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# Treatment Planning & Functional Occlusion

John C Kois, DMD, MSD

Kois Center, LLC.
*1001 Fairview Ave. N., Suite 2200*
*Seattle, WA 98109*

***Phone:*** *(206) 621-5310*
***Fax:*** *(206) 621-7609*
***Email:*** *info@koiscenter.com*
***Web:*** *www.koiscenter.com*

*Please turn off all mobile devices during the lecture*

# ALWAYS Diagnostic Opinion

NAME _____ **DIAGNOSTIC OPINION** AGE _____ DATE _____

**RISK ASSESSMENT** LOW *Acceptable* MODERATE *May require further attention* HIGH *Requires immediate attention*

## PERIODONTAL — LOW MODERATE HIGH Risk Assessment

- Gingivitis **(Gum)** (AAPI) Modified By: _____
- Attachment Loss / Chronic Periodontitis **(Bone Loss)** _____
  - Mild (AAPII) Moderate (AAPIII) Severe (AAPIV)
  - Site Specific (Infrabony)
  - Horizontal Bone Loss
- Aggressive Periodontitis
- Secondary Occlusal Traumatism
- Abrasion
- Recession
- Posterior Bite Collapse
- Oral Pathology
- Impaction
- Missing Teeth
- Other

**PROGNOSIS** Generalized *(Remaining Teeth)*: EXCELLENT GOOD FAIR POOR HOPELESS

Specific *(Individual Teeth)* _____

## BIOMECHANICAL — LOW MODERATE HIGH Risk Assessment

- Caries
- Enamel Decalcification
- Defective Restorations
- Questionable Restorations
- Xerostomia
- Erosion
- Structural Compromises
- Pulpal Pathology
- Defective Root Canal Treatment Concerns
- Crown Margin Location Concerns
- Missing Teeth
- Other

**PROGNOSIS** Generalized *(Remaining Teeth)*: EXCELLENT GOOD FAIR POOR HOPELESS

Specific *(Individual Teeth)* _____

## FUNCTIONAL — LOW MODERATE HIGH Risk Assessment

- Attrition / Normal Force
  - Minimal Moderate Severe
- Abnormal Attrition / Bruxism / Excessive Force
  - Minimal Moderate Severe
- Abfraction
- Primary Occlusal Traumatism
- TMD
- Abnormal Neuromuscular Habits
- Compromised Occlusal Vertical Dimension
- Missing Teeth
- Other
- ACCEPTABLE FUNCTION
- CONSTRICTED CHEWING PATTERN
- OCCLUSAL DYSFUNCTION (OSA, UARS)
- PARAFUNCTION (SLEEP BRUXISM)
- NEUROLOGIC DISORDERS

**PROGNOSIS** Generalized *(Remaining Teeth)*: EXCELLENT GOOD FAIR POOR HOPELESS

Specific *(Individual Teeth)* _____

## DENTOFACIAL — LOW MODERATE HIGH Risk Assessment

**COLOR** ☐ Acceptable ☐ Modify

- Developmental Disturbances

**FACIALLY RELATED TOOTH POSITION**

1. **Maxillary Incisal Edge Position** ☐ Acceptable ☐ Modify
2. **Maxillary Posterior Occlusal Plane** ☐ Acceptable ☐ Modify
3. **Mandibular Incisal Edge Position** ☐ Acceptable ☐ Modify
4. **Mandibular Posterior Occlusal Plane** ☐ Acceptable ☐ Modify
5. **Intra-arch Tooth Position** (Arrangement & Form)
   - **Midline** ☐ Acceptable ☐ Modify
   - ☐ Left ☐ Right ☐ Axially Inclined
   - **Crowding / Overlap** ☐ Acceptable ☐ Modify
   - **Diastema** ☐ Acceptable ☐ Modify
   - **Rotations** ☐ Acceptable ☐ Modify

**6a. Gingival Tissue Assessment** MAXILLARY

- **Lip Dynamics** ☐ Low ☐ Medium ☐ High ☐ Acceptable ☐ Modify
- **Horizontal Symmetry** ☐ Acceptable ☐ Modify
- **Scallop / Form** ☐ Flat ☐ Normal ☐ High

**6b. Gingival Tissue Assessment** MANDIBULAR

- **Lip Dynamics** ☐ Low ☐ Medium ☐ High ☐ Acceptable ☐ Modify
- **Horizontal Symmetry** ☐ Acceptable ☐ Modify
- **Scallop / Form** ☐ Flat ☐ Normal ☐ High

- Missing Teeth
- Other

**Patient's Vision**

**PROGNOSIS** Generalized *(Remaining Teeth)*: EXCELLENT GOOD FAIR POOR HOPELESS

Specific *(Individual Teeth)* _____



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# PRINCIPLES Diagnosis → Prognosis

