MOH/P/PAK/260.12 (GU)

Oral Health Division
Ministry of Health Malaysia

MANAGEMENT OF CHRONIC PERIODONTITIS

2nd Edition
November 2012
STATEMENT OF INTENT

These guidelines update and supplant the original guidelines developed in 2005 and are based on the best available contemporary evidence. They are intended as a guide for the best clinical practice in the management of chronic periodontitis presently. However, it must be noted that adherence to these guidelines do not necessarily lead to the best clinical outcome in individual patient care, as every health care provider is responsible for the management of his/her unique patient based on the clinical presentation and management options available locally.

REVIEW OF THE GUIDELINES

These guidelines were issued in 2012 and will be reviewed in 2016 or earlier if important new evidence becomes available.

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Electronic version available on the following websites:
http://www.moh.gov.my
http://www.ohd.gov.my
http://www.acadmed.org.my
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# LEVELS OF EVIDENCE AND GRADES OF RECOMMENDATIONS

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<th>LEVEL</th>
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<tr>
<td>I</td>
<td>Evidence obtained from at least one properly designed randomised controlled trial</td>
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<td>Evidence obtained from well-designed controlled trials without randomization</td>
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<tr>
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<td>Evidence obtained from well-designed cohort or case-control analytic studies, preferably from more than one centre or research group</td>
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<tr>
<td>II-3</td>
<td>Evidence obtained from multiple time series with or without the intervention. Dramatic results in uncontrolled experiments (such as the results of the introduction of penicillin treatment in the 1940s) could also be regarded as this type of evidence</td>
</tr>
<tr>
<td>III</td>
<td>Opinions or respected authorities, based on clinical experience; descriptive studies and case reports; or reports of expert committees</td>
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*Source: Adapted from U.S./Canadian Preventive Services Task Force*

## GRADES OF RECOMMENDATION

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<th>GRADE</th>
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<tr>
<td>A</td>
<td>At least one meta-analysis, systematic review or RCT or evidence rated as good or directly applicable to the target population</td>
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<tr>
<td>B</td>
<td>Evidence from well conducted clinical trials, directly applicable to the target population and demonstrating overall consistency of results; or evidence extrapolated from meta-analysis, systematic reviews or RCT</td>
</tr>
<tr>
<td>C</td>
<td>Evidence from expert committee reports, or opinions and or clinical experiences of respected authorities; indicates absence of directly applicable clinical studies of good quality</td>
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*Source: Modified from the Scottish Intercollegiate Guidelines Network (SIGN)*

Note: The grades of recommendation relates to the strength of the evidence on which the recommendation is based. It does not reflect the clinical importance of the recommendation.
GUIDELINES DEVELOPMENT

The Development Group for these Clinical Practice Guidelines (CPG) consisted of Periodontists, Dental Public Health Specialists and general dentists. The Review Committee was actively involved in the development process of these guidelines.

The previous edition of the CPG on Management of Chronic Periodontitis (2005) was used as the basis for the development of these guidelines.

The recommendations were adapted taking into consideration local practices.

Several improvements have been introduced in this edition. In addition to the general text and photographic updates, new and updated information has been included in the management such as basic periodontal examination, periodontal risk assessment, use of antimicrobials, key messages and recommendations. Besides this, clinical audit indicators have also been identified for the purpose of monitoring and evaluating outcomes.

Evidences were retrieved from publications from year January 2004 to January 2011. Literature search was carried out using the following electronic databases: PUBMED/MEDLINE; Cochrane Database of Systemic Reviews (CDSR); ISI Web of Knowledge; Health Technology Assessment (HTA) and full text journal articles via OVID search engine. In addition, the reference lists of all relevant articles retrieved were searched to identify further studies. The following free text terms or MeSH terms were used either singly or in combination to retrieve the articles: “Periodontal Screening”, “Periodontal screening index”, “Basic Periodontal Examination”, “Periodontal screening and recording”, “Oral Hygiene”, “Prevention”, “Smoking”, “Diabetes Mellitus”, “Nutrition”, “Periodontal Risk Assessment”, “Periodontal Risk Management”, “Periodontal surgery”, “Periodontal Scaling Root Planing”,
“Debridement Chronic Periodontitis”, “Non-surgical Periodontal”, “Laser Chronic Periodontitis Treatment”, “Power Driven Instruments Chronic Periodontitis”, “Ultrasonic Scaler, Photodynamic Therapy”, “Extraction”, “Dental Implants”, “Rehabilitation of periodontal patients” and “Supportive Periodontal Therapy”. Only literatures in English were retrieved.

