Periodontal Disease Classifications

- Gingival Diseases (Plaque/Non plaque)
- Chronic Periodontitis
- Aggressive Periodontitis
- Periodontitis As a Manifestation of Systemic Diseases
- Necrotizing Periodontitis (NUG/NUP)
- Abscesses of Periodontium
- Periodontitis Associated with Endodontic Lesions
- Developmental or Acquired Deformities and Conditions

(AAP Annals Vol. 4, 2000)
## PD Risk Assessment

### Check each behavior that applies

<table>
<thead>
<tr>
<th>Check each behavior that applies</th>
<th>Total checks</th>
<th>PD Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infrequent flossing (2)</td>
<td>No use of auxiliary aids</td>
<td>No use of antimicrobial rinses or aids</td>
</tr>
<tr>
<td>Sensitive Teeth</td>
<td>Retentive areas (crowns, proximal restorations, open contacts, crowded or misaligned teeth, orthodontia)</td>
<td>Occlusal Stress</td>
</tr>
<tr>
<td>Gingival Recession</td>
<td>Occlusal Stress</td>
<td>Bruxism</td>
</tr>
<tr>
<td>Rapid Calculus buildup</td>
<td>Occlusal Stress</td>
<td>Abfractions</td>
</tr>
<tr>
<td>Tooth Mobility</td>
<td>Pocket Depth/ CAL &gt; 4 mm</td>
<td>Bleeding gums w/brushing or flossing or upon probing</td>
</tr>
<tr>
<td>Hormonal Imbalances (pregnancy or puberty)</td>
<td>Diabetes: Controlled (0)</td>
<td>Tobacco use: Former (0) Current (0) &gt; 1 pack/day</td>
</tr>
<tr>
<td>Diet deficient in: (check all)</td>
<td>Osteoporosis</td>
<td>Xerostomia</td>
</tr>
<tr>
<td>Calcium, Vitamin A, Vitamin D, Vitamin C, B vitamins</td>
<td>Osteoporosis</td>
<td>Immune factors</td>
</tr>
<tr>
<td>Tx with bisphosphonates</td>
<td>Chemotherapy</td>
<td>Stress</td>
</tr>
<tr>
<td>Cyclosporine</td>
<td>Dilantin</td>
<td>Genetic, family history</td>
</tr>
<tr>
<td>Ca channel blocker</td>
<td>genetically</td>
<td></td>
</tr>
</tbody>
</table>

### Circle your PD Risk Score

<table>
<thead>
<tr>
<th>Circle your PD Risk Score</th>
<th>How to lower your risk for PDs</th>
<th>Highlight all recommendations and record on Tp plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-10 Moderate Risk</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10-15 High Risk</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15+ Very High Risk</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Occlusal Dysfunction in Periodontal Disease

- **Primary Occlusal Trauma**
  - Injury resulting in tissue change from excessive occlusal force(s) applied to a tooth or teeth with normal support

- **Secondary Occlusal Trauma**
  - Injury resulting in tissue changes from normal or excessive occlusal forces applied to a tooth or teeth with reduced support

- **Injury:** Dependent on direction, degree, duration

(1999 Int Workshop for Classification of Periodontal Diseases and Conditions)
Glickman’s Theory of Co-Destruction

• Zone of Irritation
  ○ Marginal gingiva, interdental gingiva, transeptal / alveolar crest fibers
  ○ Occlusion trauma has a limited impact

• Zone of Co-Destruction
  ○ Transeptal / alveolar crest fibers, PDL, Cementum, bone
  ○ Occlusion trauma can increase degree of inflammation and breakdown
  ○ Inflammatory cells go down the PDL
  ○ Vertical bone defects occurs

Sphere of Influence:  .5 – 2.7mm
Parafunctional Habits

- **Bruxism (grinding)**
- **Clenching**
- Biting a pencil
- Tongue thrust
- Holding a sewing needle/nail with front teeth
- Chewing finger nails
- Wind instruments
- Tongue Rings
Measuring Tooth Mobility

- 0 – no detectable movement when force is applied

- 1 – mobility greater than normal

- 2 – Movement up to 1 mm B-L direction

- 3 – Movement of more than 1mm B-L direction

Miller Classification System, 1950
Occlusal Trauma

Clinical Signs:
- Tooth mobility
- Fremitus
- Wear Facets
- Tooth Migration
- Tooth Fracture
- Pulpal Symptoms
  (Cold sensitivity)

Radiographic Signs:
- Widened PDL
- Vertical bone loss
- Furcation bone loss
- Root Resorption
- Thickened Lamina Dura
So what happens under occlusal force?

