

# Paradigms Shifts in Periodontal Therapy: Implementing Evolving Protocols

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- The past 30 years have represented a significant change in everything from assessment phases to treatment options both chairside and for patient daily care. Scientific paradigms have long been the cornerstone of clinical practice and daily care and yet many of these paradigms are not the “reality.” Emerging sciences have led to key understanding of new methods to prevent and manage periodontal disease which has necessitated integration and implementation for the progressive clinician. This interactive session will include a review of the 2011 AAP Comprehensive Periodontal Therapy document and inspire attendees to unconscious competency!

### *Our Opportunities:*

- Provide rationale for implementing accelerated periodontal instrumentation protocols over traditional quadrant scaling and root planing.
- Evaluate current protocols and develop plan of action to incorporate methods to enhance and advance optimal oral health for patients.
- Implement American Academy of Periodontology treatment guidelines into practice.

### Pre-Session Assessment:

What does this seminar title mean to you? What are your expectations?:

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List 5 ‘changes’ that have impacted the practice of dental hygiene and/or daily life since the beginning of your career:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_

List 5 ‘changes’ in periodontal therapy you have observed and/or incorporated into practice:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_

**Paradigms** - in the philosophy of science, a generally accepted model of how ideas relate to one another, forming a conceptual framework within which scientific research is carried out.

**vs.**

**Reality** - everything that actually does or could exist or happen in real life (practice).

### Current Paradigms in Dentistry/Hygiene?



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#### **Paradigm Shift: Big Picture!**

- |   |   |
|---|---|
| <input checked="" type="checkbox"/> Oral-Systemic Connection                                    | <input checked="" type="checkbox"/> Aesthetic Focus                 |
| <input checked="" type="checkbox"/> Evidence-Based Approach                                     | <input checked="" type="checkbox"/> Biofilm Focus                   |
| <input checked="" type="checkbox"/> Minimally Invasive Dentistry                                | <input checked="" type="checkbox"/> Periodontal/Occlusal Connection |
| <input checked="" type="checkbox"/> Patient-Centered Approach:<br>Wants vs. Needs; PAIN to GAIN | <input checked="" type="checkbox"/> Regeneration Options            |
| <input checked="" type="checkbox"/> "Green" Dentistry/Dental Hygiene                            | <input checked="" type="checkbox"/> Postural Health - Ergonomics    |
|   | <input checked="" type="checkbox"/> Technology Advances...          |

#### **Paradigm Shift: Assessment/Treatment Protocols**

- Caries Management by Risk Assessment (CAMBRA)
- Periodontal Risk and Disease Assessment (PRADA)
- Occlusal Assessment
- Use of digital technology for assessment and treatment planning
- Full-Mouth Disinfection/ Accelerated Periodontal Instrumentation

#### **Paradigm Shift: Clinical/Instrumentation Phase**

- |   |   |
|---|---|
| <input type="checkbox"/> Routine use of power scalers   | <input type="checkbox"/> Use of lasers                            |
| <input type="checkbox"/> Sequencing/value of polishing  | <input type="checkbox"/> Professional remineralization strategies |
| <input type="checkbox"/> Locally applied antimicrobials | <input type="checkbox"/> Pain control options                     |
| <input type="checkbox"/> Clinical tongue deplaquing     |   |

#### **Paradigm Shift: Daily Care**

- Powered plaque control devices
- Tongue cleaning
- Toothwhitening
- Chemotherapeutics
- The most effective daily oral care regime...is the one patient's will do!

## Minimally Invasive Dentistry [www.wcmidentistry.com](http://www.wcmidentistry.com) - World Congress of Minimally Invasive Dentistry

Minimally invasive dentistry (MID) is based on a medical model that controls the disease first and then uses minimally invasive techniques to restore the mouth to form, function, and aesthetics. The philosophy behind MID is respecting the health of oral tissue by preventing disease from occurring, or intercepting the disease process with minimal tissue loss.

MID allows dentists to become true physicians of the mouth, rather than tooth technicians. MID dentists continue to treat symptoms, but also manage the underlying disease and associated risk factors. MID focuses on the use of highly researched, leading edge, dental materials and products to control disease and to restore hard and soft tissue to the highest standard of form, function and aesthetics. The MID practitioner strives to use the most bio-mimetic and biocompatible materials currently available.

### **Disease Risk Assessment**

The two oral diseases that most dental practitioners face every day are caries and periodontal disease.

