

EVIDENCE SUMMARY

Does 'routine' scaling have any beneficial effects, or is it a waste of time?

Original question submitted by PCW Chambers, March 2010

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Key Terms

Scaling: removal of plaque, calculus, debris and staining from teeth crown and root surfaces.

Polish: mechanical removal of residual extrinsic stains and deposits.

Routine: *either* providing an intervention at regular intervals to patients *or* as a matter of routine (i.e. regardless of assessed need for treatment or prevention).

Effectiveness: measurable sustained benefits in periodontal health or overall oral health status.

Cost-effectiveness: costs to patient and practitioner (time, materials, attendance) compared with benefits arising from treatment received.

Background

In 2008/9, scale and polish was the most common adult clinical dental treatment in England, being included in almost 3 million courses of treatment¹. However, scale and polish treatments for periodontal health have previously been described as ineffective procedures², so what is the evidence to support such activity?

Review Method

Initial search: Ovid MEDLINE(R) 1950 to February Week 3 2010 using the search terms dental scaling, routine, treatment outcome, effectiveness, pros or cons. 86 papers identified, 85 papers excluded. One

Cochrane Review (2007 update) on routine scale and polish for periodontal health in adults identified and sourced³.

Because we found a relatively recent and high quality systematic review relevant to the review question, we then sought to identify any relevant studies published since the Cochrane Review.

Further searches: Three of the four search strategies used in the Cochrane Review were repeated for the period 2007 – March 2010: the Cochrane Oral Health Group (COHG) Trials Register, the Cochrane Central Register of Controlled Trials (CENTRAL) and MEDLINE (OVID). See Appendices 1-3 of Cochrane Review for detailed search strategies.

COHG Trials Register: 27 titles identified (2007 onwards), 25 excluded. One paper in addition to the Cochrane Review accessed in full and examined; one paper rejected.

CENTRAL: 34 titles identified (2007 onwards), 33 titles other than the Cochrane Review excluded.

MEDLINE (OVID): 97 titles identified, 96 titles other than the Cochrane Review excluded.

Further contact: made with Paul Beirne, corresponding author of the Cochrane Review.

Findings

In total, 158 titles and abstracts arising from the three repeated Cochrane Review searches were screened. One potentially-relevant paper was retrieved as full text and reviewed. Ultimately no recent paper was found that met the inclusion criteria of the Cochrane Review.

We could find no new randomised controlled trials to assess the beneficial and sustained effects of routine scaling and polishing.

The conclusions of the Cochrane Review remain current:

'The research evidence is of insufficient quality to reach any conclusions regarding the beneficial and adverse effects of routine scaling and polishing for periodontal health and regarding the effects of providing this intervention at different time intervals. High quality clinical trials are required to address the basic questions posed in this review.'

It is understood that a further update of the Cochrane Review may be undertaken in 2011.

Summary of the Cochrane Intervention Review on Routine Scale and Polish for Periodontal Health in Adults. (Extracts/adapted from Review/ Review Abstract).

Main objective: to determine the beneficial and harmful effects of routine scaling and polishing for periodontal health, and also at different time intervals.

Search strategy: COHG Trials Register, CENTRAL, MEDLINE and EMBASE. Most recent search 5 March 2007.

Selection criteria: design – random allocation of participants; participants – anyone with erupted permanent dentition judged to have had a routine scale and polish; interventions – routine scale and polish and also 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.

Main results: nine studies included. All studies assessed as having a high risk of bias.

1. Comparison between scale and polish versus no scale and polish. Two split-mouth studies: one involved patients attending a recall programme following periodontal treatment; no statistically significant differences for plaque, gingivitis, attachment loss between intervention and control groups at each time point during the one year trial. In the second study, involving adolescents in a developing country and having had no dental care for at least five years, reported statistically significant differences in calculus and gingivitis scores between intervention and control groups at 6, 12 and 22 months following one scale and polish treatment.

2. Comparisons between routine scale and polish provided at different time intervals. Some statistically significant differences found in favour of scaling and polishing provided at more frequent intervals: 2 weeks versus 12 months for outcomes of plaque, gingivitis, pocket depth, attachment change; 3 months versus 12 months for outcomes plaque, calculus and gingivitis.

Authors' conclusions:

1. Implications for practice: the research evidence is of insufficient quality and limited quantity to allow confident statements to be made regarding the beneficial and harmful effects of routine scaling and polishing for periodontal health and regarding the frequency of provision of this intervention to different patient populations.

2. Implications for research:

- 2.1 Well conducted trials are needed in this area, with sufficient patient numbers, and of five or more years' duration.
- 2.2 Some trials should be undertaken in primary care settings.
- 2.3 Outcomes should include clinical measures and tooth loss, patient-centred factors and economic factors. May also include caries outcomes.
- 2.4 Studies are needed to determine the clinical- and cost-effectiveness of routine scaling and polishing provided by different dental personnel.
- 2.5 In future studies to define what levels of outcome improvements are clinically significant.

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References

¹ The Health and Social Care Information Centre. Clinical Dental Report for England and Wales: Quarter 3 and Quarter 4, 2008/9 – Experimental Statistics. NHS. 11 March 2010.

² Sheiham, A. Minimal intervention in dental care. International conference on minimal intervention approach for dental treatment, Kuwait 1999. Medical Principles and Practice. 11(Suppl 1): 2-6, 2002.

³ 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.