

Chronic Periodontitis – Prevention, Diagnosis and Treatment

A Systematic Review

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Summary and Conclusions of the SBU Report on:

Chronic Periodontitis – Prevention, Diagnosis and Treatment

A Systematic Review

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SBU's Conclusions

Preventing Gingivitis

- ❑ A powered toothbrush is more effective than a manual toothbrush for reducing gingivitis (Evidence Grade 3).
- ❑ Dentifrices containing stannous fluoride, amine fluoride/stannous fluoride, chlorhexidine or triclosan/copolymer are more effective than conventional fluoridated dentifrices for reducing gingivitis (Evidence Grade 3).
- ❑ Mouth-rinsing with a chlorhexidine solution (0.12–0.2 percent) or essential oils as an adjunct to tooth brushing is more effective than tooth brushing alone for reducing gingivitis (Evidence Grade 3).
- ❑ Repeated instructions by dental professionals lead to increased knowledge about oral hygiene (Evidence Grade 3). The findings are contradictory as to whether increased knowledge and desired behavioral changes lead to reduction of gingivitis.

Diagnosing Chronic Periodontitis

- ❑ Bleeding following probing of the periodontal pocket is a sign of inflammation in the periodontal tissues (Evidence Grade 2).
- ❑ Probing pocket depth overestimates the actual depth when periodontitis is present and underestimates it when the periodontal tissues are healthy (Evidence Grade 2).
- ❑ The use of electronic pressure-sensitive probes does not improve the reproducibility of periodontal pocket measurements compared to that of manual probing (Evidence Grade 3).

- ❑ Radiographic measurements underestimate alveolar bone loss. The degree of underestimation depends on the extent of bone loss and its location in the dental arch (Evidence Grade 3).
- ❑ The accuracy of assessing alveolar bone loss from direct digital radiography is comparable to that obtained from film radiography (Evidence Grade 3).
- ❑ The number of periapical radiographs can be considerably reduced when a clinical examination, along with bitewing radiographs of the posterior teeth or a panoramic radiograph precedes a full-mouth radiographic examination (Evidence Grade 3).
- ❑ The accuracy of bitewing and periapical radiography is low for estimating small alveolar bone changes (less than 1 mm) over time (Evidence Grade 3). Thus, performing radiographic examinations at regular intervals for the purpose of assessing changes of the periodontal support over time is not justified.

Predicting Disease Progression

- ❑ The absence of “bleeding on probing” is a good predictor of periodontal stability (Evidence Grade 3).
- ❑ Scientific evidence is insufficient for assessing the value of pocket depth as a prognostic method.

Treating Chronic Periodontitis

- ❑ Mechanical infection control (scaling and root planing) reduces probing pocket depth and improves probing attach-

ment level. Mechanical infection control combined with flap surgery eliminates 10–15 percent more pockets deeper than 4 mm than mechanical infection control alone (Evidence Grade 3).

- ❑ Local adjunctive therapy with 25 percent metronidazole gel does not result in improved probing pocket depth or probing attachment level compared to mechanical infection control alone (Evidence Grade 3). Scientific evidence is insufficient for determining the efficacy of other local antibiotics and antiseptics.
- ❑ Systemic antibiotic therapy as an adjunct to mechanical infection control does not improve probing pocket depth or probing attachment level compared to mechanical infection control alone (Evidence Grade 1). Scientific evidence for the benefit derived from using anti-inflammatory drugs is insufficient.
- ❑ Adjunctive therapy with guided tissue regeneration (GTR) or with enamel matrix derivative (EMD) in individual angular bone defects results in improved probing attachment level and bone level. An improvement in probing attachment level by more than 4 mm can be expected twice as often with GTR or EMD as with flap surgery alone (Evidence Grade 1).
- ❑ Adjunctive therapy with coralline calcium carbonate in individual angular bone defects improves bone level more effectively than flap surgery alone (Evidence Grade 3). The outcomes are contradictory regarding probing attachment level. Scientific evidence for the efficacy of using other filler materials is insufficient.
- ❑ Adjunctive therapy with GTR and EMD appears to result in less improvement in smokers than in non-smokers.