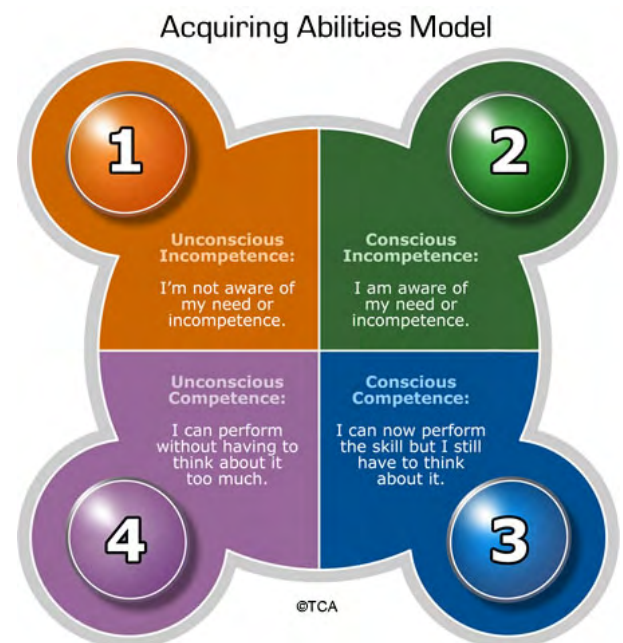
**Caries Management by Risk Assessment (CaMBRA):** The latest research shows that caries is a pathogenic bacterial infection of the tooth's natural biofilm and is a multifactorial disease. Measuring the bacterial load, learning the various contributory factors for each patient and assigning a risk level for each patient allows the practitioner to effectively help patients fight caries and the subsequent cavitations.

**Periodontal Risk and Disease Assessment (PRADA):** Periodontal Disease is a host response disease caused by a bacterial infection and is a multifactorial disease that includes a genetic component. Understanding how the body fights this infection and chronic inflammation, the genetic component and implementing new treatment modalities, such as chemical curettage and laser treatment, allow an increase in reattachment of tissue and potential bone regeneration.

**Biomimetics** – use of tissue preserving materials; mimicking of natural life; treatment in which the end result more closely mimics, behaves like or restores natural biology. Regeneration of damaged tissue using molecular information using the body's own cells and biochemistry as engineering materials.

### **Stages of Change in Practice Protocols...**

1. Unconscious Incompetence - The individual neither understands nor knows how to do something, nor recognizes the deficit, nor has a desire to address it.
2. Conscious Incompetence - Though the individual does not understand or know how to do something, he or she does recognize the deficit, without yet addressing it.
3. Conscious Competence - The individual understands or knows how to do something. However, demonstrating the skill or knowledge requires a great deal of consciousness or concentration.
4. Unconscious Competence - The individual has had so much practice with a skill that it becomes "second nature" and can be performed easily (often without concentrating too deeply). He or she may or may not be able to teach it to others, depending upon how and when it was learned.



## Protocol Considerations:

### Assessment Phase:

#### **Periodontal Risk Factors – American Academy of Periodontology:**

*“Guidelines for the Management of Patients with Periodontal Disease”*

*Journal of Periodontology – September, 2006*

- Early onset of periodontal diseases (prior to the age of 35 years)
- Unresolved inflammation at any site (e.g., bleeding upon probing, pus, and/or redness)
- Pocket depths *greater than or equal to* 5 mm
- Vertical bone defects
- Radiographic evidence of progressive bone loss
- Progressive tooth mobility
- Progressive attachment loss
- Anatomic gingival deformities

- Exposed root surfaces
- A deteriorating risk profile

#### *Medical or Behavioral Risk Factors/Indicators*

- Smoking/tobacco use
- Diabetes
- Osteoporosis/osteopenia
- Drug-induced gingival conditions (e.g., phenytoins, calcium channel blockers, immunosuppressants, and long-term systemic steroids)
- Compromised immune system, either acquired or drug induced
- A deteriorating risk profile

Visit [www.perio.org](http://www.perio.org) for self-assessment of periodontal risk

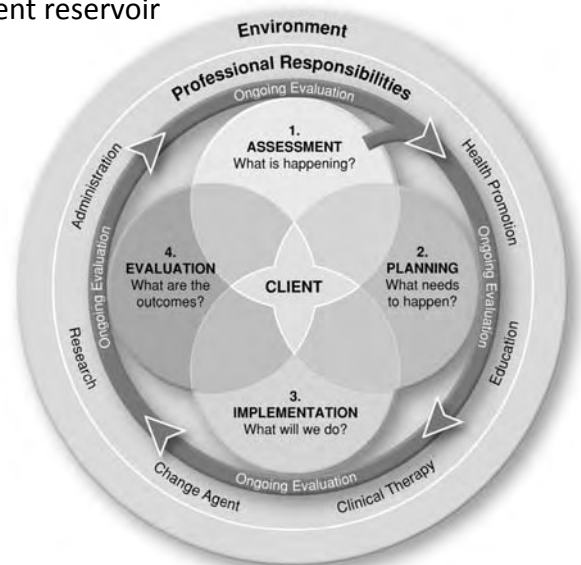
### **Occlusal Assessment: The Periodontal Connection**

- Aesthetic evaluation
- Occlusal evaluation

### Treatment/Instrumentation Phase:

#### **Accelerated Periodontal Instrumentation or Full-Mouth Disinfection**

- Schedule/complete quadrant scaling and root planning within 2 days to 2 weeks
- Utilize powered scaling instruments with medicament reservoir
- Laser therapy/treatment
- Additional therapies as indicated
- Daily care recommendations



