

# Hot Topics in Periodontology



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## Evidence-based publications/websites for information on products/treatments

1. PubMed: [www.pubmed.gov](http://www.pubmed.gov)
2. American Academy of Periodontology: [www.perio.org](http://www.perio.org)  
Comprehensive Periodontal Therapy: A Statement by the American Academy of Periodontology. J Periodontol, July 2011  
AAP Statement on the Efficacy of Lasers in the Non-Surgical Treatment of Inflammatory Periodontal Disease, J Periodontol, April 2011  
**Editor's Consensus Report:** The American Journal of Cardiology and Journal of Periodontology Editors' Consensus: Periodontitis and Atherosclerotic Cardiovascular Disease. J Periodontol, July 2009  
2008 Workshop on Inflammation; Inflammation and Periodontal diseases: A Reappraisal.  
2003 Workshop on Contemporary Science in Clinical Periodontics  
**Position Papers:**  
The role of supra-and subgingival irrigation in the treatment of periodontal diseases. 2005  
Implications of Genetic Technology for the Management of Periodontal Diseases- 2005  
Systemic Antibiotics in Periodontics -2005  
Current understanding of the role of microscopic monitoring, baking soda and hydrogen peroxide in the treatment of periodontal disease- 1998  
Modulation of the host response in periodontal therapy- 2002  
Sonic and ultrasonic scalers in periodontics. 2000  
Treatment of plaque-induced gingivitis, chronic periodontitis, and other clinical conditions. 2001  
Periodontal Maintenance-2003  
Periodontal management of patients with Cardiovascular Disease-2002  
Guidelines for Referral-2006  
**Academy Statements:**  
The Efficacy of Lasers in the Non-surgical Treatment of Inflammatory Periodontal Disease 2011  
Comprehensive Periodontal Therapy 2010  
Periodontal Management of the Pregnant Patient 2004
3. [www.blackwellpublishing.com](http://www.blackwellpublishing.com)  
J Clinical Periodontology  
Periodontology 2000  
International Journal of Dental Hygiene
4. National Institute of Dental and Craniofacial Research (NIDCR): [www.nidcr.nih.gov](http://www.nidcr.nih.gov)
5. International/American Association for Dental Research:  
[www.dentalresearch.org](http://www.dentalresearch.org)  
Advances in Dental Research
6. American Dental Association: [www.ada.org](http://www.ada.org)
7. American Dental Hygienists' Association: [www.adha.org](http://www.adha.org)
8. Canadian Dental Hygienists' Association: [www.cdha.ca](http://www.cdha.ca)
9. Journal of Dental Hygiene <http://www.adha.org/publications/>
10. Cochrane Collaboration: [www.cochrane.org](http://www.cochrane.org)
11. American Diabetes Association: [www.diabetes.org](http://www.diabetes.org) and [professional.diabetes.org](http://professional.diabetes.org)
12. American Heart Association: [www.americanheart.org](http://www.americanheart.org)