**Diagnosis** is a determination of the "cause."

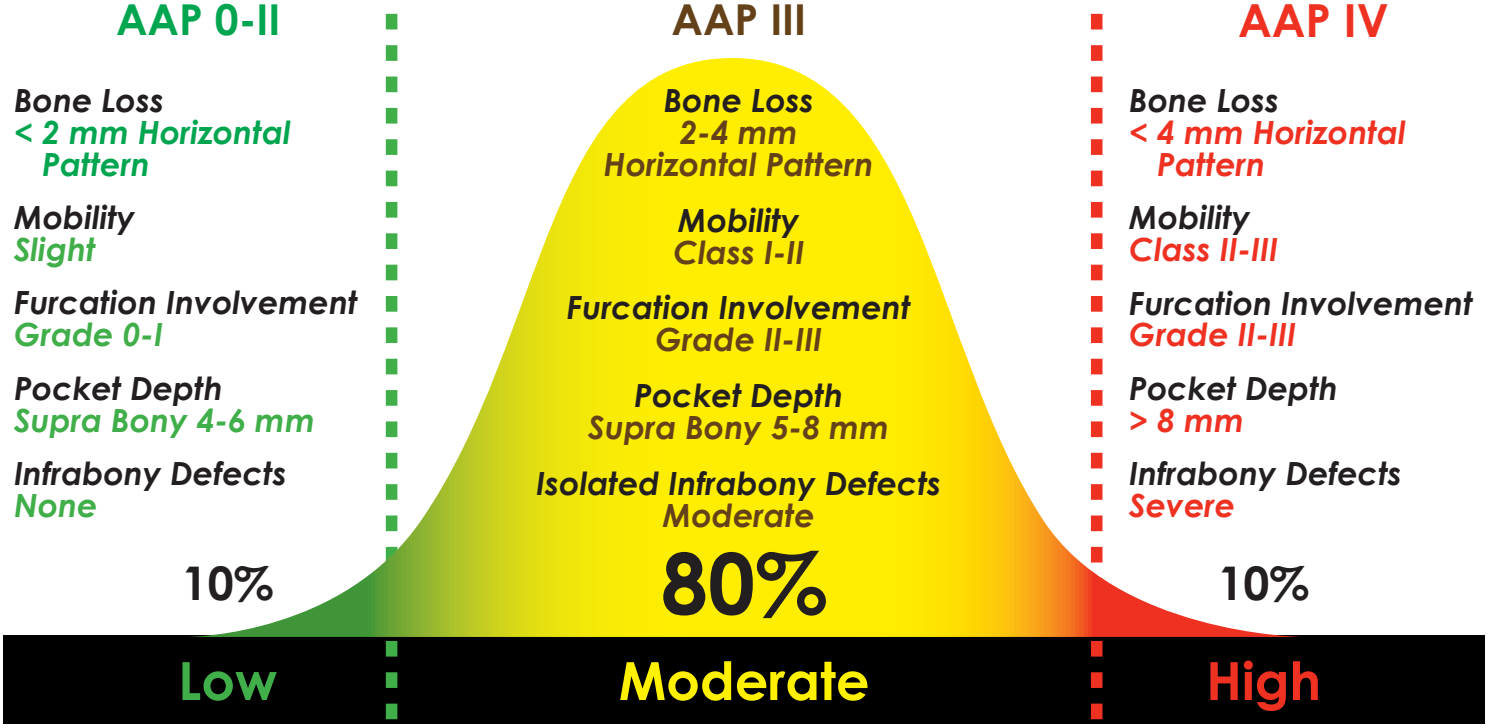
**Prognosis** is a prediction of the probable cause and outcome of disease.

**Symptom** is a departure from normal, which is noticed by the patient.

**Sign** is an objective indication of a medical fact or characteristic.

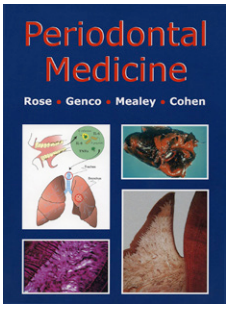
*High blood pressure is a **sign**, not a diagnosis!*
*Mobility is a **symptom**, not a diagnosis. Primary or secondary occlusal traumatism is a **diagnosis**.*
*Wear is a **sign**. Attrition is a **diagnosis**.*
*Bone loss is a **sign**. Aggressive periodontitis is a **diagnosis**.*

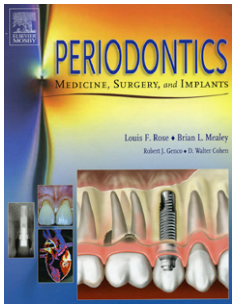
# Periodontal Medicine
## Risk Assessment