There were ten clinical questions which were assigned to members of the development group. The group members met a total of 10 times throughout the development of this guideline. All literatures retrieved were appraised by at least two members and presented in the form of evidence tables and discussed during group meetings. All statements and recommendations formulated were agreed upon by both the development group and review committee. These CPGs are based largely on the findings of randomized controlled trials and adapted according to local practices. However, where there was lack of evidence, recommendations were based on consensus of group members. Although, ideally patients view and preferences need to be considered in the development of CPGs, in this instance, it was not feasible. Nevertheless, patient information leaflets would be developed to facilitate the dissemination of important information to the public.

The levels of evidence of the literature were graded using the modified version from the United States (U.S) / Canadian Preventive Services Task Force, while the grading of recommendations was based on the modified version of the Scottish Intercollegiate Guidelines Network (SIGN).

The draft guidelines were reviewed by a team of external reviewers and were also posted on the Ministry of Health, Malaysia and Academy of Medicine, Malaysia websites for comments and feedbacks. These guidelines were presented to the Technical Advisory Committee for CPGs, and finally to the HTA and CPG Council, Ministry of Health, Malaysia for approval.
OBJECTIVES

To provide evidence-based guidance in the management of chronic periodontitis.

SPECIFIC OBJECTIVES

i. To disseminate and reinforce knowledge on the management of chronic periodontitis among healthcare professionals.

ii. To provide timely and appropriate management of chronic periodontitis by healthcare professionals.

CLINICAL QUESTIONS

The clinical questions addressed by these guidelines are:

i. How can chronic periodontitis be prevented?
ii. How is screening of chronic periodontitis carried out?
iii. How is chronic periodontitis diagnosed?
iv. Why is Periodontal Risk Assessment necessary?
v. How can patients with chronic periodontitis be managed non-surgically?
vi. When is periodontal surgery indicated?
vii. When will antimicrobials agents be needed in periodontal therapy?
viii. When is extraction indicated?
ix. Can dental implants be placed in periodontally compromised patients?
x. What is Supportive Periodontal Therapy?

TARGET POPULATION

These guidelines are applicable to patients diagnosed with chronic periodontitis.
TARGET GROUP/USER

This guideline is meant for all oral healthcare providers who provide clinical management of chronic periodontitis.

HEALTHCARE SETTINGS

Primary and Specialist Oral Health care settings.

ORGANISATIONAL BARRIERS AND COST IMPLICATIONS

Recognition of periodontal health and disease by a person, the knowledge of what to do when a problem occurs, and the appropriate response from the health professional are major factors in prevention and control of chronic periodontitis. This professional awareness is influenced by factors such as maintaining an up-to-date understanding of the nature of periodontal diseases, the routine use of appropriate screening and examination techniques, factors influencing assessment of treatment needs, patient records, continuing professional education and an understanding of patient expectations.

A national oral health survey on 2000 (10,891 Malaysian adults (15-65+years) by the Ministry of Health Malaysia using the Community Periodontal Index of Treatment Needs (CPITN) found that 90.2% of dentate Malaysian subjects presented with periodontal conditions. Of these subjects, 5.5% had deep pockets of 6 mm or more$^1$ level II-3.

As the outcomes of periodontal therapy is mostly dependent on the timely and appropriate management of the condition, it is important to disseminate the knowledge among healthcare providers, as well as to lay people, in order to bridge the gap. This can be facilitated through the development of appropriate training modules and quick references.
Cost implications on management of chronic periodontitis vary depending on several factors, such as patient's age, patient's expectation, patient's compliance and severity of the disease. Successful treatment would require meticulous periodontal therapy and long term supportive therapy; thus affecting the cost involved. Severe periodontal diseases also often result in loss of teeth requiring complex rehabilitation often involving dental implants. Early detection of the disease and appropriate risk assessment during treatment would enable long term maintenance of most of dentition.

**PROPOSED CLINICAL AUDIT INDICATORS FOR QUALITY MANAGEMENT**

\[
\text{% of Patients With Reduction of PPD}^* \text{ after 6 months of treatment} = \frac{\text{No. of patients with reduction}^{**} \text{ of PPD after 6 months of treatment}}{\text{No. of patients with pockets > 6mm at baseline}} \times 100
\]

* Probable Pocket Depths (PPD)
** 50% reduction of sites with > 6mm ppd at baseline
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<table>
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<td>Johor Bahru</td>
<td>Jalan Perak, Pulau Pinang</td>
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These guidelines were reviewed by a panel of independent reviewers from both public and private sectors who were asked to comment primarily on the comprehensiveness and accuracy of interpretation of the evidence supporting the recommendations in the guideline.

