THE PERIODONTALLY-ORIENTED RESTORATIVE PRACTICE

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SYNOPSIS

With trained dental hygienists administering local anesthesia, your dental office can treat more periodontal disease with scaling and root planing (SRP). If you are a general dentist, based on the percentage of patients who have periodontal disease, your office hygiene program should include SRP multiple times a day. The local anesthesia and scaling and root planing procedures are performed by the dental hygienist.

If you are not treating enough patients with SRP, dentists and dental hygienists attending the same course TOGETHER as a team is the best way to jump start your program. Increased periodontal treatment in your office will be beneficial to your patients, challenging and exciting to your staff, and financially rewarding to you.

COURSE OBJECTIVES

Diagnose, treat and reevaluate patients with periodontal disease.
Review periodontal disease and its link to systemic health problems.
Review periodontal and dental implant procedures.
Perform oral cancer screenings.
Local chemotherapeutics, do they work?

SPEAKER INTRODUCTION

DR. MARTY NAGER IS A BOARD CERTIFIED PERIODONTIST IN PRIVATE PRACTICE IN RHODE ISLAND. HE HAS LECTURED ON PERIODONTICS AND DENTAL IMPLANTS FOR THE PAST TWENTY YEARS. HE HAS LECTURED AT THE ADA NATIONAL MEETING, CHICAGO MIDWEST, GREATER NY, CALIFORNIA DENTAL ASSOCIATION, YANKEE DENTAL MEETINGS AND GIVEN A NUMBER OF CONTINUING EDUCATION COURSES TO DENTISTS AT TUFTS UNIVERSITY DENTAL SCHOOL. DR. NAGER IS A PAST PRESIDENT OF THE RHODE ISLAND DENTAL ASSOCIATION.
I. **NEW PATIENT APPOINTMENT (WITH DOCTOR)**

A. Consultation (with doctor)
   1. Review medical history
      - Smoking
      - Medications
      - MVP
      - Dental history
   2. Blood Pressure
   3. Oral cancer screening
   4. Periodontal exam
      - Mobility
      - Probing
      - Recession
      - Furcations
      - Mucogingival problems
      - Wear facets – TMJ problems
   5. Restorative exam
   6. Radiographs
      - FMX
      - Pan and bitewings
      - Vertical vs. horizontal BW’s
   7. Diagnosis
      - Restorative
      - Periodontal
      (Relationship to systemic diseases)
   8. Explanation of periodontal disease with model
   9. Treatment plan (based on diagnosis)
      - Periodontitis: Four quads SRP with local anesthesia
      - Health, gingivitis: cleaning, OHI

B. Initial Preparation: four guads SRP with local anesthesia.

C. Reevaluation (2-6 weeks after SRP)
   - Rechart patient
   - Three month maintenance (or six months)
   - Periodontal surgery
   - More SRP
   - Localized chemotherapeutic treatment

D. Definitive restorative treatment

E. Fees/Insurance

F. Maintenance schedule every three or six months

G. Radiograph and medical history update every three year
II  **NEW PATIENT APPOINTMENT**  (WITH HYGIENIST)

H.  NP exam (with hygienist)
    1.  Review medical history (as above)
    2.  Blood Pressure (as above)
    3.  Oral cancer exam (as above)
    4.  Periodontal exam (as above)
    5.  Hygienist decides level of periodontal disease (pocketing, calculus, home care)
    6.  If patient healthy needs a cleaning... restorative exam and appropriate radiographs
    7.  If periodontal disease... hygienist explains periodontal disease with the model and recommends four quadrants of scaling and root planning with local anesthesia – an FMX and home care instructions performed at this visit
    8.  Doctor examines patient and answers questions regarding four quadrants of scaling and root planning

I.  Patient returns for four quadrants of scaling and root planning
J.  Reevaluation
K.  Recall and Maintenance
III **How To Of Scaling And Root Planing**

- Definition of scaling, root planning, curettage
- Set up (suction, gauze, anesthesia, curettes, ultrasonics, sharpening stone)
- Time (how much)
- Local anesthesia (review home care while waiting for doctor)
- Probing
- Review radiographs
- Ultrasonics
- Scale
- Root plane (how deep?)
- Curettage (inadvertent)
- Home care aids review
- Determine types of tissue (edematous, fibrotic)
- Restorations (patched amalgams may break)
- Show patient a piece of calculus
- Shoe patient periodontal disease model (p.r.n.)
- Recommend electric toothbrush (Braun Oral-B)