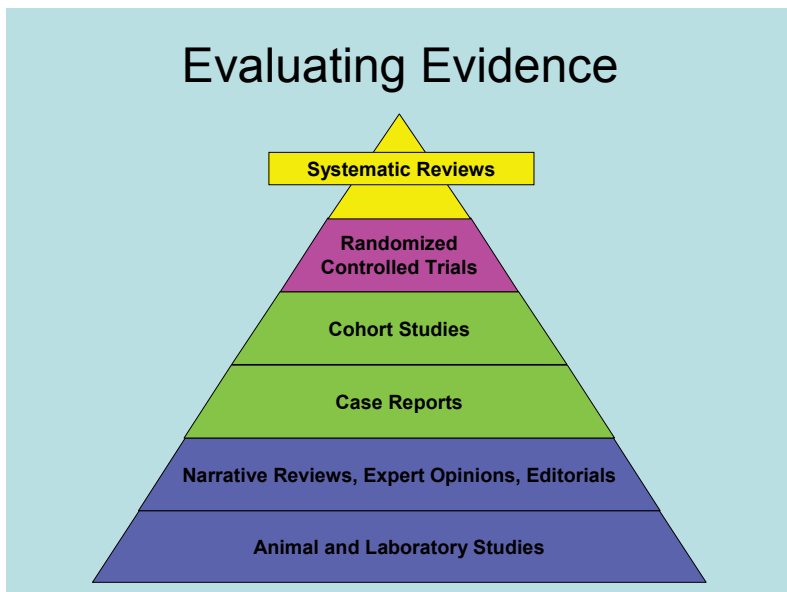
### *Informative Corporate Websites*

13. Procter & Gamble Company: [www.dentalcare.com](http://www.dentalcare.com)  
Journal of Contemporary Dental Practice
14. Colgate Oral Pharmaceuticals: [www.colgate.com](http://www.colgate.com)\* White papers on oral-systemic health
15. OraPharma, Inc: [www.arestin.com](http://www.arestin.com)
16. Dimensions of Dental Hygiene: [www.dimensionsofdentalhygiene.com](http://www.dimensionsofdentalhygiene.com)
17. Johnson & Johnson McNeil-PPC, Inc. [www.listerine.com](http://www.listerine.com)
18. PerioSciences-- <http://www.periosciences.com/control/main>

**\*List is not all-inclusive; Handout not to be reproduced, Rebecca Wilder, 2014**

### ***Definitions:***

**Evidence based practice:** EB practice is an approach to the care and treatment of patients wherein the health professional includes the "conscientious, explicit, and judicious use of the most current, best evidence in making clinical decisions regarding the care of individual patients." Evidence-based practice is a process that restructures the way health professionals think about clinical problems. Traditionally, health professionals have placed high value on their accumulated personal knowledge and adherence to long-held standard practices when making clinical decisions. Conversely, an EB approach encourages the professional's integration of the resulting knowledge with clinical expertise and patient preferences to determine the best treatment for individual patients. EB practice therefore requires the blending of research knowledge with provider experience.<sup>1-5</sup>



**Chemotherapeutic agent:** chemical substance that provides a clinical therapeutic benefit.<sup>6</sup> Used to eliminate, reduce, or alter the effect of microorganisms in the oral cavity, preferably the pathogenic microorganisms, or to effect a change in the host response. They may be applied locally, orally or parenterally.<sup>7</sup>

**Antimicrobial agent:** chemotherapeutic agent that works by reducing the number of bacteria present.<sup>6</sup>

**Antibiotics:** naturally occurring, semisynthetic or synthetic types of antimicrobials agent that destroys or inhibits the growth of selective microorganisms, generally in low concentrations.<sup>6</sup>

**Antiseptics:** chemical antimicrobials agents that are applied topically or subgingivally to mucous membranes, wounds, or intact dermal surfaces to destroy microorganisms and inhibit their reproduction or metabolism.<sup>6</sup> In dentistry, antiseptics are widely used as the active ingredient in antiplaque and antigingivitis mouthrinses and dentifrices.<sup>6-8</sup>

**Substantivity:** the ability of the agent to remain in an area or site and resist becoming diluted or washed away by gingival crevicular fluid or salivary action.<sup>6</sup>

#### References:

1. Ciancio SG: ADA Guide to Dental Therapeutics. 2007
2. Sackett D, Rosenberg W, Gray J, Haynes R, Richardson W: Evidence-based medicine: What it is and what it isn't. *Br Med J* 1996;312:71-72.
3. Niederman R, Badome R: Tradition-based dental care and evidence-based dental care. *J Dent Res* 1999;78(7):1288-1291.
4. Evidence based decision making. Forrest JF, Miller SA. In *Mosby's Dental Hygiene: Concepts, Cases and Competencies* by Daniel, Harst, and Wilder. Elsevier, 2008
5. Bader J, Ismail A, Clarkston J: Evidence-based dentistry and the dental research community. *J Dent Res* 1999;78(9):1480-1483.
6. Chemotherapeutics. Goldie M, Ciancio S, Wilder R. in *Mosby's Dental Hygiene Concepts, Cases and Competencies*. Daniel, Harst & Wilder. CV Mosby. St Louis, MO. 2008 2nd Ed.
7. Jolkovsky DL and Ciancio SB in *Clinical Periodontology*. Newman, Takei, Carranza. W.B. Saunders Co. Philadelphia, PA. 9<sup>th</sup> Ed. 2002.

