



Periodontal Disease Management/Treatment





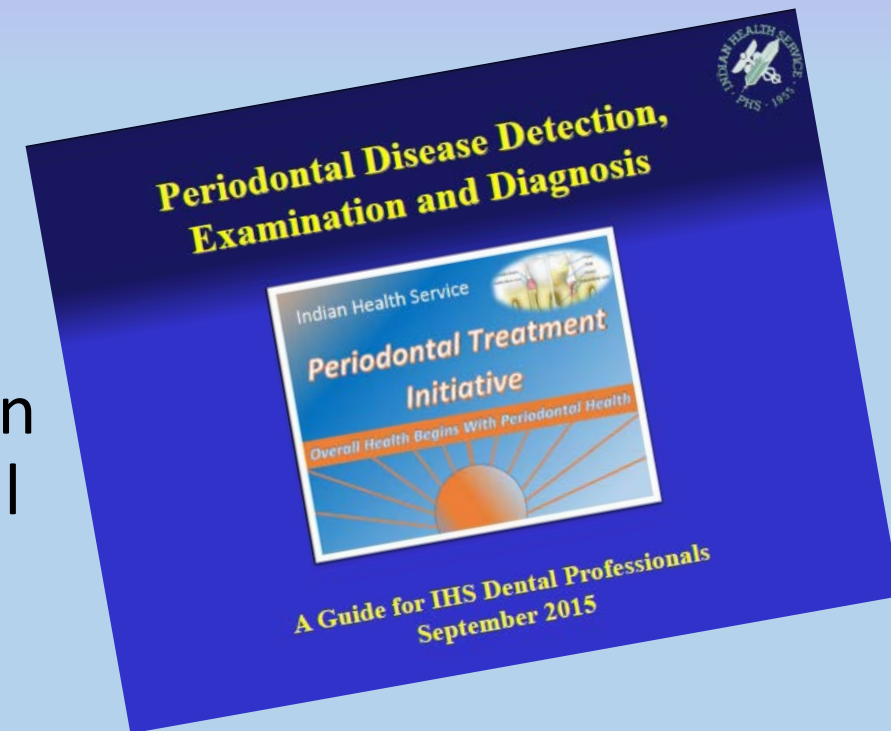
Purpose/Learning Objectives

- The purpose of this presentation is to provide general dentists, dental hygienists, dental therapists, and expanded function dental assistants working in IHS or IHS-funded programs with guidance on treating patients with periodontal disease.
- At the conclusion of this presentation, the participation should be able to:
 - Describe in detail the treatment sequence as it relates to severity of periodontal disease;
 - Define the goal of periodontal therapy; and
 - Use appropriate adjuncts in the treatment of periodontal disease.



Part of the Series

- This presentation is part of the IHS Periodontal Treatment Initiative presentation series.
- See the presentation Periodontal Detection, Exam, and Diagnosis.
- For an overview of the IHS recommendation on periodontal treatment, see the IHS Periodontal Treatment Guide.