- ❑ Scientific evidence for assessing and designing programs of supportive periodontal therapy is insufficient.

Economic Aspects

- ❑ Scientific evidence is lacking for determining cost-effectiveness and patient-perceived quality with regard to the various methods of prevention, diagnosis and treatment of chronic periodontitis. The studies that were included are too limited regarding quantity and assessed quality.

Chronic Periodontitis as a Risk for Other Diseases

- ❑ Scientific evidence is contradictory as to whether individuals with chronic periodontitis are at increased risk of developing coronary heart disease or stroke.
- ❑ Scientific evidence is lacking as to whether individuals with chronic periodontitis are at increased risk of developing diabetes mellitus, chronic obstructive pulmonary disease or rheumatoid arthritis.
- ❑ Scientific evidence is insufficient and contradictory as to whether women with chronic periodontitis during pregnancy have an increased risk for preterm birth. Scientific evidence of a relationship between chronic periodontitis and low birth weight is also insufficient.

Principles of Evidence Grading

Quality refers to the scientific quality of a particular study and its ability to reliably answer a specific question.

Evidence Grade refers to the total scientific evidence for a conclusion, i.e., how many high-quality studies support the conclusion.

Evidence Grade 1

A conclusion assigned Evidence Grade 1 is supported by at least two studies with high quality among the total scientific evidence. If some studies are at variance with the conclusion, the evidence grade may be lower.

Evidence Grade 2

A conclusion assigned Evidence Grade 2 is supported by at least one study with high quality and two studies with moderate quality among the total scientific evidence. If some studies are at variance with the conclusion, the evidence grade may be lower.

Evidence Grade 3

A conclusion assigned Evidence Grade 3 is supported by at least two studies with moderate quality among the total scientific evidence. If some studies are at variance with the conclusion, the evidence grade may be lower.

Insufficient Scientific Evidence

If no studies meet the quality criteria, the scientific evidence is rated as insufficient to draw any conclusions.

Contradictory Scientific Evidence

If different studies are characterized by equal quality but generate conflicting findings, the scientific evidence is rated as contradictory and no conclusions can be drawn.

conclusions

SBU Summary

Background

Chronic periodontitis is inflammation of the periodontium with slow to moderate, progressive loss of the tooth supporting tissues (periodontal ligament and bone). Chronic periodontitis is clinically diagnosed when supporting tissue has been lost and the periodontal pocket bleeds on probing. Chronic periodontitis has a prevalence of up to 40 percent in the adult population, whereas more extensive tissue destruction occurs in 7–20 percent. During a later stage of disease progression, the tooth becomes loose or may be lost. In today's Western society edentulousness is considered to be a social disability.

Chronic periodontitis involves an imbalance between the commensal microbiota and the host defense. The accumulation of microorganisms in dental biofilms causes inflammation of the adjacent gingiva (gingivitis), resulting in the destruction of tooth supporting tissue. Gingivitis without loss of supporting tissues is considered to be a condition separate from chronic periodontitis.

The goal of preventing and treating chronic periodontitis is to reduce dental biofilm accumulation and its ability to induce tissue destruction. Prevention is based on self-performed oral hygiene measures. Besides these measures, the common approach involves the use of various instruments to remove dental biofilm in the periodontal pocket and on the tooth surface, mechanical infection control (scaling and root planing). When treatment is successful, microbiological conditions resemble that of individuals with a healthy periodontium. The clinical signs include reduction of pocket depth and absence of “bleeding on probing”. Treating chronic periodontitis can prevent further tissue loss but can generally not reverse what has already occurred. Certain regenerative techniques may be used to restore lost periodontal tissues.

Recent discussions have centered on whether chronic periodontitis may promote or aggravate the development of other diseases. In particular, the question has been raised as to whether individuals with chronic periodontitis are at increased risk of developing cardiovascular disease, diabetes mellitus, asthma or rheumatoid arthritis. The possibility that chronic periodontitis during pregnancy may cause preterm birth and low birth weight has also been a topic of debate.

The costs associated with various methods of prevention, diagnosis and treatment of chronic periodontitis vary. Any cost must be weighed against outcomes, i.e. an expensive method may be more effective and thereby more cost-effective than a cheaper one. Thus, to determine the cost-effectiveness of a method, economic factors must be examined as part of a clinical study.

