

# Periodontal Maintenance

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# Learning Objectives

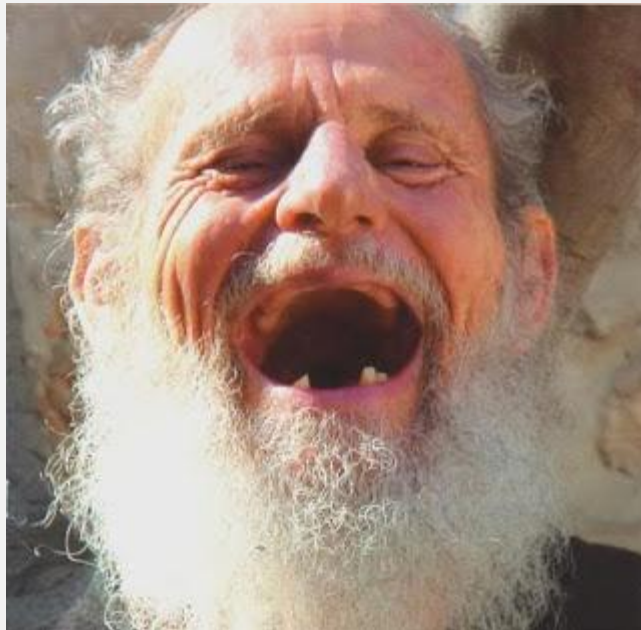
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- Discuss paradigm shift in periodontal disease definition
- Identify, give examples and assess modifiable and nonmodifiable risk factors for periodontal disease that affect onset and severity of periodontal disease
- Explain mechanisms which alter periodontal disease progression in individuals
- Understand the connection between periodontal disease and overall systemic health
- Identify interventions which halt periodontal disease progression
- Formulate a client-centered periodontal maintenance care plan