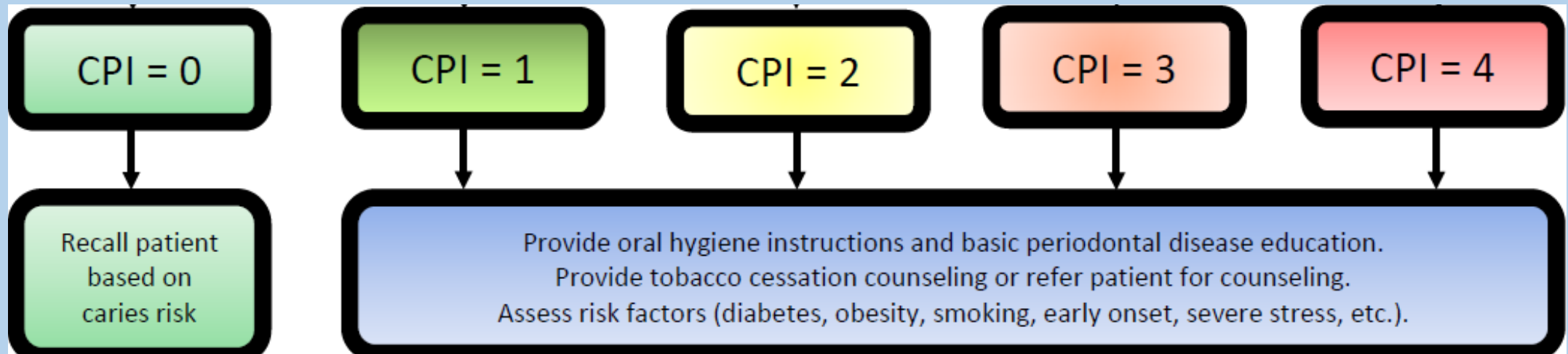


5 Steps in Periodontal Disease Management

1. Assess periodontal risk and risk factors that may affect the outcome of periodontal therapy.
2. Eliminate/Mitigate risk factors.
3. Eliminate the periodontal infection.
4. Modulate the host response and inflammation.
5. Select an appropriate recall interval.

What's next after the CPI?

- If CPI=0 (healthy periodontal condition), assess for caries risk
- Otherwise, assess for periodontal disease risk factors





1. Assessing Risk

- Medical history
 - Diabetes – does that patient have DM? How well controlled is it? What medications is the patient taking?
 - Cardiovascular disease – does that patient have CVD? Is the patient on anticoagulants?
 - Kidney disease – does the patient have kidney disease? Are they on dialysis?
 - Cancer – does the patient currently have cancer? Are they receiving radiation therapy or chemotherapy? Review medications.
 - Immunosuppression – does the patient have HIV, an organ transplant, or other conditions that suppress their immune system?
 - Tobacco use – is the patient a current or former smoker? Smokeless tobacco?



1. Assessing Risk

- Medications
 - Xerostomia – does the patient take medications that may cause xerostomia (blood pressure medications, antihistamines, antidepressants, diuretics, NSAIDs, etc.)?
 - Anticoagulants – is the patient on an anti-coagulant (aspirin, warfarin, Plavix[®], etc.)?
 - Gingival hyperplasia – is the patient taking medications that may cause hyperplasia (phenytoin, anticonvulsants, calcium channel blockers, cyclosporine, etc.)?
 - Insulin – is the patient taking insulin



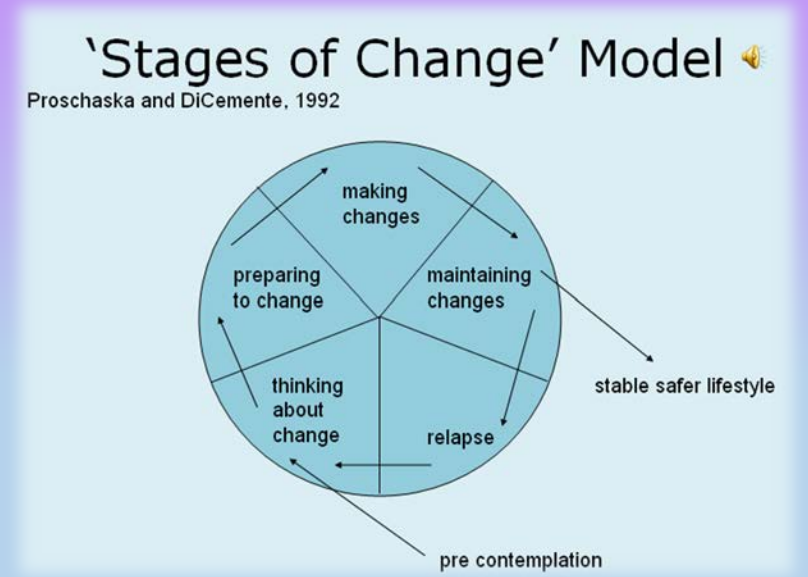
2. Eliminate/Mitigate Risks

- Provide smoking/tobacco cessation counseling
- Promote/educate about blood sugar control
 - Work with medical team as necessary
- Provide oral hygiene instructions
- Introduce oral hygiene aids
- Motivational interviewing can be used for each of these conversations



Motivational Interviewing

- Listen first, then ask open-ended questions:
 - “If you could have one dental wish, what would it be?”
 - “What are you hoping we can do for you?”
- Emphasize choice
- Be positive, provide hope
- Learn and address barriers to care (fear, cost, pain, time, appearance)
- Emphasize the benefits of treatment: preserve bone, eliminate disease, freshen breath, improve the smile, decrease pain, save time and money, and enhance quality of life