- **Primary OT**
  - More mobility
  - Widened PDL
  - Loss of crestal bone height and volume

- **Secondary OT**
  - More mobility
  - Widened PDL
  - Increase loss of CT attachment and bone

- **Force removed?**
  - Bone density increases
  - Less mobility

- **Force removed?**
  - Bone regeneration not automatic; Likely get repair
  - Need to control inflammation
  - Less mobility

Lindhe, Polson, Harrel and Nunn studies
Effects on Treatment

- No adjustments: sign. greater increase in annual PD
  (Nunn and Harrell 2001)

- Mobility negatively affects attachment gain
  (Cortellini 2001)

- Rule of thumb: Eliminate OT to optimize results
Periodontal Disease

Occlusion
Occlusal Trauma and Periodontitis

- Intrabony defects associated with occlusal trauma assume many forms.

- The most commonly seen defect in “My Chair” seems to be the circumferential
Indications for Occlusal Adjustment

- Progressively increasing mobility or fremitus
- Discomfort during function
- Traumatic injuries
- Soft tissue injury
- Food impaction
- Increased size of diastema
- Unresolved mobility after initial adjustment
Indications for Splinting

- Mobility interferes with patient comfort
- Mobility interferes with patient function
- To prevent tipping / drifting of teeth
- To prevent extrusion of unopposed teeth
- Following orthodontic therapy
- Following acute trauma to teeth
- For esthetic / prosthetic reasons