# Paradigm shift regarding periodontal disease

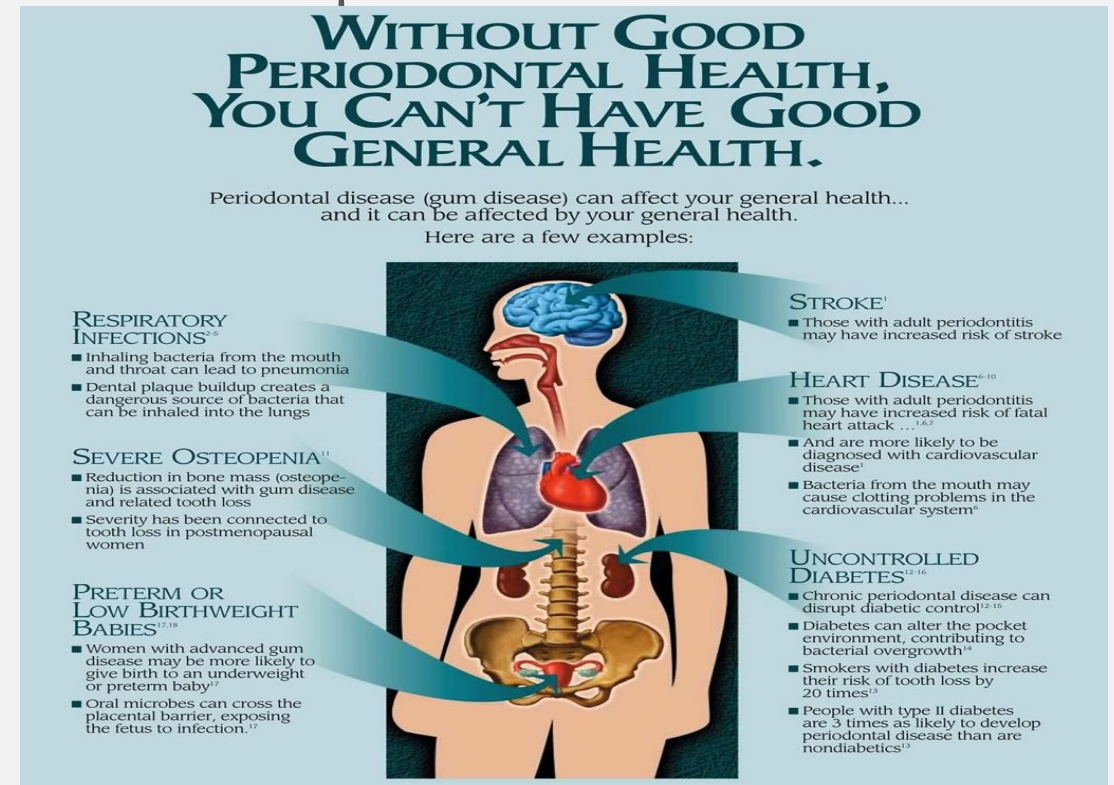
## Past

- Bacteria in plaque cause bone loss → tooth loss



## Present

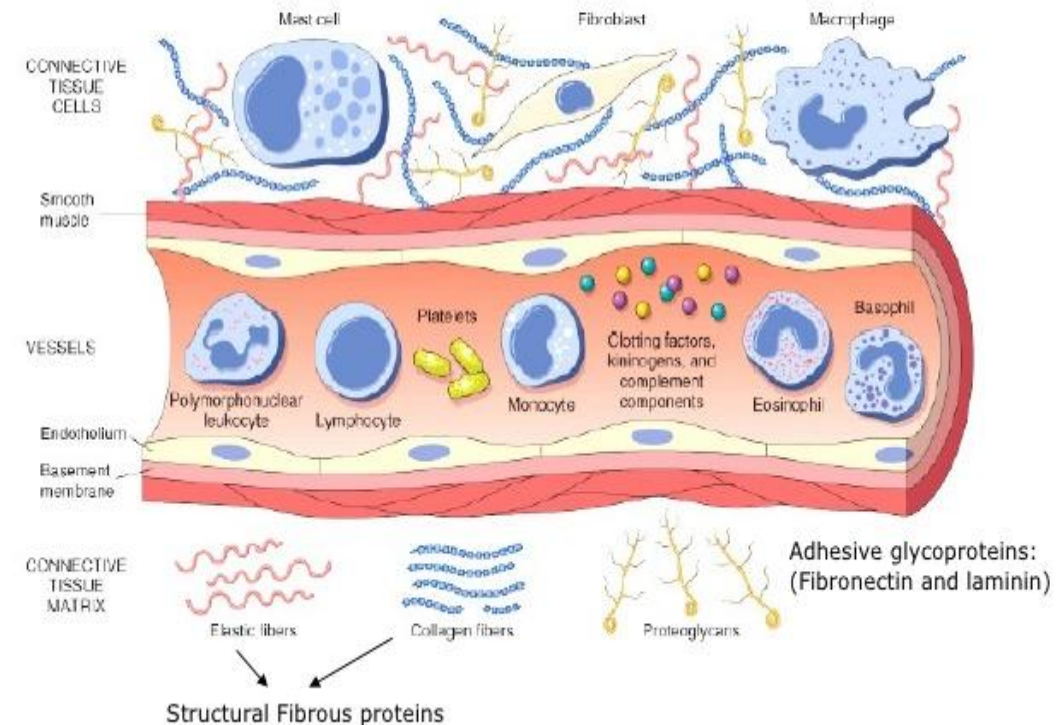
- It is the *inflammatory response* to the bacteria in biofilm which causes bone loss and contributes to poor overall health



# Inflammation

- ❖ Body's first response to injury.
- ❖ Its purpose is to protect the body from damage. However, when inflammation is *chronic*, it causes tissue destruction.
- ❖ Inflammation appears to be a common link between many diseases (i.e. arthritis, heart disease, Alzheimer's Disease, asthma, stroke, diabetes, colitis, Crohn's Disease, eczema, GERD, lupus, cancer, obesity etc)
- ❖ Biological markers of inflammation are found in blood (CRP). Chronic inflammation involves more inflammatory mediators than acute inflammation.