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ALGORITHM FOR MANAGEMENT OF CHRONIC PERIODONTITIS

At Primary Care Setting

Basic Periodontal Examination

Referral to periodontist

Yes (BPE 4)

Case referred to periodontist

Review & Reassessment

- OHI
- Scaling
- Smoking cessation advice
- Dietary counselling

At Specialist Care Setting

Examination & Diagnosis

Periodontal Risk Assessment

Treatment Planning

Cause related therapy

6-8 weeks

Review & reassess Periodontal status

Stable

Rehabilitation

Supportive Periodontal Therapy

Unstable

Surgical Therapy
1. INTRODUCTION

Chronic periodontitis has been described as inflammation of the periodontium with slow to moderate progressive loss of the tooth supporting tissues. It is caused by an imbalance between the commensal flora and the defence mechanisms of the host. When these microorganisms accumulate in the dental biofilms it results in inflammation of the gingivae (gingivitis) which may lead to destruction of the supporting tissues.\(^2\) level II-3 Chronic periodontitis affects up to 40% of the adult population in developed or developing countries \(^1\)\(^-\)\(^3\) level II-3 but is preventable.\(^4\) level II-3 The disease presentation varies and the prognosis of the dentition will depend on the health status of the patient, as well as the stage at which the patient presents. Early detection aids in retaining the dentition.

2. PREVENTION

2.1 Oral Hygiene

The common dental problems of caries and periodontal disease can be controlled by patients who are prepared to adopt appropriate oral hygiene and dietary behavior.\(^5\) level II-3

Gingival inflammation can be prevented by weekly dental visits, but this is neither practical nor cost-effective. Patients need to be aware that plaque control must be a lifelong commitment, depending totally on the active participation of the patient, with the clinician acting as mentor and adviser. The clinician can determine the level of plaque control that each individual patient needs to employ to ensure periodontal health, demonstrate effective oral hygiene techniques, and encourage patients to continue to maintain appropriate levels of cleaning. Providing effective oral hygiene advice and counselling is crucial in the management of patients susceptible to periodontal disease.\(^6\)\(^-\)\(^7\) level II-3 Patient motivation continues to be a key area in the promotion of dental health \(^8\) level II-3
KEY MESSAGE

Outcome of periodontal therapy is dependent upon active participation of patient in appropriate oral hygiene measures.

2.2 Preventive Programmes

Daily oral hygiene practices and periodic professional care are the cornerstones of any prevention and treatment programme of periodontal disease. Careful preventive dental treatment has been shown to be effective in reducing the incidence of periodontal disease, attachment loss and tooth mortality while preventive programmes improve gingival health in children and prevent the progression of periodontal disease in adults.

2.3 Smoking

An association has been shown between smoking and chronic periodontitis, with disease progression slowing in patients who quit smoking. Dental professionals thus play an important role in supporting smokers who desire to quit and counseling on cessation of smoking is an integral part of periodontal therapy.

2.4 Diabetes Mellitus

Periodontitis is a common problem in patients with diabetes mellitus, and the presence of one condition tends to promote the other, so that meticulous management of both is important. Education and motivation of periodontal patients with diabetes mellitus should be part of the treatment plan.
2.5 Diet

Nutrition can impact the host’s immune response and the integrity of the hard and soft tissues of the oral cavity, so that good dietary practices and optimal nutritional status are important in mitigating the severity of inflammatory periodontal lesions. Education and motivation of periodontal patients on proper nutrition is needed as part of the treatment plan. In patients with metabolic syndrome, wholesome nutrition might reduce inflammatory variables of periodontal disease and promote periodontal health.

**RECOMMENDATION**

The oral healthcare providers should offer patients with chronic periodontitis;
- Oral hygiene instruction.
- Oral health education.
- Smoking cessation counseling.

Grade C

3. SCREENING

The early detection of chronic periodontitis at a stage of mild to moderate severity enables simpler and more effective treatment of the disease. Thus, screening for chronic periodontitis would enable the clinicians to initiate treatment at an earlier stage.