## **Occlusal Assessments:**

*“Occlusal therapy is an integral part of periodontal therapy. Patients should be informed about the occlusal problem, therapeutic alternatives, potential complications, expected results, and their responsibility in treatment. Consequences of no treatment should be explained. Failure to treat occlusal traumatism appropriately in patients with chronic periodontitis may result in progressive loss of bone and an adverse change in prognosis, and could result in tooth loss. Given this information, patients should then be able to make informed decisions regarding their periodontal therapy.” J Periodontol 2000; 71:873-875.*

## **Seven Signs & Symptoms of Occlusal Disease:**

1. Pathological occlusal wear and fractures of teeth/restorations.
2. Cervical dentin hypersensitivity.
3. Tooth hypermobility.
4. Fremitus.
5. Abfractions.
6. Vertical bone loss or localized bone destruction (secondary to periodontal disease).
7. Pain and tired facial and masticatory muscles or TMJ pain.

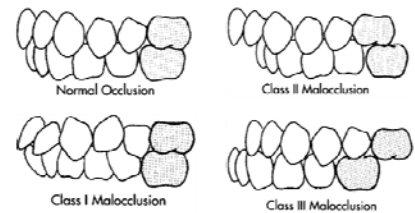
## **Orthodontic Six-Point Quick Check System:**

*Begin by examining each arch separately and evaluating the following categories:*

1. Arch width (molar-to-molar transpalatal width of 36 mm is average).
2. Excessive spacing or crowding present.
3. Missing or ankylosed teeth.

*Then note the relationship between the upper and lower teeth in occlusion. Evaluate the following:*

4. Angle’s classification.
5. The amount of overbite and overjet present.
6. Any openbite or crossbite present.



## **Facial Type:**

**Mesocephalic** – Jaw bones are in harmony with the rest of the face & with each other; teeth may be malposed & therefore need orthodontic treatment; most common facial type.

**Brachycephalic** – Jaw bones, usually the mandible, are too large in proportion to the face; the face appears short & wide; mandible is usually strong, angular, and possibly prognathic; tendency to brux & grind teeth leading to excessive wear to incisal & occlusal surfaces; when smiling very little tooth structure shows; strong muscles of mastication; from profile perspective the mouth area appears concave; extractions are rarely performed; older in appearance than age suggests.

**Dolichocephalic** – Jaw bones, usually the mandible, are too small in proportion to the face; the face appears long; mandible is usually retrognathic depicting a deficient horizontal growth; teeth can be long or appear large with a ‘gummy’ smile; weak muscles of mastication; from the profile perspective the mouth area appears convex; extractions are common in this facial type; appear younger than age would suggest; hereditary, thumb sucking, & mouth breathing are associated with this facial type; extractions are more commonly recommended with this facial type along with orthognathic surgery; considered more difficult to treat than other facial types.

## **Orthodontic Therapy/Treatment Options:**

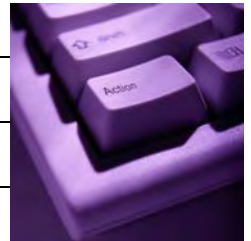
*Orthodontic medicine will treat tissue and bone...not just straighten teeth!*

- △ Traditional orthodontic fixed appliances, with ligation
- △ Two-Phase therapy includes early intervention and fixed traditional appliances
- △ Bio-Adaptive therapy considers tissue and bone while accelerating the tooth movement process, gaining arch width and generating oxygenation during tooth movement (self-ligated systems)
- △ Aligner technologies include a series of custom aligners worn sequentially over time
- △ Accelerated osteogenic orthodontics includes a combination of periodontal surgery and fixed appliances to accelerate the tooth movement process by removing alveolar bone and using bone regenerative materials

## Future “Shifts” ....

### 5 “UC” Action Items!

- 1.
- 2.
- 3.
- 4.
- 5.



Achieve unconscious competency!

### Resources – visit sites below of FREE current & archived issues, articles, etc.!

RDH Magazine ~ FREE/PRINT & ONLINE ~ [www.subscribe-rdhmag.com](http://www.subscribe-rdhmag.com)

Dimensions of Dental Hygiene ~ FREE/PRINT & ONLINE ~ [www.dimensionsofdentalhygiene.com/](http://www.dimensionsofdentalhygiene.com/)

Modern Hygienist ~ FREE/ONLINE ~ <https://www.advanstar.com/subscriptions/subscribe.asp?subid=183>

PERIO Reports ~ FREE/ONLINE with HygieneTown ~ [www.perioreports.com/](http://www.perioreports.com/) [www.hygienetown.com](http://www.hygienetown.com)

### Online National List Serves/ Groups/Resources:

[www.wcmidentistry.com](http://www.wcmidentistry.com) - World Congress of Minimally Invasive Dentistry

[www.perio.org](http://www.perio.org) – American Academy of Periodontology (periodontal classifications documents, etc.)

[www.laserdentistry.org](http://www.laserdentistry.org) - Academy of Laser Dentistry

[www.braces.org](http://www.braces.org) – American Academy of Orthodontists

[www.DamonBraces.com](http://www.DamonBraces.com) – Bio-adaptive orthodontic approaches, locate a Damon orthodontist and more.