IV **Periodontal Reevaluation**

A. Periodontal reevaluation (charting and comparison to initial recordings)
   4 - 6 weeks after SRP
B. Explanation of findings with the model
   - Three month recall and maintenance
   - Periodontal surgery as needed
   - Localized chemotherapeutic treatment
C. Rationale for reducing pockets to prevent further disease
D. Surgical procedure available by the periodontist
   - Pocket reduction surgery
   - Free gingival grafting
   - Connective tissue grafting
   - Crown lengthening surgery
   - Ridge augmentation
   - Extraction/Bone Grafts for Socket Preservation
   - Dental implants
NEW PATIENT

RESTORATIVE EXAM

PERIODONTAL EXAM *

< 5 mm POCKETS

FMX or PAN + BW'S

CLEANING

6 MONTH RECALL

5 mm OR MORE POCKETS

FMX

4 QUADS SRP with ANES.

REEVALUATION

3 MONTH RECALL

SURGERY

3 MONTH RECALL

* PERIODONTAL EXAM

- ORAL CANCER EXAM
- BLOOD PRESSURE
- CHARTING:
  - POCKETS
  - RECESSION
  - MOBILITY
  - ATTACHED GINGIVA
  - FURCATIONS
<table>
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<th>Diagnosis</th>
<th>Clinical</th>
<th>Type</th>
<th>Treatment</th>
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<tr>
<td>Gingivitis*</td>
<td>Bleeding on Probing</td>
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<td>Inflamed Tissue</td>
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<td>Mild Periodontitis**</td>
<td>1-3 mm Pockets</td>
<td>II</td>
<td>SRP</td>
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<td>Moderate Periodontitis</td>
<td>4-6 mm Pockets</td>
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<td>SRP</td>
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<td>Severe Periodontitis</td>
<td>7 mm or more Pockets</td>
<td>IV</td>
<td>SRP</td>
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*Gingivitis implies that there is NO bone loss. Pocketing comes from coronal movement of gingival overgrowth or swelling.

**Periodontitis implies bone loss apical to the CEJ. Gingival margin may be swollen or receded.

Scaling and Root Planing to be done by quadrant (or half-mouth) with local anesthesia, followed by

RE-EVALUATION.
Periodontal Diagnosis and Treatment

- Health
  Scale, OHI,
  6 Month Recall

- Gingivitis
  Scale, OHI,
  6 Month Recall

- Periodontitis
  - Mild
  SRP by Quadrant
  w/ Local Anesthesia,
  Reevaluation
  3 Month Recall
  - Moderate
  - Severe
General Dental Practice
Periodontal Guidelines

The following are things to look for when seeing patients in a general practice:

- **Pocket depths equal to or greater than 5 mm.**
  SRP with local anesthesia or pocket reduction surgery.
  Reevaluation 4-12 weeks later.
  If pocket depths still 5mm or more, or any of the following, consider referral to a periodontist.
  All SRP patients continue with 3 month Maintenance/Recall.

- **Recession with less than 1 mm of attached gingival +/- bleeding on probing.**
  Free gingival graft, or connective tissue graft.

- **Mobility +/- fremitus.**
  Occlusal analysis +/- occlusal adjustment +/- hard acrylic bite guard.

- **Cosmetics**
  Including crown lengthening, connective tissue grafting (also for class V recession), post-orthodontic gingival recontouring.

- **Interfering frenum pull.**
  Frenectomy. Gingival graft

- **Violation of biologic width, fractured tooth, deep recurrent decay, inadequate tooth structure for crown.**
  Crown lengthening surgery.

- **Furcation involvement.**
  Open cleanout surgery, SRP, local chemotherapeutics, hemisection, root amputation, extraction and dental implant.

- **Need for tooth extraction and bone graft for socket preservation.**
  Surgical flap, extraction, bone graft.
  Anterior cosmetic tissue preservation for pontics, or implants

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DENTAL QUESTIONS:  
HOW DO YOU PRACTICE DENTISTRY?