The British Society of Periodontology uses the Basic Periodontal Examination Index (BPE) based on a modification of the Community Periodontal Index for Treatment Need (CPITN) as an index for periodontal screening, while the American Dental Association uses the Periodontal Screening and Recording Index (PSR). The PSR as a screening tool has gained wide acceptance among adults and even
pregnant mothers as an index. The BPE scores between general dental practitioners and specialist periodontists were found to have a good level of equivalence. Full mouth periodontal screening has a better predictive value as compared to partial examination.

The use of panoramic radiographs in screening for chronic periodontitis is not recommended due to under diagnosis of periodontal disease as compared to clinical examination.

**RECOMMENDATION**

BPE should be used as a screening tool for all new patients.  
Grade C

### 4. DIAGNOSIS

**KEY MESSAGE**

Evaluation of periodontal status requires relevant information on:
- Medical and dental history.
- General Examination.
- Examination of extra-oral structures and intra-oral tissues.

#### 4.1 Medical History

- To identify pre-disposing conditions like diabetes mellitus, hypertension, smoking, uses of specific medication and other conditions that impact traditional dental therapy.
- Appropriate health care providers should be consulted in situations where additional evaluation may be required.
4.2 Dental history

- chief complaint, history of complaint or reason for the visit.
- Information regarding past dental and periodontal care and records like radiographs of previous treatment may be useful. 39, 40, level III

4.3 General examination

Routine general examination should be carried out.

4.4 Examination of extra-oral structures and intra-oral tissues

- the temporo-mandibular apparatus and associated structures may also be of significance. 37,39 level III

- the teeth and its replacements such as dentures, crowns, bridges and implants should be examined and evaluated for missing teeth, abnormal tooth morphology 41level III condition of restorations, caries, tooth position, tooth mobility, furcation involvement, occlusal and inter-dental relationships, signs of para-functional habits and, when applicable, pulpal status. 37,39 level III

- periodontal soft tissue should be examined for recession, probing pocket depth, and occurrence of bleeding on probing, with a calibrated periodontal probe. This examination should also focus on signs of suppuration, swelling, presence and distribution of calculus and plaque. 37-39,42 level III

- radiograph like periapical views or orthopantomograms can be utilized for the proper evaluation and interpretation of the status of the periodontium based on the diagnostic needs of the patients. 39,43 level III Conventional radiographic examination tends to underestimate alveolar bone loss 44, level III. However, digital radiographs with image analyzer tool replacing conventional method can measures alveolar bone loss. 45 level III
In addition to the above more current clinical methods can include computer-aided systems in radiography, to assess potential biomarkers of periodontal disease activity although these have not proven to be of significant clinical value, and potential microbiological markers\textsuperscript{42, level III} and alkaline phosphatase as a periodontal markers.\textsuperscript{46, level III}

5. CLINICAL FEATURES

Some of the clinical features and characteristics of chronic periodontitis are as follows:

- occurs usually in adults, rarely in children and adolescents
- amount of destruction of periodontal tissue is consistent with the presence of local factors
- microbial pattern varies and frequently sub-gingival calculus found
- slow to moderate rate of progression, although some cases may progress rapidly
- sub-classified according to the extent and severity:
- associated with local predisposing factors such as tooth related or iatrogenic factors
- modified by and/or associated with systemic diseases such as diabetes mellitus
- modified by behavioral factors such as smoking and emotional stress\textsuperscript{47, level III}

6. MANAGEMENT

6.1 Risk assessment

KEY MESSAGE

Periodontal risk assessment helps in identifying high risk individual in a clinical setting for periodontal disease development and progression.
Assessing risk factor suggests a way to investigate host susceptibility to periodontal disease and should be part of every comprehensive dental and periodontal evaluation. The ability to predict if a patient has a high risk of developing periodontal disease, will help in the clinical decision making and treatment planning for Supportive Periodontal Therapy. Various multi-factorial risk assessment models and tools have been proposed to identify low, moderate and high risk for disease progression of a patient. The Lang and Tonetti model has been assessed for their effectiveness in predicting future loss of attachment and tooth loss during Supportive Periodontal therapy, which is based on the following parameters: bleeding on probing, number of sites with probing pocket depth (PPD) > 5mm, bone loss, tooth loss, systemic factor and environmental factors (see appendix 4 for coding system).

**RECOMMENDATION**

Periodontal risk assessment should be performed as part of clinical evaluation of patient with chronic periodontitis.