### Commonly used Antimicrobial Rinses:

**Chlorhexidine:** Product names: Peridex™\*, Periogard™ PerioRx™

**Active ingredient:** CHX 0.12%

**Mechanism of action:** Rupture of the bacterial cell membrane and precipitation of the cytoplasmic contents.

**Alcohol content:** 11.6%; no alcohol in GUM CHX product

**Advantages:** Good substantivity

**Disadvantages:** extrinsic staining, temporary alteration in taste, increase in supragingival calculus

**Usage:** 15mL swished for 30 sec and expectorated; BID

**Study results:** 45-61% plaque and gingivitis reduction

**Essential Oils:** Product names: Listerine™ \*

**Active ingredient:** 0.092% eucalyptol, 0.062% thymol, 0.06% methyl salicylate, 0.042% menthol.

**Mechanism of action:** Inhibits plaque formation and/or adhesion.

**Alcohol content:** 21.6-26.9%

**Advantages:** inhibits bacterial enzymes and reduces pathogenicity of plaque

**Disadvantages:** sloughing of mucosa with prolonged use, burning sensation, bitter taste, drying out of mucous membranes; poor substantivity

**Usage:** 20mL swished full strength for 30 sec and expectorated

**Study results:** 19-35% plaque reduction; 15-37% gingivitis reduction

\*Please note that CHX rinses no longer carry the ADA Seal as only OTC products are now eligible for the ADA Seal.

**Cosmetic Mouthrinses including CPC Rinses:** Product names: Cepacol™, Scope™, Oxyfresh™, Oral B Antiplaque™, Listermint™, Lavoris™, Clear Choice™, BreathRx™, Crest Pro-Health™ (anti-plaque), Crest Invigorating Clean Multi-Protection Rinse™

**Active ingredient:** Zinc chloride (Listermint™), cetylpyridium chloride (0.045-0.07%)

**Mechanism of action:** Disrupts cell wall integrity

**Alcohol content:** 0-18%

**Advantages:** Masks oral odor (temporarily)

**Disadvantages:** Low substantivity, tooth staining in some patients, soft tissue irritation

**Usage:** Individual choice

**Study results:** 14% plaque reduction; 24% gingivitis reduction

Crest Pro-Health™ rinse has been granted the Canadian Dental Association Seal of Recognition.

**Stannous Fluoride Gels:** Product names: OmniGel™, GelKam™,

**Active ingredient:** Stannous fluoride (0.4%)

**Mechanism of action:** Interferes with bacterial metabolism.

**Alcohol content:** 0%

**Disadvantages:** ulceration of oral mucosa, tooth staining, extrinsic staining, temporary alteration in taste, increase in supragingival calculus

**Usage:** 2x daily

**Study results:** Weak short term clinical effects

**Stannous Fluoride Rinses:** Product names: PerioMed™, Perfect Choice®

**Active ingredient:** Stannous fluoride (0.63%)

**Mechanism of action:** Interferes with bacterial metabolism.

**Alcohol content:** 0%

**Advantages:**

**Disadvantages:** ulceration of oral mucosa, tooth staining, extrinsic staining, temporary alteration in taste, increase in supragingival calculus

**Usage:** Rinse daily

**Study results:** Weak short term clinical effects

References:

1. *ADA Guide to Dental Therapeutics*. 1998, 2002, 2004, 2007, 2009

## **Products for the Treatment of Chronic Periodontitis- Local Drug Delivery**

**Arestin™** OraPharma, Inc.

Minocycline hydrochloride (antibiotic)

FDA clearance

Longest study-9 months

Ease of application-easy

Characteristics:

