SILVANIA DA CONCEIÇÃO FURTADO

# MAPEAMENTO DAS EVIDÊNCIAS DO GRUPO DE ODONTOLOGIA DA COLABORAÇÃO COCHRANE PARA CONDUTAS EM SAÚDE

**Orientadora: Profa. Dra. Regina Paolucci El Dib**

Doutorado

FACULDADE DE MEDICINA DE BOTUCATU
Universidade Estadual Paulista "Júlio de Mesquita Filho"
UNESP
2013

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Tese apresentada à Universidade Estadual Paulista "Júlio de Mesquita Filho" – UNESP, para qualificação de Doutorado em Bases Gerais da Cirurgia.

**Orientadora:** Prof[a]. Dr[a]. Regina Paolucci El Dib

**Co-Orientador:** Prof. Dr. José Fernando Marques Barcellos

**Co-Orientadora:** Prof[a]. Dr[a]. Ana Lúcia Basílio Carneiro

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Coorientador: Jose Fernando Marques Barcellos
Coorientador: Ana Lúcia Basílio Carneiro
Capes: 40000001

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Palavras-chave: Diagnósticos; Medicina baseada em evidências; Odontologia; Revisões sistemáticas.

# DADOS DO ALUNO

## 1 - IDENTIFICAÇÃO

**Silvania da Conceição Furtado**

Rua Saporo, 11 Quadra D Conjunto Jardim Sakura – Parque Dez

CEP 69054 642 - Manaus - AM.

Cel. 92 8136 9580

Naturalidade: Brasileira

Estado Civil: Divorciada

Data de nascimento: 30/01/1969

E-mail: silvania_furtado@yahoo.com.br

## 2 – ATIVIDADE PROFISSIONAL EXERCIDA

- Professora de Anatomia da Faculdade de Medicina da UFAM.
- Odontóloga
- Especialista em Morfologia Humana

## 3 – FORMAÇÃO ESCOLAR E ACADÊMICA

### 3.0 – GRADUAÇÃO

- Odontóloga formada pela Universidade Federal do Amazonas – UFAM, em 1996.

### 3.1 – EDUCAÇÃO SUPERIOR – PÓS-GRADUAÇÃO (latu senso)

- Especialização em Morfologia Humana pela Universidade Federal do Amazonas.
- Doutoranda em Bases Gerais da Cirurgia pela Universidade Paulista Júlio de Mesquita Filho – UNESP.

## 3.2 – PUBLICAÇÕES

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## 3.3 – PROJETOS APROVADOS

- CNPq N° 482672- Edital 014/2010 “Ação do extrato de *Pouteria nuda* em artrite induzida por adjuvante em ratos Lewis”.
- FAPEAM Edital N° 021/2011 “Ação do gel de *Pouteria nuda* aplicado pela fonoforese em artrite induzida por adjuvante em ratos Lewis”.

## 3.4 – LINK PARA O CURRÍCULO LATTES

- CV: http://lattes.cnpq.br/8161931812320948

**UNIVERSIDADE ESTADUAL PAULISTA "JÚLIO DE MESQUITA FILHO"**

**UNESP**

**FACULDADE DE MEDICINA DE BOTUCATU**

**Coordenador do Curso de Pós-graduação:**

Prof[a]. Dr[a]. Regina Helena Garcia Martins

**SILVANIA DA CONCEIÇÃO FURTADO**

**MAPEAMENTO DAS EVIDÊNCIAS DO GRUPO DE ODONTOLOGIA DA COLABORAÇÃO COCHRANE PARA CONDUTAS EM SAÚDE**

**Presidente da banca:** Prof[a]. Dr[a]. Regina Paolucci El Dib

**BANCA EXAMINADORA**

Prof[a]. Dr[a]. Regina Paolucci El Dib

Prof. Dr. Antonio Maria José Cataneo

Prof. Dr. Paulo do Nascimento Junior

Prof. Dr. Eduardo Grossmann

Prof. Dr. Frederico Motta Gonçalves Leite

**Suplentes:**

Prof. Dr. Ricardo Augusto Monteiro de Barros Almeida

Prof[a]. Dr[a]. Eliane Chaves Jorge

Aprovada em:_____/_____/_____

## DEDICATÓRIA

*À minha família, sobretudo meus pais e irmãos que aprenderam a conviver com a distância e se mantiveram presentes em cada dia desses anos que passamos longe. Permitiram-me voar, mas deixaram o ninho sempre pronto para minha volta. À Matheus, Thiago e Lucas: razão e emoção, felicidade e paz ... Minha maior realização, minha melhor conquista. Ser mãe dessas criaturas de Deus é o que tem de melhor nessa vida!*

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*À Universidade Paulista Júlio de Mesquita Filho - UNESP - Botucatu*

*À Universidade Federal do Amazonas – UFAM*

*A todas as pessoas que contribuíram direta ou indiretamente para a conclusão deste trabalho.*

**SUMÁRIO**

## LISTA DE FIGURAS

# LISTA DE TABELAS E QUADROS

# LISTA DE ABREVIATURAS E SÍMBOLOS

| | |
|---|---|
| **C** | Controle |
| **CC** | Colaboração Cochrane |
| **ECR** | Ensaio clínico randomizado |
| **ECRs** | Ensaios clínicos randomizados |
| **FMB** | Faculdade de Medicina de Botucatu |
| **IC** | Intervalo de confiança |
| **MBE** | Medicina Baseada em Evidências |
| **OBE** | Odontologia Baseada em Evidências |
| **PICO C** | *control group* (grupo controle) e; |
| **PICO I** | *intervention* (intervenção); |
| **PICO O** | *outcome* (desfecho) |
| **PICO P** | *patients* (pacientes); |
| **RS** | Revisão sistemática |
| **RSs** | Revisões sistemáticas |

# RESUMO

**Contexto:** A Colaboração Cochrane (CC) é uma organização internacional que tem como objetivo ajudar profissionais da área da saúde a tomar decisões clínicas bem informadas através da preparação, manutenção e promoção da acessibilidade às revisões sistemáticas sobre os efeitos das intervenções, sensibilidade e especificidade de testes diagnósticos em saúde e associação de fatores de risco e ocorrência de determinada doença. Entretanto, alguns estudos apontaram a constante ausência ou insuficiência de evidências nas revisões sistemáticas da Colaboração Cochrane para a tomada de decisão clínica. **Objetivo:** Verificar a proporção de revisões sistemáticas completas do grupo de Odontologia da Colaboração Cochrane que permitem ou não a aplicação prática dos resultados, cujos autores consideram reunir evidências suficientes para recomendá-las ou desestimulá-las. **Método:** Estudo sistemático de revisões da Biblioteca Cochrane, edição 8, 2013. Foram incluídas todas as revisões sistemáticas completas do grupo de Odontologia que preencheram os critérios de inclusão deste trabalho. **Resultados:** 143 revisões sistemáticas foram analisadas, o que correspondeu a 100% da totalidade disponível na Biblioteca pertinente ao grupo de Odontologia da Colaboração Cochrane. Evidências que apoiam a intervenção 22,38% (95% IC 16 - 29); evidências contra a intervenção 6,29% (95% IC 3 - 10); ausência de evidências 71,33% (95% IC 64 - 78). O total de revisões sistemáticas que recomendam a realização de mais estudos foi de 140 (97,90 %) (95% IC, 96 – 100). A média do número de estudos incluídos foi de 13 e o total de meta-análises incluído nas revisões sistemáticas avaliadas foi de 161. **Conclusão:** Somente 28,67% das revisões sistemáticas completas do grupo de Odontologia da Colaboração Cochrane mostraram evidências suficientes para recomendar ou desestimular o tratamento de interesse e ainda, sugeriam novos estudos, ou seja, nenhuma delas apresentou resultados literalmente consistentes. Em 71,33% delas as evidências ainda estão ausentes, não conseguindo fornecer ao usuário o melhor caminho para a tomada de decisões clínicas em Odontologia.

**Palavras-chave:** medicina baseada em evidências, odontologia, revisões sistemáticas, meta-análises, implicações para a prática clínica, implicações para a pesquisa científica.

## ABSTRACT

**Context:** The Cochrane Collaboration (CC) is an international organization that aims to help health care professionals to making clinical decisions well informed by preparing, supporting and promoting the accessibility of systematic reviews about the intervention effects, sensibility and specificity of diagnostic health tests and association of risk factors and occurrence of a particular disease. However, some studies indicated the constant absence or insufficient evidences in systematic reviews from the Cochrane Collaboration to making clinical decision. **Object:** To determine the proportion of complete systematic reviews of the Cochrane Collaboration Dentistry Group which allow or not the practical application of the results, which author consider bring enough evidence to recommend or discourage them. **Method:** Systematic study of the reviews from Cochrane Library, Issue 8, 2013. Was included all the complete systematic reviews of the Dentistry Group who met inclusion criteria for this study. **Results**: 143 systematic reviews were analyzed, corresponding to 100% of all available of the Library pertinent to the Cochrane Collaboration dentistry Group. Evidences supporting intervention 22,38% (95% IC 16 – 29); evidence against intervention 6,29% (95% IC 3 - 10); absence of evidence 71,33% (95% IC 64 - 78). The total of systematic reviews that recommend further studies was 140 (97,90 %) (95% IC, 96 – 100). The mean of included studies was 13 and the total of meta-analyzes included in systematic reviews evaluated was 161. **Conclusion:** Only 28,67 of the complete systematic reviews of the the Cochrane Collaboration Dentistry Group showed sufficient evidence to recommend or discourage the treatment of interest and also suggested further studies, or be, none of them showed consistent results. In 71,33% of them still absence, failing to provide to the user the best way to making clinical decision in Dentistry.

**Keywords:** based-evidence medicine, dentistry, systematic reviews, meta-analyzes, implications for clinical practice, implications for scientific research.

## 1. INTRODUÇÃO

As revisões sistemáticas (RSs) constituem-se em revisões da literatura baseadas em uma metodologia explícita, rigorosa e transparente (1). Este método científico busca identificar e sintetizar as melhores evidências disponíveis que abordam uma questão clínica e, quando há estudos incluídos homogêneos tanto referentes aos aspectos metodológicos (ex.: alto versus baixo risco de viés) quanto aos aspectos clínicos (ex.: intervenção, desfechos) essas revisões podem incluir meta-análise (2).

Interessados em verificar as implicações das revisões sistemáticas do grupo de Odontologia da Colaboração Cochrane (CC) para a prática clínica e pesquisa, este estudo teve por objetivo avaliar as proporções das revisões sistemáticas classificadas pelos autores como benéficas, maléficas ou com ausência de evidências para estimular ou refutar uma determinada conduta clínica. E, diante de resultados inconsistentes proporem a realização de mais estudos ou, por outro lado, diante de uma questão clínica irrelevante e/ou economicamente inviável ou ainda diante de certezas absolutas não sugerirem novas pesquisas.

Quatro áreas podem se beneficiar dos resultados deste estudo, aqueles que produzem provas científicas para a investigação (i.e., cientistas), aqueles que pretendem usar esses conhecimentos na prática clínica (i.e., profissionais da saúde), os usuários (i.e., consumidores) e, os tomadores de decisões na área da saúde (i.e., gestores).

Há uma grande dificuldade para tomada de decisões baseada nas melhores evidências em diversas áreas da medicina. Desta forma, este estudo se propôs em

verificar a situação atual da Odontologia baseada em evidências (OBE) de acordo com as RSs publicadas pelo grupo de Odontologia da CC.

## 1.1 Medicina Baseada em Evidências e revisões sistemáticas da literatura

O termo Medicina Baseada em Evidências (MBE) foi primeiramente utilizado pelo médico epidemiologista Gordon Guyatt (3) em 1992 e, definido como o uso conscienciosо e explícito da melhor evidência disponível de pesquisa médica nos cuidados aos pacientes (4).

A MBE se apresenta como mediadora essencial no processo de tomada de decisões clínicas que atende ao raciocínio ético o que é explicitamente admitido como a melhor maneira de praticar a medicina (5). É importante ressaltar que a MBE não nega o valor da experiência pessoal, mas propõe que esta seja alicerçada em evidências (6). Outrossim, boas pesquisas científicas objetivam reduzir a incerteza na área da saúde para ajudar na tomada de melhores decisões clínicas (6).

Desde os anos 1990, tem havido um interesse crescente na OBE nacional e internacionalmente com o objetivo de melhorar a assistência ao paciente. O ensino odontológico baseado em evidências é a chave para o aumento da triagem de tratamentos e práticas baseadas em evidências sendo que este ensino deve promover a compreensão da ciência básica e aplicada, a gestão da incerteza e o desenvolvimento de novos conhecimentos. Como resultado o odontólogo estaria disposto a atualizar e mudar procedimentos clínicos baseados nessas ferramentas (7).

Efetividade, eficiência, eficácia e segurança são fundamentos essenciais da MBE e OBE em que o investigador irá procurar responder questões clínicas de

interesse. Ao mencionarmos efetividade, a referência é ao tratamento que funciona em condições de mundo real. Eficácia, quando o tratamento funciona em condições de mundo ideal. Eficiência, quando o tratamento é barato e acessível para que os consumidores possam dele usufruir. E, por último, segurança significa a diminuição dos efeitos adversos e toxicidade de determinado tratamento (8). Entretanto, as definições dos termos efetividade e eficácia são muito vagas e, embora sejam utilizadas por instituições renomadas como a Colaboração Cochrane (9) e o Centro de Medicina Baseada em Evidências em Oxford (10), os colaboradores do grupo da Unidade de Medicina Baseada em Evidências da FMB/UNESP do CNPq vem estudando uma forma mais objetiva de determinar se os resultados de um ensaio clínico são voltados mais para efetividade e/ou eficácia considerando que aqui existe um gradiente contínuo entre os termos estudados (11).

As RSs são consideradas estudos secundários pois sumarizam resultados de estudos primários (ex.: ensaios clínicos randomizados, estudos coortes, estudos de acurácia, etc) (12). Esse recurso utiliza uma metodologia científica rigorosa, pode ser atualizado periodicamente, ou seja, novos estudos que abordam a mesma questão clínica podem ser incluídos posteriormente e detecta lacunas em áreas de conhecimento, incentivando o desenvolvimento de novas pesquisas (13).

A primeira fase do processo para a condução da RS consiste na elaboração do protocolo no qual deve constar uma boa pergunta científica. Esta pergunta consiste em quatro itens, mais conhecidos como PICO: P, *patients*, ou seja, situação clínica (qual é a doença); I, *intervention,* intervenção (qual é o tratamento de interesse a ser testado); C, *control group*, grupo-controle (placebo, *sham*, nenhuma intervenção ou outra intervenção) e; O, *outcome*, desfecho clínico (6).

A CC é uma organização internacional que tem como objetivo ajudar profissionais da área da saúde a tomar decisões clínicas bem informadas por meio da preparação, manutenção e promoção da acessibilidade às revisões sistemáticas sobre os efeitos das intervenções e testes diagnósticos em saúde (14) (15). Esta colaboração foi precursora na realização de RSs de alta qualidade metodológica.

## 1.2 Ensaios clínicos randomizados

O ensaio clínico randomizado (ECR) é um estudo primário que tem por objetivo prover comparações entre intervenções em grupos homogêneos para responder a uma pergunta clínica. O ECR visa evitar viés de seleção usando atribuição aleatória adequada de pacientes para os grupos de tratamento e garante o padrão de qualidade ao longo do estudo. O objetivo da randomização é a criação de grupos que são comparáveis para qualquer fator conhecido ou desconhecido (15).

Um exemplo de pergunta clínica de um ECR seria: Qual a melhor intervenção para dor pós-operatória moderada e grave (i.e., O, *outcome*, desfecho clínico) após extração de terceiro molar? (P, *patients*, ou seja, situação clínica). Anti-inflamatório não esteroide rofecoxib 50mg (I, *intervetion*, intervenção) ou codeína 60mg/acetaminofeno 600mg (C, *control group*, grupo-controle) (16).

As recomendações baseadas em evidências são um recurso a ser considerado no processo de decisão clínica, que também inclui o julgamento profissional do médico ou odontólogo e, os desejos do paciente levando-se em consideração as individualidades e circunstâncias eventuais.

Por exemplo, a aplicação de selantes em fissuras e lesões não cavitadas mostrou-se ser uma forma eficaz como parte de uma abordagem abrangente à prevenção de cáries (17) e, esta informação foi provinda de um nível de evidência I, ou seja de revisões sistemáticas da literatura. Contudo, a avaliação de risco de cárie é um componente importante no processo de tomada de decisão e deve ser avaliado periodicamente.

Os ECRs bem conduzidos e com tamanho amostral adequado podem ter um impacto poderoso e imediato no atendimento aos pacientes, pois os mega trials são considerados nível II de evidências, e os ECRs menores considerados nível III para responder questões sobre tratamento e prevenção (4). Entretanto, supondo que queremos saber sobre os fatores de risco decorrentes do cigarro na ocorrência de câncer oral no decorrer dos anos um ECR seria eticamente inaceitável. Para isso, as RSs ainda são consideradas nível I de evidências, porém temos como nível II, os estudos coortes que em outras situações clínicas são considerados nível IV de evidência.

A figura 1 mostra a hierarquia das evidências para a avaliação de pesquisas ou outras fontes de informação.

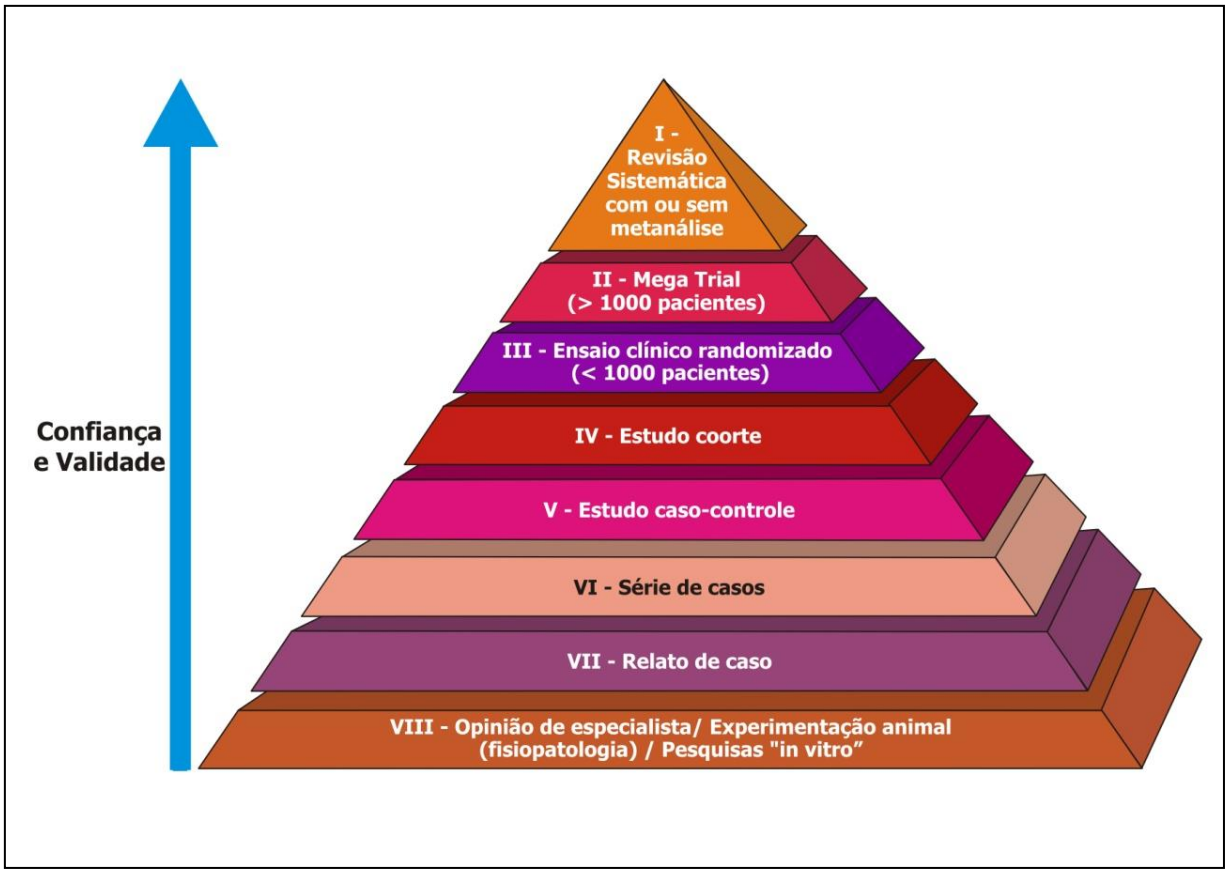


**Figura 1** – Gráfico demonstrativo dos níveis de evidências para a tomada de decisão nos cuidados com a saúde para tratamento e prevenção (4)**.**

Na figura 1, no topo da pirâmide, as RSs com ou sem meta-análises são consideradas nível I de evidências, seguida dos grandes ensaios clínicos (mega trials), ECRs com menos de 1000 pacientes, estudos coortes, estudos caso-controle (restrospectivo), séries de casos, relatos de caso, opiniões de especialistas, pesquisas com animais e pesquisas *in vitro*. As três últimas classificações permanecem no mesmo nível de evidência, sendo fundamentais para formular hipóteses que serão testadas à luz de boa pesquisa científica.

O topo e a base da pirâmide que correspondem, respectivamente, aos níveis I (RSs) e VIII (opiniões de especialistas, pesquisas com animais e pesquisas *in*

*vitro*) serão sempre estáticas, enquanto os demais níveis comportam-se de forma dinâmica a fim de atender à diversidade de perguntas clínicas.

## 1.3 Meta-análise

Meta-análise é um cálculo estatístico que integra os resultados de estudos primários (e.g., ensaios clínicos randomizados) para combinar os efeitos de determinado tratamento na área da saúde (18, 19). Tais análises têm se tornado cada vez mais populares na pesquisa médica devido tanto a existência de estudos com baixo tamanho amostral quanto aos resultados contraditórios de uma mesma pergunta clínica (20). Desta forma, a meta-análise pode fornecer conclusões sobre os efeitos de tratamentos que não poderiam ser obtidos a partir de ensaios clínicos individuais por causa da limitada significância estatística (21, 22).

As meta-análises podem aumentar o poder estatístico e a precisão da estimativa do efeito de um determinado tratamento, melhorando a confiança nos resultados. Um exemplo claro para descrever o poder das meta-análises é demonstrado no logotipo da CC (Figura 2), que mensura o tamanho de efeitos de sete ensaios clínicos que avaliaram o uso de corticosteroide no final da gravidez de mães de bebês prematuros, sendo esperada como desfecho diminuição do número de mortes por imaturidade pulmonar.

Cada linha horizontal representa os resultados de um ensaio e o diamante representa os resultados combinados. A posição do diamante para a esquerda da linha vertical indica que o tratamento estudado é benéfico, enquanto o diamante posicionado à direita da linha mostraria que o tratamento fez mais mal do que bem.

Nesta RS é possível perceber que apesar de apenas dois ensaios clínicos apresentarem efeitos estatisticamente significantes a favor do tratamento com corticosteroide, os resultados combinados, mesmo somando os cinco estudos inconclusivos, aumentaram o poder estatístico do estudo, indicando assim, que o corticosteroide reduz o risco de bebês morrerem por complicações relacionadas à imaturidade pulmonar (Figura 2).

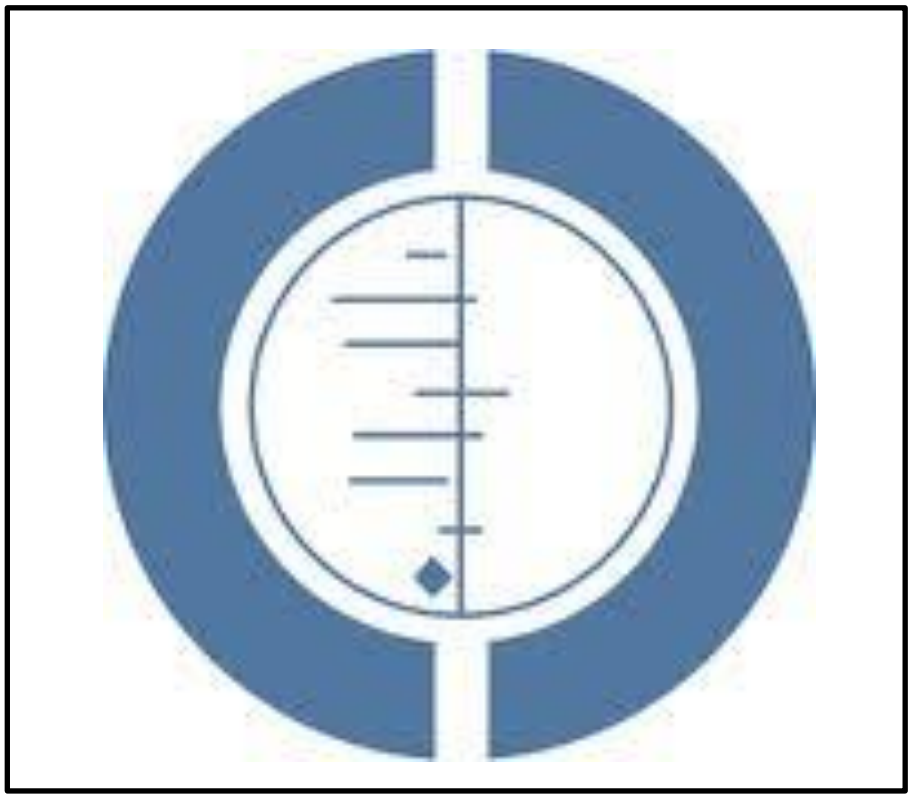

**Figura 2** – Figura ilustrativa do logotipo da Colaboração Cochrane.

## 1.4 Crítica à melhor evidência: conclusões das revisões sistemáticas

Um estudo sistemático foi publicado em 2007 com intuito de mapear as conclusões das RSs da CC em relação ás implicações para a prática clínica e pesquisa científica. Os autores encontraram menos de 2% de revisões com

evidências suficientes para recomendar ou refutar o tratamento em questão sem recomendação de novos estudos. A porcentagem de RSs desse estudo com resultados a favor e contra o tratamento avaliado foi de 43% e 5,1%, respectivamente. Entretanto 47,83% das RSs avaliadas foi categorizada como ausência de evidências e, os autores recomendaram mais estudos (23).

O mesmo estudo foi reanalisado em 2011 com intuito de verificar se esta proporção de ausência de evidências com recomendação para mais estudos diminuiu no decorrer dos anos e, se a produção de ensaios clínicos aumentou.

Os autores encontraram menos de 5% de revisões com evidências suficientes para recomendar ou refutar o tratamento em questão sem recomendação de novos estudos, demonstrando que o alto índice de incertezas se manteve acerca das recomendações clínicas. A porcentagem de RSs avaliadas como insuficientes de evidências e, os autores recomendavam mais estudos foi de 44.24%. Embora, nota-se uma diminuição de menos de 3% entre a porcentagem desta categoria nos estudos de 2007 e 2011, esse resultado não foi estatisticamente significante (24).

Resultados semelhantes foram obtidos num estudo que, também, mapeou as RSs da CC, porém apenas em doenças infecciosas. Os autores concluíram que quase metade dos estudos analisados (40.9%) também apresentou ausência de evidências e, os autores dos estudos clamam por mais pesquisas para a tomada de decisão na prática clínica. Concluíram que apenas 4,3% dos estudos avaliados confirmavam ou refutavam a utilização de tais intervenções sem a necessidade de mais estudos (25).

Outrossim, Santos et al 2013 realizaram o mesmo estudo no grupo de anestesiologia e, também, os autores concluíram que mais da metade dos estudos avaliados (51%) mostraram evidências insuficientes para recomendar ou refutar

determinada intervenção e, desta forma sugerem mais pesquisas na área. Do mesmo modo, os autores encontraram apenas 5% de RSs com recomendações consistentes para a aplicação clinica, ou seja confirmavam ou refutavam a utilização de tais intervenções sem a necessidade de mais estudos (26).

Desta forma, o novo apelo para a Medicina Baseada em Evidências é que sejam produzidos estudos em massa e de alta qualidade, com participação de centros do mundo inteiro e, de acordo com os protocolos pré-definidos da Colaboração Cochrane, para abranger todas as revisões sistemáticas que não oferecem evidências suficientes para a tomada de decisão em saúde (27). Assim, reconhecemos um campo de pesquisa vasto para a prática e o ensino da Odontologia Baseada em Evidências.

# 2. OBJETIVOS

## 2.1 Objetivo geral

Verificar a proporção de revisões sistemáticas completas do grupo de Odontologia da Colaboração Cochrane que permitem ou não a aplicação prática dos resultados, cujos autores consideram reunir evidências suficientes para recomendá-las ou desestimulá-las.

## 2.2 Objetivos específicos

A) Verificar a proporção de revisões sistemáticas que fazem recomendações para a tomada de decisão em Odontologia, ou seja, implicações que concluem tanto pelo benefício quanto malefício em relação ao grupo controle.

B) Verificar a proporção de revisões sistemáticas que sugerem recomendações de futuros estudos para a pesquisa científica.

C) Verificar quantos estudos, em média, existe em cada revisão sistemática.

D) Verificar quantas meta-análises, em média, existe em cada revisão sistemática.

Consideramos, também, fazer uma análise do número de RSs e estudos incluídos por área e subárea odontológica.

## 2.3 Pergunta

Qual é a proporção de incertezas nas revisões sistemáticas do grupo de odontologia da Colaboração Cochrane quanto à aplicabilidade dos resultados para a prática clínica?

## 2.4 Hipótese

As provas científicas provenientes de revisões sistemáticas realizadas pela CC demonstram ser insuficientes em grande proporção para recomendar ou desestimular uma intervenção quando comparada ao grupo controle e, os autores clamam por mais estudos.

# 3. MÉTODO

Este estudo seguiu a metodologia proposta e desenvolvida durante a tese de mestrado da Prof[a]. Dra. Regina Paolucci El Dib que originaram duas publicações no *Journal of Evaluation in Clinical Practice* (23, 24). Este estudo também foi dispensado de parecer pelo comitê de ética em pesquisa (CEP) através do ofício 163/2013 (Anexo 1).

## 3.1 Tipo de estudo

Estudo sistemático.

## 3.2 Local do estudo

O estudo foi desenvolvido no Departamento de Morfologia do Instituto de Ciências Biológicas da Universidade Federal do Amazonas e, no grupo de estudos da Unidade de Medicina Baseada em Evidências da Faculdade de Medicina de Botucatu (FMB), UNESP pelo CNPq e no Departamento de Anestesiologia da FMB - UNESP.

## 3.3 Critérios de inclusão

Foram incluídas todas as revisões sistemáticas completas do grupo colaborativo em Odontologia da Cochrane, de acordo com a última atualização da Biblioteca Cochrane, edição 8, datada de 12 de agosto de 2013.

## 3.4 Critérios de exclusão

Foram excluídos protocolos de revisões sistemáticas, representações de meta-análises com apenas um estudo e revisões sistemáticas removidas da Biblioteca Cochrane.

## 3.5 Tamanho da amostra

Foi considerada amostra de conveniência.

## 3.6 Definições dos eventos a serem computados

### 3.6.1 Benefício e malefício

**Malefício:** evidências de que a intervenção testada faz mais mal do que bem, em comparação com o grupo controle.

**Benefício:** evidências de que a intervenção testada faz mais bem do que mal, comparada ao grupo controle.

### 3.6.2 Objetivos específicos / desfechos

#### 3.6.2.1 Proporção de revisões sistemáticas que permitem concluir pelos benefícios ou malefícios da intervenção (classificação A ou B)

Utilizamos uma tabela (Anexo 2) e preenchemos com o número 1 a coluna “evidências que apoiam a intervenção” quando as revisões sistemáticas permitiram

fazer recomendações sobre benefícios significantes para a aplicação prática. Caso contrário, preenchemos com o número 1 a coluna “evidências contra a intervenção” quando as revisões sistemáticas permitiram fazer recomendações significantes contra a intervenção testada.

Obtivemos as respostas descritas anteriormente, mediante a interpretação das conclusões dos autores pelo escrutínio de todas as sessões da RS em questão. No caso de dúvidas entre o preenchimento das duas colunas descritas anteriormente, optamos por preencher a coluna “evidências contra a intervenção”, uma vez que, sob o ponto de vista ético, é pertinente desaconselhar intervenções que ofereçam riscos de desfechos negativos que sejam observados de forma significante na população-alvo da intervenção testada.

Quando um estudo demonstrou não haver diferença entre as intervenções, ou seja, quando não houve evidências para responder a questão clínica, preenchemos as colunas “evidências que apoiam a intervenção” e “evidências contra a intervenção” com o número zero (ausência de resposta). Consideramos esse preenchimento falta de evidências, em outras palavras, ausência de estudos para responder a pergunta da RS.

Desta forma, foram obtidas três possíveis combinações:

**1 e 0** → Evidências que apoiam a intervenção testada (classificação A);

**0 e 1** → Evidência contra a intervenção testada (classificação B);

**0 e 0** → Ausência de evidências (classificação C).

#### 3.6.2.2 Proporção de revisões sistemáticas que sugerem recomendações de futuros estudos para a pesquisa científica

Quando as revisões sistemáticas sugeriram recomendações de futuras pesquisas voltadas para a questão abordada enfatizando a necessidade de mais estudos para obterem melhores evidências, preenchemos na tabela (Anexo 2) a coluna “recomendações para futuros estudos” com o número 1**.** Entretanto, se o autor não sugeriu a realização de mais estudos, preenchemos essa mesma coluna com o número zero.

Dessa maneira, obtivemos seis possíveis combinações do cruzamento das colunas "evidências que apoiam a intervenção”, "evidências contra a intervenção" e "recomendação de futuros estudos":

**1 e 0 e 1** → Evidências que apoiam a intervenção, com recomendação para mais estudos (classificação A1). Provas científicas que apoiam a utilização da intervenção testada, apesar de os autores não estarem muito certos do benefício da intervenção, quando comparada ao grupo controle, e recomendarem mais estudos para confirmar ou não o efeito da intervenção testada.

**1 e 0 e 0** → Evidências que apoiam a intervenção, sem recomendação para mais estudos (classificação A2). Provas científicas suficientes que apoiam a utilização da intervenção testada, em que os autores estão confiantes do benefício da intervenção, quando comparada ao grupo controle, e dispensam a realização de mais estudos voltados para a mesma questão clínica.

**0 e 1 e 1** → Evidências contra a intervenção, com recomendação para mais estudos (classificação B1). Provas científicas que contraindicam a utilização da intervenção testada, embora os autores não estejam muito certos do malefício da intervenção, quando comparada ao grupo controle, e recomendem mais estudos para refutar ou não o efeito da intervenção testada.

**0 e 1 e 0** → Evidências contra a intervenção, sem recomendação para mais estudos (classificação B2). Provas científicas que contraindicam a utilização da intervenção testada, os autores estando confiantes do malefício da intervenção, quando comparada ao grupo controle, e dispensam a realização de mais estudos voltados para a mesma questão clínica.

**0 e 0 e 1** → Ausência de evidências, com recomendação para mais estudos (classificação C1). Não há provas científicas de que uma intervenção traga mais benefícios ou malefícios, quando comparada ao grupo controle. Portanto, os autores recomendam a realização de estudos para responderem a questão abordada.

**0 e 0 e 0** → Ausência de evidências, sem recomendação para mais estudos (classificação C2). Não há provas científicas de que uma intervenção traga mais benefícios ou malefícios, quando comparada ao grupo controle. Entretanto os autores, ao conduzirem a RS, perceberam que não seria viável economicamente a realização de mais estudos, ou em casos em que a pergunta não foi mais relevante e, dessa forma, desaprovaram a produção de novos estudos para a mesma questão.

Como se pode notar “A”, “B” e “C” são classificações das implicações para a prática e “1” e “2”, para a pesquisa científica. Com a combinação entre as letras e os números, obtivemos seis subclassificações.

#### 3.6.2.3 Quantidade de estudos existentes em cada revisão sistemática

Como suporte para compreendermos as diferentes implicações nas revisões sistemáticas, computamos o número de ensaios clínicos incluídos em cada revisão sistemática. A contagem foi checada tanto na sessão resultados como na tabela “características dos estudos incluídos”. Quando houve discordância no relato da quantidade de ensaios clínicos confrontamos também as referências dos estudos incluídos. Inserimos os dados na penúltima coluna da tabela (Anexo 2), denominada "número de estudos incluídos".

#### 3.6.2.4 Quantidade de meta-análises existente em cada revisão sistemática

Computamos as meta-análises que existiam em cada revisão sistemática e obtivemos a contagem no tópico “*Data and Analyses“*. Inserimos os dados na última coluna da tabela (Anexo 2), denominada "número de meta-análises".

### 3.6.3 Desfechos

Os dados computados foram inseridos em um quadro final (Anexo 3), de acordo com as combinações descritas anteriormente.

No caso em que o tratamento favoreceu o desfecho primário e refutou o desfecho secundário, a classificação foi estabelecida de acordo com a conclusão do desfecho primário. Da mesma forma, nos casos em que o tratamento refutou o desfecho primário e recomendou o desfecho secundário, foi considerada a classificação B, ou seja, evidências que contraindicam a intervenção.

## 4. ANÁLISE ESTATÍSTICA

As proporções de implicações para a prática clínica e para a pesquisa científica foram representadas por números reais, porcentagens e 95% de intervalo de confiança (IC) da totalidade das RSs. Para calcular o intervalo de confiança de 95%, foi utilizado um fator de correção finito, $(N-N)/(N-1)$, considerando que $n \cdot N^{-1} \geq 0.05$ (28), onde n foi o número de RSs analisadas e N foi o total de RSs publicadas na Biblioteca Cocrhane, edição 8 de 2013 que preencheram os critérios de inclusão.

As meta-análises e estudos incluídos em cada RS foram expressos em total, média, mediana e desvio-padrão.

## 5. RESULTADOS

Foram identificadas 147 RSs na lista de RSs fornecida pela CC com potencial para inclusão neste estudo. Entretanto, após avaliação minuciosa dos títulos, excluímos quatro RSs que não pertenciam ao grupo de Odontologia (Anexo 3), totalizando assim, 143 RSs para análise.

A seguir são apresentados os resultados para os desfechos, bem como para o número de estudos incluídos e o número de meta-análises desenvolvidas de 143 RSs analisadas neste estudo.

**Quadro 1.** Dados das 143 revisões sistemáticas do grupo examinado.

| Implicações para a Prática clínica e para a Pesquisa Científica | Número | Percentual | Intervalo de confiança (%) |
|---|---|---|---|
| **A - Evidências que apoiam a intervenção** | **32** | **22,38** | **16 - 29** |
| A1 - Evidências que apoiam a intervenção, com recomendação para mais estudos | 32 | 22,38 | 16 - 29 |
| A2 - Evidências que apoiam a intervenção, sem recomendação para mais estudos | 0 | 0,00 | - |
| **B - Evidências contra a intervenção** | **9** | **6,29** | **3 - 10** |
| B1 - Evidências contra a intervenção, com recomendação para mais estudos | 9 | 6,29 | 3 - 10 |
| B2 - Evidências contra a intervenção, sem recomendação para mais estudos | 0 | 0,00 | - |
| **C - Ausência de evidências suficientes para sugerir benefício ou malefício** | **102** | **71,33** | **64 - 78** |
| C1 - Ausência de evidências, com recomendação para mais estudos | 99 | 69,23 | 62 - 76 |
| C2 - Ausência de evidências, sem recomendação para mais estudos | 3 | 2,10 | 0 - 4 |
| **Número e porcentagem de RS que recomendaram mais estudos (A1 + B1 + C1)** | 140 | 97,90 | 96 - 100 |

A proporção de evidências que apoiam a intervenção testada quando comparada ao grupo controle (desfecho A) foi de 22,38%, totalizando 32 RSs. Já a proporção de evidências que contraindicam o uso de determinada intervenção (desfecho B) foi de 6,29% (9 revisões sistemáticas). Entretanto o desfecho de maior proporção foi à ausência de evidências suficientes para sugerir benefício ou malefício comparativamente ao grupo controle, num total de 102 estudos, representando uma porcentagem de 71,33%. As médias dos estudos e meta-análises incluídos foram, respectivamente, 13,00 e 1,13 (tabela 1). A porcentagem de revisões sistemáticas avaliadas que recomendaram a realização de novos estudos para confirmar ou refutar os achados foi de 97,90%.

O Quadro 3 refere-se aos dados do intervalo de confiança dos desfechos dos estudos avaliados.

A figura 3 representa os dados dos quadros 1 mostrando porcentagem das implicações para a prática clínica e para a pesquisa científica das revisões sistemáticas do grupo de Odontologia da CC.

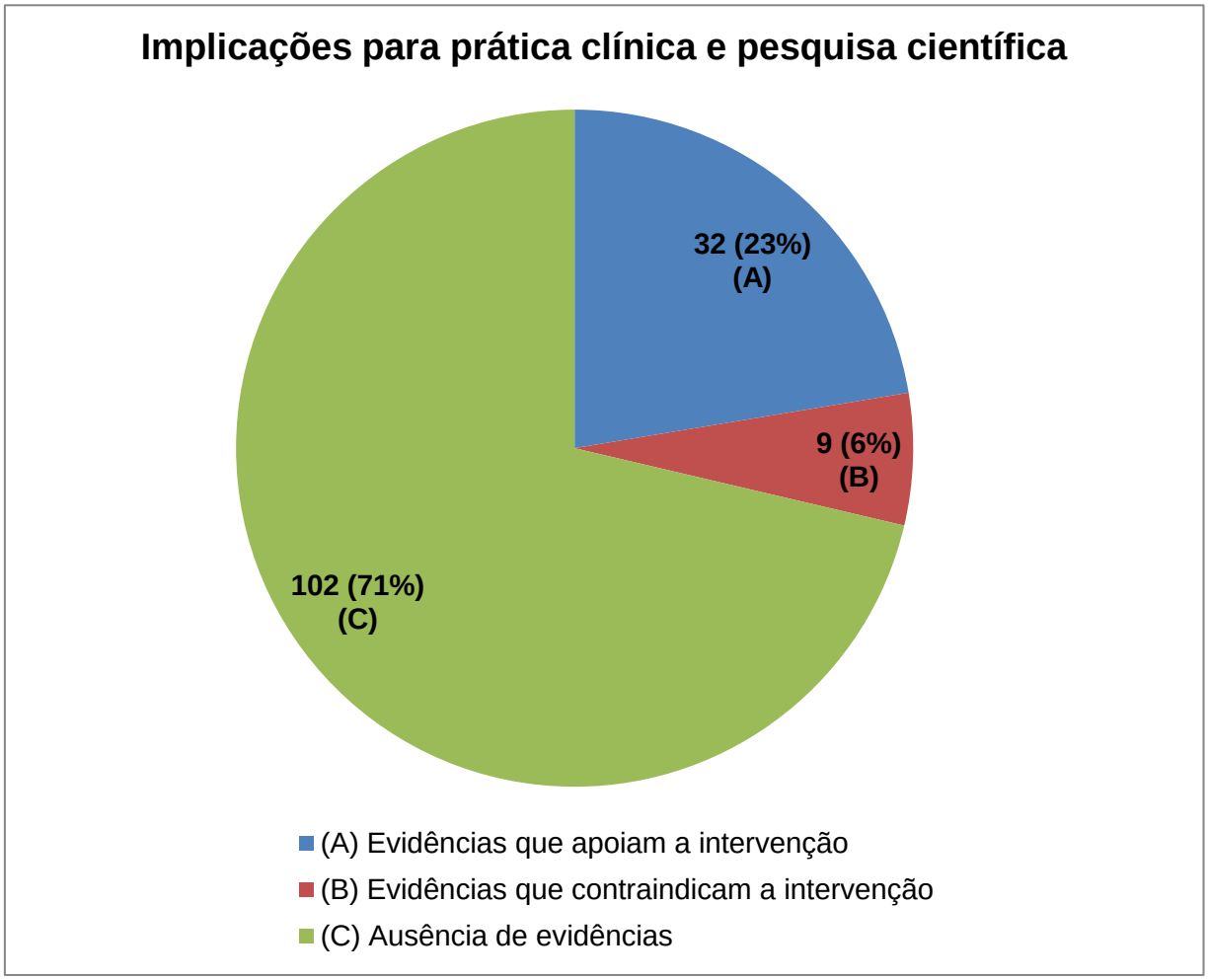


**Figura 3 –** Porcentagem das implicações para a prática clínica e para a pesquisa científica das revisões sistemáticas do grupo de Odontologia da CC.

A figura 4 representa os dados do quadro 1 mostrando porcentagem dos desfechos avaliados bem como os desfechos sugestivos de recomendação para a realização de novos ensaios clínicos randomizados das RSs do grupo de Odontologia da CC.

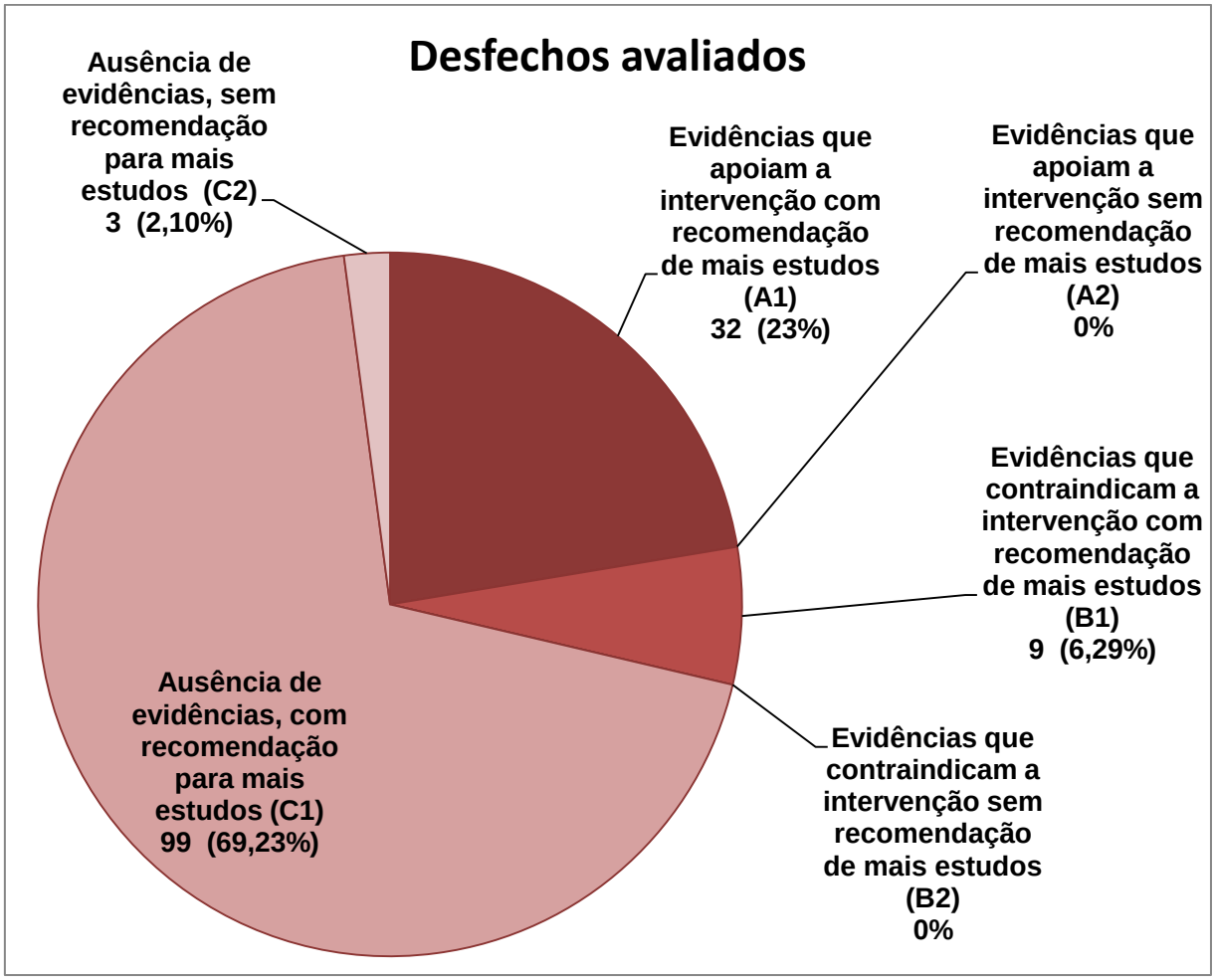


**Figura 4 –** Porcentagem dos desfechos avaliados como benéficos ou maléficos sem recomendação de mais estudos e desfechos sugestivos de recomendação de novos ensaios clínicos randomizados.

A tabela 1 mostra a média, desvio-padrão, mediana e número total dos estudos incluídos e meta-análises no grupo de Odontologia da CC.

**Tabela 1.** Apresentação da média, desvio-padrão, mediana, moda e número total dos estudos incluídos e meta-análises no grupo de Odontologia da CC.

| Estatística | Estudos Incluídos | Número de Meta-Análises |
|---|---|---|
| **Média (Desvio-padrão)** | 13 (22,76) | 1,13 (3,88) |
| **Mediana** | 6 | 0 |
| **Moda** | 0 | 0 |
| **Variação** | 0 - 505 | 0 - 35 |
| **Total** | 1.859 | 161 |

O quadro 2 apresenta o panorama das RSs publicadas pelo grupo de Odontologia da CC por área e subárea odontológica e os números reais de estudos incluídos.

**Quadro 2** – Panorama das RSs publicadas pelo grupo de Odontologia da CC por área e subárea odontológica.

| Área | Subárea | N° de RSs | % Revisões | N° de Estudos incluídos | % Estudos Incluídos |
|---|---|---|---|---|---|
| Antibioticoterapia | | 4 | 2,80 | 26 | 1,40 |
| Síndrome da ardência bucal | | 1 | 0,70 | 9 | 0,48 |
| Cosmeticoterapia | | 1 | 0,70 | 25 | 1,35 |
| Anomalias Craniofaciais | Granuloma Central de Células Gigantes | 1 | 0,70 | 1 | 0,05 |
| | Fenda Palatina e Lábio leporino | 3 | 2,10 | 8 | 0,43 |
| | Tratamento Ortodôntico | 21 | 14,69 | 121 | 6,51 |
| Ansiedade | | 2 | 1,40 | 39 | 2,10 |
| Cárie dentária | Prevenção | 19 | 13,29 | 505 | 27,18 |
| | Tratamento | 18 | 12,59 | 61 | 3,28 |
| Alveolite | | 2 | 1,40 | 49 | 2,64 |
| Gengivoestomatite | | 1 | 0,70 | 2 | 0,11 |
| Halitose | | 2 | 1,40 | 7 | 0,38 |
| Manutenção | | 1 | 0,70 | 6 | 0,32 |
| Cirurgia oral e maxilofacial | Cirurgia e complicações | 1 | 0,70 | 21 | 1,13 |
| | Dentes impactados | 1 | 0,70 | 0 | 0,00 |
| | Próteses e implantes | 16 | 11,19 | 132 | 7,10 |
| | Remoção de terceiro molar | 2 | 1,40 | 18 | 0,97 |
| | Injúria traumática | 5 | 3,50 | 3 | 0,16 |
| Câncer oral | Saúde oral de paciente com câncer | 5 | 3,50 | 184 | 9,90 |
| | Prevenção | 1 | 0,70 | 1 | 0,05 |
| | Tratamento | 4 | 2,80 | 126 | 6,78 |
| Canddíase oral | | 2 | 1,40 | 10 | 0,54 |
| Higiene oral | | 2 | 1,40 | 36 | 1,94 |
| Lesão oral | | 1 | 0,70 | 0 | 0,00 |
| Leucoplasia oral | | 1 | 0,70 | 9 | 0,48 |
| Líquem plano oral | | 1 | 0,70 | 28 | 1,51 |
| Mucosite oral | | 2 | 1,40 | 163 | 8,77 |
| Dor oral | | 10 | 6,99 | 105 | 5,65 |
| Fibrose submucosa oral | | 1 | 0,70 | 2 | 0,11 |
| Úlcera oral | | 1 | 0,70 | 25 | 1,35 |
| Doença Periodontal | Condições associadas | 1 | 0,70 | 27 | 1,45 |
| | Prevenção | 4 | 2,80 | 62 | 3,34 |
| | Tratamento | 6 | 4,20 | 47 | 2,53 |

O quadro acima mostra que as subáreas de tratamento ortodôntico (área de anomalias craniofaciais), prevenção (área de cárie dentária) e Prótese/implante (subárea de cirurgia oral e maxilofacial) foram as que apresentaram maior número de Rss correspondendo a 14,69, 13,29 e 11,19 % , respectivamente. Da mesma forma, estas subáreas apresentaram, também, o maior número de estudos incluídos, correspondendo a 6,51, 27,18 e 7,10 %, respectivamente com destaque para o número de estudos incluídos no subgrupo de prevenção pertencente a área de cárie dentária que apresentou o maior número de estudos incluídos, correspondendo a 27,18 % de todos os estudos incluídos nas RSs do grupo de Odontologia da CC.

Por outro lado, estudos relacionados à saúde oral do paciente com câncer apresentou um pequeno número de RSs (5) publicadas no grupo de Odontologia da CC representando 3,50 **%** de todas as publicações do grupo avaliado, porém apresentou um número expressivo de estudos incluídos (184), correspondendo à 9,90**%** do total de estudos incluídos nas RSs avaliadas.

O gráfico 5 apresenta o panorama do número de revisões sistemáticas publicadas pelo grupo de Odontologia da CC nas várias áreas e subáreas de especialidades odontológicas.

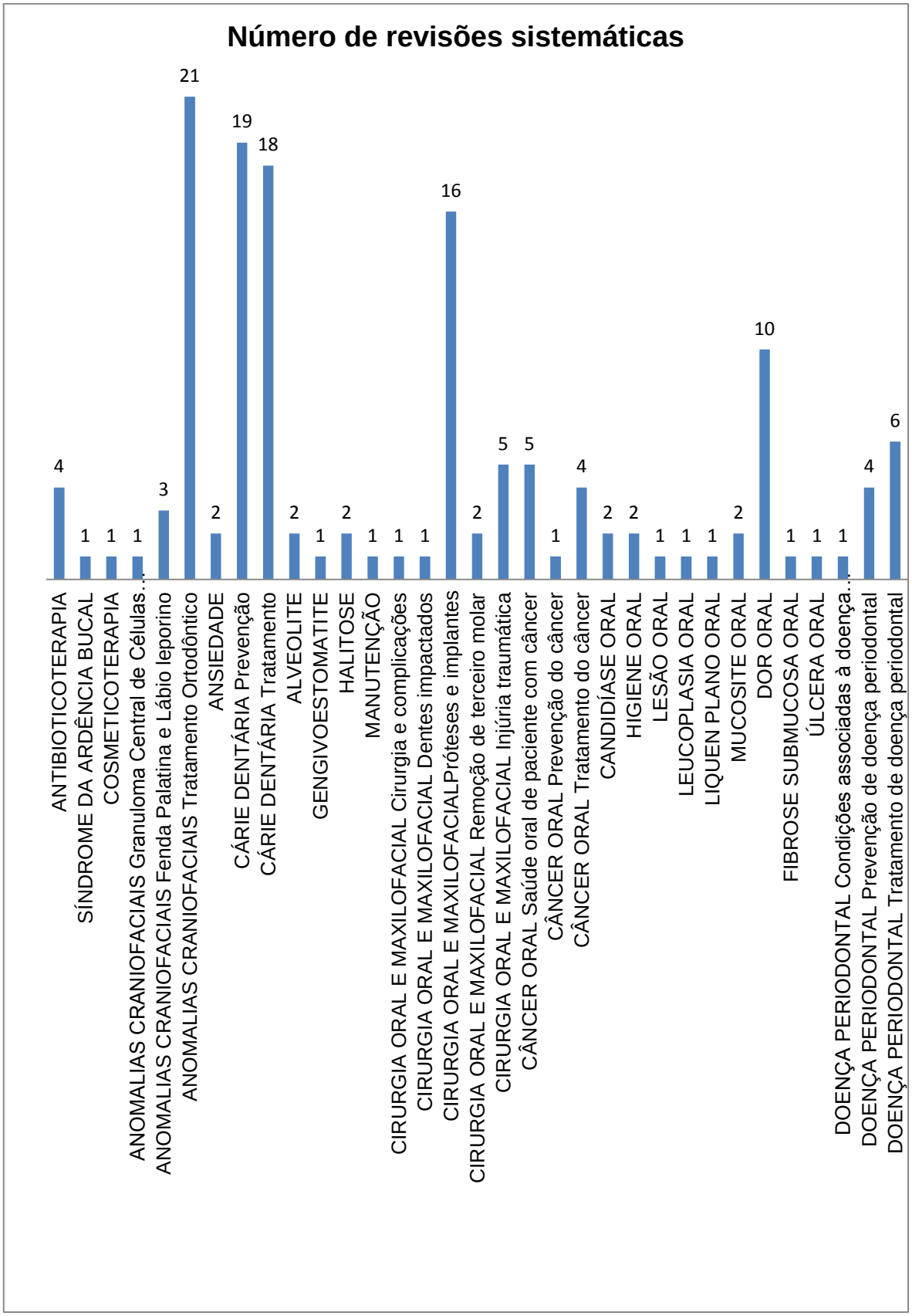


**Figura 5 –** Número de RSs por área e subárea do grupo de Odontologia da CC.

O gráfico 6 apresenta o panorama do número de estudos incluídos nas RSs do grupo de Odontologia da CC, edição 8 de 2013.

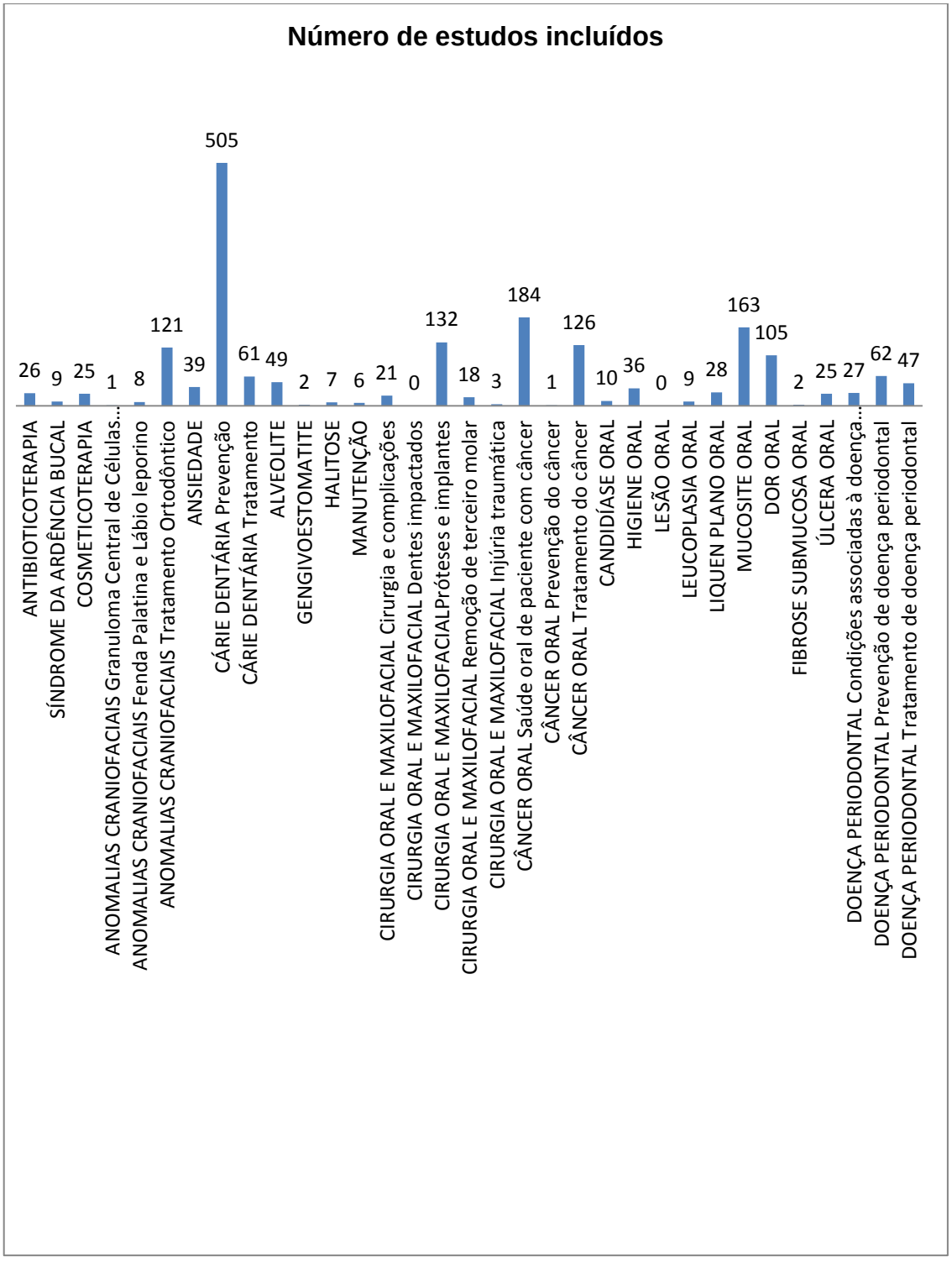


**Figura 6 –** Número de estudos incluídos em cada RS por área e subárea do grupo de Odontologia da CC.

## 6. DISCUSSÃO

A CC é uma organização da saúde que mantem e atualiza as revisões sistemáticas sobre diagnóstico, tratamento e prevenção há 20 anos envolvento milhares de pesquisadores de todo o mundo (29).