Grade C

### 6.2 Non-Surgical Therapy

Non-surgical therapy remains an essential component of a successful periodontal treatment. The goal of therapy is to establish and maintain healthy periodontal tissues by removing irritants from the surface and root of the tooth that promote plaque retention, through mechanical means (scaling and root planing/root debridement). The reduction of pockets and improving level of attachment are better achieved in moderate to deep periodontal pockets after scaling and root planing.
6.2.1 Instrumentation

The type of instrumentation used depends on operator preference as well as the condition of the patient. Ultrasonic or manual debridement can be carried out in patients with chronic periodontitis.\textsuperscript{58, level III, 59, level I, 60, level III, 61, level I, 62, level III} While similar results were obtained for both of these in the removal of plaque and calculi, there was less root surface damage with ultrasonic scalers used at medium power than hand or sonic scalers. In addition powered sub-gingival debridement requires less time than manual instrumentation. Furcation regions may also be more accessible with ultrasonic or sonic scalers than manual scalers due to less instrument width in the former.\textsuperscript{56 level III, 63 level III}

Er:YAG laser application in nonsurgical periodontal therapy compared with mechanical debridement resulted in similar clinical outcomes, both in the short and the long term (up to 24 months), in patients with chronic periodontitis.\textsuperscript{64, level I}

Although preliminary data shows the potential of some laser applications (Er:YAG) in the treatment of chronic periodontitis, stronger evidence is needed before a clinical recommendation can be given.\textsuperscript{60 level I}

6.2.2 Approaches to Instrumentation

Conventional quadrant-wise staged debridement (CSD) at usually 1-2 weeks interval is the common practice of treating chronic periodontitis patients. Nevertheless, some approaches were also being adopted by clinicians in order to avoid intra-oral transmission of periodontal pathogens from periodontal pockets to recently instrumented and healing periodontal sites.

The full mouth debridement (FMD) concept typically included the disinfection of the entire oral cavity within a period of 24 hours, depletion
of the supragingival plaque deposits and prevention of biofilm formation by means chlorhexidine mouth rinses twice daily for 1 minute for 2 weeks and disinfection of bacterial reservoirs of the tongue, tonsils and periodontal pockets.  

Derived from the above, another clinical protocol has emerged, full mouth scaling and root planing (FMSRP) without the use of antiseptics.  

Full-mouth debridement (FMD), full mouth scaling and root planing (FMSRP) as well as conventional quadrant to quadrant root planing give good clinical improvement. The choice of treatment should be based on patient preference and clinical workload since there is insufficient evidence of the superiority of either method.  

**RECOMMENDATION**

For debridement of patients with chronic periodontitis, any of the following procedures can be performed:

- Full mouth disinfection.
- Full mouth scaling and root planing.
- Conventional staged debridement

Grade A

**KEY MESSAGE**

Periodontal surgery reduces or eliminates periodontal pockets and creates an acceptable gingival form that will facilitate effective oral hygiene and periodontal maintenance.
6.3 SURGICAL THERAPY

Periodontal surgery should be considered in compliant patients with advanced loss of periodontal support, or in those where non-surgical therapy has failed to adequately resolve the condition. 66 -67, level III, 68, level I;69 - 73, level III

Periodontal surgery reduces or eliminates periodontal pockets and creates an acceptable gingival form that will facilitate effective oral hygiene and periodontal maintenance. 66,71,73 - 76, level III

It also improves access and facilitates root debridement in areas of deep probing depths and roots that present elusive anatomic features such as flutings, grooves, concavities and furcations 77, 78 level III where scaling and root-planing alone has been found to be inadequate. 75, 79, 80 level III

In general, periodontal surgery resulting in pocket elimination is more effective in combating periodontal pathogens than procedures that allow residual pocket depth to remain. 78, level III

6.3.1 Surgical procedure

The following are the common periodontal surgical procedures:

- Open debridement
- Gingival augmentation therapy
- Regenerative therapy
  - Bone replacement graft
  - Guided tissue regeneration
  - Combined regenerative techniques 81, level III; 82 level I
• Resective therapy
  • Flaps with or without osseous surgery
  • Root resective surgery
  • Gingivectomy \(^69,70,83\), level III

6.3.2 Postoperative health education

Health education on the following areas should be provided to postoperative patients:

• discomfort and the potential complications; including bruising, soreness,
• limitation in mouth opening and hypersensitivity. \(^84\), level III
• all medication, especially analgesics and antibiotics.
• diet modification including avoidance of hot/(heat) or spicy food and liquids.
• smoking reduction, especially during the healing period.
• home care instruction. \(^72,85\), level III

RECOMMENDATION

Periodontal surgery should be considered in compliant patient where adequate non-surgical therapy has failed.