Primary Questions Posed by the Report

Preventing Gingivitis

- What is the most effective method for reducing gingivitis?
- Are there ways of encouraging the acquisition of knowledge, attitudes and behaviors that will reduce the prevalence of gingivitis?

Diagnosing Chronic Periodontitis and Predicting Disease Progression

- What is the efficacy (accuracy and/or reliability) of methods used in clinical practice to identify signs of chronic periodontitis?
- What is the efficacy of methods used in clinical practice to identify changes in the periodontium over time?
- What is the efficacy of methods used in clinical practice to predict the progression of chronic periodontitis, i.e., further loss of supporting tissues?

Treating Chronic Periodontitis

- Is treatment of chronic periodontitis by mechanical infection control equally effective regardless of whether or not flap surgery is performed?
- Do various adjunctive therapies improve the outcome of mechanical infection control?

Economic Aspects

- How cost-effective are various methods for preventing, diagnosing and treating chronic periodontitis? How do patients perceive the quality of methods used for diagnosis and treatment of chronic periodontitis?

Chronic Periodontitis as a Risk for Other Diseases

- Are individuals with chronic periodontitis at increased risk of developing other diseases that may be linked to non-specific infections/inflammations?
- Do women with chronic periodontitis during pregnancy have an increased risk for preterm and low weight births?

Definitions and Frame of Reference

This report deals with the methods used by general practice in Sweden to prevent, diagnose, treat and predict progression of chronic periodontitis. The report also covers economic issues related to these methods, along with chronic periodontitis as a risk for other diseases. The perusal of the literature covered studies of chronic periodontitis in adults. The section on prevention, but also describes studies with adolescent subjects.

Chronic periodontitis is defined as inflammation of the periodontium with slow to moderate progressive loss of the tooth supporting tissues.

Gingivitis is classified according to indices that assess various clinical signs of inflammation in the gingiva.

Methodology

Literature Search

The primary literature search was performed on electronic databases (Medline, PsycInfo) dating back to 1966. Relevant additional literature was obtained from reference lists in individual articles and overviews, and documentation from consensus meetings.

Inclusion Criteria for the Studies

The articles included in the systematic review satisfied preestablished criteria. The results of a study had to be applicable to the questions posed, i.e., appropriate outcome measures, follow-up period and study design. The outcome measures for various methods reflected changes in the degree of inflammation and amount of periodontal support. For diagnosis and prediction, the efficacy of the methods was compared to a reference. In the section on chronic periodontitis as a risk for the development of other diseases, these diseases constituted the outcome.

The follow-up period for various treatment methods and for predicting disease progression had to be at least one year. The minimum follow-up period for preventive methods was six months.

The vast majority of the publications included were prospective studies with a control group and the patient as the unit of analysis. For preventive methods, retrospective, cross-sectional and qualitative studies were also considered. The section on diagnostic and prognostic methods includes studies on human histology and *in vitro* studies. All types of studies were reviewed when addressing the issue of chronic periodontitis as a risk for other diseases.

Reviewing and Assessing a Study's Quality and Internal Validity

Based on an assessment protocol, at least two independent reviewers assessed each article that met the inclusion criteria. The protocol formed the basis of compiling data on a study's design and findings to assess its quality and internal validity, i.e., how well it was done, how reliable its results appeared to be, and the extent to which it addressed the questions posed by the report. The reviewers assessed the quality and internal validity of each study as high, moderate or low.

Rating the Report's Conclusions According to Evidence Grade

The scientific evidence (evidence grade) for each conclusion was rated as strong (1), moderately strong (2), limited (3) or insufficient, depending on the quality and internal validity of the studies assessed. The fact that the scientific evidence for a method's efficacy is lacking, limited or insufficient does not necessarily imply that it is ineffective or should not be used.

Review of the Literature – Findings of the Report

Efficacy of Gingivitis Prevention Methods

All methods for preventing gingivitis aim to reduce the accumulation of plaque on the tooth surface and in the periodontal pocket. Daily use of either a manual or powered toothbrush is the fundamental method. Various substances are included in dentifrices and mouthwashes to ensure more effective cleaning and minimize the quantity of bacteria. Knowledge and proper attitudes can affect brushing regularity, presumably a key factor in achieving effective results. Table 1 lists the methods identified in the perusal of the literature.