O grupo de Odontologia da CC é um dos 53 grupos colaborativos que compreende uma rede internacional de profissionais de saúde, pesquisadores e consumidores que tem como atribuição preparar, manter e disseminar RSs de estudos randomizados controlados em Odontologia. A Oodontologia é amplamente concebida para incluir prevenção, tratamento e reabilitação de doenças e agravos dental, oral e maxilofacial (29).

Este estudo mapeou as evidências do grupo de Odontologia da CC e também quantificou a frequencia de incertezas nas RSs, ou seja, as lacunas das evidências na literatura odontológica para recomendar ou refutar as intervenções propostas.

A identificação de todos os estudos publicados pelo grupo de Odontologia da CC até a edição 8 de 2013 permitiu documentar o panorama das conclusões das RSs para a difusão de inovação nas diferentes áreas odontológicas como, por exemplo, cirurgia oral e maxilofacial e doença periodontal.

No quadro 3 é possível verificar a conformidade dos resultados das evidências da área da Odontologia com outras áreas da Medicina e, ainda, constatar um cenário desfavorável nas RSs publicadas pelo grupo de Odontologia nas classificações A2 e B2, ou seja, evidências que apoiam e evidências que contraindicam a intervenção, respectivamente; ambas sem recomendação de novas pesquisas, em relação às publicações de outros grupos da área de Medicina da CC. Da mesma forma, as RSs com ausência de evidências (C1 + C2) também

demonstraram resultados ainda mais críticos quando comparados a outras áeras da Medicina.

**Quadro 3** - Classificação comparativa dos resultados das RSs da CC.

| **Estudo** | **Classificação das revisões sistemáticas** | | | | | |
|---|---|---|---|---|---|---|
| | **A1** | **A2** | **B1** | **B2** | **C1** | **C2** |
| El Dib et al. 2007 (Especialidades médicas) | 43,0% | 1,4% | 5,1% | 1,7% | 47,8% | 1,0% |
| Villas Boas et al. 2011 (Especialidades médicas) | 43,3% | 2,0% | 7,9% | 1,8% | 44,2% | 0,8% |
| Almeida, et al. 2013 (Doenças Infecciosas) | 46,1% | 1,7% | 8,2% | 2,6% | 40,9% | 0,4% |
| Santos, et al. 2013 (Anestesiologia) | 37,2% | 2,6% | 7,7% | 1,3% | 51,3% | 0% |
| Presente estudo (Odontologia) | 22,38% | 0% | 6,29% | 0% | 69,23% | 2,10% |

A maioria das RSs avaliadas não indica e nem contra indica a intervenção testada (figura 3), entretanto, embora em pequena porcentagem, algumas RSs sugerem impactos positivos para condutas em saúde odontológica, visto que apoiam o tratamento avaliado baseados em ECRs.

Um exemplo de mudança de conduta clínica proposta a partir destas RSs foi o estudo que comparou o tratamento endodôntico através de visita simples *versus* visitas múltiplas para tratamento de canais radiculares.

Os resultados de uma RS demonstraram que visita única para tratamento de canais radiculares de dentes necrosados ou não parece ser ligeiramente mais eficaz do que visitas múltiplas. Os autores admitem que provavelmente o benefício do tratamento em uma visita única em termos de tempo e comodidade, tanto para o paciente como para o endodontista tenha o custo de maior frequencia de dor e

edema no pós-operatório tardio e sugerem novos estudos (30). Entretanto, resultados como este já dão ao profissional e ao paciente a opção de escolher a conduta de acordo com sua conveniência baseado na evidência de que o resultado final não será alterado.

Outro exemplo de resultados de ECRs que sugerem impactos positivos para condutas em saúde oral foi demonstrado a partir de uma RS que avaliou estudos sobre tratamentos tópicos e sistêmicos para estomatite aftosa recorrente (aftas). Os autores concluíram que nenhum tratamento foi eficaz sugerindo então, que administrar o arsenal terapêutico disponível no momento seria prejudicial ao bem estar do paciente (31).

Os desfechos alocados na classificação B, ou seja que contraindicam a intervenção testada obtiveram resultados modestos (6,29%) o que pode ser reflexo do acanhado enstusiasmo de revistas e autores em publicar resultados contraditórios ao tratamento testado. A pressão comercial da indústria farmacêutica e de equipamentos também contribuem para inibir essas publicações o que pode superestimar os resultados que apoiam e subestimar os resultados contraditórios das RSs do grupo de Odontologia da CC.

O dado mais inusitado que encontramos nas 143 revisões sistemáticas analisadas do grupo de Odontologia da CC foi apresentado no quadro 2 na coluna N° de estudos incluídos, onde foram encontrados desde zero até 500 estudos incluídos nas RSs analisadas com predominância de RSs com no máximo 10 estudos incluídos. Esta variação discrepante, entre 1 e 21, também foi observada na quantidade de RSs por especialidades onde cerca de metade das subáreas odontológicas apresentaram o número mínimo (1) de RSs publicadas (figura 5).

O objetivo deste estudo em avaliar a aplicabilidade das RSs nas implicações para a prática clínica e para a pesquisa científica foi alcançado. Entretanto, a dificuldade encontrada pelos investigadores em relação à interpretação das conclusões dos autores, devido à falta de objetividade dos mesmos para responderem à questão inicial foi considerado um ponto instável para a interpretação final.

Mais da metade da amostra analisada não demonstra evidências consistentes para comprovar ou refutar o tratamento em questão, ou seja, há uma ausência de evidências para a prática clínica (C, 71,33%), sendo que 69,23% das RSs recomendam a realização de mais ensaios clínicos para reduzir a incerteza quanto à questão abordada (C1). Um exemplo disso foi obtido a partir de uma RS que avaliou o tratamento de dentes molares decíduos acometidos por cárie extensa com coroa metálica pré-moldada comparado com material de preenchimento convencional como amálgama, resina e ionômero de vidro.

Os mesmos constataram uma relutância no uso deste recurso e também sugeriram que isto pode estar relacionado mais a fatores como dificuldades percebidas na colocação como também a questões financeiras ao invés de dúvidas quanto à eficácia e efetividade das coroas metálicas pré-moldadas, por isso, sugerem mais estudos para a questão abordada (32).

Em apenas 2,10% das vezes, os autores não recomendam ECRs adicionais (C2). Esse último aspecto pode ser explicado por não ser relevante a questão clínica ou por ser economicamente inviável a questão clínica abordada.

Por exemplo, na RS que analisou a eficácia da desinfecção total comparada à desinfecção parcial (por quadrante) para o tratamento da periodontite os autores

concluíram que não há evidências de efeitos consistentes e não recomendaram novos estudos (33).

Outro estudo que constatou ausência de evidências e não recomendou novos estudos foi aquele que avaliou a terapia combinada contra a terapia única de flúor tópico para prevenção de cárie dentária em crianças e adolescentes tendo como desfecho primário o incremento de cárie medido pela variação do índice de dentes cariados, perdidos e obturados. Esta avaliação concluiu que, em comparação com creme dental com flúor sozinho, fluoreto tópico usado de forma combinada reduz em média 10% o incremento de cárie. Os autores afirmam que em termos de aceitabilidade, o tamanho efetivo do efeito preventivo de cárie no grupo testado é relativamente pequeno não sendo possível uma recomendação sobre a superioridade da utilização de outra forma tópica de flúor além da aplicação única do dentifrício. Afirmam, também, que devido à falta de uma sugestão de benefícios significativos os dados analisados não justificam prioridade para realização de novos estudos (34).

Mesmo quando as intervenções de interesse obtiveram resultados que apoiam a intervenção testada para a utilização na prática clínica (A, 22,38%), a totalidade delas sugere a realização de mais estudos para confirmar o efeito.

O estudo que avaliou a eficácia do enxerto de tecido subepitelial comparado com a regeneração tecidual guiada com membranas reabsorvíveis para tratamento de recessão gengival constatou um ganho maior de tecido queratinizado na área afetada naqueles que receberam enxerto de tecido subepitelial quando comparado ao controle. Porém, a condição estética relacionada à opinião dos pacientes, assim como possíveis fatores associados ao prognostico indicam a necessidade de mais ECRs (35).

O aspecto de incerteza sobre contraindicar uma intervenção recomendando mais estudos (B1, 6,29%) pode ser visto na RS que avaliou a eficácia do uso de antibiótico para o tratamento da pulpite irreversível. Os autores concluíram que a prescrição de antibióticos terapêutica ou profilaticamente afeta negativamente os resultados do tratamento e confirmam a necessidade de investigar a eficácia e segurança da antibioticoterapia nos casos de pulpite irreversível baseada em novos ECRs (36).

Da mesma forma, em avaliação que incluiu 2.456 participantes submetidos à extração de terceiro molar impactado, os autores concluíram, também, que o tamanho do benefício não é suficiente para recomendar o uso rotineiro dessa prática, devido ao risco aumentado de efeitos adversos para os pacientes e também recomendam mais estudos para investigar o uso de antibiótico profilático neste tipo de cirurgia (37).

As revisões sistemáticas que demonstraram evidências um pouco mais consistentes - evidências que apoiam a intervenção e evidências contra a intervenção - e que também recomendaram futuros estudos representaram 28,67%. (A1 + B1). Essa característica (recomendação para novos estudos) pode ser mais notável quando apresentados ao somatório dos três desfechos (A1 + B1 + C1, 97,90%) (quadro 1). Esse aspecto pode ser parcialmente explicado pelo número pequeno de estudos incluídos (mediana 6 e total 1.859), frequentemente encontrados nas RSs (tabela 1). Para incluirmos um estudo em uma RS, este deve ser no mínimo randomizado ou quase randomizado. Desta forma, os 97,90% demonstram a pobre qualidade metodológica dos estudos de potencial interesse para as revisões sistemáticas.

Não foram encontradas RSs classificadas como “evidências que apoiam o uso da intervenção, sem recomendações para a realização de futuros estudos (A2)” e “evidências que contraindicam a intervenção, sem recomendação para novas pesquisas (B2)”.

Nossos resultados confirmam o aspecto da ausência de evidências, oferecido pela Odontologia às RSs da mesma forma que as ciências médicas também mostraram este índice elevado em trabalhos anteriores (23-26).

Quanto ao panorama das RSs e estudos incluídos por área e/ou subárea encontramos algumas com meia dúzia de revisões e, outras com dezenas delas. Podemos citar, como exemplo, a subárea prevenção (área cárie dentária) que possui como percentual de peso 13,29%, enquanto a subárea cirurgia e complicações (área cirurgia oral e maxilofacial) possui um percentual de 0,70% ou seja, a amostra analisada nesse grupo correspondeu a menos de 1% de revisões existentes no grupo de Odontologia no período que estávamos avaliando (edição 8, 2013). Por outro lado, encontramos 14,69% do total de revisões existentes na subárea tratamento ortodôntico (área de anomalias craniofaciais), que nos remete inferir que esta é a subárea com maior quantidade de revisões sistemáticas (quadro 2).

Informações médicas baseadas em evidências para tomada de decisão clínica é uma realidade na área da saúde e o uso de ferramentas informatizadas permite melhores resultados e melhores cuidados com o paciente (38) e assim como a CC, possui facilidade de uso e eficiência na resposta à perguntas baseadas em uma estrutura única: PICO.

Ao longo dos últimos anos, a universidade e outros centros acadêmicos de ciências da saúde foi mudando para uma maior ênfase em ambientes clínicos

sobre um modelo baseado em evidências (39). No entanto, a Odontologia ainda se mantem distante do número ideal de ECRs para prover RSs, sobretudo em áreas como higiene oral e doença periodontal que, de acordo com o presente estudo, apresentaram números baixíssimos tanto de RSs como de estudos incluídos.

O número de estudos incluídos determina o cenário das RSs uma vez que os estudos correspondem ao combustível das RSs. Entretanto, o número de participantes de cada estudo bem como o rigor metodológico desses estudos é que vai determinar a validade interna e externa do ECRs.

Segundo El Dib, 2012 (27) “a grande crítica da era da Medicina Baseada em Evidências é que não tenhamos produzido estudos primários em massa e de alta qualidade, com a participação de centros em todo o mundo e, de acordo com os protocolos pré-definidos da CC, para abranger todas as RSs que não oferecem evidências suficientes para a prática clínica.”

Enquanto este cenário ideal para a nova era da MBE não acontece, uma alternativa estatística foi criada para lidar com a ausência de ensaios clínicos em RSs, ou seja, cenários de classificação C1, denominada de meta-análise proporcional de série de casos, representada na figura 7 (40).

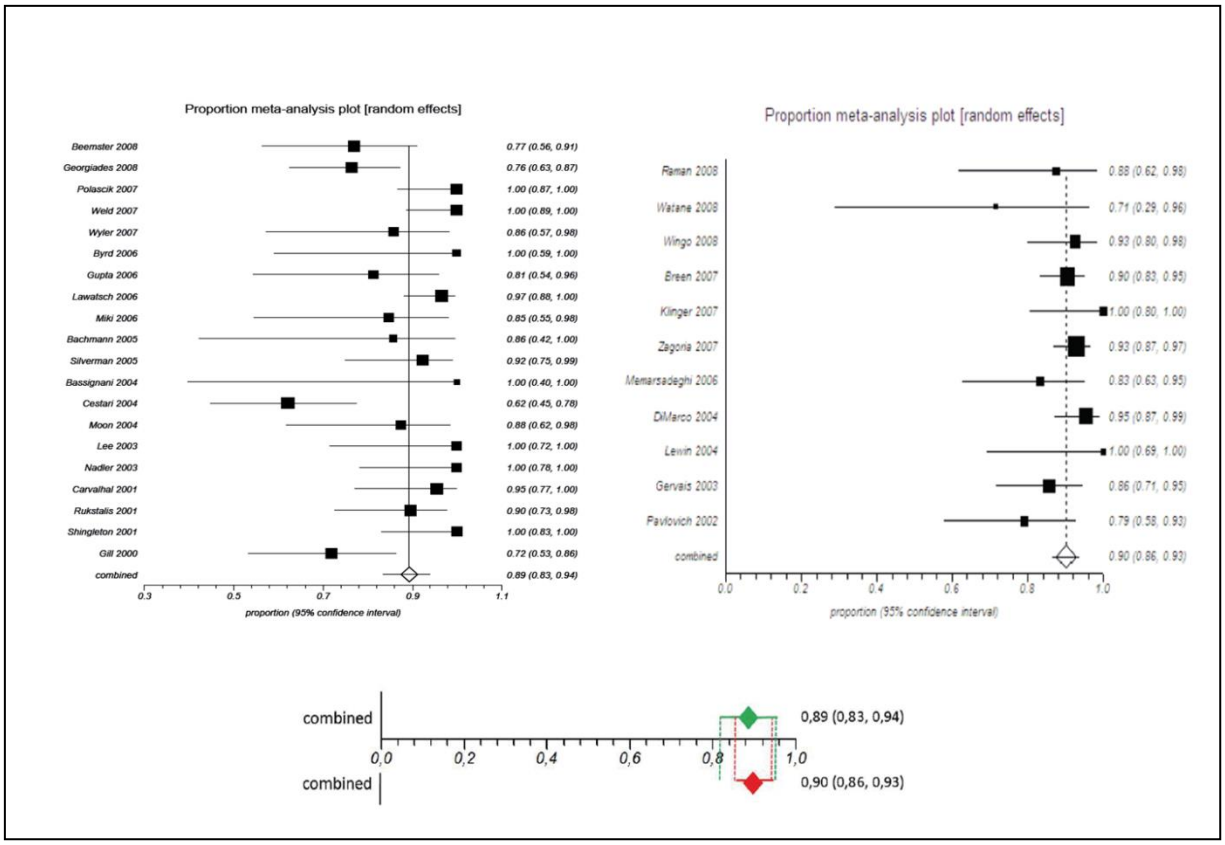


**Figura 7 –** Exemplo de meta-análise proporcional de série de casos (40).

Embora esta metodologia lida com estudos de baixa qualidade metodológica, as séries de casos, para determinar a eficácia ou efetividade de determinado tratamento, é uma opção na ausência de ensaios clínicos, considerando a opinião do especialista e os desejos e circunstâncias dos pacientes. Como os autores citam "não é uma substituição para o padrão ouro ECRs, mas uma alternativa provisória para a pesquisa clinica"(40).

Requerer da academia nacional especializada a realização de estudos adequados e pesquisas relevantes por meio de ECRs com qualidade para inclusão em uma RS na Odontologia poderá alterar este panorama considerando as circunstâncias e desejos dos pacientes, a experiência profissional do clínico e a melhor evidência disponível no momento.

## 7. CONCLUSÕES

A) Uma pequena proporção de RSs completas do grupo de Odontologia da CC mostrou evidências suficientes e consistentes para recomendar ou desestimular o tratamento de interesse sob investigação.

B) A grande maioria das revisões avaliadas aponta para a recomendação de futuros estudos com esperança de fornecerem resultados mais definidos nas futuras atualizações das revisões sistemáticas.

C) O número de estudos incluídos e de meta-analises em uma revisão sistemática mostra-se insuficientes para a tomada de decisão em saúde.

D) As áreas e subáreas Odontológicas apresentaram grande variação entre o número mínimo e número máximo de RSs e estudos incluídos nas diversas especialidades analisadas.

## 8. PERSPECTIVAS FUTURAS

Em relação à importância desse estudo na áerea da saúde e, sobretudo, na Odontologia, podemos afirmar que a utilização desses resultados poderá alertar a comunidade científica para a produção de pesquisas de excelência. Priorizar a realização de ECRs pode estimular os profisssionais envolvidos a obter, interpretar e integrar as evidências oriundas de pesquisas para auxiliar a tomada de decisão em relação à assistência à saúde.

Sugestão para futuro estudo metodológico utilizando a escala Higgins 2011 da Colaboração Cochrane a fim de avaliar a validade interna e externa dos estudos incluídos nas revisões sistemáticas e traçar um panorama da qualidade dos ensaios clínicos randomizados na Odontologia.

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## 10. ANEXOS

### Anexo 1 – Parecer do Comitê de Ética em Pesquisa

unesp
**Universidade Estadual Paulista**
**Faculdade de Medicina de Botucatu**

Distrito Rubião Junior, s/nº - Botucatu – S.P.
CEP: 18.618-970
Fone: (14) 3880-1608 / 3880-1609
e-mail secretaria: capellup@fmb.unesp.br
kleber@fmb.unesp.br
e-mail coordenadoria: tsarden@fmb.unesp.br

Ética

Registrado no Ministério da Saúde
em 30 de abril de 1997

Botucatu, 24 de outubro de 2013 Of. 163/2013-CEP

Ilustríssima Senhora
Profª. Drª. Regina Paolucci El Dib
Departamento de Anestesiologia da
Faculdade de Medicina de Botucatu

Prezada Drª. Regina,

Informo que o Projeto de Pesquisa "Mapeamento das evidências do grupo de odontologia da colaboração cochrane para condutas em saúde", de autoria de Silvania da Conceição Furtado, orientado por Vossa Senhoria, co-orientado pelo Prof. Dr. José Fernando Marques Barcellos e com a colaboração de Ana Lúcia Basílio Carneiro, foi analisado e constatado que se trata de Revisão Sistemática da Literatura, portanto não necessitando de Parecer do Comitê de Ética em Pesquisa.

Atenciosamente,

Prof. Dr. Trajano Sardenberg
Coordenador do CEP

**Anexo 2 –** Modelo de tabela utilizado para registro dos resultados

| Título da revisão sistemática | Evidências que apóiam a intervenção "A" | Evidências contra a intervenção "B" | Recomendação de futuros estudos "1" ou "0" | Número de estudos incluídos | Número de metanálises |
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**Anexo 3 –** Modelo de tabela para registro dos desfechos

| **Implicações para a Prática clínica e para a Pesquisa Científica** | **Número** | **Percentual** |
|---|---|---|
| **A - Evidências que apoiam a intervenção** | | |
| A1 - Evidências que apoiam a intervenção, com recomendação para mais estudos | | |
| A2 - Evidências que apoiam a intervenção, sem recomendação para mais estudos | | |
| **B - Evidências contra a intervenção** | | |
| B1 - Evidências contra a intervenção, com recomendação para mais estudos | | |
| B2 - Evidências contra a intervenção, sem recomendação para mais estudos | | |
| **C - Ausência de evidências suficientes para sugerir benefício ou malefício** | | |
| C1 - Ausência de evidências, com recomendação para mais estudos | | |
| C2 - Ausência de evidências, sem recomendação para mais estudos | | |
| **Número de estudos incluídos** | | |
| **Número meta-análises** | | |
| **Número e porcentagem de RS que recomendaram mais estudos** | | |

# 11. APÊNDICES

## Apêndice 1 – Lista de Publicações da Colaboração Cochrane

| N° | Level 1 | Level 2 | Title | CD Number |
|---|---|---|---|---|
| 1 | Antibiotic therapy | | Antibiotic use for irreversible pulpitis | CD004969 |
| 2 | Antibiotic therapy | | Antibiotics for the prophylaxis of bacterial endocarditis in dentistry | CD003813 |
| 3 | Antibiotic therapy | | Antibiotics to prevent complications following tooth extractions | CD003811 |
| 4 | Antibiotic therapy | | Interventions for replacing missing teeth: antibiotics at dental implant placement to prevent complications | CD004152 |
| 5 | Cosmetic therapy | | Home-based chemically-induced whitening of teeth in adults | CD006202 |
| 6 | Craniofacial anomalies | Central giant cell granuloma | Interventions for central giant cell granuloma (CGCG) of the jaws | CD007404 |
| 7 | Craniofacial anomalies | Cleft lip & palate | Feeding interventions for growth and development in infants with cleft lip, cleft palate or cleft lip and palate | CD003315 |
| 8 | Craniofacial anomalies | Cleft lip & palate | Interventions for the management of submucous cleft palate | CD006703 |
| 9 | Craniofacial anomalies | Cleft lip & palate | Secondary bone grafting for alveolar cleft in children with cleft lip or cleft lip and palate | CD008050 |
| 10 | Craniofacial anomalies | Orthodontic treatment | Adhesives for bonded molar tubes during fixed brace treatment | CD008236 |
| 11 | Craniofacial anomalies | Orthodontic treatment | Adhesives for fixed orthodontic bands | CD004485 |
| 12 | Craniofacial anomalies | Orthodontic treatment | Adhesives for fixed orthodontic brackets | CD002282 |
| 13 | Craniofacial anomalies | Orthodontic treatment | Arthroscopy for temporomandibular disorders | CD006385 |
| 14 | Craniofacial anomalies | Orthodontic treatment | Extraction of primary (baby) teeth for unerupted palatally displaced permanent canine teeth in children | CD004621 |
| 15 | Craniofacial anomalies | Orthodontic treatment | Fluorides for the prevention of white spots on teeth during fixed brace treatment | CD003809 |
| 16 | Craniofacial anomalies | Orthodontic treatment | Initial arch wires for tooth alignment during orthodontic treatment with fixed appliances | CD007859 |
| 17 | Craniofacial anomalies | Orthodontic treatment | Interspace/interdental brushes for oral hygiene in orthodontic patients with fixed appliances | CD005410 |
| 18 | Craniofacial anomalies | Orthodontic treatment | Interventions for replacing missing teeth: augmentation procedures of the maxillary sinus | CD008397 |
| 19 | Craniofacial anomalies | Orthodontic treatment | Interventions for replacing missing teeth: denture chewing surface designs in edentulous people | CD004941 |

| | | | | |
|---|---|---|---|---|
| 20 | Craniofacial anomalies | Orthodontic treatment | Occlusal adjustment for treating and preventing temporomandibular joint disorders | CD003812 |
| 21 | Craniofacial anomalies | Orthodontic treatment | Occlusal splints for treating sleep bruxism (tooth grinding) | CD005514 |
| 22 | Craniofacial anomalies | Orthodontic treatment | Oral appliances and functional orthopaedic appliances for obstructive sleep apnoea in children | CD005520 |
| 23 | Craniofacial anomalies | Orthodontic treatment | Orthodontic and orthopaedic treatment for anterior open bite in children | CD005515 |
| 24 | Craniofacial anomalies | Orthodontic treatment | Orthodontic treatment for deep bite and retroclined upper front teeth in children | CD005972 |
| 25 | Craniofacial anomalies | Orthodontic treatment | Orthodontic treatment for posterior crossbites | CD000979 |
| 26 | Craniofacial anomalies | Orthodontic treatment | Orthodontic treatment for prominent upper front teeth in children | CD003452 |
| 27 | Craniofacial anomalies | Orthodontic treatment | Orthodontics for treating temporomandibular joint (TMJ) disorders | CD006541 |
| 28 | Craniofacial anomalies | Orthodontic treatment | Reinforcement of anchorage during orthodontic brace treatment with implants or other surgical methods | CD005098 |
| 29 | Craniofacial anomalies | Orthodontic treatment | Retention procedures for stabilising tooth position after treatment with orthodontic braces | CD002283 |
| 30 | Craniofacial anomalies | Orthodontic treatment | Treatments for adults with prominent lower front teeth | CD006963 |
| 31 | Dental anxiety | | Hypnosis for children undergoing dental treatment | CD007154 |
| 32 | Dental anxiety | | Sedation of children undergoing dental treatment | CD003877 |
| 33 | Dental caries | Prevention | Antibacterial agents in composite restorations for the prevention of dental caries | CD007819 |
| 34 | Dental caries | Prevention | Combinations of topical fluoride (toothpastes, mouthrinses, gels, varnishes) versus single topical fluoride for preventing dental caries in children and adolescents | CD002781 |
| 35 | Dental caries | Prevention | Flossing for the management of periodontal diseases and dental caries in adults | CD008829 |
| 36 | Dental caries | Prevention | Fluoridated milk for preventing dental caries | CD003876 |
| 37 | Dental caries | Prevention | Fluoride gels for preventing dental caries in children and adolescents | CD002280 |
| 38 | Dental caries | Prevention | Fluoride mouthrinses for preventing dental caries in children and adolescents | CD002284 |
| 39 | Dental caries | Prevention | Fluoride supplements (tablets, drops, lozenges or chewing gums) for preventing dental caries in children | CD007592 |
| 40 | Dental caries | Prevention | Fluoride toothpastes for preventing dental caries in children and adolescents | CD002278 |

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| 41 | Dental caries | Prevention | Fluoride toothpastes of different concentrations for preventing dental caries in children and adolescents | CD007868 |
| 42 | Dental caries | Prevention | Fluoride varnishes for preventing dental caries in children and adolescents | CD002279 |
| 43 | Dental caries | Prevention | Fluorides for the prevention of white spots on teeth during fixed brace treatment | CD003809 |
| 44 | Dental caries | Prevention | One topical fluoride (toothpastes, or mouthrinses, or gels, or varnishes) versus another for preventing dental caries in children and adolescents | CD002780 |
| 45 | Dental caries | Prevention | One-to-one dietary interventions undertaken in a dental setting to change dietary behaviour | CD006540 |
| 46 | Dental caries | Prevention | Pit and fissure sealants versus fluoride varnishes for preventing dental decay in children and adolescents | CD003067 |
| 47 | Dental caries | Prevention | Primary school-based behavioural interventions for preventing caries | CD009378 |
| 48 | Dental caries | Prevention | Sealants for preventing dental decay in the permanent teeth | CD001830 |
| 49 | Dental caries | Prevention | Slow-release fluoride devices for the control of dental decay | CD005101 |
| 50 | Dental caries | Prevention | Topical fluoride (toothpastes, mouthrinses, gels or varnishes) for preventing dental caries in children and adolescents | CD002782 |
| 51 | Dental caries | Prevention | Topical fluoride as a cause of dental fluorosis in children | CD007693 |
| 52 | Dental caries | Treatment | Adhesively bonded versus non-bonded amalgam restorations for dental caries | CD007517 |
| 53 | Dental caries | Treatment | Ceramic inlays for restoring posterior teeth | CD003450 |
| 54 | Dental caries | Treatment | Dental fillings for the treatment of caries in the primary dentition | CD004483 |
| 55 | Dental caries | Treatment | Direct versus indirect veneer restorations for intrinsic dental stains | CD004347 |
| 56 | Dental caries | Treatment | Hand and ultrasonic instrumentation for orthograde root canal treatment of permanent teeth | CD006384 |
| 57 | Dental caries | Treatment | Irrigants for non-surgical root canal treatment in mature permanent teeth | CD008948 |
| 58 | Dental caries | Treatment | Magnification devices for endodontic therapy | CD005969 |
| 59 | Dental caries | Treatment | Operative caries management in adults and children | CD003808 |
| 60 | Dental caries | Treatment | Ozone therapy for the treatment of dental caries | CD004153 |
| 61 | Dental caries | Treatment | Preformed metal crowns for decayed primary molar teeth | CD005512 |
| 62 | Dental caries | Treatment | Pulp management for caries in adults: maintaining pulp vitality | CD004484 |

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| 63 | Dental caries | Treatment | Pulp treatment for extensive decay in primary teeth | CD003220 |
| 64 | Dental caries | Treatment | Replacement versus repair of defective restorations in adults: amalgam | CD005970 |
| 65 | Dental caries | Treatment | Replacement versus repair of defective restorations in adults: resin composite | CD005971 |
| 66 | Dental caries | Treatment | Root canal posts for the restoration of root filled teeth | CD004623 |
| 67 | Dental caries | Treatment | Single crowns versus conventional fillings for the restoration of root filled teeth | CD009109 |
| 68 | Dental caries | Treatment | Single versus multiple visits for endodontic treatment of permanent teeth | CD005296 |
| 69 | Dental caries | Treatment | Surgical versus non-surgical endodontic re-treatment for periradicular lesions | CD005511 |
| 70 | Dry mouth | | Interventions for the management of dry mouth: non-pharmacological interventions | CD009603 |
| 71 | Dry mouth | | Interventions for the management of dry mouth: topical therapies | CD008934 |
| 72 | Gingivostomatitis | | Acyclovir for treating primary herpetic gingivostomatitis | CD006700 |
| 73 | Halitosis | | Mouthrinses for the treatment of halitosis | CD006701 |
| 74 | Halitosis | | Tongue scraping for treating halitosis | CD005519 |
| 75 | Maintenance | | Interventions for cleaning dentures in adults | CD007395 |
| 76 | Oral & maxillofacial surgery | Complications of surgery | Local interventions for the management of alveolar osteitis (dry socket) | CD006968 |
| 77 | Oral & maxillofacial surgery | Impacted teeth | Open versus closed surgical exposure of canine teeth that are displaced in the roof of the mouth | CD006966 |
| 78 | Oral & maxillofacial surgery | Implants/prosthesis | Interventions for replacing missing teeth: 1- versus 2-stage implant placement | CD006698 |
| 79 | Oral & maxillofacial surgery | Implants/prosthesis | Interventions for replacing missing teeth: dental implants in fresh extraction sockets (immediate, immediate-delayed and delayed implants) | CD005968 |
| 80 | Oral & maxillofacial surgery | Implants/prosthesis | Interventions for replacing missing teeth: dental implants in zygomatic bone for the rehabilitation of the severely deficient edentulous maxilla | CD004151 |
| 81 | Oral & maxillofacial surgery | Implants/prosthesis | Interventions for replacing missing teeth: different times for loading dental implants | CD003878 |
| 82 | Oral & maxillofacial surgery | Implants/prosthesis | Interventions for replacing missing teeth: different types of dental implants | CD003815 |

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| 83 | Oral & maxillofacial surgery | Implants/prosthesis | Interventions for replacing missing teeth: horizontal and vertical bone augmentation techniques for dental implant treatment | CD003607 |
| 84 | Oral & maxillofacial surgery | Implants/prosthesis | Interventions for replacing missing teeth: hyperbaric oxygen therapy for irradiated patients who require dental implants | CD003603 |
| 85 | Oral & maxillofacial surgery | Implants/prosthesis | Interventions for replacing missing teeth: maintaining and recovering soft tissue health around dental implants | CD003069 |
| 86 | Oral & maxillofacial surgery | Implants/prosthesis | Interventions for replacing missing teeth: management of soft tissues for dental implants | CD006697 |
| 87 | Oral & maxillofacial surgery | Implants/prosthesis | Interventions for replacing missing teeth: partially absent dentition | CD003814 |
| 88 | Oral & maxillofacial surgery | Implants/prosthesis | Interventions for replacing missing teeth: preprosthetic surgery versus dental implants | CD003604 |
| 89 | Oral & maxillofacial surgery | Implants/prosthesis | Interventions for replacing missing teeth: treatment of peri-implantitis | CD004970 |
| 90 | Oral & maxillofacial surgery | Implants/prosthesis | Interventions for the management of mandibular fractures | CD006087 |
| 91 | Oral & maxillofacial surgery | Implants/prosthesis | Interventions for the treatment of fractures of the mandibular condyle | CD006538 |
| 92 | Oral & maxillofacial surgery | Implants/prosthesis | Resorbable versus titanium plates for facial fractures | CD007158 |
| 93 | Oral & maxillofacial surgery | Implants/prosthesis | Resorbable versus titanium plates for orthognathic surgery | CD006204 |
| 94 | Oral & maxillofacial surgery | Removal of third molars | Antibiotics to prevent complications following tooth extractions | CD003811 |
| 95 | Oral & maxillofacial surgery | Removal of third molars | Surgical removal versus retention for the management of asymptomatic impacted wisdom teeth | CD003879 |
| 96 | Oral & maxillofacial surgery | Traumatic injury | Domestic violence screening and intervention programmes for adults with dental or facial injury | CD004486 |
| 97 | Oral & maxillofacial surgery | Traumatic injury | Interventions for the management of external root resorption | CD008003 |
| 98 | Oral & maxillofacial surgery | Traumatic injury | Interventions for treating traumatised ankylosed permanent front teeth | CD007820 |
| 99 | Oral & maxillofacial surgery | Traumatic injury | Interventions for treating traumatised permanent front teeth: avulsed (knocked out) and replanted | CD006542 |

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| 100 | Oral & maxillofacial surgery | Traumatic injury | Interventions for treating traumatised permanent front teeth: luxated (dislodged) teeth | CD006203 |
| 101 | Oral cancer | Oral care for cancer patients | Dental extractions prior to radiotherapy to the jaws for reducing post-radiotherapy dental complications | CD008857 |
| 102 | Oral cancer | Oral care for cancer patients | Interventions for preventing oral candidiasis for patients with cancer receiving treatment | CD003807 |
| 103 | Oral cancer | Oral care for cancer patients | Interventions for preventing oral mucositis for patients with cancer receiving treatment | CD000978 |
| 104 | Oral cancer | Oral care for cancer patients | Interventions for the prevention and treatment of herpes simplex virus in patients being treated for cancer | CD006706 |
| 105 | Oral cancer | Oral care for cancer patients | Interventions for treating oral candidiasis for patients with cancer receiving treatment | CD001972 |
| 106 | Oral cancer | Prevention | Screening programmes for the early detection and prevention of oral cancer | CD004150 |
| 107 | Oral cancer | Treatment | Interventions for the treatment of keratocystic odontogenic tumours (KCOT, odontogenic keratocysts (OKC)) | CD008464 |
| 108 | Oral cancer | Treatment | Interventions for the treatment of oral and oropharyngeal cancers: surgical treatment | CD006205 |
| 109 | Oral cancer | Treatment | Interventions for the treatment of oral cavity and oropharyngeal cancer: chemotherapy | CD006386 |
| 110 | Oral cancer | Treatment | Interventions for the treatment of oral cavity and oropharyngeal cancer: radiotherapy | CD006387 |
| 111 | Oral candidiasis | | Interventions for preventing oral candidiasis for patients with cancer receiving treatment | CD003807 |
| 112 | Oral candidiasis | | Interventions for treating oral candidiasis for patients with cancer receiving treatment | CD001972 |
| 113 | Oral hygiene | | Oral hygiene care for critically ill patients to prevent ventilator-associated pneumonia | CD008367 |
| 114 | Oral hygiene | | Recall intervals for oral health in primary care patients | CD004346 |
| 115 | Oral lesions | | Interventions for the restorative care of amelogenesis imperfecta in children and adolescents | CD007157 |
| 116 | Oral leucoplakia | | Interventions for treating oral leukoplakia | CD001829 |
| 117 | Oral lichen planus | | Interventions for erosive lichen planus affecting mucosal sites | CD008092 |
| 118 | Oral lichen planus | | Interventions for treating oral lichen planus | CD001168 |

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| 119 | Oral mucositis | | Interventions for preventing oral mucositis for patients with cancer receiving treatment | CD000978 |
| 120 | Oral mucositis | | Interventions for treating oral mucositis for patients with cancer receiving treatment | CD001973 |
| 121 | Oral pain | | Arthrocentesis and lavage for treating temporomandibular joint disorders | CD004973 |
| 122 | Oral pain | | Hyaluronate for temporomandibular joint disorders | CD002970 |
| 123 | Oral pain | | Interventions for the management of temporomandibular joint osteoarthritis | CD007261 |
| 124 | Oral pain | | Local interventions for the management of alveolar osteitis (dry socket) | CD006968 |
| 125 | Oral pain | | Paracetamol for pain relief after surgical removal of lower wisdom teeth | CD004487 |
| 126 | Oral pain | | Pharmacological interventions for pain in patients with temporomandibular disorders | CD004715 |
| 127 | Oral pain | | Potassium containing toothpastes for dentine hypersensitivity | CD001476 |
| 128 | Oral pain | | Preoperative analgesics for additional pain relief in children and adolescents having dental treatment | CD008392 |
| 129 | Oral pain | | Psychosocial interventions for the management of chronic orofacial pain | CD008456 |
| 130 | Oral pain | | Stabilisation splint therapy for temporomandibular pain dysfunction syndrome | CD002778 |
| 131 | Oral submucous fibrosis | | Interventions for the management of oral submucous fibrosis | CD007156 |
| 132 | Oral ulcers | | Systemic interventions for recurrent aphthous stomatitis (mouth ulcers) | CD005411 |
| 133 | Periodontal disease | Associated conditions | Root coverage procedures for the treatment of localised recession-type defects | CD007161 |
| 134 | Periodontal disease | Prevention | Different powered toothbrushes for plaque control and gingival health | CD004971 |
| 135 | Periodontal disease | Prevention | Flossing for the management of periodontal diseases and dental caries in adults | CD008829 |
| 136 | Periodontal disease | Prevention | Manual versus powered toothbrushing for oral health | CD002281 |
| 137 | Periodontal disease | Prevention | Psychological interventions to improve adherence to oral hygiene instructions in adults with periodontal diseases | CD005097 |
| 138 | Periodontal disease | Treatment | Enamel matrix derivative (Emdogain®) for periodontal tissue regeneration in intrabony defects | CD003875 |
| 139 | Periodontal disease | Treatment | Full-mouth disinfection for the treatment of adult chronic periodontitis | CD004622 |
| 140 | Periodontal disease | Treatment | Guided tissue regeneration for periodontal infra-bony defects | CD001724 |

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| 141 | Periodontal disease | Treatment | Occlusal interventions for periodontitis in adults | CD004968 |
| 142 | Periodontal disease | Treatment | Routine scale and polish for periodontal health in adults | CD004625 |
| 143 | Periodontal disease | Treatment | Treatment of periodontal disease for glycaemic control in people with diabetes | CD004714 |

**Apêndice 2 –** Abstract das RSs do grupo de Odontologia da Colaboração Cocrhane com desfechos que apoiam a intervenção com recomendação de novos estudos (A1).

# Antibiotic use for irreversible pulpitis

Zbys Fedorowicz[1], James V Keenan[2], Allan G Farman[3], Tim Newton[4]

[1]UKCC (Bahrain Branch), Ministry of Health, Bahrain, Awali, Bahrain. [2]Branch Dental Clinic London, US Navy, Beaconsfield, UK. [3]Department of Surgical and Hospital Dentistry, The University of Louisville School of Dentistry, Louisville, Kentucky, USA. [4]Division of Health and Social Care Research, KCL Dental Institute, London, UK

Contact address: Zbys Fedorowicz, UKCC (Bahrain Branch), Ministry of Health, Bahrain, Box 25438, Awali, Bahrain. zbysfedo@batelco.com.bh.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New search for studies and content updated (no change to conclusions), published in Issue 3, 2009.
**Review content assessed as up-to-date:** 16 February 2009.

**Citation:** Fedorowicz Z, Keenan JV, Farman AG, Newton T. Antibiotic use for irreversible pulpitis. *Cochrane Database of Systematic Reviews* 2005, Issue 2. Art. No.: CD004969. DOI: 10.1002/14651858.CD004969.pub2.



## ABSTRACT

### Background

Irreversible pulpitis, which is characterised by acute and intense pain, is one of the most frequent reasons that patients attend for emergency dental care. Apart from removal of the tooth the customary way of relieving the pain of irreversible pulpitis is by drilling into the tooth, removing the inflamed pulp (nerve) and cleaning the root canal. However, a significant minority of dentists continue to prescribe antibiotics to stop the pain of irreversible pulpitis.

### Objectives

To provide reliable evidence regarding the effects of prescribing systemic antibiotics for irreversible pulpitis by comparing clinical outcomes expressed as pain relief.

### Search methods

We searched the Cochrane Oral Health Group Trials Register (to 2nd February 2009); CENTRAL (*The Cochrane Library* 2009, Issue 1); MEDLINE (1966 to January 2009); and EMBASE (1980 to February 2009). There were no language restrictions.

### Selection criteria

Randomised controlled trials which compared pain relief with systemic antibiotics and analgesics, against placebo and analgesics in the acute preoperative phase of irreversible pulpitis.

### Data collection and analysis

Two review authors screened studies and extracted data independently. Pooling of data was not possible and a descriptive summary is presented.

### Main results

One trial involving 40 participants was included. There was a close parallel distribution of the pain ratings in both the intervention and placebo groups over the 7-day study period. The between-group differences in sum pain intensity differences (SPID) for the penicillin group were (6.0±10.5), and for placebo (6.0±9.5) P = 0.776. The sum pain percussion intensity differences (SPPID) for the penicillin group were (3.5±7.5) and placebo (2.0±7.0) P = 0.290, with differences as assessed by the Mann-Whitney-Wilcoxon test considered to be statistically significant at P < 0.05. There was no significant difference in the mean total number of ibuprofen tablets (P = 0.839)

# Interventions for replacing missing teeth: antibiotics at dental implant placement to prevent complications

Marco Esposito[1], Maria Gabriella Grusovin[2], Helen V Worthington[1]

[1]Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Manchester, UK. [2]Private practice, Gorizia, Italy

Contact address: Marco Esposito, Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Coupland 3 Building, Oxford Road, Manchester, M13 9PL, UK. espositomarco@hotmail.com.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New search for studies and content updated (no change to conclusions), published in Issue 7, 2013.
**Review content assessed as up-to-date:** 17 June 2013.

**Citation:** Esposito M, Grusovin MG, Worthington HV. Interventions for replacing missing teeth: antibiotics at dental implant placement to prevent complications. *Cochrane Database of Systematic Reviews* 2013, Issue 7. Art. No.: CD004152. DOI: 10.1002/14651858.CD004152.pub4.



## ABSTRACT

### Background

Some dental implant failures may be due to bacterial contamination at implant insertion. Infections around biomaterials are difficult to treat, and almost all infected implants have to be removed. In general, antibiotic prophylaxis in surgery is only indicated for patients at risk of infectious endocarditis; with reduced host-response; when surgery is performed in infected sites; in cases of extensive and prolonged surgical interventions; and when large foreign materials are implanted. A variety of prophylactic systemic antibiotic regimens have been suggested to minimise infections after dental implant placement. More recent protocols recommended short-term prophylaxis, if antibiotics have to be used. Adverse events may occur with the administration of antibiotics, and can range from diarrhoea to life-threatening allergic reactions. Another major concern associated with the widespread use of antibiotics is the selection of antibiotic-resistant bacteria. The use of prophylactic antibiotics in implant dentistry is controversial.

### Objectives

To assess the beneficial or harmful effects of systemic prophylactic antibiotics at dental implant placement versus no antibiotic or placebo administration and, if antibiotics are beneficial, to determine which type, dosage and duration is the most effective.

### Search methods

We searched the Cochrane Oral Health Group's Trials Register (to 17 June 2013), the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2013, Issue 5), MEDLINE via OVID (1946 to 17 June 2013) and EMBASE via OVID (1980 to 17 June 2013). There were no language or date restrictions placed on the searches of the electronic databases.

### Selection criteria

Randomised controlled clinical trials (RCTs) with a follow-up of at least three months, that compared the administration of various prophylactic antibiotic regimens versus no antibiotics to people undergoing dental implant placement. Outcome measures included prosthesis failures, implant failures, postoperative infections and adverse events (gastrointestinal, hypersensitivity, etc).

### Data collection and analysis

Screening of eligible studies, assessment of the risk of bias of the trials and data extraction were conducted in duplicate and independently by two review authors. Results were expressed as risk ratios (RRs) using a random-effects model for dichotomous outcomes with 95% confidence intervals (CIs). Heterogeneity, including both clinical and methodological factors, was to be investigated.

# Home-based chemically-induced whitening of teeth in adults

Hana Hasson[1], Amid Ismail[1], Gisele Neiva[1]

[1]Department of Cariology, Restorative Sciences and Endodontics, School of Dentistry, University of Michigan, Ann Arbor, Michigan, USA

Contact address: Hana Hasson, Department of Cariology, Restorative Sciences and Endodontics, School of Dentistry, University of Michigan, Ann Arbor, Michigan, 48109-1078, USA. hanahass@umich.edu.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 4, 2008.
**Review content assessed as up-to-date:** 20 August 2006.

**Citation:** Hasson H, Ismail A, Neiva G. Home-based chemically-induced whitening of teeth in adults. *Cochrane Database of Systematic Reviews* 2006, Issue 4. Art. No.: CD006202. DOI: 10.1002/14651858.CD006202.



## ABSTRACT

### Background

During the last decade tooth whitening products have become widely available in the USA for sale over-the-counter or dispensed by dentists for use at home. With the current rapid growth in demand for tooth whitening it is imperative that the dental community base its recommendations to patients on sound scientific evaluations conducted in well-designed and independent studies.

### Objectives

To evaluate the effectiveness (versus a placebo or another active product) and side effects of over-the-counter or dentist-dispensed chemically-based tooth whitening products designed for home use.

### Search methods

We searched the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2005, Issue 3); MEDLINE (January 1966 to September week 2 2005); and EMBASE (1988 to week 39 2005). The tables of content of selected dental journals published since 1995 were searched for additional references. Written requests for additional studies and information were mailed to experts in this area of research. After a final set of studies was identified, the list of references reported in the included reports was reviewed to identify additional studies. Studies published in English and non-English were considered in this review.

### Selection criteria

Randomised controlled trials and quasi-randomised controlled trials of dentist-dispensed or over-the-counter tooth whitening products with a chemical action (rather than abrasive action), for home use.

### Data collection and analysis

Screening of titles and abstracts, data extraction and quality assessment were undertaken independently and in duplicate.

### Main results

A total of 416 articles were identified, 25 of which met the inclusion criteria and presented data that could be used in the analysis. All included trials measured effectiveness immediately after 2 weeks of product application. Only 13 studies reported outcome data 1 week after the 2-week application period, and of those only six reported outcome data after 1 month or longer. Four of the included trials were assessed as at moderate risk of bias and the remainder at high risk of bias. All trials were sponsored by the manufacturers of tooth whitening products.

# Arthroscopy for temporomandibular disorders

Marcelo Rigon[2], Ligia M Pereira[2], Marcelo C Bortoluzzi[3], Alessandro D Loguercio[4], Adilson Luiz Ramos[5], Jefferson R Cardoso[1]

[1]Physical Therapy Department, Universidade Estadual de Londrina, Londrina, Brazil. [2]Universidade Estadual de Londrina, Londrina, Brazil. [3]Universidade do Oeste de Santa Catarina, Joacaba, Brazil. [4]Universidade Estadual de Ponta Grossa, Ponta Grossa, Brazil. [5]Universidade Estadual de Maringa, Maringa, Brazil

Contact address: Jefferson R Cardoso, Physical Therapy Department, Universidade Estadual de Londrina, Av. Robert Koch 60, Londrina, PR, 86038-350, Brazil. jeffcar@uel.br. jeffcar@hotmail.com.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New, published in Issue 5, 2011.
**Review content assessed as up-to-date:** 9 April 2010.

**Citation:** Rigon M, Pereira LM, Bortoluzzi MC, Loguercio AD, Ramos AL, Cardoso JR. Arthroscopy for temporomandibular disorders. *Cochrane Database of Systematic Reviews* 2011, Issue 5. Art. No.: CD006385. DOI: 10.1002/14651858.CD006385.pub2.



## ABSTRACT

### Background

Temporomandibular disorders (TMDs) are considered a collection of disorders involving many organic, psychological and psychosocial factors. They can involve the masticatory muscles or the temporomandibular joint (TMJ) and associated structures, or both. It is estimated that 40% to 75% of the population displays at least one sign of the disease and 33% of the population reports at least one symptom. Arthroscopy has been used to reduce signs and symptoms of patients with TMD but the effectiveness has still not been totally explained.

### Objectives

To assess the effectiveness of arthroscopy for the management of signs and symptoms in patients with TMDs.

### Search methods

The Cochrane Oral Health Group Trials Register (to 23 December 2010), the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library*, Issue 4, 2010), MEDLINE via OVID (1950 to 23 December 2010), EMBASE via OVID (1980 to 23 December 2010), LILACS via BIREME Virtual Health Library (1982 to 23 December 2010), Allied and Complementary Medicine Database (AMED) via OVID (1985 to 23 December 2010), CINAHL via EBSCO (1980 to 23 December 2010). There were no restrictions regarding the language or date of publication.

### Selection criteria

Randomized controlled clinical trials of arthroscopy for treating TMDs were included.

### Data collection and analysis

Two review authors independently extracted data, and three review authors independently assessed the risk of bias of included trials. The authors of the selected articles were contacted for additional information.

# Fluorides for the prevention of white spots on teeth during fixed brace treatment

Philip E Benson[1], Nicola Parkin[1], Declan T Millett[2], Fiona Dyer[3], Suzy Vine[4], Anwar Shah[5]

[1]Department of Oral Health and Development, School of Clinical Dentistry, University of Sheffield, Sheffield, UK. [2]Department of Oral Health and Development, University Dental School and Hospital, Wilton, Cork, Ireland. [3]Department of Orthodontics, Charles Clifford Dental Hospital, Sheffield, UK. [4]Manchester, UK. [5]Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Manchester, UK

Contact address: Philip E Benson, Department of Oral Health and Development, School of Clinical Dentistry, University of Sheffield, Wellesley Road, Sheffield, S10 2SZ, UK. p.benson@sheffield.ac.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 4, 2008.
**Review content assessed as up-to-date:** 20 May 2004.

**Citation:** Benson PE, Parkin N, Millett DT, Dyer F, Vine S, Shah A. Fluorides for the prevention of white spots on teeth during fixed brace treatment. *Cochrane Database of Systematic Reviews* 2004, Issue 3. Art. No.: CD003809. DOI: 10.1002/14651858.CD003809.pub2.



## ABSTRACT

### Background

White spots can appear on teeth during fixed brace treatment because of early decay around the brace attachments. Fluoride is effective at reducing decay in susceptible individuals and is routinely prescribed in various different forms to patients during orthodontic treatment.

### Objectives

To evaluate the effectiveness of fluoride in preventing white spots during orthodontic treatment and to compare the different modes of delivery of fluoride.

### Search methods

We searched the Cochrane Oral Health Group's Trials Register (January 2004); CENTRAL (*The Cochrane Library* 2002, Issue 3); MEDLINE (January 1966 to July 2003); EMBASE (January 1980 to July 2003). Authors of trials were contacted for further data.

### Selection criteria

Trials were selected if they met the following criteria: a randomised or quasi-randomised clinical trial, involving the use of a fluoride-containing product compared with no use or use of a non-fluoride control and enamel demineralisation was assessed during or after orthodontic treatment.

### Data collection and analysis

Six reviewers independently, in duplicate, extracted data. The primary outcome was the difference in the presence or absence of white spots between experimental and control patients for parallel design studies, and between experimental and control quadrants, for split-mouth design studies. Potential sources of heterogeneity were examined. Sensitivity analyses were undertaken for the items assessed for quality and publication bias.

# Interventions for replacing missing teeth: denture chewing surface designs in edentulous people

Andrew Finlay Sutton[1], Anne-Marie Glenny[2], J Fraser McCord[3]

[1]Restorative Dentistry Department, Liverpool University Dental Hospital, Liverpool, UK. [2]Cochrane Oral Health Group, MANDEC, School of Dentistry, The University of Manchester, Manchester, UK. [3]Restorative Dentistry, Glasgow Dental Hospital and School, Glasgow, UK

Contact address: Andrew Finlay Sutton, Restorative Dentistry Department, Liverpool University Dental Hospital, Pembroke Place, Liverpool, L3 5PS, UK. finlaysutton@another.com.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 4, 2008.
**Review content assessed as up-to-date:** 10 November 2004.

**Citation:** Sutton AF, Glenny AM, McCord JF. Interventions for replacing missing teeth: denture chewing surface designs in edentulous people. *Cochrane Database of Systematic Reviews* 2005, Issue 1. Art. No.: CD004941. DOI: 10.1002/14651858.CD004941.pub2.



## ABSTRACT

### Background

When constructing complete dentures for edentulous patients, ultimately patient satisfaction is key. Complete dentures can be produced with different types of occlusal schemes (chewing surfaces) and it is widely accepted that the occlusal scheme for complete dentures has a direct influence upon their success.

### Objectives

To assess the relative effectiveness of differing occlusal schemes for complete dentures with regard to patient satisfaction. The null hypothesis is that there is no difference in terms of patient satisfaction between different designs of chewing surfaces for complete dentures.

### Search methods

Several electronic databases were searched in order to identify relevant trials: Cochrane Oral Health Group Trials Register (to 29 April 2004), CENTRAL (*The Cochrane Library* 2004, Issue 2), MEDLINE (1966 to week 2 April 2004), OLDMEDLINE (1953 to 1965), EMBASE (1980 to week 16 2004), ZETOC (1993 to December 2003), SIGLE (1980 to December 2003), SCI (1945 to 4 April 2004 ). Reference lists of identified, relevant trials and review articles were scanned. Unpublished data were sought through personal contact with experts in the field. There was no language restriction.

### Selection criteria

Randomised or quasi-randomised controlled clinical trials (RCTs), recruiting edentulous adults, and comparing complete dentures produced with different occlusal schemes with regard to patient satisfaction and masticatory function.

### Data collection and analysis

The quality assessment of the included trials was undertaken independently and in duplicate by two reviewers based initially on what was written in the articles. Data were extracted by two reviewers independently. Disagreements were discussed and a third reviewer consulted as necessary. Authors were contacted for clarification or missing information. Data were excluded until further clarification if agreement could not be reached.

# Flossing for the management of periodontal diseases and dental caries in adults

Dario Sambunjak[1], Jason W Nickerson[2], Tina Poklepovic[3], Trevor M Johnson[4], Pauline Imai[5,6], Peter Tugwell[7], Helen V Worthington[8]

[1]Dept for Research in Biomedicine and Health, School of Medicine University of Split, Split, Croatia. [2]Centre for Global Health, Institute of Population Health, Ottawa, Canada. [3]Department of Research in Biomedicine and Health, University of Split School of Medicine, Split, Croatia. [4]Yorkshire Area, Faculty of General Dental Practice, York, UK. [5]MTI Community College, Vancouver, Canada. [6]Dental Hygiene Degree Program, Faculty of Dentistry, The University of British Columbia, Vancouver, Canada. [7]Department of Medicine, University of Ottawa, Ottawa, Canada. [8]Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Manchester, UK

Contact address: Trevor M Johnson, Yorkshire Area, Faculty of General Dental Practice, Orchard House, Tollerton, York, North Yorkshire, YO61 1PS, UK. johnson1@dsl.pipex.com. johnson3@lineone.net.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 4, 2012.
**Review content assessed as up-to-date:** 28 October 2011.

**Citation:** Sambunjak D, Nickerson JW, Poklepovic T, Johnson TM, Imai P, Tugwell P, Worthington HV. Flossing for the management of periodontal diseases and dental caries in adults. *Cochrane Database of Systematic Reviews* 2011, Issue 12. Art. No.: CD008829. DOI: 10.1002/14651858.CD008829.pub2.



## ABSTRACT

### Background

Good oral hygiene is thought to be important for oral health. This review is to determine the effectiveness of flossing in addition to toothbrushing for preventing gum disease and dental caries in adults.

### Objectives

To assess the effects of flossing in addition to toothbrushing, as compared with toothbrushing alone, in the management of periodontal diseases and dental caries in adults.

### Search methods

We searched the following electronic databases: the Cochrane Oral Health Group Trials Register (to 17 October 2011), the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2011, Issue 4), MEDLINE via OVID (1950 to 17 October 2011), EMBASE via OVID (1980 to 17 October 2011), CINAHL via EBSCO (1980 to 17 October 2011), LILACS via BIREME (1982 to 17 October 2011), ZETOC Conference Proceedings (1980 to 17 October 2011), Web of Science Conference Proceedings (1990 to 17 October 2011), Clinicaltrials.gov (to 17 October 2011) and the metaRegister of Controlled Clinical Trials (to 17 October 2011). We imposed no restrictions regarding language or date of publication. We contacted manufacturers of dental floss to identify trials.

### Selection criteria

We included randomised controlled trials conducted comparing toothbrushing and flossing with only toothbrushing, in adults.

# Fluoridated milk for preventing dental caries

Albert Yeung[1], Joseph L Hitchings[2], Tatiana V Macfarlane[3], Anthony Threlfall[4], Martin Tickle[5], Anne-Marie Glenny[6]

[1]Public Health Department, Lanarkshire NHS Board, Hamilton, UK. [2]Southport, UK. [3]Department of General Practice and Primary Care, Foresterhill Health Centre, Aberdeen, UK. [4]School of Dentistry, The University of Manchester, Manchester, UK. [5]Oral Health Unit, National Primary Care Research and Development Centre, School of Dentistry, The University of Manchester, Manchester, UK. [6]Cochrane Oral Health Group, MANDEC, School of Dentistry, The University of Manchester, Manchester, UK

Contact address: Albert Yeung, Public Health Department, Lanarkshire NHS Board, 14 Beckford Street, Hamilton, ML3 0TA, UK. albert.yeung@lanarkshire.scot.nhs.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 4, 2008.
**Review content assessed as up-to-date:** 16 May 2005.

**Citation:** Yeung A, Hitchings JL, Macfarlane TV, Threlfall A, Tickle M, Glenny AM. Fluoridated milk for preventing dental caries. *Cochrane Database of Systematic Reviews* 2005, Issue 3. Art. No.: CD003876. DOI: 10.1002/14651858.CD003876.pub2.



## ABSTRACT

### Background

Dental caries remains a major public health problem in most industrialised countries, affecting 60% to 90% of school children and the vast majority of adults. Milk provides a relatively cost-effective vehicle for fluoride in the prevention of dental caries.

### Objectives

To determine the effectiveness of fluoridated milk, as a means of delivering fluoride on a community basis, for preventing dental caries.

### Search methods

We searched Cochrane Oral Health Group Trials Register (28 April 2005), Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2005, Issue 2), MEDLINE (1966 to 17 May 2005), OLDMEDLINE (1950 to 1965), EMBASE (1980 to 2005 week 20), LILACS (1982 to 17 May 2005), BBO (1986 to 17 May 2005), SIGLE (1980 to 17 May 2005), Digital Dissertations (1861 to 17 May 2005) and reference lists of relevant articles. Attempts were made to identify both unpublished and ongoing studies. There were no language restrictions.

### Selection criteria

Randomised or quasi-randomised controlled trials (RCTs), with an intervention or follow-up period of at least 3 years, comparing fluoridated milk with non-fluoridated milk. Primary outcome was change in caries experience, as measured by changes in decayed, missing and filled figures on tooth (dmft/DMFT) and surface (dmfs/DMFS).