Grade A

6.4 Others

KEY MESSAGE

The use of antimicrobials can suppress periodontal pathogens in periodontal patients and improve the result of periodontal therapy.
6.4.1 Antimicrobials

The microbial aetiology and infectious nature of chronic periodontitis provides a rationale for use of adjunctive antimicrobial agents in the prevention and treatment of periodontal diseases. Some patients may benefit from the use of systemic or topical antimicrobial agents since conventional periodontal therapy alone may fail to eradicate certain periodonto-pathogenic organisms like Aggregatibacter (Actinobacillus) actinomycetemcomitans, Prevotella intermedia, Porphyromonas gingivalis, located in sub-epithelial gingival tissues, collagenous strata, altered cementum and radicular dentinal tubules, furcation involvement or other anatomic features complicating adequate instrumentation. Antibiotic therapy should not be considered as routine - a conservative and highly selective approach is recommended, and if antibiotic is needed, it should be given as an adjunct to periodontal therapy.

Adjunctive antibiotic therapy may be considered for the following patients:

- not responding to conventional mechanical therapy.
- acute periodontal infection associated with systemic manifestations.
- medically compromised.
- supplement in selected patients undergoing non-surgical and surgical periodontal therapy.

Please refer to Appendix 3 for recommended antibiotic regimes.

6.4.2 Extraction

Teeth with poor prognosis requiring extraction may be identified upon patient evaluation and during the course of treatment. Extraction provides treatment advantages to the patient, dentist and periodontist.
Extractions may be performed in the following situations:
during the initial non-surgical treatment

- during the surgical phase to eliminate pain, infection or periodontal
defects

- selective extraction of teeth or retained roots may also be done to
  - facilitate periodontal therapy,
  - implant therapy - implant site development or implant
  - restorative and/or prosthetic treatment plans

- During maintenance therapy,
  - teeth with advanced loss of bone
  - periodontal attachment \(^{70, \text{level III}}\)

- Other reasons
  - tooth mobility,
  - degree of furcation involvement
  - lack of occlusal antagonist
  - occlusal trauma \(^{93,94, \text{level III}}\)

Refer to appendix 4 on decision making process for tooth retention or
extraction \(^{95 \text{ level III}}\)

**RECOMMENDATION**

Antimicrobials should only be used when indicated and as an
adjunct to mechanical periodontal therapy.

Grade A
7. REHABILITATION

**KEY MESSAGE**

Rehabilitation of patients with chronic periodontitis involves multidisciplinary approach.

Rehabilitation of patients with chronic periodontitis requires the integration of treatment methods of other dental disciplines such as orthodontics, restorative/occlusal, prosthodontics and implant dentistry.\(^{96, \text{ level III}}\)

Definitive treatment to reinstate function, speech and aesthetics usually starts after conclusion of initial or surgical corrective therapy, to allow time for consolidation of periodontal tissue. By this time, level of home care and prognosis of individual teeth is known.

Extensive destruction of periodontal tissue requires a systematic approach to determine the possibilities and expectations of the patient, since the long term results of treatment will depend on the full cooperation of the patient and consistent periodontal maintenance care.\(^{97, \text{ level III}}\)

Oral rehabilitation is important to:

- stop progression of the disease,
- correct deformities created by dental disease
- restore therapeutic occlusion, form and function of the masticatory system.\(^{98, \text{ level III}}\)

Some of the major problems encountered after management of active periodontal disease in periodontally compromised chronic periodontitis patients are drifted and missing teeth.\(^{96-99, \text{ level III}}\) elongated and spaced incisors, drifted or tilted incisors, edentulous spaces, and teeth that need prosthodontic rehabilitation.\(^{100-102, \text{ level III}}\)
7.1 Implantation

**KEY MESSAGE**

Dental implants can be placed in periodontally compromised patients who have successfully undergone periodontal therapy.

Patients with combination of a history of treated periodontitis and smoking must be warned of the increased risk of implant failure.