Tobacco Cessation Counseling


- Most smokers have had numerous quit attempts
- Be patient and positive; help patient set targets
- Help the patient identify triggers to tobacco use (stress, time of the day, etc.) and help them set targets to remove triggers
- Inform the patient that smokeless tobacco is not a safe alternative to smoking
- Emphasize the positive benefits of quitting; don't emphasize the black lung or ugly teeth as much
- Get help from others in the healthcare team; remember:
 - Ask the patient if they are willing to quit tobacco
 - Assist the patient in finding resources to help quit tobacco
 - Refer the patient for follow-up tobacco cessation support with a physician and/or behavioral health provider



Blood Sugar Control

- Most diabetic patients are aware of their most recent HbA1c (glycated hemoglobin) or fasting blood glucose level – if not, make sure to review their medical summary or last medical visit
- Ideally, they want to try to get consistent blood sugar readings <126 mg/dL or 7% HbA1c
- Ways to help control blood sugar:
 - Lose weight, even if just a few pounds
 - Increase physical activity
 - Quit smoking
 - Reduce stress
 - Regularly monitor blood glucose levels
 - Excellent oral hygiene and regular dental care

Blood Test Levels for Diagnosis of Diabetes and Prediabetes



	A1C (percent)	Fasting Plasma Glucose (mg/dL)	Oral Glucose Tolerance Test (mg/dL)
Diabetes	6.5 or above	126 or above	200 or above
Prediabetes	5.7 to 6.4	100 to 125	140 to 199
Normal	About 5	99 or below	139 or below







Definitions: mg = milligram, dL = deciliter

For all three tests, within the prediabetes range, the higher the test result, the greater the risk of diabetes.

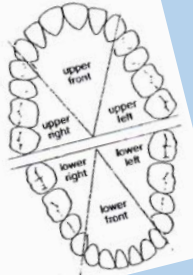
Oral Hygiene Instructions

- Use disclosing tablets/solution; plaque is hard to see

Following today's appointment I will:

<p>Brush twice a day for 3 minutes</p>  <p>Brush 3 teeth at a time, concentrating on the gumline.</p>	<p>Floss daily</p>  <p>Use your fingers or a floss aid like Reach Access.</p>	<p>Proxabrush daily</p>  <p>Proxabrush from the cheek side and the tongue side.</p>
<p>Use a prescription mouthrinse like chlorhexidine</p>  <p>Dip the proxabrush in the mouthrinse and use between the teeth.</p>	<p>Use a rubber tip</p>  <p>Be sure to get the tip into the deep pockets daily.</p>	<p>Stop Smoking</p> 

Pay special attention to problem areas (see diagram).



There may be some discomfort and tooth sensitivity, especially to cold things, for a few days. Avoid hot and spicy foods, nuts, and popcorn for several days.

Rinse for 1 minute with warm salt water twice a day for 3 days (one teaspoon of salt per glass of warm water). It is soothing and can help the healing process.

- Use a hands-on approach; don't leave the patient brushing at the sink
- Show them what they are doing well and what they can improve on
- Help the patient set definitive goals and document these
- Educate the patient at each visit if possible
- Provide the patient with written instructions to complement what you discussed today

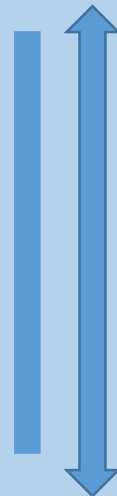
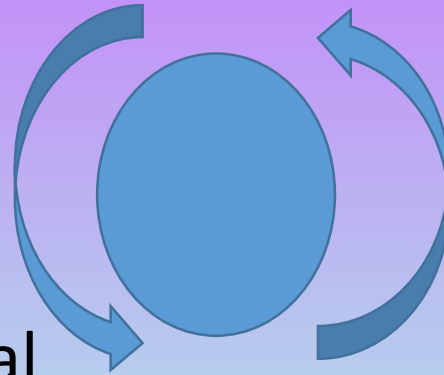
3. Eliminate Infection