### Data collection and analysis

Inclusion decisions, data extraction and quality assessment were carried out independently and in duplicate. Study authors were contacted for additional information where necessary.

# Fluoride gels for preventing dental caries in children and adolescents

Valeria CC Marinho[1], Julian PT Higgins[2], Stuart Logan[3], Aubrey Sheiham[4]

[1]Clinical and Diagnostic Oral Sciences, Institute of Dentistry, Barts and The London School of Medicine and Dentistry, London, UK. [2]MRC Biostatistics Unit, Cambridge, UK. [3]Institute of Health and Social Care Research, Peninsula Medical School, Universities of Exeter & Plymouth, Exeter, UK. [4]Department of Epidemiology and Public Health, University College London Medical School, London, UK

Contact address: Valeria CC Marinho, Clinical and Diagnostic Oral Sciences, Institute of Dentistry, Barts and The London School of Medicine and Dentistry, Queen Mary, University of London, Turner Street, Whitechapel, London, E1 2AD, UK. vcmarinho@yahoo.com. v.marinho@qmul.ac.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 1, 2009.
**Review content assessed as up-to-date:** 26 September 2001.

**Citation:** Marinho VCC, Higgins JPT, Logan S, Sheiham A. Fluoride gels for preventing dental caries in children and adolescents. *Cochrane Database of Systematic Reviews* 2002, Issue 1. Art. No.: CD002280. DOI: 10.1002/14651858.CD002280.



## ABSTRACT

### Background

Topically applied fluoride gels have been widely used as a caries-preventive intervention in dental surgeries and school-based programs for over 2 decades.

### Objectives

To determine the effectiveness and safety of fluoride gels in the prevention of dental caries in children and to examine factors potentially modifying their effect.

### Search methods

Multiple electronic database searches, reference lists of articles, journal handsearch, selected authors and manufacturers.

### Selection criteria

Randomised or quasi-randomised controlled trials with blind outcome assessment, comparing fluoride gel with placebo or no treatment in children up to 16 years during at least 1 year. The main outcome was caries increment measured by the change in decayed, missing and filled tooth surfaces (D(M)FS).

### Data collection and analysis

Inclusion decisions, quality assessment and data extraction were duplicated in a random sample of one third of studies, and consensus achieved by discussion or a third party. Study authors were contacted for missing data. The primary measure of effect was the prevented fraction (PF), that is the difference in caries increments between the treatment and control groups expressed as a percentage of the increment in the control group. Random-effects meta-analyses were performed where data could be pooled. Potential sources of heterogeneity were examined in random-effects metaregression analyses.

# Fluoride mouthrinses for preventing dental caries in children and adolescents

Valeria CC Marinho[1], Julian PT Higgins[2], Stuart Logan[3], Aubrey Sheiham[4]

[1]Clinical and Diagnostic Oral Sciences, Institute of Dentistry, Barts and The London School of Medicine and Dentistry, London, UK. [2]MRC Biostatistics Unit, Cambridge, UK. [3]Institute of Health and Social Care Research, Peninsula Medical School, Universities of Exeter & Plymouth, Exeter, UK. [4]Department of Epidemiology and Public Health, University College London Medical School, London, UK

Contact address: Valeria CC Marinho, Clinical and Diagnostic Oral Sciences, Institute of Dentistry, Barts and The London School of Medicine and Dentistry, Queen Mary, University of London, Turner Street, Whitechapel, London, E1 2AD, UK. vcmarinho@yahoo.com, v.marinho@qmul.ac.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 1, 2009.
**Review content assessed as up-to-date:** 18 May 2003.

**Citation:** Marinho VCC, Higgins JPT, Logan S, Sheiham A. Fluoride mouthrinses for preventing dental caries in children and adolescents. *Cochrane Database of Systematic Reviews* 2003, Issue 3. Art. No.: CD002284. DOI: 10.1002/14651858.CD002284.



## ABSTRACT

### Background

Fluoride mouthrinses have been used extensively as a caries-preventive intervention in school-based programmes and individually at home.

### Objectives

To determine the effectiveness and safety of fluoride mouthrinses in the prevention of dental caries in children and to examine factors potentially modifying their effect.

### Search methods

We searched the Cochrane Oral Health Group's Trials Register (May 2000), the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2000, Issue 2), MEDLINE (1966 to January 2000), plus several other databases. We handsearched journals, reference lists of articles and contacted selected authors and manufacturers.

### Selection criteria

Randomised or quasi-randomised controlled trials with blind outcome assessment, comparing fluoride mouthrinse with placebo or no treatment in children up to 16 years during at least 1 year. The main outcome was caries increment measured by the change in decayed, missing and filled tooth surfaces (D(M)FS).

### Data collection and analysis

Inclusion decisions, quality assessment and data extraction were duplicated in a random sample of one third of studies, and consensus achieved by discussion or a third party. Authors were contacted for missing data. The primary measure of effect was the prevented fraction (PF) that is the difference in mean caries increments between the treatment and control groups expressed as a percentage of the mean increment in the control group. Random-effects meta-analyses were performed where data could be pooled. Potential sources of heterogeneity were examined in random-effects metaregression analyses.

# Fluoride toothpastes for preventing dental caries in children and adolescents

Valeria CC Marinho[1], Julian PT Higgins[2], Stuart Logan[3], Aubrey Sheiham[4]

[1]Clinical and Diagnostic Oral Sciences, Institute of Dentistry, Barts and The London School of Medicine and Dentistry, London, UK. [2]MRC Biostatistics Unit, Cambridge, UK. [3]Institute of Health and Social Care Research, Peninsula Medical School, Universities of Exeter & Plymouth, Exeter, UK. [4]Department of Epidemiology and Public Health, University College London Medical School, London, UK

Contact address: Valeria CC Marinho, Clinical and Diagnostic Oral Sciences, Institute of Dentistry, Barts and The London School of Medicine and Dentistry, Queen Mary, University of London, Turner Street, Whitechapel, London, E1 2AD, UK. vcmarinho@yahoo.com. v.marinho@qmul.ac.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 1, 2009.
**Review content assessed as up-to-date:** 12 September 2002.

**Citation:** Marinho VCC, Higgins JPT, Logan S, Sheiham A. Fluoride toothpastes for preventing dental caries in children and adolescents. *Cochrane Database of Systematic Reviews* 2003, Issue 1. Art. No.: CD002278. DOI: 10.1002/14651858.CD002278.



## ABSTRACT

### Background

Fluoride toothpastes have been widely used for over 3 decades and remain a benchmark intervention for the prevention of dental caries.

### Objectives

To determine the effectiveness and safety of fluoride toothpastes in the prevention of caries in children and to examine factors potentially modifying their effect.

### Search methods

We searched the Cochrane Oral Health Group's Trials Register (May 2000), the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2000, Issue 2), MEDLINE (1966 to January 2000), plus several other databases. We handsearched journals, reference lists of articles and contacted selected authors and manufacturers.

### Selection criteria

Randomised or quasi-randomised controlled trials with blind outcome assessment, comparing fluoride toothpaste with placebo in children up to 16 years during at least 1 year. The main outcome was caries increment measured by the change in decayed, missing and filled tooth surfaces (D(M)FS).

### Data collection and analysis

Inclusion decisions, quality assessment and data extraction were duplicated in a random sample of one third of studies, and consensus achieved by discussion or a third party. Authors were contacted for missing data. The primary measure of effect was the prevented fraction (PF) that is the difference in caries increments between the treatment and control groups expressed as a percentage of the increment in the control group. Random-effects meta-analyses were performed where data could be pooled. Potential sources of heterogeneity were examined in random-effects metaregression analyses.

# Fluoride toothpastes of different concentrations for preventing dental caries in children and adolescents

Tanya Walsh[1], Helen V Worthington[2], Anne-Marie Glenny[2], Priscilla Appelbe[1], Valeria CC Marinho[3], Xin Shi[4]

[1]School of Dentistry, The University of Manchester, Manchester, UK. [2]Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Manchester, UK. [3]Clinical and Diagnostic Oral Sciences, Barts and The London School of Medicine and Dentistry, Queen Mary University of London, London, UK. [4]Manchester Metropolitan University Business School, Manchester, UK

Contact address: Tanya Walsh, School of Dentistry, The University of Manchester, Higher Cambridge Street, Manchester, M15 6FH, UK. tanya.walsh@manchester.ac.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 2, 2010.
**Review content assessed as up-to-date:** 25 August 2009.

**Citation:** Walsh T, Worthington HV, Glenny AM, Appelbe P, Marinho VCC, Shi X. Fluoride toothpastes of different concentrations for preventing dental caries in children and adolescents. *Cochrane Database of Systematic Reviews* 2010, Issue 1. Art. No.: CD007868. DOI: 10.1002/14651858.CD007868.pub2.



## ABSTRACT

### Background

Caries (dental decay) is a disease of the hard tissues of the teeth caused by an imbalance, over time, in the interactions between cariogenic bacteria in dental plaque and fermentable carbohydrates (mainly sugars). The use of fluoride toothpaste is the primary intervention for the prevention of caries.

### Objectives

To determine the relative effectiveness of fluoride toothpastes of different concentrations in preventing dental caries in children and adolescents, and to examine the potentially modifying effects of baseline caries level and supervised toothbrushing.

### Search methods

A search was undertaken on Cochrane Oral Health Group's Trials Register, CENTRAL, MEDLINE and several other databases. Reference lists of articles were also searched.

Date of the most recent searches: 8 June 2009.

### Selection criteria

Randomised controlled trials and cluster-randomised controlled trials comparing fluoride toothpaste with placebo or fluoride toothpaste of a different concentration in children up to 16 years of age with a follow-up period of at least 1 year. The primary outcome was caries increment in the permanent or deciduous dentition as measured by the change in decayed, (missing), filled tooth surfaces (D(M)FS/d(m)fs) from baseline.

### Data collection and analysis

Inclusion of studies, data extraction and quality assessment were undertaken independently and in duplicate by two members of the review team. Disagreements were resolved by discussion and consensus or by a third party. The primary effect measure was the prevented fraction (PF), the caries increment of the control group minus the caries increment of the treatment group, expressed as a proportion

# Fluoride varnishes for preventing dental caries in children and adolescents

Valeria CC Marinho[1], Julian PT Higgins[2], Stuart Logan[3], Aubrey Sheiham[4]

[1]Clinical and Diagnostic Oral Sciences, Institute of Dentistry, Barts and The London School of Medicine and Dentistry, London, UK. [2]MRC Biostatistics Unit, Cambridge, UK. [3]Institute of Health and Social Care Research, Peninsula Medical School, Universities of Exeter & Plymouth, Exeter, UK. [4]Department of Epidemiology and Public Health, University College London Medical School, London, UK

Contact address: Valeria CC Marinho, Clinical and Diagnostic Oral Sciences, Institute of Dentistry, Barts and The London School of Medicine and Dentistry, Queen Mary, University of London, Turner Street, Whitechapel, London, E1 2AD, UK. vcmarinho@yahoo.com. v.marinho@qmul.ac.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 1, 2009.
**Review content assessed as up-to-date:** 25 November 2001.

**Citation:** Marinho VCC, Higgins JPT, Logan S, Sheiham A. Fluoride varnishes for preventing dental caries in children and adolescents. *Cochrane Database of Systematic Reviews* 2002, Issue 1. Art. No.: CD002279. DOI: 10.1002/14651858.CD002279.



## ABSTRACT

### Background

Topically applied fluoride varnishes have been used extensively as an operator-applied caries-preventive intervention for over 2 decades.

### Objectives

To determine the effectiveness and safety of fluoride varnishes in the prevention of dental caries in children and to examine factors potentially modifying their effect.

### Search methods

Multiple electronic database searches, reference lists of articles, journal handsearch, selected authors and manufacturers.

### Selection criteria

Randomised or quasi-randomised controlled trials with blind outcome assessment, comparing fluoride varnish with placebo or no treatment in children up to 16 years during at least 1 year. The main outcome was caries increment measured by the change in decayed, missing and filled tooth surfaces (D(M)FS).

### Data collection and analysis

Inclusion decisions, quality assessment and data extraction were duplicated in a random sample of one third of studies, and consensus achieved by discussion or a third party. Study authors were contacted for missing data. The primary measure of effect was the prevented fraction (PF), that is the difference in caries increments between the treatment and control groups expressed as a percentage of the increment in the control group. Random-effects meta-analyses were performed where data could be pooled. Potential sources of heterogeneity were examined in random-effects metaregression analyses.

# Fluorides for the prevention of white spots on teeth during fixed brace treatment

Philip E Benson[1], Nicola Parkin[1], Declan T Millett[2], Fiona Dyer[3], Suzy Vine[4], Anwar Shah[5]

[1]Department of Oral Health and Development, School of Clinical Dentistry, University of Sheffield, Sheffield, UK. [2]Department of Oral Health and Development, University Dental School and Hospital, Wilton, Cork, Ireland. [3]Department of Orthodontics, Charles Clifford Dental Hospital, Sheffield, UK. [4]Manchester, UK. [5]Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Manchester, UK

Contact address: Philip E Benson, Department of Oral Health and Development, School of Clinical Dentistry, University of Sheffield, Wellesley Road, Sheffield, S10 2SZ, UK. p.benson@sheffield.ac.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 4, 2008.
**Review content assessed as up-to-date:** 20 May 2004.

**Citation:** Benson PE, Parkin N, Millett DT, Dyer F, Vine S, Shah A. Fluorides for the prevention of white spots on teeth during fixed brace treatment. *Cochrane Database of Systematic Reviews* 2004, Issue 3. Art. No.: CD003809. DOI: 10.1002/14651858.CD003809.pub2.



## ABSTRACT

### Background

White spots can appear on teeth during fixed brace treatment because of early decay around the brace attachments. Fluoride is effective at reducing decay in susceptible individuals and is routinely prescribed in various different forms to patients during orthodontic treatment.

### Objectives

To evaluate the effectiveness of fluoride in preventing white spots during orthodontic treatment and to compare the different modes of delivery of fluoride.

### Search methods

We searched the Cochrane Oral Health Group's Trials Register (January 2004); CENTRAL (*The Cochrane Library* 2002, Issue 3); MEDLINE (January 1966 to July 2003); EMBASE (January 1980 to July 2003). Authors of trials were contacted for further data.

### Selection criteria

Trials were selected if they met the following criteria: a randomised or quasi-randomised clinical trial, involving the use of a fluoride-containing product compared with no use or use of a non-fluoride control and enamel demineralisation was assessed during or after orthodontic treatment.

### Data collection and analysis

Six reviewers independently, in duplicate, extracted data. The primary outcome was the difference in the presence or absence of white spots between experimental and control patients for parallel design studies, and between experimental and control quadrants, for split-mouth design studies. Potential sources of heterogeneity were examined. Sensitivity analyses were undertaken for the items assessed for quality and publication bias.

# One-to-one dietary interventions undertaken in a dental setting to change dietary behaviour

Rebecca Harris[1], Ana Gamboa[2], Yvonne Dailey[3], Angela Ashcroft[4]

[1]Department of Health Services Research, University of Liverpool, Liverpool, UK. [2]Centre for Clinical and Diagnostic Oral Sciences, Institute of Dentistry, Queen Mary University of London, Barts & The London School of Medicine and Dentistry, London, UK. [3]Public Health Department, NHS Western Cheshire, Chester, UK. [4]School of Dental Sciences, University of Liverpool, Liverpool, UK

Contact address: Rebecca Harris, Department of Health Services Research, University of Liverpool, Waterhouse Building, Block B, 1st Floor, Room B113, 1-5 Brownlow Street, Liverpool, L69 3GL, UK. r.v.harris@liverpool.ac.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 5, 2012.
**Review content assessed as up-to-date:** 24 January 2012.

**Citation:** Harris R, Gamboa A, Dailey Y, Ashcroft A. One-to-one dietary interventions undertaken in a dental setting to change dietary behaviour. *Cochrane Database of Systematic Reviews* 2012, Issue 3. Art. No.: CD006540. DOI: 10.1002/14651858.CD006540.pub2.



## ABSTRACT

### Background

The dental care setting is an appropriate place to deliver dietary assessment and advice as part of patient management. However, we do not know whether this is effective in changing dietary behaviour.

### Objectives

To assess the effectiveness of one-to-one dietary interventions for all ages carried out in a dental care setting in changing dietary behaviour. The effectiveness of these interventions in the subsequent changing of oral and general health is also assessed.

### Search methods

The following electronic databases were searched: the Cochrane Oral Health Group Trials Register (to 24 January 2012), the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2012, Issue 1), MEDLINE via OVID (1950 to 24 January 2012), EMBASE via OVID (1980 to 24 January 2012), CINAHL via EBSCO (1982 to 24 January 2012), PsycINFO via OVID (1967 to 24 January 2012), and Web of Science (1945 to 12 April 2011). We also undertook an electronic search of key conference proceedings (IADR and ORCA between 2000 and 13 July 2011). Reference lists of relevant articles, thesis publications (Dissertations Abstracts Online 1861 to 2011) were searched. The authors of eligible trials were contacted to identify any unpublished work.

### Selection criteria

Randomised controlled trials assessing the effectiveness of one-to-one dietary interventions delivered in a dental care setting.

### Data collection and analysis

Abstract screening, eligibility screening and data extraction decisions were all carried out independently and in duplicate by two review authors. Consensus between the two opinions was achieved by discussion, or involvement of a third review author.

[Intervention Review]

# Pit and fissure sealants versus fluoride varnishes for preventing dental decay in children and adolescents

Anne Hiiri[1], Anneli Ahovuo-Saloranta[2], Anne Nordblad[3], Marjukka Mäkelä[4]

[1]The Finnish Dental Society Apollonia, Helsinki, Finland. [2]Finnish Office for Health Technology Assessment/Finohta, National Institute for Health and Welfare/THL, Tampere, Finland. [3]Health Department, Ministry of Social Affairs and Health, Helsinki, Finland. [4]Finnish Office for Health Technology Assessment / FinOHTA, National Institute for Health and Welfare / THL, Helsinki, Finland

Contact address: Anne Hiiri, The Finnish Dental Society Apollonia, Bulevardi 30 B 5, Helsinki, FI-00120, Finland. anne.hiiri@apollonia.fi.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New search for studies and content updated (no change to conclusions), published in Issue 3, 2010.
**Review content assessed as up-to-date:** 4 February 2010.

**Citation:** Hiiri A, Ahovuo-Saloranta A, Nordblad A, Mäkelä M. Pit and fissure sealants versus fluoride varnishes for preventing dental decay in children and adolescents. *Cochrane Database of Systematic Reviews* 2010, Issue 3. Art. No.: CD003067. DOI: 10.1002/14651858.CD003067.pub3.



## ABSTRACT

### Background

The majority of the detected increment in dental caries among children and adolescents is confined to pit and fissure surfaces of first molars.

### Objectives

The objective of this study was to compare the effectiveness of pit and fissure sealants with fluoride varnishes in the prevention of dental decay on occlusal surfaces.

### Search methods

The Cochrane Oral Health Group's Trials Register, CENTRAL, MEDLINE, EMBASE and 10 other databases were searched to November 2009. There were no language or publication restrictions.

### Selection criteria

Random or quasi-random allocation study design; sealants versus fluoride varnish or sealants and fluoride varnish combination versus fluoride varnish alone; and subjects under 20 years of age. The primary outcome of interest was the increment in the numbers of carious occlusal surfaces of permanent premolars and molars.

### Data collection and analysis

Two review authors independently screened search results, extracted data and assessed the risk of bias of trials. Risk ratios (RR) were calculated for differences between intervention and control groups and in split-mouth studies for differences of paired tooth surfaces being carious or not. No data could be combined or meta-analyses undertaken due to the clinical and methodological diversity between study designs.

# Sealants for preventing dental decay in the permanent teeth

Anneli Ahovuo-Saloranta[1], Helena Forss[2], Tanya Walsh[3], Anne Hiiri[4], Anne Nordblad[5], Marjukka Mäkelä[6], Helen V Worthington[7]

[1]Finnish Office for Health Technology Assessment / FinOHTA, National Institute for Health and Welfare / THL, Tampere, Finland. [2]Department of Oral and Dental Diseases, Tampere University Hospital, Tampere, Finland. [3]School of Dentistry, The University of Manchester, Manchester, UK. [4]Department of Health Care, City of Kotka, Kotka, Finland. [5]Health Department, Ministry of Social Affairs and Health, Helsinki, Finland. [6]Finnish Office for Health Technology Assessment / FinOHTA, National Institute for Health and Welfare / THL, Helsinki, Finland. [7]Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Manchester, UK

Contact address: Anneli Ahovuo-Saloranta, Finnish Office for Health Technology Assessment / FinOHTA, National Institute for Health and Welfare / THL, Finn-Medi 3, Biokatu 10, Tampere, FI-33520, Finland. anneli.ahovuo-saloranta@thl.fi.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New search for studies and content updated (no change to conclusions), published in Issue 3, 2013.
**Review content assessed as up-to-date:** 1 November 2012.

**Citation:** Ahovuo-Saloranta A, Forss H, Walsh T, Hiiri A, Nordblad A, Mäkelä M, Worthington HV. Sealants for preventing dental decay in the permanent teeth. *Cochrane Database of Systematic Reviews* 2013, Issue 3. Art. No.: CD001830. DOI: 10.1002/14651858.CD001830.pub4.



## ABSTRACT

### Background

Dental sealants were introduced in the 1960s to help prevent dental caries in the pits and fissures of mainly the occlusal tooth surfaces. Sealants act to prevent the growth of bacteria that can lead to dental decay. There is evidence to suggest that fissure sealants are effective in preventing caries in children and adolescents when compared to no sealants. Their effectiveness may be related to the caries prevalence in the population.

### Objectives

To compare the effects of different types of fissure sealants in preventing caries in permanent teeth in children and adolescents.

### Search methods

We searched the Cochrane Oral Health Group's Trials Register (to 1 November 2012); the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2012, Issue 7); MEDLINE via OVID (1946 to 1 November 2012); EMBASE via OVID (1980 to 1 November 2012); SCISEARCH, CAplus, INSPEC, NTIS and PASCAL via STN Easy (to 1 September 2012); and DARE, NHS EED and HTA (via the CAIRS web interface to 29 March 2012 and thereafter via Metaxis interface to September 2012). There were no language or publication restrictions. We also searched for ongoing trials via ClinicalTrials.gov (to 23 July 2012).

### Selection criteria

Randomised or quasi-randomised controlled trials of at least 12 months duration comparing sealants for preventing caries of occlusal or approximal surfaces of premolar or molar teeth with no sealant or different type of sealant in children and adolescents under 20 years of age.

# Topical fluoride (toothpastes, mouthrinses, gels or varnishes) for preventing dental caries in children and adolescents

Valeria CC Marinho[1], Julian PT Higgins[2], Stuart Logan[3], Aubrey Sheiham[4]

[1]Clinical and Diagnostic Oral Sciences, Institute of Dentistry, Barts and The London School of Medicine and Dentistry, London, UK. [2]MRC Biostatistics Unit, Cambridge, UK. [3]Institute of Health and Social Care Research, Peninsula Medical School, Universities of Exeter & Plymouth, Exeter, UK. [4]Department of Epidemiology and Public Health, University College London Medical School, London, UK

Contact address: Valeria CC Marinho, Clinical and Diagnostic Oral Sciences, Institute of Dentistry, Barts and The London School of Medicine and Dentistry, Queen Mary, University of London, Turner Street, Whitechapel, London, E1 2AD, UK. vcmarinho@yahoo.com. v.marinho@qmul.ac.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 1, 2009.
**Review content assessed as up-to-date:** 19 August 2003.

**Citation:** Marinho VCC, Higgins JPT, Logan S, Sheiham A. Topical fluoride (toothpastes, mouthrinses, gels or varnishes) for preventing dental caries in children and adolescents. *Cochrane Database of Systematic Reviews* 2003, Issue 4. Art. No.: CD002782. DOI: 10.1002/14651858.CD002782.



## ABSTRACT

### Background

Topical fluoride therapy (TFT) in the form of varnish, gel, mouthrinse or toothpaste has been used extensively as a caries-preventive intervention for over 3 decades.

### Objectives

To determine the effectiveness and safety of fluoride varnishes, gels, mouthrinses, and toothpastes in the prevention of dental caries in children and to examine factors potentially modifying their effect.

### Search methods

We searched the Cochrane Oral Health Group's Trials Register (May 2000), CENTRAL (*The Cochrane Library* 2000, Issue 2), MEDLINE (1966 to January 2000), plus several other databases. We handsearched journals, reference lists of articles and contacted selected authors and manufacturers.

### Selection criteria

Randomized or quasi-randomized controlled trials with blind outcome assessment, comparing fluoride varnish, gel, mouthrinse, or toothpaste with placebo or no treatment in children up to 16 years during at least 1 year. The main outcome was caries increment measured by the change in decayed, missing and filled tooth surfaces (D(M)FS).

### Data collection and analysis

Inclusion decisions, quality assessment and data extraction were duplicated in a random sample of one third of studies, and consensus achieved by discussion or a third party. Authors were contacted for missing data. The primary measure of effect was the prevented fraction (PF) that is the difference in mean caries increments between the treatment and control groups expressed as a percentage of the mean increment in the control group. Random-effects meta-analyses were performed where data could be pooled. Potential sources of heterogeneity were examined in random-effects metaregression analyses.

# Interventions for replacing missing teeth: different times for loading dental implants

Marco Esposito[1], Maria Gabriella Grusovin[2], Hassan Maghaireh[3], Helen V Worthington[1]

[1]Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Manchester, UK. [2]Private practice, Gorizia, Italy. [3]Department of Oral and Maxillofacial Surgery, School of Dentistry, The University of Manchester, Manchester, UK

Contact address: Marco Esposito, Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Coupland 3 Building, Oxford Road, Manchester, M13 9PL, UK. espositomarco@hotmail.com.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 5, 2013.
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**Citation:** Esposito M, Grusovin MG, Maghaireh H, Worthington HV. Interventions for replacing missing teeth: different times for loading dental implants. *Cochrane Database of Systematic Reviews* 2013, Issue 3. Art. No.: CD003878. DOI: 10.1002/14651858.CD003878.pub5.



## ABSTRACT

### Background

To minimise the risk of implant failures after their placement, dental implants are kept load-free for 3 to 8 months to establish osseointegration (conventional loading). It would be beneficial if the healing period could be shortened without jeopardising implant success. Nowadays implants are loaded early and even immediately and it would be useful to know whether there is a difference in success rates between immediately and early loaded implants compared with conventionally loaded implants.

### Objectives

To evaluate the effects of (1) immediate (within 1 week), early (between 1 week and 2 months), and conventional (after 2 months) loading of osseointegrated implants; (2) immediate occlusal versus non-occlusal loading and early occlusal versus non-occlusal loading; (3) direct loading versus progressive loading immediately, early and conventionally.

### Search methods

The following electronic databases were searched: the Cochrane Oral Health Group's Trials Register (to 8 June 2012), the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2012, Issue 4), MEDLINE via OVID (1946 to 8 June 2012) and EMBASE via OVID (1980 to 8 June 2012). Authors of identified trials were contacted to find unpublished randomised controlled trials (RCTs). There were no restrictions regarding language or date of publication.

### Selection criteria

All RCTs of root-form osseointegrated dental implants, having a follow-up of 4 months to 1 year, comparing the same implant type immediately, early or conventionally loaded, occlusally or non-occlusally loaded, or progressively loaded or not. Outcome measures were: prosthesis and implant failures and radiographic marginal bone level changes.

### Data collection and analysis

Data were independently extracted, in duplicate, by at least two review authors. Trial authors were contacted for missing information. Risk of bias was assessed for each trial by at least two review authors, and data were extracted independently, and in duplicate. Results were combined using fixed-effect models with mean differences (MD) for continuous outcomes and risk ratios (RR) for dichotomous outcomes with 95% confidence intervals (CI). Summary of findings tables of the main findings were constructed.

# Interventions for replacing missing teeth: different times for loading dental implants

Marco Esposito[1], Maria Gabriella Grusovin[2], Hassan Maghaireh[3], Helen V Worthington[1]

[1]Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Manchester, UK. [2]Private practice, Gorizia, Italy. [3]Department of Oral and Maxillofacial Surgery, School of Dentistry, The University of Manchester, Manchester, UK

Contact address: Marco Esposito, Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Coupland 3 Building, Oxford Road, Manchester, M13 9PL, UK. espositomarco@hotmail.com.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 5, 2013.
**Review content assessed as up-to-date:** 20 February 2013.

**Citation:** Esposito M, Grusovin MG, Maghaireh H, Worthington HV. Interventions for replacing missing teeth: different times for loading dental implants. *Cochrane Database of Systematic Reviews* 2013, Issue 3. Art. No.: CD003878. DOI: 10.1002/14651858.CD003878.pub5.



## ABSTRACT

### Background

To minimise the risk of implant failures after their placement, dental implants are kept load-free for 3 to 8 months to establish osseointegration (conventional loading). It would be beneficial if the healing period could be shortened without jeopardising implant success. Nowadays implants are loaded early and even immediately and it would be useful to know whether there is a difference in success rates between immediately and early loaded implants compared with conventionally loaded implants.

### Objectives

To evaluate the effects of (1) immediate (within 1 week), early (between 1 week and 2 months), and conventional (after 2 months) loading of osseointegrated implants; (2) immediate occlusal versus non-occlusal loading and early occlusal versus non-occlusal loading; (3) direct loading versus progressive loading immediately, early and conventionally.

### Search methods

The following electronic databases were searched: the Cochrane Oral Health Group's Trials Register (to 8 June 2012), the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2012, Issue 4), MEDLINE via OVID (1946 to 8 June 2012) and EMBASE via OVID (1980 to 8 June 2012). Authors of identified trials were contacted to find unpublished randomised controlled trials (RCTs). There were no restrictions regarding language or date of publication.

### Selection criteria

All RCTs of root-form osseointegrated dental implants, having a follow-up of 4 months to 1 year, comparing the same implant type immediately, early or conventionally loaded, occlusally or non-occlusally loaded, or progressively loaded or not. Outcome measures were: prosthesis and implant failures and radiographic marginal bone level changes.

### Data collection and analysis

Data were independently extracted, in duplicate, by at least two review authors. Trial authors were contacted for missing information. Risk of bias was assessed for each trial by at least two review authors, and data were extracted independently, and in duplicate. Results were combined using fixed-effect models with mean differences (MD) for continuous outcomes and risk ratios (RR) for dichotomous outcomes with 95% confidence intervals (CI). Summary of findings tables of the main findings were constructed.

[Intervention Review]

# Interventions for replacing missing teeth: maintaining and recovering soft tissue health around dental implants

Maria Gabriella Grusovin[1], Paul Coulthard[2], Helen V Worthington[3], Peter George[4], Marco Esposito[1]

[1]Department of Oral and Maxillofacial Surgery, School of Dentistry, The University of Manchester, Manchester, UK. [2]Oral and Maxillofacial Surgery, School of Dentistry, The University of Manchester, Manchester, UK. [3]Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Manchester, UK. [4]Oak Dental Care, Ormskirk, UK

Contact address: Maria Gabriella Grusovin, Department of Oral and Maxillofacial Surgery, School of Dentistry, The University of Manchester, Higher Cambridge Street, Manchester, M15 6FH, UK. gabri.grusovin@tiscali.it.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 12, 2010.
**Review content assessed as up-to-date:** 1 June 2010.

**Citation:** Grusovin MG, Coulthard P, Worthington HV, George P, Esposito M. Interventions for replacing missing teeth: maintaining and recovering soft tissue health around dental implants. *Cochrane Database of Systematic Reviews* 2010, Issue 8. Art. No.: CD003069. DOI: 10.1002/14651858.CD003069.pub4.



## ABSTRACT

### Background

It is important to institute an effective supportive therapy to maintain or recover soft tissue health around dental implants. Different maintenance regimens have been suggested, however it is unclear which are the most effective.

### Objectives

To assess the effects of different interventions for 1) maintaining and 2) recovering soft tissue health around osseointegrated dental implants.

### Search methods

We searched the Cochrane Oral Health Group's Trials Register, the Cochrane Central Register of Controlled Trials (CENTRAL), MEDLINE and EMBASE. Handsearching included several dental journals. We checked the bibliographies of the identified randomised controlled trials (RCTs) and relevant review articles for studies outside the handsearched journals. We wrote to authors of all identified RCTs, to more than 55 oral implant manufacturers and to an Internet discussion group to find unpublished or ongoing RCTs. No language restrictions were applied. The last electronic search was conducted on 2 June 2010.

### Selection criteria

All randomised controlled trials comparing agents or interventions for maintaining or recovering healthy tissues around dental implants.

### Data collection and analysis

Screening of eligible studies, assessment of the methodological quality of the trials and data extraction were conducted in duplicate and independently by two review authors. Results were expressed as random-effects models using standardised mean differences for continuous data and risk ratios for dichotomous data with 95% confidence intervals.

# Interventions for the prevention and treatment of herpes simplex virus in patients being treated for cancer

Anne-Marie Glenny[1], Luisa M Fernandez Mauleffinch[1], Sue Pavitt[2], Tanya Walsh[3]

[1]Cochrane Oral Health Group, MANDEC, School of Dentistry, The University of Manchester, Manchester, UK. [2]Clinical Trials Research Unit, University of Leeds, Leeds, UK. [3]School of Dentistry, The University of Manchester, Manchester, UK

Contact address: Anne-Marie Glenny, Cochrane Oral Health Group, MANDEC, School of Dentistry, The University of Manchester, Higher Cambridge Street, Manchester, M15 6FH, UK. a.glenny@manchester.ac.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New, published in Issue 1, 2009.
**Review content assessed as up-to-date:** 9 November 2008.

**Citation:** Glenny AM, Fernandez Mauleffinch LM, Pavitt S, Walsh T. Interventions for the prevention and treatment of herpes simplex virus in patients being treated for cancer. *Cochrane Database of Systematic Reviews* 2009, Issue 1. Art. No.: CD006706. DOI: 10.1002/14651858.CD006706.pub2.



## ABSTRACT

### Background

Treatment of cancer is increasingly effective, but associated with oral complications such as mucositis, fungal infections, bacterial infections and viral infections such as the herpes simplex virus (HSV).

### Objectives

To examine the effects of interventions for the prevention or treatment or both, of herpes simplex virus in patients receiving treatment for cancer.

### Search methods

We searched the following databases: Cochrane Oral Health Group's Trials Register, CENTRAL, MEDLINE, EMBASE, CINAHL, CANCERLIT, SIGLE and LILACS. The reference list of all related review articles and articles considered to be potentially relevant were checked for further trials. Authors of identified trials and known specialists in the field were also contacted in an attempt to identify any additional published or unpublished trials. Date of most recent search: November 2008.

### Selection criteria

All randomised controlled trials comparing interventions for the prevention or treatment or both of HSV infection in people being treated for cancer. Outcomes were presence/absence of clinical/culture positive HSV infections (prevention), time to complete healing of lesions (treatment), duration of viral shedding, recurrence of lesions, relief of pain, amount of analgesia, duration of hospital stay, cost of oral care, patient quality of life and adverse effects.

### Data collection and analysis

Data were independently extracted, in duplicate, by two review authors. Authors were contacted for details of randomisation, blindness and sample demographics where necessary. Quality assessment was carried out on randomisation, blindness, withdrawals and selective reporting. The Cochrane Collaboration's statistical guidelines were followed and risk ratio (RR) values were calculated using random-effects models.

# Interventions for the treatment of oral cavity and oropharyngeal cancer: chemotherapy

Susan Furness[1], Anne-Marie Glenny[1], Helen V Worthington[1], Sue Pavitt[2], Richard Oliver[3], Jan E Clarkson[4], Michaelina Macluskey[5], Kelvin KW Chan[6], David I Conway[7]

[1]Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Manchester, UK. [2]Leeds Institute of Health Sciences, University of Leeds, Leeds, UK. [3]RED (Research and Education in Dentistry), Shrewsbury, UK. [4]Dental Health Services & Research Unit, University of Dundee, Dundee, UK. [5]Unit of Oral Surgery and Medicine, University of Dundee, Dundee, UK. [6]Princess Margaret Hospital, Toronto, Canada. [7]Glasgow Dental School, University of Glasgow, Glasgow, UK

Contact address: Susan Furness, Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Coupland III Building, Oxford Rd, Manchester, M13 9PL, UK. Susan.Furness@manchester.ac.uk. suefurness@gmail.com.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New search for studies and content updated (conclusions changed), published in Issue 4, 2011.
**Review content assessed as up-to-date:** 27 February 2011.

**Citation:** Furness S, Glenny AM, Worthington HV, Pavitt S, Oliver R, Clarkson JE, Macluskey M, Chan KKW, Conway DI. Interventions for the treatment of oral cavity and oropharyngeal cancer: chemotherapy. *Cochrane Database of Systematic Reviews* 2011, Issue 4. Art. No.: CD006386. DOI: 10.1002/14651858.CD006386.pub3.



## ABSTRACT

### Background

Oral cavity and oropharyngeal cancers are frequently described as part of a group of oral cancers or head and neck cancer. Treatment of oral cavity cancer is generally surgery followed by radiotherapy, whereas oropharyngeal cancers, which are more likely to be advanced at the time of diagnosis, are managed with radiotherapy or chemoradiation. Surgery for oral cancers can be disfiguring and both surgery and radiotherapy have significant functional side effects, notably impaired ability to eat, drink and talk. The development of new chemotherapy agents, new combinations of agents and changes in the relative timing of surgery, radiotherapy, and chemotherapy treatments may potentially bring about increases in both survival and quality of life for this group of patients.

### Objectives

To determine whether chemotherapy, in addition to radiotherapy and/or surgery for oral cavity and oropharyngeal cancer results in improved survival, disease free survival, progression free survival, locoregional control and reduced recurrence of disease. To determine which regimen and time of administration (induction, concomitant or adjuvant) is associated with better outcomes.

### Search methods

Electronic searches of the Cochrane Oral Health Group's Trials Register, CENTRAL, MEDLINE, EMBASE, AMED were undertaken on 1st December 2010. Reference lists of recent reviews and included studies were also searched to identify further trials.

### Selection criteria

Randomised controlled trials where more than 50% of participants had primary tumours in the oral cavity or oropharynx, and which compared the addition of chemotherapy to other treatments such as radiotherapy and/or surgery, or compared two or more chemotherapy regimens or modes of administration, were included.

# Interventions for preventing oral candidiasis for patients with cancer receiving treatment

Jan E Clarkson[1], Helen V Worthington[2], Tim OB Eden[3]

[1]Dental Health Services Research Unit, University of Dundee, Dundee, UK. [2]Cochrane Oral Health Group, MANDEC, School of Dentistry, The University of Manchester, Manchester, UK. [3]Young Oncology Unit, Christie Hospital NHS Trust, Manchester, UK

Contact address: Jan E Clarkson, Dental Health Services Research Unit, University of Dundee, The Mackenzie Building, Kirsty Semple Way, Dundee, DD2 4BF, UK. j.e.clarkson@chs.dundee.ac.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New search for studies and content updated (no change to conclusions), published in Issue 4, 2009.
**Review content assessed as up-to-date:** 4 August 2009.

**Citation:** Clarkson JE, Worthington HV, Eden TOB. Interventions for preventing oral candidiasis for patients with cancer receiving treatment. *Cochrane Database of Systematic Reviews* 2007, Issue 1. Art. No.: CD003807. DOI: 10.1002/14651858.CD003807.pub3.



## ABSTRACT

### Background

Treatment of cancer is increasingly more effective but is associated with short and long term side effects. Oral side effects remain a major source of illness despite the use of a variety of agents to prevent and treat them. One of these side effects is oral candidiasis.

### Objectives

To assess the effectiveness of interventions (which may include placebo or no treatment) for the prevention of oral candidiasis for patients with cancer receiving chemotherapy or radiotherapy or both.

### Search methods

Computerised searches of Cochrane Oral Health Group and PaPaS Trials Registers, CENTRAL, MEDLINE, EMBASE, CINAHL, CANCERLIT, SIGLE and LILACS were undertaken.

Reference lists from relevant articles were searched and the authors of eligible trials were contacted to identify trials and obtain additional information.

Date of the most recent searches: 3 August 2009: CENTRAL (*The Cochrane Library* 2009, Issue 3).

### Selection criteria

Trials were selected if they met the following criteria: design - random allocation of participants; participants - anyone receiving chemotherapy or radiotherapy treatment for cancer; interventions - agents prescribed to prevent oral candidiasis; primary outcome - prevention of oral candidiasis.

### Data collection and analysis

Data were recorded on the following secondary outcomes if present: relief of pain, amount of analgesia, relief of dysphagia, incidence of systemic infection, duration of stay in hospital (days), cost of oral care, patient quality of life, death, use of empirical antifungal treatment, toxicity and compliance.

Information regarding methods, participants, interventions, outcome measures and results were independently extracted, in duplicate, by two review authors. The Cochrane Collaboration statistical guidelines were followed and risk ratios (RR) calculated using random-effects models. Potential sources of heterogeneity were examined in random-effects metaregression analyses.

# Oral hygiene care for critically ill patients to prevent ventilator-associated pneumonia

Zongdao Shi[1], Huixu Xie[1], Ping Wang[2], Qi Zhang[3], Yan Wu[4], E Chen[5], Linda Ng[6], Helen V Worthington[7], Ian Needleman[8], Susan Furness[7]

[1]Department of Oral and Maxillofacial Surgery, State Key Laboratory of Oral Diseases, West China College of Stomatology, Sichuan University, Chengdu, China. [2]Department of Dental Implantation, West China College of Stomatology, Sichuan University, Chengdu, China. [3]Department of Oral Implantology, State Key Laboratory of Oral Diseases, West China College of Stomatology, Sichuan University, Chengdu, China. [4]Department of Orthodontics, Chongqing Medical University, Chongqing, China. [5]Department of Paediatric Dentistry, West China College of Stomatology, Sichuan University, Chengdu, China. [6]School of Nursing and Midwifery, University of Queensland, South Brisbane, Australia. [7]Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Manchester, UK. [8]Unit of Periodontology and International Centre for Evidence-Based Oral Healthcare, UCL Eastman Dental Institute, London, UK

Contact address: Susan Furness, Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Coupland III Building, Oxford Road, Manchester, M13 9PL, UK. Susan.Furness@manchester.ac.uk. suefurness@gmail.com.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New, published in Issue 8, 2013.
**Review content assessed as up-to-date:** 14 January 2013.

**Citation:** Shi Z, Xie H, Wang P, Zhang Q, Wu Y, Chen E, Ng L, Worthington HV, Needleman I, Furness S. Oral hygiene care for critically ill patients to prevent ventilator-associated pneumonia. *Cochrane Database of Systematic Reviews* 2013, Issue 8. Art. No.: CD008367. DOI: 10.1002/14651858.CD008367.pub2.



## ABSTRACT

### Background

Ventilator-associated pneumonia (VAP) is defined as pneumonia developing in persons who have received mechanical ventilation for at least 48 hours. VAP is a potentially serious complication in these patients who are already critically ill. Oral hygiene care (OHC), using either a mouthrinse, gel, toothbrush, or combination, together with aspiration of secretions may reduce the risk of VAP in these patients.

### Objectives

To assess the effects of OHC on the incidence of VAP in critically ill patients receiving mechanical ventilation in intensive care units (ICUs) in hospitals.

### Search methods

We searched the Cochrane Oral Health Group's Trials Register (to 14 January 2013), CENTRAL (*The Cochrane Library* 2012, Issue 12), MEDLINE (OVID) (1946 to 14 January 2013), EMBASE (OVID) (1980 to 14 January 2013), LILACS (BIREME) (1982 to 14 January 2013), CINAHL (EBSCO) (1980 to 14 January 2013), Chinese Biomedical Literature Database (1978 to 14 January 2013), China National Knowledge Infrastructure (1994 to 14 January 2013), Wan Fang Database (January 1984 to 14 January 2013), OpenGrey and ClinicalTrials.gov (to 14 January 2013). There were no restrictions regarding language or date of publication.

### Selection criteria

We included randomised controlled trials (RCTs) evaluating the effects of OHC (mouthrinse, swab, toothbrush or combination) in critically ill patients receiving mechanical ventilation.

# Arthrocentesis and lavage for treating temporomandibular joint disorders

Chunlan Guo[1], Zongdao Shi[2], Peter Revington[3]

[1]Dentistry Department, Peking Union Medical College Hospital, Beijing, China. [2]Department of Oral and Maxillofacial Surgery, West China College of Stomatology, Sichuan University, Chengdu, China. [3]Department of Maxillofacial Surgery, Frenchay Hospital, Bristol, UK

Contact address: Chunlan Guo, Dentistry Department, Peking Union Medical College Hospital, 41# Da Mucang Hutong, Xicheng District, Beijing, 100032, China. lynngch@yahoo.com.cn. lynngch@tom.com.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New, published in Issue 4, 2009.
**Review content assessed as up-to-date:** 3 August 2009.

**Citation:** Guo C, Shi Z, Revington P. Arthrocentesis and lavage for treating temporomandibular joint disorders. *Cochrane Database of Systematic Reviews* 2009, Issue 4. Art. No.: CD004973. DOI: 10.1002/14651858.CD004973.pub2.



## ABSTRACT

### Background

Temporomandibular joint disorders are important oral health problems, reducing the quality of life of sufferers. It has been estimated that approximately 20% to 30% of the adult population will experience temporomandibular joint dysfunction. Arthrocentesis and lavage has been used to treat temporomandibular joint disorders for about 10 years, but the clinical effectiveness of the therapy has not been summarized in the form of a systematic review.

### Objectives

To assess the effectiveness and complications of arthrocentesis and lavage for the treatment of temporomandibular joint disorders compared with controlled interventions.

### Search methods

The Cochrane Oral Health Group's Trials Register (to August 2009), CENTRAL (*The Cochrane Library* 2009, Issue 3), MEDLINE (1950 to August 2009), EMBASE (1980 to August 2009), OpenSIGLE (to August 2009), CBMdisc (1981 to 2007 (in Chinese)) and Chinese Medical Library were searched. All the Chinese professional journals in the oral health field were handsearched and conference proceedings consulted. There was no language restriction.

### Selection criteria

All randomised controlled trials (RCTs) (including quasi-randomised clinical trials) aiming to test the therapeutic effects of arthrocentesis and lavage for treating temporomandibular joint disorders.

### Data collection and analysis

Two review authors independently extracted data, and three review authors independently assessed the risk of bias of included trials. The first authors of the selected articles were contacted for additional information.

# Hyaluronate for temporomandibular joint disorders

Zongdao Shi[1], Chunlan Guo[2], Manal Awad[3]

[1]Department of Oral and Maxillofacial Surgery, West China College of Stomatology, Sichuan University, Chengdu, China. [2]Dentistry Department, Peking Union Medical College Hospital, Beijing, China. [3]College of Health Sciences, American University of Sharjah, Sharjah, United Arab Emirates

Contact address: Zongdao Shi, Department of Oral and Maxillofacial Surgery, West China College of Stomatology, Sichuan University, No 14, 3rd section, Renmin Nan Road, Chengdu, Sichuan Province, 610041, China. shizd0664@yahoo.com.cn. shizd0664@vip.sina.com.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 1, 2009.
**Review content assessed as up-to-date:** 13 November 2002.

**Citation:** Shi Z, Guo C, Awad M. Hyaluronate for temporomandibular joint disorders. *Cochrane Database of Systematic Reviews* 2003, Issue 1. Art. No.: CD002970. DOI: 10.1002/14651858.CD002970.



## ABSTRACT

### Background

Temporomandibular joint disorders (TMD) refer to a group of heterogeneous pain and dysfunction conditions involving the masticatory system, reducing life quality of the sufferers. Intra-articular injection of hyaluronate for TMD has been used for nearly 2 decades but the clinical effectiveness of the agent has not been summarized in the form of a systematic review.

### Objectives

To assess the effectiveness of intra-articular injection of hyaluronate both alone and in combination with other remedies on temporomandibular joint disorders.

### Search methods

Intensive electronic and handsearches were carried out. The Cochrane Oral Health Group's Trials Register (September 2001), CENTRAL (*The Cochrane Library* 2001, Issue 3), MEDLINE (1966 to May 2001), PubMed (up to March 2002), EMBASE (1980 to August 2001), SIGLE (1980 to December 2001), CBMdisc (1983 to July 2001, in Chinese) and Chinese Medical Library were searched. All the Chinese professional journals in the oral health field were handsearched and conference proceedings consulted. There was no language restriction.

### Selection criteria

Randomized or quasi-randomized controlled trials (RCTs), with single or double blind design, testing the effectiveness of hyaluronate for patients with temporomandibular joint disorders.

### Data collection and analysis

Two review authors independently extracted data, and three review authors independently assessed the quality of included studies. The first authors of the selected articles were contacted for additional information.

# Interventions for the management of temporomandibular joint osteoarthritis

Raphael Freitas de Souza[1], Claudia H Lovato da Silva[1], Mona Nasser[2], Zbys Fedorowicz[3], Mohammed A Al-Muharraqi[4]

[1]Department of Dental Materials and Prosthodontics, Ribeirão Preto Dental School, University of São Paulo, Ribeirão Preto, Brazil. [2]Peninsula Dental School, University of Plymouth, Plymouth, UK. [3]UKCC (Bahrain Branch), Ministry of Health, Bahrain, Awali, Bahrain. [4]Maxillofacial Surgery Unit, Bahrain Defence Force - Royal Medical Services, Essa Town, Bahrain

Contact address: Raphael Freitas de Souza, Department of Dental Materials and Prosthodontics, Ribeirão Preto Dental School, University of São Paulo, Av. Do Café, s/n, Ribeirão Preto, São Paulo (SP), 14040-050, Brazil. raphaelfs@yahoo.com.br. raphael@forp.usp.br.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New, published in Issue 4, 2012.
**Review content assessed as up-to-date:** 26 September 2011.

**Citation:** de Souza RF, Lovato da Silva CH, Nasser M, Fedorowicz Z, Al-Muharraqi MA. Interventions for the management of temporomandibular joint osteoarthritis. *Cochrane Database of Systematic Reviews* 2012, Issue 4. Art. No.: CD007261. DOI: 10.1002/14651858.CD007261.pub2.



## ABSTRACT

### Background

Osteoarthritis (OA) is the most common form of arthritis of the temporomandibular joint (TMJ), and can often lead to severe pain in the orofacial region. Management options for TMJ OA include reassurance, occlusal appliances, physical therapy, medication in addition to several surgical modalities.

### Objectives

To investigate the effects of different surgical and non-surgical therapeutic options for the management of TMJ OA in adult patients.

### Search methods

We searched the following databases: the Cochrane Oral Health Group Trials Register (to 26 September 2011); CENTRAL (*The Cochrane Library* 2011, Issue 3); MEDLINE via OVID (1950 to 26 September 2011); EMBASE via OVID (1980 to 26 September 2011); and PEDro (1929 to 26 September 2011). There were no language restrictions.

### Selection criteria

Randomised controlled trials (RCTs) comparing any form of non-surgical or surgical therapy for TMJ OA in adults over the age of 18 with clinical and/or radiological diagnosis of TMJ OA according to the Research Diagnostic Criteria for Temporomandibular Disorders (RDC/TMD) guideline or compatible criteria.

Primary outcomes considered were pain/tenderness/discomfort in the TMJs or jaw muscles, self assessed range of mandibular movement and TMJ sounds. Secondary outcomes included the measurement of quality of life or patient satisfaction evaluated with a validated questionnaire, morphological changes of the TMJs assessed by imaging, TMJ sounds assessed by auscultation and any adverse effects.

### Data collection and analysis

Two review authors screened and extracted information and data from, and independently assessed the risk of bias in the included trials.

# Paracetamol for pain relief after surgical removal of lower wisdom teeth

Kiaran Weil[1], Lee Hooper[2], Zahid Afzal[3], Marco Esposito[4], Helen V Worthington[4], Arjen van Wijk[5], Paul Coulthard[6]

[1]Department of Oral and Maxillofacial Surgery, School of Dentistry, The University of Manchester, Manchester, UK. [2]Norwich Medical School, University of East Anglia, Norwich, UK. [3]Oral and Maxillofacial Surgery, City Hospital, Birmingham, UK. [4]Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Manchester, UK. [5]Social Dentistry and Behavioural Sciences, ACTA, Amsterdam, Netherlands. [6]Oral and Maxillofacial Surgery, School of Dentistry, The University of Manchester, Manchester, UK

Contact address: Kiaran Weil, Department of Oral and Maxillofacial Surgery, School of Dentistry, The University of Manchester, Higher Cambridge Street, Manchester, M15 6FH, UK. kiaran_weil@hotmail.com.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 4, 2012.
**Review content assessed as up-to-date:** 22 May 2007.

**Citation:** Weil K, Hooper L, Afzal Z, Esposito M, Worthington HV, van Wijk A, Coulthard P. Paracetamol for pain relief after surgical removal of lower wisdom teeth. *Cochrane Database of Systematic Reviews* 2007, Issue 3. Art. No.: CD004487. DOI: 10.1002/14651858.CD004487.pub2.



## ABSTRACT

### Background

Paracetamol has been commonly used for the relief of postoperative pain following oral surgery. In this review we investigated the optimal dose of paracetamol and the optimal time for drug administration to provide pain relief, taking into account the side effects of different doses of the drug. This will inform dentists and their patients of the best strategy for pain relief after the surgical removal of wisdom teeth.

### Objectives

To assess the beneficial and harmful effects of paracetamol for pain relief after surgical removal of lower wisdom teeth, compared to placebo, at different doses and administered postoperatively.

### Search methods

We searched the Cochrane Oral Health Group's Trials Register; the Cochrane Pain, Palliative and Supportive Care Group's Trials Register; CENTRAL; MEDLINE; EMBASE and the Current Controlled Trials Register. Handsearching included several dental journals. We checked the bibliographies of relevant clinical trials and review articles for studies outside the handsearched journals. We wrote to authors of the identified randomised controlled trials (RCTs), to manufacturers of analgesic pharmaceuticals, we searched personal references in an attempt to identify unpublished or ongoing RCTs. No language restriction was applied. The last electronic search was conducted on 24th August 2006.

### Selection criteria

Randomised, parallel group, placebo controlled, double blind clinical trials of paracetamol for acute pain, following third molar surgery.

# Psychosocial interventions for the management of chronic orofacial pain

Vishal R Aggarwal[1], Karina Lovell[2], Sarah Peters[3], Hanieh Javidi[1], Amy Joughin[1], Joanna Goldthorpe[1]

[1]Oral Health Unit, School of Dentistry, The University of Manchester, Manchester, UK. [2]School of Nursing, Midwifery and Social Work, The University of Manchester, Manchester, UK. [3]School of Psychological Sciences, The University of Manchester, Manchester, UK

Contact address: Vishal R Aggarwal, Oral Health Unit, National Primary Care Research and Development Centre, School of Dentistry, The University of Manchester, Higher Cambridge Street, Manchester, M15 6FH, UK. vishal.r.aggarwal@manchester.ac.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New, published in Issue 11, 2011.
**Review content assessed as up-to-date:** 19 September 2011.

**Citation:** Aggarwal VR, Lovell K, Peters S, Javidi H, Joughin A, Goldthorpe J. Psychosocial interventions for the management of chronic orofacial pain. *Cochrane Database of Systematic Reviews* 2011, Issue 11. Art. No.: CD008456. DOI: 10.1002/14651858.CD008456.pub2.



## ABSTRACT

### Background

Psychosocial factors have a role in the onset of chronic orofacial pain. However, current management involves invasive therapies like occlusal adjustments and splints which lack an evidence base.

### Objectives

To determine the efficacy of non-pharmacologic psychosocial interventions for chronic orofacial pain.

### Search methods

The following electronic databases were searched: the Cochrane Oral Health Group Trials Register (to 25 October 2010), the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2010, Issue 4), MEDLINE via OVID (1950 to 25 October 2010), EMBASE via OVID (1980 to 25 October 2010) and PsycINFO via OVID (1950 to 25 October 2010). There were no restrictions regarding language or date of publication.

### Selection criteria

Randomised controlled trials which included non-pharmacological psychosocial interventions for adults with chronic orofacial pain compared with any other form of treatment (e.g. usual care like intraoral splints, pharmacological treatment and/or physiotherapy).

### Data collection and analysis

Data were independently extracted in duplicate. Trial authors were contacted for details of randomisation and loss to follow-up, and also to provide means and standard deviations for outcome measures where these were not available. Risk of bias was assessed and disagreements between review authors were discussed and another review author involved where necessary.

# Root coverage procedures for the treatment of localised recession-type defects

Leandro Chambrone[1], Flávia Sukekava[1], Maurício G Araújo[2], Francisco E Pustiglioni[1], Luiz Armando Chambrone[3], Luiz A Lima[1]

[1]Department of Periodontology, University of São Paulo, São Paulo, Brazil. [2]Department of Periodontology, State University of Maringá, Maringá, Brazil. [3]Department of Periodontology, Methodist University of São Paulo, São Paulo, Brazil

Contact address: Leandro Chambrone, Department of Periodontology, University of São Paulo, Av. Prof. Lineu Prestes, 2227 Cidade Universitária, São Paulo, SP, 05508-000, Brazil. chambrone@usp.br.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New, published in Issue 2, 2009.
**Review content assessed as up-to-date:** 25 January 2009.

**Citation:** Chambrone L, Sukekava F, Araújo MG, Pustiglioni FE, Chambrone LA, Lima LA. Root coverage procedures for the treatment of localised recession-type defects. *Cochrane Database of Systematic Reviews* 2009, Issue 2. Art. No.: CD007161. DOI: 10.1002/14651858.CD007161.pub2.



## ABSTRACT

### Background

Gingival recession is defined as the oral exposure of the root surface due to a displacement of the gingival margin apical to the cemento-enamel junction and it is regularly linked to the deterioration of dental aesthetics. Successful treatment of recession-type defects is based on the use of predictable periodontal plastic surgery (PPS) procedures.

### Objectives

To evaluate the effectiveness of different root coverage procedures in the treatment of recession-type defects.

### Search methods

The Cochrane Oral Health Group's Trials Register, CENTRAL, MEDLINE and EMBASE were searched up to October 2008. The main international periodontal journals were handsearched. There were no restrictions with regard to publication status or language of publication.

### Selection criteria

Only randomised controlled clinical trials (RCTs) of at least 6 months' duration evaluating recession areas (Miller's Class I or II $\geq$ 3 mm) and that were treated by means of PPS procedures were included.

### Data collection and analysis

Screening of eligible studies, assessment of the methodological quality of the trials and data extraction were conducted independently and in duplicate. Authors were contacted for any missing information. Results were expressed as random-effects models using mean differences for continuous outcomes and risk ratios for dichotomous outcomes with 95% confidence intervals.

### Main results

Twenty-four RCTs provided data. Only one trial was considered to be at low risk of bias. The remaining trials were considered to be at high risk of bias.

# Different powered toothbrushes for plaque control and gingival health

Scott A Deacon[1], Anne-Marie Glenny[2], Chris Deery[3], Peter G Robinson[4], Mike Heanue[5], A Damien Walmsley[6], William C Shaw[7]

[1]South West Cleft Unit, Frenchay Hospital, Bristol, UK. [2]Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Manchester, UK. [3]Department of Oral Health and Development, University of Sheffield, Sheffield, UK. [4]Department of Dental Public Health, School of Clinical Dentistry, University of Sheffield, Sheffield, UK. [5]Sheffield, UK. [6]Department of Prosthetic Dentistry, School of Dentistry, Birmingham, UK. [7]Department of Orthodontics, School of Dentistry, The University of Manchester, Manchester, UK

Contact address: Scott A Deacon, South West Cleft Unit, Frenchay Hospital, Frenchay Park Road, Bristol, BS16 1LE, UK. scott.deacon@nbt.nhs.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 6, 2011.
**Review content assessed as up-to-date:** 24 March 2011.

**Citation:** Deacon SA, Glenny AM, Deery C, Robinson PG, Heanue M, Walmsley AD, Shaw WC. Different powered toothbrushes for plaque control and gingival health. *Cochrane Database of Systematic Reviews* 2010, Issue 12. Art. No.: CD004971. DOI: 10.1002/14651858.CD004971.pub2.



## ABSTRACT

### Background

Powered brushes were first introduced commercially in the 1960s. A recent systematic review suggested the superiority of certain modes of powered over manual toothbrushing for plaque and gingivitis reduction. That review did not allow for direct comparison between different modes of powered toothbrush.

### Objectives

To compare different modes of powered toothbrushing against each other for plaque reduction and the health of the gingivae. Other factors to be assessed were calculus and stain removal, cost, dependability and adverse effects.

### Search methods

The following databases were searched: Cochrane Oral Health Group's Trials Register (to 26 July 2010); Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2010, Issue 3); MEDLINE via OVID (1950 to 26 July 2010); EMBASE via OVID (1980 to 26 July 2010); CINAHL via EBSCO (1982 to 26 July 2010). There were no language restrictions.