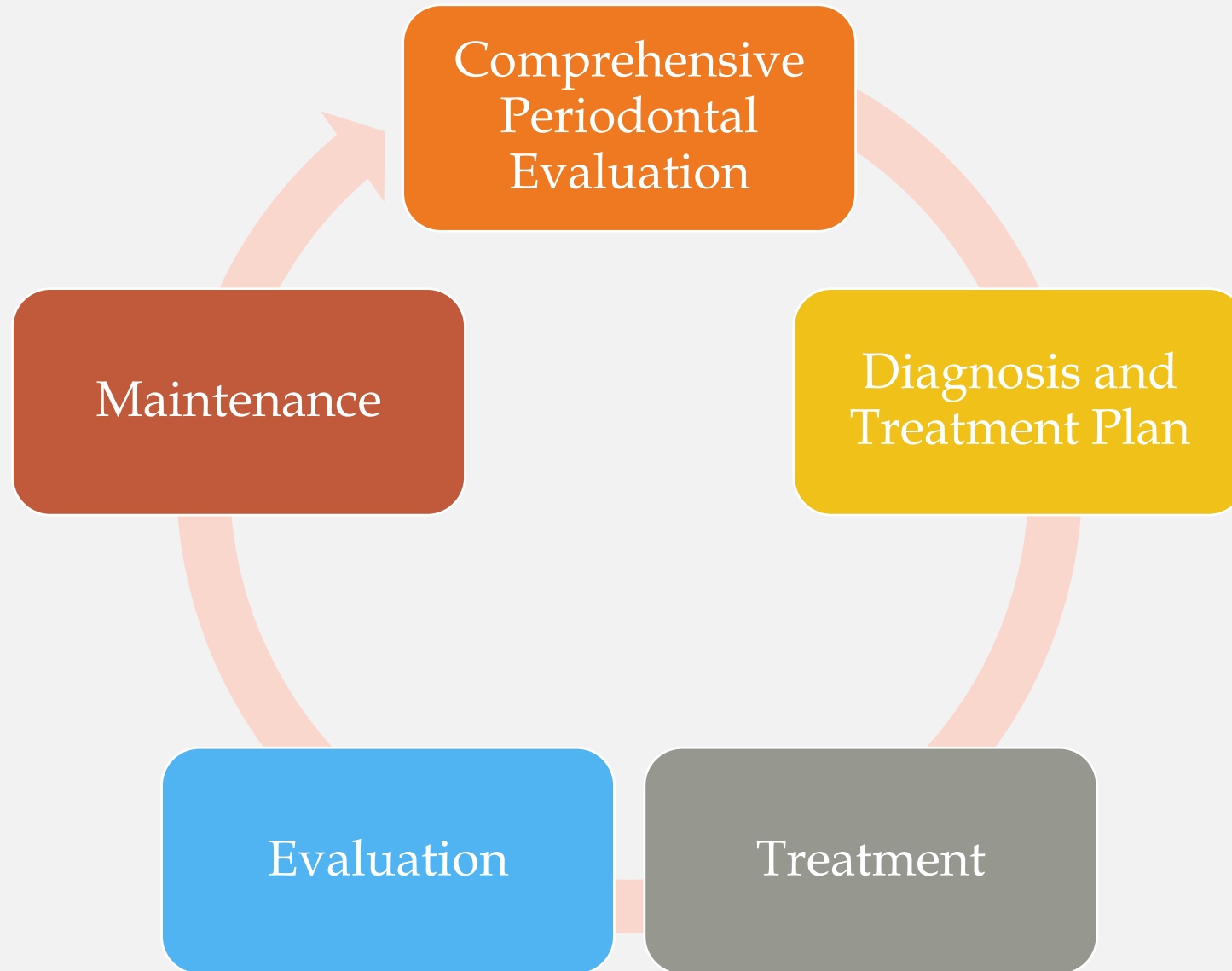
The components of acute and chronic inflammatory responses: circulating cells and proteins, cells of blood vessels, and cells and proteins of the extracellular matrix.