Table 1 Efficacy of different methods for reducing gingivitis.

METHOD	EFFICACY
Powered toothbrush	More effective than manual toothbrush
Stannous fluoride, amine fluoride/ stannous fluoride, chlorhexidine or triclosan/copolymer in dentifrice	More effective than standard dentifrice Some additives may cause undesirable side-effects
Mouth-rinsing with chlorhexidine or essential oils as an adjunct to tooth brushing	More effective than tooth brushing alone
Repeated instruction	Increased knowledge of oral health and greater changes in behavior than occasional instruction Contradictory evidence as to whether it leads to reduced gingivitis

The literature search did not locate any human studies on the prevention of chronic periodontitis. Mechanical cleaning is the cornerstone of maintaining healthy periodontal tissues. The studies reviewed by this report compared the use of powered and manual toothbrushes in adults. No study examined the efficacy of methods for interdental cleaning. Nor were any studies located that dealt with methods for improving the frequency and regularity of cleaning. None of the studies that were reviewed involved people with motor disabilities, who would presumably benefit from the use of a powered toothbrush.

Various additives to standard fluoride dentifrices were tested in an effort to further reduce gingivitis. According to the manufacturers, the additives are somewhat effective in reducing plaque

in hard-to-reach areas, such as between the teeth. Another approach is to rinse with an antibacterial mouthwash before brushing to loosen plaque and facilitate its mechanical removal. The perusal of the literature showed that dentifrices containing triclosan or stannous fluoride reduced gingivitis more effectively than ordinary fluoride dentifrices. Rinsing with mouthwashes containing various essential oils provided additional efficacy. The use of such additives is not uncontroversial. Dentifrices with stannous fluoride can discolor the teeth, while triclosan is classified as an environmentally hazardous substance and is highly toxic for aquatic organisms, especially algae. Moreover, recent research regarding triclosan has indicated a risk for development of bacterial resistance to antibiotics. Of particular importance is to include that risk, along with environmental considerations, in any assessment of the anticipated advantages of triclosan over an ordinary fluoride dentifrice.

Repeated information and instruction by dental professionals for caregivers at nursing homes could improve general knowledge about oral health. Similar efforts aimed at schoolchildren produced desired behavioral changes. But, only few studies looked at whether such prevention measures led to improved clinical outcomes, i.e., reduced gingivitis. Thus, this perusal of the literature does not permit any conclusions about the efficacy of such initiatives for reducing or eliminating gingivitis. Studies in areas other than dental and oral health have found that the gravity people ascribe to a problem and what they expect prevention measures to accomplish influence their willingness to participate in such efforts.

Efficacy of Methods for Diagnosing Chronic Periodontitis, Identifying Changes Over Time and Predicting Disease Progression

The methods used in clinical practice are probing of the periodontal pocket to record bleeding on probing and to measure the pocket depth, and assessment of the alveolar bone level in radiographs. Table 2 summarizes the efficacy of these methods as indicated by the review of the literature.

Probing a periodontal pocket yields either a positive or negative result regarding bleeding. All studies reviewed found a correlation between a positive result and histological signs of inflammation of the tissue. Thus, the absence of bleeding on probing of periodontal pockets that had previously been inflamed indicates that treatment had led to an improvement in periodontal health. The lack of bleeding also turned out to be a good indicator of periodontal stability, given its high specificity (percentage of healthy sites that do not bleed) and negative predictive value (probability that the site is healthy).

Healthy periodontal pockets are rarely deeper than 3 mm. Although a measurement that exceeds that figure may be a sign of chronic periodontitis, it is more likely to reflect the apical extent of inflammation than the actual depth of the pocket. The studies reviewed by this report showed that clinical measurements performed by manual probing overestimated the depth by 0.1–0.8 mm compared with the actual depth assessed during examination of the site after the tooth had been extracted. Inter-examiner and intra-examiner measurement errors were about 1 mm. Scientific evidence for increased pocket depth as a prognostic indicator of disease progression is insufficient.