Have to control inflammation
Will not permanently decrease tooth mobility
- Amount of Occlusal force
- Bone loss, Type
- Arc Visible
- Furcation Involvement
- Root trunk length
- Root Proximity
- Crown:Root ratio
- Calculus
- PDL
- Opening contacts
- Super-eruption
- Splint and/or Biteguard
- Amount of Occlusal force
- Bone loss, Type
- Arc Visible
- Furcation Involvement
- Root trunk length
- Root Proximity
- Crown:Root ratio
- Calculus
- PDL
- Opening contacts
- Super-eruption
- Splint and/or Biteguard
- Amount of Occlusal force
- Bone loss, Type
- Arc Visible
- Furcation Involvement
- Root trunk length
- Root Proximity
- Crown:Root ratio
- Calculus
- PDL
- Opening contacts
- Super-eruption
- Splint and/or Biteguard
- Amount of Occlusal force
- Bone loss, Type
- Arc Visible
- Furcation Involvement
- Root trunk length
- Root Proximity
- Crown:Root ratio
- Calculus
- PDL
- Opening contacts
- Super-eruption
- Splint and/or Biteguard
- Amount of Occlusal force
- Bone loss, Type
- Arc Visible
- Furcation Involvement
- Root trunk length
- Root Proximity
- Crown:Root ratio
- Calculus
- PDL
- Opening contacts
- Super-eruption
- Splint and/or Biteguard
- Amount of Occlusal force
- Bone loss, Type
- Arc Visible
- Furcation Involvement
- Root trunk length
- Root Proximity
- Crown:Root ratio
- Calculus
- PDL
- Opening contacts
- Super-eruption
- Splint and/or Biteguard
- Amount of Occlusal force
- Bone loss, Type
- Arc Visible
- Furcation Involvement
- Root trunk length
- Root Proximity
- Crown:Root ratio
- Calculus
- PDL
- Opening contacts
- Super-eruption
- Splint and/or Biteguard
- Amount of Occlusal force
- **Bone loss, Type**
- Arc Visible
- Furcation Involvement
- Root trunk length
- Root Proximity
- Crown:Root ratio
- **Calculus**
- PDL
- Opening contacts
- Super-eruption
- Splint and/or Biteguard
- Amount of Occlusal force
- **Bone loss, Type**
- Arc Visible
- **Furcation Involvement**
- Root trunk length
- Root Proximity
- **Crown:Root ratio**
- Calculus
- PDL
- Opening contacts
- Super-eruption
- Splint and/or Biteguard
- Amount of Occlusal force
- Bone loss, Type
- Arc Visible
- Furcation Involvement
- Root trunk length
- Root Proximity
- Crown:Root ratio
- Calculus
- PDL
- Opening contacts
- Super-eruption
- Splint and/or Biteguard
- Amount of Occlusal force
- Bone loss, Type
- Arc Visible
- Furcation Involvement
- Root trunk length
- Root Proximity
- Crown:Root ratio
- Calculus
- PDL
- Opening contacts
- Super-eruption
- Splint and/or Biteguard
- Amount of Occlusal force
- Bone loss, Type
- Arc Visible
- Furcation Involvement
- Root trunk length
- Root Proximity
- **Crown:Root ratio**
- Calculus
- PDL
- Opening contacts
- Super-eruption
- Splint and/or Biteguard
- Amount of Occlusal force
- Bone loss, Type
- Arc Visible
- Furcation Involvement
- Root trunk length
- Root Proximity
- Crown:Root ratio
- Calculus
- PDL
- Opening contacts
- Super-eruption
- Splint and/or Biteguard
- Amount of Occlusal force
- Bone loss, Type
- Arc Visible
- Furcation Involvement
- Root trunk length
- Root Proximity
- Crown:Root ratio
- Calculus
- PDL
- Opening contacts
- Super-eruption
- Splint and/or Biteguard
- Amount of Occlusal force
- Bone loss, Type
- Arc Visible
- Furcation Involvement
- Root trunk length
- Root Proximity
- Crown:Root ratio
- Calculus
- PDL
- Opening contacts
- Super-eruption
- Splint and/or Biteguard
- Amount of Occlusal force
- Bone loss, Type
- Arc Visible
- Furcation Involvement
- Root trunk length
- Root Proximity
- Crown:Root ratio
- Calculus
- PDL
- Opening contacts
- Super-eruption
- Splint and/or Biteguard
- Amount of Occlusal force
- Bone loss, Type
- Arc Visible
- Furcation Involvement
- Root trunk length
- Root Proximity
- Crown:Root ratio
- Calculus
- PDL
- Opening contacts
- Super-eruption
- Splint and/or Biteguard
- Amount of Occlusal force
- Bone loss, Type
- Arc Visible
- Furcation Involvement
- Root trunk length
- Root Proximity
- Crown:Root ratio
- Calculus
- PDL
- Opening contacts
- Super-eruption
- Splint and/or Biteguard
- Amount of Occlusal force
- Bone loss, Type
- Arc Visible
- Furcation Involvement
- Root trunk length
- Root Proximity
- Crown:Root ratio
- Calculus
- PDL
- Opening contacts
- Super-eruption
- Splint and/or Biteguard
- Amount of Occlusal force
- Bone loss, Type
- Arc Visible
- Furcation Involvement
- Root trunk length
- Root Proximity
- Crown:Root ratio
- Calculus
- PDL
- Opening contacts
- Super-eruption
- Splint and/or Biteguard
- Amount of Occlusal force
- Bone loss, Type
- Arc Visible
- Furcation Involvement
- Root trunk length
- Root Proximity
- Crown:Root ratio
- Calculus
- PDL
- Opening contacts
- Super-eruption
- Splint and/or Biteguard
- Amount of Occlusal force
- Bone loss, Type
- Arc Visible
- Furcation Involvement
- Root trunk length
- Root Proximity
- Crown:Root ratio
- Calculus
- PDL
- Opening contacts
- Super-eruption
- Splint and/or Biteguard
- Amount of Occlusal force
- Bone loss, Type
- Arc Visible
- Furcation Involvement
- Root trunk length
- Root Proximity
- Crown:Root ratio
- Calculus
- PDL
- Opening contacts
- Super-eruption
- Splint and/or Biteguard
Take Home Messages

- Diagnosis: Perio Dz and Occlusal Trauma
- Have the right radiographs
- Have an accurate and complete probings
- Check Occlusion: Patient symptoms important
- Check Mobility
- Cold Sensitivity can be related to occlusion...I see this quite frequently
- Consider splinting and/or biteguard