- Mechanically through ultrasonics and hand instruments
- Surgically through blades or lasers
- Topical antimicrobials such as toothpastes, mouthrinses
- Local antimicrobials such as gels, chips, etc.
- Systemic antimicrobials such as antibiotics



Mechanical Sonic/Ultrasonic Tip Motion

- Sonic – elliptical
- Magnetostrictive – elliptical
(Dentsply Cavitron, Parkell)
- Piezo – linear
(EMS, Brasseler)

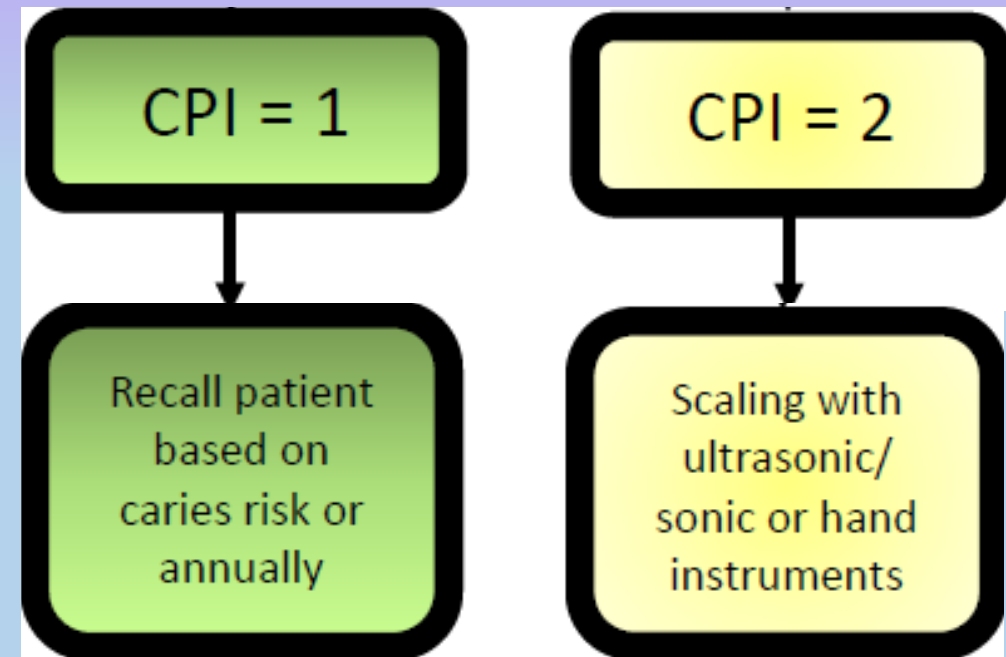


Incorrect Piezon use – handpiece not vertical enough for instrumenting interproximals



Patients with CPIs of 1 or 2

- Check for calculus in prone areas (lower anteriors, buccal of maxillary molars)
- Remove calculus with the ultrasonic and/or hand instruments
- Check for any remaining calculus before moving to the next area



Patients with CPIs of 3 or 4

- Check for calculus in prone areas (lower anteriors, buccal of maxillary molars)
- Remove calculus with the ultrasonic
- Scale and root plane
- Check for any remaining calculus before moving to the next area