A radiographic examination is a means of determining the topography of the alveolar bone, and its relation to the root length. The inter-examiner measurement error for the assessment of degree of radiographic alveolar bone loss is 1–2 mm, while the intra-examiner error is only 0.2–0.6 mm.

Table 2 Efficacy of different methods for diagnosing chronic periodontitis, identifying tissue changes over time and predicting disease progression.

METHOD	EFFICACY
Bleeding on probing	Shows inflammation of the tissue and may indicate further disease progression. Absence of bleeding is a predictor of periodontal stability
Measuring depths of periodontal pockets	Overestimates actual pocket depth in the presence of inflammation. Measurement error is about 1 mm. Insufficient evidence to assess its prognostic value for disease progression
Measuring depths of periodontal pressure-sensitive probes	Reliability not better than with manual probes
Radiographic examination	Underestimates alveolar bone loss
Combinations of different examinations	The number of periapical radiographs can be reduced if a full-mouth radiographic examination is preceded by a clinical examination along with bitewing radiographs of the posterior teeth or a panoramic radiograph
Repeated routine radiographic examinations	Low accuracy in identifying small bone changes (less than 1 mm) over time

A full-mouth radiographic examination, i.e., at least 12 periapical and 4 bitewing radiographs, is not needed to identify bone loss in the entire dentition. An initial clinical examination, combined with four bitewing radiographs of the posterior teeth, can reduce the number of periapical radiographs required to obtain the corresponding information.

When the goal of pocket probing is to identify tissue changes over time, the precision of an individual measurement and the risk of a false positive result should be taken into consideration. Thus, the commonly used minimum criterion for a change in the level of periodontal support over time is a difference of 2 mm between two examinations. Routine examinations to detect small (less than 1 mm) changes of the alveolar bone level over time are not justified. Clinical findings such as bleeding on probing and increased pocket depth should serve as selection criteria for radiographic examinations.

No study identified by this report defined chronic periodontitis on the basis of bleeding on probing, a particular probing pocket depth, typical radiographic changes or a combination of such findings. As is the case with other chronic conditions, such as diabetes and rheumatoid arthritis, there is no unequivocal definition of the disease based on clinical signs.

Efficacy of Treatment Methods

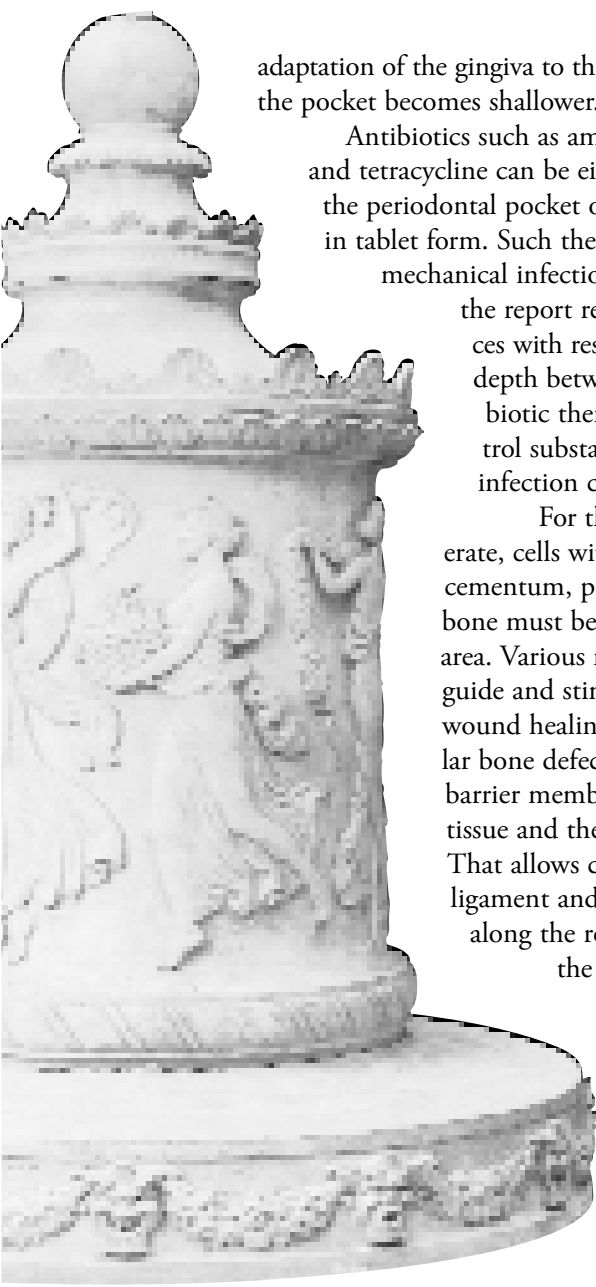
The goal of periodontal treatment is to arrest disease progression and prevent further loss of the supporting tissue. Efficacy is gauged by comparing pocket depth and probing attachment level before and after treatment. The treatment aims at the removal of bacteria and calculus in the pocket and on the tooth surface by the use of various instruments (mechanical infection control). The treatment can be performed either as non-surgical intervention or in combination with flap surgery i.e., elevation of the soft tissue surrounding the tooth. Table 3 compares the two approaches and summarizes findings about possible additional efficacy from the use of antibiotics, membranes (guided tissue regeneration: GTR), bio-