### Selection criteria

Trials were considered for inclusion with the following criteria: random allocation of participants; no compromised manual dexterity; unsupervised powered toothbrushing for at least 4 weeks. The primary outcomes were the plaque and gingivitis scores after powered toothbrush use during trial period.

### Data collection and analysis

Data extraction was performed independently and in duplicate. The authors of trials were contacted to provide missing data where possible. The effect measure for each meta-analysis was the standardised mean difference (SMD) with 95% confidence intervals (CI) using the random-effects model. Potential sources of heterogeneity were assessed.

# Treatment of periodontal disease for glycaemic control in people with diabetes

Terry C Simpson[1], Ian Needleman[2], Sarah H Wild[3], David R Moles[4], Edward J Mills[5]

[1]Edinburgh Dental Institute, University of Edinburgh, Edinburgh, UK. [2]Unit of Periodontology and International Centre for Evidence-Based Oral Healthcare, UCL Eastman Dental Institute, London, UK. [3]Centre for Public Health and Primary Care Research, Public Health Sciences, University of Edinburgh, Edinburgh, UK. [4]Oral Health Services Research, Peninsula Dental School, Plymouth, UK. [5]Faculty of Health Sciences, University of Ottawa, Ottawa, Canada

Contact address: Terry C Simpson, Edinburgh Dental Institute, University of Edinburgh, Lauriston Place, Edinburgh, Scotland, EH3 8HA, UK. t.c.simpson@oriel.oxon.org.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New, published in Issue 5, 2010.
**Review content assessed as up-to-date:** 23 March 2010.

**Citation:** Simpson TC, Needleman I, Wild SH, Moles DR, Mills EJ. Treatment of periodontal disease for glycaemic control in people with diabetes. *Cochrane Database of Systematic Reviews* 2010, Issue 5. Art. No.: CD004714. DOI: 10.1002/14651858.CD004714.pub2.



## ABSTRACT

### Background

Glycaemic control is a key issue in the care of people with diabetes mellitus (DM). Some studies have suggested a bidirectional relationship between glycaemic control and periodontal disease.

### Objectives

To investigate the relationship between periodontal therapy and glycaemic control in people with diabetes and to identify the appropriate future strategy for this question.

### Search methods

A comprehensive approach was adopted employing handsearching; searching of electronic databases including the Cochrane Oral Health Group's Trials Register, CENTRAL, MEDLINE, EMBASE, CINAHL, ZETOC, ISI Web of Knowledge and LILACS; contact with appropriate non-English language healthcare professionals; authors and organisations. The final date for searching for studies was 24th March 2010.

### Selection criteria

This review studied randomised controlled trials of people with Type 1 or 2 diabetes mellitus (DM) with a diagnosis of periodontitis. Suitable interventions included mechanical periodontal therapy with or without adjunctives and oral hygiene education.

### Data collection and analysis

The titles and abstracts of 690 papers were examined by two review authors independently. Ultimately, seven studies were included and 19 excluded after full text scrutiny. All trials were assessed for risk of bias.

**Apêndice 3 –** Abstract das RSs do grupo de Odontologia da Colaboração Cocrhane com desfechos que contraindicam a intervenção com recomendação de novos estudos (B1).

# Antibiotics to prevent complications following tooth extractions

Giovanni Lodi[1], Lara Figini[2], Andrea Sardella[1], Antonio Carrassi[1], Massimo Del Fabbro[3], Susan Furness[4]

[1]Dipartimento di Scienze Biomediche, Chirurgiche e Odontoiatriche, Università degli Studi di Milano, Milan, Italy. [2]Milan, Italy. [3]Dipartimento di Scienze Biomediche, Chirurgiche e Odontoiatriche, Università degli Studi di Milano, IRCCS Istituto Ortopedico Galeazzi, Milan, Italy. [4]Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Manchester, UK

Contact address: Giovanni Lodi, Dipartimento di Scienze Biomediche, Chirurgiche e Odontoiatriche, Università degli Studi di Milano, Via Beldiletto 1/3, Milan, 20142, Italy. giovanni.lodi@unimi.it.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), comment added to review, published in Issue 5, 2013.
**Review content assessed as up-to-date:** 25 January 2012.

**Citation:** Lodi G, Figini L, Sardella A, Carrassi A, Del Fabbro M, Furness S. Antibiotics to prevent complications following tooth extractions. *Cochrane Database of Systematic Reviews* 2012, Issue 11. Art. No.: CD003811. DOI: 10.1002/14651858.CD003811.pub2.



## ABSTRACT

### Background

The most frequent indications for tooth extractions are dental caries and periodontal infections, and these extractions are generally done by general dental practitioners. Antibiotics may be prescribed to patients undergoing extractions to prevent complications due to infection.

### Objectives

To determine the effect of antibiotic prophylaxis on the development of infectious complications following tooth extractions.

### Search methods

The following electronic databases were searched: the Cochrane Oral Health Group's Trials Register (to 25 January 2012), the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2012, Issue 1), MEDLINE via OVID (1948 to 25 January 2012), EMBASE via OVID (1980 to 25 January 2012) and LILACS via BIREME (1982 to 25 January 2012). There were no restrictions regarding language or date of publication.

### Selection criteria

We included randomised double-blind placebo-controlled trials of antibiotic prophylaxis in patients undergoing tooth extraction(s) for any indication.

### Data collection and analysis

Two review authors independently assessed risk of bias for the included studies and extracted data. We contacted trial authors for further details where these were unclear. For dichotomous outcomes we calculated risk ratios (RR) and 95% confidence intervals (CI) using random-effects models. For continuous outcomes we used mean differences (MD) with 95% CI using random-effects models. We examined potential sources of heterogeneity. The quality of the body of evidence has been assessed using the GRADE tool.

# Adhesives for bonded molar tubes during fixed brace treatment

Declan T Millett[1], Nicky A Mandall[2], Rye CR Mattick[3], Joy Hickman[4], Anne-Marie Glenny[5]

[1]Oral Health and Development, Cork University Dental School and Hospital, Cork, Ireland. [2]Orthodontic Department, Tameside General Hospital, Ashton under Lyne, UK. [3]Department of Orthodontics, Newcastle Dental Hospital, Newcastle upon Tyne, UK. [4]Department of Orthodontics, Glan Clwyd Hospital, Rhyl, UK. [5]Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Manchester, UK

Contact address: Declan T Millett, Oral Health and Development, Cork University Dental School and Hospital, University College, Cork, Ireland. d.millett@ucc.ie.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New, published in Issue 6, 2011.
**Review content assessed as up-to-date:** 12 April 2011.

**Citation:** Millett DT, Mandall NA, Mattick RCR, Hickman J, Glenny AM. Adhesives for bonded molar tubes during fixed brace treatment. *Cochrane Database of Systematic Reviews* 2011, Issue 6. Art. No.: CD008236. DOI: 10.1002/14651858.CD008236.pub2.



## ABSTRACT

### Background

Orthodontic treatment involves using fixed or removable appliances (dental braces) to correct the positions of teeth. The success of a fixed appliance depends partly on the metal attachments (brackets and bands) being glued to the teeth so that they do not become detached during treatment. Brackets (metal squares) are usually attached to teeth other than molars, where bands (metal rings that go round each tooth) are more commonly used. Orthodontic tubes (stainless steel tubes that allow wires to pass through them), are typically welded to bands but they may also be glued directly (bonded) to molars. Failure of brackets, bands and bonded molar tubes slows down the progress of treatment with a fixed appliance. It can also be costly in terms of clinical time, materials and time lost from education/work for the patient.

### Objectives

To evaluate the effectiveness of the adhesives used to attach bonded molar tubes, and the relative effectiveness of the adhesives used to attach bonded molar tubes versus adhesives used to attach bands, during fixed appliance treatment, in terms of:

(1) how often the tubes (or bands) come off during treatment; and

(2) whether they protect the bonded (or banded) teeth against decay.

### Search methods

The following electronic databases were searched: the Cochrane Oral Health Group Trials Register (to 16 December 2010), the Cochrane Central Register of Controlled Clinical Trials (CENTRAL) (*The Cochrane Library* 2010, Issue 3), MEDLINE via OVID (1950 to 16 December 2010) and EMBASE via OVID (1980 to 16 December 2010). There were no restrictions regarding language or date of publication.

# Orthodontic treatment for prominent upper front teeth in children

Jayne E Harrison[1], Kevin D O'Brien[2], Helen V Worthington[3]

[1]Orthodontic Department, Liverpool University Dental Hospital, Liverpool, UK. [2]Orthodontics, School of Dentistry, The University of Manchester, Manchester, UK. [3]Cochrane Oral Health Group, MANDEC, School of Dentistry, The University of Manchester, Manchester, UK

Contact address: Jayne E Harrison, Orthodontic Department, Liverpool University Dental Hospital, Pembroke Place, Liverpool, Merseyside, L3 5PS, UK. Jayne.Harrison@rlbuht.nhs.uk. jeharrison@hotmail.co.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 4, 2008.
**Review content assessed as up-to-date:** 14 May 2007.

**Citation:** Harrison JE, O'Brien KD, Worthington HV. Orthodontic treatment for prominent upper front teeth in children. *Cochrane Database of Systematic Reviews* 2007, Issue 3. Art. No.: CD003452. DOI: 10.1002/14651858.CD003452.pub2.



## ABSTRACT

### Background

Prominent upper front teeth are an important and potentially harmful type of orthodontic problem. This condition develops when the child's permanent teeth erupt and children are often referred to an orthodontist for treatment with dental braces to reduce the prominence of the teeth. If a child is referred at a young age, the orthodontist is faced with the dilemma of whether to treat the patient early or to wait until the child is older and provide treatment in early adolescence. When treatment is provided during adolescence the orthodontist may provide treatment with various orthodontic braces, but there is currently little evidence of the relative effectiveness of the different braces that can be used.

### Objectives

To assess the effectiveness of orthodontic treatment for prominent upper front teeth, when this treatment is provided when the child is 7 to 9 years old or when they are in early adolescence or with different dental braces or both.

### Search methods

The Cochrane Oral Health Group's Trials Register, CENTRAL, MEDLINE and EMBASE were searched. The handsearching of the key international orthodontic journals was updated to December 2006. There were no restrictions in respect to language or status of publication.

Date of most recent searches: February 2007.

### Selection criteria

Trials were selected if they met the following criteria:

design - randomised and controlled clinical trials;

participants - children or adolescents (age ≤ 16 years) or both receiving orthodontic treatment to correct prominent upper front teeth;

interventions - active: any orthodontic brace or head-brace, control: no or delayed treatment or another active intervention;

primary outcomes - prominence of the upper front teeth, relationship between upper and lower jaws;

# Fluoride supplements (tablets, drops, lozenges or chewing gums) for preventing dental caries in children

Stéphanie Tubert-Jeannin[1], Candy Auclair[2], Emmanuel Amsallem[3], Paul Tramini[4], Laurent Gerbaud[2], Christiane Ruffieux[5], Andreas G Schulte[6], Martin J Koch[6], Myriam Rège-Walther[7], Amid Ismail[8]

[1]Dental Public Health, Faculty of Dentistry, CHU of Clermont-Ferrand, University of Auvergne, Clermont-Ferrand, France. [2]Public Health, Hotel Dieu - CHU of Clermont-Ferrand, University of Auvergne, Clermont-Ferrand, France. [3]Quality - Evaluation - Etudes, CETAF, Saint-Etienne Cedex 02, France. [4]Public Health, Faculty of Dentistry, Montpellier, France. [5]Health Care Evaluation Unit & Clinical Epidemiology Centre, Institute of Social and Preventive Medicine, Lausanne, Switzerland. [6]Department of Conservative Dentistry, Heidelberg University Dental School, Heidelberg, Germany. [7]Institute of Social and Preventive Medicine, Centre Hospitalier Universitaire Vaudois and University of Lausanne, Lausanne, Switzerland. [8]Kornberg School of Dental Medicine, Temple University, Philadelphia, Pennsylvania, USA

Contact address: Stéphanie Tubert-Jeannin, Dental Public Health, Faculty of Dentistry, CHU of Clermont-Ferrand, University of Auvergne, 11 Boulevard Charles de Gaulle, Clermont-Ferrand, 63000, France. stephanie.tubert@u-clermont1.fr.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New, published in Issue 12, 2011.
**Review content assessed as up-to-date:** 12 October 2011.

**Citation:** Tubert-Jeannin S, Auclair C, Amsallem E, Tramini P, Gerbaud L, Ruffieux C, Schulte AG, Koch MJ, Rège-Walther M, Ismail A. Fluoride supplements (tablets, drops, lozenges or chewing gums) for preventing dental caries in children. *Cochrane Database of Systematic Reviews* 2011, Issue 12. Art. No.: CD007592. DOI: 10.1002/14651858.CD007592.pub2.



## ABSTRACT

### Background

Dietary fluoride supplements were first introduced to provide systemic fluoride in areas where water fluoridation is not available. Since 1990, the use of fluoride supplements in caries prevention has been re-evaluated in several countries.

### Objectives

To evaluate the efficacy of fluoride supplements for preventing dental caries in children.

### Search methods

We searched the Cochrane Oral Health Group's Trials Register (to 12 October 2011), the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2011, Issue 3), MEDLINE via OVID (1950 to 12 October 2011), EMBASE via OVID (1980 to 12 October 2011), WHOLIS/PAHO/MEDCARIB/LILACS/BBO via BIREME (1982 to 12 October 2011), and Current Controlled Trials (to 12 October 2011). We handsearched reference lists of articles and contacted selected authors.

### Selection criteria

We included randomised or quasi-randomised controlled trials comparing, with minimum follow-up of 2 years, fluoride supplements (tablets, drops, lozenges) with no fluoride supplement or with other preventive measures such as topical fluorides in children less than 16 years of age at the start. The main outcome was caries increment measured by the change in decayed, missing and filled tooth surfaces (DMFS).

# Topical fluoride as a cause of dental fluorosis in children

May CM Wong[1], Anne-Marie Glenny[2], Boyd WK Tsang[1], Edward CM Lo[1], Helen V Worthington[2], Valeria CC Marinho[3]

[1]Dental Public Health, Faculty of Dentistry, The University of Hong Kong, Hong Kong, China. [2]Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Manchester, UK. [3]Clinical and Diagnostic Oral Sciences, Barts and The London School of Medicine and Dentistry, Queen Mary University of London, London, UK

Contact address: May CM Wong, Dental Public Health, Faculty of Dentistry, The University of Hong Kong, 3B20, 3/F, Prince Philip Dental Hospital, 34 Hospital Road, Hong Kong, China. mcmwong@hkucc.hku.hk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 6, 2010.
**Review content assessed as up-to-date:** 27 August 2009.

**Citation:** Wong MCM, Glenny AM, Tsang BWK, Lo ECM, Worthington HV, Marinho VCC. Topical fluoride as a cause of dental fluorosis in children. *Cochrane Database of Systematic Reviews* 2010, Issue 1. Art. No.: CD007693. DOI: 10.1002/14651858.CD007693.pub2.



## ABSTRACT

### Background

For many years, topical use of fluorides has gained greater popularity than systemic use of fluorides. A possible adverse effect associated with the use of topical fluoride is the development of dental fluorosis due to the ingestion of excessive fluoride by young children with developing teeth.

### Objectives

To describe the relationship between the use of topical fluorides in young children and the risk of developing dental fluorosis.

### Search strategy

Electronic search of the Cochrane Oral Health Group Trials Register, CENTRAL, MEDLINE, EMBASE, BIOSIS, Dissertation Abstracts and LILACS/BBO. Reference lists from relevant articles were searched. Date of the most recent searches: 9th March 09.

### Selection criteria

Randomised controlled trials (RCTs), quasi-RCTs, cohort studies, case-control studies and cross-sectional surveys, in which fluoride toothpastes, mouthrinses, gels, foams, paint-on solutions, and varnishes were compared to an alternative fluoride treatment, placebo or no intervention group. Children under the age of 6 years at the time topical fluorides were used.

### Data collection and analysis

Data from all included studies were extracted by two review authors. Risk ratios for controlled, prospective studies and odds ratios for case-control studies or cross-sectional surveys were extracted or calculated. Where both adjusted and unadjusted risk ratios or odds ratios were presented, the adjusted value was included in the meta-analysis.

### Main results

25 studies were included: 2 RCTs, 1 cohort study, 6 case-control studies and 16 cross-sectional surveys. Only one RCT was judged to be at low risk of bias. The other RCT and all observational studies were judged to be at moderate to high risk of bias. Studies were included in four intervention/exposure comparisons. A statistically significant reduction in fluorosis was found if brushing of a child's teeth with fluoride toothpaste commenced after the age of 12 months odds ratio 0.70 (random-effects: 95% confidence interval

# Operative caries management in adults and children

David Ricketts[1], Thomas Lamont[1], Nicola PT Innes[1], Edwina Kidd[2], Jan E Clarkson[3]

[1]Dundee Dental School, University of Dundee, Dundee, UK. [2]Department of Conservative Dentistry, King's College London Dental Institute, London, UK. [3]Dental Health Services & Research Unit, University of Dundee, Dundee, UK

Contact address: David Ricketts, Dundee Dental School, University of Dundee, Park Place, Dundee, Tayside, DD1 4HN, UK. d.n.j.ricketts@dundee.ac.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New search for studies and content updated (no change to conclusions), published in Issue 3, 2013.
**Review content assessed as up-to-date:** 12 December 2012.

**Citation:** Ricketts D, Lamont T, Innes NPT, Kidd E, Clarkson JE. Operative caries management in adults and children. *Cochrane Database of Systematic Reviews* 2013, Issue 3. Art. No.: CD003808. DOI: 10.1002/14651858.CD003808.pub3.



## ABSTRACT

### Background

The management of dental caries has traditionally involved removal of all soft demineralised dentine before a filling is placed. However, the benefits of complete caries removal have been questioned because of concerns about the possible adverse effects of removing all soft dentine from the tooth. Three groups of studies have also challenged the doctrine of complete caries removal by sealing caries into teeth using three different techniques. The first technique removes caries in stages over two visits some months apart, allowing the dental pulp time to lay down reparative dentine (the stepwise excavation technique). The second removes part of the dentinal caries and seals the residual caries into the tooth permanently (partial caries removal) and the third technique removes no dentinal caries prior to sealing or restoring (no dentinal caries removal). This is an update of a Cochrane review first published in 2006.

### Objectives

To assess the effects of stepwise, partial or no dentinal caries removal compared with complete caries removal for the management of dentinal caries in previously unrestored primary and permanent teeth.

### Search methods

The following electronic databases were searched: the Cochrane Oral Health Group's Trials Register (to 12 December 2012), the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2012, Issue 11), MEDLINE via OVID (1946 to 12 December 2012) and EMBASE via OVID (1980 to 12 December 2012). There were no restrictions regarding language or date of publication.

### Selection criteria

Parallel group and split-mouth randomised and quasi-randomised controlled trials comparing stepwise, partial or no dentinal caries removal with complete caries removal, in unrestored primary and permanent teeth were included.

### Data collection and analysis

Three review authors extracted data independently and in triplicate and assessed risk of bias. Trial authors were contacted where possible for information. We used standard methodological procedures exacted by The Cochrane Collaboration.

# Tongue scraping for treating halitosis

Trent L Outhouse[1], Rashad Al-Alawi[2], Zbys Fedorowicz[3], James V Keenan[4]

[1]Awali, Bahrain. [2]Periodontology, Ministry of Health Bahrain, Manama, Bahrain. [3]UKCC (Bahrain Branch), Ministry of Health, Bahrain, Awali, Bahrain. [4]Branch Dental Clinic London, US Navy, Beaconsfield, UK

Contact address: Trent L Outhouse, Box 25438, Awali, Bahrain. TLOuthouse@yahoo.com. tlouthouse@sig.med.navy.mil.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 4, 2008.
**Review content assessed as up-to-date:** 19 February 2006.

**Citation:** Outhouse TL, Al-Alawi R, Fedorowicz Z, Keenan JV. Tongue scraping for treating halitosis. *Cochrane Database of Systematic Reviews* 2006, Issue 2. Art. No.: CD005519. DOI: 10.1002/14651858.CD005519.pub2.



## ABSTRACT

### Background

Halitosis is used to describe any disagreeable odour of expired air regardless of its origin. Mouthwashes which disguise oral malodor are more socially acceptable and generally more popular than tongue scrapers.

### Objectives

To provide reliable evidence regarding the effectiveness of tongue scraping versus other interventions (including mouthwashes) to control halitosis.

### Search methods

We searched the following databases: Cochrane Oral Health Group Trials Register (to 15th September 2005); the Cochrane Central Register of Controlled Trials (*The Cochrane Library* 2005, Issue 3); MEDLINE (1966 to 15th September 2005); and EMBASE (1974 to 19th September 2005).

### Selection criteria

Randomized controlled trials comparing different methods of tongue cleaning to reduce mouth odour in adults with halitosis.

### Data collection and analysis

Clinical heterogeneity between the two included trials precluded pooling of data, therefore a descriptive summary is presented.

### Main results

This review included two trials involving 40 participants. Both trials were methodologically sound but included no data for the primary outcomes specified in this review. Secondary outcomes expressed as volatile sulfur compound (VSC) levels were assessed by a portable sulfide monitor in both trials. One trial showed reductions of VSC levels of 42% with the tongue cleaner, 40% with the tongue scraper and 33% with the toothbrush. Reduced VSC levels persisted longer with the tongue cleaner than the toothbrush and could not be detected for more than 30 minutes after the intervention in any of the groups. Differences were assessed by the Friedman and Wilcoxon signed rank tests with the level of significance set at $P < 0.05$. The second trial, in which differences in totaled rank values between groups were compared by the Dunn method $\alpha = 0.01$, showed a reduction of VSC levels compared with baseline measurements of 75% with the tongue scraper and 45% with the toothbrush. Adverse effects in one trial were nausea (60%) and trauma (10%) with the toothbrush and all participants receptive to using the tongue scraper. Based on the independent data from these two trials there was a statistically significant difference between the effectiveness of either the tongue cleaner or the tongue scraper in reducing VSC levels when compared with the toothbrush.

# Interventions for replacing missing teeth: hyperbaric oxygen therapy for irradiated patients who require dental implants

Marco Esposito[1], Maria Gabriella Grusovin[1], Satya Patel[1], Helen V Worthington[2], Paul Coulthard[1]

[1]Department of Oral and Maxillofacial Surgery, School of Dentistry, The University of Manchester, Manchester, UK. [2]Cochrane Oral Health Group, MANDEC, School of Dentistry, The University of Manchester, Manchester, UK

Contact address: Marco Esposito, Department of Oral and Maxillofacial Surgery, School of Dentistry, The University of Manchester, Higher Cambridge Street, Manchester, M15 6FH, UK. espositomarco@hotmail.com. marco.esposito@manchester.ac.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 4, 2008.
**Review content assessed as up-to-date:** 31 October 2007.

**Citation:** Esposito M, Grusovin MG, Patel S, Worthington HV, Coulthard P. Interventions for replacing missing teeth: hyperbaric oxygen therapy for irradiated patients who require dental implants. *Cochrane Database of Systematic Reviews* 2008, Issue 1. Art. No.: CD003603. DOI: 10.1002/14651858.CD003603.pub2.



## ABSTRACT

### Background

Dental implants offer one way to replace missing teeth. Patients who have undergone radiotherapy and those that have also undergone surgery for cancer in the head and neck region may benefit particularly from reconstruction with implants. Hyperbaric oxygen therapy (HBO) has been advocated to improve the success of implant treatment in patients who have undergone radiotherapy but this remains a controversial issue.

### Objectives

To compare success, morbidity, patient satisfaction and cost effectiveness of dental implant treatment carried out with and without HBO in irradiated patients.

### Search methods

We searched the Cochrane Oral Health Group's Trials Register, The Cochrane Central Register of Controlled Trials (CENTRAL), MEDLINE and EMBASE. Handsearching included several dental journals. We checked the bibliographies of relevant clinical trials and review articles for studies outside the handsearched journals. We wrote to authors of the identified randomised controlled trials (RCTs), to more than 55 oral implant manufacturers; we used personal contacts and we asked on an internet discussion group in an attempt to identify unpublished or ongoing RCTs. No language restriction was applied. The last electronic search was conducted on 13 June 2007.

### Selection criteria

Randomised controlled trials of HBO therapy for irradiated patients requiring dental implants.

### Data collection and analysis

Screening of eligible studies, assessment of the methodological quality of the trials and data extraction were conducted in duplicate and independently by two review authors. Results were expressed as random-effects models using mean differences for continuous outcomes and risk ratios for dichotomous outcomes with 95% confidence intervals.

# Antibiotics to prevent complications following tooth extractions

Giovanni Lodi[1], Lara Figini[2], Andrea Sardella[1], Antonio Carrassi[1], Massimo Del Fabbro[3], Susan Furness[4]

[1]Dipartimento di Scienze Biomediche, Chirurgiche e Odontoiatriche, Università degli Studi di Milano, Milan, Italy. [2]Milan, Italy. [3]Dipartimento di Scienze Biomediche, Chirurgiche e Odontoiatriche, Università degli Studi di Milano, IRCCS Istituto Ortopedico Galeazzi, Milan, Italy. [4]Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Manchester, UK

Contact address: Giovanni Lodi, Dipartimento di Scienze Biomediche, Chirurgiche e Odontoiatriche, Università degli Studi di Milano, Via Beldiletto 1/3, Milan, 20142, Italy. giovanni.lodi@unimi.it.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), comment added to review, published in Issue 5, 2013.
**Review content assessed as up-to-date:** 25 January 2012.

**Citation:** Lodi G, Figini L, Sardella A, Carrassi A, Del Fabbro M, Furness S. Antibiotics to prevent complications following tooth extractions. *Cochrane Database of Systematic Reviews* 2012, Issue 11. Art. No.: CD003811. DOI: 10.1002/14651858.CD003811.pub2.



## ABSTRACT

### Background

The most frequent indications for tooth extractions are dental caries and periodontal infections, and these extractions are generally done by general dental practitioners. Antibiotics may be prescribed to patients undergoing extractions to prevent complications due to infection.

### Objectives

To determine the effect of antibiotic prophylaxis on the development of infectious complications following tooth extractions.

### Search methods

The following electronic databases were searched: the Cochrane Oral Health Group's Trials Register (to 25 January 2012), the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2012, Issue 1), MEDLINE via OVID (1948 to 25 January 2012), EMBASE via OVID (1980 to 25 January 2012) and LILACS via BIREME (1982 to 25 January 2012). There were no restrictions regarding language or date of publication.

### Selection criteria

We included randomised double-blind placebo-controlled trials of antibiotic prophylaxis in patients undergoing tooth extraction(s) for any indication.

### Data collection and analysis

Two review authors independently assessed risk of bias for the included studies and extracted data. We contacted trial authors for further details where these were unclear. For dichotomous outcomes we calculated risk ratios (RR) and 95% confidence intervals (CI) using random-effects models. For continuous outcomes we used mean differences (MD) with 95% CI using random-effects models. We examined potential sources of heterogeneity. The quality of the body of evidence has been assessed using the GRADE tool.

**Apêndice 4 –** Abstract das RSs do grupo de Odontologia da Colaboração Cocrhane com desfechos ausência de evidências com recomendação de novos estudos (C1).

# Antibiotics for the prophylaxis of bacterial endocarditis in dentistry

Richard Oliver[1], Graham J Roberts[2], Lee Hooper[3], Helen V Worthington[4]

[1]Department of Oral and Maxillofacial Surgery, School of Dentistry, The University of Manchester, Manchester, UK. [2]Department of Paediatric Dentistry, Eastman Dental Institute, London, UK. [3]School of Medicine, Health Policy & Practice, University of East Anglia, Norwich, UK. [4]Cochrane Oral Health Group, MANDEC, School of Dentistry, The University of Manchester, Manchester, UK

Contact address: Richard Oliver, Department of Oral and Maxillofacial Surgery, School of Dentistry, The University of Manchester, Higher Cambridge Street, Manchester, M15 6FH, UK. richard.j.oliver@manchester.ac.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New search for studies and content updated (no change to conclusions), published in Issue 4, 2008.
**Review content assessed as up-to-date:** 23 July 2008.

**Citation:** Oliver R, Roberts GJ, Hooper L, Worthington HV. Antibiotics for the prophylaxis of bacterial endocarditis in dentistry. *Cochrane Database of Systematic Reviews* 2008, Issue 4. Art. No.: CD003813. DOI: 10.1002/14651858.CD003813.pub3.



## ABSTRACT

### Background

Infective endocarditis is a severe infection arising in the lining of the heart with a high mortality rate.

Many dental procedures cause bacteraemia and it was believed that this may lead to bacterial endocarditis (BE) in a few people. Guidelines in many countries have recommended that prior to invasive dental procedures antibiotics are administered to people at high risk of endocarditis. However, recent guidance by the National Institute for Health and Clinical Excellence (NICE) in England and Wales has recommended that antibiotics are not required.

### Objectives

To determine whether prophylactic antibiotic administration compared to no such administration or placebo before invasive dental procedures in people at increased risk of BE influences mortality, serious illness or endocarditis incidence.

### Search methods

The search strategy from the previous review was expanded and run on MEDLINE (1950 to June 2008) and adapted for use on the Cochrane Oral Health, Heart and Infectious Diseases Groups' Trials Registers, as well as the following databases: CENTRAL (*The Cochrane Library* 2008, Issue 2); EMBASE (1980 to June 2008); and the *meta*Register of Controlled Trials (to June 2008).

### Selection criteria

Due to the low incidence of BE it was anticipated that few if any trials would be located. For this reason, cohort and case-control studies were included where suitably matched control or comparison groups had been studied. The intervention was the administration of antibiotic compared to no such administration before a dental procedure in people with an increased risk of BE. Cohort studies would need to follow those at increased risk and assess outcomes following any invasive dental procedures, grouping by whether prophylaxis was received. Included case-control studies would need to match people who had developed endocarditis (and who were known to be at increased risk before undergoing an invasive dental procedure preceding the onset of endocarditis) with those at similar risk but who had not developed endocarditis. Outcomes of interest were: mortality or serious adverse event requiring hospital admission;

# Interventions for the treatment of burning mouth syndrome

Joanna M Zakrzewska[1], Heli Forssell[2], Anne-Marie Glenny[3]

[1]Oral Medicine, Eastman Dental Institute, London, UK. [2]Pain Clinic, Turku University Central Hospital, Turku, Finland. [3]Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Manchester, UK

Contact address: Joanna M Zakrzewska, Oral Medicine, Eastman Dental Institute, 256 Gray's Inn Road, London, WC1X 8LD, UK. jzakrzewska@nhs.net. j.zakrzewska@ucl.ac.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 5, 2012.
**Review content assessed as up-to-date:** 15 November 2004.

**Citation:** Zakrzewska JM, Forssell H, Glenny AM. Interventions for the treatment of burning mouth syndrome. *Cochrane Database of Systematic Reviews* 2005, Issue 1. Art. No.: CD002779. DOI: 10.1002/14651858.CD002779.pub2.



## ABSTRACT

### Background

The complaint of a burning sensation in the mouth can be said to be a symptom of other disease or a syndrome in its own right of unknown aetiology. In patients where no underlying dental or medical causes are identified and no oral signs are found, the term burning mouth syndrome (BMS) should be used. The prominent feature is the symptom of burning pain which can be localised just to the tongue and/or lips but can be more widespread and involve the whole of the oral cavity. Reported prevalence rates in general populations vary from 0.7% to 15%. Many of these patients show evidence of anxiety, depression and personality disorders.

### Objectives

The objectives of this review are to determine the effectiveness and safety of any intervention versus placebo for relief of symptoms and improvement in quality of life and to assess the quality of the studies.

### Search methods

We searched the Cochrane Oral Health Group Trials Register (20 October 2004), CENTRAL (*The Cochrane Library* 2004, Issue 4), MEDLINE (January 1966 to October 2004), EMBASE (January 1980 to October). Clinical Evidence Issue No. 10 2004, conference proceedings and bibliographies of identified publications were searched to identify the relevant literature, irrespective of language of publication.

### Selection criteria

Studies were selected if they met the following criteria: study design - randomised controlled trials (RCTs) and controlled clinical trials (CCTs) which compared a placebo against one or more treatments; participants - patients with burning mouth syndrome, that is, oral mucosal pain with no dental or medical cause for such symptoms; interventions - all treatments that were evaluated in placebo-controlled trials; primary outcome - relief of burning/discomfort.

### Data collection and analysis

Articles were screened independently by two reviewers to confirm eligibility and extract data. The reviewers were not blinded to the identity of the studies. The quality of the included trials was assessed independently by two reviewers, with particular attention given to allocation concealment, blinding and the handling of withdrawals and drop outs. Due to both clinical and statistical heterogeneity statistical pooling of the data was inappropriate.

# Interventions for central giant cell granuloma (CGCG) of the jaws

María de Lourdes Suárez-Roa[1], Ludovic Reveiz[2], Luz María Ruíz-Godoy Rivera[3], Juan Asbun-Bojalil[4], José Eduardo Dávila-Serapio[5], Andrés H Menjívar-Rubio[6], Abelardo Meneses-García[7]

[1]Section of Pathology, National Cancer Institute, Mexico City, Mexico. [2]Research Institute, Sanitas Foundation, Bogotá, Colombia. [3]Basic Research, National Cancer Institute, Mexico City, Mexico. [4]Postgraduate Studies and Research, National Polytechnic Institute, Mexico City, Mexico. [5]Mexico City, Mexico. [6]Department of Systematic Reviews, Instituto Nacional de Salud Pública, México Distrito Federal, Mexico. [7]National Cancer Institute, Mexico City, Mexico

Contact address: María de Lourdes Suárez-Roa, Section of Pathology, National Cancer Institute, Av. San Fernando, No. 22 Col. Seccion XVI, Mexico City, 14080, Mexico. lusuroa@gmail.com. lu_su_ro@yahoo.com.mx.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New, published in Issue 4, 2009.
**Review content assessed as up-to-date:** 23 July 2009.

**Citation:** Suárez-Roa MDL, Reveiz L, Ruíz-Godoy Rivera LM, Asbun-Bojalil J, Dávila-Serapio JE, Menjívar-Rubio AH, Meneses-García A. Interventions for central giant cell granuloma (CGCG) of the jaws. *Cochrane Database of Systematic Reviews* 2009, Issue 4. Art. No.: CD007404. DOI: 10.1002/14651858.CD007404.pub2.



## ABSTRACT

### Background

Central giant cell granuloma (CGCG) of the jaws is a rare benign tumour with an unknown aetiology accounting for up to 7% of tumours in the mandible (lower jaw) and the maxilla (upper jaw).

### Objectives

This systematic review focused on assessing the effects of primary non-surgical versus primary surgical interventions or any other treatment or placebo for treating central giant cell granuloma of the jaws.

### Search methods

Relevant randomised controlled trials (RCTs) were identified from the Cochrane Oral Health Group's Trials Register (July 2009); CENTRAL (*The Cochrane Library* 2009, Issue 3); MEDLINE (1950 to July 2009); EMBASE (1980 to July 2009); and LILACS (1982 to July 2009). We scanned bibliographies of relevant studies for possible references to additional trials as well as prospective clinical trial registries. Eligible RCTs were included regardless of the language of publication.

### Selection criteria

Randomised controlled trials involving a comparison of primary non-surgical interventions with primary surgical interventions or any other treatment.

### Data collection and analysis

Two review authors independently assessed eligibility, risk of bias and extracted data. The Cochrane Collaboration statistical guidelines were followed.

# Feeding interventions for growth and development in infants with cleft lip, cleft palate or cleft lip and palate

Alyson Bessell[1], Lee Hooper[2], William C Shaw[3], Sheena Reilly[4], Julie Reid[5], Anne-Marie Glenny[6]

[1]Department of Oral and Dental Sciences, University of Bristol, Bristol, UK. [2]School of Medicine, Health Policy & Practice, University of East Anglia, Norwich, UK. [3]Department of Orthodontics, School of Dentistry, The University of Manchester, Manchester, UK. [4]Department of Pediatrics, University of Melbourne, Melbourne, Australia. [5]Speech Pathology Department, Royal Children's Hospital, Melbourne, Australia. [6]Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Manchester, UK

Contact address: Alyson Bessell, Department of Oral and Dental Sciences, University of Bristol, Lower Maudlin Street, Bristol, BS1 2LY, UK. alyson.bessell@bristol.ac.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New search for studies and content updated (no change to conclusions), published in Issue 2, 2011.
**Review content assessed as up-to-date:** 26 October 2010.

**Citation:** Bessell A, Hooper L, Shaw WC, Reilly S, Reid J, Glenny AM. Feeding interventions for growth and development in infants with cleft lip, cleft palate or cleft lip and palate. *Cochrane Database of Systematic Reviews* 2011, Issue 2. Art. No.: CD003315. DOI: 10.1002/14651858.CD003315.pub3.



## ABSTRACT

### Background

Cleft lip and cleft palate are common birth defects, affecting about one baby of every 700 born. Feeding these babies is an immediate concern and there is evidence of delay in growth of children with a cleft as compared to those without clefting. In an effort to combat reduced weight for height, a variety of advice and devices are recommended to aid feeding of babies with clefts.

### Objectives

This review aims to assess the effects of these feeding interventions in babies with cleft lip and/or palate on growth, development and parental satisfaction.

### Search methods

The following electronic databases were searched: the Cochrane Oral Health Group Trials Register (to 27 October 2010), the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2010, Issue 4), MEDLINE via OVID (1950 to 27 October 2010), EMBASE via OVID (1980 to 27 October 2010), PsycINFO via OVID (1950 to 27 October 2010) and CINAHL via EBSCO (1980 to 27 October 2010). Attempts were made to identify both unpublished and ongoing studies. There was no restriction with regard to language of publication.

### Selection criteria

Studies were included if they were randomised controlled trials (RCTs) of feeding interventions for babies born with cleft lip, cleft palate or cleft lip and palate up to the age of 6 months (from term).

### Data collection and analysis

Studies were assessed for relevance independently and in duplicate. All studies meeting the inclusion criteria were data extracted and assessed for validity independently by each member of the review team. Authors were contacted for clarification or missing information whenever possible.

# Interventions for the management of submucous cleft palate

Mona Nasser[1], Zbys Fedorowicz[2], Tim Newton[3], Mahtab Nouri[4]

[1]Department of Health Information, Institute for Quality and Efficiency in Health care, Köln, Germany. [2]UKCC (Bahrain Branch), Ministry of Health, Bahrain, Awali, Bahrain. [3]Department of Oral Health Services Research & Dental Public Health, GKT Dental Institute King's College Hospital, London, UK. [4]Orthodontic Department, Dental School of Shahid Beheshti University of Medical Sciences, Tehran, Iran, Islamic Republic of

Contact address: Mona Nasser, Department of Health Information, Institute for Quality and Efficiency in Health care, Dillenburger Street, 27, D-51105, Köln, D-51105, Germany. Monalisa1n@gmail.com. monanasser1@googlemail.com.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 4, 2008.
**Review content assessed as up-to-date:** 6 November 2007.

**Citation:** Nasser M, Fedorowicz Z, Newton T, Nouri M. Interventions for the management of submucous cleft palate. *Cochrane Database of Systematic Reviews* 2008, Issue 1. Art. No.: CD006703. DOI: 10.1002/14651858.CD006703.pub2.



## ABSTRACT

### Background

Submucous cleft palate (SMCP) is a common congenital malformation of the soft palate which may present as velopharyngeal insufficiency (VPI), which can affect the quality and intelligibility of speech. Surgical techniques, which can be used to reconstruct these structural or anatomical defects and to correct velopharyngeal insufficiency, include palatal repair and procedures that rearrange the muscle attachments of the soft palate.

### Objectives

To provide reliable evidence regarding the effectiveness of surgical interventions to treat velopharyngeal insufficiency and improve speech in patients with submucous cleft palate.

### Search methods

We searched the Cochrane Oral Health Group Trials Register (to 21st December 2006); Cochrane Developmental, Psychosocial and Learning Problems Group Trials Register (on 12th March 2007); the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2006, Issue 4); MEDLINE (from 1966 to 21st December 2006); EMBASE (from 1980 to 21st December 2006); and CINAHL, ERIC, PsycINFO (on 7th March 2007).

### Selection criteria

Randomised controlled trials comparing surgical interventions to correct velopharyngeal insufficiency in submucous cleft palate.

### Data collection and analysis

Limited data from one included trial precluded pooling of data, and only a descriptive summary is presented.

### Main results

This review included one trial, involving 72 participants aged 4 to 7 years with submucous cleft palate associated velopharyngeal insufficiency, which compared minimal incision palatopharyngoplasty (MIPP) to MIPP with additional velopharyngeal surgery, either pharyngeal flap (32) or sphincter pharyngoplasty (3).

# Secondary bone grafting for alveolar cleft in children with cleft lip or cleft lip and palate

Jing Guo[1], Chunjie Li[2], Qifeng Zhang[3], Gang Wu[4], Scott A Deacon[5], Jianwei Chen[1], Haikun Hu[1], Shujuan Zou[1], Qingsong Ye[1,6]

[1]State Key Laboratory of Oral Diseases, Department of Orthodontics, West China College of Stomatology, Sichuan University, Chengdu, China. [2]Department of Oral and Maxillofacial Surgery, State Key Laboratory of Oral Diseases, West China College of Stomatology, Sichuan University, Chengdu, China. [3]Department of Stomatology, The First Affiliated Hospital of College of Medicine, Zhejiang University, Hangzhou, China. [4]Department of Oral Implantology and Prosthetic Dentistry, Academic Centre for Dentistry Amsterdam (ACTA), Research Institute MOVE, VU University and University of Amsterdam, Amsterdam, Netherlands. [5]South West Cleft Unit, Frenchay Hospital, Bristol, UK. [6]Department of Orthodontics, School of Medicine and Dentistry, James Cook University, Cairns, Australia

Contact address: Shujuan Zou, State Key Laboratory of Oral Diseases, Department of Orthodontics, West China College of Stomatology, Sichuan University, No. 14, Section Three, Ren Min Nan Road, Chengdu, Sichuan, 610041, China. shujuanzou@yahoo.com.cn. shujuanzou@163.com.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New, published in Issue 6, 2011.
**Review content assessed as up-to-date:** 9 May 2011.

**Citation:** Guo J, Li C, Zhang Q, Wu G, Deacon SA, Chen J, Hu H, Zou S, Ye Q. Secondary bone grafting for alveolar cleft in children with cleft lip or cleft lip and palate. *Cochrane Database of Systematic Reviews* 2011, Issue 6. Art. No.: CD008050. DOI: 10.1002/14651858.CD008050.pub2.



## ABSTRACT

### Background

Secondary alveolar bone grafting has been widely used to reconstruct alveolar cleft. However, there is still some controversy.

### Objectives

To compare the effectiveness and safety of different secondary bone grafting methods.

### Search methods

The final electronic and handsearches were carried out on 11 February 2011, and included the Cochrane Oral Health Group's Trials Register, Cochrane Central Register of Controlled Trials, MEDLINE, EMBASE, Chinese Biomedical Literature Database and WHO International Clinical Trials Registry Platform. All the Chinese professional journals in the oral and dental field were handsearched and conference proceedings consulted. There was no language or time restriction.

### Selection criteria

Only randomized clinical trials were selected. Patients with the diagnosis of cleft lip and alveolar process only, unilateral cleft lip and palate and bilateral cleft lip and palate involving the alveolar process and greater than 5 years of age were included.

### Data collection and analysis

Two review authors extracted data and assessed the quality of included studies independently. Disagreement between the two review authors was resolved by discussion in the review team. The first authors of the included studies were contacted for additional information, if necessary.

# Adhesives for fixed orthodontic bands

Declan T Millett[1], Anne-Marie Glenny[2], Rye CR Mattick[3], Joy Hickman[4], Nicky A Mandall[5]

[1]Department of Oral Health and Development, University Dental School and Hospital, Wilton, Cork, Ireland. [2]Cochrane Oral Health Group, MANDEC, School of Dentistry, The University of Manchester, Manchester, UK. [3]Department of Orthodontics, Newcastle Dental Hospital, Newcastle upon Tyne, UK. [4]Department of Orthodontics, Glan Clwyd Hospital, Rhyl, UK. [5]Orthodontics, School of Dentistry, The University of Manchester, Manchester, UK

Contact address: Declan T Millett, Department of Oral Health and Development, University Dental School and Hospital, Wilton, Cork, Ireland. d.millett@ucc.ie.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 4, 2008.
**Review content assessed as up-to-date:** 20 February 2007.

**Citation:** Millett DT, Glenny AM, Mattick RCR, Hickman J, Mandall NA. Adhesives for fixed orthodontic bands. *Cochrane Database of Systematic Reviews* 2007, Issue 2. Art. No.: CD004485. DOI: 10.1002/14651858.CD004485.pub3.



## ABSTRACT

### Background

Orthodontic treatment involves using fixed or removable appliances (dental braces) to correct the positions of teeth. It has been shown that the quality of treatment result obtained with fixed appliances is much better than with removable appliances. Fixed appliances are, therefore, favoured by most orthodontists for treatment. The success of a fixed orthodontic appliance depends on the metal attachments (brackets and bands) being attached securely to the teeth so that they do not become loose during treatment. Brackets are usually attached to the front and side teeth, whereas bands (metal rings that go round the teeth) are more commonly used on the back teeth (molars). A number of adhesives are available to attach bands to teeth and it is important to understand which group of adhesives bond most reliably, as well as reducing or preventing dental decay during the treatment period.

### Objectives

To evaluate the effectiveness of the adhesives used to attach bands to teeth during fixed appliance treatment, in terms of:

(1) how often the bands come off during treatment; and

(2) whether they protect the banded teeth against decay during fixed appliance treatment.

### Search methods

Electronic databases were searched: the Cochrane Oral Health Group's Trials Register (29th January 2007), the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2007, Issue 1), MEDLINE (1966 to 29th January 2007) and EMBASE (1980 to 29th January 2007). A search of the internet was also undertaken. There was no restriction with regard to publication status or language of publication.

### Selection criteria

Randomised and controlled clinical trials (RCTs and CCTs) (including split-mouth studies) of adhesives used to attach orthodontic bands to molar teeth were selected. Patients with full arch fixed orthodontic appliance(s) who had bands attached to molars were included.

# Adhesives for fixed orthodontic brackets

Nicky A Mandall[1], Joy Hickman[2], Tatiana V Macfarlane[3], Rye CR Mattick[4], Declan T Millett[5], Helen V Worthington[6]

[1]Orthodontics, School of Dentistry, The University of Manchester, Manchester, UK. [2]Department of Orthodontics, Glan Clwyd Hospital, Rhyl, UK. [3]Department of General Practice and Primary Care, Foresterhill Health Centre, Aberdeen, UK. [4]Department of Orthodontics, Newcastle Dental Hospital, Newcastle upon Tyne, UK. [5]Department of Oral Health and Development, University Dental School and Hospital, Wilton, Cork, Ireland. [6]Cochrane Oral Health Group, MANDEC, School of Dentistry, The University of Manchester, Manchester, UK

Contact address: Nicky A Mandall, Orthodontics, School of Dentistry, The University of Manchester, Higher Cambridge Street, Manchester, M15 6FH, UK. nicola.mandall@manchester.ac.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 1, 2009.
**Review content assessed as up-to-date:** 14 January 2003.

**Citation:** Mandall NA, Hickman J, Macfarlane TV, Mattick RCR, Millett DT, Worthington HV. Adhesives for fixed orthodontic brackets. *Cochrane Database of Systematic Reviews* 2003, Issue 2. Art. No.: CD002282. DOI: 10.1002/14651858.CD002282.



## ABSTRACT

### Background

Bonding of orthodontic brackets to teeth is important to enable effective and efficient treatment with fixed appliances. The problem is bracket failure during treatment which increases operator chairside time and lengthens treatment time. A prolonged treatment is likely to increase the oral health risks of orthodontic treatment with fixed appliances one of which is irreversible enamel decalcification.

### Objectives

To evaluate the effectiveness of different orthodontic adhesives for bonding.

### Search methods

Electronic databases: the Cochrane Oral Health Group's Trials Register, the Cochrane Central Register of Controlled Trials (CENTRAL), MEDLINE and EMBASE.

Date of most recent searches: August 2002 (CENTRAL) (*The Cochrane Library* 2002, Issue 2).

### Selection criteria

Trials were selected if they met the following criteria: randomised controlled trials (RCTs) and controlled clinical trials (CCTs) comparing two different adhesive groups. Participants were patients with fixed orthodontic appliances. The interventions were adhesives that bonded stainless steel brackets to all teeth except the molars. The primary outcome was debond or bracket failure.

### Data collection and analysis

Data were recorded on decalcification as a secondary outcome, if present. Information regarding methods, participants, interventions, outcome measures and results were extracted in duplicate by pairs of review authors (Nicky Mandall (NM) and Rye Mattick (CRM); Declan Millett (DTM) and Joy Hickman (JH2)). Since the data were not presented in a form that was amenable to meta-analysis, the results of the review are presented in narrative form only.

# Extraction of primary (baby) teeth for unerupted palatally displaced permanent canine teeth in children

Nicola Parkin[1], Philip E Benson[1], Anwar Shah[2], Bikram Thind[3], Zoe Marshman[1], Gillian Glenroy[4], Fiona Dyer[5]

[1]Department of Oral Health and Development, School of Clinical Dentistry, Sheffield, UK. [2]Falchion Orthodontics, Darlington, UK. [3]Department of Orthodontics, Argyll House, Aberdeen, UK. [4]Foxbar Clinic, Paisley, UK. [5]Department of Orthodontics, Charles Clifford Dental Hospital, Sheffield, UK

Contact address: Nicola Parkin, Department of Oral Health and Development, School of Clinical Dentistry, University of Sheffield, Claremont Crescent, Sheffield, S10 2TA, UK. nicolaparkin@hotmail.com.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New, published in Issue 2, 2009.
**Review content assessed as up-to-date:** 17 December 2008.

**Citation:** Parkin N, Benson PE, Shah A, Thind B, Marshman Z, Glenroy G, Dyer F. Extraction of primary (baby) teeth for unerupted palatally displaced permanent canine teeth in children. *Cochrane Database of Systematic Reviews* 2009, Issue 2. Art. No.: CD004621. DOI: 10.1002/14651858.CD004621.pub2.



## ABSTRACT

### Background

The permanent canine tooth in the upper (maxillary) jaw sometimes does not erupt into the mouth correctly. In about 1% to 3% of the population these teeth will be diverted into the roof of the mouth (palatally). It has been suggested that if the deciduous canine is removed at the right time this palatal eruption might be avoided.

### Objectives

To evaluate the effect of extracting the primary maxillary canine on the eruption of the palatally ectopic maxillary permanent canine.

### Search methods

We searched the Cochrane Oral Health Group's Trials Register (to April 2008); CENTRAL (*The Cochrane Library* 2008, Issue 3); MEDLINE (1966 to April 2008); EMBASE (1980 to April 2008). There were no language restrictions. Authors of trials were contacted for further data.

### Selection criteria

Trials were selected if they met the following criteria: a randomised or quasi-randomised controlled trial, involving the extraction of the primary maxillary canine and assessing eruption/non-eruption of the palatally displaced maxillary permanent canine.

### Data collection and analysis

Seven review authors independently, in duplicate, examined the studies found in the search. The primary outcome was the reported prevalence of eruption or non-eruption of the ectopic permanent canine into the mouth following observation or intervention. Results were to be expressed as risk ratios for dichotomous outcomes with 95% confidence intervals and mean differences for continuous outcomes. Heterogeneity was to be investigated, including both clinical and methodological factors.

# Initial arch wires for tooth alignment during orthodontic treatment with fixed appliances

Fan Jian[1], Wenli Lai[1], Susan Furness[2], Grant T McIntyre[3], Declan T Millett[4], Joy Hickman[5], Yan Wang[1]

[1]Department of Orthodontics, State Key Laboratory of Oral Diseases, West China Hospital of Stomatology, Sichuan University, Chengdu, China. [2]Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Manchester, UK. [3]Department of Orthodontics, NHS Tayside, Dundee, UK. [4]Oral Health and Development, Cork University Dental School and Hospital, Cork, Ireland. [5]Department of Orthodontics, Glan Clwyd Hospital, Rhyl, UK

Contact address: Yan Wang, Department of Orthodontics, State Key Laboratory of Oral Diseases, West China Hospital of Stomatology, Sichuan University, No. 14, Section Three, Ren Min Nan Road, Chengdu, Sichuan, 610041, China. lwwylwwy@hotmail.com.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New search for studies and content updated (no change to conclusions), published in Issue 4, 2013.
**Review content assessed as up-to-date:** 2 August 2012.

**Citation:** Jian F, Lai W, Furness S, McIntyre GT, Millett DT, Hickman J, Wang Y. Initial arch wires for tooth alignment during orthodontic treatment with fixed appliances. *Cochrane Database of Systematic Reviews* 2013, Issue 4. Art. No.: CD007859. DOI: 10.1002/14651858.CD007859.pub3.



## ABSTRACT

### Background

Initial arch wires are the first arch wires to be inserted into the fixed appliance at the beginning of orthodontic treatment and are used mainly for the alignment of teeth by correcting crowding and rotations. With a number of different types of orthodontic arch wires available for initial tooth alignment, it is important to understand which wire is most efficient, as well as which wires cause the least amount of root resorption and pain during the initial aligning stage of treatment. This is an update of the review 'Initial arch wires for alignment of crooked teeth with fixed orthodontic braces' first published in the *Cochrane Database of Systematic Reviews* 2010, Issue 4.

### Objectives

To assess the effects of initial arch wires for alignment of teeth with fixed orthodontic braces in relation to alignment speed, root resorption and pain intensity.

### Search methods

We searched the following electronic databases: the Cochrane Oral Health Group's Trials Register (to 2 August 2012), CENTRAL (*The Cochrane Library* 2012, Issue 7), MEDLINE via OVID (1950 to 2 August 2012) and EMBASE via OVID (1980 to 2 August 2012). We also searched the reference lists of relevant articles. There was no restriction with regard to publication status or language of publication. We contacted all authors of included studies to identify additional studies.

### Selection criteria

We included randomised controlled trials (RCTs) of initial arch wires to align teeth with fixed orthodontic braces. Only studies involving participants with upper and/or lower full arch fixed orthodontic appliances were included.

### Data collection and analysis

Two review authors were responsible for study selection, validity assessment and data extraction. All disagreements were resolved by discussion amongst the review team. Corresponding authors of included studies were contacted to obtain missing information.

# Interspace/interdental brushes for oral hygiene in orthodontic patients with fixed appliances

Hock Hoe Goh[1], Luisa M Fernandez Mauleffinch[2]

[1]Department of Orthodontics, York Hospital, York, UK. [2]Cochrane Oral Health Group, MANDEC, School of Dentistry, Manchester, UK

Contact address: Hock Hoe Goh, Department of Orthodontics, York Hospital, Wigginton Road, York, YO31 8HE, UK. h.goh@nhs.net.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 4, 2008.
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**Citation:** Goh HH, Fernandez Mauleffinch LM. Interspace/interdental brushes for oral hygiene in orthodontic patients with fixed appliances. *Cochrane Database of Systematic Reviews* 2007, Issue 3. Art. No.: CD005410. DOI: 10.1002/14651858.CD005410.pub2.



## ABSTRACT

### Background

Accumulation of plaque on tooth surfaces that have fixed orthodontic appliances is increased. Effective removal is essential to maintain oral health but it is unclear whether the use of interdental or interspace brushes is useful.

### Objectives

To compare the effectiveness of standard toothbrushes with combined standard toothbrushes and interdental/interspace brushes used by patients during fixed orthodontic appliances therapy in relation to plaque removal, the health of dental and supporting tissues, dependability, cost and adverse effects.

### Search methods

We searched the Cochrane Oral Health Group's Trials Register, CENTRAL, MEDLINE, EMBASE and CINAHL. Schools of dental hygiene were contacted for additional data. No language restrictions were applied. Handsearching of the relevant journals was carried out. Most recent search: January 2006.

### Selection criteria

Randomised controlled trials (RCTs) including the following criteria: participants - patients with fixed orthodontic appliances and uncompromised manual dexterity; intervention - unsupervised toothbrushing with standard toothbrush alone versus standard toothbrush and interdental/interspace brush. Primary outcomes were differences in plaque control, gingival health and decalcification.

### Data collection and analysis

Screening of eligible studies, assessment of the methodological quality of the trials and data extraction were to be conducted in duplicate and independently. Trials were to be grouped in terms of their interventions and outcome measures. Results were to be expressed as random-effects models using standardised mean differences for continuous outcomes and risk ratios for dichotomous outcomes with 95% confidence intervals. Heterogeneity was to be investigated.

### Main results

No studies were identified to support or contest the null hypothesis.

# Interventions for replacing missing teeth: augmentation procedures of the maxillary sinus

Marco Esposito[1], Maria Gabriella Grusovin[1], Jonathan Rees[1], Dimitrios Karasoulos[1], Pietro Felice[2], Rami Alissa[1], Helen V Worthington[3], Paul Coulthard[1]

[1]Department of Oral and Maxillofacial Surgery, School of Dentistry, The University of Manchester, Manchester, UK. [2]Department of Oral and Dental Sciences, University of Bologna, Bologna, Italy. [3]Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Manchester, UK

Contact address: Marco Esposito, Department of Oral and Maxillofacial Surgery, School of Dentistry, The University of Manchester, Higher Cambridge Street, Manchester, M15 6FH, UK. espositomarco@hotmail.com. marco.esposito@manchester.ac.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 4, 2010.
**Review content assessed as up-to-date:** 6 January 2010.

**Citation:** Esposito M, Grusovin MG, Rees J, Karasoulos D, Felice P, Alissa R, Worthington HV, Coulthard P. Interventions for replacing missing teeth: augmentation procedures of the maxillary sinus. *Cochrane Database of Systematic Reviews* 2010, Issue 3. Art. No.: CD008397. DOI: 10.1002/14651858.CD008397.



## ABSTRACT

### Background

Insufficient bone volume is a common problem encountered in the rehabilitation of the edentulous posterior maxillae with implant-supported prostheses. Bone volume is limited by the presence of the maxillary sinus together with loss of alveolar bone height. Sinus lift procedures increase bone volume by augmenting the sinus cavity with autogenous bone and/or commercially available biomaterials.

### Objectives

To determine whether and when augmentation of the maxillary sinus are necessary and which are the most effective augmentation techniques for rehabilitating patients with implant-supported prostheses.

### Search methods

The Cochrane Oral Health Group's Trials Register, CENTRAL, MEDLINE and EMBASE were searched on 7th January 2010. Several dental journals were handsearched. The bibliographies of review articles were checked, and personal references were searched. More than 55 implant manufacturing companies were also contacted.

### Selection criteria

Randomised controlled trials (RCTs) of different techniques and materials for augmenting the maxillary sinus for rehabilitation with dental implants reporting the outcome of implant success/failure at least to abutment connection.

### Data collection and analysis

Screening of eligible studies, assessment of the methodological quality of the trials and data extraction were conducted independently and in duplicate. Authors were contacted for any missing information. Results were expressed as random-effects models using mean differences for continuous outcomes and odds ratios for dichotomous outcomes with 95% confidence intervals. The statistical unit of the analysis was the patient.

# Occlusal adjustment for treating and preventing temporomandibular joint disorders

Holy Koh[1], Peter Robinson[2]

[1]Department of Preventive Dentistry, National University of Singapore, Singapore, Singapore. [2]Department of Dental Public Health, School of Clinical Dentistry, Sheffield, UK

Contact address: Holy Koh, Department of Preventive Dentistry, National University of Singapore, National University Hospital, 5 Lower Kent Ridge Road, Singapore, 119074, Singapore. denbox2@nus.edu.sg.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 1, 2009.
**Review content assessed as up-to-date:** 12 November 2002.

**Citation:** Koh H, Robinson P. Occlusal adjustment for treating and preventing temporomandibular joint disorders. *Cochrane Database of Systematic Reviews* 2003, Issue 1. Art. No.: CD003812. DOI: 10.1002/14651858.CD003812.



## ABSTRACT

### Background

There has been a long history of using occlusal adjustment in the management of temporomandibular disorders (TMD). It is not clear if occlusal adjustment is effective in treating TMD.

### Objectives

To assess the effectiveness of occlusal adjustment for treating TMD in adults and preventing TMD.

### Search methods

We searched the Cochrane Oral Health Group's Trials Register (April 2002); the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2002, Issue 2); MEDLINE (1966 to 8th April 2002); EMBASE (1980 to 8th April 2002) and handsearched journals of particular importance to this review.

Additional reports were identified from the reference lists of retrieved reports and from review articles of treating TMD. There were no language restrictions. Unpublished reports or abstracts were considered from the SIGLE database.