# What is periodontal disease?

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- A bacterially-induced chronic, inflammatory disease of aging that affects the soft and hard tissues which support the teeth
- Modifiable and nonmodifiable risk factors affect its progression
- Reversible in the earliest stage, gingivitis




Treatment  
of  
Periodontal  
Disease



# Comprehensive Periodontal Evaluation <sup>1</sup>

- Extra- and intraoral examination
- Periodontal exam-examination of teeth and dental implants to evaluate the topography of the gingiva and related structures; to measure probing depths, the width of keratinized tissue, gingival recession, and attachment level; to evaluate the health of the subgingival area with measures such as bleeding on probing and suppuration; to assess clinical furcation status; and to detect endodontic-periodontal lesions
- Assessment of the presence, degree, and/or distribution of plaque/biofilm, calculus, and gingival inflammation
- Evaluation of potential periodontal-systemic interrelationships. Determination and assessment of patient risk factors and other systemic conditions associated with development and/or progression of periodontal disease



A comprehensive periodontal evaluation and identification of a patient's risk factors should be done at least once a year.

# Comprehensive Periodontal Evaluation (cont'd)

- ❖ Dental examination including caries assessment, proximal contact relationships, the status of dental restorations and prosthetic appliances, and other tooth- or implant-related problems
- ❖ An occlusal examination that includes, but may not be limited to, determining the degree of mobility of teeth and dental implants, occlusal patterns and discrepancy, and determination of fremitus
- ❖ Current and comprehensive diagnostic-quality radiographs