Dr. Marty Nager

1. Patients that have decay need restorations or the decay may eventually get worse causing additional treatment (such as root canal or a larger filling).  T  F

2. Patients with 5mm or more periodontal pockets can be “watched” as these pockets will most likely not get worse.  T  F

3. Patients can lose their teeth due to gingival recession.  T  F

4. Patients can lose their teeth due to periodontal pockets.  T  F

5. Teeth that have 5mm or greater need scaling and root planing with local anesthesia in order to prevent them from getting worse.  T  F

6. Patients that have SPR need a periodontal reevaluation 4-12 weeks later.  T  F

7. Patients that still have 5mm or more pocketing after SRP may need periodontal surgery in order to be maintained.  T  F

8. Patients that have been diagnosed with periodontitis need to have their teeth cleaned every three months.  T  F

9. Patients who have circumferential or vertical bony defects around teeth need periodontal surgery in order to correct and maintain.  T  F

10. Teeth that have furcation involvement have a decreased long-term prognosis.  T  F

11. Patients who smoke are at greater risk for periodontal disease.  T  F

12. Patients with Diabetes are at greater risk for periodontal disease.  T  F

13. Patients with significant root exposure and/or progressing recession may need gingival grafting.  T  F

14. Patients who have 5mm or more pockets before the age of 35 are at greater risk for periodontal disease.  T  F

15. Patients who have bleeding upon periodontal probing have active periodontal disease.  T  F

16. Teeth that need extraction in the anterior region, or prior to dental implant placement should have bone grafts placed at the time of extraction.  T  F

Answers: All are True except #’s 2 and 3. Even severe gingival recession will not cause tooth loss (untreated pockets, however can lead to tooth loss).
Questions For The Periodontally-oriented Restorative Dentist
Dr. Marty Nager

- What do you think would happen over time if there was decay in a tooth that was not treated?

- What do you think would happen over time to a 5mm periodontal pocket on a tooth if it was not treated?

- Are teeth with 5 and 6 mm periodontal pockets maintainable over time if the patient has their teeth cleaned every 6 months? Will the pockets get better? Stay the same? Get worse?

- Why don't we recommend periodontal treatment more often to individual patients who may need it?

- What are the biggest obstacles to periodontal treatment if the patient was informed of their needs?

Why don’t more dentists diagnose and treat periodontal disease for their patients?

1. They don’t know about periodontal disease.
2. They know about it, but don’t care about it.
3. They know about it and don’t think treatment is of value.
4. ??
Bacteria that builds up between the tooth and gum can enter into the bloodstream whenever your gums bleed. These bacteria can travel throughout the body and cause serious health problems.

**HEART DISEASE**
Bacteria from the mouth can get into the bloodstream when the gums are inflamed. This bacteria can get mixed up with blood-clotting cells called platelets. These clumps of cells and bacteria can lodge inside the walls of the blood vessels, causing heart-stopping clots to form. These clots are what lead to heart disease. Keeping your gums healthy can reduce your risk of heart attack.

**STROKE**
A new study of fatty deposits lodged in the carotid arteries of stroke sufferers shows that up to 40% of the bacteria that cause the fatty deposits comes from the mouth if the gums are inflamed.

**ULCERS (stomach)**
The bacteria that collect in your mouth when gum disease is present are the same bacteria that cause gastric ulcers. If the bacterial count in the mouth is high these bacteria can be constantly travelling to the stomach, reinfecting and causing a return of ulcers.

**DIABETES**
The presence of any gum inflammation can make it much more difficult for a diabetic to control their blood sugar. Elimination of any gum inflammation can directly improve diabetic control.

**PANCREATIC CANCER**
A recently published Harvard study showed men with gum disease were 63% more likely to develop pancreatic cancer than those without gum disease.

**PRE-TERM BIRTHS**
Women with gum disease are seven to eight times more likely to give birth prematurely to low birth weight babies. Researchers believe that the low grade gum inflammation causes the body to release inflammatory chemicals which are linked to pre-term birth.

Want more info? www.riperio.com

Drs. Ross, Nager and Pierce
DENTAL EXAMINATION 101

Question 1

Regular dental visits and cleaning’s are necessary in order to maintain your.

a. teeth  
b. smile  
c. chewing  
d. speaking  
e. social life  
f. self image  
g. healthy body  
h. all of the above

Answer: h. all of the above

Untreated gum disease has been linked to heart disease, stroke, pre-term low birth weight babies, and diabetes. TIME Magazine listed “brushing and flossing” as one of the few things you can do to maintain your overall health and live longer.