### Selection criteria

All randomised or quasi-randomised controlled trials (RCTs) comparing occlusal adjustment to placebo, reassurance or no treatment in adults with TMD. The outcomes were global measures of symptoms, pain, headache and limitation of movement.

### Data collection and analysis

Data were independently extracted, in duplicate, by two review authors (Holy Koh (HK) and Peter G Robinson (PR)). Authors were contacted for details of randomisation and withdrawals and a quality assessment was carried out. The Cochrane Collaboration's statistical guidelines were followed and risk ratios calculated using random-effects models where significant heterogeneity was detected ($P < 0.1$).

# Occlusal splints for treating sleep bruxism (tooth grinding)

Cristiane R Macedo[1], Ademir B Silva[2], Marco Antonio C Machado[3], Humberto Saconato[4], Gilmar F Prado[5]

[1]Department of Medicine, Universidade Federal de São Paulo, São Paulo, Brazil. [2]Neurology, Neurosurgery and Neuroscience, Universidade Federal de São Paulo, São Paulo, Brazil. [3]Department of Neurology and Internal Medicine, Universidade Federal de São Paulo, São Paulo, Brazil. [4]Department of Medicine, Federal University of Rio Grande do norte, São Paulo, Brazil. [5]São Paulo, Brazil

Contact address: Cristiane R Macedo, Department of Medicine, Universidade Federal de São Paulo, Rua Pedro de Toledo, 598, São Paulo, São Paulo, 04039-001, Brazil. crisrufa@uol.com.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 4, 2008.
**Review content assessed as up-to-date:** 19 August 2007.

**Citation:** Macedo CR, Silva AB, Machado MAC, Saconato H, Prado GF. Occlusal splints for treating sleep bruxism (tooth grinding). *Cochrane Database of Systematic Reviews* 2007, Issue 4. Art. No.: CD005514. DOI: 10.1002/14651858.CD005514.pub2.



## ABSTRACT

### Background

Sleep bruxism is an oral activity characterised by teeth grinding or clenching during sleep. Several treatments for sleep bruxism have been proposed such as pharmacological, psychological, and dental.

### Objectives

To evaluate the effectiveness of occlusal splints for the treatment of sleep bruxism with alternative interventions, placebo or no treatment.

### Search methods

We searched the Cochrane Oral Health Group's Trials Register (to May 2007); the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2007, Issue 1); MEDLINE (1966 to May 2007); EMBASE (1980 to May 2007); LILACS (1982 to May 2007); Biblioteca Brasileira de Odontologia (1982 to May 2007); Dissertation, Theses and Abstracts (1981 to May 2007); and handsearched abstracts of particular importance to this review. Additional reports were identified from the reference lists of retrieved reports and from article reviews about treating sleep bruxism. There were no language restrictions.

### Selection criteria

We selected randomised or quasi-randomised controlled trials (RCTs), in which splint therapy was compared concurrently to no treatment, other occlusal appliances, or any other intervention in participants with sleep bruxism.

### Data collection and analysis

Data extraction was carried out independently and in duplicate. Validity assessment of the included trials was carried out at the same time as data extraction. Discrepancies were discussed and a third review author consulted. The author of the primary study was contacted when necessary.

### Main results

Thirty-two potentially relevant RCTs were identified. Twenty-four trials were excluded. Five RCTs were included. Occlusal splint was compared to: palatal splint, mandibular advancement device, transcutaneous electric nerve stimulation, and no treatment. There was just one common outcome (arousal index) which was combined in a meta-analysis. No statistically significant differences between the occlusal splint and control groups were found in the meta-analyses.

# Oral appliances and functional orthopaedic appliances for obstructive sleep apnoea in children

Fernando R Carvalho[1], Débora A Lentini-Oliveira[1], Marco Antonio C Machado[2], Humberto Saconato[3], Lucila BF Prado[1], Gilmar F Prado[4]

[1]Internal Medicine Department, Universidade Federal de São Paulo, São Paulo, Brazil. [2]Department of Neurology and Internal Medicine, Universidade Federal de São Paulo, São Paulo, Brazil. [3]Department of Medicine, Federal University of Rio Grande do norte, São Paulo, Brazil. [4]São Paulo, Brazil

Contact address: Fernando R Carvalho, Internal Medicine Department, Universidade Federal de São Paulo, Rua Padre Damaso, 314, Osasco, São Paulo, Centro, 06016-010, Brazil. frcarv@bn.com.br.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 4, 2008.
**Review content assessed as up-to-date:** 14 February 2007.

**Citation:** Carvalho FR, Lentini-Oliveira DA, Machado MAC, Saconato H, Prado LBF, Prado GF. Oral appliances and functional orthopaedic appliances for obstructive sleep apnoea in children. *Cochrane Database of Systematic Reviews* 2007, Issue 2. Art. No.: CD005520. DOI: 10.1002/14651858.CD005520.pub2.



## ABSTRACT

### Background

Apnoea is a breathing disorder marked by the absence of airflow at the nose or mouth. In children, risk factors include adenotonsillar hypertrophy, obesity, neuromuscular disorders and craniofacial anomalies. The most common treatment for obstructive sleep apnoea syndrome (OSAS) in childhood is adenotonsillectomy. This approach is limited by its surgical risks, mostly in children with comorbidities and, in some patients, by recurrence that can be associated with craniofacial problems. Oral appliances and functional orthopaedic appliances have been used for patients who have OSAS and craniofacial anomalies because they change the mandible posture forwards and potentially enlarge the upper airway and increase the upper airspace, improving the respiratory function.

### Objectives

To assess the effectiveness of oral appliances or functional orthopaedic appliances for OSAS in children.

### Search methods

A sensitive search was developed for the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2005, Issue 3); PubMed (January 1966 to September 2005); EMBASE (1980 to September 2005); LILACS (1982 to September 2005); BBO (1986 to September 2005); and SciELO (1997 to September 2005).

There was no restriction of language or source of information.

### Selection criteria

All randomised or quasi-randomised controlled trials comparing all types of oral and functional orthopaedic appliances with placebo or no treatment, in children 15 years old or younger. Primary outcome: reduction of apnoea to less than one episode per hour. Secondary outcomes: dental and skeletal relationship, sleep parameters improvement, cognitive and phonoaudiologic function, behavioural problems, drop outs and withdrawals, quality of life, side effects (tolerability), economic evaluation.

# Orthodontic and orthopaedic treatment for anterior open bite in children

Débora A Lentini-Oliveira[1], Fernando R Carvalho[1], Qingsong Ye[2], Junjie Luo[2], Humberto Saconato[3], Marco Antonio C Machado[4], Lucila BF Prado[1], Gilmar F Prado[5]

[1]Internal Medicine Department, Universidade Federal de São Paulo, São Paulo, Brazil. [2]Department of Orthodontics, West China College of Stomatology, Chengdu, China. [3]Department of Medicine, Federal University of Rio Grande do norte, São Paulo, Brazil. [4]Department of Neurology and Internal Medicine, Universidade Federal de São Paulo, São Paulo, Brazil. [5]São Paulo, Brazil

Contact address: Débora A Lentini-Oliveira, Internal Medicine Department, Universidade Federal de São Paulo, Tuiuti -22, Sorocaba, São Paulo, Vergueiro, 18035-340, Brazil. deblentini@terra.com.br.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 4, 2008.
**Review content assessed as up-to-date:** 13 February 2007.

**Citation:** Lentini-Oliveira DA, Carvalho FR, Ye Q, Luo J, Saconato H, Machado MAC, Prado LBF, Prado GF. Orthodontic and orthopaedic treatment for anterior open bite in children. *Cochrane Database of Systematic Reviews* 2007, Issue 2. Art. No.: CD005515. DOI: 10.1002/14651858.CD005515.pub2.



## ABSTRACT

### Background

Anterior open bite occurs when there is a lack of vertical overlap of the upper and lower incisors. The aetiology is multifactorial including: oral habits, unfavourable growth patterns, enlarged lymphatic tissue with mouth breathing. Several treatments have been proposed to correct this malocclusion, but interventions are not supported by strong scientific evidence.

### Objectives

The aim of this systematic review was to evaluate orthodontic and orthopaedic treatments to correct anterior open bite in children.

### Search methods

Search strategies were developed for MEDLINE and revised appropriately for the following databases: Cochrane Oral Health Group Trials Register; CENTRAL (*The Cochrane Library* 2005, Issue 4); PubMed (1966 to December 2005); EMBASE (1980 to February 2006); LILACS (1982 to December 2005); BBO (1986 to December 2005); and SciELO (1997 to December 2005). Chinese journals were handsearched and the bibliographies of papers were retrieved.

### Selection criteria

All randomised or quasi-randomised controlled trials of orthodontic or orthopaedic treatments or both to correct anterior open bite in children.

### Data collection and analysis

Two review authors independently assessed the eligibility of all reports identified.

Risk ratios (RRs) and corresponding 95% confidence intervals (CIs) were calculated for dichotomous data. The continuous data were expressed as described by the author.

# Orthodontic treatment for deep bite and retroclined upper front teeth in children

Declan T Millett[1], Susan Cunningham[2], Kevin D O'Brien[3], Philip E Benson[4], Alison Williams[5], Cesar M de Oliveira[6]

[1]Oral Health and Development, Cork University Dental School and Hospital, Cork, Ireland. [2]Department of Orthodontics, Eastman Dental Institute, UCL, London, UK. [3]Orthodontics, School of Dentistry, The University of Manchester, Manchester, UK. [4]Academic Unit of Oral Health and Development, School of Clinical Dentistry, Sheffield, UK. [5]Oral Health Services Research and Dental Public Health, GKT Dental Institute, London, UK. [6]Department of Epidemiology and Public Health, University College London, London, UK

Contact address: Declan T Millett, Oral Health and Development, Cork University Dental School and Hospital, University College, Cork, Ireland. d.millett@ucc.ie.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New search for studies and content updated (no change to conclusions), published in Issue 1, 2012.
**Review content assessed as up-to-date:** 28 November 2011.

**Citation:** Millett DT, Cunningham S, O'Brien KD, Benson PE, Williams A, de Oliveira CM. Orthodontic treatment for deep bite and retroclined upper front teeth in children. *Cochrane Database of Systematic Reviews* 2006, Issue 4. Art. No.: CD005972. DOI: 10.1002/14651858.CD005972.pub2.



## ABSTRACT

### Background

Correction of the type of dental problem where the bite is deep and the upper front teeth are retroclined (Class II division 2 malocclusion) may be carried out using different types of orthodontic treatment. However, in severe cases, surgery to the jaws in combination with orthodontics may be required. In growing children, treatment may sometimes be carried out using special upper and lower dental braces (functional appliances) that can be removed from the mouth. In many cases this treatment does not involve taking out any permanent teeth. Often, however, further treatment is needed with fixed braces to get the best result. In other cases, treatment aims to move the upper first permanent molars backwards to provide space for the correction of the front teeth. This may be carried out by applying a force to the teeth and jaws from the back of the head using a head brace (headgear) and transmitting this force to a part of a fixed or removable dental brace. This treatment may or may not involve the removal of permanent teeth. In some cases, neither functional appliances nor headgear are required and treatment may be carried out without extraction of any permanent teeth. Instead of using a headgear, in certain cases, the back teeth are held back in other ways such as with an arch across or in contact with the front of the roof of the mouth which links two bands glued to the back teeth. Often in these cases, two permanent teeth are taken out from the middle of the upper arch (one on each side) to provide room to correct the upper front teeth. It is important for orthodontists to find out whether orthodontic treatment only, carried out without the removal of permanent teeth, in children with a Class II division 2 malocclusion produces a result which is any different from no orthodontic treatment or orthodontic treatment only involving extraction of permanent teeth.

### Objectives

To establish whether orthodontic treatment, carried out without the removal of permanent teeth, in children with a Class II division 2 malocclusion, produces a result which is any different from no orthodontic treatment or orthodontic treatment involving removal of permanent teeth.

# Orthodontic treatment for posterior crossbites

Jayne E Harrison[1], Deborah Ashby[2]

[1]Orthodontic Department, Liverpool University Dental Hospital, Liverpool, UK. [2]Wolfson Institute of Preventive Medicine, Queen Mary College, University of London, London, UK

Contact address: Jayne E Harrison, Orthodontic Department, Liverpool University Dental Hospital, Pembroke Place, Liverpool, Merseyside, L3 5PS, UK. Jayne.Harrison@rlbuht.nhs.uk. jeharrison@hotmail.co.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 4, 2008.
**Review content assessed as up-to-date:** 15 November 2000.

**Citation:** Harrison JE, Ashby D. Orthodontic treatment for posterior crossbites. *Cochrane Database of Systematic Reviews* 2001, Issue 1. Art. No.: CD000979. DOI: 10.1002/14651858.CD000979.



## ABSTRACT

### Background

'Posterior crossbite' occurs when the top back teeth bite inside the bottom back teeth. When it affects one side of the mouth the lower jaw may have to move to one side to allow the back teeth to meet together. It is unclear what causes posterior crossbites and they may develop or improve at any time from when the baby teeth come into the mouth to when the adult teeth come through. Several treatments have been recommended to correct this problem. Some treatments widen the upper teeth whilst others are directed at treating the cause of the posterior crossbite e.g. breathing problems or sucking habits. Most treatments have been used at each stage of dental development.

### Objectives

The aim of this review was to evaluate orthodontic treatments used to expand the maxillary dentition and correct posterior crossbites.

### Search methods

All randomised and controlled clinical trials identified from the Cochrane Oral Health Group Trials Register, a MEDLINE search using the Mesh term Palatal Expansion Technique and relevant free text words, handsearching the British, European and American journals of orthodontics and *Angle Orthodontist*, and the bibliographies of papers and review articles which reported the outcome of orthodontic treatment to expand the maxillary dentition and/or correct a posterior crossbite that were published as abstracts or papers between 1970 and 1999.

### Selection criteria

All randomised and controlled clinical trials published as full papers or abstracts which reported quantitative data on the outcomes crossbite correction, molar and/or canine expansion, signs and symptoms of temporomandibular joint dysfunction or respiratory disease.

### Data collection and analysis

Data were extracted without blinding to the authors, treatments used or results obtained.

The first named authors of randomised and controlled clinical trials were written to in an attempt to establish the method of randomisation/allocation and identify unpublished studies.

# Orthodontics for treating temporomandibular joint (TMJ) disorders

Friedy Luther[2], Stephen Layton[3], Fraser McDonald[1]

[1]Department of Orthodontics, King's College London Dental Institute, King's College London, London, UK. [2]Department of Orthodontics, Division of Child Dental Health, Leeds, UK. [3]United Lincolnshire Hospitals NHS Trust, Lincoln Nuffield Hospital, Lincoln, UK

Contact address: Fraser McDonald, Department of Orthodontics, King's College London Dental Institute, King's College London, Floor 22, Guy's Tower, St Thomas Street, London, SE1 9RT, UK. fraser.mcdonald@kcl.ac.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New, published in Issue 7, 2010.
**Review content assessed as up-to-date:** 3 June 2010.

**Citation:** Luther F, Layton S, McDonald F. Orthodontics for treating temporomandibular joint (TMJ) disorders. *Cochrane Database of Systematic Reviews* 2010, Issue 7. Art. No.: CD006541. DOI: 10.1002/14651858.CD006541.pub2.



## ABSTRACT

### Background

Temporomandibular disorders (TMD) relate to discomfort of the temporomandibular joint (TMJ). The disorder is multifactorial with a degree of psychogenic influence varying throughout an individual's life with phases of symptoms affecting the quality of life. In an attempt to treat this complex group of disorders many treatment modalities have been identified some of which are also considered in other Cochrane reviews. The disorder also has a normal cycle of events appearing to spontaneously improve without treatment.

### Objectives

To establish the effectiveness of orthodontic intervention in reducing symptoms in patients with TMD (compared with any control group receiving no treatment, placebo treatment or reassurance) and to establish if active orthodontic intervention leads to TMD.

### Search methods

The Cochrane Oral Health Group's Trials Register, CENTRAL, MEDLINE and EMBASE were searched. Handsearching of orthodontic journals and other related journals was undertaken in keeping with the Cochrane Collaboration handsearching programme. No language restrictions were applied.

Authors of any studies were identified, as were experts offering legal advice, and contacted to identify unpublished trials. Most recent search: 13th April 2010.

### Selection criteria

All randomised controlled trials (RCTs) including quasi-randomised trials assessing orthodontic treatment for TMD were included. Studies with adults aged equal to or above 18 years old with clinically diagnosed TMD were included. There were no age restrictions for prevention trials provided the follow-up period extended into adulthood. The inclusion criteria required reports to state their diagnostic criteria for TMD at the start of treatment and for participants to exhibit two or more of the signs and/or symptoms. The treatment group included treatment with appliances that could induce stable orthodontic tooth movement. Patients receiving splints for 8 to 12 weeks and studies involving surgical intervention (direct exploration/surgery of the joint and/or orthognathic surgery to correct an abnormality of the underlying skeletal pattern) were excluded. The outcomes were: how well were the symptoms reduced, adverse effects on oral health and quality of life.

# Reinforcement of anchorage during orthodontic brace treatment with implants or other surgical methods

Richard M Skeggs[1], Philip E Benson[2], Fiona Dyer[3]

[1]Orthodontic Department, University of Sheffield, Sheffield, UK. [2]Department of Oral Health and Development, School of Clinical Dentistry, University of Sheffield, Sheffield, UK. [3]Department of Orthodontics, Charles Clifford Dental Hospital, Sheffield, UK

Contact address: Richard M Skeggs, Orthodontic Department, University of Sheffield, School of Clinical Dentistry, Claremont Crescent, Sheffield, S10 2TA, UK. skeggsrichard@yahoo.co.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 4, 2008.
**Review content assessed as up-to-date:** 15 May 2007.

**Citation:** Skeggs RM, Benson PE, Dyer F. Reinforcement of anchorage during orthodontic brace treatment with implants or other surgical methods. *Cochrane Database of Systematic Reviews* 2007, Issue 3. Art. No.: CD005098. DOI: 10.1002/14651858.CD005098.pub2.



## ABSTRACT

### Background

The term anchorage in orthodontic treatment refers to the control of unwanted tooth movement. This is conventionally provided either by anchor sites within the mouth, such as the teeth and the palate or from outside the mouth (headgear). Orthodontic implants which are surgically inserted to bone in the mouth are increasingly being used as an alternative form of anchorage reinforcement in orthodontics.

### Objectives

The primary objective of this review was to evaluate the effectiveness of surgical methods for preventing unwanted tooth movement compared with conventional anchorage reinforcement techniques. The secondary objectives were to examine patient acceptance, discomfort and failure rates associated with these techniques.

### Search methods

The Cochrane Oral Health Group's Trials Register, CENTRAL, MEDLINE and EMBASE were searched. No language restrictions were applied. Authors were identified and contacted to identify unpublished trials. The most recent search was conducted in February 2006.

### Selection criteria

Randomised or quasi-randomised clinical trials involving the use of surgically assisted means of anchorage reinforcement on orthodontic patients. Inclusion and exclusion criteria were applied when considering the studies to be included in this review.

### Data collection and analysis

Data extraction was performed by two review authors working independently using a previously piloted data collection form. Data were entered into RevMan with planned analysis of mean differences (MD) and 95% confidence intervals (CI) for continuous outcomes and risk ratios (RR) and 95% CI for dichotomous outcomes. Pooling of data and meta-analysis were not performed due to an insufficient number of similar studies.

# Retention procedures for stabilising tooth position after treatment with orthodontic braces

Simon J Littlewood[1], Declan T Millett[2], Bridget Doubleday[3], David R Bearn[4], Helen V Worthington[5]

[1]Orthodontic Department, St Luke's Hospital, Bradford, UK. [2]Department of Oral Health and Development, University Dental School and Hospital, Wilton, Cork, Ireland. [3]Orthodontic Department, Glasgow Dental Hospital, Glasgow, UK. [4]Orthodontics, University of Dundee Dental School, Dundee, UK. [5]Cochrane Oral Health Group, MANDEC, School of Dentistry, The University of Manchester, Manchester, UK

Contact address: Simon J Littlewood, Orthodontic Department, St Luke's Hospital, Little Horton Lane, Bradford, West Yorkshire, BD5 0NA, UK. simonjlittlewood@aol.com.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 1, 2009.
**Review content assessed as up-to-date:** 10 November 2005.

**Citation:** Littlewood SJ, Millett DT, Doubleday B, Bearn DR, Worthington HV. Retention procedures for stabilising tooth position after treatment with orthodontic braces. *Cochrane Database of Systematic Reviews* 2006, Issue 1. Art. No.: CD002283. DOI: 10.1002/14651858.CD002283.pub3.



## ABSTRACT

### Background

Retention is the phase of orthodontic treatment that attempts to keep teeth in the corrected positions after treatment with orthodontic (dental) braces. Without a phase of retention there is a tendency for the teeth to return to their initial position (relapse). To prevent relapse almost every patient who has orthodontic treatment will require some type of retention.

### Objectives

To evaluate the effectiveness of different retention strategies used to stabilise tooth position after orthodontic braces.

### Search methods

The Cochrane Oral Health Group's Trials Register, CENTRAL, MEDLINE and EMBASE were searched. Handsearching of orthodontic journals was undertaken in keeping with the Cochrane Oral Health Group search programme. No language restrictions were applied. Authors of randomised controlled trials (RCTs) were identified and contacted to identify unpublished trials. Most recent search: May 2005.

### Selection criteria

RCTs on children and adults, who have had retainers fitted or adjunctive procedures undertaken, following orthodontic treatment with braces to prevent relapse. The outcomes were: how well the teeth were stabilised, survival of retainers, adverse effects on oral health and quality of life.

### Data collection and analysis

Screening of eligible studies, assessment of the methodological quality of the trials and data extraction were conducted in duplicate and independently by two review authors. As no two studies compared the same retention strategies (interventions) it was not possible to combine the results of any studies.

# Treatments for adults with prominent lower front teeth

Hideko Minami-Sugaya[1], Débora A Lentini-Oliveira[1], Fernando R Carvalho[1], Marco Antonio C Machado[1], Clóvis Marzola[2], Humberto Saconato[3], Gilmar F Prado[4]

[1]Neuro-Sono Sleep Center, Department of Neurology, Federal University of São Paulo, São Paulo - SP, Brazil. [2]Department of Surgery, Faculty of Odontology of Bauru, University of São Paulo, São Paulo, Brazil. [3]Department of Medicine, Santa Casa de Campo Mourão, Campo Mourão, Brazil. [4]Department of Neurology, Federal University of São Paulo, São Paulo - SP, Brazil

Contact address: Hideko Minami-Sugaya, Neuro-Sono Sleep Center, Department of Neurology, Federal University of São Paulo, Rua Americo Salvador Novelli 508, Itaquera, São Paulo - SP, 08210-090, Brazil. hmsugaya@gmail.com.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New, published in Issue 5, 2012.
**Review content assessed as up-to-date:** 22 March 2012.

**Citation:** Minami-Sugaya H, Lentini-Oliveira DA, Carvalho FR, Machado MAC, Marzola C, Saconato H, Prado GF. Treatments for adults with prominent lower front teeth. *Cochrane Database of Systematic Reviews* 2012, Issue 5. Art. No.: CD006963. DOI: 10.1002/14651858.CD006963.pub2.



## ABSTRACT

### Background

Prominent lower front teeth may be associated with a large or prognathic lower jaw (mandible) or a small or retrusive upper jaw (maxilla). Edward Angle, who may be considered the father of modern orthodontics, classified the malocclusion in this situation as Class III. The individual is described as having a negative or reverse overjet as the lower front teeth are more prominent than the upper front teeth.

### Objectives

The purpose of this systematic review was to evaluate different treatments of Angle Class III malocclusion in adults.

### Search methods

The following databases were searched: Cochrane Oral Health Group Trials Register (to 22 March 2012); CENTRAL (*The Cochrane Library* 2012, Issue 1); MEDLINE via OVID (1950 to 22 March 2012); EMBASE via OVID (1980 to 22 March 2012); LILACs (1982 to 22 March 2012); BBO (1986 to 22 March 2012); and SciELO (1997 to 22 March 2012).

### Selection criteria

All randomized or quasi-randomized controlled trials of treatments for adults with an Angle Class III malocclusion were included.

### Data collection and analysis

Three review authors independently assessed the eligibility of the identified reports. Two review authors independently extracted data and assessed the risk of bias in the included studies. The mean differences with 95% confidence intervals were calculated for continuous data.

# Hypnosis for children undergoing dental treatment

Sharifa Al-Harasi[1], Paul F Ashley[2], David R Moles[3], Susan Parekh[2], Val Walters[4]

[1]Military Dental Centre, PO Box 454, Seeb, Oman. [2]Unit of Paediatric Dentistry, UCL Eastman Dental Institute, London, UK. [3]Oral Health Services Research, Peninsula Dental School, Plymouth, UK. [4]Division of Psychology and Language Sciences, UCL, London, UK

Contact address: Sharifa Al-Harasi, Military Dental Centre, PO Box 454, PC 121, Seeb, Oman. ifaharasi@hotmail.com.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New, published in Issue 8, 2010.
**Review content assessed as up-to-date:** 14 June 2010.

**Citation:** Al-Harasi S, Ashley PF, Moles DR, Parekh S, Walters V. Hypnosis for children undergoing dental treatment. *Cochrane Database of Systematic Reviews* 2010, Issue 8. Art. No.: CD007154. DOI: 10.1002/14651858.CD007154.pub2.



## ABSTRACT

### Background

Managing children is a challenge that many dentists face. Many non-pharmacological techniques have been developed to manage anxiety and behavioural problems in children, such us: 'tell, show & do', positive reinforcement, modelling and hypnosis. The use of hypnosis is generally an overlooked area, hence the need for this review.

### Objectives

This systematic review attempted to answer the question: What is the effectiveness of hypnosis (with or without sedation) for behaviour management of children who are receiving dental care in order to allow successful completion of treatment?

Null hypothesis: Hypnosis has no effect on the outcome of dental treatment of children.

### Search methods

We searched the Cochrane Oral Health Group's Trials Register, CENTRAL, MEDLINE (OVID), EMBASE (OVID), and PsycINFO. Electronic and manual searches were performed using controlled vocabulary and free text terms with no language restrictions. Date of last search: 11th June 2010.

### Selection criteria

All children and adolescents aged up to 16 years of age. Children having any dental treatment, such as: simple restorative treatment with or without local anaesthetic, simple extractions or management of dental trauma.

### Data collection and analysis

Information regarding methods, participants, interventions, outcome measures and results were independently extracted, in duplicate, by two review authors. Authors of trials were contacted for details of randomisation and withdrawals and a quality assessment was carried out. The methodological quality of randomised controlled trials (RCTs) was assessed using the criteria described in the *Cochrane Handbook for Systematic Reviews of Interventions* 5.0.2.

### Main results

Only three RCTs (with 69 participants) fulfilled the inclusion criteria. Statistical analysis and meta-analysis were not possible due to insufficient number of studies.

# Sedation of children undergoing dental treatment

Liege Lourenço-Matharu[1], Paul F Ashley[2], Susan Furness[3]

[1]Unit of Paediatric Dentistry, King's College London, Dental Institute, London, UK. [2]Unit of Paediatric Dentistry, UCL Eastman Dental Institute, London, UK. [3]Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Manchester, UK

Contact address: Paul F Ashley, Unit of Paediatric Dentistry, UCL Eastman Dental Institute, 256 Grays Inn Road, London, WC1X 8LD, UK. p.ashley@eastman.ucl.ac.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New search for studies and content updated (conclusions changed), published in Issue 3, 2012.
**Review content assessed as up-to-date:** 13 January 2012.

**Citation:** Lourenço-Matharu L, Ashley PF, Furness S. Sedation of children undergoing dental treatment. *Cochrane Database of Systematic Reviews* 2012, Issue 3. Art. No.: CD003877. DOI: 10.1002/14651858.CD003877.pub4.



## ABSTRACT

### Background

Children's fear about dental treatment may lead to behaviour management problems for the dentist, which can be a barrier to the successful dental treatment of children. Sedation can be used to relieve anxiety and manage behaviour in children undergoing dental treatment. There is a need to determine from published research which agents, dosages and regimens are effective.

### Objectives

To evaluate the efficacy and relative efficacy of conscious sedation agents and dosages for behaviour management in paediatric dentistry.

### Search methods

Electronic searches of MEDLINE, EMBASE, Cochrane Central Register of Controlled Trials, Dissertation Abstracts, SIGLE, the World Wide Web (Google) and the Community of Science Database were conducted for relevant trials and references up to 4th August 2011. Reference lists from relevant articles were scanned and the authors contacted to identify trials and obtain additional information. There were no language restrictions. Trials pre-1966 were not searched.

### Selection criteria

Studies were selected if they met the following criteria: randomised controlled trials of conscious sedation comparing two or more drugs/techniques/placebo undertaken by the dentist or one of the dental team in children up to 16 years of age. Crossover trials were excluded.

### Data collection and analysis

Information regarding methods, participants, interventions, outcome measures and results were independently extracted, in duplicate, by two review authors. Where information in trial reports was unclear or incomplete authors of trials were contacted. Trials were assessed for risk of bias. The Cochrane Collaboration statistical guidelines were followed.

### Main results

Thirty-six studies were included with a total of 2810 participants. Thirty trials (83%) were at high risk of bias and six (17%) were at unclear risk of bias. There were 28 different sedatives used with or without inhalational nitrous oxide. Dosages, mode of administration and time of administration varied widely. Trials were grouped into placebo-controlled, dosage and head-to-head comparisons. Meta-analysis of the available data was possible for studies investigating oral midazolam vs placebo only. There is weak evidence from five

# Antibacterial agents in composite restorations for the prevention of dental caries

Tatiana Pereira-Cenci[1], Maximiliano S Cenci[1], Zbys Fedorowicz[2], Melissa A Marchesan[3]

[1]School of Dentistry, Federal University of Pelotas, Pelotas, Brazil. [2]UKCC (Bahrain Branch), Ministry of Health, Bahrain, Awali, Bahrain. [3]Dentistry, University of Ribeirão Preto-UNAERP, Ribeirão Preto, Brazil

Contact address: Tatiana Pereira-Cenci, School of Dentistry, Federal University of Pelotas, Rua Gonçalves Chaves, 457, 2nd floor, Pelotas, 96015560, Brazil. tatiana.dds@gmail.com. tatiana.cenci@ufpel.edu.br.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New, published in Issue 3, 2009.
**Review content assessed as up-to-date:** 9 March 2009.

**Citation:** Pereira-Cenci T, Cenci MS, Fedorowicz Z, Marchesan MA. Antibacterial agents in composite restorations for the prevention of dental caries. *Cochrane Database of Systematic Reviews* 2009, Issue 3. Art. No.: CD007819. DOI: 10.1002/14651858.CD007819.pub2.



## ABSTRACT

### Background

Dental caries is a multifactorial disease in which the fermentation of food sugars by bacteria from the biofilm (dental plaque) leads to localised demineralisation of tooth surfaces, which may ultimately result in cavity formation. Resin composites are widely used in dentistry to restore teeth. These restorations can fail for a number of reasons, such as secondary caries, excessive wear, marginal degradation, tooth sensitivity, pulpal death, and restorative material fracture. Caries adjacent to restorations is one of the main causes for restoration replacement. The presence of antibacterials in both the filling material and the bonding systems would theoretically be able to affect the initiation and progression of caries adjacent to restorations.

### Objectives

To assess the effects of antibacterial agents incorporated into composite restorations for the prevention of dental caries.

### Search methods

We searched the following databases in February 2009: the Cochrane Oral Health Group's Trials Register; the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2009, Issue 1); MEDLINE via OVID (1950 to February 2009) without filter; and EMBASE via OVID (1980 to February 2009) without filter.

### Selection criteria

Randomised controlled clinical trials (RCTs) comparing resin composite restorations containing antibacterial agents with non-antibacterial containing composite restorations.

### Data collection and analysis

Two review authors conducted screening of studies in duplicate and independently, and although no eligible trials were identified, the two authors had planned to extract data independently and assess trial quality using standard Cochrane Collaboration methodologies.

### Main results

We retrieved 128 references to studies, none of which matched the inclusion criteria for this review and all of which were excluded.

# One topical fluoride (toothpastes, or mouthrinses, or gels, or varnishes) versus another for preventing dental caries in children and adolescents

Valeria CC Marinho[1], Julian PT Higgins[2], Aubrey Sheiham[3], Stuart Logan[4]

[1]Clinical and Diagnostic Oral Sciences, Institute of Dentistry, Barts and The London School of Medicine and Dentistry, London, UK. [2]MRC Biostatistics Unit, Cambridge, UK. [3]Department of Epidemiology and Public Health, University College London Medical School, London, UK. [4]Institute of Health and Social Care Research, Peninsula Medical School, Universities of Exeter & Plymouth, Exeter, UK

Contact address: Valeria CC Marinho, Clinical and Diagnostic Oral Sciences, Institute of Dentistry, Barts and The London School of Medicine and Dentistry, Queen Mary, University of London, Turner Street, Whitechapel, London, E1 2AD, UK. vcmarinho@yahoo.com. v.marinho@qmul.ac.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 1, 2009.
**Review content assessed as up-to-date:** 23 November 2003.

**Citation:** Marinho VCC, Higgins JPT, Sheiham A, Logan S. One topical fluoride (toothpastes, or mouthrinses, or gels, or varnishes) versus another for preventing dental caries in children and adolescents. *Cochrane Database of Systematic Reviews* 2004, Issue 1. Art. No.: CD002780. DOI: 10.1002/14651858.CD002780.pub2.



## ABSTRACT

### Background

Topical fluorides in the form of toothpaste, mouthrinse, varnish and gel are effective caries preventive measures. However, there is uncertainty about the relative value of these interventions.

### Objectives

To compare the effectiveness of one form of topical fluoride intervention with another when used for the prevention of dental caries in children.

### Search methods

We searched the Cochrane Oral Health Group's Trials Register (May 2000), the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2000, Issue 2), MEDLINE (1966 to January 2000), plus several other databases. We handsearched journals, reference lists of articles and contacted selected authors and manufacturers.

### Selection criteria

Randomized or quasi-randomized controlled trials with blind outcome assessment, comparing fluoride varnish, gel, mouthrinse, or toothpaste with each other in children up to 16 years during at least 1 year. The main outcome was caries increment measured by the change in decayed, missing and filled tooth surfaces (D(M)FS).

### Data collection and analysis

Inclusion decisions, quality assessment and data extraction were duplicated in a random sample of one third of studies, and consensus achieved by discussion or a third party. Authors were contacted for missing data. The primary measure of effect was the prevented fraction (PF) that is the difference in mean caries increments between the 'experimental' and 'control' groups expressed as a percentage of the mean increment in the control group. Random-effects meta-analyses were performed where data could be pooled.

# Primary school-based behavioural interventions for preventing caries

Anna M Cooper[1], Lucy A O'Malley[2], Sarah N Elison[1], Rosemary Armstrong[3], Girvan Burnside[4], Pauline Adair[1], Lindsey Dugdill[1], Cynthia Pine[5]

[1]Directorate of Psychology and Public Health, School of Health Sciences, University of Salford, Salford, UK. [2]School of Dentistry, The University of Manchester, Manchester, UK. [3]World Health Organization Collaborating Centre for Research on Oral Health in Deprived Communities, School of Health Sciences, University of Salford, Salford, UK. [4]Department of Biostatistics, Institute of Translational Medicine, Faculty of Health and Life Sciences, University of Liverpool, Liverpool, UK. [5]Barts and The London School of Medicine and Dentistry, Queen Mary University of London, London, UK

Contact address: Anna M Cooper, Directorate of Psychology and Public Health, School of Health Sciences, University of Salford, Allerton Building, Frederick Road Campus, Salford, Greater Manchester, M6 6PU, UK. a.m.cooper@salford.ac.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New, published in Issue 5, 2013.
**Review content assessed as up-to-date:** 18 October 2012.

**Citation:** Cooper AM, O'Malley LA, Elison SN, Armstrong R, Burnside G, Adair P, Dugdill L, Pine C. Primary school-based behavioural interventions for preventing caries. *Cochrane Database of Systematic Reviews* 2013, Issue 5. Art. No.: CD009378. DOI: 10.1002/14651858.CD009378.pub2.



## ABSTRACT

### Background

Dental caries is one of the most common global childhood diseases and is, for the most part, entirely preventable. Good oral health is dependent on the establishment of the key behaviours of toothbrushing with fluoride toothpaste and controlling sugar snacking. Primary schools provide a potential setting in which these behavioural interventions can support children to develop independent and habitual healthy behaviours.

### Objectives

To assess the clinical effects of school-based interventions aimed at changing behaviour related to toothbrushing habits and the frequency of consumption of cariogenic food and drink in children (4 to 12 year olds) for caries prevention.

### Search methods

We searched the following electronic databases: the Cochrane Oral Health Group's Trials Register (to 18 October 2012), the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2012, Issue 4), MEDLINE via OVID (1948 to 18 October 2012), EMBASE via OVID (1980 to 18 October 2012), CINAHL via EBSCO (1981 to 18 October 2012) and PsycINFO via OVID (1950 to 18 October 2012). Ongoing trials were searched for using Current Controlled Trials (to 18 October 2012) and ClinicalTrials.gov (to 18 October 2012). Conference proceedings were searched for using ZETOC (1993 to 18 October 2012) and Web of Science (1990 to 18 October 2012). We searched for thesis abstracts using the Proquest Dissertations and Theses database (1950 to 18 October 2012). There were no restrictions regarding language or date of publication. Non-English language papers were included and translated in full by native speakers.

# Slow-release fluoride devices for the control of dental decay

Brian C Bonner[1], Jan E Clarkson[1], Lorna Dobbyn[2], Smriti Khanna[3]

[1]Dental Health Services Research Unit, University of Dundee, Dundee, UK. [2]Dundee Dental School and Hospital, University of Dundee, Dundee, UK. [3]Sheffield, UK

Contact address: Brian C Bonner, Dental Health Services Research Unit, University of Dundee, The Mackenzie Building, Kirsty Semple Way, Dundee, Tayside, DD2 4BF, UK. b.c.bonner@dundee.ac.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 4, 2008.
**Review content assessed as up-to-date:** 8 August 2006.

**Citation:** Bonner BC, Clarkson JE, Dobbyn L, Khanna S. Slow-release fluoride devices for the control of dental decay. *Cochrane Database of Systematic Reviews* 2006, Issue 4. Art. No.: CD005101. DOI: 10.1002/14651858.CD005101.pub2.



## ABSTRACT

### Background

Slow-release fluoride devices have been investigated as a potentially cost-effective method of reducing dental caries in those with high risk of disease.

### Objectives

To evaluate the effectiveness of different types of slow-release fluoride devices on preventing, arresting, or reversing the progression of carious lesions on all surface types of deciduous and permanent teeth.

### Search methods

We searched (up until February 2005) multiple electronic databases (Cochrane Oral Health Group's Trials Register, CENTRAL, MEDLINE, EMBASE), bibliographic references of identified randomised controlled trials (RCTs), textbooks, review articles, and meta-analyses. Letters were sent to authors of identified RCTs asking for clarifications and unpublished or ongoing research. Relevant journals were handsearched for more recent reports than those obtained from databases.

### Selection criteria

Randomised or quasi-randomised controlled trials (RCTs) comparing slow-release fluoride devices with an alternative fluoride treatment, placebo, or no intervention in all age groups. The main outcomes measures sought were changes in numbers of decayed, missing, and filled teeth or surfaces (DMFT/DMFS in permanent teeth or dmft/dmfs in primary teeth) and progression of carious lesions through enamel and into dentine.

### Data collection and analysis

Abstracts of all reports identified were considered independently by two review authors and full reports obtained of any potentially relevant articles to allow further assessment for relevance and validity. Data extraction and quality assessment were conducted independently by two and three review authors respectively, with arbitration by the fourth. Where uncertainty existed, authors were contacted for additional information.

# Adhesively bonded versus non-bonded amalgam restorations for dental caries

Zbys Fedorowicz[1], Mona Nasser[2], Nairn Wilson[3]

[1]UKCC (Bahrain Branch), Ministry of Health, Bahrain, Awali, Bahrain. [2]Department of Health Information, Institute for Quality and Efficiency in Health care, Cologne, Germany. [3]King's College London Dental Institute at Guy's, King's College and St Thomas' Hospitals, London, UK

Contact address: Zbys Fedorowicz, UKCC (Bahrain Branch), Ministry of Health, Bahrain, Box 25438, Awali, Bahrain. zbysfedo@batelco.com.bh.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New, published in Issue 4, 2009.
**Review content assessed as up-to-date:** 23 July 2009.

**Citation:** Fedorowicz Z, Nasser M, Wilson N. Adhesively bonded versus non-bonded amalgam restorations for dental caries. *Cochrane Database of Systematic Reviews* 2009, Issue 4. Art. No.: CD007517. DOI: 10.1002/14651858.CD007517.pub2.



## ABSTRACT

### Background

Dental caries (tooth decay) is one of the commonest diseases which afflicts mankind, and has been estimated to affect up to 80% of people in high-income countries. Caries adversely affects and progressively destroys the tissues of the tooth, including the dental pulp (nerve), leaving teeth unsightly, weakened and with impaired function. The treatment of lesions of dental caries, which are progressing through dentine and have caused the formation of a cavity, involves the provision of dental restorations (fillings).

### Objectives

To assess the effects of adhesive bonding on the in-service performance and longevity of restorations of dental amalgam.

### Search methods

Databases searched July 2009: the Cochrane Oral Health Group's Trials Register; CENTRAL (*The Cochrane Library* 2009, Issue 3); MEDLINE (1950 to July 2009); and EMBASE (1980 to July 2009).

### Selection criteria

Randomised controlled trials comparing adhesively bonded versus traditional non-bonded amalgam restorations in conventional preparations utilising deliberate retention, in adults with permanent molar and premolar teeth suitable for Class I and II amalgam restorations only.

### Data collection and analysis

Two review authors independently screened papers, extracted trial details and assessed the risk of bias in the included study.

### Main results

One trial with 31 patients who received 113 restorations was included. At 2 years only 3 out of 53 restorations in the non-bonded group were lost, which was attributed to a lack of retention, and 55 of 60 bonded restorations survived with five unaccounted for at follow-up. Post-insertion sensitivity was not significantly different ($P > 0.05$) at baseline or 2-year follow-up. No fractures of tooth tissue were reported and there was no significant difference between the groups or matched pairs of restorations in their marginal adaptation ($P > 0.05$).

# Ceramic inlays for restoring posterior teeth

Mikako Hayashi[1], Albert Yeung[2]

[1]Department of Restorative Dentistry & Endodontology, Osaka University Graduate School of Dentistry, Osaka, Japan. [2]Public Health Department, Lanarkshire NHS Board, Hamilton, UK

Contact address: Mikako Hayashi, Department of Restorative Dentistry & Endodontology, Osaka University Graduate School of Dentistry, 1-8 Yamadaoka Suita, Osaka, 565-0871, Japan. mikarin@dent.osaka-u.ac.jp.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 1, 2009.
**Review content assessed as up-to-date:** 31 October 2002.

**Citation:** Hayashi M, Yeung A. Ceramic inlays for restoring posterior teeth. *Cochrane Database of Systematic Reviews* 2003, Issue 1. Art. No.: CD003450. DOI: 10.1002/14651858.CD003450.



## ABSTRACT

### Background

In recent decades ceramic inlays have been used with the increasing requirements from patients for tooth-coloured restorations in posterior teeth. Ceramic inlays can offer an excellent appearance, however, their long-term prognosis is uncertain, as only a few studies have reported the long-term clinical performance of these restorations.

### Objectives

To compare the effectiveness of ceramic inlays in posterior teeth with other posterior restorations.

### Search methods

We conducted an electronic search of the Cochrane Oral Health Group Trials Register, the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2002, Issue 1), MEDLINE and EMBASE from 1990 to 2001. Handsearching included relevant journals and bibliographies of all relevant papers and review articles from 1990 up to 2001. In addition, we contacted experts and companies conducting clinical research on ceramic restorations to find other trials or unpublished materials or to clarify ambiguous or missing data.

### Selection criteria

Randomised controlled trials, in which the longevity of ceramic inlays is compared with those of other posterior restorations.

### Data collection and analysis

Screening of possible studies and data extraction were independently conducted by two review authors using a specially designed chart. Authors of studies were contacted for additional information. The methodological quality of studies was assessed in duplicate using individual components. The Cochrane Collaboration statistical guidelines were followed and the results expressed as odds ratio (OR) and 95% confidence interval for dichotomous outcomes.

### Main results

Two studies fulfilled the criteria to be included in the review. However, one of them was later excluded from the review, as the study design was not clearly described. The remaining included study evaluated the clinical performance of 60 ceramic inlays and 20 gold inlays for 5 years. Seven of the 60 ceramic inlays and two of the 20 gold inlays failed at 5-year review. No ceramic inlays resulted in postoperative pain/discomfort after the treatment, however, one gold inlay did. The power of the included study was not great enough to detect an important difference in longevity and postoperative pain/discomfort between ceramic and gold inlays.

# Dental fillings for the treatment of caries in the primary dentition

Veerasamy Yengopal[1], Soraya Yasin Harnekar[2], Naren Patel[3], Nandi Siegfried[4]

[1]Department of Community Dentistry, School of Public Health, Division of Public Oral Health, Wits University, Wits, South Africa. [2]Department of Paediatric Dentistry, Faculty of Dentistry, University of the Western Cape, Cape Town, South Africa. [3]Division of Restorative Dentistry, School of Oral Sciences, Tygerberg, South Africa. [4]South African Cochrane Centre, South African Medical Research Council, Tygerberg, South Africa

Contact address: Veerasamy Yengopal, Department of Community Dentistry, School of Public Health, Division of Public Oral Health, Wits University, Private Bag 3, Wits, Johannesburg, 2050, South Africa. Veerasamy.Yengopal@wits.ac.za.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 3, 2009.
**Review content assessed as up-to-date:** 16 February 2009.

**Citation:** Yengopal V, Harnekar SY, Patel N, Siegfried N. Dental fillings for the treatment of caries in the primary dentition. *Cochrane Database of Systematic Reviews* 2009, Issue 2. Art. No.: CD004483. DOI: 10.1002/14651858.CD004483.pub2.



## ABSTRACT

### Background

Childhood caries (tooth decay) consists of a form of tooth decay that affects the milk teeth (also known as baby or primary teeth) of children. This may range from tooth decay in a single tooth to rampant caries affecting all the teeth in the mouth. Primary teeth in young children are vital to their development and every effort should be made to retain these teeth for as long as is possible. Dental fillings or restorations have been used as an intervention to repair these damaged teeth. Oral health professionals need to make astute decisions about the type of restorative (filling) material they choose to best manage their patients with childhood caries. This decision is by no means an easy one as remarkable advances in dental restorative materials over the last 10 years has seen the introduction of a multitude of different filling materials claiming to provide the best performance in terms of durability, aesthetics, symptom relief, etc when placed in the mouth. This review sought to compare the different types of dental materials against each other for the same outcomes.

### Objectives

The objective of this review was to compare the outcomes (including pain relief, survival and aesthetics) for restorative materials used to treat caries in the primary dentition in children. Additionally, the restoration of teeth was compared with extraction and no treatment.

### Search methods

Electronic searches of the following databases were undertaken: the Cochrane Oral Health Group's Trials Register (up to January 2009); CENTRAL (*The Cochrane Library* 2009, Issue1); MEDLINE (1966 to January 2009); EMBASE (1996 to January 2009); SIGLE (1976 to 2004); and conference proceedings on early childhood caries, restorative materials for paediatric dentistry, and material sciences conferences for dental materials used for children's dentistry (1990 to 2008). The searches attempted to identify all relevant studies irrespective of language.

Additionally, the reference lists from articles of eligible papers were searched, handsearching of key journals was undertaken, and personal communication with authors and manufacturers of dental materials was initiated to increase the pool of suitable trials (both published and unpublished) for inclusion into this review.

# Direct versus indirect veneer restorations for intrinsic dental stains

John M Wakiaga[1], Paul Brunton[2], Nick Silikas[1], Anne-Marie Glenny[3]

[1]Unit of Biomaterials Science, School of Dentistry, The University of Manchester, Manchester, UK. [2]Fixed & Removable Prosthodontics, Leeds Dental Institute, Leeds, UK. [3]Cochrane Oral Health Group, MANDEC, School of Dentistry, The University of Manchester, Manchester, UK

Contact address: John M Wakiaga, Unit of Biomaterials Science, School of Dentistry, The University of Manchester, Higher Cambridge Street, Manchester, M15 6FH, UK. jmwakiaga@yahoo.co.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 4, 2008.
**Review content assessed as up-to-date:** 24 November 2003.

**Citation:** Wakiaga JM, Brunton P, Silikas N, Glenny AM. Direct versus indirect veneer restorations for intrinsic dental stains. *Cochrane Database of Systematic Reviews* 2004, Issue 1. Art. No.: CD004347. DOI: 10.1002/14651858.CD004347.pub2.



## ABSTRACT

### Background

Patients with discoloured teeth frequently present to the dentist requesting restorations designed to improve their appearance. For teeth that are sound, this might include the use of a veneer restoration. The veneer acts as a thin layer of a material covering the labial surface of a tooth and can be applied directly to the tooth, or by using indirect methods.

### Objectives

To examine the effectiveness of direct versus indirect laminate veneer restorations.

### Search methods

The following electronic databases were searched: the Cochrane Oral Health Group's Trials Register (November 2003), the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2003, Issue 4), MEDLINE (1980 to November 2003) and EMBASE (1980 to November 2003). There was no restriction on language.

### Selection criteria

All randomised controlled trials (RCTs) of participants with permanent anterior teeth suitable for restorations using laminate veneers, comparing direct (different composite materials) and indirect techniques for making dental veneers. The indirect restorations may be either composite or porcelain. The primary outcome was restoration failure.

### Data collection and analysis

Assessment of relevance and validity and data extraction were conducted in triplicate. Authors of the primary studies were contacted to provide additional information as necessary.

### Main results

Six full publications were screened as being potentially relevant to the review, only one trial was found to meet the review's inclusion criteria. Although the trial met the review's inclusion criteria with regard to participant characteristics, interventions and outcomes assessed, problems with the reporting of the data prevented any statistical analysis of the results.

# Hand and ultrasonic instrumentation for orthograde root canal treatment of permanent teeth

Vinícius Pedrazzi[1], Jeronimo M Oliveira-Neto[1], Patrick Sequeira[2], Zbys Fedorowicz[3], Mona Nasser[4]

[1]Departamento de Materiais Dentários e Prótese, Faculdade de Odontologia de Ribeirão Preto, Universidade de São Paulo, Ribeirão Preto, Brazil. [2]Endodontology SSE SFZ, Cham-Zug, Switzerland. [3]UKCC (Bahrain Branch), Ministry of Health, Bahrain, Awali, Bahrain. [4]Department of Health Information, Institute for Quality and Efficiency in Health care, Köln, Germany

Contact address: Vinícius Pedrazzi, Departamento de Materiais Dentários e Prótese, Faculdade de Odontologia de Ribeirão Preto, Universidade de São Paulo, Av do Café s/nº, Ribeirão Preto, São Paulo, 14040-904, Brazil. pedrazzi@forp.usp.br.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New search for studies and content updated (conclusions changed), published in Issue 4, 2008.
**Review content assessed as up-to-date:** 25 February 2008.

**Citation:** Pedrazzi V, Oliveira-Neto JM, Sequeira P, Fedorowicz Z, Nasser M. Hand and ultrasonic instrumentation for orthograde root canal treatment of permanent teeth. *Cochrane Database of Systematic Reviews* 2008, Issue 4. Art. No.: CD006384. DOI: 10.1002/14651858.CD006384.pub3.



## ABSTRACT

### Background

Endodontic treatment of root canals or root canal treatment is a frequently performed dental procedure and is carried out on teeth in which irreversible pulpitis has led to necrosis (death) of the dental pulp (nerve). Removal of the necrotic tissue remnants and cleaning and shaping of the root canal are important phases of root canal treatment. Treatment options include the use of hand and rotary instruments and methods using ultrasonic or sonic equipment.

### Objectives

The objectives of this review were to determine the relative clinical effectiveness of hand instrumentation versus ultrasonic instrumentation alone or in conjunction with hand instrumentation for orthograde root canal treatment of permanent teeth.

### Search methods

We searched the Cochrane Oral Health Group Trials Register, the Cochrane Central Register of Controlled Trials (CENTRAL), MEDLINE, EMBASE and LILACS. We searched the reference lists of relevant articles in an attempt to locate additional published and unpublished trials. No language restriction was applied. The last electronic search was conducted in December 2007.

### Selection criteria

Randomised controlled trials involving people over 18 years of age with single and multiple permanent teeth with a completely formed apex and with no evidence of internal resorption requiring root canal treatment were included. Patients undertaking re-treatment of a tooth were excluded.

### Data collection and analysis

Screening of eligible studies was conducted in duplicate and independently. Results were to be expressed as fixed-effect or random-effects models using mean differences for continuous outcomes and risk ratios for dichotomous outcomes with 95% confidence intervals. Heterogeneity was to be investigated including both clinical and methodological factors.

# Irrigants for non-surgical root canal treatment in mature permanent teeth

Zbys Fedorowicz[1], Mona Nasser[2], Patrick Sequeira-Byron[3], Raphael Freitas de Souza[4], Ben Carter[5], Marc Heft[6]

[1]UKCC (Bahrain Branch), Head of Research College of Medicine, AMA International University of Bahrain, Awali, Bahrain. [2]Peninsula Dental School, University of Plymouth, Plymouth, UK. [3]Department of Preventive, Restorative and Pediatric Dentistry, School of Dental Medicine, Bern 10, Switzerland. [4]Department of Dental Materials and Prosthodontics, Ribeirão Preto Dental School, University of São Paulo, Ribeirão Preto, Brazil. [5]North Wales Centre for Primary Care Research, Bangor University, Wrexham, UK. [6]Department of Oral and Maxillofacial Surgery, University of Florida College of Dentistry, Gainesville, USA

Contact address: Patrick Sequeira-Byron, Department of Preventive, Restorative and Pediatric Dentistry, School of Dental Medicine, Freiburgstrasse 7, Postfach 64, Bern 10, Bern, CH-3010, Switzerland. patrick.sequeira@zmk.unibe.ch.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New, published in Issue 9, 2012.
**Review content assessed as up-to-date:** 24 July 2012.

**Citation:** Fedorowicz Z, Nasser M, Sequeira-Byron P, de Souza RF, Carter B, Heft M. Irrigants for non-surgical root canal treatment in mature permanent teeth. *Cochrane Database of Systematic Reviews* 2012, Issue 9. Art. No.: CD008948. DOI: 10.1002/14651858.CD008948.pub2.



## ABSTRACT

### Background

Root canal treatment is carried out on teeth in which irreversible pulpitis has led to necrosis of the dental pulp. As a treatment option it is an alternative to dental extraction. Mechanical preparation and irrigation with antiseptic or antibacterial solutions destroys bacteria and cleans the infected root canal. Irrigants should be effective in deactivating bacteria in the entire root canal space without causing any adverse tissue reactions. Sodium hypochlorite (NaOCl) and chlorhexidine are commonly used but there is uncertainty as to which solution, concentration or combination is the most effective.

### Objectives

To assess the effects of irrigants used in the non-surgical root canal treatment of mature permanent teeth.

### Search methods

We searched the Cochrane Oral Health Group's Trials Register (to 5 July 2012), the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2012, Issue 4), MEDLINE via Ovid (1950 to 5 July 2012), EMBASE via Ovid (1980 to 5 July 2012), LILACS via BIREME (1980 to 5 July 2012). There were no restrictions regarding language or date of publication.

### Selection criteria

Randomised controlled trials in single or multi-rooted permanent teeth with pulpal or periapical pathology or both, which require root canal treatment. Irrigants either against each other or against inactive irrigant or placebo. Combinations of irrigants were allowed and if used in conjunction with EDTA (ethylenediaminetetra-acetic acid) or similar chelating agents.

### Data collection and analysis

Two review authors independently assessed risk of bias of included trials and extracted data.

# Magnification devices for endodontic therapy

Silvio Taschieri[1], Massimo Del Fabbro[1], Tiziano Testori[1], Roberto L Weinstein[1]

[1]Department of Odontology, University of Milan, Milan, Italy

Contact address: Silvio Taschieri, Department of Odontology, University of Milan, Galeazzi Institute, Via R Galeazzi 4, Milan, 20161, Italy. silvio.taschieri@fastwebnet.it. (Editorial group: Cochrane Oral Health Group.)

*Cochrane Database of Systematic Reviews*, Issue 2, 2009 (Status in this issue: *Unchanged*)

DOI: 10.1002/14651858.CD005969
**This version first published online:** 19 April 2006 in Issue 2, 2006. (Help document - Dates and Statuses explained)

**This record should be cited as:** Taschieri S, Del Fabbro M, Testori T, Weinstein RL. Magnification devices for endodontic therapy. *Cochrane Database of Systematic Reviews* 2006, Issue 2. Art. No.: CD005969. DOI: 10.1002/14651858.CD005969.

## ABSTRACT

This is the protocol for a review and there is no abstract. The objectives are as follows:

The purpose of this systematic review is to evaluate and compare the effectiveness of endodontic treatment performed with the aid of magnification devices versus endodontic treatment without magnification devices. Magnification devices will include microscopes, endoscopes and magnifying loupes.

**Null hypothesis**

No difference in clinical performance between using or not using magnification devices for endodontic treatment. In particular we aim to test that there is no difference in terms of treatment outcome, time for completing the clinical procedure, occurrence of post-operative discomfort (immediate and over following weeks).

# Ozone therapy for the treatment of dental caries

George David Rickard[1], Robin J Richardson[2], Trevor M Johnson[3], David C McColl[4], Lee Hooper[5]

[1]Dorking, UK. [2]Sutton Coldfield, UK. [3]Yorkshire Area, Faculty of General Dental Practice, York, UK. [4]Dental Surgery, Govan Hill Health Centre, Glasgow, UK. [5]School of Medicine, Health Policy & Practice, University of East Anglia, Norwich, UK

Contact address: George David Rickard, Old Sandstone Dental Practice, The Chine, Dorking, Surrey, RH4 1QT, UK. david@rickarddental.freeserve.co.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 4, 2008.
**Review content assessed as up-to-date:** 13 May 2004.

**Citation:** Rickard GD, Richardson RJ, Johnson TM, McColl DC, Hooper L. Ozone therapy for the treatment of dental caries. *Cochrane Database of Systematic Reviews* 2004, Issue 3. Art. No.: CD004153. DOI: 10.1002/14651858.CD004153.pub2.



## ABSTRACT

### Background

Dental caries is a bacterially mediated disease characterised by demineralisation of the tooth surface, which may lead to cavitation, discomfort, pain and eventual tooth loss. Ozone is toxic to certain bacteria in vitro and it has been suggested that delivering ozone into a carious lesion might reduce the number of cariogenic bacteria. This possibly could arrest the progress of the lesion and may, in the presence of fluoride, perhaps allow remineralisation to occur. This may in turn delay or prevent the need for traditional dental conservation by 'drilling and filling'.

### Objectives

To assess whether ozone is effective in arresting or reversing the progression of dental caries.

### Search methods

We searched the Cochrane Oral Health Group's Trials Register (to 7 November 2003); Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2003, Issue 3); MEDLINE and PREMEDLINE (OVID) (1966 to November 2003); EMBASE (OVID) (1980 to November 2003); CINAHL (OVID) (1982 to November 2003); AMED (OVID) (1985 to November 2003). Quintessence was handsearched through 2002 and KaVo were contacted as manufacturers of the HealOzone apparatus for any additional published or unpublished trials.

### Selection criteria

Inclusion was assessed independently by at least two reviewers. Trials were only included if they met the following criteria: randomisation in a controlled trial; single surface in vivo carious lesion accessible to ozone application; clear allocation concealment; ozone application to the lesions in the intervention group; no such application of ozone in the control group; outcomes measured after at least 6 months.

### Data collection and analysis

Reviewers independently extracted information in duplicate. A paucity of comparable data did not allow meta-analytic pooling of the included studies.

# Pulp management for caries in adults: maintaining pulp vitality

Hiroshi Miyashita[1], Helen V Worthington[2], Alison Qualtrough[3], Alphons Plasschaert[4]

[1]Dentistry, SPDA Japan, Minato-Ku, Tokyo, Japan. [2]Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Manchester, UK. [3]Operative Dentistry and Endodontology, School of Dentistry, The University of Manchester, Manchester, UK. [4]Department of Preventative and Curative Dentistry, Radboud University Nijmegen Medical Center, Nijmegen, Netherlands

Contact address: Alison Qualtrough, Operative Dentistry and Endodontology, School of Dentistry, The University of Manchester, Higher Cambridge Street, Manchester, M15 6FH, UK. alison.qualtrough@manchester.ac.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 4, 2012.
**Review content assessed as up-to-date:** 12 February 2007.