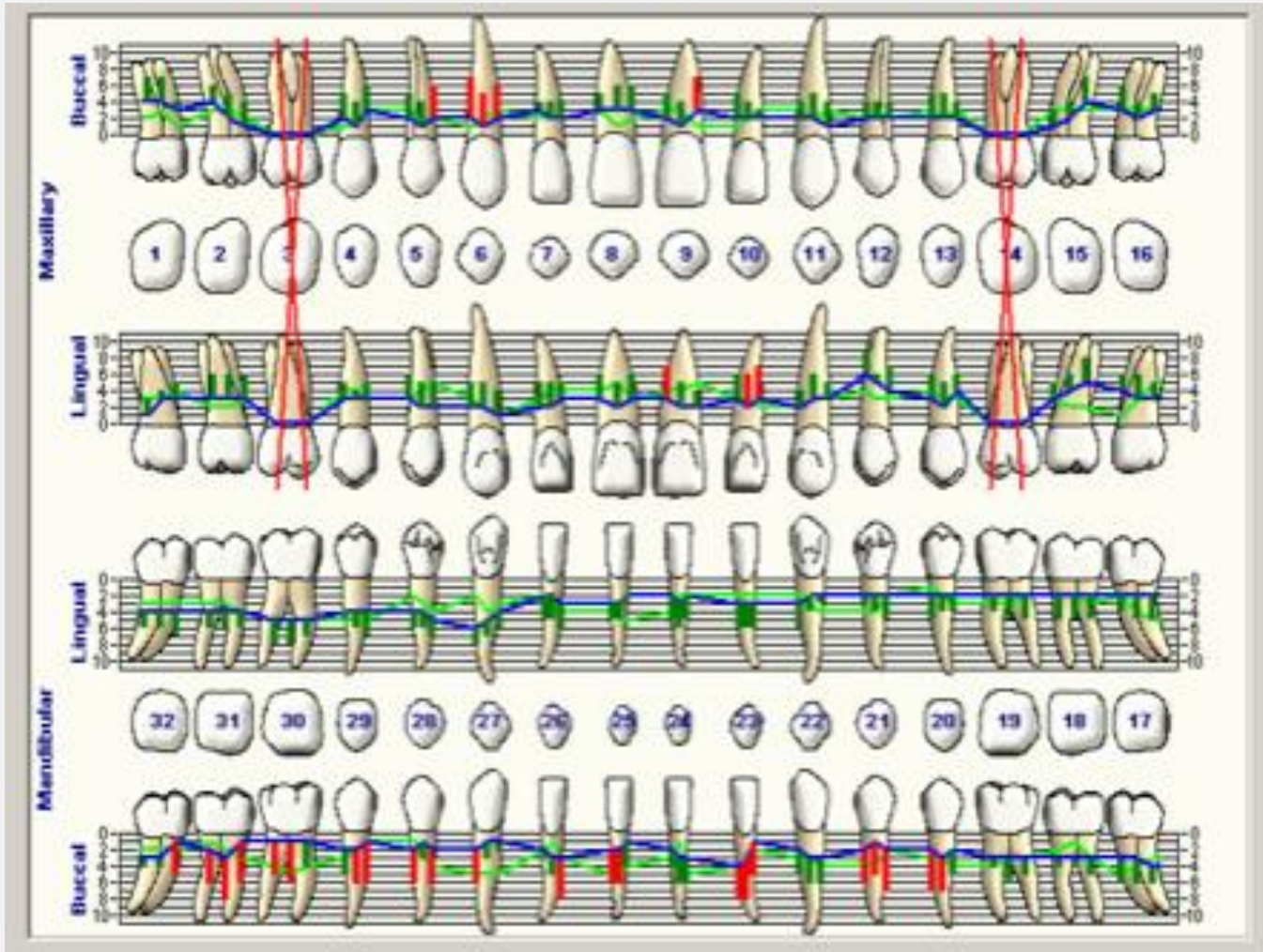


## Gingival Descriptor Worksheet (2)

*Directions:* Highlight or circle the applicable descriptors.

*In the last column, list your findings:*

- Indicate if a characteristic is localized or generalized.
- If localized, note
  - the tooth number or
  - the aspect, facial or lingual, of the sextant(s) or quadrant(s) exhibiting the characteristic.
- If bleeding is evident, indicate extent as light, moderate, or heavy.



CHARACTERISTIC	NORMAL DESCRIPTORS	DISEASE DESCRIPTORS	LIST FINDINGS
Color	Pink Pigmented	Red Bluish purple White Pale pink <i>Distribution:</i> Papillary Marginal Diffuse	
Size	Fits snugly around tooth	Enlarged	
Position of Margin	Near the CEJ: 1-2 mm coronal to the CEJ	More than 2 mm coronal to the CEJ Apical to the CEJ	
Shape of Margin	Tapered or slightly rounded edge Fits snugly around tooth	Thickened edge Rolled edge Irregular edge	
Shape of Papilla	Flat, pointed papilla Fills interproximal space	Bulbous papilla Blunted papilla Cratered papilla Missing papilla	
Texture	Normal Stippled	Smooth and shiny Nodular (fibrotic)	
Consistency	Firm, resilient	Soft, flaccid Spongy, puffy Leathery, not resilient	
Bleeding, Exudate	No bleeding No exudate (pus)	Spontaneous bleeding Bleeding on probing Exudate	

# Periodontal risk assessment

## Modifiable

- Smoking
- Diabetes
- Specific bacterial pathogens
- Poor oral self-care
- Osteoporosis
- HIV/AIDS
- Stress
- Bleeding on probing
- Medications
- Local factors
- Sleep deprivation

## Nonmodifiable

- History of periodontitis
- Age
- Gender
- Race
- Genetic disorder
- Genetic marker

# Nonsurgical Periodontal Therapy

- “The gold standard for the nonsurgical management of periodontitis” <sup>(3)</sup>

- Includes:

## Nonsurgical Periodontal Therapy

Client education and self-care instruction

Dietary guidance

Tobacco cessation counseling

Fluoride/Remineralization therapy

Pit and fissure sealants

Therapeutic periodontal debridement

Desensitization

Correction of restorative and prosthetic irritational factors

Antimicrobial/anti-infective therapy

Occlusal correction/orthodontics

Coronal polishing

Root planing is the definitive procedure designed for the removal of cementum and dentin that is rough and/or permeated by calculus or contaminated with toxins or microorganisms.