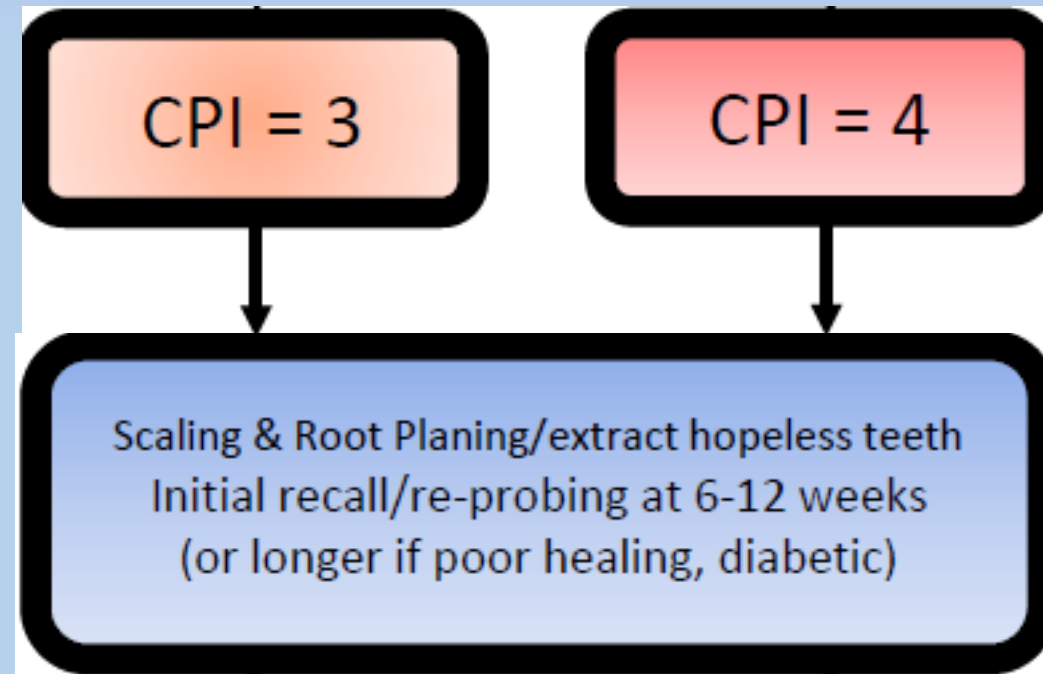


Anesthetic During SRP

- Topical anesthetic
 - Dyclonine HCl 1% (active ingredient in Sucrets[®]), \$45 per 60 ml (one source)
 - Oraqix[®] (lidocaine 2.5%/prilocaine 2.5% gel) – 30 second onset, can be reapplied up to a maximum of 5 cartridges
- Local anesthetic
- No anesthetic
 - Not required to use SRP code
 - Depends on severity of perio and patient tolerance

Hopeless Teeth

- If teeth have been treatment planned for extraction, perform extraction during the SRP appointment if possible, especially for those with Class III mobility.



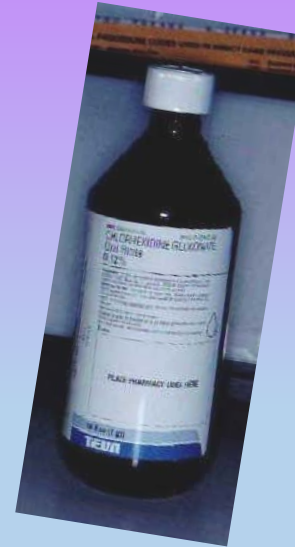
Surgical - Lasers in Periodontics

- Hard and Soft Tissue-can remove caries and calculus from teeth and roots.
 - ErYAG
 - Er,Cr:YsGG
- Soft Tissue- can trim gum tissue and remove frenum- does not remove calculus
 - CO₂
 - Nd/Yag
 - 980 and 810 nm diode



Topical Antimicrobials

- Many toothpastes
- Antiplaque/antigingivitis mouthrinses
 - “Safe and effective in reducing plaque and gingivitis...and should be a part of a comprehensive oral health care regimen...” (Silverman and Wilder, JADA, 2006)
- Irrigation with CHX or Povidone-iodine





Subgingival Irrigation

- During SRP with an ultrasonic, with an oral irrigator or syringe in the office with a subgingival tip, or at home.
- 0.12% CHX, Listerine[®], Povidone Iodine 10%, H₂O₂, or diluted bleach
- May be of increased value when scaling and root planing is less than ideal and in diabetics.
- Effective in reducing gingivitis and the number of microbes.
- Weak data exists for its effect on periodontitis, especially with only a single episode of irrigation.

Povidone Iodine 10% Solution

- Betadine® and Applicare® PI Prep solution, use 2.5 % (1/4 dilution) to 10% Solution
- Used in severe periodontitis, HIV associated perio, abscesses, or refractory disease
- Inexpensive
- Nasty Taste
- Use in a small syringe (3ml endo syringe) with a blunt needle- Dilute 1:1 and flush in the deeper pockets 3x over 10 mins immediately after scaling (J. Slots 2011)
- Contraindications:
 - Allergy to iodine or shellfish
 - Thyroid dysfunction
 - Pregnancy
 - Not for routine home care (decreases thyroid synthesis; goiter)