Rehabilitation with implants in periodontally compromised patients is not contraindicated.\(^{103,104}\) Implants replacing teeth lost due to chronic periodontitis have been found to have lower survival rates and more biological complications than those replacing teeth lost due to other reasons,\(^{105,\text{ level III}};^{106,\text{ level II}}\) although the 5 year survival rate was similar.\(^{107,\text{ level III}};^{108,\text{ level II}}\) Periodontally compromised patients were also found to have a higher prevalence of implants failure due to peri-implantitis.\(^{109,\text{ level III}}\) The combination of a history of treated periodontitis and smoking increases the risk of implant failure and peri-implant bone loss.\(^{110,\text{ level II}}\)

8. SUPPORTIVE PERIODONTAL THERAPY

**KEY MESSAGE**

Supportive periodontal therapy should include:

- an update of the medical and dental history,
- dental examination,
- radiographic review,
- evaluation of the patient’s oral hygiene performance,
- periodontal evaluation and risk assessment.
Supportive periodontal treatment is a crucial phase of periodontal therapy, but is often overlooked and frequently not appreciated.\textsuperscript{111, level III} Long-term maintenance has been shown to be attainable for most periodontal patients and is consistent with a variety of treatment approaches.\textsuperscript{112,113, level II-1}

Supportive periodontal therapy should include an update of the medical and dental histories, examination of extra and intraoral soft tissues, dental examination, radiographic review, evaluation of the patient’s oral hygiene performance, periodontal evaluation and risk assessment, with supra and subgingival removal of bacterial plaque and calculus, and retreatment of disease when so indicated.\textsuperscript{114, level III}

Parameters of care for periodontal therapy have been established.\textsuperscript{114, level III} The ultimate aims of supportive periodontal therapy are as follows:

- Prevention of the progression and recurrence of periodontal disease in patients who have been treated for gingivitis and periodontitis.
- Reduction of tooth loss by monitoring the dentition and rehabilitation of lost dentition.
- Diagnosis and management of other diseases or conditions found within or related to the oral cavity.\textsuperscript{111,114, level III}

Supportive treatment visits should be performed every 3-6 months.\textsuperscript{115-119, level II-1} although it may be determined by the periodontal condition of the patient, effectiveness of supragingival oral hygiene and patient risk factors for periodontal disease progression.\textsuperscript{120-122, level II-1} Regular supportive periodontal treatment intervals have been shown to reduce the likelihood of attachment loss or loss of teeth.\textsuperscript{111 level III ,115-116 level II-1 ,118 level II-1, 120-122 level II-1}

**RECOMMENDATION**

Supportive treatment visits should be performed every 3-6 months and be tailored to patients’ risk factors for periodontal disease progression.

Grade B
REFERENCES


52. Heitz-Mayfield LJ. A., Disease progression: identification of high-risk groups and individuals for periodontitis Journal Clinical of Periodontology, 2005; vol 32 issue supplement s6, 196-209.


78. Slots J, Jorgensen MG. Effective, safe, practical and affordable periodontal antimicrobial therapy: Where are we going, and are we there yet? Periodontol, 2000; 28:pp 298-312.


Appendix 1

(adapted from British Society of Periodontology, 2000)

The Basic Periodontal Examination (BPE) requires that the periodontium be examined with a standardized periodontal probe (WHO probe) using light pressure to examine for bleeding on probing, plaque retentive factors and pocket depth.

All the teeth present are to be examined in six sextants, four posterior sextants and two anterior sextants. The worst score of each sextant is scored.

Code:

0  –  no bleeding or pocketing detected
1  –  bleeding on probing but no pocketing more than 3.5mm
2  –  plaque retentive factors present but no pocketing more than 3.5mm
3  –  pockets more than 3.5mm but less than 5.5mm in depth
4  –  pockets more than 5.5mm in depth
* - furcation involvement
BASIC PERIODONTAL EXAMINATION

**BPE: CODE 0**

- Healthy gingiva
- No bleeding on Probing (BOP)
- Black band (marking 3.5mm - 5.5mm) clearly visible

No bleeding or pocketing detected
Management: Maintain good oral hygiene

**BPE: CODE 1**

- Slight inflammation of gingiva
- Bleeding on probing
- Black band clearly visible

Coloured area of the probe remains completely visible in the deepest pocket in the sextant.
No calculus or defective restoration margins.
There is bleeding after gentle bleeding after probing.
Management: OHI
Coloured area of probe remains completely visible in the deepest pocket in the sextant.

Supra or subgingival calculus detected or defective margin(s) of crown/restoration.

Management: OHI and removal of plaque retentive factors.

Coloured area of probe remains partly visible in the deepest pocket in the sextant indicating deep pockets of > than 4mm and < than 6 mm.

Management: OHI and debridement
Coloured area of probe completely disappears into the pocket indicating probing depths of at least 6mm.

Management: OHI, gross scaling and refer to specialist.