## PRINCIPLES Periodontal Risk Assessment

- Patient Specific: Genetics (Ethnicity), Smoking, Diabete
- Tooth Specific: Secondary Occlusal Traumatis
- Site Specific: Infrabony Componen

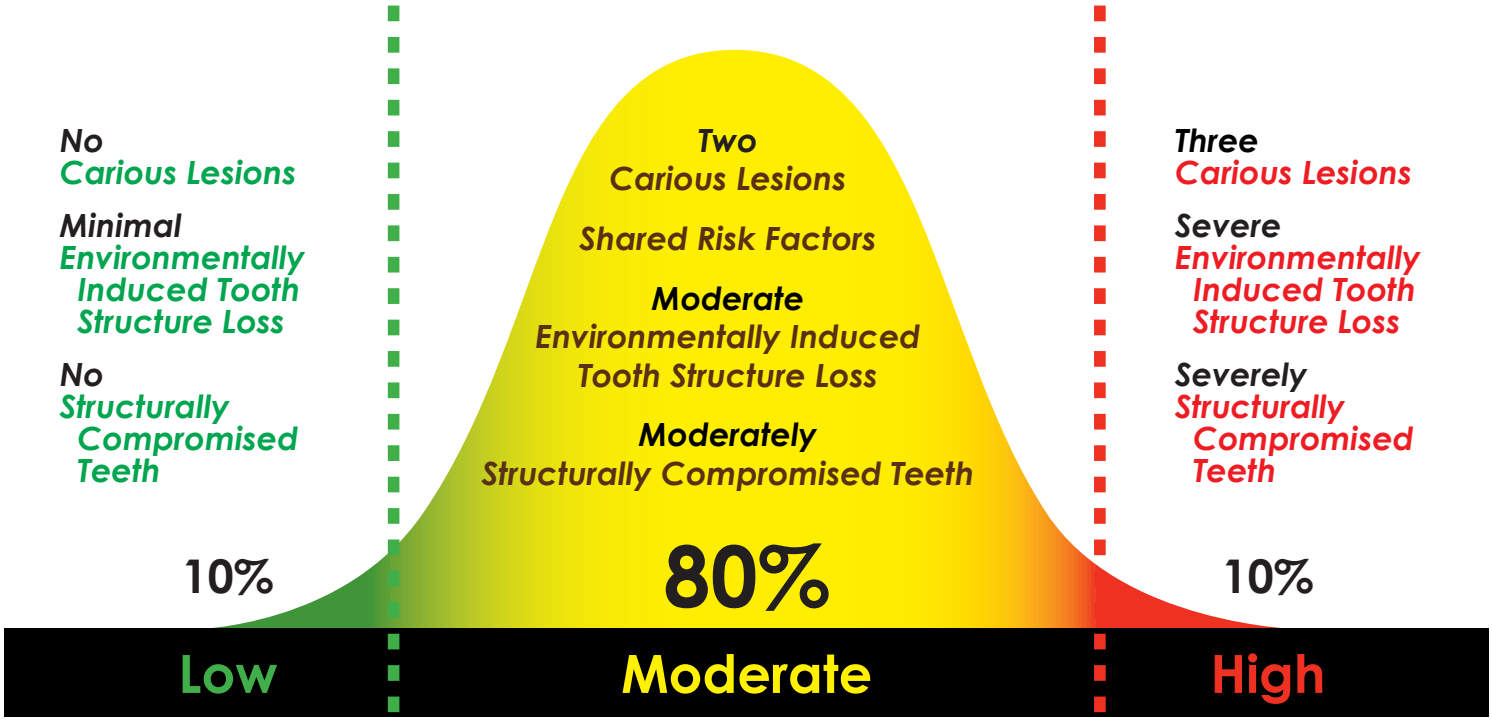




## DENTAL HISTORY

### GUM AND BONE

| | | YES | NO |
|---|---|---|---|
| 7. | Do your gums bleed or are they painful when brushing or flossing? | ☐ | ☐ |
| 8. | Have you ever been treated for gum disease or been told you have lost bone around your teeth? | ☐ | ☐ |
| 9. | Have you ever noticed an unpleasant taste or odor in your mouth? | ☐ | ☐ |
| 10. | Is there anyone with a history of periodontal disease in your family? | ☐ | ☐ |
| 11. | Have you ever experienced gum recession? | ☐ | ☐ |
| 12. | Have you ever had any teeth become loose on their own (without an injury), or do you have difficulty eating an apple? | ☐ | ☐ |
| 13. | Have you experienced a burning or painful sensation in your mouth not related to your teeth? | ☐ | ☐ |