Have You Seen Your Dentist Lately?

Brought to you by the Rhode Island Dental Association.  
“We promote quality dental care.”
TEN RECOMMENDATIONS FOR PERIODONTAL TREATMENT SUCCESS
Marty Nager, DMD

1. ALWAYS PROBE EVERY PATIENT, AT EVERY VISIT.

2. TAKE AN FMX (OR PAN AND BWs) ON EVERY PATIENT AT LEAST ONCE. VERTICAL BWs UPDATED YEARLY.

3. ALWAYS UPDATE AND REVIEW MEDICAL HISTORY: MEDICATIONS, ALLERGIES, HEART MURMUR, ETC.

4. POCKETS GREATER THAN 5mm NEED QUADRANT SCALING AND ROOT PLANING WITH LOCAL ANESTHESIA.

5. ALWAYS RE-EVALUATE PATIENTS PERIODONTIUM AND HOME CARE.

6. PATIENTS WHO NEED SRP NEED 3 MONTH RECALL APPOINTMENTS AND CONTINUING RE-EVALUATION.

7. POCKETING GREATER THAN 5mm MAY NEED POCKET REDUCTION SURGERY TO GAIN ACCESS TO ROOT SURFACES AND BONE.

8. INCREASING RECESSION, BLEEDING, OR FRENUM PULL NEEDS SOFT TISSUE GRAFTING.

9. TEETH WITH LESS THAN 1mm OF ATTACHED GINGIVA MAY NEED SOFT TISSUE GRAFTING.

10. RECORD AND DOCUMENT AREAS OF POCKETING, RECESSION, FURCATIONS, MOBILITY AND ATTACHED GINGIVA TO BE ABLE TO SEE CHANGES OVER TIME (DISEASE PROGRESSION).
The Recall/Maintenance Appointment
Marty Nager, DMD

Recall/ Maintenance

• Update Medical History
  • Changes in medications?
  • Changes in health?
  • Heart murmur?

• Blood pressure check.
• Oral cancer screening.
• Probe patient and record numbers > 3 mm.
• Review home care with mirror, disclosing solution (prn).
• Scale, RP where needed: use topical or dentin block (prn).
• Polish.
• Fluoride treatment (prn).
• Vertical bitewing radiographs (prn).
• Restorative exam; caries exam.
• *Explanation of findings* to the patient, by hygienist, with mirror and/or photos, models etc...
• Doctor exam with brief overall summary by hygienist, always saying *something* good; note problem areas and treatment needed.
• Dismiss patient and **make next appointment**:  
  6 months for healthy/gingivitis patients.  
  3 months for patients who have had SRP.
Local Chemotherapeutic Products

There are some new products on the market for the "treatment" of periodontal disease. These products are being heavily marketed by a number of large companies. Many of our patients will be asking about these products.

Although we are excited that there is new technology being developed for the treatment of periodontal disease, the majority of research show "a small but statistically significant improvement." Although this is may be statistically significant for research, it "may not be" clinically significant. Clinically, we can't measure tenths of a millimeter with the probe. Only time will tell how these products will help to maintain the progression of periodontal disease.

**Actisite** is a tetracycline fiber that is placed under the gum tissue to release a high concentration of antibiotic to the specific site. The fiber is used for localized pocketing in isolated areas, usually after gum treatment has been performed and the area is compromised. The fiber is placed around the tooth, held in place with cyanoacrylate and removed seven to ten days later.

**PerioChip** is a resorbable chip that is placed in localized pocketing in isolated areas. It contains chlorhexidine (same as Peridex) which is released over a week's time as the chip dissolves, treating one specific sight (or tooth surface).

**Atridox** is a gel that contains doxycycline (a type of tetracycline). This is squirted into a pocket, and this dissolves over a week's time releasing the antibiotic to the specific site, multiple tooth surfaces, or multiple teeth.

**Arestin** is a Minocycline (a type of tetracycline) powder in the form of microspheres. It is injected into the pocket. This antibiotic treats one specific sight (or tooth surface), and dissolves.