- Broad spectrum-effective against periodontal pathogens

- Releases & maintains effective drug concentrations

- Biodegradable

- Clinical efficacy

- Adjunctive benefit to SC/RP

Cost: approximately \$10.59-\$16.03 per cartridge (1 site): Recommend charging \$25.00-30.00

[www.arestin.com](http://www.arestin.com)

**Atridox®** Zila, Inc.

Doxycycline hyclate (10%)

FDA Clearance

Longest study-9 months

Ease of application: easy-moderate

Characteristics

- Effective against periodontal pathogens

- Releases & maintains effective drug concentrations

- Biodegradable

- Clinical efficacy

Cost: approximately \$60.00 Syringe (approx. 5-7 sites)

**PerioChip®** Dexcel Pharma

Chlorhexidine (antiseptic)

FDA clearance

Longest study-9 months

Ease of application: easy

Characteristics:

- Effective against periodontal pathogens

- Releases/maintains effective drug concentrations

- Easy to use; Biodegradable

- Minimal risk for bacterial resistance

- Tested for use every 3 months if indicated

- Adjunctive benefit to SC/RP

Cost: approximately \$17.00 per Chip (1 site)

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**Comprehensive Periodontal Therapy—Updated by AAP in 2010: Available at [http://www.perio.org/resources-products/pdf/periodontal-therapy\\_statement.pdf](http://www.perio.org/resources-products/pdf/periodontal-therapy_statement.pdf)**

- Scope of Periodontal Therapy
- Periodontal Evaluation
- Establishing a Diagnosis, Prognosis, and Treatment Plan
- Informed Consent and Patient Records
- Treatment Procedures
- Evaluation of Therapy
- Factors Modifying Results
- Periodontal Maintenance Therapy

**Bacteria associated with periodontitis**

- **Moderate evidence for etiology**
  - Campylobacter rectus
  - Eubacterium nodatum
  - Fusobacterium nucleatum
  - Prevotella intermedia
  - Peptostreptococcus micros
  - Streptococcus intermedius-complex
  - Treponema denticola
- **Strong evidence for etiology**
  - Aggregatibacter actinomycetemcomitans (Aa)
  - Porphyromonas gingivalis (Pg)
  - Tannerella forsythensis- (Tf)
  - (Bacteroides forsythus) (Bf)