[www.hygienetown.com](http://www.hygienetown.com) – join an electronic hygiene community with a vast variety of topics!

[www.adha.org](http://www.adha.org) – numerous list serves based on areas of interest

### Seminar Bibliography and Resources Available Upon Request - Kristy Menage Bernie, RDH, BS • RYT •

[info@EducationalDesigns.com](mailto:info@EducationalDesigns.com) • 925-735-3238 - Visit [www.EducationalDesigns.com/](http://www.EducationalDesigns.com/)!

## Full Mouth vs. Quadrant (Partial Mouth) Periodontal Therapy

Full-mouth disinfection (FMD) was introduced in 1995 and was designed to target intraoral niches and periodontal pockets and reduce the likelihood of reinfection of previously treated areas.

### **Partial Mouth Protocol:**

- Traditional quadrant scaling and root planing over a 6 week period of time at 2 week intervals
- 4 – 6 consecutive sessions
- Quadrant or sextant therapy
- Reinfection potential?
- Patient/ Client centered approach?

### **Research Protocol - FMD:**

- Scaling and root planing 4 quads in 24 hours with hand instruments
- Application of chlorhexidine to all intra-oral niches
- Tongue disinfection
- 2x a day rinse and/or spray of buccal mucosa and tonsil area combined with daily tongue disinfection

### **Research on the efficacy of FMD has proven that this protocol:**

- Improves probing depth and increases clinical attachment for up to 8 months.
- Reduces oral malodor
- Decreases spirochetes and motile organisms in subgingival flora
- Eliminates *P. gingivalis*

### **FMD provides the following additional benefits:**

- Fast-tracking of aesthetic treatment
- Rapid healing and/or assessment for surgical intervention
- Facilitates client-centered approach
- Minimizes time spent in Phase I therapy by facilitating control of treatment planning and patient compliance



*Contemporary research on adjunctive therapies always begins with full-mouth therapy that is completed in one to two weeks using both hand and powered instrumentation. This substantial body of research utilizing this process of care provides the full rationale to accelerate periodontal instrumentation in daily practice.*

❖ **Optimal Oral Health** - A standard of health of the oral and related tissues which enable an individual to eat, speak, or socialize without active disease, discomfort or embarrassment and which contributes to general well-being and overall health – ADHA, 1999.

# PROPOSED ACCELERATED INSTRUMENTATION PROTOCOL

2 appointments of appropriate length scheduled within 24 hours – to 2 weeks • ½ mouth per appointment

1. Pre-procedural antimicrobial rinse for 30 seconds
2. Anesthesia administration/ pain control procedures
3. Instrumentation
  - a. Pre-procedural polishing with desensitizing agent
  - b. Powered instrumentation with self-contained water / medicament reservoir and antimicrobial irrigant
  - c. Hand instrumentation
4. Laser Therapy
  - a. Bacterial decontamination of pocket sites (prior and post instrumentation)
  - b. Removal of diseased epithelial lining (post instrumentation in sites greater than 5mm)
5. Placement of locally delivery/ control release medicaments
6. Tongue deplaquing/ scraping with antimicrobial/VSC neutralizing agent
7. Post-procedural rinse for 30 seconds with antimicrobial/VSC neutralizing agent
8. Professional remineralization/desensitization therapies/application (CHX varnish, FI varnish)
9. Appropriate daily care recommendations from calcium phosphate products to CHX to prescription strength fluoride to automated plaque control devices.
10. 2 to 3 month evaluation
  - a. Utilization of diagnostic devices to assess clinical outcome
  - b. Placement of local delivery / controlled release agent for nonresponsive sites / or prescription for subgingival dosage doxycycline:
    - i. 2.5 mg chlorhexidine chip
    - ii. 10% doxycycline gel
    - iii. 1 mg minocycline microsphere power
    - iv. 20 mg systemic/ subgingival dosage doxycycline bid
  - c. Appropriate recare schedule
11. Re-evaluation at appropriate time with referral for non-responsive cases.
  - *Daily oral hygiene should include toothbrushing; interdental cleansing and tongue deplaquing along with appropriate adjunctive chemotherapy for caries prevention, sensitivity control and antimicrobial benefits.*

## IMPLEMENTING & INTEGRATION:

- Full-mouth disinfection, or accelerated instrumentation, accounts for a client- and clinician centered approach to periodontal therapy that maximizes clinical outcomes while providing immediate benefits.
- Utilization of ultrasonics and or lasers in FMD protocols will greater increase the likelihood of success and provide patients with the high-tech therapy they appreciate and deserve.
- Completing periodontal instrumentation within 1 to 2 weeks is an easy factor to control that will lend to fast-tracking aesthetic treatment plans, healing, and referral.



**The Use of Lasers in Periodontal Therapy – [www.perio.org](http://www.perio.org) – American Academy of Periodontology**

Limited research suggests that the use of lasers as an adjunct to scaling and root planing (SRP) may improve the effectiveness of this procedure. In addition, when the lasers are used properly during periodontal therapy there can be less bleeding, swelling and discomfort to the patient during surgery. However, each laser has different wavelengths and power levels that can be used safely during different periodontal procedures. Damage to periodontal tissues can result if an inappropriate wavelength and/or power level is used during a periodontal procedure.