Compared with no treatment, SRP treatment resulted in a 0.49-millimeter gain in CAL<sup>4</sup>

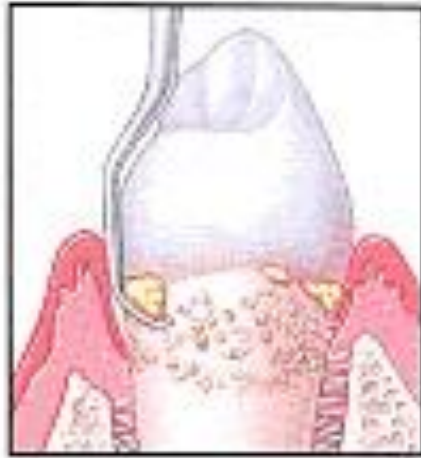
# How often should periodontal debridement be done?





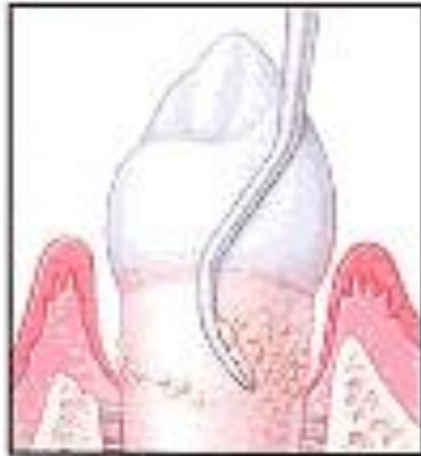
## Scaling

Scaling is a type of cleaning. It removes plaque and tartar from around and below the gum line.



## Root Planing

Root planing involves scraping and smoothing the root surfaces of your teeth. Gum tissue can more firmly reattach to roots that are clean and smooth.



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Figure 3. Coltene Whaledent BioSonic® Ultrasonic Scaler System



# Adjunctive therapies

Medications	What is it?	Why is it used?	How is it used?
<b>Prescription antimicrobial mouthrinse</b>	A prescription mouthrinse containing an antimicrobial called chlorhexidine	To control bacteria when treating gingivitis and after gum surgery	It's used like a regular mouthwash.
<b>Antiseptic chip</b>	A tiny piece of gelatin filled with the medicine chlorhexidine	To control bacteria and reduce the size of periodontal pockets	After root planing, it's placed in the pockets where the medicine is slowly released over time.
<b>Antibiotic gel</b>	A gel that contains the antibiotic doxycycline	To control bacteria and reduce the size of periodontal pockets	The periodontist puts it in the pockets after scaling and root planing. The antibiotic is released slowly over a period of about seven days.
<b>Antibiotic microspheres</b>	Tiny, round particles that contain the antibiotic minocycline	To control bacteria and reduce the size of periodontal pockets	The periodontist puts the microspheres into the pockets after scaling and root planing. The particles release minocycline slowly over time.
<b>Enzyme suppressant</b>	A low dose of the medication doxycycline that keeps destructive enzymes in check	To hold back the body's enzyme response — If not controlled, certain enzymes can break down gum tissue	This medication is in tablet form. It is used in combination with scaling and root planing.
<b>Oral antibiotics</b>	Antibiotic tablets or capsules	For the short term treatment of an acute or locally persistent periodontal infection	These come as tablets or capsules and are taken by mouth.

- SRP plus Systemic Subantimicrobial-Dose Doxycycline resulted in a 0.35-mm mean gain in CAL
- SRP plus systemic antimicrobials resulted in a 0.35-mm mean gain in CAL
- SRP plus chlorhexidine chips resulted in a 0.40-mm mean gain in CAL
- SRP plus DH gel resulted in a 0.64-mm mean gain in CAL
- SRP plus minocycline microspheres resulted in a 0.24-mm mean gain in CAL



# Nonsurgical Treatment of Chronic Periodontitis by Scaling and Root Planing with or without Adjuncts: Clinical Practice Guideline<sup>1,2</sup>

**Strength of recommendations:** Each recommendation is based on the best available evidence. The level of evidence available to support each recommendation may differ.