Furcation involvement
Management: Refer to Specialist
Appendix 2
RECOMMENDED ADJUNCT ANTIBIOTIC OF PERIODONTAL THERAPY

*(adult dosage with normal renal function)*

<table>
<thead>
<tr>
<th>Antibiotic</th>
<th>Dosage</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metronidazole + Amoxicillin</td>
<td>Metronidazole = 400mg tds + Amoxicillin = 500mg tds</td>
<td>7 days</td>
</tr>
<tr>
<td>Clindamycin</td>
<td>300mg tds</td>
<td>7 days</td>
</tr>
<tr>
<td>Azithromycin</td>
<td>500mg od</td>
<td>3 days</td>
</tr>
<tr>
<td>Metronidazole</td>
<td>400mg tds</td>
<td>7 days</td>
</tr>
</tbody>
</table>
Appendix 3
PERIODONTAL RISK ASSESSMENT

Table 1. Coding system for the PRA (Lang & Tonetti 2003)

<table>
<thead>
<tr>
<th>Risk</th>
<th>Bleeding on Probing</th>
<th>N of sites PPD &gt;5mm</th>
<th>Tooth loss</th>
<th>Boneloss /age*</th>
<th>Smoking</th>
<th>Genetic/Systemic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>0-9%</td>
<td>0-4</td>
<td>0-4</td>
<td>0-0.5</td>
<td>Non-smoker/Former smoker</td>
<td>Negative</td>
</tr>
<tr>
<td>Moderate</td>
<td>10-25%</td>
<td>5-8</td>
<td>5-8</td>
<td>&gt;0.5-1.0</td>
<td>10-19 cig/day</td>
<td>Negative</td>
</tr>
<tr>
<td>High</td>
<td>&gt;25%</td>
<td>&gt;8</td>
<td>&gt;8</td>
<td>&gt;1.0</td>
<td>&gt;19 cig/day</td>
<td>Positive</td>
</tr>
</tbody>
</table>

* Bone loss, estimation of bone loss in percent of the root length at the worst site in the posterior periapical/bitewings radiographs, where 1mm is 10% bone loss.
Table 2. Calculation of PRA

<table>
<thead>
<tr>
<th>Low-risk individual</th>
<th>All low-risk categories and one in moderate-risk category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moderate-risk individual</td>
<td>At least two in moderate-risk categories and one in high-risk category</td>
</tr>
<tr>
<td>High-risk individual</td>
<td>At least two high-risk categories</td>
</tr>
</tbody>
</table>

Table 3. Recommended SPT visit intervals according to PRA (Lang & Tonetti 2003)

<table>
<thead>
<tr>
<th>Risk</th>
<th>Recall interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>1/year</td>
</tr>
<tr>
<td>Moderate</td>
<td>2/year</td>
</tr>
<tr>
<td>High</td>
<td>3-4/year</td>
</tr>
</tbody>
</table>
Appendix 4

Decision making chart for tooth extraction or conservation

Source: A Novel Decision – Making Process for Tooth Retention or Extraction

Avila et al: J.Periodontol March 2009 Vol 80 No:3

### EXTRACTION VERSUS CONSERVATION

#### DECISION CHART

<table>
<thead>
<tr>
<th>1st Level</th>
<th>2nd Level</th>
<th>3rd Level</th>
<th>4th Level</th>
<th>5th Level</th>
<th>6th Level</th>
<th>OTHER DETERMINANTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>INITIAL ASSESSMENT</td>
<td>PERIODONTAL DISEASE SEVERITY</td>
<td>FURCATION INVOLVEMENT</td>
<td>ETIOLOGIC FACTORS</td>
<td>RESTORATIVE FACTORS</td>
<td>OTHER DETERMINANTS</td>
<td></td>
</tr>
</tbody>
</table>

- Patient Expectations
- Treatment Expectations
- Esthetics
- Finances
- Patient’s Compliance

#### Diagram:

- Decision tree for extraction versus conservation.
- Icons and symbols for different outcomes.
- Legend for long-term maintenance favorability.

#### Legend:

- Long-term Survival Unfavorable
- Proceed with caution Recommended
- Long-term Maintenance Favorable

#### Notes:

- ≥3 or 2 + ≥2 : Extraction is recommended
- 2 + or 1 + or ≥2 : Consider extraction
- 1 + or ≥1 + or ≥3 : Attempt to treat: if fails, then extraction advisable
- 2 : Tooth maintenance may be compromised but feasible
- Any or 1 : Tooth conservation is recommended

- Strongly suggest extraction

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