Local Antimicrobials

- PerioChip[®] (chlorhexidine)
- Atridox[®] doxycycline gel
- Arestin[®] minocycline microspheres

PerioChip[®] (Chlorhexidine)

- Biodegradable chip/wafer with 2.5 mg chlorhexidine gluconate



- Applied in sulcus where pocket depths \geq 5mm
- Dissolves within about 10 days (patients should not floss where chip inserted)

Atridox[®] Doxycycline Gel

- Doxycycline hyclate 10%
- Activated by mixing liquid and powder syringes
- Best used for multiple sites – one syringe works on up to 14 sites
- Hardens upon contact with saliva to form wax-like substance, with slow release of antibiotic



Arestin[®] Minocycline Microspheres



- Minocycline HCl 1 mg
- Microspheres filled with minocycline
- Advantage over Atridox[®]: easiest to place
- Disadvantage over Atridox[®]: used for single sites, need 1 cartridge per site



Local Delivery of Antimicrobials

- Where?
 - Localized periodontal defects with pockets \geq 6mm and bleeding
 - Periodontal abscesses
- When?
 - After initial therapy for nonresponding sites (AAP systematic review)
- Cost Comparison:
 - PerioChip[®]: \$15.00/site
 - Atridox[®]: \$ 8.95/site (\$71.50/syringe, up to 8 sites)
 - Arestin[®]: \$ 9.05/site

Systemic Antimicrobials

- Amoxicillin
 - 500mg tid X 10 days
- Doxycycline - diabetics
 - 100mg bid X 14 or 21 days
- Metronidazole
 - 500mg tid X 8 days
- Clindamycin - refractory disease
 - 300mg tid X 8 days
- Azithromycin - severe chronic perio
 - 500mg a day for 5 days
- Amoxicillin and Metronidazole -aggressive perio (LJP)
 - 250mg each, 3X/day X 8 days in those aged < 60
- Ciprofloxacin and Metronidazole - severe perio
 - 500mg each, 2X/day for 8 days in those aged \geq 60





4. Modulate the Host Response/Inflammation

- Systemic
 - Enzyme suppressors (Low dose doxycycline)
 - Anti-inflammatories (Omega-3s, baby aspirin)
 - Antioxidants (leaf and berry products, Vitamin C)
- Locally with surgery adjuncts-
 - Pig proteins
 - Recombinant growth factors
 - Bone morphogenic protein (BMP)



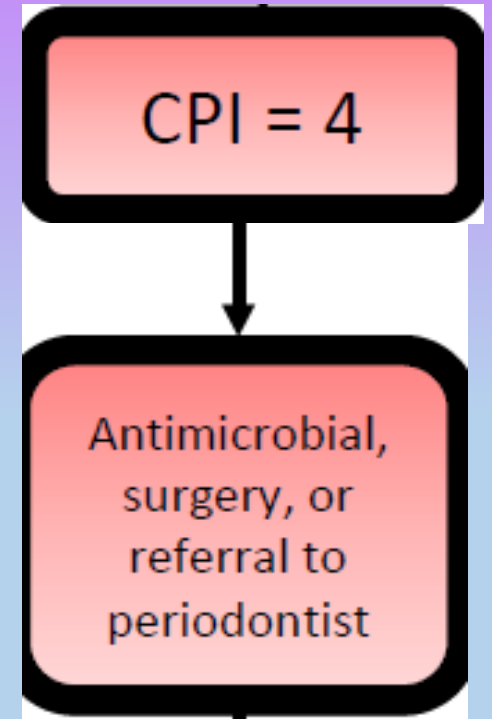
Periostat[®] – Enzyme Suppressor

- Reduces the activity of the enzymes that destroy the periodontium
- 20mg doxycycline, sub-antimicrobial dose
- \$690/9 Months, with 90% of the results achieved by 3 months.
- In ≥ 4 mm pockets, there was only a ≥ 2 mm decrease pocket depth in 34.3% of sites vs. 29.9% with placebo.
- “Suppression of the bacterial challenge (with the normal 100mg doxycycline dose), which also reduces the host response, is the most efficient way to control periodontal diseases.” ROL, Greenstein & Lamster, JADA 2001
- No difference after 9 months use in microbial flora except fewer spirochetes (vs. placebo).
- No evidence of doxycycline resistance, multiple antibiotic resistance, or cross-resistance. Walker, JP, 2000.
- Particularly effective in the management of generalized, severe chronic periodontitis.