**Citation:** Miyashita H, Worthington HV, Qualtrough A, Plasschaert A. Pulp management for caries in adults: maintaining pulp vitality. *Cochrane Database of Systematic Reviews* 2007, Issue 2. Art. No.: CD004484. DOI: 10.1002/14651858.CD004484.pub2.



## ABSTRACT

### Background

There is a range of treatment options for the management of the pulp in extensively decayed teeth. These include direct and indirect pulp capping, pulpotomy or pulpectomy. If the tooth is symptomatic or if there are periapical bone changes, then endodontic treatment is required. However, if the tooth is asymptomatic but the caries is extensive, there is no consensus as to the best method of management. In addition, there has been a recent move towards using alternative materials and methods such as the direct or indirect placement of bonding agents and mineral trioxide aggregate.

Most studies have investigated the management of asymptomatic carious teeth with or without an exposed dental pulp using various capping materials (e.g. calcium hydroxide, Ledermix, Triodent, Biorex, etc.). However, there is no long term data regarding the outcome of management of asymptomatic, carious teeth according to different regimens.

### Objectives

This study aims to assess the effectiveness of techniques used to treat asymptomatic carious teeth and maintain pulp vitality.

### Search methods

Electronic searches of the following databases were undertaken: The Cochrane Oral Health Group's Trials Register (March 2006), the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2006, Issue 1), MEDLINE (1966 to week 4, February 2006), EMBASE (1974 to 13 March 2006), National Research Register (March 2006), Science Citation Index - SCISEARCH (1981 to March 2006). Detailed search strategies were developed for each database. Handsearching and screening of reference lists were undertaken. There was no restriction with regard to language of publication.

### Selection criteria

Studies included were randomised controlled trials (RCTs). Asymptomatic vital permanent teeth with extensive caries were included. Studies were those which compared techniques to maintain pulp vitality. Outcome measures included clinical success and adverse events.

# Pulp treatment for extensive decay in primary teeth

Gill Nadin[1], Beena Rani Goel[2], Albert Yeung[3], Anne-Marie Glenny[4]

[1]Shetland NHS Board, Lerwick, UK. [2]India Office, International Academy for Rotary Endodontics, Belgaum, India. [3]Public Health Department, Lanarkshire NHS Board, Hamilton, UK. [4]Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Manchester, UK

Contact address: Gill Nadin, Shetland NHS Board, Montfield Dental Clinic, Burgh Road, Lerwick, Shetland, ZE1 OLA, UK. g.nadin@nhs.net.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 4, 2012.
**Review content assessed as up-to-date:** 1 November 2002.

**Citation:** Nadin G, Goel BR, Yeung A, Glenny AM. Pulp treatment for extensive decay in primary teeth. *Cochrane Database of Systematic Reviews* 2003, Issue 1. Art. No.: CD003220. DOI: 10.1002/14651858.CD003220.



## ABSTRACT

### Background

Dental decay in primary teeth remains a considerable health problem. Where decay extends to involve the dental pulp, pulp treatment techniques are often used to manage both symptomatic and symptom free teeth.

### Objectives

To assess the relative effectiveness of:

various pulp treatment techniques in retaining primary molar teeth with decay involving the pulp for at least 12 months;

pulp treatment techniques and extractions in avoiding long term sequelae.

### Search methods

We searched the Cochrane Oral Health Group's Trials Register (August 2002); CENTRAL (*The Cochrane Library* 2002, Issue 3); MEDLINE (January 1966 to August 2002); EMBASE (1980 to August 2002); Science Citation Index Expanded (1981 to August 2002); Social Science Citation Index (1981 to August 2002); Index to Scientific and Technical Proceedings (1982 to August 2002); System for Information on Grey Literature in Europe (August 2002). Key journals were handsearched. There was no restriction on language of publication.

### Selection criteria

Randomised or quasi-randomised controlled trials (RCTs) comparing different pulp treatment techniques (with each other, with extraction or with no treatment) for extensive decay in primary molar teeth. Primary outcomes were extractions following pulp treatment and long term effects.

### Data collection and analysis

Data extraction and quality assessment were carried out independently and in duplicate. Authors were contacted for additional information where necessary.

# Replacement versus repair of defective restorations in adults: amalgam

Mohammad O Sharif[2], Alison Merry[3], Melanie Catleugh[4], Martin Tickle[5], Paul Brunton[1], Stephen M Dunne[6], Vishal R Aggarwal[5]

[1]Fixed & Removable Prosthodontics, Leeds Dental Institute, Leeds, UK. [2]School of Dentistry, The University of Manchester, Manchester, UK. [3]Public Health Department, NHS Herefordshire, Hereford, UK. [4]Department of Dental Public Health, NHS East Lancashire, Nelson, UK. [5]Oral Health Unit, National Primary Care Research and Development Centre, School of Dentistry, The University of Manchester, Manchester, UK. [6]Primary Dental Care, Kings College London Dental Institute, London, UK

Contact address: Paul Brunton, Fixed & Removable Prosthodontics, Leeds Dental Institute, Clarendon Way, Leeds, LS2 9LU, UK. p.a.brunton@leeds.ac.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New, published in Issue 2, 2010.
**Review content assessed as up-to-date:** 3 January 2010.

**Citation:** Sharif MO, Merry A, Catleugh M, Tickle M, Brunton P, Dunne SM, Aggarwal VR. Replacement versus repair of defective restorations in adults: amalgam. *Cochrane Database of Systematic Reviews* 2010, Issue 2. Art. No.: CD005970. DOI: 10.1002/14651858.CD005970.pub2.



## ABSTRACT

### Background

Amalgam is a common filling material for posterior teeth, as with any restoration amalgams have a finite life-span. Traditionally replacement was the ideal approach to treat defective amalgam restorations, however, repair offers an alternative more conservative approach where restorations are only partially defective. Repairing a restoration has the potential of taking less time and may sometimes be performed without the use of local anaesthesia hence it may be less distressing for a patient when compared with replacement.

### Objectives

To evaluate the effectiveness of replacement (with amalgam) versus repair (with amalgam) in the management of defective amalgam dental restorations in permanent molar and premolar teeth.

### Search methods

For the identification of studies relevant to this review we searched the Cochrane Oral Health Group Trials Register (to 23rd September 2009); CENTRAL (*The Cochrane Library* 2009, Issue 4); MEDLINE (1950 to 23rd September 2009); EMBASE (1980 to 23rd September 2009); ISI Web of Science (SCIE, SSCI) (1981 to 22nd December 2009); ISI Web of Science Conference Proceedings (1990 to 22nd December 2009); BIOSIS (1985 to 22nd December 2009); and OpenSIGLE (1980 to 2005). Researchers, experts and organisations known to be involved in this field were contacted in order to trace unpublished or ongoing studies. There were no language limitations.

### Selection criteria

Trials were selected if they met the following criteria: randomised or quasi-randomised controlled trial, involving replacement and repair of amalgam restorations.

# Replacement versus repair of defective restorations in adults: resin composite

Mohammad O Sharif[2], Melanie Catleugh[3], Alison Merry[4], Martin Tickle[5], Stephen M Dunne[6], Paul Brunton[1], Vishal R Aggarwal[5]

[1]Fixed & Removable Prosthodontics, Leeds Dental Institute, Leeds, UK. [2]School of Dentistry, The University of Manchester, Manchester, UK. [3]Department of Dental Public Health, NHS East Lancashire, Nelson, UK. [4]Public Health Department, NHS Herefordshire, Hereford, UK. [5]Oral Health Unit, National Primary Care Research and Development Centre, School of Dentistry, The University of Manchester, Manchester, UK. [6]Primary Dental Care, Kings College London Dental Institute, London, UK

Contact address: Paul Brunton, Fixed & Removable Prosthodontics, Leeds Dental Institute, Clarendon Way, Leeds, LS2 9LU, UK. p.a.brunton@leeds.ac.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New, published in Issue 2, 2010.
**Review content assessed as up-to-date:** 3 January 2010.

**Citation:** Sharif MO, Catleugh M, Merry A, Tickle M, Dunne SM, Brunton P, Aggarwal VR. Replacement versus repair of defective restorations in adults: resin composite. *Cochrane Database of Systematic Reviews* 2010, Issue 2. Art. No.: CD005971. DOI: 10.1002/14651858.CD005971.pub2.



## ABSTRACT

### Background

Composite filling materials have been increasingly used for the restoration of posterior teeth in recent years as a tooth coloured alternative to amalgam. As with any filling material composites have a finite life-span. Traditionally, replacement was the ideal approach to treat defective composite restorations, however, repairing composites offers an alternative more conservative approach where restorations are partly still serviceable. Repairing the restoration has the potential of taking less time and may sometimes be performed without the use of local anaesthesia hence it may be less distressing for a patient when compared with replacement.

### Objectives

To evaluate the effectiveness of replacement (with resin composite) versus repair (with resin composite) in the management of defective resin composite dental restorations in permanent molar and premolar teeth.

### Search methods

For the identification of studies relevant to this review we searched the Cochrane Oral Health Group Trials Register (to 23rd September 2009); CENTRAL (*The Cochrane Library* 2009, Issue 4); MEDLINE (1950 to 23rd September 2009); EMBASE (1980 to 23rd September 2009); ISI Web of Science (SCIE, SSCI) (1981 to 22nd December 2009); ISI Web of Science Conference Proceedings (1990 to 22nd December 2009); BIOSIS (1985 to 22nd December 2009); and OpenSIGLE (1980 to 2005). Researchers, experts and organisations known to be involved in this field were contacted in order to trace unpublished or ongoing studies. There were no language limitations.

### Selection criteria

Trials were selected if they met the following criteria: randomised or quasi-randomised controlled trial, involving replacement and repair of resin composite restorations.

# Root canal posts for the restoration of root filled teeth

Marc Bolla[2], Michele Muller-Bolla[1], Cybele Borg[2], Laurence Lupi-Pegurier[1], Olivier Laplanche[3], Eric Leforestier[4]

[1]Sante Publique (Public Health), Faculté de Chirurgie Dentaire, Nice, France. [2]Biomatériaux Dentaires (Biomaterials), Faculté de Chirurgie Dentaire, Nice, France. [3]Prothèses (Prosthetics), Faculté de Chirurgie Dentaire, Nice, France. [4]Odontologie Conservatrice - Endodontie (Conservative Dentistry), Faculté de Chirurgie Dentaire, Nice, France

Contact address: Michele Muller-Bolla, Sante Publique (Public Health), Faculté de Chirurgie Dentaire, 24 Rue des Diables Bleus, Nice, 06357, France. muller@unice.fr.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 4, 2008.
**Review content assessed as up-to-date:** 31 October 2006.

**Citation:** Bolla M, Muller-Bolla M, Borg C, Lupi-Pegurier L, Laplanche O, Leforestier E. Root canal posts for the restoration of root filled teeth. *Cochrane Database of Systematic Reviews* 2007, Issue 1. Art. No.: CD004623. DOI: 10.1002/14651858.CD004623.pub2.



## ABSTRACT

### Background

The foundation for the reconstruction of endodontically-treated teeth can be provided by a metal or a non-metal post and core system but no guidelines exist for choosing one or the other in particular clinical cases.

### Objectives

To assess the effectiveness of different post and core systems for the restoration of endodontically-treated teeth. The primary objective of this review was to compare the clinical failure rates of the different types of posts.

### Search methods

We searched the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2005, Issue 3), MEDLINE (from 1966 to September 2005), Scopus (from January 1985 to December 2004) and EMBASE (until December 2004). We looked through reference lists of articles and dental conference proceedings. We contacted researchers in the field and manufacturers.

### Selection criteria

Randomised or quasi-randomised clinical trials (RCTs) comparing failures on endodontically-treated permanent teeth with different types of post. The outcomes were loss of retention, post fracture and root fracture.

### Data collection and analysis

Two review authors independently assessed the quality of trials and extracted data. Study authors were contacted for additional information.

### Main results

Two trials involving 317 participants were included but only one of them, involving 200 participants, compared metal to non-metal posts. The other answered to the secondary objective. The risk of failure was greater with metal-cast posts (9/98) compared to carbon fibre posts (0/97) (risk ratio (RR) = 0.05 (95% confidence interval (CI) 0.00 to 0.90)) but the study was at high risk of bias. Thus fewer failures occurred when using non-metal posts but the evidence is unreliable.

# Single crowns versus conventional fillings for the restoration of root filled teeth

Zbys Fedorowicz[1], Ben Carter[2], Raphael Freitas de Souza[3], Carolina de Andrade Lima Chaves[4], Mona Nasser[5], Patrick Sequeira-Byron[6]

[1]UKCC (Bahrain Branch), College of Medicine, AMA International University of Bahrain, Awali, Bahrain. [2]North Wales Centre for Primary Care Research, Bangor University, Wrexham, UK. [3]Department of Dental Materials and Prosthodontics, Ribeirão Preto Dental School, University of São Paulo, Ribeirão Preto, Brazil. [4]Department of Dental Materials and Prosthodontics, Araraquara Dental School, São Paulo State University, Araraquara, Brazil. [5]Peninsula Dental School, University of Plymouth, Plymouth, UK. [6]Department of Preventive, Restorative and Pediatric Dentistry, School of Dental Medicine, Bern 10, Switzerland

Contact address: Zbys Fedorowicz, UKCC (Bahrain Branch), College of Medicine, AMA International University of Bahrain, Box 25438, Awali, Bahrain. zbysfedo@batelco.com.bh. zbysfedorowicz@gmail.com.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New, published in Issue 5, 2012.
**Review content assessed as up-to-date:** 13 February 2012.

**Citation:** Fedorowicz Z, Carter B, de Souza RF, de Andrade Lima Chaves C, Nasser M, Sequeira-Byron P. Single crowns versus conventional fillings for the restoration of root filled teeth. *Cochrane Database of Systematic Reviews* 2012, Issue 5. Art. No.: CD009109. DOI: 10.1002/14651858.CD009109.pub2.



## ABSTRACT

### Background

Endodontic treatment, involves removal of the dental pulp and its replacement by a root canal filling. Restoration of root filled teeth can be challenging due to structural differences between vital and non-vital root filled teeth. Direct restoration involves placement of a restorative material e.g. amalgam or composite directly into the tooth. Indirect restorations consist of cast metal or ceramic (porcelain) crowns. The choice of restoration depends on the amount of remaining tooth which may influence long term survival and cost. The comparative in service clinical performance of crowns or conventional fillings used to restore root filled teeth is unclear.

### Objectives

To assess the effects of restoration of endodontically treated teeth (with or without post and core) by crowns versus conventional filling materials.

### Search methods

We searched the following databases: the Cochrane Oral Health Group's Trials Register, CENTRAL, MEDLINE via OVID, EMBASE via OVID, CINAHL via EBSCO, LILACS via BIREME and the reference lists of articles as well as ongoing trials registries. There were no restrictions regarding language or date of publication. Date of last search was 13 February 2012.

### Selection criteria

Randomised controlled trials (RCTs) or quasi-randomised controlled trials in participants with permanent teeth which have undergone endodontic treatment. Single full coverage crowns compared with any type of filling materials for direct restoration, as well as indirect partial restorations (e.g. inlays and onlays). Comparisons considered the type of post and core used (cast or prefabricated post), if any.

### Data collection and analysis

Two review authors independently assessed trial quality and extracted data.

# Single versus multiple visits for endodontic treatment of permanent teeth

Lara Figini[1], Giovanni Lodi[2], Fabio Gorni[3], Massimo Gagliani[4]

[1]Milan, Italy. [2]Oral Pathology and Oral Medicine, University of Milan, Milan, Italy. [3]Endodontics, Italian Endodontic Society, Milan, Italy. [4]Clinica Odontoiatrica, DMCO San Paolo, Milan, Italy

Contact address: Lara Figini, Piazzale Aquileia 6, Milan, 20144, Italy. lara.figini@libero.it.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 4, 2008.
**Review content assessed as up-to-date:** 20 August 2007.

**Citation:** Figini L, Lodi G, Gorni F, Gagliani M. Single versus multiple visits for endodontic treatment of permanent teeth. *Cochrane Database of Systematic Reviews* 2007, Issue 4. Art. No.: CD005296. DOI: 10.1002/14651858.CD005296.pub2.



## ABSTRACT

### Background

Root canal treatment (RoCT), or endodontic treatment, is a common procedure in dentistry. The main indications for RoCT are irreversible pulpitis and necrosis of the dental pulp caused by carious processes, tooth cracks or chips, or dental trauma. Successful RoCT is characterised by an absence of symptoms and clinical signs in teeth without radiographic evidence of periodontal involvement. The success of RoCT depends on a series of variables related to the preoperative condition of the tooth, as well as the endodontic procedures.

### Objectives

To compare the effectiveness of single- and multiple-visit RoCT, measured as tooth extraction due to endodontic problems and radiological success.

To assess the difference in short- and long-term complications between single- and multiple-visit RoCT.

### Search methods

The following databases were searched for relevant trials: Cochrane Oral Health Group's Trials Register, CENTRAL, MEDLINE, and EMBASE. Handsearching was performed for the major oral medicine journals. References of included studies and reviews were checked. Endodontics experts were contacted through e-mail. No language limitations were imposed. Date of last search was 6th March 2007.

### Selection criteria

Randomised and quasi-randomised controlled trials of patients needing RoCT were included. Surgical endodontic treatment was excluded. The outcomes considered were the number of teeth extracted for endodontic problems; radiological success after at least 1 year, that is, absence of any periapical radiolucency; postoperative pain; painkiller use; swelling; or sinus track formation.

### Data collection and analysis

Data were collected using a specific extraction form. The validity of included studies was assessed on the basis of allocation concealment, blindness of the study, and loss of participants. Data were analysed by calculating risk ratios. When valid and relevant data were collected, a meta-analysis of the data was undertaken.

# Surgical versus non-surgical endodontic re-treatment for periradicular lesions

Massimo Del Fabbro[1], Silvio Taschieri[2], Tiziano Testori[2], Luca Francetti[2], Roberto L Weinstein[2]

[1]Department of Odontology, IRCCS Galeazzi Institute, University of Milan, Milan, Italy. [2]Department of Odontology, University of Milan, Milan, Italy

Contact address: Massimo Del Fabbro, Department of Odontology, IRCCS Galeazzi Institute, University of Milan, Via R Galeazzi 4, Milan, 20161, Italy. massimo.delfabbro@unimi.it.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 4, 2008.
**Review content assessed as up-to-date:** 20 May 2007.

**Citation:** Del Fabbro M, Taschieri S, Testori T, Francetti L, Weinstein RL. Surgical versus non-surgical endodontic re-treatment for periradicular lesions. *Cochrane Database of Systematic Reviews* 2007, Issue 3. Art. No.: CD005511. DOI: 10.1002/14651858.CD005511.pub2.



## ABSTRACT

### Background

Though success rates of endodontic initial treatment have been improving over the years, persistence of periapical disease is far from being a rare condition. The most common therapeutical options for the re-treatment of teeth with periapical pathosis are non-surgical orthograde treatment and surgical treatment. Selection between alternative treatments should be based on assessment of respective benefits (mainly healing) and risks from studies consistent with a high level of evidence.

### Objectives

To test the null hypothesis of no difference in outcome between surgical and non-surgical therapy for endodontic re-treatment of periradicular lesions.

### Search methods

The Cochrane Oral Health Group Trials Register, CENTRAL, MEDLINE and EMBASE were searched with appropriate search strategies. Handsearching included eight dental journals. The bibliographies of relevant clinical trials and relevant articles were checked for identifying studies outside the handsearched journals. Seven manufacturers of instruments in the field of endodontics or endodontic surgery or both, as well as the authors of the identified randomised controlled trials (RCTs) were contacted in order to identify unpublished or ongoing RCTs. No language restriction was placed. The last electronic search was conducted on 3rd April 2007.

### Selection criteria

All RCTs about re-treatment of teeth with periapical pathosis in which both surgical and non-surgical approaches were used and having a follow up of at least 1 year were considered for the analysis.

### Data collection and analysis

A quality assessment of the included RCTs was carried out and the authors were contacted for missing information. We independently extracted the data in duplicate. We followed the Cochrane Collaboration's statistical guidelines.

# Interventions for the management of dry mouth: non-pharmacological interventions

Susan Furness[1], Gemma Bryan[1], Roddy McMillan[2], Helen V Worthington[1]

[1]Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Manchester, UK. [2]Eastman Dental Hospital, London, UK

Contact address: Susan Furness, Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Coupland III Building, Oxford Rd, Manchester, M13 9PL, UK. Susan.Furness@manchester.ac.uk. suefurness@gmail.com.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New, published in Issue 8, 2013.
**Review content assessed as up-to-date:** 16 April 2013.

**Citation:** Furness S, Bryan G, McMillan R, Worthington HV. Interventions for the management of dry mouth: non-pharmacological interventions. *Cochrane Database of Systematic Reviews* 2013, Issue 8. Art. No.: CD009603. DOI: 10.1002/14651858.CD009603.pub2.



## ABSTRACT

### Background

Xerostomia is the subjective sensation of dry mouth. Common causes of xerostomia include adverse effects of many commonly prescribed medications, disease (e.g. Sjogren's Syndrome) and radiotherapy treatment for head and neck cancers. Non-pharmacological techniques such as acupuncture or mild electrostimulation may be used to improve symptoms.

### Objectives

To assess the effects of non-pharmacological interventions administered to stimulate saliva production for the relief of dry mouth.

### Search methods

We searched the Cochrane Oral Health Group's Trials Register (to 16th April 2013), the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2013, Issue 3), MEDLINE via OVID (1948 to 16th April 2013), EMBASE via OVID (1980 to 16th April 2013), AMED via OVID (1985 to 16th April 2013), CINAHL via EBSCO (1981 to 16th April 2013), and CANCERLIT via PubMed (1950 to 16th April 2013). The *meta*Register of Controlled Clinical Trials (www.controlled-trials.com) and ClinicalTrials.gov (www.clinicaltrials.gov) were also searched to identify ongoing and completed trials. References lists of included studies and relevant reviews were also searched. There were no restrictions on the language of publication or publication status.

### Selection criteria

We included parallel group randomised controlled trials of non-pharmacological interventions to treat dry mouth, where participants had dry mouth symptoms at baseline.

### Data collection and analysis

At least two review authors assessed each of the included studies to confirm eligibility, assess risk of bias and extract data using a piloted data extraction form. We calculated mean difference (MD) and 95% confidence intervals (CI) for continuous outcomes or where different scales were used to assess an outcome, we calculated standardised mean differences (SMD) together with 95% CIs. We attempted to extract data on adverse effects of interventions. Where data were missing or unclear we attempted to contact study authors to obtain further information.

# Interventions for the management of dry mouth: topical therapies

Susan Furness[1], Helen V Worthington[1], Gemma Bryan[1], Sarah Birchenough[2], Roddy McMillan[3]

[1]Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Manchester, UK. [2]Bradford Teaching Hospitals NHS Foundation Trust, Bradford, UK. [3]Eastman Dental Hospital, London, UK

Contact address: Susan Furness, Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Coupland III Building, Oxford Rd, Manchester, M13 9PL, UK. Susan.Furness@manchester.ac.uk. suefurness@gmail.com.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New, published in Issue 12, 2011.
**Review content assessed as up-to-date:** 28 October 2011.

**Citation:** Furness S, Worthington HV, Bryan G, Birchenough S, McMillan R. Interventions for the management of dry mouth: topical therapies. *Cochrane Database of Systematic Reviews* 2011, Issue 12. Art. No.: CD008934. DOI: 10.1002/14651858.CD008934.pub2.



## ABSTRACT

### Background

Xerostomia (the feeling of dry mouth) is a common symptom especially in older adults. Causes of dry mouth include medications, autoimmune disease (Sjögren's Syndrome), radiotherapy or chemotherapy for cancer, hormone disorders and infections.

### Objectives

To determine which topical treatments for dry mouth are effective in reducing this symptom.

### Search methods

We searched the following electronic databases: the Cochrane Oral Health Group Trials Register (28 October 2011), The Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library*, Issue 4 2011), MEDLINE via OVID (1950 to 28 October 2011), EMBASE via OVID (1980 to 28 October 2011), CINAHL via EBSCO (1980 to 28 October 2011), AMED via OVID (1985 to 28 October 2011), CANCERLIT via PubMed (1950 to 28 October 2011).

### Selection criteria

We included randomised controlled trials of topical interventions such as lozenges, sprays, mouthrinses, gels, oils, chewing gum or toothpastes for the treatment of dry mouth symptom. We classified interventions into two broad categories, saliva stimulants and saliva substitutes, and these were compared with either placebo or another intervention. We included both parallel group and crossover trials.

### Data collection and analysis

Two or more review authors independently carried out data extraction and assessed risk of bias. Trial authors were contacted for additional information as required.

### Main results

Thirty-six randomised controlled trials involving 1597 participants met the inclusion criteria. Two trials compared saliva stimulants to placebo, nine trials compared saliva substitutes to placebo, five trials compared saliva stimulants directly with saliva substitutes, 18 trials directly compared two or more saliva substitutes, and two trials directly compared two or more saliva stimulants. Only one trial was at low risk of bias and 17 were at high risk of bias. Due to the range of interventions, comparisons and outcome measures in the trials,

# Acyclovir for treating primary herpetic gingivostomatitis

Mona Nasser[1], Zbys Fedorowicz[2], Mohammad H Khoshnevisan[3], Maryam Shahiri Tabarestani[4]

[1]Department of Health Information, Institute for Quality and Efficiency in Health care, Köln, Germany. [2]UKCC (Bahrain Branch), Ministry of Health, Bahrain, Awali, Bahrain. [3]Community Oral Health, School of Dentistry of SBMU, Tehran, Iran, Islamic Republic of. [4]App 2, 1st Floor, Babol, Iran, Islamic Republic of

Contact address: Mona Nasser, Department of Health Information, Institute for Quality and Efficiency in Health care, Dillenburger Street, 27, D-51105, Köln, D-51105, Germany. Monalisa1n@gmail.com. monanasser1@googlemail.com.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New, published in Issue 4, 2008.
**Review content assessed as up-to-date:** 25 June 2008.

**Citation:** Nasser M, Fedorowicz Z, Khoshnevisan MH, Shahiri Tabarestani M. Acyclovir for treating primary herpetic gingivostomatitis. *Cochrane Database of Systematic Reviews* 2008, Issue 4. Art. No.: CD006700. DOI: 10.1002/14651858.CD006700.pub2.



## ABSTRACT

### Background

Primary herpetic gingivostomatitis is a highly contagious infection of the oral cavity which typically affects children but can also occur in adults. Symptoms may vary widely from mild discomfort to life-threatening encephalitis.

### Objectives

The objective of this review was to evaluate the effectiveness of systemic acyclovir for primary herpetic gingivostomatitis.

### Search methods

We searched the following databases: Cochrane Oral Health Group's Trials Register (to 22 May 2008); the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2008, Issue 2); MEDLINE (1950 to 22 May 2008); and EMBASE (1980 to 22 May 2008). There were no language restrictions.

### Selection criteria

Randomised controlled trials comparing acyclovir to placebo in children and young adults < 25 years of age with a diagnosis of primary herpetic gingivostomatitis with or without herpes labialis were considered.

### Data collection and analysis

Two review authors independently and in duplicate screened and extracted information from, and assessed the risk of bias in the included clinical trials. The Cochrane Collaboration statistical guidelines were followed for data synthesis.

### Main results

Only two clinical trials, one with 72 participants and the other with 20 participants were included in this review. The second study failed to report several methodological items and was inconsistent in its reporting of the outcomes measurement.

The first trial, with a moderate risk of bias, showed better results in the acyclovir group compared to the placebo group in children < 6 years of age in reducing the number of individuals with oral lesions (risk ratio (RR) 0.10 (95% confidence interval (CI) 0.02 to 0.38)), new extraoral lesions (RR 0.04 (95% CI 0.00 to 0.65)), difficulty in eating (RR 0.14 (95% CI 0.03 to 0.58)), and drinking difficulties (RR 0.11 (95% CI 0.01 to 0.83)) after 8 days of treatment.

# Mouthrinses for the treatment of halitosis

Zbys Fedorowicz[1], Hamad Aljufairi[2], Mona Nasser[3], Trent L Outhouse[4], Vinícius Pedrazzi[5]

[1]UKCC (Bahrain Branch), Ministry of Health, Bahrain, Awali, Bahrain. [2]UKCC Bahrain Branch, UKCC Bahrain Branch, Manama, Bahrain. [3]Department of Health Information, Institute for Quality and Efficiency in Health care, Köln, Germany. [4]Awali, Bahrain. [5]Departamento de Materiais Dentários e Prótese, Faculdade de Odontologia de Ribeirão Preto, Universidade de São Paulo, Ribeirão Preto, Brazil

Contact address: Zbys Fedorowicz, UKCC (Bahrain Branch), Ministry of Health, Bahrain, Box 25438, Awali, Bahrain. zbysfedo@batelco.com.bh.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New, published in Issue 4, 2008.
**Review content assessed as up-to-date:** 10 August 2008.

**Citation:** Fedorowicz Z, Aljufairi H, Nasser M, Outhouse TL, Pedrazzi V. Mouthrinses for the treatment of halitosis. *Cochrane Database of Systematic Reviews* 2008, Issue 4. Art. No.: CD006701. DOI: 10.1002/14651858.CD006701.pub2.



## ABSTRACT

### Background

Halitosis is an unpleasant odour emanating from the oral cavity. Mouthwashes, which are commonly used for dealing with oral malodour, can be generally divided into those that neutralize and those that mask the odour.

### Objectives

To investigate the effects of mouthrinses in controlling halitosis.

### Search methods

We searched the following databases: Cochrane Oral Health Group Trials Register (to August 2008); the Cochrane Central Register of Controlled Trials (*The Cochrane Library* 2008, Issue 3); MEDLINE (1950 to August 2008); EMBASE (1980 to August 2008); and CINAHL (1982 to August 2008). There were no language restrictions.

### Selection criteria

Randomised controlled trials (RCTs) comparing mouthrinses to placebo in adults over the age of 18 with halitosis and without significant other comorbidities or health conditions.

The primary outcomes considered were self expressed and organoleptic (human nose) assessments of halitosis, and the secondary outcomes included assessment of halitosis as measured by a halimeter, portable sulphide monitor or by gas chromatography coupled with flame-photometric detection.

### Data collection and analysis

Two independent review authors screened and extracted information from, and independently assessed the risk of bias in the included trials.

# Interventions for cleaning dentures in adults

Raphael Freitas de Souza[1], Helena de Freitas Oliveira Paranhos[1], Claudia H Lovato da Silva[1], Layla Abu-Naba'a[2], Zbys Fedorowicz[3], Cem A Gurgan[4]

[1]Department of Dental Materials and Prosthodontics, Ribeirão Preto Dental School, University of São Paulo, Ribeirão Preto, Brazil. [2]Faculty of Dentistry, Jordan University of Science and Technology, Irbid, Jordan. [3]UKCC (Bahrain Branch), Ministry of Health, Bahrain, Awali, Bahrain. [4]Department of Periodontology, Faculty of Dentistry, Ankara University, Ankara, Turkey

Contact address: Raphael Freitas de Souza, Department of Dental Materials and Prosthodontics, Ribeirão Preto Dental School, University of São Paulo, Av. Do Café, s/n, Ribeirão Preto, São Paulo (SP), 14040-050, Brazil. raphael@forp.usp.br.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New, published in Issue 4, 2009.
**Review content assessed as up-to-date:** 25 May 2009.

**Citation:** de Souza RF, de Freitas Oliveira Paranhos H, Lovato da Silva CH, Abu-Naba'a L, Fedorowicz Z, Gurgan CA. Interventions for cleaning dentures in adults. *Cochrane Database of Systematic Reviews* 2009, Issue 4. Art. No.: CD007395. DOI: 10.1002/14651858.CD007395.pub2.



## ABSTRACT

### Background

Removing denture plaque may be essential for maintaining the oral health of edentulous people. Brushing and soaking in chemical products are two of the most commonly used methods of cleaning dentures.

### Objectives

To evaluate the effectiveness and safety of different methods for cleansing removable dentures.

### Search methods

We searched the following databases: the Cochrane Oral Health Group Trials Register (to May 2009); CENTRAL (*The Cochrane Library* 2009, Issue 2); MEDLINE (1965 to May 2009); EMBASE (1980 to May 2009); LILACS (1980 to May 2009); and CINAHL (1997 to May 2009). There were no language restrictions.

### Selection criteria

Randomised controlled trials (RCTs) comparing any mechanical method (e.g. brushing or ultrasound) or chemical (e.g. enzymes, sodium hypochlorite, oral rinses or peroxide solutions) in adults over the age of 18 wearing removable partial dentures or complete dentures.

The primary outcomes considered were the health of denture bearing areas (soft tissues, periodontal tissues and teeth) and participants' satisfaction and preference. Secondary outcomes included denture plaque coverage area, indicators of halitosis and microbial counts on abutment teeth, soft tissues or denture base or saliva.

### Data collection and analysis

Two independent review authors screened and extracted information from, and independently assessed the risk of bias in the included trials.

# Local interventions for the management of alveolar osteitis (dry socket)

Blánaid Daly[1], Mohammad O Sharif[2], Tim Newton[3], Kate Jones[4], Helen V Worthington[5]

[1]Dental Practice & Policy, King's College London Dental Institute, London, UK. [2]School of Dentistry, The University of Manchester, Manchester, UK. [3]Division of Health and Social Care Research, KCL Dental Institute, London, UK. [4]NHS Sheffield, Sheffield, UK. [5]Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Manchester, UK

Contact address: Blánaid Daly, Dental Practice & Policy, King's College London Dental Institute, Denmark Hill Campus, Bessemer Road, London, SE5 9RW, UK. blanaid.daly@kcl.ac.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New, published in Issue 12, 2012.
**Review content assessed as up-to-date:** 7 November 2012.

**Citation:** Daly B, Sharif MO, Newton T, Jones K, Worthington HV. Local interventions for the management of alveolar osteitis (dry socket). *Cochrane Database of Systematic Reviews* 2012, Issue 12. Art. No.: CD006968. DOI: 10.1002/14651858.CD006968.pub2.



## ABSTRACT

### Background

Alveolar osteitis (dry socket) is a complication of dental extractions and occurs more commonly in extractions involving mandibular molar teeth. It is associated with severe pain developing 2 to 3 days postoperatively, a socket that may be partially or totally devoid of blood clot and in some patients there may be a complaint of halitosis. It can result in an increase in postoperative visits.

### Objectives

To assess the effects of local interventions for the prevention and treatment of alveolar osteitis (dry socket) following tooth extraction.

### Search methods

The following electronic databases were searched: the Cochrane Oral Health Group Trials Register (to 29 October 2012), the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2012, Issue 10), MEDLINE via OVID (1946 to 29 October 2012) and EMBASE via OVID (1980 to 29 October 2012). There were no restrictions regarding language or date of publication. We also searched the reference lists of articles and contacted experts and organisations to identify any further studies.

### Selection criteria

We included randomised controlled trials of adults over 18 years of age who were having permanent teeth extracted or who had developed dry socket post-extraction. We included studies with any type of local intervention used for the prevention or treatment of dry socket, compared to a different local intervention, placebo or no treatment. We excluded studies reporting on systemic use of antibiotics or the use of surgical techniques for the management of dry socket because these interventions are evaluated in separate Cochrane reviews.

### Data collection and analysis

Two review authors independently undertook risk of bias assessment and data extraction in duplicate for included studies using pre-designed proformas. Any reports of adverse events were recorded and summarised into a table when these were available. We contacted trial authors for further details where these were unclear. We followed The Cochrane Collaboration statistical guidelines and reported dichotomous outcomes as risk ratios (RR) and calculated 95% confidence intervals (CI) using random-effects models. For some of the split-mouth studies with sparse data it was not possible to calculate RR so we calculated the exact odds ratio instead. We used the GRADE tool to assess the quality of the body of evidence.

# Open versus closed surgical exposure of canine teeth that are displaced in the roof of the mouth

Nicola Parkin[1], Philip E Benson[1], Bikram Thind[2], Anwar Shah[3]

[1]Department of Oral Health and Development, School of Clinical Dentistry, University of Sheffield, Sheffield, UK. [2]Department of Orthodontics, Argyll House, Aberdeen, UK. [3]Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Manchester, UK

Contact address: Nicola Parkin, Department of Oral Health and Development, School of Clinical Dentistry, University of Sheffield, Wellesley Road, Sheffield, S10 2SZ, UK. nicolaparkin@hotmail.com.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New, published in Issue 4, 2008.
**Review content assessed as up-to-date:** 9 June 2008.

**Citation:** Parkin N, Benson PE, Thind B, Shah A. Open versus closed surgical exposure of canine teeth that are displaced in the roof of the mouth. *Cochrane Database of Systematic Reviews* 2008, Issue 4. Art. No.: CD006966. DOI: 10.1002/14651858.CD006966.pub2.



## ABSTRACT

### Background

Palatal canines are upper permanent canine (eye) teeth that have become displaced in the roof of the mouth. They are a frequently occurring anomaly, present in 2% to 3% of the population. Management of this problem is both time consuming and expensive and involves surgical exposure (uncovering) followed by fixed braces for 2 to 3 years to bring the canine into alignment within the dental arch. Two techniques for exposing palatal canines are routinely used in the UK: one method (the closed technique) involves orthodontically moving the canine into its correct position beneath the palatal mucosa and the second method (the open technique) involves orthodontically moving the canine into its correct position above the palatal mucosa.

### Objectives

To establish if clinical, patient centred and economic outcomes are different according to whether an 'open' or 'closed' technique is employed for uncovering palatal canines.

### Search methods

MEDLINE, EMBASE, the Cochrane Central Register of Controlled Trials (CENTRAL) and the Cochrane Oral Health Group's Trials Register were searched (to 29th February 2008). There were no restrictions with regard to publication status or language.

### Selection criteria

Patients receiving surgical treatment to correct upper palatally impacted canines. There was no restriction for age, presenting malocclusion or the type of active orthodontic treatment undertaken. Unilateral and bilaterally displaced canines were included.

Trials including participants with craniofacial deformity/syndrome were excluded.

### Data collection and analysis

Two review authors independently and in duplicate assessed studies for inclusion. The Cochrane Collaboration statistical guidelines were to be followed for data synthesis.

# Interventions for replacing missing teeth: 1- versus 2-stage implant placement

Marco Esposito[1], Maria Gabriella Grusovin[1], Yun Shane Chew[1], Paul Coulthard[1], Helen V Worthington[2]

[1]Department of Oral and Maxillofacial Surgery, School of Dentistry, The University of Manchester, Manchester, UK. [2]Cochrane Oral Health Group, MANDEC, School of Dentistry, The University of Manchester, Manchester, UK

Contact address: Marco Esposito, Department of Oral and Maxillofacial Surgery, School of Dentistry, The University of Manchester, Higher Cambridge Street, Manchester, M15 6FH, UK. espositomarco@hotmail.com. marco.esposito@manchester.ac.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 1, 2010.
**Review content assessed as up-to-date:** 15 April 2009.

**Citation:** Esposito M, Grusovin MG, Chew YS, Coulthard P, Worthington HV. Interventions for replacing missing teeth: 1- versus 2-stage implant placement. *Cochrane Database of Systematic Reviews* 2009, Issue 3. Art. No.: CD006698. DOI: 10.1002/14651858.CD006698.pub2.



## ABSTRACT

### Background

Implants may be placed penetrating the oral mucosa (1-stage procedure) or can be completely buried under the oral mucosa (2-stage procedure) during the healing phase of the bone at the implant surface. With a 2-stage procedure the risk of having unwanted loading onto the implants is minimized, but a second minor surgical intervention is needed to connect the healing abutments and more time is needed prior to start the prosthetic phase because of the wound-healing period required in relation to the second surgical intervention.

### Objectives

To evaluate whether a 1-stage implant placement procedure is as effective as a 2-stage procedure.

### Search methods

The Cochrane Oral Health Group's Trials Register, CENTRAL, MEDLINE and EMBASE were searched. Handsearching included several dental journals. Authors of all identified trials, an Internet discussion group and 55 dental implant manufacturers were contacted to find unpublished randomised controlled trials (RCTs). The last electronic search was conducted on 21 January 2009.

### Selection criteria

All RCTs of osseointegrated dental implants comparing the same dental implants placed according to 1- versus 2-stage procedures with a minimum follow up of 6 months after loading. Outcome measures were: prosthesis failures, implant failures, marginal bone level changes on intraoral radiographs, patient preference including aesthetics, aesthetics evaluated by dentists, and complications.

### Data collection and analysis

Screening of eligible studies, assessment of the methodological quality of the trials and data extraction were conducted in duplicate and independently by two review authors. Authors were contacted for missing information. Results were expressed as random-effects models using mean differences for continuous outcomes and risk ratios for dichotomous outcomes with 95% confidence intervals.

# Interventions for replacing missing teeth: dental implants in fresh extraction sockets (immediate, immediate-delayed and delayed implants)

Marco Esposito[1], Maria Gabriella Grusovin[1], Ilias P Polyzos[1], Pietro Felice[2], Helen V Worthington[3]

[1]Department of Oral and Maxillofacial Surgery, School of Dentistry, The University of Manchester, Manchester, UK. [2]Department of Oral and Dental Sciences, University of Bologna, Bologna, Italy. [3]Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Manchester, UK

Contact address: Marco Esposito, Department of Oral and Maxillofacial Surgery, School of Dentistry, The University of Manchester, Coupland 3 Building, Oxford Road, Manchester, M13 9PL, UK. espositomarco@hotmail.com. marco.esposito@manchester.ac.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 10, 2010.
**Review content assessed as up-to-date:** 1 June 2010.

**Citation:** Esposito M, Grusovin MG, Polyzos IP, Felice P, Worthington HV. Interventions for replacing missing teeth: dental implants in fresh extraction sockets (immediate, immediate-delayed and delayed implants). *Cochrane Database of Systematic Reviews* 2010, Issue 9. Art. No.: CD005968. DOI: 10.1002/14651858.CD005968.pub3.



## ABSTRACT

### Background

'Immediate' implants are placed in dental sockets just after tooth extraction. 'Immediate-delayed' implants are those implants inserted after weeks up to about a couple of months to allow for soft tissue healing. 'Delayed' implants are those placed thereafter in partially or completely healed bone. The potential advantages of immediate implants are that treatment time can be shortened and that bone volumes might be partially maintained thus possibly providing good aesthetic results. The potential disadvantages are an increased risk of infection and failures. After implant placement in postextractive sites, gaps can be present between the implant and the bony walls. It is possible to fill these gaps and to augment bone simultaneously to implant placement. There are many techniques to achieve this but it is unclear when augmentation is needed and which could be the best augmentation technique.

### Objectives

To evaluate success, complications, aesthetics and patient satisfaction between 'immediate', 'immediate-delayed' and 'delayed' implants.

To evaluate whether and when augmentation procedures are necessary and which is the most effective technique.

### Search methods

The Cochrane Oral Health Group's Trials Register (to 2 June 2010), CENTRAL (*The Cochrane Library* 2010, Issue 2), MEDLINE via OVID (1950 - 2 June 2010) and EMBASE via OVID (1980 - 2 June 2010) were searched. Several dental journals were handsearched.

### Selection criteria

Randomised controlled trials (RCTs) comparing immediate, immediate-delayed, and delayed implants, or comparing various bone augmentation procedures around the inserted implants, reporting the outcome of the interventions to at least 1 year after functional loading.

# Interventions for replacing missing teeth: dental implants in zygomatic bone for the rehabilitation of the severely deficient edentulous maxilla

Marco Esposito[1], Helen V Worthington[2], Paul Coulthard[1]

[1]Department of Oral and Maxillofacial Surgery, School of Dentistry, The University of Manchester, Manchester, UK. [2]Cochrane Oral Health Group, MANDEC, School of Dentistry, The University of Manchester, Manchester, UK

Contact address: Marco Esposito, Department of Oral and Maxillofacial Surgery, School of Dentistry, The University of Manchester, Higher Cambridge Street, Manchester, M15 6FH, UK. espositomarco@hotmail.com. marco.esposito@manchester.ac.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 4, 2008.
**Review content assessed as up-to-date:** 16 August 2005.

**Citation:** Esposito M, Worthington HV, Coulthard P. Interventions for replacing missing teeth: dental implants in zygomatic bone for the rehabilitation of the severely deficient edentulous maxilla. *Cochrane Database of Systematic Reviews* 2005, Issue 4. Art. No.: CD004151. DOI: 10.1002/14651858.CD004151.pub2.



## ABSTRACT

### Background

Dental implants are used for replacing missing teeth. Placing dental implants is limited by the presence of adequate bone volume permitting their anchorage. Several bone augmentation procedures have been developed to solve this problem. Zygomatic implants are long screw-shaped implants developed as a partial or complete alternative to bone augmentation procedures for the severely atrophic maxilla. One to three zygomatic implants can be inserted through the posterior alveolar crest and maxillary sinus to engage the body of the zygomatic bone. A couple of conventional dental implants are also needed in the frontal region of the maxilla to stabilize the prosthesis. The potential main advantages of zygomatic implants could be that in some situations bone grafting may not be needed and a fixed denture could be fitted sooner. Another specific indication for using zygomatic implants could be the need of maxillary reconstruction after maxillectomy in cancer patients.

### Objectives

To test the hypothesis of no difference in outcomes between zygomatic implants with and without bone augmenting procedures in comparison with conventional dental implants in augmented bone for severely resorbed maxillae.

### Search methods

We searched the Cochrane Oral Health Group's Trial Register, Cochrane Central Register of Controlled Trials (CENTRAL), MEDLINE and EMBASE. We handsearched several dental journals. No language restrictions were applied. Personal contacts and all known zygomatic implant manufacturers were contacted to identify unpublished trials. Most recent search: May 2005.

### Selection criteria

Randomised controlled clinical trials (RCTs) including patients with severely resorbed maxillae who could not be rehabilitated with conventional dental implants, treated with zygomatic implants with and without bone grafts versus patients treated with conventional dental implants in conjunction with bone augmentation procedures having a follow up of at least 1 year. Outcome measures considered were: prosthesis and implant failures, side effects, patient satisfaction and cost effectiveness.

# Interventions for replacing missing teeth: different types of dental implants

Marco Esposito[1], Lawrence Murray-Curtis[1], Maria Gabriella Grusovin[1], Paul Coulthard[1], Helen V Worthington[2]

[1]Department of Oral and Maxillofacial Surgery, School of Dentistry, The University of Manchester, Manchester, UK. [2]Cochrane Oral Health Group, MANDEC, School of Dentistry, The University of Manchester, Manchester, UK

Contact address: Marco Esposito, Department of Oral and Maxillofacial Surgery, School of Dentistry, The University of Manchester, Higher Cambridge Street, Manchester, M15 6FH, UK. espositomarco@hotmail.com. marco.esposito@manchester.ac.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 4, 2008.
**Review content assessed as up-to-date:** 9 August 2007.

**Citation:** Esposito M, Murray-Curtis L, Grusovin MG, Coulthard P, Worthington HV. Interventions for replacing missing teeth: different types of dental implants. *Cochrane Database of Systematic Reviews* 2007, Issue 4. Art. No.: CD003815. DOI: 10.1002/14651858.CD003815.pub3.



## ABSTRACT

### Background

Dental implants are available in different materials, shapes and with different surface characteristics. In particular, numerous implant surface modifications have been developed for enhancing clinical performance.

### Objectives

To test the null hypothesis of no difference in clinical performance between various root-formed osseointegrated dental implant types.

### Search methods

We searched the Cochrane Oral Health Group's Trials Register, the Cochrane Central Register of Controlled Trials (CENTRAL), MEDLINE and EMBASE. Handsearching included several dental journals. We checked the bibliographies of relevant clinical trials and review articles for studies outside the handsearched journals. We wrote to authors of the identified randomised controlled trials (RCTs), to more than 55 oral implant manufacturers; we used personal contacts and we asked on an internet discussion group in an attempt to identify unpublished or ongoing RCTs. No language restriction was applied. The last electronic search was conducted on 13 June 2007.

### Selection criteria

All RCTs of oral implants comparing osseointegrated implants with different materials, shapes and surface properties having a follow up of at least 1 year.

### Data collection and analysis

Screening of eligible studies, assessment of the methodological quality of the trials and data extraction were conducted in duplicate and independently by two review authors. Results were expressed as random-effects models using mean differences for continuous outcomes and risk ratios (RR) for dichotomous outcomes with 95% confidence intervals (CI).

# Interventions for replacing missing teeth: horizontal and vertical bone augmentation techniques for dental implant treatment

Marco Esposito[1], Maria Gabriella Grusovin[1], Pietro Felice[2], Georgios Karatzopoulos[1], Helen V Worthington[3], Paul Coulthard[1]

[1]Department of Oral and Maxillofacial Surgery, School of Dentistry, The University of Manchester, Manchester, UK. [2]Department of Oral and Dental Sciences, University of Bologna, Bologna, Italy. [3]Cochrane Oral Health Group, MANDEC, School of Dentistry, The University of Manchester, Manchester, UK

Contact address: Marco Esposito, Department of Oral and Maxillofacial Surgery, School of Dentistry, The University of Manchester, Higher Cambridge Street, Manchester, M15 6FH, UK. espositomarco@hotmail.com. marco.esposito@manchester.ac.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 1, 2010.
**Review content assessed as up-to-date:** 10 June 2009.

**Citation:** Esposito M, Grusovin MG, Felice P, Karatzopoulos G, Worthington HV, Coulthard P. Interventions for replacing missing teeth: horizontal and vertical bone augmentation techniques for dental implant treatment. *Cochrane Database of Systematic Reviews* 2009, Issue 4. Art. No.: CD003607. DOI: 10.1002/14651858.CD003607.pub4.



## ABSTRACT

### Background

Dental implants require sufficient bone to be adequately stabilised. For some patients implant treatment would not be an option without horizontal or vertical bone augmentation. A variety of materials and surgical techniques are available for bone augmentation.

### Objectives

To test whether and when augmentation procedures are necessary and which is the most effective technique for horizontal and vertical bone augmentation.

### Search methods

The Cochrane Oral Health Group's Trials Register, CENTRAL, MEDLINE and EMBASE were searched. Several dental journals were handsearched. The bibliographies of review articles were checked, and personal references were searched. More than 55 implant manufacturing companies were also contacted. Last electronic search was conducted on 11 June 2009.

### Selection criteria

Randomised controlled trials (RCTs) of different techniques and materials for augmenting bone horizontally or vertically or both for implant treatment reporting the outcome of implant therapy at least to abutment connection. Trials were divided into two broad categories: horizontal augmentation and vertical augmentation techniques.

### Data collection and analysis

Screening of eligible studies, assessment of the methodological quality of the trials and data extraction were conducted independently and in duplicate. Authors were contacted for any missing information. Results were expressed as random-effects models using mean differences for continuous outcomes and odd ratios for dichotomous outcomes with 95% confidence intervals. The statistical unit of the analysis was the patient.

# Interventions for replacing missing teeth: management of soft tissues for dental implants

Marco Esposito[1], Hassan Maghaireh[2], Maria Gabriella Grusovin[2], Ioannis Ziounas[3], Helen V Worthington[1]

[1]Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Manchester, UK. [2]Department of Oral and Maxillofacial Surgery, School of Dentistry, The University of Manchester, Manchester, UK. [3]Department of Oral and Maxillofacial Surgery, School of Dentistry, The University of Manchester, Manchester, UK

Contact address: Marco Esposito, Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Coupland 3 Building, Oxford Road, Manchester, M13 9PL, UK. espositomarco@hotmail.com.

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**Citation:** Esposito M, Maghaireh H, Grusovin MG, Ziounas I, Worthington HV. Interventions for replacing missing teeth: management of soft tissues for dental implants. *Cochrane Database of Systematic Reviews* 2012, Issue 2. Art. No.: CD006697. DOI: 10.1002/14651858.CD006697.pub2.



## ABSTRACT

### Background

Dental implants are usually placed by elevating a soft tissue flap, but in some instances, they can also be placed flapless reducing patient discomfort. Several flap designs and suturing techniques have been proposed. Soft tissues are often manipulated and augmented for aesthetic reasons. It is often recommended that implants are surrounded by a sufficient width of attached/keratinised mucosa to improve their long-term prognosis.

### Objectives

To evaluate whether (1a) flapless procedures are beneficial for patients, and (1b) which is the ideal flap design; whether (2a) soft tissue correction/augmentation techniques are beneficial for patients, and (2b) which are the best techniques; whether (3a) techniques to increase the peri-implant keratinised mucosa are beneficial for patients, and (3b) which are the best techniques; and (4) which are the best suturing techniques/materials.

### Search methods

The following electronic databases were searched: the Cochrane Oral Health Group Trials Register (to 9 June 2011), the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2011, Issue 2), MEDLINE via OVID (1950 to 9 June 2011), EMBASE via OVID (1980 to 9 June 2011). Several dental journals were handsearched. There were no language restrictions.

### Selection criteria

All randomised controlled trials (RCTs) of root-form osseointegrated dental implants, with a follow-up of at least 6 months after function, comparing various techniques to handle soft tissues in relation to dental implants. Outcome measures, according to the different hypotheses, were: prosthetic and implant failures, biological complications, aesthetics evaluated by patients and dentists, postoperative pain, marginal peri-implant bone level changes on periapical radiographs, patient preference, ease of maintenance by patient, soft tissue thickness changes and attached/keratinised mucosa height changes.

# Interventions for replacing missing teeth: partially absent dentition

Elliot Abt[1], Alan B Carr[2], Helen V Worthington[3]

[1]Department of Dentistry, Illinois Masonic Medical Center, Chicago, IL, USA. [2]Department of Dental Specialities, Mayo Clinic, Rochester, USA. [3]Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Manchester, UK

Contact address: Elliot Abt, Department of Dentistry, Illinois Masonic Medical Center, 811 W Wellington, Chicago, IL, 60657, USA. eabt7@sbcglobal.net.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New, published in Issue 2, 2012.
**Review content assessed as up-to-date:** 21 March 2011.

**Citation:** Abt E, Carr AB, Worthington HV. Interventions for replacing missing teeth: partially absent dentition. *Cochrane Database of Systematic Reviews* 2012, Issue 2. Art. No.: CD003814. DOI: 10.1002/14651858.CD003814.pub2.



## ABSTRACT

### Background

Management of individuals presenting with partial loss of teeth is a common task for dentists. Outcomes important to the management of missing teeth in the partially absent dentition should be systematically summarized. This review recognizes both the challenges associated with such a summarization and the critical nature of the information for patients.

### Objectives

To assess the effects of different prostheses for the treatment of partially absent dentition in terms of the following outcomes: long-term success, function, morbidity and patient satisfaction.

### Search methods

We searched the Cochrane Oral Health Group's Trials Register (to 21 March 2011), the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2011, Issue 1), MEDLINE via OVID (1950 to March 2011) and EMBASE via OVID (1980 to March 2011). There were no restrictions regarding language or date of publication. We contacted several authors to identify non-published trials.

### Selection criteria

Randomized controlled trials (RCTs) comparing different methods (including the design and materials used) of treating partial edentulism, with clinically relevant outcomes, were included in this review. Trials reporting only surrogate outcomes, such as plaque accumulation or gingival volume, were excluded from this review.

### Data collection and analysis

Two review authors independently carried out the screening of eligible studies, assessment of dimensions of quality of trials, and data extraction. Results were expressed as mean differences for continuous data, risk ratios for dichotomous outcomes, and hazard ratios with 95% confidence intervals for time-to-event data.

# Interventions for replacing missing teeth: preprosthetic surgery versus dental implants

Paul Coulthard[1], Marco Esposito[1], Helen V Worthington[2], Asbjorn Jokstad[3]

[1]Department of Oral and Maxillofacial Surgery, School of Dentistry, The University of Manchester, Manchester, UK. [2]Cochrane Oral Health Group, MANDEC, School of Dentistry, The University of Manchester, Manchester, UK. [3]Nobel Biocare Chair in Prosthodontics, University of Toronto, Faculty of Dentistry, Toronto, Canada

Contact address: Paul Coulthard, Department of Oral and Maxillofacial Surgery, School of Dentistry, The University of Manchester, Higher Cambridge Street, Manchester, M15 6FH, UK. paul.coulthard@manchester.ac.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 4, 2008.
**Review content assessed as up-to-date:** 8 July 2002.

**Citation:** Coulthard P, Esposito M, Worthington HV, Jokstad A. Interventions for replacing missing teeth: preprosthetic surgery versus dental implants. *Cochrane Database of Systematic Reviews* 2002, Issue 4. Art. No.: CD003604. DOI: 10.1002/14651858.CD003604.



## ABSTRACT

### Background

Preprosthetic surgery refers to the surgical procedures that can modify the oral anatomy to facilitate the retention of conventional dentures. Osseointegrated implants offer an alternative treatment to improve denture retention. A denture may be connected by special attachments to implants placed into the jaw.

### Objectives

To test the null hypothesis of no difference in the success (patient satisfaction and morbidity) and cost effectiveness between conventional prostheses that require preprosthetic surgery (PPS) and implant retained prostheses (IRO) that do not require preprosthetic surgery, against the alternative hypothesis of a difference.

### Search methods

The Cochrane Oral Health Group Trials Register (May 2002), CENTRAL (*The Cochrane Library* 2002, Issue 2), MEDLINE and EMBASE (May 2002) were searched. In addition, 55 implant companies were contacted and the bibliographies of review articles were checked for studies outside the hand searched journals and personal references were searched.

### Selection criteria

Randomised controlled trials (RCTS) comparing preprosthetic surgery and implant retained dentures for improving denture retention.

### Data collection and analysis

Data were independently extracted, in duplicate, by two review authors. Authors were contacted for details of randomisation and withdrawals and a quality assessment was carried out. The Cochrane Collaboration's statistical guidelines were followed.

### Main results

One study, containing 60 participants, reported in four articles was identified for inclusion in this review. No studies were excluded. There was a statistically significant difference between mean patient satisfaction scores with patients in the IRO group being more satisfied in general at both year 1 (WMD = -0.66 (95% CI -1.28 to -0.04)) and 5 years (WMD = -0.90 (95% CI -1.74 to -0.06). Altered sensation of the lower lip and chin was measured at 1 year and 5 years. There was no statistically significant difference at either time point and no patients had altered sensation at 5 years.

# Interventions for replacing missing teeth: treatment of peri-implantitis

Marco Esposito[1], Maria Gabriella Grusovin[2], Helen V Worthington[1]

[1]Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Manchester, UK. [2]Gorizia, Italy

Contact address: Marco Esposito, Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Coupland 3 Building, Oxford Road, Manchester, M13 9PL, UK. espositomarco@hotmail.com.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 10, 2012.
**Review content assessed as up-to-date:** 5 December 2011.

**Citation:** Esposito M, Grusovin MG, Worthington HV. Interventions for replacing missing teeth: treatment of peri-implantitis. *Cochrane Database of Systematic Reviews* 2012, Issue 1. Art. No.: CD004970. DOI: 10.1002/14651858.CD004970.pub5.



## ABSTRACT

### Background

One of the key factors for the long-term success of oral implants is the maintenance of healthy tissues around them. Bacterial plaque accumulation induces inflammatory changes in the soft tissues surrounding oral implants and it may lead to their progressive destruction (peri-implantitis) and ultimately to implant failure. Different treatment strategies for peri-implantitis have been suggested, however it is unclear which are the most effective.

### Objectives

To identify the most effective interventions for treating peri-implantitis around osseointegrated dental implants.

### Search methods

We searched the Cochrane Oral Health Group's Trials Register, CENTRAL, MEDLINE and EMBASE. Handsearching included several dental journals. We checked the bibliographies of the identified randomised controlled trials (RCTs) and relevant review articles for studies outside the handsearched journals. We wrote to authors of all identified RCTs, to more than 55 dental implant manufacturers and an Internet discussion group to find unpublished or ongoing RCTs. No language restrictions were applied. The last electronic search was conducted on 9 June 2011.

### Selection criteria

All RCTs comparing agents or interventions for treating peri-implantitis around dental implants.

### Data collection and analysis

Screening of eligible studies, assessment of the methodological quality of the trials and data extraction were conducted in duplicate and independently by two review authors. We contacted the authors for missing information. Results were expressed as random-effects models using mean differences for continuous outcomes and risk ratios for dichotomous outcomes with 95% confidence intervals (CI). Heterogeneity was to be investigated including both clinical and methodological factors.