Strong	In Favor	Weak	Expert Opinion For	Expert Opinion Against	Against
Evidence strongly supports providing this intervention. There is a high level of certainty of benefits, and the benefits outweigh the potential harms.	Evidence favors providing this intervention. Either there is a high level of certainty of benefits, but the benefits are balanced with the potential harms OR there is a moderate level of certainty of benefits, and the benefits outweigh the potential for harms.	Evidence suggests implementing this intervention only after alternatives have been considered. There is a moderate level of certainty of benefits, and either the benefits are balanced with potential harms or there is uncertainty in the magnitude of the benefit.	Expert Opinion suggests this intervention can be implemented, but there is a low level of certainty of benefits and there is uncertainty in the benefit to harm balance.	Expert Opinion suggests this intervention NOT be implemented because there is a low level of certainty that there is no benefit or the potential harms outweigh benefits.	Evidence suggests not implementing this intervention or discontinuing ineffective procedures. There is moderate or high certainty that there are no benefits and/or the potential harms outweigh the benefits.

Clinical Recommendation	Strength
<b>Scaling and root planing (no adjuncts)</b> For patients with chronic periodontitis, clinicians should consider scaling and root planing (SRP) as the initial treatment.	In Favor
<b>SRP with systemic sub-antimicrobial dose doxycycline</b> For patients with moderate to severe chronic periodontitis, clinicians may consider systemic sub-antimicrobial dose doxycycline (20 mg twice a day) for 3 to 9 months as an adjunct to SRP with a small net benefit expected.	In Favor
<b>SRP with systemic antimicrobials</b> For patients with moderate to severe chronic periodontitis, clinicians may consider systemic antimicrobials as an adjunct to SRP with a small net benefit expected.	Weak
<b>SRP with locally-delivered antimicrobials</b> For patients with moderate to severe chronic periodontitis, clinicians may consider locally delivered chlorhexidine chips as an adjunct to SRP with a moderate net benefit expected.	Weak
For patients with moderate to severe chronic periodontitis, clinicians may consider locally delivered doxycycline hyclate gel as an adjunct to SRP, but the net benefit is uncertain.	Expert Opinion For
For patients with moderate to severe chronic periodontitis, clinicians may consider locally delivered minocycline microspheres as an adjunct to SRP, but the net benefit is uncertain.	Expert Opinion For

1 Smiley CJ, Tracy SL, Abt E, Michalowicz B, et al. Evidence-Based Clinical Practice Guideline on the Nonsurgical Treatment of Chronic Periodontitis by Scaling and Root Planing with or without Adjuncts. *JADA* 2015; 146 (7):525-535.  
 2 Smiley CJ, Tracy SL, Abt E, Michalowicz B, et al. Systematic Review and Meta-Analysis on the Nonsurgical Treatment of Chronic Periodontitis by Scaling and Root Planing with or without Adjuncts. *JADA* 2015; 146 (7):508-524.  
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# Nonsurgical Treatment of Chronic Periodontitis by Scaling and Root Planing with or without Adjuncts: Clinical Practice Guideline<sup>1,2</sup>

**Strength of recommendations:** Each recommendation is based on the best available evidence. The level of evidence available to support each recommendation may differ.