*Annals of Periodontology 1:928, 1996*



## Free Publications

1. Genco RJ and Williams RC. Periodontal Disease and Overall Health: A Clinician's Guide. 2010 <http://www.colgateprofessional.com/professionaleducation/Periodontal-Disease-and-Overall-Health-A-Clinicians-Guide/article>
2. Spolarich AE, Andrews L. An examination of the bleeding complications associated with herbal supplements, antiplatelet and anticoagulant medications. *J Dent Hyg.* 2007 <http://www.adha.org/jdh/articles/JDHHerbalSuppl.pdf>
3. Scientific American Oral and Whole Body Health. <http://www.dentalcare.com/search/index.htm>
4. Colgate White Papers. <http://www.colgateprofessional.com/app/ColgateProfessional/US/EN/Products/ProductItems/ColgateTotal/WhitePapers.cvsp>
5. ADA Policy on Evidence Based Dentistry. <http://www.ada.org/prof/resources/positions/statements/evidencebased.asp>
6. Mealey BL and Oates TW. Diabetes mellitus and periodontal diseases. *J Periodontol* 2006;77:1289-1303. <http://www.perio.org/resources-products/pdf/lr-diabetes.pdf>
7. Cobb C. Lasers in periodontics: a review of the literature. *Periodontol* 2006;77:545-564. <http://www.perio.org/resources-products/pdf/lr-lasers.pdf>
8. AAP Position Paper: Implications for genetic technology for the management of periodontal diseases. *Periodontol* 2005;76:850-857. <http://www.perio.org/resources-products/pdf/47-genetics.pdf>
9. Gurenlian J. Inflammation: The relationship between oral health and systemic disease. Access, April 2006. [http://www.adha.org/downloads/sup\\_inflammation.pdf](http://www.adha.org/downloads/sup_inflammation.pdf)
10. Gurenlian JR. The role of dental plaque biofilm in oral health. *J Dent Hyg.* Special Supplement 2007. [http://www.adha.org/downloads/Antimicrobial\\_JDH\\_Supplement.pdf](http://www.adha.org/downloads/Antimicrobial_JDH_Supplement.pdf)
11. DePaola LG, Eshenaur Spolarich A. Safety and efficacy of antimicrobial mouthrinses in clinical practice. *J Dent Hyg.* Special Supplement 2007. [http://www.adha.org/downloads/Antimicrobial\\_JDH\\_Supplement.pdf](http://www.adha.org/downloads/Antimicrobial_JDH_Supplement.pdf)
12. Asadoorian J. Strategies for incorporating antimicrobial mouthrinses into daily oral care. *J Dent Hyg.* Special Supplement 2007. [http://www.adha.org/downloads/Antimicrobial\\_JDH\\_Supplement.pdf](http://www.adha.org/downloads/Antimicrobial_JDH_Supplement.pdf)
13. Jared H, Boggess K. Periodontal Diseases and Adverse Pregnancy Outcomes: A Review of the Evidence and Implications for Clinical Practice. *J Dent Hyg* <http://www.adha.org/publications/index.html>
14. Cobb C. Microbes, inflammation, scaling and root planning, and the periodontal condition. *J Dent Hyg* 2008; 3-9.
15. Paquette DW, Ryan ME, Wilder RS. Locally delivered antimicrobials: clinical evidence and relevance. *J Dent Hyg* 2008; 10-15.
16. Sweeting LA, Davis K, Cobb CM. Periodontal treatment protocol (PTP) for the general dental practice. *J Dent Hyg* 2008; 16-25.
17. Gurenlian JR., Ball WL, Fontaine JL. Diabetes Mellitus: Promoting Collaborations Among Health Care Professionals. *J Dent Hyg* 2008; 83:1-13.
18. Rethman M. Inflammation and Periodontal Science: What we know now and What the Future may Hold. *Dimensions of Dental Hygiene* May, 2009.

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## **Free Patient Resources:**

[American Diabetes Association: Cardiovascular Disease Toolkit](http://professional.diabetes.org/ResourcesForProfessionals.aspx?typ=17&cid=60459)  
<http://professional.diabetes.org/ResourcesForProfessionals.aspx?typ=17&cid=60459>

All about Pre-diabetes  
Getting the Very Best Care for your Diabetes  
Taking Care of Type 2 Diabetes  
All About Your Blood Glucose for People with Type 2 Diabetes  
All About Insulin Resistance  
Protect Your Heart: Make Wise Food Choices  
Protect Your Heart: Choose Fats Wisely  
Protect Your Heart: Cook with Heart Healthy Foods  
Protect your Heart: Check Food Labels to Make Heart-Healthy Choices  
Protect Your Heart by Losing Weight  
Recognizing and Handling Depression for People with Diabetes  
Treating High Blood Pressure in People with Diabetes  
Taking Care of Your Heart  
Know the Warning Signs of a Heart Attack  
All About Stroke

[National Institutes of Health / National Institute of Dental and Craniofacial Research](http://www.nidcr.nih.gov/OralHealth/)  
<http://www.nidcr.nih.gov/OralHealth/>

Burning Mouth Syndrome  
Cancer Treatment and Oral Health  
Cleft Lip and Palate  
Developmental Disabilities and Oral Health  
Diabetes and Oral Health  
Dry Mouth (Xerostomia)  
Fillings (Amalgams)  
Fluoride  
Genetics  
Gum (Periodontal) Diseases  
Heart Disease and Oral Health  
HIV/AIDS  
Oral Cancer  
Organ Transplantation and Oral Health  
Pain (oral, facial)  
Pregnancy and Oral Health  
Saliva and Salivary Gland Disorders  
Sjögren's Syndrome  
Spit (Smokeless) Tobacco  
Taste Disorders  
TMJ (Temporomandibular Joint and Muscle Disorders)  
Tooth Decay (Caries)