Table 3 Efficacy of different methods on periodontal pockets and attachment level.

METHOD	EFFICACY
Mechanical infection control with flap surgery	More effective than mechanical infection control without flap surgery for periodontal pockets deeper than 4 mm. Reduces the number of residual periodontal pockets deeper than 4 mm by an additional 10–15%
Systemic antibiotic therapy	No additional effect
Local antibiotic therapy	No additional effect
Membrane (GTR)	Adjunctive therapy promotes attachment level gain at individual tooth sites with deep angular bone defects by at least 4 mm twice as often as flap surgery alone
EMD	Adjunctive therapy promotes attachment level gain at individual tooth sites with deep angular bone defects by at least 4 mm twice as often as flap surgery alone
Filler material	No additional effect

active substances (enamel matrix derivative: EMD), or bone replacement material.

Ethical considerations preclude the use of untreated control groups in studies concerning treatment of chronic periodontitis. As a result, studies are designed so as to compare the method under consideration with the standard treatment of mechanical infection control. With or without flap surgery, mechanical infection control leads to a reduction of tissue inflammation and closer



adaptation of the gingiva to the tooth surface. As a result, the pocket becomes shallower.

Antibiotics such as amoxicillin, metronidazole and tetracycline can be either applied locally into the periodontal pocket or administered systemically in tablet form. Such therapy is adjunctive to mechanical infection control. The studies that the report reviewed found no differences with respect to reduction of pocket depth between local or systemic antibiotic therapy and the use of a control substance and/or mechanical infection control.

For the periodontium to regenerate, cells with the capability to form cementum, periodontal ligament and bone must be recruited to the wound area. Various methods were developed to guide and stimulate cell growth during wound healing at tooth sites with angular bone defects. GTR involves placing a barrier membrane between the gingival tissue and the tooth during flap surgery. That allows cells from the periodontal ligament and alveolar bone to grow along the root surface while isolating the area to be reconstructed from unwanted cells and tissue. The use of barrier membranes led to probing attachment level gain of at least 4 mm twice as often as mechanical infection control and flap surgery alone.


Another method for periodontal regeneration involves applying EMD gel to the root surface after it has been cleaned. The gel acts by stimulating the growth of cells from the surrounding wound area to form cementum and bone, and contributing to the formation of new periodontal ligament fibers. The application of EMD gel after cleaning the root surface during flap surgery led to probing attachment level gain of at least 4 mm twice as often as mechanical infection control and flap surgery alone.

In deep angular bone defects, also various filler materials are occasionally used as well. Such materials can act as filler in the defect and as scaffolding for newly formed bone tissue. The material may be bone tissue taken from the same person or freeze-dried and demineralised bone tissue from another person. Calcium carbonate from natural coral, and synthetic or inorganic fillers, may also serve as a bone substitute. The studies reviewed were heterogeneous with respect to patient selection, surgical technique and the morphological characteristics of the bone defects, and the structure and composition of the filler material. Bone level as inspected during re-entry surgery improved after the placement of such materials in angular bone defects, but the studies reported no, or only limited, reduction of probing pocket depth.