Laser Assisted Periodontal Therapy – improves phase I periodontal therapy and is used as an adjunct to traditional scaling and root planing in order to reduce pocket depths. A diode laser allows for a non-surgical approach, gaining easier access to deeper calculus deposits after ablation of diseased epithelium and hemorrhage control. Laser energy selectively targets only darker, necrotic tissue and leaves healthy tissue alone, allowing for better healing and results.

**General Protocol:**

1. Review Health History
2. Anesthesia as needed
3. Disclose area that is being worked on at that appointment
4. Full Mouth Laser Bacterial Reduction - LBR
5. Ultrasonic Scaler/Hand Instrumentation
6. Laser Curettage pockets 4mm and above
7. LBR (again)
8. Lavage/Irrigate with preferred irrigant (Chlorhexidine)
9. Place chemotherapeutic agents
10. Place vitamin E on all lased areas
11. Give post-op instructions OHI
  - o No smoking for 48 hours
  - o No flossing or use of any interdental aid for three days
  - o No water irrigation device use during periodontal therapy
  - o Do not brush that evening; start next morning, but be gentle

Table 1. Current calcium phosphate technologies used to enhance remineralization.<sup>1-6</sup>

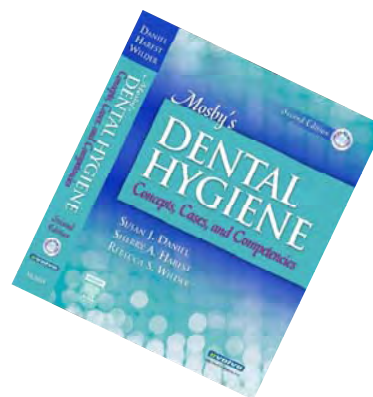
	Description	Mechanism of Action	Reported Benefits
Amorphous Calcium Phosphate (ACP)	ACP is a reactive and soluble calcium phosphate compound.	ACP releases calcium and phosphate ions to convert to apatite and remineralize when it comes in contact with saliva. ACP forms on the tooth enamel, as well as within the dentinal tubules, and provides a reservoir in the saliva.	Remineralization of acid erosion and abrasion, strengthens tooth enamel, improves enamel luster and surface smoothness, reduces dentinal hypersensitivity by occluding dentinal tubules, enhanced fluoride delivery system. <sup>3</sup>
Calcium Sodium Phosphosilicate (NovaMin®)	NovaMin is calcium sodium phosphosilicate, which contains calcium, phosphorous, sodium, and silica.	Novamin reacts with saliva, releasing Ca <sup>2+</sup> , P <sup>5+</sup> , and Na <sup>+</sup> into the oral environment. First the Na <sup>+</sup> buffers the acid and then the charged Ca <sup>2+</sup> and P <sup>5+</sup> ions saturate saliva precipitating into demineralized areas to form a new layer of hydroxyapatite filling the demineralized lesions.	Remineralizes tooth enamel and dentin, repairs and protects teeth against acid erosion and abrasion, reduces sensitivity, and kills the bacteria that cause caries and gingivitis. <sup>4</sup>
Casein Phosphopeptide-Amorphous Calcium Phosphate (Recaldent®)	Recaldent is casein phosphopeptide (CPP) and ACP. CPP is an organic molecule that is able to bind calcium and phosphate ions and stabilize ACP. CPP is a milk-derived protein.	The Ca and PO contained in the milk-derived peptide bind to the tooth surface. ACP is released during acidic challenges.	CPP and ACP adhere to plaque on the tooth surface and release calcium and phosphorous during acid exposure, increasing tooth remineralization; promotes fluoride uptake in plaque, inhibiting caries. <sup>5</sup>
Tri-calcium Phosphate (TCP)	Hybrid material created by the fusion of beta tricalcium phosphate and sodium lauryl sulfate.	The blending of beta tricalcium phosphate and sodium lauryl sulfate creates a functionalized calcium and a free phosphate.	Increases effectiveness of fluoride remineralization through the free floating of the phosphate, which prevents the calcium from interacting with the fluoride too soon. When the TCP is exposed to saliva, the barrier that prevented the calcium from interacting with the fluoride breaks down, allowing the calcium, phosphate, and fluoride ions to react with the teeth. <sup>6</sup>

## BOX 38-1

### PERIODONTAL INFECTION AND ORAL MALODOR

1. Periodontal disease is caused by anaerobic and facultative protein-utilizing bacteria.
2. Bacteria are located in periodontal pockets, deeper than 4 mm, and older established plaque biofilm where sulfur-containing substrates are available.
3. Subgingival anaerobes, such as *Porphyromonas gingivalis*, *Prevotella* spp., and many others, reduce sulfur-containing amino acids to hydrogen sulfide (H<sub>2</sub>S), methyl mercaptan (CH<sub>3</sub>SH), and dimethyl sulfide (CH<sub>3</sub>SCH<sub>3</sub>), referred to as *volatile sulfur compounds* (VSCs). VSCs are some of the specific by-products of bacterial metabolism of many different host substrates, including, but not limited to, crevicular fluid constituents, leukocytes, gingival bleeding, epithelial cells, and other bacteria and their constituents.
4. VSCs are released into the oral environment where they mix with expired air and contribute to malodor.
5. VSCs might contribute to the pathogenesis of periodontitis because they have pathogenic potential on a variety of host cells and processes.
6. The plaque biofilm associated with periodontitis lesions lead bacteria to other oral sites, such as the tongue dorsum, where they colonize and contribute to the total oral malodor status.