Patients with CPI of 4

- After initial therapy, consider antimicrobials
- After reaching a diagnosis of severe periodontitis, general dentists varied on how to proceed with treatment:
 - 34% prescribed systemic antibiotics
 - 42% placed local antibiotics
 - 32% prescribed host response modifiers

Rosen IADR 2011 (n=132 dentists, median practice of 23 years)



Nutritional Supplements

- Vitamin C: Healthy connective tissue: $\geq 60\text{mg/day}$
- Vitamin D: If limited sun exposure
- Calcium: Jaw bone density; 3 servings/day.
- Omega-3 fatty acids: anti-inflammatory; cardiovascular health
- Others: melatonin, green tea, eucalyptus, licorice extract, and yogurt.





AAP Systematic Review Findings 2003

- Compared with SRP alone, SRP with CHX irrigation did not improve probing depths, enhance attachment gain, or reduce BOP. (Strong evidence)
- Adjunctive therapy with minocycline gel or microspheres enhances probing depth reduction, and CHX chips or doxycycline gels enhances gain in attachment levels. (Moderate evidence)
- Subantimicrobial dose doxy in conjunction with SRP is effective. (Strong evidence)

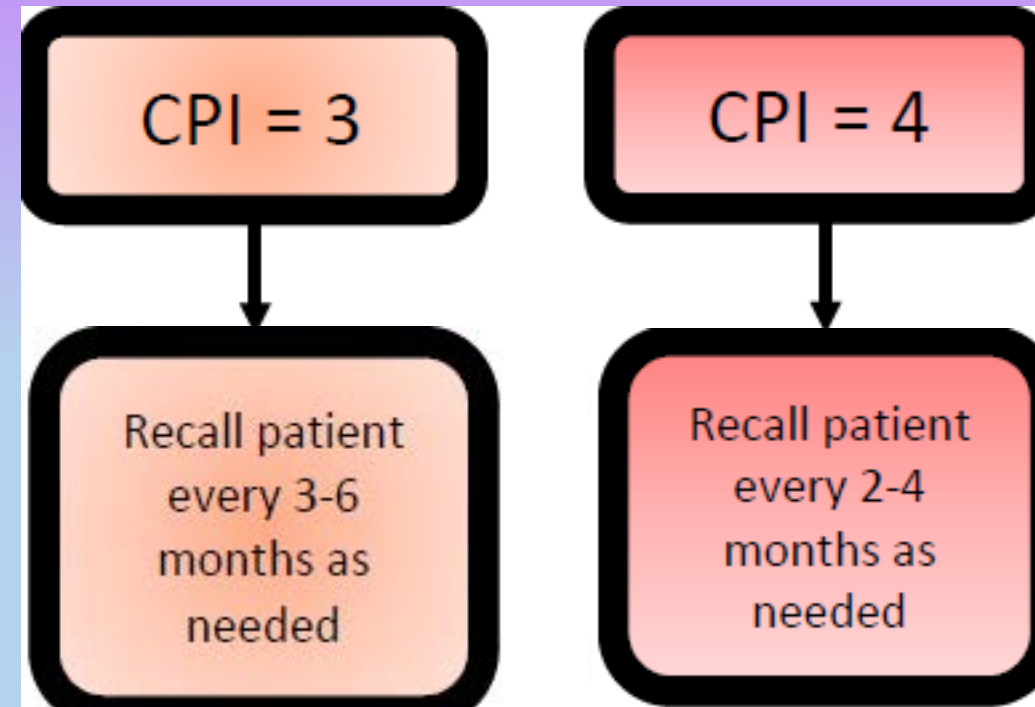


Systematic Review and Meta-analysis JADA 2015

- CHX chips beneficial but strength of recommendation weak
- Minocycline microspheres and doxycycline gel- Evidence is lacking and level of certainty is low for effectiveness
- Subantimicrobial dose doxy is beneficial and evidence favors providing this intervention.