Strong

In Favor

Weak

Expert Opinion For

Expert Opinion Against

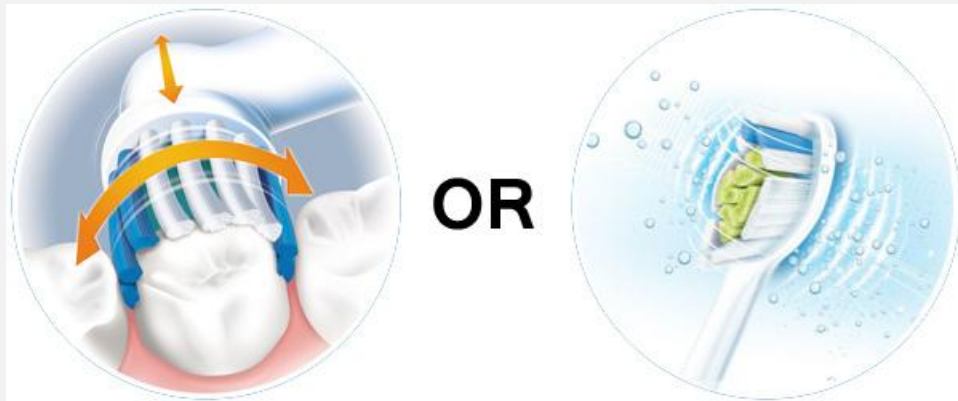
Against

Clinical Recommendation	Strength
<b>SRP with nonsurgical use of lasers</b> For patients with moderate to severe chronic periodontitis, clinicians may consider photodynamic therapy (PDT) using diode lasers as an adjunct to SRP with a moderate net benefit expected.	Weak
For patients with moderate to severe chronic periodontitis, clinicians should be aware that the current evidence shows no net benefit from diode (non-PDT) lasers when used as an adjunct to SRP.	Expert Opinion Against
For patients with moderate to severe chronic periodontitis, clinicians should be aware that the current evidence shows no net benefit from Nd:YAG lasers when used as an adjunct to SRP.	Expert Opinion Against
For patients with moderate to severe chronic periodontitis, clinicians should be aware that the current evidence shows no net benefit from erbium lasers when used as an adjunct to SRP.	Expert Opinion Against

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# Plaque removal

- Toothbrush
- Power toothbrush



How often?

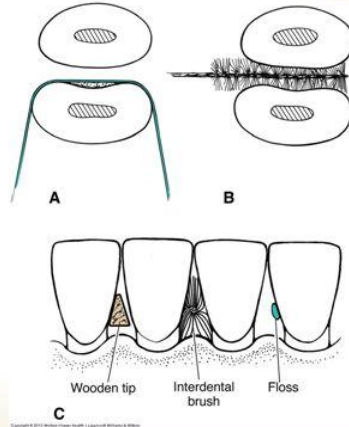
- Miscellaneous

# Interdental Brushes



## Procedure

- ✧ Select brush of appropriate diameter
- ✧ Moisten the brush and insert at an angle in keeping with gingival form
- ✧ Brush in and out



# Rubber Tip Stimulators



- ✧ Flexible rubber tip attached to the end of the handle
- ✧ Adapted into interdental area & below the gingival margin without causing damage to the epithelial lining
- ✧ Indications
  - ✧ Cleaning debris from the interdental area
  - ✧ Removal of biofilm by rubbing the exposed tooth surfaces
  - ✧ Biofilm removal at & just below gingival margin





# Sources

1. National Guideline Clearinghouse (NGC). Guideline summary: Comprehensive periodontal therapy: a statement by the American Academy of Periodontology. In: National Guideline Clearinghouse (NGC) [Web site]. Rockville (MD): Agency for Healthcare Research and Quality (AHRQ); 2011 Jul 01. [cited 2016 Aug 18].
2. Nield-Gehrig, Jill S., and Donald E. Willmann. Patient Assessment Tutorials: A Step-by-step Procedures Guide for the Dental Hygienist. Lippincott Williams & Wilkins, 2013.
3. American Dental Hygienists Association. "Rationale for Comprehensive Nonsurgical Periodontal Therapy: A Review of the Clinical Evidence and Practice Protocol". The Journal of Dental Hygiene 83.6 (2008): Supplement
4. Smiley, Christopher J., et al. "Systematic review and meta-analysis on the nonsurgical treatment of chronic periodontitis by means of scaling and root planing with or without adjuncts." The Journal of the American Dental Association 146.7 (2015): 508-524.

# Additional sources

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- American Academy of Periodontology. “Inflammation and Periodontal Diseases: A paradigm shift in periodontology and what it means for patient care”. Available at <http://slideplayer.com/slide/6178647/>