# Interventions for the management of mandibular fractures

Mona Nasser[1], Nikolaos Pandis[2], Padhraig S Fleming[3], Zbys Fedorowicz[4], Edward Ellis[5], Kamran Ali[6]

[1]Peninsula Dental School, University of Plymouth, Plymouth, UK. [2]Department of Orthodontics and Dentofacial Orthopedics, University of Bern, Bern, Switzerland. [3]Barts and The London School of Medicine and Dentistry, Queen Mary University of London, London, UK. [4]UKCC (Bahrain Branch), The Cochrane Collaboration, Awali, Bahrain. [5]Department of Oral and Maxillofacial Surgery, University of Texas Health Science Center at San Antonio, San Antonio, USA. [6]Peninsula Dental School, University of Plymouth, Plymouth, UK

Contact address: Mona Nasser, Peninsula Dental School, University of Plymouth, The John Bull Building, Tamar Science Park,, Plymouth, PL6 8BU, UK. mona.nasser.pcmd@gmail.com. mona.nasser@pcmd.ac.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New search for studies and content updated (no change to conclusions), published in Issue 7, 2013.
**Review content assessed as up-to-date:** 28 February 2013.

**Citation:** Nasser M, Pandis N, Fleming PS, Fedorowicz Z, Ellis E, Ali K. Interventions for the management of mandibular fractures. *Cochrane Database of Systematic Reviews* 2013, Issue 7. Art. No.: CD006087. DOI: 10.1002/14651858.CD006087.pub3.



## ABSTRACT

### Background

Fractures of the mandible (lower jaw) are a common occurrence and usually related to interpersonal violence or road traffic accidents. Mandibular fractures may be treated using open (surgical) and closed (non-surgical) techniques. Fracture sites are immobilized with intermaxillary fixation (IMF) or other external or internal devices (i.e. plates and screws) to allow bone healing. Various techniques have been used, however uncertainty exists with respect to the specific indications for each approach.

### Objectives

The objective of this review is to provide reliable evidence of the effects of any interventions either open (surgical) or closed (non-surgical) that can be used in the management of mandibular fractures, excluding the condyles, in adult patients.

### Search methods

We searched the following electronic databases: the Cochrane Oral Health Group's Trials Register (to 28 February 2013), the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2013, Issue 1), MEDLINE via OVID (1950 to 28 February 2013), EMBASE via OVID (1980 to 28 February 2013), *meta*Register of Controlled Trials (to 7 April 2013), ClinicalTrials.gov (to 7 April 2013) and the WHO International Clinical Trials Registry Platform (to 7 April 2013). The reference lists of all trials identified were checked for further studies. There were no restrictions regarding language or date of publication.

### Selection criteria

Randomised controlled trials evaluating the management of mandibular fractures without condylar involvement. Any studies that compared different treatment approaches were included.

### Data collection and analysis

At least two review authors independently assessed trial quality and extracted data. Results were to be expressed as random-effects models using mean differences for continuous outcomes and risk ratios for dichotomous outcomes with 95% confidence intervals. Heterogeneity was to be investigated to include both clinical and methodological factors.

# Interventions for the treatment of fractures of the mandibular condyle

Mohammad O Sharif[2], Zbys Fedorowicz[3], Peter Drews[4], Mona Nasser[5], Mojtaba Dorri[6], Tim Newton[7], Richard Oliver[1]

[1]Department of Oral and Maxillofacial Surgery, School of Dentistry, The University of Manchester, Manchester, UK. [2]School of Dentistry, The University of Manchester, Manchester, UK. [3]UKCC (Bahrain Branch), Ministry of Health, Bahrain, Awali, Bahrain. [4]Naval Medical Center San Diego, Dental Department, San Diego, USA. [5]Department of Health Information, Institute for Quality and Efficiency in Health care, Cologne, Germany. [6]Department of Epidemiology and Public Health, University College London Medical School, London, UK. [7]Division of Health and Social Care Research, KCL Dental Institute, London, UK

Contact address: Richard Oliver, Department of Oral and Maxillofacial Surgery, School of Dentistry, The University of Manchester, Higher Cambridge Street, Manchester, M15 6FH, UK. richard.j.oliver@manchester.ac.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New, published in Issue 4, 2010.
**Review content assessed as up-to-date:** 11 March 2010.

**Citation:** Sharif MO, Fedorowicz Z, Drews P, Nasser M, Dorri M, Newton T, Oliver R. Interventions for the treatment of fractures of the mandibular condyle. *Cochrane Database of Systematic Reviews* 2010, Issue 4. Art. No.: CD006538. DOI: 10.1002/14651858.CD006538.pub2.



## ABSTRACT

### Background

Fractures of the condylar process account for between 25% and 35% of all mandibular fractures. Treatment options for fractures of the condyles consist of either the closed method or by open reduction with fixation. Complications may be associated with either treatment option; for the closed approach these can include malocclusion, particularly open bites, reduced posterior facial height and facial asymmetry in addition to chronic pain and reduced mobility. A cutaneous scar and temporary paralysis of the facial nerve are not infrequent complications associated with the open approach. There is a lack of consensus currently surrounding the indications for either surgical or non-surgical treatment of fractures of the mandibular condyle.

### Objectives

To evaluate the effectiveness of interventions that can be used in the treatment of fractures of the mandibular condyle.

### Search methods

The databases searched were: the Cochrane Oral Health Group's Trials Register (to 12th March 2010), CENTRAL (*The Cochrane Library* 2010, Issue 2), MEDLINE (from 1950 to 12th March 2010), and EMBASE (from 1980 to 12th March 2010). The reference lists of all trials identified were cross checked for additional trials. Authors were contacted by electronic mail to ask for details of additional published and unpublished trials. There were no language restrictions and several articles were translated.

### Selection criteria

Randomised controlled trials (RCTs) which included adults, over 18 years of age, with unilateral or bilateral fractures of the mandibular condyles. Any form of open or closed method of reduction and fixation was considered.

# Resorbable versus titanium plates for facial fractures

Mojtaba Dorri[1], Mona Nasser[2], Richard Oliver[3]

[1]Department of Epidemiology & Public Health, University College London (UCL), London, UK. [2]Department of Health Information, Institute for Quality and Efficiency in Health care, Köln, Germany. [3]Department of Oral and Maxillofacial Surgery, School of Dentistry, The University of Manchester, Manchester, UK

Contact address: Mojtaba Dorri, Department of Epidemiology & Public Health, University College London (UCL), 1-19 Torrington Place, London, WC1E 6BT, UK. mojtabadorri@yahoo.com. drmojtabadorri@gmail.com.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New, published in Issue 1, 2009.
**Review content assessed as up-to-date:** 17 September 2008.

**Citation:** Dorri M, Nasser M, Oliver R. Resorbable versus titanium plates for facial fractures. *Cochrane Database of Systematic Reviews* 2009, Issue 1. Art. No.: CD007158. DOI: 10.1002/14651858.CD007158.pub2.



## ABSTRACT

### Background

Rigid internal fixation of the jaw bones is a routine procedure for the management of facial fractures. Titanium plates and screws are routinely used for this purpose. The limitations of this system has led to the development of plates manufactured from bioresorbable materials which, in some cases, omits the necessity for the second surgery. However, concerns remain about the stability of fixation and the length of time required for their degradation and the possibility of foreign body reactions.

### Objectives

To compare the effectiveness of bioresorbable fixation systems with titanium systems for the management of facial fractures.

### Search methods

We searched the following databases: The Cochrane Oral Health Group's Trials Register (to 20th August 2008), the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2008, Issue 3), MEDLINE (1950 to 20th August 2008), EMBASE (from 1980 to 20th August 2008), http://www.clinicaltrials.gov/ and http://www.controlled-trials.com (to 20th August 2008).

### Selection criteria

Randomised controlled trials comparing resorbable versus titanium fixation systems used for facial fractures.

### Data collection and analysis

Retrieved studies were independently screened by two review authors. Results were to be expressed as random-effects models using mean differences for continuous outcomes and risk ratios for dichotomous outcomes with 95% confidence intervals. Heterogeneity was to be investigated including both clinical and methodological factors.

### Main results

The search strategy retrieved 53 potentially eligible studies. None of the retrieved studies met our inclusion criteria and all were excluded from this review. One study is awaiting classification as we failed to obtain the full text copy. Three ongoing trials were retrieved, two of which were stopped before recruiting the planned number of participants. In one study, the excess complications in the resorbable arm was declared as the reason for stopping the trial.

# Resorbable versus titanium plates for orthognathic surgery

Zbys Fedorowicz[1], Mona Nasser[2], Tim Newton[3], Richard Oliver[4]

[1]UKCC (Bahrain Branch), Ministry of Health, Bahrain, Awali, Bahrain. [2]Department of Health Information, Institute for Quality and Efficiency in Health care, Köln, Germany. [3]Department of Oral Health Services Research & Dental Public Health, GKT Dental Institute King's College Hospital, London, UK. [4]Department of Oral and Maxillofacial Surgery, School of Dentistry, The University of Manchester, Manchester, UK

Contact address: Zbys Fedorowicz, UKCC (Bahrain Branch), Ministry of Health, Bahrain, Box 25438, Awali, Bahrain. zbysfedo@batelco.com.bh.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 4, 2008.
**Review content assessed as up-to-date:** 14 February 2007.

**Citation:** Fedorowicz Z, Nasser M, Newton T, Oliver R. Resorbable versus titanium plates for orthognathic surgery. *Cochrane Database of Systematic Reviews* 2007, Issue 2. Art. No.: CD006204. DOI: 10.1002/14651858.CD006204.pub2.



## ABSTRACT

### Background

Recognition of some of the limitations of titanium plates and screws used for the fixation of bones has led to the development of plates manufactured from bioresorbable materials. Whilst resorbable plates appear to offer clinical advantages over metal plates in orthognathic surgery, concerns remain about the stability of fixation and the length of time required for their degradation and the possibility of foreign body reactions.

### Objectives

To compare the effectiveness of bioresorbable fixation systems with titanium systems used during orthognathic surgery.

### Search methods

We searched the following databases: Cochrane Oral Health Group Trials Register (to 26th January 2006); the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2005, Issue 4); MEDLINE (without filter) (from 1966 to 26th January 2006); and EMBASE (without filter) (from 1980 to 26th January 2006).

### Selection criteria

Randomised controlled trials comparing resorbable versus titanium fixation systems used for orthognathic surgery.

### Data collection and analysis

Clinical heterogeneity between the included trials precluded pooling of data, and only a descriptive summary is presented.

### Main results

This review included two trials, involving 103 participants, one compared titanium with resorbable plates and screws and the other titanium with resorbable screws, both provided very limited data for the primary outcomes of this review. All patients in one trial suffered mild to moderate postoperative discomfort with no statistically significant difference between the two plating groups at different follow-up times. Mean scores of patient satisfaction were 7.43 to 8.63 (range 0 to 10) with no statistically significant difference between the two groups throughout follow up. Adverse effects reported in one study were two plate exposures in each group occurring between the third and ninth months. Plate exposures occurred mainly in the posterior maxillary region, except for one titanium plate exposure

# Surgical removal versus retention for the management of asymptomatic impacted wisdom teeth

Theodorus (Dirk) G Mettes[1], Hossein Ghaeminia[2], Marloes EL Nienhuijs[2], John Perry[3], Wil JM van der Sanden[4], Alphons Plasschaert[5]

[1]Scientific Institute for Quality of Healthcare, Radboud University Nijmegen Medical Center, Nijmegen, Netherlands. [2]Department of Oral and Maxillofacial Surgery, Radboud University Nijmegen Medical Center, Nijmegen, Netherlands. [3]Ashburton, New Zealand. [4]Department of Global Oral Health, Radboud University Nijmegen Medical Center, Nijmegen, Netherlands. [5]Department of Preventative and Curative Dentistry, Radboud University Nijmegen Medical Center, Nijmegen, Netherlands

Contact address: Theodorus (Dirk) G Mettes, Scientific Institute for Quality of Healthcare, Radboud University Nijmegen Medical Center, PO Box 9101, Philips van Leydenlaan 25, Nijmegen, Gelderland, 6500 HB, Netherlands. d.mettes@dent.umcn.nl.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New search for studies and content updated (conclusions changed), published in Issue 6, 2012.
**Review content assessed as up-to-date:** 30 March 2012.

**Citation:** Mettes TG, Ghaeminia H, Nienhuijs MEL, Perry J, van der Sanden WJM, Plasschaert A. Surgical removal versus retention for the management of asymptomatic impacted wisdom teeth. *Cochrane Database of Systematic Reviews* 2012, Issue 6. Art. No.: CD003879. DOI: 10.1002/14651858.CD003879.pub3.



## ABSTRACT

### Background

The prophylactic removal of asymptomatic impacted wisdom teeth is defined as the (surgical) removal of wisdom teeth in the absence of local disease. Impacted wisdom teeth may be associated with pathological changes, such as inflammation of the gums around the tooth, root resorption, gum and alveolar bone disease, damage to the adjacent teeth and the development of cysts and tumours. Other reasons to justify prophylactic removal have been to prevent late incisor crowding. When surgical removal is carried out in older patients, following the development of symptoms, the risk of postoperative complications, pain and discomfort increases. Nevertheless, in most developed countries prophylactic removal of trouble-free wisdom teeth, either impacted or fully erupted, has long been considered as 'appropriate care' and is a very common procedure. There is a need to determine whether there is evidence to support this practice.

### Objectives

To evaluate the effects of prophylactic removal of asymptomatic impacted wisdom teeth in adolescents and adults compared with the retention (conservative management) of these wisdom teeth.

### Search methods

The following electronic databases were searched: the Cochrane Oral Health Group's Trials Register (to 30 March 2012), the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2012, Issue 1), MEDLINE via OVID (1950 to 30 March 2012), and EMBASE via OVID (1980 to 30 March 2012). There were no restrictions on language or date of publication.

### Selection criteria

All randomised controlled trials (RCTs) on adolescents and adults comparing the effect of prophylactic removal of asymptomatic impacted wisdom teeth with no-treatment (retention).

# Domestic violence screening and intervention programmes for adults with dental or facial injury

Paul Coulthard[2], Sin Leong Yong[2], Linda Adamson[3], Alison Warburton[4], Helen V Worthington[3], Marco Esposito[2], Mohammad O Sharif[1]

[1]School of Dentistry, The University of Manchester, Manchester, UK. [2]Oral and Maxillofacial Surgery, School of Dentistry, The University of Manchester, Manchester, UK. [3]Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Manchester, UK. [4]Centre for Women's Mental Health Research, Dept. of Psychiatry & Behavioural Sciences, University of Manchester, Manchester, UK

Contact address: Mohammad O Sharif, School of Dentistry, The University of Manchester, Coupland III Building, Oxford Road, Manchester, M13 9PL, UK. mohammad.owaise.sharif@googlemail.com.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New search for studies and content updated (no change to conclusions), published in Issue 12, 2010.
**Review content assessed as up-to-date:** 20 October 2010.

**Citation:** Coulthard P, Yong SL, Adamson L, Warburton A, Worthington HV, Esposito M, Sharif MO. Domestic violence screening and intervention programmes for adults with dental or facial injury. *Cochrane Database of Systematic Reviews* 2010, Issue 12. Art. No.: CD004486. DOI: 10.1002/14651858.CD004486.pub3.



## ABSTRACT

### Background

Domestic violence exists in all communities across the world. Healthcare services have a pivotal role in the identification, assessment and response to domestic violence. As the face is a common target in assault, dentists and oral and maxillofacial surgeons are in a unique position to screen for domestic violence in the context of presentation of dental and facial injury. Owing to lack of training, dentists and oral and maxillofacial surgeons may not be the best persons to give advice to someone experiencing domestic violence. Improper advice such as encouragement to leave an abusive relationship may escalate the frequency of violence. It may be more appropriate to refer to specialist agencies for intervention and support. It would, therefore be useful to know whether screening and intervention programmes are effective.

### Objectives

(1) To assess the benefits and harms of intervention programmes employed to reduce and or prevent domestic violence in adults with dental and/or facial injuries.

(2) To assess the benefits and harms of screening and the use of different screening tools in the detection of the proportion of adult victims of domestic violence who present with dental and/or facial injury.

### Search methods

The following electronic databases were searched: the Cochrane Oral Health Group Trials Register (to 18 May 2010), the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2010, Issue 2), MEDLINE via OVID (1950 to 18 May 2010), EMBASE via OVID (1980 to 18 May 2010), PsycINFO via OVID (1950 to 18 May 2010), LILACS via BIREME (1982 to 18 May 2010) and CINAHL via EBSCO (1980 to 18 May 2010). There were no restrictions regarding language or date of publication.

### Selection criteria

Randomised controlled trials (RCTs) involving adults aged 16 years and over presenting with dental and/or facial injury relating to domestic violence in any healthcare setting.

# Interventions for the management of external root resorption

Zohreh Ahangari[1], Mona Nasser[2], Mina Mahdian[3], Zbys Fedorowicz[4], Melissa A Marchesan[5]

[1]Department of Endodontics and Iranian Dental Research Centre, Shahid Beheshti School of Dentistry, Tehran, Iran. [2]Department of Health Information, Institute for Quality and Efficiency in Health Care, Cologne, Germany. [3]Iranian Dental Research Centre, Shahid Beheshti School of Dentistry, Tehran, Iran. [4]UKCC (Bahrain Branch), Ministry of Health, Bahrain, Awali, Bahrain. [5]Dentistry, Nova Southeastern University, Fort Lauderdale, Florida, USA

Contact address: Zohreh Ahangari, Department of Endodontics and Iranian Dental Research Centre, Shahid Beheshti School of Dentistry, Daneshjou Boulevard, Evin, Tehran, 19834, Iran. zohrehahangari@gmail.com.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 7, 2010.
**Review content assessed as up-to-date:** 6 April 2010.

**Citation:** Ahangari Z, Nasser M, Mahdian M, Fedorowicz Z, Marchesan MA. Interventions for the management of external root resorption. *Cochrane Database of Systematic Reviews* 2010, Issue 6. Art. No.: CD008003. DOI: 10.1002/14651858.CD008003.pub2.



## ABSTRACT

### Background

External root resorption is a pathological process which tends to occur following a wide range of mechanical or chemical stimuli such as infection, pressure, trauma or orthodontic tooth movement. Although it is predominantly detected by radiography, in some cases, root resorption may be identified by clinical symptoms i.e. pain, swelling and mobility of the tooth. Treatment alternatives are case-dependant and aim at the removal of the cause and the regeneration of the resorptive lesion.

### Objectives

To evaluate the effectiveness of any interventions that can be used in the management of external root resorption in permanent teeth.

### Search methods

We searched the following databases in April 2010: The Cochrane Oral Health Group's Trials Register; the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2010, Issue 3); MEDLINE (via OVID) (1950 to April 2010); and EMBASE (via OVID) (1980 to April 2010). We also searched two regional bibliographic databases (IndMED and Iranmedex) and handsearched five Iranian dental journals using free text terms appropriate for this review.

### Selection criteria

Randomised controlled trials comparing any type of intervention including root canal medications and canal filling, splinting or extraction of teeth or the surgical removal of any relevant pathology with each other, or placebo or no treatment applied to permanent teeth with any type of external root resorption which had been confirmed by clinical and radiological examination.

### Data collection and analysis

Two review authors conducted screening of studies in duplicate and independently. The Cochrane Collaboration statistical guidelines were to be followed.

### Main results

66 trials were identified in our searches none of which matched our inclusion criteria. However, we identified one ongoing study which is potentially relevant to this review and will be assessed when it is published.

# Interventions for treating traumatised ankylosed permanent front teeth

Raphael Freitas de Souza[1], Helen Travess[2], Tim Newton[3], Melissa A Marchesan[4]

[1]Department of Dental Materials and Prosthodontics, Ribeirão Preto Dental School, University of São Paulo, Ribeirão Preto, Brazil. [2]Department of Orthodontics, Stoke Mandeville Hospital, Aylesbury, UK. [3]Division of Health and Social Care Research, KCL Dental Institute, London, UK. [4]Dentistry, University of Ribeirão Preto-UNAERP, Ribeirão Preto, Brazil

Contact address: Raphael Freitas de Souza, Department of Dental Materials and Prosthodontics, Ribeirão Preto Dental School, University of São Paulo, Av. Do Café, s/n, Ribeirão Preto, São Paulo (SP), 14040-050, Brazil. raphael@forp.usp.br.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New, published in Issue 1, 2010.
**Review content assessed as up-to-date:** 15 September 2009.

**Citation:** de Souza RF, Travess H, Newton T, Marchesan MA. Interventions for treating traumatised ankylosed permanent front teeth. *Cochrane Database of Systematic Reviews* 2010, Issue 1. Art. No.: CD007820. DOI: 10.1002/14651858.CD007820.pub2.



## ABSTRACT

### Background

Teeth that have suffered trauma can fuse to the surrounding bone - the process referred to as dental ankylosis. Ankylosed permanent front teeth fail to erupt during facial growth and can become displaced, thus resulting in functional and aesthetic problems. Dental ankylosis is also associated with root resorption, which eventually leads to the loss of affected teeth. Different interventions for the management of ankylosed permanent front teeth have been described but it is unclear which are the most effective.

### Objectives

To assess the effects of treatment options for ankylosed permanent front teeth.

### Search methods

We searched the following databases: Cochrane Oral Health Group Trials Register (to September 2009); Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2009, Issue 3); MEDLINE (1950 to September 2009); EMBASE (1980 to September 2009); and LILACS (1980 to September 2009). There were no language restrictions.

### Selection criteria

Randomised controlled trials (RCTs) comparing any intervention for treating displaced ankylosed permanent front teeth in individuals of any age.

### Data collection and analysis

Two independent review authors screened studies in duplicate. Although no study was included, the authors had planned to extract data independently and to assess risk of bias following the Cochrane Collaboration methods.

### Main results

The search retrieved 77 references to studies. None matched the inclusion criteria and therefore were excluded.

# Interventions for treating traumatised permanent front teeth: avulsed (knocked out) and replanted

Peter Day[1], Monty Duggal[1]

[1]Department of Paediatric Dentistry, Leeds Dental Institute, Leeds, UK

Contact address: Peter Day, Department of Paediatric Dentistry, Leeds Dental Institute, Clarendon Way, Leeds, LS2 9LU, UK. p.f.day@leeds.ac.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New, published in Issue 1, 2010.
**Review content assessed as up-to-date:** 27 October 2009.

**Citation:** Day P, Duggal M. Interventions for treating traumatised permanent front teeth: avulsed (knocked out) and replanted. *Cochrane Database of Systematic Reviews* 2010, Issue 1. Art. No.: CD006542. DOI: 10.1002/14651858.CD006542.pub2.



## ABSTRACT

### Background

Dental trauma is common. One of the most severe injuries is when a permanent tooth is knocked completely out (avulsed) of the mouth. In most circumstances the tooth should be replanted as quickly as possible. There is uncertainty on how best to prepare teeth for replantation.

### Objectives

To compare the effects of a range of interventions for managing traumatised permanent teeth with avulsion injuries.

### Search methods

The Cochrane Oral Health Group's Trials Register (to 28th October 2009); CENTRAL (*The Cochrane Library* 2009, Issue 4); MEDLINE (1950 to October 2009); EMBASE (1980 to October 2009); www.clinicaltrials.gov/; www.controlled-trials.com/ and reference lists of articles were searched. There were no language restrictions.

### Selection criteria

Only randomised controlled trials (RCTs), that included a minimum follow-up period of 12 months, for interventions for avulsed and replanted permanent teeth were considered.

### Data collection and analysis

Two review authors independently extracted data and assessed trial quality and the risk of bias in studies to be included.

### Main results

Three studies, involving a total of 162 patients and 231 teeth were identified. Study one (with a high risk of bias) investigated the effect of extra-oral endodontics. This showed no significant difference in radiographic resorption compared with intra-oral endodontics provided at week 1 for teeth avulsed for longer than 60 minutes dry time. Study two (which had a moderate risk of bias) investigated a 10-minute soaking in thymosin alpha 1 prior to replantation and then its further use as a daily gingival injection for the first 7 days. They reported a strong benefit at 48 months (14% with periodontal healing in the control group versus 77% for the experimental group). Study three (with a high risk of bias) investigated a 20-minute soaking with gentamycin sulphate ($4x10^7$ U/L) for both groups prior to replantation and then the use of hyperbaric oxygen daily in the experimental group for 80 minutes for the first 10 days. They reported a strong benefit at 12 months (43% periodontal healing versus 88% for the experimental group). There was no formal reporting of adverse events.

# Interventions for treating traumatised permanent front teeth: luxated (dislodged) teeth

Flavia M Belmonte[1], Cristiane R Macedo[2], Peter F Day[3], Humberto Saconato[4], Virginia Fernandes Moça Trevisani[5]

[1]Internal and Therapeutic Medicine, Universidade Federal de São Paulo, São Paulo, Brazil. [2]Brazilian Cochrane Centre, Centro de Estudos de Medicina Baseada em Evidências e Avaliação Tecnológica em Saúde, São Paulo, Brazil. [3]Department of Paediatric Dentistry, Leeds Dental Institute, Leeds, UK. [4]Department of Medicine, Santa Casa de Campo Mourão, Campo Mourão, Brazil. [5]Rheumatology/Internal Medicine and Therapeutics, Universidade Federal de São Paulo, São Paulo, Brazil

Contact address: Cristiane R Macedo, Brazilian Cochrane Centre, Centro de Estudos de Medicina Baseada em Evidências e Avaliação Tecnológica em Saúde, Rua Borges Lagoa 564 cj 63, São Paulo, São Paulo, CEP 04038-000, Brazil. crisrufa@uol.com.br.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New, published in Issue 4, 2013.
**Review content assessed as up-to-date:** 20 August 2012.

**Citation:** Belmonte FM, Macedo CR, Day PF, Saconato H, Fernandes Moça Trevisani V. Interventions for treating traumatised permanent front teeth: luxated (dislodged) teeth. *Cochrane Database of Systematic Reviews* 2013, Issue 4. Art. No.: CD006203. DOI: 10.1002/14651858.CD006203.pub2.



## ABSTRACT

### Background

Dental trauma is common especially in children and young adults. One group of dento-alveolar injuries is classified as luxation. This group includes a subgroup of severe injuries where the tooth is displaced from its original position. These injuries are classified further by the direction in which the tooth has been displaced, namely: intrusion, extrusion and lateral luxation.

### Objectives

To evaluate the effects of a range of interventions for treating displaced luxated permanent front teeth.

### Search methods

Search strategies were developed for MEDLINE via OVID and revised appropriately for the following databases: Cochrane Oral Health Group's Trials Register (to 20 August 2012), the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2012, Issue 8), MEDLINE via OVID (1966 to August 2012), EMBASE via Elsevier (1974 to August 2012), and LILACS via BIREME (1982 to August 2012). Dissertations, Theses and Abstracts were searched as were reference lists from articles. There were no language restrictions.

### Selection criteria

Randomised or quasi-randomised controlled trials of treatment interventions for displaced luxated permanent front teeth. Included trials had to have a minimum follow-up period of 12 months.

### Data collection and analysis

Two review authors independently and in duplicate assessed the eligibility of all reports identified in the searches. Authors were contacted for additional information where required.

### Main results

No randomised or quasi-randomised controlled trials were found.

# Dental extractions prior to radiotherapy to the jaws for reducing post-radiotherapy dental complications

Shiyana Eliyas[1], Ahmed Al-Khayatt[2], Richard WJ Porter[2], Peter Briggs[2]

[1]Charles Clifford Dental Hospital, Sheffield Teaching Hospital, Sheffield, UK. [2]Maxillofacial Unit, St George's Hospital NHS Trust, London, UK

Contact address: Shiyana Eliyas, Charles Clifford Dental Hospital, Sheffield Teaching Hospital, Wellesley Road, Sheffield, S10 2SZ, UK. shiyanaeliyas@hotmail.com.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New, published in Issue 2, 2013.
**Review content assessed as up-to-date:** 22 November 2012.

**Citation:** Eliyas S, Al-Khayatt A, Porter RWJ, Briggs P. Dental extractions prior to radiotherapy to the jaws for reducing post-radiotherapy dental complications. *Cochrane Database of Systematic Reviews* 2013, Issue 2. Art. No.: CD008857. DOI: 10.1002/14651858.CD008857.pub2.



## ABSTRACT

### Background

Radiotherapy as part of head and neck cancer treatment leaves patients requiring much dental rehabilitation in a compromised environment that is difficult for the patient and the dental team to manage.

### Objectives

To assess the effects of maintaining the patient's natural dentition during radiotherapy in comparison to extracting teeth before radiotherapy in areas that are difficult to access by the patient and the dentist, should reduction in mouth opening occur after radiotherapy to the jaws.

### Search methods

We searched the Cochrane Oral Health Group's Trials Register (to 22 November 2012), the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2012, Issue 11), MEDLINE via OVID (1946 to 22 November 2012), EMBASE via OVID (1980 to 22 November 2012), CANCERLIT via PubMed (1950 to 22 November 2012), CINAHL via EBSCO (1980 to 22 November 2012) and reference lists of articles. We advertised for currently ongoing studies via the Cochrane Oral Health Group website and the Cochrane Oral Health Group Twitter feed.

### Selection criteria

Randomised controlled trials comparing extraction of teeth prior to radiotherapy with leaving teeth in situ during radiotherapy to the jaws.

### Data collection and analysis

Three review authors independently assessed the results of the searches for inclusion in the review.

### Main results

No randomised controlled trials were found.

# Interventions for preventing oral candidiasis for patients with cancer receiving treatment

Jan E Clarkson[1], Helen V Worthington[2], Tim OB Eden[3]

[1]Dental Health Services Research Unit, University of Dundee, Dundee, UK. [2]Cochrane Oral Health Group, MANDEC, School of Dentistry, The University of Manchester, Manchester, UK. [3]Young Oncology Unit, Christie Hospital NHS Trust, Manchester, UK

Contact address: Jan E Clarkson, Dental Health Services Research Unit, University of Dundee, The Mackenzie Building, Kirsty Semple Way, Dundee, DD2 4BF, UK. j.e.clarkson@chs.dundee.ac.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New search for studies and content updated (no change to conclusions), published in Issue 4, 2009.
**Review content assessed as up-to-date:** 4 August 2009.

**Citation:** Clarkson JE, Worthington HV, Eden TOB. Interventions for preventing oral candidiasis for patients with cancer receiving treatment. *Cochrane Database of Systematic Reviews* 2007, Issue 1. Art. No.: CD003807. DOI: 10.1002/14651858.CD003807.pub3.



## ABSTRACT

### Background

Treatment of cancer is increasingly more effective but is associated with short and long term side effects. Oral side effects remain a major source of illness despite the use of a variety of agents to prevent and treat them. One of these side effects is oral candidiasis.

### Objectives

To assess the effectiveness of interventions (which may include placebo or no treatment) for the prevention of oral candidiasis for patients with cancer receiving chemotherapy or radiotherapy or both.

### Search methods

Computerised searches of Cochrane Oral Health Group and PaPaS Trials Registers, CENTRAL, MEDLINE, EMBASE, CINAHL, CANCERLIT, SIGLE and LILACS were undertaken.

Reference lists from relevant articles were searched and the authors of eligible trials were contacted to identify trials and obtain additional information.

Date of the most recent searches: 3 August 2009: CENTRAL (*The Cochrane Library* 2009, Issue 3).

### Selection criteria

Trials were selected if they met the following criteria: design - random allocation of participants; participants - anyone receiving chemotherapy or radiotherapy treatment for cancer; interventions - agents prescribed to prevent oral candidiasis; primary outcome - prevention of oral candidiasis.

### Data collection and analysis

Data were recorded on the following secondary outcomes if present: relief of pain, amount of analgesia, relief of dysphagia, incidence of systemic infection, duration of stay in hospital (days), cost of oral care, patient quality of life, death, use of empirical antifungal treatment, toxicity and compliance.

Information regarding methods, participants, interventions, outcome measures and results were independently extracted, in duplicate, by two review authors. The Cochrane Collaboration statistical guidelines were followed and risk ratios (RR) calculated using random-effects models. Potential sources of heterogeneity were examined in random-effects metaregression analyses.

# Interventions for preventing oral mucositis for patients with cancer receiving treatment

Helen V Worthington[1], Jan E Clarkson[2], Gemma Bryan[1], Susan Furness[1], Anne-Marie Glenny[1], Anne Littlewood[1], Martin G McCabe[3], Stefan Meyer[4], Tasneem Khalid[5]

[1]Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Manchester, UK. [2]Dental Health Services & Research Unit, University of Dundee, Dundee, Cochrane Oral Health Group, The University of Manchester, Manchester, UK. [3]Manchester Academic Health Science Centre, School of Cancer and Enabling Sciences, University of Manchester, Manchester, UK. [4]Paediatric and Adolescent Oncology, Royal Manchester Children's and Christie Hospital, School of Cancer and Enabling Sciences, Manchester Academic Health Science Centre, The University of Manchester, Manchester, UK. [5]Department of Haematology/Oncology, Royal Manchester Children's Hospital, Manchester, UK

Contact address: Helen V Worthington, Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Coupland III Building, Oxford Road, Manchester, M13 9PL, UK. helen.worthington@manchester.ac.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 2, 2013.
**Review content assessed as up-to-date:** 8 March 2011.

**Citation:** Worthington HV, Clarkson JE, Bryan G, Furness S, Glenny AM, Littlewood A, McCabe MG, Meyer S, Khalid T. Interventions for preventing oral mucositis for patients with cancer receiving treatment. *Cochrane Database of Systematic Reviews* 2011, Issue 4. Art. No.: CD000978. DOI: 10.1002/14651858.CD000978.pub5.



## ABSTRACT

### Background

Treatment of cancer is increasingly more effective but is associated with short and long term side effects. Oral side effects remain a major source of illness despite the use of a variety of agents to prevent them. One of these side effects is oral mucositis (mouth ulcers).

### Objectives

To evaluate the effectiveness of prophylactic agents for oral mucositis in patients with cancer receiving treatment, compared with other potentially active interventions, placebo or no treatment.

### Search methods

Electronic searches of Cochrane Oral Health Group and PaPaS Trials Registers (to 16 February 2011), CENTRAL (*The Cochrane Library* 2011, Issue 1), MEDLINE via OVID (1950 to 16 February 2011), EMBASE via OVID (1980 to 16 February 2011), CINAHL via EBSCO (1980 to 16 February 2011), CANCERLIT via PubMed (1950 to 16 February 2011), OpenSIGLE (1980 to 2005) and LILACS via the Virtual Health Library (1980 to 16 February 2011) were undertaken. Reference lists from relevant articles were searched and the authors of eligible trials were contacted to identify trials and obtain additional information.

### Selection criteria

Randomised controlled trials of interventions to prevent oral mucositis in patients receiving treatment for cancer.

### Data collection and analysis

Information regarding methods, participants, interventions, outcome measures, results and risk of bias were independently extracted, in duplicate, by two review authors. Authors were contacted for further details where these were unclear. The Cochrane Collaboration statistical guidelines were followed and risk ratios calculated using random-effects models.

# Interventions for treating oral candidiasis for patients with cancer receiving treatment

Helen V Worthington[1], Jan E Clarkson[2], Tasneem Khalid[3], Stefan Meyer[4], Martin McCabe[5]

[1]Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Manchester, UK. [2]Dental Health Services Research Unit, University of Dundee, Dundee, UK. [3]Department of Haematology/Oncology, Royal Manchester Children's Hospital, Manchester, UK. [4]Paediatric and Adolescent Oncology, Royal Manchester Children's and Christie Hospital, School of Cancer and Enabling Sciences, Manchester Academic Health Science Centre, The University of Manchester, Manchester, UK. [5]School of Cancer and Enabling Sciences, Manchester Academic Health Science Centre, University of Manchester, Manchester, UK

Contact address: Helen V Worthington, Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Coupland III Building, Oxford Road, Manchester, M13 9PL, UK. helen.worthington@manchester.ac.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New search for studies and content updated (no change to conclusions), published in Issue 7, 2010.
**Review content assessed as up-to-date:** 31 May 2010.

**Citation:** Worthington HV, Clarkson JE, Khalid T, Meyer S, McCabe M. Interventions for treating oral candidiasis for patients with cancer receiving treatment. *Cochrane Database of Systematic Reviews* 2010, Issue 7. Art. No.: CD001972. DOI: 10.1002/14651858.CD001972.pub4.



## ABSTRACT

### Background

Treatment of cancer is increasingly effective but is associated with short and long term side effects. Oral and gastrointestinal side effects, including oral candidiasis, remain a major source of illness despite the use of a variety of agents to treat them.

### Objectives

To assess the effectiveness of interventions for the treatment of oral candidiasis for patients with cancer receiving chemotherapy or radiotherapy or both.

### Search methods

Computerised searches of Cochrane Oral Health Group and PaPaS Trials Registers (to 1 June 2010), CENTRAL via *the Cochrane Library* (Issue 2, 2010, 1 June 2010), MEDLINE via OVID (1 June 2010), EMBASE via OVID (1 June 2010), CINAHL via EBSCO (1 June 2010), CANCERLIT via PubMed (1 June 2010), OpenSIGLE (1 June 2010) and LILACS via Virtual Health Library (1 June 2010) were undertaken.

Reference lists from relevant articles were searched and the authors of eligible trials were contacted to identify trials and obtain additional information.

### Selection criteria

All randomised controlled trials comparing agents prescribed to treat oral candidiasis in people receiving chemotherapy or radiotherapy for cancer. The outcomes were eradication of oral candidiasis, dysphagia, systemic infection, amount of analgesia, length of hospitalisation, cost and patient quality of life.

### Data collection and analysis

Data were independently extracted, in duplicate, by two review authors. Trial authors were contacted for details of randomisation and withdrawals and a quality assessment was carried out. Risk ratios (RR) were calculated using fixed-effect models.

# Screening programmes for the early detection and prevention of oral cancer

Paul Brocklehurst[1], Omar Kujan[2], Anne-Marie Glenny[3], Richard Oliver[4], Philip Sloan[5], Graham Ogden[6], Simon Shepherd[6]

[1]Department of Dental Public Health & Primary Care, School of Dentistry, Manchester, UK. [2]Oral Pathology and Medicine, School of Dentistry, AlBaath University, Hama, Syrian Arab Republic. [3]Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Manchester, UK. [4]School of Dentistry, The University of Manchester, Manchester, UK. [5]Department of Cellular Pathology, Royal Victoria Infirmary, Newcastle upon Tyne, UK. [6]Department of Oral Surgery & Medicine, School of Dentistry, University of Dundee, Dundee, UK

Contact address: Paul Brocklehurst, Department of Dental Public Health & Primary Care, School of Dentistry, The University of Manchester, Higher Cambridge Street, Manchester, M15 6FH, UK. paul.brocklehurst@hotmail.co.uk. paul.brocklehurst@postgrad.manchester.ac.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New search for studies and content updated (no change to conclusions), published in Issue 11, 2010.
**Review content assessed as up-to-date:** 5 October 2010.

**Citation:** Brocklehurst P, Kujan O, Glenny AM, Oliver R, Sloan P, Ogden G, Shepherd S. Screening programmes for the early detection and prevention of oral cancer. *Cochrane Database of Systematic Reviews* 2010, Issue 11. Art. No.: CD004150. DOI: 10.1002/14651858.CD004150.pub3.



## ABSTRACT

### Background

Oral cancer is an important global healthcare problem, its incidence is increasing and late-stage presentation is common. Screening programmes have been introduced for a number of major cancers and have proved effective in their early detection. Given the high morbidity and mortality rates associated with oral cancer, there is a need to determine the effectiveness of a screening programme for this disease, either as a targeted, opportunistic or population based measure. Evidence exists from modelled data that a visual oral examination of high-risk individuals may be a cost-effective screening strategy and the development and use of adjunctive aids and biomarkers is becoming increasingly common.

### Objectives

To assess the effectiveness of current screening methods in decreasing oral cancer mortality.

### Search methods

The following electronic databases were searched: the Cochrane Oral Health Group Trials Register (to 20 May 2010), the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2010, Issue 2), MEDLINE via OVID (1950 to 20 May 2010), EMBASE via OVID (1980 to 20 May 2010) and CANCERLIT via PubMed (1950 to 20 May 2010). There were no restrictions regarding language or date of publication.

### Selection criteria

Randomised controlled trials (RCTs) of screening for oral cancer or potentially malignant disorders using visual examination, toluidine blue, fluorescence imaging or brush biopsy.

# Interventions for the treatment of keratocystic odontogenic tumours (KCOT, odontogenic keratocysts (OKC))

Fyeza NJ Sharif[2], Richard Oliver[1], Christopher Sweet[3], Mohammad O Sharif[1]

[1]School of Dentistry, The University of Manchester, Manchester, UK. [2]Manchester, UK. [3]The University of Manchester, Manchester, UK

Contact address: Richard Oliver, School of Dentistry, The University of Manchester, Coupland III Building, Oxford Road, Manchester, M13 9PL, UK. oral.surgeon@hotmail.com.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New, published in Issue 9, 2010.
**Review content assessed as up-to-date:** 27 July 2010.

**Citation:** Sharif FNJ, Oliver R, Sweet C, Sharif MO. Interventions for the treatment of keratocystic odontogenic tumours (KCOT, odontogenic keratocysts (OKC)). *Cochrane Database of Systematic Reviews* 2010, Issue 9. Art. No.: CD008464. DOI: 10.1002/14651858.CD008464.pub2.



## ABSTRACT

### Background

The keratocystic odontogenic tumours (KCOTs) account for between about 2% and 11% of all jaw cysts and can occur at any age. They are more common in males than females with a male:female ratio of approximately 2:1. Although they are benign, KCOTs are locally very aggressive and have a tendency to recur after treatment, reported recurrence rates range from 3% to 60%. The traditional method for the treatment of most KCOTs is surgical enucleation. However, due to the lining of the cyst being delicate and the fact that they frequently recur, this method alone is not sufficient. Adjunctive surgical treatment has been proposed in addition to the surgical enucleation, such as removal of the peripheral bone (ostectomy) or resection of the cyst with surrounding bone (en-bloc) resection. Other adjunctive treatments proposed are: cryotherapy (freezing) with liquid nitrogen and the use of the fixative Carnoy's solution placed in the cyst cavity after enucleation; both of which attempt to address residual tissue to prevent recurrence.

### Objectives

To assess the available evidence comparing the effectiveness of surgical interventions and adjuncts for the treatment of KCOTs.

### Search methods

Databases searched were: the Cochrane Oral Health Group's Trials Register (to 28th July 2010), CENTRAL (*The Cochrane Library* 2010, Issue 3), MEDLINE (from 1950 to 28th July 2010), and EMBASE (from 1980 to 28th July 2010). The reference lists of all trials identified were cross checked for additional trials. There were no language restrictions and several articles were translated.

### Selection criteria

Randomised controlled trials comparing one modality of surgical intervention with another with or without adjunctive treatment for the treatment of KCOTs. Adults, over the age of 18 with a validated diagnosis of solitary KCOTs arising in the jaw bones of the maxilla or mandible. Patients with known Gorlin syndrome were to be excluded.

### Data collection and analysis

Review authors screened trials for inclusion. Full papers were obtained for relevant and potentially relevant trials. If data had been extracted, it would have been synthesised using the fixed-effect model, if substantial clinical diversity were identified between studies we planned to use the random-effects model with studies grouped by action provided there were four or more studies included in the meta-analysis, and we would have explored the heterogeneity between the included studies.

# Interventions for the treatment of oral and oropharyngeal cancers: surgical treatment

Alyson Bessell[1], Anne-Marie Glenny[2], Susan Furness[2], Jan E Clarkson[3], Richard Oliver[4], David I Conway[5], Michaelina Macluskey[6], Sue Pavitt[7], Philip Sloan[8], Helen V Worthington[2]

[1]Department of Oral and Dental Sciences, University of Bristol, Bristol, UK. [2]Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Manchester, UK. [3]Dental Health Services & Research Unit, University of Dundee, Dundee, Cochrane Oral Health Group, The University of Manchester, Manchester, UK. [4]RED (Research and Education in Dentistry), Shrewsbury, UK. [5]Glasgow Dental School, University of Glasgow, Glasgow, UK. [6]Unit of Oral Surgery and Medicine, University of Dundee, Dundee, UK. [7]Leeds Institute of Health Sciences, University of Leeds, Leeds, UK. [8]Department of Cellular Pathology, Royal Victoria Infirmary, Newcastle upon Tyne, UK

Contact address: Alyson Bessell, Department of Oral and Dental Sciences, University of Bristol, Lower Maudlin Street, Bristol, BS1 2LY, UK. alyson.bessell@bristol.ac.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New search for studies and content updated (conclusions changed), published in Issue 9, 2011.
**Review content assessed as up-to-date:** 16 February 2011.

**Citation:** Bessell A, Glenny AM, Furness S, Clarkson JE, Oliver R, Conway DI, Macluskey M, Pavitt S, Sloan P, Worthington HV. Interventions for the treatment of oral and oropharyngeal cancers: surgical treatment. *Cochrane Database of Systematic Reviews* 2011, Issue 9. Art. No.: CD006205. DOI: 10.1002/14651858.CD006205.pub3.



## ABSTRACT

### Background

Surgery is an important part of the management of oral cavity cancer with regard to both the removal of the primary tumour and removal of lymph nodes in the neck. Surgery is less frequently used in oropharyngeal cancer. Surgery alone may be treatment for early stage disease or surgery may be used in combination with radiotherapy, chemotherapy and immunotherapy/biotherapy. There is variation in the recommended timing and extent of surgery in the overall treatment regimens of people with these cancers.

### Objectives

To determine which surgical treatment modalities for oral cavity and oropharyngeal cancers result in increased overall survival, disease free survival, progression free survival and reduced recurrence.

### Search methods

The following electronic databases were searched: the Cochrane Oral Health Group Trials Register (to 17 February 2011), the Cochrane Central Register of Controlled Trials (CENTRAL) (The Cochrane Library 2011, Issue 1), MEDLINE via OVID (1950 to 17 February 2011) and EMBASE via OVID (1980 to 17 February 2011). There were no restrictions regarding language or date of publication.

### Selection criteria

Randomised controlled trials where more than 50% of participants had primary tumours of the oral cavity or oropharynx, and which compared two or more surgical treatment modalities or surgery versus other treatment modalities.

### Data collection and analysis

Data extraction and assessment of risk of bias was undertaken independently by two or more review authors. Study authors were contacted for additional information as required. Adverse events data were collected from published trials.

# Interventions for the treatment of oral cavity and oropharyngeal cancer: radiotherapy

Anne-Marie Glenny[1], Susan Furness[2], Helen V Worthington[1], David I Conway[3], Richard Oliver[4], Jan E Clarkson[5], Michaelina Macluskey[6], Sue Pavitt[7], Kelvin KW Chan[8], Paul Brocklehurst[9], The CSROC Expert Panel[1]

[1]Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Manchester, UK. [2]Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Manchester, UK. [3]Glasgow Dental School, University of Glasgow, Glasgow, UK. [4]RED (Research and Education in Dentistry), Shrewsbury, UK. [5]Dental Health Services & Research Unit, University of Dundee, Dundee, Cochrane Oral Health Group, The University of Manchester, Manchester, UK. [6]Unit of Oral Surgery and Medicine, University of Dundee, Dundee, UK. [7]Clinical Trials Research Unit, University of Leeds, Leeds, UK. [8]Princess Margaret Hospital, Toronto, Canada. [9]School of Dentistry, The University of Manchester, Manchester, UK

Contact address: Anne-Marie Glenny, Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Coupland III Building, Oxford Road, Manchester, M13 9PL, UK. a.glenny@manchester.ac.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New, published in Issue 12, 2010.
**Review content assessed as up-to-date:** 4 November 2010.

**Citation:** Glenny AM, Furness S, Worthington HV, Conway DI, Oliver R, Clarkson JE, Macluskey M, Pavitt S, Chan KKW, Brocklehurst P, The CSROC Expert Panel. Interventions for the treatment of oral cavity and oropharyngeal cancer: radiotherapy. *Cochrane Database of Systematic Reviews* 2010, Issue 12. Art. No.: CD006387. DOI: 10.1002/14651858.CD006387.pub2.



## ABSTRACT

### Background

The management of advanced oral cavity and oropharyngeal cancers is problematic and has traditionally relied on surgery and radiotherapy, both of which are associated with substantial adverse effects. Radiotherapy has been in use since the 1950s and has traditionally been given as single daily doses. This method of dividing up the total dose, or fractionation, has been modified over the years and a variety of approaches have been developed with the aim of improving survival whilst maintaining acceptable toxicity.

### Objectives

To determine which radiotherapy regimens for oral cavity and oropharyngeal cancers result in increased overall survival, disease free survival, progression free survival and locoregional control.

### Search methods

The following electronic databases were searched: the Cochrane Oral Health Group's Trials Register (to 28 July 2010), CENTRAL (*The Cochrane Library* 2010, Issue 3), MEDLINE via OVID (1950 to 28 July 2010) and EMBASE via OVID (1980 to 28 July 2010). There were no restrictions regarding language or date of publication.

### Selection criteria

Randomised controlled trials where more than 50% of participants had primary tumours of the oral cavity or oropharynx, and which compared two or more radiotherapy regimens, radiotherapy versus other treatment modality, or the addition of radiotherapy to other treatment modalities.

# Interventions for treating oral candidiasis for patients with cancer receiving treatment

**Clarkson JE, Worthington HV, Eden OB**

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## ABSTRACT

**Background**
Treatment of cancer is increasingly effective but is associated with short and long-term side effects. Oral side effects, including oral candidiasis, remain a major source of illness despite the use of a variety of agents to treat them.

**Objectives**
To assess the effectiveness of interventions for the treatment of oral candidiasis for patients with cancer receiving chemotherapy and or radiotherapy.

**Search strategy**
Computerised searches of Cochrane Oral Health Group Specialised Register, CCTR, MEDLINE and EMBASE were undertaken. Reference lists from relevant articles were searched and the authors of eligible trials were contacted to identify trials and obtain additional information.
Date of the most recent searches May 2001: (CCTR 2001, issue 3)

**Selection criteria**
All randomised controlled trials comparing agents prescribed to treat oral candidiasis in people receiving chemotherapy or radiotherapy for cancer. The outcomes were eradication of oral candidiasis, dysphagia, systemic infection, amount of analgesia, length of hospitalisation, cost and patient quality of life.

**Data collection and analysis**
Data were independently extracted, in duplicate, by two reviewers. Authors were contacted for details of randomisation and withdrawals and a quality assessment was carried out. The Cochrane Oral Health Group statistical guidelines were followed and relative risk values calculated using random effects models where significant heterogeneity was detected ($P<0.1$).

**Main results**
Eight trials involving 418 patients, satisfied the inclusion criteria and are included in this review. Only two agents, each in single trials, were found to be effective for eradicating oral candidiasis. A drug absorbed from the gastrointestinal tract, ketoconazole, was more beneficial than placebo in eradicating oral candidiasis (RR=0.35 95%CI 0.20 to 0.61) and clotrimazole, at a higher dose of 50mg was more effective than a lower 10mg dose in eradicating oral candidiasis, when assessed mycologically (RR=0.47 95%CI 0.25 to 0.89). Another trial demonstrated no statistically significant difference between a 10mg dose of the partially absorbed drug, clotrimazole, and placebo. No differences were found when comparing different absorbed drugs; and comparing absorbed drugs with drugs which are not absorbed.

**Reviewer's conclusions**
There is weak and unreliable evidence that the absorbed drug, ketoconazole, may eradicate oral candidiasis and that a higher dose of the partially absorbed drug, clotrimazole, may give greater benefit than a lower 10mg dose, however, researchers may wish to prevent rather than treat oral candidiasis. Further well designed, placebo-controlled trials assessing the effectiveness of old and new interventions for treating oral candidiasis are needed.

# Recall intervals for oral health in primary care patients

Paul V Beirne[1], Jan E Clarkson[2], Helen V Worthington[3]

[1]Department of Epidemiology and Public Health, University College Cork, Brookfield Health Sciences Complex, Wilton, Ireland. [2]Dental Health Services Research Unit, University of Dundee, Dundee, UK. [3]Cochrane Oral Health Group, MANDEC, School of Dentistry, The University of Manchester, Manchester, UK

Contact address: Paul V Beirne, Department of Epidemiology and Public Health, University College Cork, Brookfield Health Sciences Complex, College Road, Wilton, Cork, Ireland. p.beirne@ucc.ie.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 4, 2008.
**Review content assessed as up-to-date:** 9 August 2007.

**Citation:** Beirne PV, Clarkson JE, Worthington HV. Recall intervals for oral health in primary care patients. *Cochrane Database of Systematic Reviews* 2007, Issue 4. Art. No.: CD004346. DOI: 10.1002/14651858.CD004346.pub3.



## ABSTRACT

### Background

The frequency with which patients should attend for a dental check-up and the potential effects on oral health of altering recall intervals between check-ups have been the subject of ongoing international debate for almost 3 decades. Although recommendations regarding optimal recall intervals vary between countries and dental healthcare systems, 6-monthly dental check-ups have traditionally been advocated by general dental practitioners in many developed countries.

### Objectives

To determine the beneficial and harmful effects of different fixed recall intervals (for example 6 months versus 12 months) for the following different types of dental check-up: a) clinical examination only; b) clinical examination plus scale and polish; c) clinical examination plus preventive advice; d) clinical examination plus preventive advice plus scale and polish.

To determine the relative beneficial and harmful effects between any of these different types of dental check-up at the same fixed recall interval.

To compare the beneficial and harmful effects of recall intervals based on clinicians' assessment of patients' disease risk with fixed recall intervals.

To compare the beneficial and harmful effects of no recall interval/patient driven attendance (which may be symptomatic) with fixed recall intervals.

### Search methods

We searched the Cochrane Oral Health Group Trials Register, the Cochrane Central Register of Controlled Trials (CENTRAL), MEDLINE and EMBASE. Reference lists from relevant articles were scanned and the authors of some papers were contacted to identify further trials and obtain additional information.

Date of most recent searches: 5th March 2007.

# Interventions for the restorative care of amelogenesis imperfecta in children and adolescents

Mayssoon Dashash[1], C Albert Yeung[2], Issam Jamous[3], Anthony Blinkhorn[4]

[1]Department of Paediatric Dentistry, Faculty of Dentistry, University of Damascus, Damascus, Syrian Arab Republic. [2]Department of Public Health, NHS Lanarkshire, Bothwell, UK. [3]Department of Fixed Prosthodontics, Dental School, University of Damascus, Mazzeh Jabal, Syrian Arab Republic. [4]Population Oral Health, Faculty of Dentistry, The University of Sydney, Westmead, Australia

Contact address: Mayssoon Dashash, Department of Paediatric Dentistry, Faculty of Dentistry, University of Damascus, Mezza Autustrad, Behind Razzi Hospital, Doctors' Building, Damascus, Syrian Arab Republic. mdashash@yahoo.com.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New, published in Issue 6, 2013.
**Review content assessed as up-to-date:** 30 April 2013.

**Citation:** Dashash M, Yeung CA, Jamous I, Blinkhorn A. Interventions for the restorative care of amelogenesis imperfecta in children and adolescents. *Cochrane Database of Systematic Reviews* 2013, Issue 6. Art. No.: CD007157. DOI: 10.1002/14651858.CD007157.pub2.



## ABSTRACT

### Background

Amelogenesis imperfecta (AI) is a tooth development disorder in which the teeth are covered with thin, abnormally formed enamel. This enamel is easily fractured and damaged, which affects the appearance of the teeth, especially if left untreated. Negative psychological outcomes, due to compromised appearance and function, in patients with AI, have been found to compromise a person's attractiveness and reduce social interaction. The treatment used depends on the severity of the problem.

### Objectives

To compare the success rates of different restorative materials and techniques used for the restoration of anterior and posterior teeth with AI in terms of patient satisfaction (aesthetics and sensitivity) and function.

### Search methods

We searched the Cochrane Oral Health Group's Trials Register (to 18 April 2013), the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2013, Issue 3), MEDLINE via OVID (1946 to 18 April 2013), EMBASE via OVID (1980 to 18 April 2013), CINAHL via EBSCO (1980 to 18 April 2013), Abstracts of the Conference Proceedings of the International Association for Dental Research (2001 to 18 April 2013) and reference lists of relevant articles. There were no restrictions on language or date of publication in the electronic searches.

### Selection criteria

Randomised controlled trials where children and adolescents with AI who required restoration of teeth were allocated to different restoration techniques would have been selected. Outcomes which would have been evaluated were patient satisfaction, aesthetics, masticatory function and longevity of restorations.

### Data collection and analysis

Two review authors would have extracted data and assessed the risk of bias in included studies independently. Disagreement between the two authors would have been resolved by consulting a third review author. First authors were contacted for additional information and unpublished data.

# Interventions for treating oral leukoplakia

Giovanni Lodi[1], Andrea Sardella[1], Cristina Bez[1], Federica Demarosi[1], Antonio Carrassi[1]

[1]Oral Pathology and Oral Medicine, University of Milan, Milan, Italy

Contact address: Giovanni Lodi, Oral Pathology and Oral Medicine, University of Milan, Via Beldiletto 1/3, Milan, 20142, Italy. giovanni.lodi@unimi.it.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 4, 2008.
**Review content assessed as up-to-date:** 3 July 2006.

**Citation:** Lodi G, Sardella A, Bez C, Demarosi F, Carrassi A. Interventions for treating oral leukoplakia. *Cochrane Database of Systematic Reviews* 2006, Issue 4. Art. No.: CD001829. DOI: 10.1002/14651858.CD001829.pub3.



## ABSTRACT

### Background

Oral leukoplakia is a relatively common oral lesion that in a small but significant proportion of cases changes into cancer. Since most leukoplakias are asymptomatic, the primary objective of treatment should be to prevent such malignant transformation.

### Objectives

To assess effectiveness, safety and acceptability of treatments for leukoplakia.

### Search methods

The following databases were searched for relevant trials: Cochrane Oral Health Group's Trials Register (to April 2006), CENTRAL (*The Cochrane Library* 2006, Issue 1), MEDLINE (from 1966 to December 2005), and EMBASE (from 1980 to December 2005). Handsearching was performed for the main oral medicine journals. References of included studies and reviews were checked. Oral medicine experts were contacted through an European mailing list (EURORALMED).

### Selection criteria

Randomised controlled trials (RCTs), enrolling patients with a diagnosis of oral leukoplakia, were included. Any surgical or medical (topical and systemic) treatment was included. The primary outcome considered was malignant transformation of leukoplakia. Other outcomes considered were clinical resolution, histological modification and frequency of adverse effects.

### Data collection and analysis

Data were collected using a specific extraction form. Malignant transformation of leukoplakia, demonstrated by histopathological examination, was the main outcome considered. Secondary outcomes included clinical resolution of the lesion and variation in dysplasia severity. The validity of included studies was assessed by two review authors, on the basis of the method of allocation concealment, blindness of the study and loss of participants. Data were analysed by calculating risk ratio. When valid and relevant data were collected, a meta-analysis of the data was undertaken.

### Main results

The possible effectiveness of surgical interventions, including laser therapy and cryotherapy, has never been studied by means of a RCT with a no treatment/placebo arm. Twenty-five eligible RCTs of non-surgical interventions were identified: 11 were excluded for different reasons, five were ongoing studies, leaving nine studies to be included in the review (501 patients). Two studies resulted at low risk of bias, six at moderate risk of bias and one at high risk of bias. Vitamin A and retinoids were tested by five RCTs, two studies

# Interventions for treating oral lichen planus

Kobkan Thongprasom[1], Marco Carrozzo[2], Susan Furness[3], Giovanni Lodi[4]

[1]Department of Oral Medicine, Faculty of Dentistry, Chulalongkorn University, Bangkok, Thailand. [2]Department of Oral Medicine, School of Dental Sciences, University of Newcastle upon Tyne, Newcastle upon Tyne, UK. [3]Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Manchester, UK. [4]Unit of Oral Pathology and Oral Medicine, Department of Medicine, Surgery and Dentistry, University of Milan, Milan, Italy

Contact address: Kobkan Thongprasom, Department of Oral Medicine, Faculty of Dentistry, Chulalongkorn University, Bangkok, 10330, Thailand. Kobkan.T@Chula.ac.th.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New search for studies and content updated (conclusions changed), published in Issue 7, 2011.
**Review content assessed as up-to-date:** 6 June 2011.

**Citation:** Thongprasom K, Carrozzo M, Furness S, Lodi G. Interventions for treating oral lichen planus. *Cochrane Database of Systematic Reviews* 2011, Issue 7. Art. No.: CD001168. DOI: 10.1002/14651858.CD001168.pub2.



## ABSTRACT

### Background

Oral lichen planus (OLP) is a common chronic autoimmune disease associated with cell-mediated immunological dysfunction. Symptomatic OLP is painful and complete healing is rare.

### Objectives

To assess the effectiveness and safety of any form of therapy for symptomatic OLP.

### Search methods

The following electronic databases were searched: the Cochrane Oral Health Group Trials Register (to 26 January 2011), the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2011, Issue 1), MEDLINE via OVID (1950 to 26 January 2011) and EMBASE via OVID (1980 to 26 January 2011). There were no restrictions regarding language or date of publication.