A consistent finding of studies that analyzed the treatment outcome in smokers and non-smokers was that treatments generally yielded poorer results (smaller improvements) for the former than the latter. None of the studies identified by the report examined the impact of the use of smokeless tobacco.

The studies reviewed by the report primarily involved single rooted teeth. Insufficient data emerged to draw any conclusions about treatment outcomes for furcation involved (multirooted) teeth.

Following completion of treatment, the patient is enrolled in a supportive periodontal therapy program of regular appointments. The goal of the program is to retain the gains achieved by treatment and to prevent further loss of periodontal support. The scientific evidence was insufficient to draw any conclusions about



the impact of the design of various supportive periodontal therapy programs.

Economic Aspects

Only five original studies could be included in the report that contained economic analyses of preventive, diagnostic and treatment methods. No study was identified that dealt with patient-perceived quality.

The studies reviewed were too limited in number, and assessed quality, to justify any conclusions about the cost-effectiveness of various methods for preventing gingivitis and arresting the progression of chronic periodontitis.

Thus, a model analysis was performed. The analysis showed that: 1) it was more cost-effective to diagnose and treat risk groups than the average of an age cohort; 2) the choice of diagnostic method affected treatment costs per tooth saved; 3) dental appointments (the patient's loss of time) accounted for about

one-fourth of all treatment costs; 4) total costs for treating the 55–59 age group in Sweden were estimated at SEK 130 million.

Chronic Periodontitis as a Risk for Other Diseases

The review included studies on chronic periodontitis as a potential risk factor for coronary heart disease, stroke, diabetes mellitus, pulmonary disease, rheumatoid arthritis, preterm birth and low birth weight. Although periodontitis as a risk for diabetes was included in the literature search, no studies were found that addressed the issue.

The composite results of the literature review showed that scientific evidence that individual with chronic periodontitis are at increased risk of developing coronary heart disease or stroke is contradictory. Scientific evidence was lacking for determining whether subjects with chronic periodontitis are at increased risk for pulmonary disease or rheumatoid arthritis. Scientific evidence that women with chronic periodontitis during pregnancy have increased risk for preterm or low weight births was contradictory and incomplete.

Future Research

This systematic literature review points to the need for additional high-quality studies. Current knowledge is limited in areas such as:

- cost-effectiveness and patient-perceived quality of diagnostic and treatment methods
- adherence and behavioral changes related to prevention and treatment
- prevention methods in individuals with motor disabilities
- outcomes of sequential studies using various combinations of diagnostic and prognostic methods

- treatment with outcomes that reflect tooth survival or loss
- the influence of tobacco use on the outcome of various methods
- studies performed in general practice (effectiveness studies, given that most studies up until now were performed by university and specialist clinics).

Reports *published by SBU in English*

SBU Reports

Moderately Elevated Blood Pressure (2004), no 170/2

Radiotherapy for Cancer (2003), no 162/2

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SBU Evaluates Health Care Technology

The Swedish Government has given SBU the following responsibilities:

- SBU shall evaluate the methods used in health care by systematically and critically reviewing the scientific evidence in the field.
- SBU's assessments shall cover the medical aspects and the ethical, social, and economic consequences of disseminating and applying medical and dental technologies.
- SBU's assessments shall be compiled, presented, and disseminated in such a way that all affected parties have access to the information.
- SBU shall contribute, through informational and educational initiatives, toward ensuring that the knowledge gained is used to rationally utilize available resources in health care.
- SBU shall draw on national and international experience and research findings in the field and shall serve as a focal point for health technology assessment in Sweden. This effort shall be managed in a way that secures success and respect for the organization, both domestically and internationally.

Chronic Periodontitis – Prevention, Diagnosis and Treatment

The SBU report, “Chronic Periodontitis – Prevention, Diagnosis and Treatment,” is based on a systematic and critical review of the scientific literature.

It is one of a series of scientific reports published by SBU (The Swedish Council on Technology Assessment in Health Care).

The Summary and Conclusions of the report, presented in this booklet, have been approved by the SBU Board of Directors and the Scientific Advisory Committee.