Adapted from Newman M: The role of periodontitis in oral malodour: clinical perspectives. In van Steenberghe D, Rosenberg M, eds: *Bad breath: a multidisciplinary approach*, Leuven, Belgium, 1996, Leuven University Press, pp 3-14.



## BOX 38-4

### TONGUE DEPLAQUING PROCEDURE

1. With the patient observing the procedure, have the patient extend his or her tongue and place an antibacterial agent to the surface of the tongue.
2. Apply light pressure and place the tongue-cleaning device as far posterior on the surface of the tongue as possible.
3. Gently move the cleaning device forward and remove the tongue coating or debris via suction or 2- × 2-inch gauze square. Repeat as needed.
4. Take the opportunity to explain that this process will help reduce oral malodor when implemented on a daily basis.

## BOX 38-5

### ACTIVE AGENTS FOR NEUTRALIZING VOLATILE SULFUR COMPOUNDS AND CONTROLLING GRAM-NEGATIVE ORAL FLORA

- Zinc: recognized and effective VSC-neutralizing agent
- Essential oils: recognized antimicrobial agents affecting VSC-producing organisms
- Chlorhexidine gluconate: broad-spectrum antimicrobial agent that also neutralizes VSCs
- Chlorine dioxide: recognized VSC-neutralizing agent
- Cetylpyridinium chloride: recognized mild antimicrobial agent affecting VSC-producing organisms
- Triclosan: recognized mild antimicrobial agent affecting VSC-producing organisms
- Combination of these agents to achieve antimicrobial and VSC-neutralizing results (i.e., for oral malodor control, an antimicrobial agent and neutralizing agent; products that combine agents for optimal oral malodor control)

VSCs, Volatile sulfur compounds.

## BOX 38-6

### DISCUSSING ORAL MALODOR DURING THE DENTAL HYGIENE EXPERIENCE

- Assess use of oral malodor-related products.
- Correlate probing depth of more than 4 mm with oral malodor.
- Deplaque the tongue, and *show* patients the biofilm or tongue coating substance.
- Use positive dialog (maintain fresh breath versus eliminate bad breath).

## Comprehensive Periodontal Therapy: A Statement by the American Academy of Periodontology\*

*The American Academy of Periodontology (AAP) periodically publishes reports, statements, and guidelines on a variety of topics relevant to periodontics. These papers are developed by an appointed committee of experts, and the documents are reviewed and approved by the AAP Board of Trustees.*

The American Academy of Periodontology offers the following statement that sets forth the scope, objective, and procedures that constitute periodontal therapy. This statement is provided to assist all members of the dental team who provide periodontal care and should be considered in its entirety. This statement may also be useful to those who supervise, teach, or regulate the provision of periodontal therapy.

### SCOPE OF PERIODONTAL THERAPY

As a result of advances in knowledge and therapy, the majority of patients can retain their dentition over their lifetime with proper treatment, reasonable plaque/biofilm control, and continuing care. Periodontics is the specialty of dentistry that encompasses prevention, diagnosis, and treatment of diseases of the supporting and surrounding tissues of teeth and dental implants.

The scope of the specialty of periodontics also encompasses maintenance of the health, function, comfort, and esthetics of all supporting structures and tissues in the mouth. The goals of periodontal therapy are to preserve, improve, and maintain the natural dentition, dental implants, periodontium, and peri-implant tissues in order to achieve health, comfort, esthetics, and function. A healthy periodontium is characterized by the absence of inflammation, which may appear clinically as redness, swelling, suppuration, and bleeding on probing.

### PERIODONTAL EVALUATION

A comprehensive assessment of a patient's current health status, history of disease, and risk characteris-

tics is essential to determine the periodontal diagnosis and prognosis of the dentition and/or the suitability of dental implants. Patients should receive a comprehensive periodontal evaluation and their risk factors should be identified at least on an annual basis. Such an evaluation includes discussion with the patient regarding his/her chief complaint, medical and dental history review, clinical examination, and radiographic analysis. Microbiologic, genetic, biochemical, or other diagnostic tests may also be useful, on an individual basis, for assessing the periodontal status of selected individuals or sites. The following procedures should be included in a comprehensive periodontal evaluation:

1. Extra- and intraoral examination to detect non-periodontal oral diseases or conditions.
2. 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.
3. Assessment of the presence, degree, and/or distribution of plaque/biofilm, calculus, and gingival inflammation.
4. Dental examination including caries assessment, proximal contact relationships, the status of dental restorations and prosthetic appliances, and other tooth- or implant-related problems.
5. 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.
6. Interpretation of current and comprehensive diagnostic-quality radiographs to visualize each tooth and/or implant in its entirety and assess the quality/quantity of bone and establish bone loss patterns.
7. Evaluation of potential periodontal-systemic interrelationships.
8. Assessment of the need for and suitability of dental implants.
9. Determination and assessment of patient risk factors such as age, diabetes, smoking, cardiovascular disease, and other systemic conditions associated

\*This statement was developed under the direction of the Task Force to Update the Guidelines for Periodontal Therapy and approved by the Board of Trustees of the American Academy of Periodontology in November 2010.