### Selection criteria

All randomised controlled clinical trials (RCTs) of therapy for symptomatic OLP which compared treatment with a placebo or between treatments or no intervention were considered in this review.

### Data collection and analysis

The titles and abstracts of all reports identified were scanned independently by two review authors. All studies meeting the inclusion criteria were assessed for risk of bias and data were extracted. For dichotomous outcomes, the estimates of effects of an intervention were expressed as risk ratios (RR) together with 95% confidence intervals. For continuous outcomes, mean differences (MD) and 95% confidence intervals were used to summarise the data for each group. The statistical unit was the patient. Meta-analyses were done only with studies of similar comparisons reporting the same outcome measures.

# Interventions for preventing oral mucositis for patients with cancer receiving treatment

Helen V Worthington[1], Jan E Clarkson[2], Gemma Bryan[1], Susan Furness[1], Anne-Marie Glenny[1], Anne Littlewood[1], Martin G McCabe[3], Stefan Meyer[4], Tasneem Khalid[5]

[1]Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Manchester, UK. [2]Dental Health Services & Research Unit, University of Dundee, Dundee, Cochrane Oral Health Group, The University of Manchester, Manchester, UK. [3]Manchester Academic Health Science Centre, School of Cancer and Enabling Sciences, University of Manchester, Manchester, UK. [4]Paediatric and Adolescent Oncology, Royal Manchester Children's and Christie Hospital, School of Cancer and Enabling Sciences, Manchester Academic Health Science Centre, The University of Manchester, Manchester, UK. [5]Department of Haematology/Oncology, Royal Manchester Children's Hospital, Manchester, UK

Contact address: Helen V Worthington, Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Coupland III Building, Oxford Road, Manchester, M13 9PL, UK. helen.worthington@manchester.ac.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 2, 2013.
**Review content assessed as up-to-date:** 8 March 2011.

**Citation:** Worthington HV, Clarkson JE, Bryan G, Furness S, Glenny AM, Littlewood A, McCabe MG, Meyer S, Khalid T. Interventions for preventing oral mucositis for patients with cancer receiving treatment. *Cochrane Database of Systematic Reviews* 2011, Issue 4. Art. No.: CD000978. DOI: 10.1002/14651858.CD000978.pub5.



## ABSTRACT

### Background

Treatment of cancer is increasingly more effective but is associated with short and long term side effects. Oral side effects remain a major source of illness despite the use of a variety of agents to prevent them. One of these side effects is oral mucositis (mouth ulcers).

### Objectives

To evaluate the effectiveness of prophylactic agents for oral mucositis in patients with cancer receiving treatment, compared with other potentially active interventions, placebo or no treatment.

### Search methods

Electronic searches of Cochrane Oral Health Group and PaPaS Trials Registers (to 16 February 2011), CENTRAL (*The Cochrane Library* 2011, Issue 1), MEDLINE via OVID (1950 to 16 February 2011), EMBASE via OVID (1980 to 16 February 2011), CINAHL via EBSCO (1980 to 16 February 2011), CANCERLIT via PubMed (1950 to 16 February 2011), OpenSIGLE (1980 to 2005) and LILACS via the Virtual Health Library (1980 to 16 February 2011) were undertaken. Reference lists from relevant articles were searched and the authors of eligible trials were contacted to identify trials and obtain additional information.

### Selection criteria

Randomised controlled trials of interventions to prevent oral mucositis in patients receiving treatment for cancer.

### Data collection and analysis

Information regarding methods, participants, interventions, outcome measures, results and risk of bias were independently extracted, in duplicate, by two review authors. Authors were contacted for further details where these were unclear. The Cochrane Collaboration statistical guidelines were followed and risk ratios calculated using random-effects models.

# Interventions for treating oral mucositis for patients with cancer receiving treatment

Jan E Clarkson[2], Helen V Worthington[1], Susan Furness[3], Martin McCabe[4], Tasneem Khalid[5], Stefan Meyer[6]

[1]Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Manchester, UK. [2]Dental Health Services Research Unit, University of Dundee, Dundee, UK. [3]Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Manchester, UK. [4]School of Cancer and Enabling Sciences, Manchester Academic Health Science Centre, University of Manchester, Manchester, UK. [5]Department of Haematology/Oncology, Royal Manchester Children's Hospital, Manchester, UK. [6]Paediatric and Adolescent Oncology, Royal Manchester Children's and Christie Hospital, School of Cancer and Enabling Sciences, Manchester Academic Health Science Centre, The University of Manchester, Manchester, UK

Contact address: Helen V Worthington, Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Coupland III Building, Oxford Road, Manchester, M13 9PL, UK. helen.worthington@manchester.ac.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), comment added to review, published in Issue 10, 2010.
**Review content assessed as up-to-date:** 31 May 2010.

**Citation:** Clarkson JE, Worthington HV, Furness S, McCabe M, Khalid T, Meyer S. Interventions for treating oral mucositis for patients with cancer receiving treatment. *Cochrane Database of Systematic Reviews* 2010, Issue 8. Art. No.: CD001973. DOI: 10.1002/14651858.CD001973.pub4.



## ABSTRACT

### Background

Treatment of cancer is increasingly effective but associated with short and long term side effects. Oral side effects, including oral mucositis (mouth ulceration), remain a major source of illness despite the use of a variety of agents to treat them.

### Objectives

To assess the effectiveness of interventions for treating oral mucositis or its associated pain in patients with cancer receiving chemotherapy or radiotherapy or both.

### Search methods

Electronic searches of Cochrane Oral Health Group and PaPaS Trials Registers (to 1 June 2010), CENTRAL via *The Cochrane Library* (to Issue 2, 2010), MEDLINE via OVID (1950 to 1 June 2010), EMBASE via OVID (1980 to 1 June 2010), CINAHL via EBSCO (1980 to 1 June 2010), CANCERLIT via PubMed (1950 to 1 June 2010), OpenSIGLE (1980 to 1 June 2010) and LILACS via the Virtual Health Library (1980 to 1 June 2010) were undertaken. Reference lists from relevant articles were searched and the authors of eligible trials were contacted to identify trials and obtain additional information.

### Selection criteria

All randomised controlled trials comparing agents prescribed to treat oral mucositis in people receiving chemotherapy or radiotherapy or both. Outcomes were oral mucositis, time to heal mucositis, oral pain, duration of pain control, dysphagia, systemic infection, amount of analgesia, length of hospitalisation, cost and quality of life.

# Local interventions for the management of alveolar osteitis (dry socket)

Blánaid Daly[1], Mohammad O Sharif[2], Tim Newton[3], Kate Jones[4], Helen V Worthington[5]

[1]Dental Practice & Policy, King's College London Dental Institute, London, UK. [2]School of Dentistry, The University of Manchester, Manchester, UK. [3]Division of Health and Social Care Research, KCL Dental Institute, London, UK. [4]NHS Sheffield, Sheffield, UK. [5]Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Manchester, UK

Contact address: Blánaid Daly, Dental Practice & Policy, King's College London Dental Institute, Denmark Hill Campus, Bessemer Road, London, SE5 9RW, UK. blanaid.daly@kcl.ac.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New, published in Issue 12, 2012.
**Review content assessed as up-to-date:** 7 November 2012.

**Citation:** Daly B, Sharif MO, Newton T, Jones K, Worthington HV. Local interventions for the management of alveolar osteitis (dry socket). *Cochrane Database of Systematic Reviews* 2012, Issue 12. Art. No.: CD006968. DOI: 10.1002/14651858.CD006968.pub2.



## ABSTRACT

### Background

Alveolar osteitis (dry socket) is a complication of dental extractions and occurs more commonly in extractions involving mandibular molar teeth. It is associated with severe pain developing 2 to 3 days postoperatively, a socket that may be partially or totally devoid of blood clot and in some patients there may be a complaint of halitosis. It can result in an increase in postoperative visits.

### Objectives

To assess the effects of local interventions for the prevention and treatment of alveolar osteitis (dry socket) following tooth extraction.

### Search methods

The following electronic databases were searched: the Cochrane Oral Health Group Trials Register (to 29 October 2012), the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2012, Issue 10), MEDLINE via OVID (1946 to 29 October 2012) and EMBASE via OVID (1980 to 29 October 2012). There were no restrictions regarding language or date of publication. We also searched the reference lists of articles and contacted experts and organisations to identify any further studies.

### Selection criteria

We included randomised controlled trials of adults over 18 years of age who were having permanent teeth extracted or who had developed dry socket post-extraction. We included studies with any type of local intervention used for the prevention or treatment of dry socket, compared to a different local intervention, placebo or no treatment. We excluded studies reporting on systemic use of antibiotics or the use of surgical techniques for the management of dry socket because these interventions are evaluated in separate Cochrane reviews.

### Data collection and analysis

Two review authors independently undertook risk of bias assessment and data extraction in duplicate for included studies using pre-designed proformas. Any reports of adverse events were recorded and summarised into a table when these were available. We contacted trial authors for further details where these were unclear. We followed The Cochrane Collaboration statistical guidelines and reported dichotomous outcomes as risk ratios (RR) and calculated 95% confidence intervals (CI) using random-effects models. For some of the split-mouth studies with sparse data it was not possible to calculate RR so we calculated the exact odds ratio instead. We used the GRADE tool to assess the quality of the body of evidence.

# Pharmacological interventions for pain in patients with temporomandibular disorders

Helen R Mujakperuo[1], Margaret Watson[2], Roderick Morrison[3], Tatiana V Macfarlane[1]

[1]School of Medicine and Dentistry, University of Aberdeen, Aberdeen, UK. [2]Department of General Practice and Primary Care, University of Aberdeen, Aberdeen, UK. [3]Grampian Regional Maxillofacial Unit, Aberdeen Royal Infirmary, Aberdeen, UK

Contact address: Tatiana V Macfarlane, School of Medicine and Dentistry, University of Aberdeen, Polwarth Building, Foresterhill, Aberdeen, Scotland, AB25 2ZD, UK. Tatiana.Macfarlane@abdn.ac.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New, published in Issue 10, 2010.
**Review content assessed as up-to-date:** 5 September 2010.

**Citation:** Mujakperuo HR, Watson M, Morrison R, Macfarlane TV. Pharmacological interventions for pain in patients with temporomandibular disorders. *Cochrane Database of Systematic Reviews* 2010, Issue 10. Art. No.: CD004715. DOI: 10.1002/14651858.CD004715.pub2.



## ABSTRACT

### Background

Temporomandibular disorders (TMD) are a group of disorders affecting the temporomandibular joints and the muscles of mastication. TMDs are treated with a wide range of drugs. The extent to which the use of these drugs is based upon evidence is unknown.

### Objectives

To assess the effectiveness of pharmacological interventions both alone and in combination with non-pharmacological therapy in relieving pain in patients with chronic TMD.

### Search methods

Electronic searches of the Cochrane Oral Health Group's Trials Register (2 August 2010), CENTRAL (*The Cochrane Library* 2010, Issue 3), MEDLINE via OVID (1950 to 2 August 2010), EMBASE via OVID (1980 to 2 August 2010) and CINAHL via EBSCO (1981 to 2 August 2010) were conducted. Reference lists of articles and previous reviews were scanned for relevant articles and authors were contacted for further information where appropriate.

### Selection criteria

Randomised controlled trials (RCTs) in which a pharmacological agent was compared with placebo for the management of pain in patients with TMD. Parenteral routes of administration were excluded.

### Data collection and analysis

Duplicate data extraction and assessment of risk of bias in included studies was performed.

### Main results

Eleven studies were included with a total of 496 participants. The primary outcome of most of the studies was pain. The risk of bias in the included studies was variable. Whilst four studies showed significant pain relief for the active treatment, three were of poor quality. Most adverse effects were mild to moderate in severity. Four studies reported withdrawals due to severe adverse reactions, but insufficient information was provided regarding the trial groups from which the withdrawals occurred. No meta-analysis was conducted due to lack of similarities across the included studies.

# Potassium containing toothpastes for dentine hypersensitivity

Sven Poulsen[1], Marie Errboe[2], Yamila Lescay Mevil[3], Anne-Marie Glenny[4]

[1]Department of Oral Epidemiology and Public Health, Aarhus university, Århus, Denmark. [2]Royal Dental College Library, Faculty of Health Sciences, University of Aarhus, Aarhus C, Denmark. [3]Odontology, Havana University, Havana, Cuba. [4]Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Manchester, UK

Contact address: Sven Poulsen, Department of Oral Epidemiology and Public Health, Aarhus university, 9 Vennelyst Boulevard, Århus, DK-8000, Denmark. cohg@manchester.ac.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 4, 2012.
**Review content assessed as up-to-date:** 23 May 2006.

**Citation:** Poulsen S, Errboe M, Lescay Mevil Y, Glenny AM. Potassium containing toothpastes for dentine hypersensitivity. *Cochrane Database of Systematic Reviews* 2006, Issue 3. Art. No.: CD001476. DOI: 10.1002/14651858.CD001476.pub2.



## ABSTRACT

### Background

Dentine hypersensitivity may be defined as the pain arising from exposed dentine, typically in response to external stimuli, and which cannot be explained by any other form of dental disease. Many treatment regimens have been recommended over the years, and in recent years particular attention has been focused on toothpastes containing various potassium salts.

### Objectives

To compare the effectiveness of potassium containing toothpastes with control toothpastes in reducing dentine hypersensitivity.

### Search methods

The following databases were searched: Cochrane Oral Health Group Trials Register (searched until August 2005); CENTRAL (until August 2005); EMBASE/MEDLINE, PubMed, Web of Science (until September 2005). Bibliographies of clinical studies and reviews identified in the electronic search were checked for studies published outside the electronically searched journals.

### Selection criteria

Randomised controlled trials (RCTs) in which the effect on dentine hypersensitivity of potassium containing toothpastes was tested against non-potassium containing control toothpastes.

### Data collection and analysis

Two of the review authors independently recorded the results of the included trials using a specially designed form. Sensitivity was assessed by using thermal, tactile, air blast, and subjective methods.

### Main results

Six studies were included in the meta-analysis which showed the statistically significant effect of potassium nitrate toothpaste on air blast and tactile sensitivity at the 6 to 8 weeks follow up, e.g. the meta-analysis of air blast sensitivity showed a standardized mean difference in sensitivity score of -1.25 (95% CI: -1.65 to -0.851) in favour of treatment. The subjective assessment failed to show a significant effect at the 6 to 8 week assessment.

# Preoperative analgesics for additional pain relief in children and adolescents having dental treatment

Paul F Ashley[1], Susan Parekh[1], David R Moles[2], Prabhleen Anand[1], Arnal Behbehani[1]

[1]Unit of Paediatric Dentistry, UCL Eastman Dental Institute, London, UK. [2]Oral Health Services Research, Peninsula Dental School, Plymouth, UK

Contact address: Paul F Ashley, Unit of Paediatric Dentistry, UCL Eastman Dental Institute, 256 Grays Inn Road, London, WC1X 8LD, UK. p.ashley@eastman.ucl.ac.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New, published in Issue 9, 2012.
**Review content assessed as up-to-date:** 10 July 2012.

**Citation:** Ashley PF, Parekh S, Moles DR, Anand P, Behbehani A. Preoperative analgesics for additional pain relief in children and adolescents having dental treatment. *Cochrane Database of Systematic Reviews* 2012, Issue 9. Art. No.: CD008392. DOI: 10.1002/14651858.CD008392.pub2.



## ABSTRACT

### Background

Fear of dental pain is a major barrier to children needing dental care. The use of preoperative analgesics has the potential to reduce postoperative discomfort. In addition it might also reduce intraoperative pain. Reviewing the available evidence will determine whether further research is warranted and will inform the development of prescribing guidelines.

### Objectives

To assess the effects of preoperative analgesics for pain relief in children and adolescents undergoing dental treatment.

### Search methods

We searched the following electronic databases: the Cochrane Oral Health Group Trials Register (to 8 March 2012), the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2012, Issue 1), MEDLINE via OVID (1950 to 8 March 2012), EMBASE via OVID (1980 to 8 March 2012), LILACS via BIREME (1982 to 8 March 2012) and the ISI Web of Knowledge (1945 to 8 March 2012). There were no restrictions regarding language or date of publication.

The reference lists of all eligible trials were checked for additional studies. Specialists in the field were contacted for any unpublished data.

### Selection criteria

Randomised controlled clinical trials of analgesics given before dental treatment versus placebo or no analgesics in children and adolescents aged up to 17 years. We excluded children and adolescents having dental treatment under sedation (including nitrous oxide/oxygen) or general anaesthesia.

### Data collection and analysis

Two review authors assessed titles and abstracts for eligibility and undertook data extraction and assessment of risk of bias.

# Stabilisation splint therapy for temporomandibular pain dysfunction syndrome

M Ziad Al-Ani[1], Stephen J Davies[2], Robin JM Gray[3], Philip Sloan[4], Anne-Marie Glenny[5]

[1]TMD Unit, Prosthodontics, School of Dentistry, The University of Manchester, Manchester, UK. [2]Prosthodontics, School of Dentistry, The University of Manchester, Manchester, UK. [3]Oral and Maxillofacial Surgery, School of Dentistry, The University of Manchester, Manchester, UK. [4]Department of Cellular Pathology, Royal Victoria Infirmary, Newcastle upon Tyne, UK. [5]Cochrane Oral Health Group, MANDEC, School of Dentistry, The University of Manchester, Manchester, UK

Contact address: M Ziad Al-Ani, TMD Unit, Prosthodontics, School of Dentistry, The University of Manchester, Higher Cambridge Street, Manchester, M15 6FH, UK. ziad_alani@hotmail.com.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 1, 2009.
**Review content assessed as up-to-date:** 3 November 2003.

**Citation:** Al-Ani MZ, Davies SJ, Gray RJM, Sloan P, Glenny AM. Stabilisation splint therapy for temporomandibular pain dysfunction syndrome. *Cochrane Database of Systematic Reviews* 2004, Issue 1. Art. No.: CD002778. DOI: 10.1002/14651858.CD002778.pub2.



## ABSTRACT

### Background

Pain dysfunction syndrome (PDS) is the most common temporomandibular disorder (TMD). There are many synonyms for this condition including facial arthromyalgia, TMJ dysfunction syndrome, myofacial pain dysfunction syndrome, craniomandibular dysfunction and myofacial pain dysfunction. The aetiology of PDS is multifactorial and many different therapies have been advocated.

### Objectives

To establish the effectiveness of stabilisation splint therapy in reducing symptoms in patients with pain dysfunction syndrome.

### Search methods

Electronic databases (including the Cochrane Oral Health Group's Trials Register; the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2003, Issue 2); MEDLINE (1966 to June 2001); EMBASE (1966 to June 2001)) were searched. Handsearching of relevant journals was undertaken and reference lists of included studies screened. Experts in the field were contacted to identify unpublished articles. There was no language restriction.

### Selection criteria

Randomised or quasi-randomised controlled trials (RCTs), in which splint therapy was compared concurrently to no treatment, other occlusal appliances, or any other active intervention.

### Data collection and analysis

Data extraction was carried out independently and in duplicate. Validity assessment of the included trials was carried out at the same time as data extraction. Discrepancies were discussed and a third review author consulted. The author of the primary study was contacted where necessary. The studies were grouped according to treatment type and duration of follow up.

# Interventions for the management of oral submucous fibrosis

Zbys Fedorowicz[1], Edwin Chan Shih-Yen[2], Mojtaba Dorri[3], Mona Nasser[4], Tim Newton[5], Luming Shi[2]

[1]UKCC (Bahrain Branch), Ministry of Health, Bahrain, Awali, Bahrain. [2]Singapore Branch, Australasian Cochrane Centre, Clinical Trials & Epidemiology Research Unit, Singapore, Singapore. [3]Department of Epidemiology & Public Health, University College London (UCL), London, UK. [4]Department of Health Information, Institute for Quality and Efficiency in Health care, Köln, Germany. [5]Department of Oral Health Services Research & Dental Public Health, GKT Dental Institute King's College Hospital, London, UK

Contact address: Zbys Fedorowicz, UKCC (Bahrain Branch), Ministry of Health, Bahrain, Box 25438, Awali, Bahrain. zbysfedo@batelco.com.bh.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New, published in Issue 4, 2008.
**Review content assessed as up-to-date:** 28 July 2008.

**Citation:** Fedorowicz Z, Chan Shih-Yen E, Dorri M, Nasser M, Newton T, Shi L. Interventions for the management of oral submucous fibrosis. *Cochrane Database of Systematic Reviews* 2008, Issue 4. Art. No.: CD007156. DOI: 10.1002/14651858.CD007156.pub2.



## ABSTRACT

### Background

Oral submucous fibrosis (OSF) is a chronic disease of the oral cavity which is more commonly found in patients in the Asian subcontinent and the Far East. It is characterised by the progressive build up of constricting bands of collagen in the cheeks and adjacent structures of the mouth which can severely restrict mouth opening and tongue movement and cause problems with speech and swallowing.

### Objectives

To assess the effectiveness of interventions for the management of pain and restricted jaw opening or movement occurring as a result of oral submucous fibrosis.

### Search methods

We searched the Cochrane Oral Health Group's Trials Register to July 2008; CENTRAL (*The Cochrane Library* 2008, Issue 2); MEDLINE (from 1950 to July 2008); EMBASE (from 1980 to July 2008) and IndMED on 18th November 2007. There were no language restrictions.

### Selection criteria

Randomised controlled trials comparing surgical interventions, systemic or topical medicines or other interventions to manage the symptoms of oral submucous fibrosis.

### Data collection and analysis

Two authors independently assessed trial quality and extracted trial data. Disagreements were resolved by consultation with a third author. Attempts were made to contact study authors where necessary for clarification and for additional information.

### Main results

Two trials, involving 87 participants, evaluated lycopene in conjunction with intralesional injections of a steroid, and pentoxifylline in combination with mouth stretching exercises and heat. Only two of the primary but none of the secondary outcomes of this review were considered in these trials and provided a limited amount of unreliable data. The data in one trial were based on inadequately defined evaluations of outcomes, and in the other trial are likely to be skewed due to a substantial number of withdrawals and therefore

# Systemic interventions for recurrent aphthous stomatitis (mouth ulcers)

Paul Brocklehurst[1], Martin Tickle[1], Anne-Marie Glenny[2], Michael A Lewis[3], Michael N Pemberton[4], Jennifer Taylor[4], Tanya Walsh [1], Philip Riley[5], Julian M Yates[6]

[1]School of Dentistry, The University of Manchester, Manchester, UK. [2]Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Manchester, UK. [3]School of Dentistry, Cardiff University, Cardiff, UK. [4]Department of Oral Medicine, University of Manchester, Manchester, UK. [5]Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Manchester, UK. [6]Department of Oral and Maxillofacial Surgery, School of Dentistry, The University of Manchester, Manchester, UK

Contact address: Paul Brocklehurst, School of Dentistry, The University of Manchester, Coupland III Building, Oxford Road, Manchester, M13 9PL, UK. paul.brocklehurst@manchester.ac.uk. paul.r.brocklehurst@btopenworld.com.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New, published in Issue 9, 2012.
**Review content assessed as up-to-date:** 9 August 2012.

**Citation:** Brocklehurst P, Tickle M, Glenny AM, Lewis MA, Pemberton MN, Taylor J, Walsh T, Riley P, Yates JM. Systemic interventions for recurrent aphthous stomatitis (mouth ulcers). *Cochrane Database of Systematic Reviews* 2012, Issue 9. Art. No.: CD005411. DOI: 10.1002/14651858.CD005411.pub2.



## ABSTRACT

### Background

Recurrent aphthous stomatitis (RAS) is the most frequent form of oral ulceration, characterised by recurrent oral mucosal ulceration in an otherwise healthy individual. At its worst RAS can cause significant difficulties in eating and drinking. Treatment is primarily aimed at pain relief and the promotion of healing to reduce the duration of the disease or reduce the rate of recurrence. A variety of topical and systemic therapies have been utilised.

### Objectives

To determine the clinical effect of systemic interventions in the reduction of pain associated with RAS, a reduction in episode duration or frequency.

### Search methods

We undertook electronic searches of: Cochrane Oral Health Group and PaPaS Trials Registers (to 6 June 2012); CENTRAL via The Cochrane Library (to Issue 4, 2012); MEDLINE via OVID (1950 to 6 June 2012); EMBASE via OVID (1980 to 6 June 2012); CINAHL via EBSCO (1980 to 6 June 2012); and AMED via PubMed (1950 to 6 June 2012). We searched reference lists from relevant articles and contacted the authors of eligible trials to identify further trials and obtain additional information.

### Selection criteria

We included randomised controlled trials (RCTs) in which the primary outcome measures assess a reduction of pain associated with RAS, a reduction in episode duration or a reduction in episode frequency. Trials were not restricted by outcome alone. We also included RCTs of a cross-over design.

# Flossing for the management of periodontal diseases and dental caries in adults

Dario Sambunjak[1], Jason W Nickerson[2], Tina Poklepovic[3], Trevor M Johnson[4], Pauline Imai[5,6], Peter Tugwell[7], Helen V Worthington[8]

[1]Dept for Research in Biomedicine and Health, School of Medicine University of Split, Split, Croatia. [2]Centre for Global Health, Institute of Population Health, Ottawa, Canada. [3]Department of Research in Biomedicine and Health, University of Split School of Medicine, Split, Croatia. [4]Yorkshire Area, Faculty of General Dental Practice, York, UK. [5]MTI Community College, Vancouver, Canada. [6]Dental Hygiene Degree Program, Faculty of Dentistry, The University of British Columbia, Vancouver, Canada. [7]Department of Medicine, University of Ottawa, Ottawa, Canada. [8]Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Manchester, UK

Contact address: Trevor M Johnson, Yorkshire Area, Faculty of General Dental Practice, Orchard House, Tollerton, York, North Yorkshire, YO61 1PS, UK. johnson1@dsl.pipex.com. johnson3@lineone.net.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 4, 2012.
**Review content assessed as up-to-date:** 28 October 2011.

**Citation:** Sambunjak D, Nickerson JW, Poklepovic T, Johnson TM, Imai P, Tugwell P, Worthington HV. Flossing for the management of periodontal diseases and dental caries in adults. *Cochrane Database of Systematic Reviews* 2011, Issue 12. Art. No.: CD008829. DOI: 10.1002/14651858.CD008829.pub2.



## ABSTRACT

### Background

Good oral hygiene is thought to be important for oral health. This review is to determine the effectiveness of flossing in addition to toothbrushing for preventing gum disease and dental caries in adults.

### Objectives

To assess the effects of flossing in addition to toothbrushing, as compared with toothbrushing alone, in the management of periodontal diseases and dental caries in adults.

### Search methods

We searched the following electronic databases: the Cochrane Oral Health Group Trials Register (to 17 October 2011), the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2011, Issue 4), MEDLINE via OVID (1950 to 17 October 2011), EMBASE via OVID (1980 to 17 October 2011), CINAHL via EBSCO (1980 to 17 October 2011), LILACS via BIREME (1982 to 17 October 2011), ZETOC Conference Proceedings (1980 to 17 October 2011), Web of Science Conference Proceedings (1990 to 17 October 2011), Clinicaltrials.gov (to 17 October 2011) and the metaRegister of Controlled Clinical Trials (to 17 October 2011). We imposed no restrictions regarding language or date of publication. We contacted manufacturers of dental floss to identify trials.

### Selection criteria

We included randomised controlled trials conducted comparing toothbrushing and flossing with only toothbrushing, in adults.

# Manual versus powered toothbrushing for oral health

Peter Robinson[1], Scott A Deacon[2], Chris Deery[3], Mike Heanue[4], A Damien Walmsley[5], Helen V Worthington[6], Anne-Marie Glenny[7], Bill C Shaw[6]

[1]Department of Dental Public Health, School of Clinical Dentistry, Sheffield, UK. [2]South West Cleft Unit, Frenchay Hospital, Bristol, UK. [3]Department of Paediatric Dentistry, Edinburgh Dental Institute, Edinburgh, UK. [4]Dental Surgery, Private Dental Practice, Sheffield, UK. [5]Department of Prosthetic Dentistry, School of Dentistry, Birmingham, UK. [6]Cochrane Oral Health Group, MANDEC, School of Dentistry, The University of Manchester, Manchester, UK. [7]Cochrane Oral Health Group, MANDEC, School of Dentistry, The University of Manchester, Manchester, UK

Contact address: Peter Robinson, Department of Dental Public Health, School of Clinical Dentistry, University of Sheffield, Claremont Crescent, Sheffield, S10 2TA, UK. peter.g.robinson@sheffield.ac.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 1, 2009.
**Review content assessed as up-to-date:** 16 February 2005.

**Citation:** Robinson P, Deacon SA, Deery C, Heanue M, Walmsley AD, Worthington HV, Glenny AM, Shaw BC. Manual versus powered toothbrushing for oral health. *Cochrane Database of Systematic Reviews* 2005, Issue 2. Art. No.: CD002281. DOI: 10.1002/14651858.CD002281.pub2.



## ABSTRACT

### Background

Removing dental plaque may play a key role maintaining oral health. There is conflicting evidence for the relative merits of manual and powered toothbrushing in achieving this.

### Objectives

To compare manual and powered toothbrushes in relation to the removal of plaque, the health of the gingivae, staining and calculus, dependability, adverse effects and cost.

### Search methods

We searched the Cochrane Oral Health Group Trials Register (to July 2004) and CENTRAL (*The Cochrane Library* 2004, Issue 2); MEDLINE (January 1966 to week 2 June 2004); EMBASE (January 1980 to week 2 2004) and CINAHL (January 1982 to week 2 June 2004). Manufacturers were contacted for additional data.

### Selection criteria

Trials were selected for the following criteria: design-random allocation of participants; participants - general public with uncompromised manual dexterity; intervention - unsupervised manual and powered toothbrushing for at least 4 weeks. Primary outcomes were the change in plaque and gingivitis over that period.

### Data collection and analysis

Six authors independently extracted information. The effect measure for each meta-analysis was the standardised mean difference (SMD) with 95% confidence intervals (CI) using random-effects models. Potential sources of heterogeneity were examined, along with sensitivity analyses for quality and publication bias. For discussion purposes SMD was translated into percentage change.

# Psychological interventions to improve adherence to oral hygiene instructions in adults with periodontal diseases

Anna Renz[1], Mark Ide[2], Tim Newton[1], Peter Robinson[3], Debbie Smith[1]

[1]Oral Health Services Research & Dental Public Health, GKT Dental Institute, London, UK. [2]Periodontology & Preventive Dentistry Department, GKT Dental Institute, London, UK. [3]Department of Dental Public Health, School of Clinical Dentistry, Sheffield, UK

Contact address: Anna Renz, Oral Health Services Research & Dental Public Health, GKT Dental Institute, Caldecot Road, Denmark Hill Campus, London, SE5 9RW, UK. anna.renz@kcl.ac.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 4, 2008.
**Review content assessed as up-to-date:** 15 February 2007.

**Citation:** Renz A, Ide M, Newton T, Robinson P, Smith D. Psychological interventions to improve adherence to oral hygiene instructions in adults with periodontal diseases. *Cochrane Database of Systematic Reviews* 2007, Issue 2. Art. No.: CD005097. DOI: 10.1002/14651858.CD005097.pub2.



## ABSTRACT

### Background

Adherence to oral hygiene is an important aspect of the treatment of periodontal disease. Traditional educational interventions have been shown to be of little value in achieving long term behaviour change.

### Objectives

The aim of this review was to determine the impact of interventions aimed to increase adherence to oral hygiene instructions in adult periodontal patients based on psychological models and theoretical frameworks. This review considered the following outcomes:

Observational measures of oral health related behaviour

Self reported oral health related behaviours, beliefs and attitudes towards oral health related behaviour

Clinical markers of periodontal disease.

### Search methods

The Cochrane Oral Health Group's Trials Register (2005), CENTRAL (*The Cochrane Library* 2004, Issue 4), MEDLINE (from 1966 to December 2004), EMBASE (from 1980 to December 2004), PsycINFO (from 1966 to December 2004), Ingenta (from 1998 to December 2004) and CINAHL (from 1966 to December 2004). Reference lists from relevant articles were searched and the authors of eligible trials were contacted to identify trials and obtain additional information. No language restriction was applied.

### Selection criteria

Randomised controlled trials testing the effectiveness of interventions based on psychological models compared with educational, attention or no active intervention controls to improve adherence to oral hygiene in adults with either gingivitis or periodontitis.

### Data collection and analysis

Titles and abstracts of studies that were potentially relevant to the review were independently screened by two review authors. Those that were clearly ineligible were rejected. For the remaining studies, the full paper was reviewed by two review authors and where necessary further information was sought from the author to verify eligibility. Included studies were assessed on their quality using standard criteria.

# Enamel matrix derivative (Emdogain®) for periodontal tissue regeneration in intrabony defects

Marco Esposito[1], Maria Gabriella Grusovin[2], Nikolaos Papanikolaou[2], Paul Coulthard[1], Helen V Worthington[3]

[1]Oral and Maxillofacial Surgery, School of Dentistry, The University of Manchester, Manchester, UK. [2]Department of Oral and Maxillofacial Surgery, School of Dentistry, The University of Manchester, Manchester, UK. [3]Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Manchester, UK

Contact address: Marco Esposito, Oral and Maxillofacial Surgery, School of Dentistry, The University of Manchester, Coupland 3 Building, Oxford Road, Manchester, M13 9PL, UK. espositomarco@hotmail.com. marco.esposito@manchester.ac.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 1, 2011.
**Review content assessed as up-to-date:** 26 May 2009.

**Citation:** Esposito M, Grusovin MG, Papanikolaou N, Coulthard P, Worthington HV. Enamel matrix derivative (Emdogain®) for periodontal tissue regeneration in intrabony defects. *Cochrane Database of Systematic Reviews* 2009, Issue 4. Art. No.: CD003875. DOI: 10.1002/14651858.CD003875.pub3.



## ABSTRACT

### Background

Periodontitis is a chronic infective disease of the gums caused by bacteria present in dental plaque. This condition induces the breakdown of the tooth supporting apparatus until teeth are lost. Surgery may be indicated to arrest disease progression and regenerate lost tissues. Several surgical techniques have been developed to regenerate periodontal tissues including guided tissue regeneration (GTR), bone grafting (BG) and the use of enamel matrix derivative (EMD). EMD is an extract of enamel matrix and contains amelogenins of various molecular weights. Amelogenins are involved in the formation of enamel and periodontal attachment formation during tooth development.

### Objectives

To test whether EMD is effective, and to compare EMD versus GTR, and various BG procedures for the treatment of intrabony defects.

### Search methods

We searched the Cochrane Oral Health Group Trials Register, CENTRAL, MEDLINE and EMBASE. Several journals were hand-searched. No language restrictions were applied. Authors of randomised controlled trials (RCTs) identified, personal contacts and the manufacturer were contacted to identify unpublished trials. Most recent search: February 2009.

### Selection criteria

RCTs on patients affected by periodontitis having intrabony defects of at least 3 mm treated with EMD compared with open flap debridement, GTR and various BG procedures with at least 1 year follow up. The outcome measures considered were: tooth loss, changes in probing attachment levels (PAL), pocket depths (PPD), gingival recessions (REC), bone levels from the bottom of the defects on intraoral radiographs, aesthetics and adverse events. The following time-points were to be evaluated: 1, 5 and 10 years.

### Data collection and analysis

Screening of eligible studies, assessment of the methodological quality of the trials and data extraction were conducted in duplicate and independently by two authors. Results were expressed as random-effects models using mean differences for continuous outcomes and risk ratios (RR) for dichotomous outcomes with 95% confidence intervals (CI). It was decided not to investigate heterogeneity, but a sensitivity analysis for the risk of bias of the trials was performed.

# Guided tissue regeneration for periodontal infra-bony defects

Ian Needleman[1], Helen V Worthington[2], Elaine Giedrys-Leeper[3], Richard Tucker[3]

[1]Unit of Periodontology and International Centre for Evidence-Based Oral Healthcare, UCL Eastman Dental Institute, London, UK. [2]Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Manchester, UK. [3]Unit of Periodontology, Division of Restorative Dental Sciences, UCL Eastman Dental Institute, London, UK

Contact address: Ian Needleman, Unit of Periodontology and International Centre for Evidence-Based Oral Healthcare, UCL Eastman Dental Institute, 256 Gray's Inn Road, London, WC1X 8LD, UK. i.needleman@eastman.ucl.ac.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 4, 2012.
**Review content assessed as up-to-date:** 13 January 2006.

**Citation:** Needleman I, Worthington HV, Giedrys-Leeper E, Tucker R. Guided tissue regeneration for periodontal infra-bony defects. *Cochrane Database of Systematic Reviews* 2006, Issue 2. Art. No.: CD001724. DOI: 10.1002/14651858.CD001724.pub2.



## ABSTRACT

### Background

Conventional treatment of destructive periodontal (gum) disease arrests the disease but does not usually regain the bone support or connective tissue lost in the disease process. Guided tissue regeneration (GTR) is a surgical procedure that specifically aims to regenerate the periodontal tissues when the disease is advanced and could overcome some of the limitations of conventional therapy.

### Objectives

To assess the efficacy of GTR in the treatment of periodontal infra-bony defects measured against conventional surgery (open flap debridement (OFD)) and factors affecting outcomes.

### Search methods

We conducted an electronic search of the Cochrane Oral Health Group Trials Register, MEDLINE and EMBASE up to April 2004. Handsearching included *Journal of Periodontology, Journal of Clinical Periodontology, Journal of Periodontal Research* and bibliographies of all relevant papers and review articles up to April 2004. In addition, we contacted experts/groups/companies involved in surgical research to find other trials or unpublished material or to clarify ambiguous or missing data and posted requests for data on two periodontal electronic discussion groups.

### Selection criteria

Randomised, controlled trials (RCTs) of at least 12 months duration comparing guided tissue regeneration (with or without graft materials) with open flap debridement for the treatment of periodontal infra-bony defects. Furcation involvements and studies specifically treating aggressive periodontitis were excluded.

### Data collection and analysis

Screening of possible studies and data extraction was conducted independently. The methodological quality of studies was assessed in duplicate using individual components and agreement determined by Kappa scores. Methodological quality was used in sensitivity analyses to test the robustness of the conclusions. The Cochrane Collaboration statistical guidelines were followed and the results expressed as mean differences (MD and 95% CI) for continuous outcomes and risk ratios (RR and 95% CI) for dichotomous outcomes calculated using random-effects models. Any heterogeneity was investigated. The primary outcome measure was change in clinical attachment.

# Occlusal interventions for periodontitis in adults

Paul Weston[1], Yuhaniz A Yaziz[2], David R Moles[3], Ian Needleman[4]

[1]Perio Solutions, Warndon, UK. [2]Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Manchester, UK. [3]International Centre for Evidence-Based Oral Health (ICEBOH), UCL Eastman Dental Institute, London, UK. [4]Unit of Periodontology, Division of Restorative Dental Sciences, UCL Eastman Dental Institute, London, UK

Contact address: Paul Weston, Perio Solutions, 2 Ankerage Green, Warndon, Worcester, WR4 0DZ, UK. p.weston1@btconnect.com.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** New, published in Issue 3, 2008.
**Review content assessed as up-to-date:** 6 May 2008.

**Citation:** Weston P, Yaziz YA, Moles DR, Needleman I. Occlusal interventions for periodontitis in adults. *Cochrane Database of Systematic Reviews* 2008, Issue 3. Art. No.: CD004968. DOI: 10.1002/14651858.CD004968.pub2.



## ABSTRACT

### Background

Occlusal interventions may be used in adults with periodontitis. At present there is little consensus regarding the indications and effectiveness of occlusal interventions in periodontal patients.

### Objectives

To identify and analyse the evidence for the effect of occlusal interventions on adults who have periodontitis in relation to tooth loss, probing depths, clinical attachment level, adverse effects and patient-centred outcomes.

### Search methods

The search was last conducted in April 2008. We searched the Cochrane Oral Health Group's Trials Register (to 30th April 2008); the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2008, Issue 1); MEDLINE (1966 to 30th April 2008); and EMBASE (1980 to 30th April 2008). There were no language restrictions.

### Selection criteria

We included randomised controlled trials (RCTs) assessing occlusal interventions in patients with periodontitis with a follow up of at least 3 months.

### Data collection and analysis

Screening of eligible studies, assessment of the methodological quality of the trials and data extraction were conducted in duplicate and independently by two review authors. Any disagreements between the review authors were resolved by discussion. The main investigator of the included trial was contacted to obtain missing information. The Cochrane Collaboration statistical guidelines were to be followed for data synthesis.

### Main results

Abstracts of 54 papers were identified by the search. One paper was eligible for inclusion. This paper studied the effect of occlusal adjustment against no occlusal adjustment in patients who were treated with non-surgical and surgical periodontal therapy. Methodological quality assessment of the included paper revealed that randomisation of the patients into the treatment groups was adequate. Allocation concealment, masking of patients and clinicians were not reported and no response to author contact was received.

# Routine scale and polish for periodontal health in adults

Paul V Beirne[1], Helen V Worthington[2], Jan E Clarkson[3]

[1]Department of Epidemiology and Public Health, University College Cork, Brookfield Health Sciences Complex, Wilton, Ireland. [2]Cochrane Oral Health Group, MANDEC, School of Dentistry, The University of Manchester, Manchester, UK. [3]Dental Health Services Research Unit, University of Dundee, Dundee, UK

Contact address: Paul V Beirne, Department of Epidemiology and Public Health, University College Cork, Brookfield Health Sciences Complex, College Road, Wilton, Cork, Ireland. p.beirne@ucc.ie.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 4, 2008.
**Review content assessed as up-to-date:** 9 August 2007.

**Citation:** Beirne PV, Worthington HV, Clarkson JE. Routine scale and polish for periodontal health in adults. *Cochrane Database of Systematic Reviews* 2007, Issue 4. Art. No.: CD004625. DOI: 10.1002/14651858.CD004625.pub3.



## ABSTRACT

### Background

Many dentists or hygienists provide scaling and polishing for patients at regular intervals, even if those patients are considered to be at low risk of developing periodontal disease. There is debate over the clinical effectiveness and cost effectiveness of 'routine scaling and polishing' and the 'optimal' frequency at which it should be provided.

### Objectives

The main objectives were: to determine the beneficial and harmful effects of routine scaling and polishing for periodontal health; to determine the beneficial and harmful effects of providing routine scaling and polishing at different time intervals on periodontal health; to compare the effects of routine scaling and polishing provided by a dentist or professionals complementary to dentistry (PCD) (dental therapists or dental hygienists) on periodontal health.

### Search methods

We searched the Cochrane Oral Health Group Trials Register, the Cochrane Central Register of Controlled Trials (CENTRAL), MEDLINE and EMBASE. Reference lists from relevant articles were scanned and the authors of eligible studies were contacted where possible to identify trials and obtain additional information.

Date of most recent searches: 5th March 2007.

### Selection criteria

Trials were selected if they met the following criteria: design - random allocation of participants; participants - anyone with an erupted permanent dentition who were judged to have received a 'routine scale and polish' (as defined in this review); interventions - 'routine scale and polish' (as defined in this review) and routine scale and polish provided at different time intervals; outcomes - tooth loss, plaque, calculus, gingivitis, bleeding and periodontal indices, changes in probing depth, attachment change, patient-centred outcomes and economic outcomes.

### Data collection and analysis

Information regarding methods, participants, interventions, outcome measures and results were independently extracted, in duplicate, by two review authors. Authors were contacted where possible and where deemed necessary for further details regarding study design and for data clarification. A quality assessment of all included trials was carried out. The Cochrane Collaboration's statistical guidelines were followed and both standardised mean differences and mean differences were calculated as appropriate using random-effects models.

**Apêndice 5 –** Abstract das RSs do grupo de Odontologia da Colaboração Cocrhane com desfechos ausência de evidências sem recomendação de novos estudos (C2).

# Combinations of topical fluoride (toothpastes, mouthrinses, gels, varnishes) versus single topical fluoride for preventing dental caries in children and adolescents

Valeria CC Marinho[1], Julian PT Higgins[2], Aubrey Sheiham[3], Stuart Logan[4]

[1]Clinical and Diagnostic Oral Sciences, Institute of Dentistry, Barts and The London School of Medicine and Dentistry, London, UK. [2]MRC Biostatistics Unit, Cambridge, UK. [3]Department of Epidemiology and Public Health, University College London Medical School, London, UK. [4]Institute of Health and Social Care Research, Peninsula Medical School, Universities of Exeter & Plymouth, Exeter, UK

Contact address: Valeria CC Marinho, Clinical and Diagnostic Oral Sciences, Institute of Dentistry, Barts and The London School of Medicine and Dentistry, Queen Mary, University of London, Turner Street, Whitechapel, London, E1 2AD, UK. vcmarinho@yahoo.com. v.marinho@qmul.ac.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 1, 2009.
**Review content assessed as up-to-date:** 24 November 2003.

**Citation:** Marinho VCC, Higgins JPT, Sheiham A, Logan S. Combinations of topical fluoride (toothpastes, mouthrinses, gels, varnishes) versus single topical fluoride for preventing dental caries in children and adolescents. *Cochrane Database of Systematic Reviews* 2004, Issue 1. Art. No.: CD002781. DOI: 10.1002/14651858.CD002781.pub2.



## ABSTRACT

### Background

Topical fluoride therapy (TFT) in the form of toothpastes, mouthrinses, varnishes and gels are effective caries preventive measures. However, there is uncertainty about the relative value of these interventions when used together.

### Objectives

To compare the effectiveness of two TFT modalities combined with one of them alone (mainly toothpaste) when used for the prevention of dental caries in children.

### Search methods

We searched the Cochrane Oral Health Group's Trials Register (May 2000), the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2000, Issue 2), MEDLINE (1966 to January 2000), plus several other databases. We handsearched journals, reference lists of articles and contacted selected authors and manufacturers.

### Selection criteria

Randomized or quasi-randomized controlled trials with blind outcome assessment, comparing fluoride varnish, gel, mouthrinse, or toothpaste in combination with each other in children up to 16 years during at least 1 year. The main outcome was caries increment measured by the change in decayed, missing and filled tooth surfaces (D(M)FS).

### Data collection and analysis

Inclusion decisions, quality assessment and data extraction were duplicated in a random sample of one third of studies, and consensus achieved by discussion or a third party. Authors were contacted for missing data. The primary measure of effect was the prevented fraction (PF) that is the difference in mean caries increments between the 'treatment' and 'control' groups expressed as a percentage of the mean increment in the control group. Random-effects meta-analyses were performed where data could be pooled.

# Preformed metal crowns for decayed primary molar teeth

Nicola P T Innes[1], David Ricketts[2], Dafydd J P Evans[1]

[1]Unit of Dental and Oral Health, Dundee Dental Hospital and School, Dundee, UK. [2]Restorative Dentistry, Dundee Dental Hospital and School, Dundee, UK

Contact address: Nicola P T Innes, Unit of Dental and Oral Health, Dundee Dental School, Park Place, Dundee, Tayside, DD1 4HN, UK. n.p.innes@dundee.ac.uk.

**Editorial group:** Cochrane Oral Health Group.
**Publication status and date:** Edited (no change to conclusions), published in Issue 4, 2008.
**Review content assessed as up-to-date:** 13 November 2006.

**Citation:** Innes NPT, Ricketts D, Evans DJP. Preformed metal crowns for decayed primary molar teeth. *Cochrane Database of Systematic Reviews* 2007, Issue 1. Art. No.: CD005512. DOI: 10.1002/14651858.CD005512.pub2.



## ABSTRACT

### Background

Preformed metal crowns (PMCs) are recommended by the British Society of Paediatric Dentistry (BSPD) for restoring badly broken down primary molar teeth. However, few dental practitioners adopt this technique in clinical practice, citing cost and clinical difficulty as reasons for this. Whilst there is a subjective impression by clinical academics that PMCs provide a more durable restoration than filling materials, there appears to be little evidence within the literature to support this.

### Objectives

The primary aim of this systematic review was to compare clinical outcomes for primary molar teeth restored using PMCs compared to those restored with filling materials.

### Search methods

The literature was searched using: the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2005, Issue 3); MEDLINE (1966 to August 2005); EMBASE (1980 to August 2005); System for Information on Grey Literature in Europe (SIGLE) (1976 to August 2005). Relevant publications' reference lists were reviewed for relevant articles. The most recent search was carried out on 24 August 2005.

### Selection criteria

Randomised controlled trials (RCTs) that assessed the effectiveness of PMCs compared with filling materials or where there had been no treatment in children with untreated tooth decay in one or more primary molar teeth.

### Data collection and analysis

Two review authors independently assessed the title and abstracts for each article from the search results to decide whether it was likely to be relevant. Full papers were obtained for relevant articles and all three review authors studied these.

### Main results

Forty-seven records were retrieved by the search strategies of which some were duplicates. Of these, 14 studies were scrutinised. No studies met the inclusion criteria and six studies were excluded from the review as they were either retrospective in design or reported as prospective outcomes but not randomised. No data were available for extraction and analysis and therefore, no conclusion could be made as to whether PMCs were more successful than filling materials for restoring primary molar teeth.

# Full-mouth disinfection for the treatment of adult chronic periodontitis

Joerg Eberhard[1], Sören Jepsen[2], Pia-Merete Jervøe-Storm[2], Ian Needleman[3], Helen V Worthington[4]

[1]Prosthetic Dentistry and Biomaterials Science, Medizinische Hochschule Hannover, Hannover, Germany. [2]Department of Periodontology, Operative and Preventive Dentistry, University Hospital Bonn, Bonn, Germany. [3]Unit of Periodontology and International Centre for Evidence-Based Oral Healthcare, UCL Eastman Dental Institute, London, UK. [4]Cochrane Oral Health Group, School of Dentistry, The University of Manchester, Manchester, UK

Contact address: Joerg Eberhard, Prosthetic Dentistry and Biomaterials Science, Medizinische Hochschule Hannover, Carl-Neuberg-Straße 1, Hannover, 30625, Germany. eberhard.joerg@mh-hannover.de.

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## ABSTRACT

### Background

In an attempt to enhance treatment outcomes, alternative protocols for anti-infective periodontal therapy have been introduced.

### Objectives

To evaluate the effectiveness of full-mouth disinfection or full-mouth scaling compared to conventional quadrant scaling for periodontitis.

### Search methods

Data sources included electronic databases, handsearched journals and contact with experts. The Cochrane Oral Health Group Trials Register, the Cochrane Central Register of Controlled Trials (CENTRAL), MEDLINE and EMBASE were searched. Reference lists from relevant articles were scanned and the authors of eligible studies were contacted to identify trials and obtain additional information.

Date of most recent searches: December 2006: CENTRAL (*The Cochrane Library* 2006, Issue 4).

### Selection criteria

Randomised controlled trials were selected with at least 3 months follow up comparing full-mouth scaling and root planing within 24 hours with (FMD) or without (FMS) the adjunctive use of an antiseptic (chlorhexidine) with conventional quadrant scaling and root planing (control). The methodological quality of the studies was assessed within the data extraction form, mainly focusing on: method of randomisation, allocation concealment, blindness of examiners and completeness of follow up.

### Data collection and analysis

Data extraction and quality assessment were conducted independently by multiple review authors. The primary outcome measure was tooth loss, secondary outcomes were reduction of probing depth, bleeding on probing and gain in probing attachment. The Cochrane Collaboration statistical guidelines were followed.

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## Authors:

Silvania Furtado, Fernando Barcellos, Ana Lucia Basilio Carneiro, Flávio Souza Melo, Regina El Dib

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**Article Title:** Status of systematic reviews in dentistry for making clinical decisions

**Names of all authors and academic qualifications:** Silvania Furtado[1], Fernando Barcellos[1], Ana Lucia Basilio Carneiro[2], Flávio Souza Melo[3], Regina El Dib[4]

**Name(s) and address(es) of the institution(s) at which the work was carried out:**

Federal University of Amazonas

City: Manaus

State: Amazonas – Brazil

**Author affiliations and job title:** 1. Professors at the Department of Morphology (UFAM), Manaus, Amazonas, Brazil 2. Department of Morphology (UFPB) João Pessoa, Paraíba, Brazil 3. Student of Scientific Initiation, CNPq, Dentistry (UFAM), Manaus, Amazonas, Brazil 4. Botucatu Medical School (FMB), UNESP – Univ. Estadual Paulista, Botucatu, São Paulo, Brazil. Regina El Dib is also a Research Collaborator for the McMaster Institute of Urology, McMaster University, Hamilton, Ontario, Canada.

**Corresponding author's full details:**

Silvania da Conceição Furtado, Doctoral Student

Department of Morphology - UFAM

Av. Rodrigo Otávio, 6.200 – Coroado I

Manaus – Amazonas – Brazil

+559281369580 (mobile)

E-mails: silvania_furtado@yahoo.com.br

**Running title:** Evidence from systematic reviews in dental specialities.

**Key-words:** clinical medicine, clinical trials, evidence-based medicine, Evidence-Based Dentistry, meta-analysis, research, review literature.

**ABSTRACT**

**Rationale and aim** Systematic reviews are explicit and reproducible methods for the systematic search, critical analysis and synthesis of individual studies methods. They have the purpose of presenting results considered valid, applicable, safe and ethical. At the end, they present evidences capable of assisting decision in healthcare. We proposed then to analyze the reviews to evaluate whether this percentage had significantly decreased. **Methods** A systematic study of systematic reviews published in the Cochrane Library (issue 8, 2013) was conducted. We selected all reviews available in full-text from the Cochrane Oral Health Group. **Results** We analyzed 143 completed systematic reviews. Of these, 22,38% concluded that the interventions studied were likely to be beneficial, however recommend further research. In total, 71,33% of the reviews reported that the evidence did not support either benefit or harm, of which 2,10% did not recommend further studies and 69,23% recommended additional studies. **Conclusions** The vast majority of the systematic reviews from the Cochrane Oral Health Group suggest an urgency need to conduct larger clinical trials as none of the reviews analyzed in this study fell in the both beneficial and harmful interventions and, the authors did not suggest further research. According to other publications throughout the medical field it is essential to produce larger number of high-quality randomized clinical trials to change the “insufficient evidence” scenario for decision making in dental specialities.

**INTRODUCTION**

Systematic reviews form literature reviews based in a explicit, rigorous and transparent methodology. This scientific method seeks to identifier and summarise the best disponible evidences that address a clinical issues and when there are homogeneous included studies both methodological and clinical aspects, these reviews may include meta-analyzes (1). Systematic reviews also are considered secondary studies, because summarise results from primary studies like randomized clinical trials, cohorts studies, accuracy studies etc (2).

The first stage of the process to conduct a Systematic Review consist in the protocol elaboration, where must be included a good scientific issue. This question consists in four items, better know as PICO: P, patients, that be, clinical situation (what disease is); I, Intervention (what interest treatment to be tested); C, control group (placebo, sham, no interventions or other intervention) and; O, outcome (clinical outcome) (3).

A study was conducted to evaluate the percentage of some of the Cochrane reviews classified by their authors as showing either a beneficial or harmful intervention, or those reviews with insufficient evidence to make a judgement whether the treatment is beneficial or harmful (4) . 47.83% of all Cochrane reviews analysed offered insufficient evidence for clinical practice, and the authors did ask for further research (4).

Another research (5) reanalysed a random sample of the Cochrane systematic reviews to evaluate whether the percentage of the previous study (4) had significantly decreased as the authors thought that there would be an increase in the production and quality of primary studies for inclusion in systematic reviews during the period

between both researches. However, what this study found was a similar percentage of uncertainties in the clinical questions from the health field. Only 2.04% from a total of 1,128 systematic reviews concluded that the interventions were likely to be beneficial and no further research was needed.

The same scenario appears to occur in the Anaesthesiology (6) and Infections Diseases (7) areas, as the percentage for insufficient evidence where the authors asked for further research was 40,9% and 51%, respectively.

Therefore, we propose to verify whether the same scenario of lack of high quality evidence is also presented in the dental specialities for decision making in health care.

**METHODS**

In this systematic survey we selected systematic reviews from the Cochrane Library issue 8, 2013, excluding, withdrawn reviews and protocols. We used the same methodology applied in previous study (El Dib 2007 (4); Villas Boas 2011 (5); Santos 2013 (6); Almeida 2013 (7). We analysed all the available and completed systematic reviews from the Cochrane Oral Health Group. We contacted the editor from the Cochrane Editorial unit to request a list of all reviews published in this group since its inception.

We evaluated the relevant sections from each review and categorized the conclusions from the reviewer's authors to one of six categories (4):

a) A1: interventions likely to be beneficial, for which the authors recommended further research;

b) A2: beneficial interventions, for which the authors did not recommend further research;

c) B1: interventions likely to be harmful, for which the authors did suggest more research;

d) B2: harmful interventions and the authors did not recommend further research;

e) C1: insufficient evidence, and the authors asked for further research.

f) C2: insufficient evidence for which the authors did not suggest further research;

The data extractors, which hold a specialist degree in Dentistry, independently assessed each review. Disagreements were resolved by a third party where necessary.

The occurrence of each category was represented as a natural number and percentages for all the systematic reviews analysed. We expressed the number of meta-analyses performed and studies included as totals, means and standard deviations; and ranges, medians and modes. We only computed randomized (or quasi-randomized) controlled trials as included studies. To calculate the 95% confidence intervals, we used the finite correction factor (N−n)/(N−1), considering that ($n \cdot N-1 \geq 0.05$) [5], where ‘n’ is the sample and ‘N’ is the total of systematic reviews issue 8, 2013 (8).

**RESULTS**

We analysed 143 of the completed systematic reviews published in the Cochrane Library (Oral Health Group), issue 8, 2013.

The reviews included a median of 6 randomized clinical trials (range: 0-505) and 0 meta-analyses (range: 0-161).

The main outcomes were as follows:

0% - Beneficial interventions (and the authors did not suggest further research);

22,38% - Interventions likely to be beneficial (and the authors did suggest further research);

0 % - Harmful interventions (and the authors did not suggest further research);

6,29% - Interventions likely to be harmful (and the authors did suggest more research);

2,10 % - Insufficient evidence for clinical practice (and the authors did not suggest further research);

69,23 % - Insufficient evidence for clinical practice (and the authors did ask for further research).

97,90 % - Reviews recommended further studies (interventions likely to be beneficial, interventions likely to be harmful and insufficient evidence for clinical practice).

The percentages relating to the categories of conclusions on ‘implications for practice and research’ are shown Figure 1.

**DISCUSSION**

Although the Cochrane Collaboration is an enterprise that have brought technology advances in the health field, mainly, related to methodological aspects and, have also raised attention to the conduction of studies with adequate internal validity, even after 20 years of existence we are facing a difficult issue: the lack of high-quality evidence to answer treatment clinical questions.

Self-controlled trials in which each patient/teeth serves as his/her own control is an advantage for orthodontic research because it produces valid results and it's an alternative for the traditional RCTs when the latter it's not feasible to conduct. However, even thought the research in dental area is less developed than in Anaesthesiology, Infectious Diseases and other medical areas.

This study mapped the status of Cochrane systematic reviews published in the Cochrane Oral Health Group in terms of its implications for both clinical practice and research. We have found no systematic review with sufficient and consistent evidence to either prove or refute the treatment under investigation and, the authors did not suggest further research. It means that there is not enough of level I of evidence to for making decision in dental specialities. The majority of the about half of the sample analised doesn't show consistent evidences to prove or refute the treatment in question, there is an absence of evidence for clinical practice (C, 71,33%), and that 69,23% of the systematic review recommend performing further clinical trials to reduce the uncertainty about the issue addressed (C1).

The number of included studies ranged from 0 to 505, which suggest a huge gap in certain subareas of the dental specialities such as Oral and Maxillofacial

Surgery, subarea Impacted teeth (minimum), Dental Caries, subarea Prevention (maximum).

The aim of these study to evalue the aplicability of the systematic review on the implications for clinical practice and scientific reseach was achieved. However, the difficult found by researchers about the interpretation of the authors conclusion, because the lack of objectivity of them to answers to initial issue was considered an instable point to the final interpretation.

Our results confirm the aspects of evidence lack offered by Dentistry for systematic reviews in the same way that medical science also showed this high level in previous studies (11-14).

A small proportion of complete systematic reviews of the Cochrane Collaboration Dentistry group showed consistent and enough evidences to recommend or discourage the treatment of interest under investigation evidence. The most majority of the reviews evaluated points to the recommendation of future studies hope to provide more specific results in future updates of systematic reviews. The number of included studies and meta-analyzes in a systematic review shows to be insufficient for making decision in health.

**CONCLUSIONS**

The vast majority of the systematic reviews from the Cochrane Oral Health Group suggest an urgency need to conduct larger clinical trials as none of the reviews analyzed in this study fell in the both beneficial and harmful interventions and, the authors did not suggest further research. According to other publications throughout the medical field it is essential to produce larger number of high-quality randomized clinical trials to change the “insufficient evidence” scenario for decision making in dental specialities.

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