**Periostat** is a pill that is taken twice a day for at least three months, (sometimes six or nine months). This is taken in conjunction with SRP. This pill contains a sub-antimicrobial dose of Doxycycline, which inhibits collagenase and other enzymes involved with tissue breakdown. It is only 1/5 th the strength of doxycycline and is does not work as an antibiotic. This is available only by prescription.

We are trying all of these products in certain patients to see how they work first hand, but unfortunately, a fiber, a gel, a chip, and a pill will not cure periodontal disease. Better yet ... try the products yourself and follow-up on how they work...in your office. An office study sheet follows.
## Local Chemotherapeutic Chart

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BOTTOM-LINE SUMMARY

 Associations between Periodontal Disease and other Diseases/Conditions

Although periodontal disease is often considered a localized infection, there is increasing evidence linking periodontitis to systemic conditions such as cardiovascular disease, stroke, respiratory diseases and adverse pregnancy outcomes. Evidence suggests that periodontitis can be a systemic exposure that may contribute to the development or progression of other diseases and conditions. *Periodontal intervention may prevent the onset or progression of atherosclerosis-induced diseases, such as myocardial infarction and ischemic stroke and may help to prevent adverse pregnancy outcomes.*

 Anti-Infective Therapy

Scaling and root planning (SRP) is usually considered the first step in anti-infective management of periodontal diseases. Scaling and root planning is usually effective, but bacteria quickly recolonizes subgingival environments and re-form biofilms. Minocycline microspheres (Arestin) enhance probing depth reduction but shows *no change* in clinical attachment level. Chlorhexidine chips (Perio chips) and Doxycycline gel (Atridox) enhances gain in clinical attachment level.

Compared with SRP alone, therapist-delivered chlorhexidine *irrigation* during scaling and root planing does not improve probing depth, enhance clinical attachment level gain, or reduce bleeding upon probing. Manual (SRP) methods and mechanically driven instrumentation (ultrasomics) were equally effective at pocket-reduction; however, subgingival irrigation provides no benefit beyond that achieved by mechanical therapy alone.

Moderate evidence suggests that Tetracycline and Metronidazole (systemic antibiotics) as an adjunct to scaling and root planing results in improvement in clinical attachment level lasting at least six months regardless of the baseline probing depth. This improvement is greater in patients with aggressive periodontitis than those with chronic periodontitis.

There was insufficient evidence to support microbial identification in treating chronic periodontitis. There was also limited evidence to support the use of microbial identification in the management of aggressive periodontitis and non-responsive cases of chronic periodontitis.
Host-Modulating Agents

Doxycycline is used as an anti-proteinase that inhibits matrix metalloproteinases. There is strong evidence to support the use of Periostat (sub anti-microbial Doxycycline) in combination with root planing. Based on 9 to 12 month clinical trials, there is strong evidence that Periostat provides small, but statically significant improvements in clinical attachment level and probing depth without significant side effects. This is left to clinical judgment.

Tissue Engineering: Natural Teeth

There is moderate evidence to indicate that use of chemical root modifiers during periodontal surgery does not provide adjunctive benefit in clinical attachment level gain or probing depth reduction. Emdogain provided highly consistent and statistically significant clinical attachment gain and probing depth reduction in patients with periodontal osseous defects.

Bone grafts (DFDBA) in the treatment of intrabony defects increases bone levels and clinical attachment levels and reduces crestal bone loss and probing depth.

Compared with open flap debridement, use of barrier membranes improves clinical attachment level and probing depth in both intrabony and furcation defects, use of bone graft material in addition to a barrier membrane did not improve clinical outcomes.
A connective tissue graft with a coronally positioned flap results in significantly greater root coverage and increased keratinized tissue compared to other procedures such as guided tissue regeneration for the same purpose.

Tissue Engineering: Implants

Implants placed at sites of socket bone augmentation are successful under functional loads. The success rate for implants placed at sites of horizontal bone augmentation are similar to those for implants placed in native bone. Implant success at sites of bone augmentation is similar to that of implants placed in native bone, particularly in maxillary sinus augmentations, socket bone augmentations and horizontal bone augmentations.

* Annals of Periodontology.
2003 Workshop on Contemporary Science in Clinical Periodontics
Volume 8: Number 1. December 2003