DISCLAIMER: This statement represents the views of the Academy regarding periodontal therapy and related procedures. It must be recognized, however, that decisions with respect to the treatment of patients must be made by the individual practitioner in light of the condition and needs of each specific patient. Such decisions should be made in the best judgment of the practitioner, taking into account all relevant circumstances.

NOTE: The Academy updates guidelines and statements on a periodic basis. All previous publications should be considered in light of their historical context with regard to current knowledge and practices.

doi: 10.1902/jop.2011.117001

with development and/or progression of periodontal disease.

### ESTABLISHING A DIAGNOSIS, PROGNOSIS, AND TREATMENT PLAN

Clinical findings together with a diagnosis and prognosis should be used to develop a logical plan of treatment to eliminate or alleviate the signs and symptoms of periodontal diseases, thereby arresting or slowing further disease progression. The treatment plan should be used to establish the methods and sequence of delivering appropriate periodontal treatment, which may include non-surgical, surgical, regenerative, and cosmetic periodontal therapy or dental implant placement. When indicated, the plan should include:

1. Medical and dental consultation or referral for treatment, when appropriate.
2. Surgical and non-surgical periodontal and implant procedures to be performed.
3. Consideration of adjunctive restorative, prosthetic, orthodontic, and/or endodontic consultation or treatment.
4. Provision for ongoing reevaluation during periodontal or dental implant therapy and throughout the maintenance phase of treatment.
5. Consideration of diagnostic testing that may include microbiologic, genetic, or biochemical assessment or monitoring during the course of periodontal therapy.
6. Consideration of risk factors including, but not limited to, diabetes and smoking, which play a role in development, progression, and management of periodontal diseases.
7. Periodontal maintenance program including ongoing evaluation and reevaluation for treatment.

### INFORMED CONSENT AND PATIENT RECORDS

Informed consent should be obtained prior to the commencement of therapy. Complete records of the periodontal examination (including full charting), diagnosis, treatment, and recommended follow-up are essential and should be maintained according to state law. Information given to the patient should include the following:

1. The diagnosis, etiology, proposed therapy, possible alternative treatment(s), and the prognosis with and without the proposed therapy or possible alternatives.
2. Recommendations for treatment to be performed by other dentists or physicians.
3. The reasonably foreseeable inherent risks and potential complications associated with the proposed therapy, including failure with the ultimate loss of teeth or dental implants.

4. The need for periodontal maintenance treatment after active therapy due to the potential for disease recurrence.

### TREATMENT PROCEDURES

When indicated, treatment should include:

1. Patient education, training in oral hygiene, and counseling on control of risk factors (e.g., stress, medical status, smoking, etc.) with appropriate referral if needed.
2. Management of periodontal–systemic interrelationships, when appropriate.
3. Removal of supra- and subgingival bacterial plaque/biofilm and calculus by comprehensive, meticulous periodontal scaling and root planing. In some instances, these procedures may be incorporated into the surgical treatment.
4. Chemotherapeutic agents may be used as appropriate to reduce, eliminate, or change the quality of microbial pathogens, or to alter the host response through local or systemic delivery.
5. Resective procedures to reduce or eliminate periodontal pockets and create an acceptable gingival form that facilitates oral hygiene and periodontal maintenance. Soft tissue procedures include gingivectomy, gingivoplasty, and various mucogingival flap procedures. Osseous procedures include ostectomy and osteoplasty. Dental tissue procedures include root resection, tooth hemisection, and odontoplasty. Combined dental tissue and osseous procedures may be required.
6. Periodontal regenerative procedures including bone replacement grafts, use of biologics, root biomodification, guided tissue regeneration, and combinations of these procedures for osseous, furcation, and gingival recession defects. Periodontal/oral reconstructive procedures include guided bone regeneration, ridge augmentation, ridge preservation, implant site development, and sinus grafting.
7. Periodontal plastic surgery for gingival augmentation, correction of recession or soft tissue deformities, or enhancement of oral esthetics.
8. Occlusal therapy that may include tooth movement, occlusal adjustment, splinting, periodontally accelerated osteogenic orthodontics, or biteguard therapy as a means to establish and maintain occlusal health.
9. Preprosthetic periodontal procedures including exploratory flap surgery, resective procedures, regenerative procedures, mucogingival procedures, or crown lengthening.
10. Selective extraction of teeth, roots, or implants.
11. Surgical placement of dental implants and management of peri-implant disease.
12. Procedures to facilitate orthodontic treatment including tooth exposure, frenulectomy, fiberotomy,

temporary anchorage devices, and gingival augmentation.