5. Select Appropriate Recall Interval

- Depends on response to initial therapy
- Initial recall should occur 6-16 weeks after last SRP (diabetics and poor healers, wait 12-16 weeks)
- Recalls decrease tooth loss
- Patients who didn't comply with recalls were 5X more likely to have tooth loss (Checci 2002)
- Recall intervals can be extended beyond 6 months for low risk patients (Mettes 2005, Giannobile 2013)





Final Treatment Considerations

- Always have a diagnosis and treatment plan when providing periodontal treatment
- Consult physician when indicated
- For patients with diabetes:
 - Be aware of the signs of emergencies (i.e., hypoglycemia-shaky, confused, moist skin)
 - Normal routine for patient meds and meals
 - Schedule morning appointments (when cortisol levels higher)
 - Make appointments as short as possible
- If you get in over your head, or when you have unresolved pockets, consult a periodontist or refer the patient for follow-up care

Case Presentation

31 year-old with generalized moderate to severe chronic periodontitis;
noncompliant diabetic, with no dental care for at least six years.

CPI 4-4-4-4-4-4



5 Steps in Periodontal Disease Management

1. Assess periodontal risk and risk factors that may affect the outcome of periodontal therapy.
 - Poor diabetes control – physician consultation mandatory
 - Oral hygiene instructions – modified Bass, interproximal care, mouthrinse
 - Full periodontal exam





5 Steps in Periodontal Disease Management

2. Eliminate/mitigate risk factors.
3. Eliminate the periodontal infection.
 - Scaling and root planing under local anesthesia, with extraction of hopeless teeth
 - Systemic antibiotic (doxycycline) at completion of SRP
 - Immediate acrylic partial to replace teeth # 8 and # 9
4. Modulate the host response and inflammation.
 - Evaluate in 3-6 months, reprobe
5. Select an appropriate recall interval after reevaluation.



Treatment Provided

1. 2/05/15 SRP Right side
 - OHI: modified Bass Technique
 - CHX mouthrinse

2. 2/11/15 SRP Left side
 - Extraction Tooth # 17
 - OHI: floss aid
 - Rx: Doxy 100mg bid X 20 days
 - HbA1c result 12.7%
 - Alginate impression/shade

3. 2/25/15 (still on doxycycline)
 - Surgical extractions # 8 and # 9
 - Insert partial
 - Still on doxycycline)

4. Post-op 3/09/15
 - reline partial

T#	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PD	556	657	666	535	966	769	957	886	>>8	547	977	757	857	966	646	666
Bld																
Sup																
GM																
CAL	556	657	666	535	966	769	957	886	>>8	547	977	757	857	966	646	666
MG																
FG			200											200	200	
TC								M	M							
PMB			2	2	1		1	3	3	2		1			1	
PD	758	86>	895	566	645	657	666	865	>>>	648	657	956	765	757	657	667
Bld																
Sup																
GM																
CAL	758	86>	895	566	645	657	666	865	>>>	648	657	956	765	757	657	667
MG																
PD				566	555	655	655	755	545	644	645	868	655		556	
Bld																
Sup																
GM																
CAL				566	555	655	655	755	545	644	645	868	655		556	
MG																
FG																21
TC	M	M	M											M		
PMB					1			2	2	2	2		1		1	
PD				556	556	557	755	666	555	566	969	>87	655		666	
Bld																
Sup																
GM																
CAL				556	556	557	755	666	555	566	969	>87	655		666	
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T#	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17

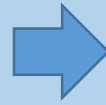
Treatment Provided

3/17/15

- HbA1C 10.3 (was 12.7% on 2/11/15)
1. If poor result - localized
 - Local antibiotic?
 2. If poor result - generalized
 - Low dose doxycycline?
 - Irrigation iodine?
 - Plaque sampling/salivary analysis?
 - Home dilute bleach mouthrinse or OTC formulation?
 3. If poor result
 - Refer to periodontist
 - If no periodontist available, or patient refuses, document recommendation
 4. Recommend antiplaque/antigingivitis mouthrinse daily



Before & After





Summary:

5 Steps in Periodontal Disease Management

1. Assess periodontal risk and risk factors that may affect the outcome of periodontal therapy.
2. Eliminate/Mitigate risk factors.
3. Eliminate the periodontal infection.
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5. Select an appropriate recall interval.