13. Finishing procedures, which include post-treatment evaluation with review and reinforcement of daily oral hygiene when appropriate.

### EVALUATION OF THERAPY

Upon completion of planned periodontal therapy, the record should document that:

1. The patient has been counseled on why and how to perform an effective daily personal oral hygiene program including managing their own personal risk factors associated with development and/or progression of periodontal diseases.
2. All indicated therapeutic procedures have been performed.
3. The patient's response to therapy has been evaluated, and treatment objectives have been met.
4. A recommendation has been made for the correction of any tooth form, tooth position, restoration, or prosthesis considered to be contributing to the periodontal disease process.
5. An appropriate professional periodontal maintenance program, specific to individual circumstances, has been recommended to the patient for long-term control of his/her condition, as well as for the maintenance of dental implants, if present. This should include professional management of those risk factors associated with development and/or progression of periodontal diseases including, but not limited to, smoking and diabetes.

### FACTORS MODIFYING RESULTS

The results of periodontal therapy may be adversely affected by factors that include systemic diseases; inadequate plaque/biofilm control; unknown or undeterminable etiologies; pulpal-periodontal problems; inability or failure of the patient to follow the suggested treatment or maintenance program; adverse environmental influences such as smoking and stress; occlusal dysfunction; and uncorrectable anatomic, structural, or iatrogenic causalities.

Patients with medical compromises, those who refuse or delay treatment, or those who present with other limitations may be unable to undergo recommended procedures required to establish a completely healthy periodontium. In those situations, appropriate therapy to establish the best possible periodontal health is indicated.

### PERIODONTAL MAINTENANCE THERAPY

Upon completion of active periodontal therapy, periodontal maintenance visits should include:

1. Update of medical and dental histories.

2. Evaluation of current extra- and intraoral periodontal and peri-implant soft tissues as well as dental hard tissues and referral when indicated (e.g., for treatment of carious lesions, pulpal pathoses, or other conditions) and diagnostic-quality radiographs when appropriate.

3. Assessment of the oral hygiene status with reconstruction when indicated.

4. Mechanical tooth cleaning to disrupt/remove dental plaque, biofilms, stain, and calculus. Local delivery or systemic chemotherapeutic agents may be used as adjunctive treatment for recurrent or refractory disease.

5. Ongoing assessment of risk factors to identify an individual who may be more highly susceptible to ongoing breakdown of the periodontal or peri-implant tissues, with elimination or mitigation of new or persistent risk and etiologic factors with appropriate treatment.

6. Identification and treatment of new, recurrent, or refractory areas of periodontal and peri-implant pathoses.

7. Establishment of an appropriate interval for periodontal maintenance.

The patient should be kept informed of:

1. Areas of persistent, recurrent, refractory, or newly occurring periodontal or peri-implant disease.
2. Changes in the periodontal prognosis and risk factors associated with periodontal diseases.
3. Advisability of further periodontal treatment or retreatment of indicated sites.
4. Status of dental implants.
5. Other oral health problems that may include caries, defective restorations, and non-periodontal mucosal diseases or conditions.
6. Changes that would warrant referral to, or consultation with, other dental or medical specialists.

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# COMPREHENSIVE PERIODONTAL EVALUATION CHECKLIST

Patient Name: \_\_\_\_\_

Clinician: \_\_\_\_\_

Date of Evaluation: \_\_\_\_ / \_\_\_\_ / \_\_\_\_

**Instructions:**

- Review each of the six elements listed below
- Mark your initial by each "Specific Consideration"
- Refer to other patient information, radiographs etc. in the "Notes" section

**1. TEETH, DENTAL IMPLANTS AND SUBGINGIVAL AREA**

Initials	Specific Considerations	Notes
	pocket depths	
	width of keratinized tissue	
	gingival recession	
	attachment level	
	bleeding on probing	
	furcation status	
	presence of inflammation	

**2. PLAQUE/BIOFILM**

Initials	Specific Considerations	Notes
	presence, degree, and/or distribution of plaque/biofilm	
	presence, degree, and/or distribution of calculus	

**3. DENTITION**

Initials	Specific Considerations	Notes
	caries	
	proximal contact relationships	
	endodontic/periodontal lesions	
	status of dental restorations and prosthetic appliances	
	other tooth or implant related problems	

**4. OCCLUSION**

Initials	Specific Considerations (but not be limited to)	Notes
	degree of mobility of teeth and dental implants	
	occlusal patterns	
	fremitus	

**5. DIAGNOSTIC QUALITY RADIOGRAPHS**

Initials	Specific Considerations	Notes
	quality/quantity of bone	
	bone loss patterns	

**6. DISCUSSION OF PATIENT RISK FACTORS**

Initials	Specific Considerations	Notes
	age	
	diabetes	
	smoking	
	cardiovascular disease	
	other	