# Biomechanical Risk Assessment




## PRINCIPLES Biomechanical Risk Assessment

**Tooth Structure Loss**

- Caries Risk Assessment
  - Xerostomia
- Erosion

**Structural Compromises**

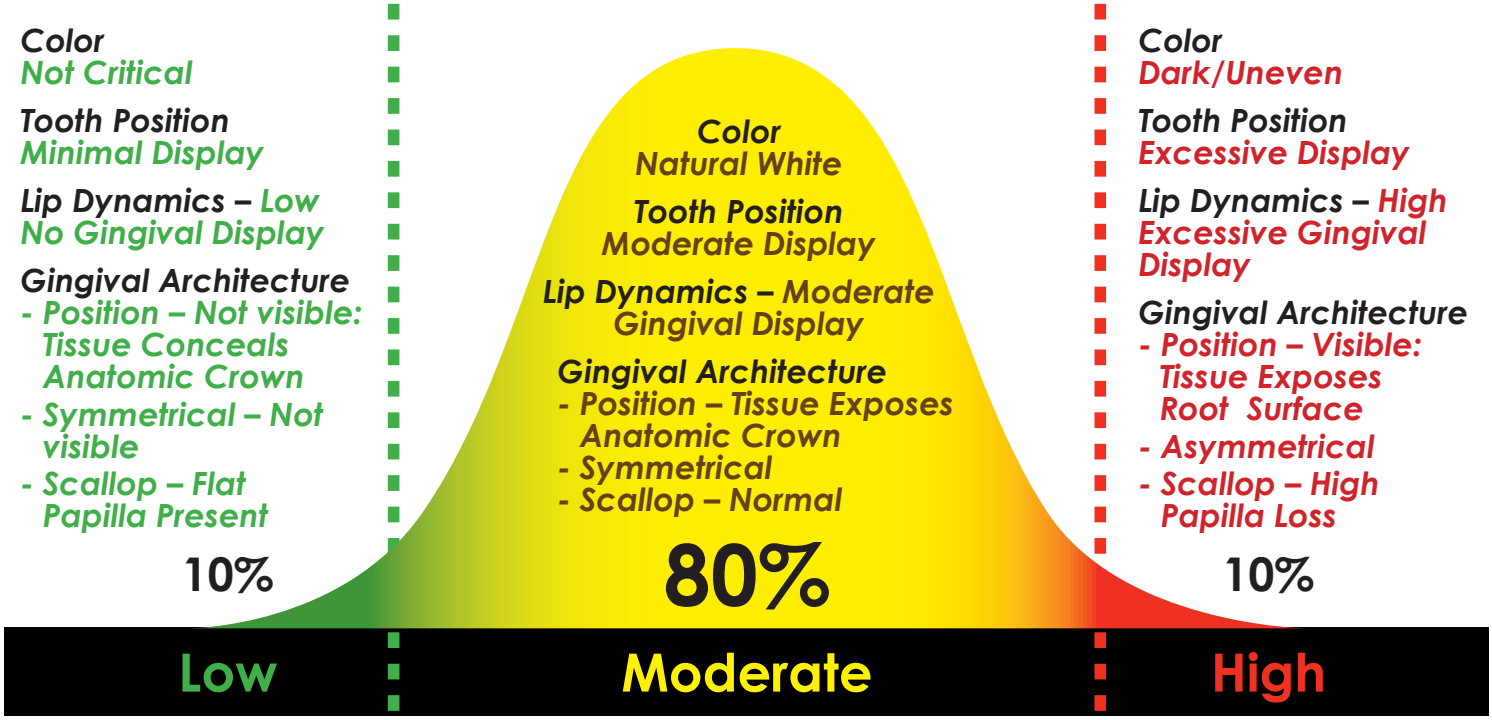
- Bonded Alternatives
- Fatigue Loading
- Pulpal Concerns
- Mechanical Principles
- Ferrule Effect

## DENTAL HISTORY

### TOOTH STRUCTURE

| | | YES | NO |
|---|---|---|---|
| 14. | Have you had any cavities within the past 3 years? | ☐ | ☐ |
| 15. | Does the amount of saliva in your mouth seem too little or do you have difficulty swallowing any food? | ☐ | ☐ |
| 16. | Do you feel or notice any holes (i.e. pitting, craters) on the biting surface of your teeth? | ☐ | ☐ |
| 17. | Are any teeth sensitive to hot, cold, biting, sweets, or avoid brushing any part of your mouth? | ☐ | ☐ |
| 18. | Do you have grooves or notches on your teeth near the gum line? | ☐ | ☐ |
| 19. | Have you ever broken teeth, chipped teeth, or had a toothache or cracked filling? | ☐ | ☐ |
| 20. | Do you frequently get food caught between any teeth? | ☐ | ☐ |

# Dentofacial Risk Assessment




## PRINCIPLES Dentofacial Risk Assessment

- Color
- Tooth Position
- Lip Dynamics/ Tooth Display (Length)
- Gingival Architecture/ Horizontal Position

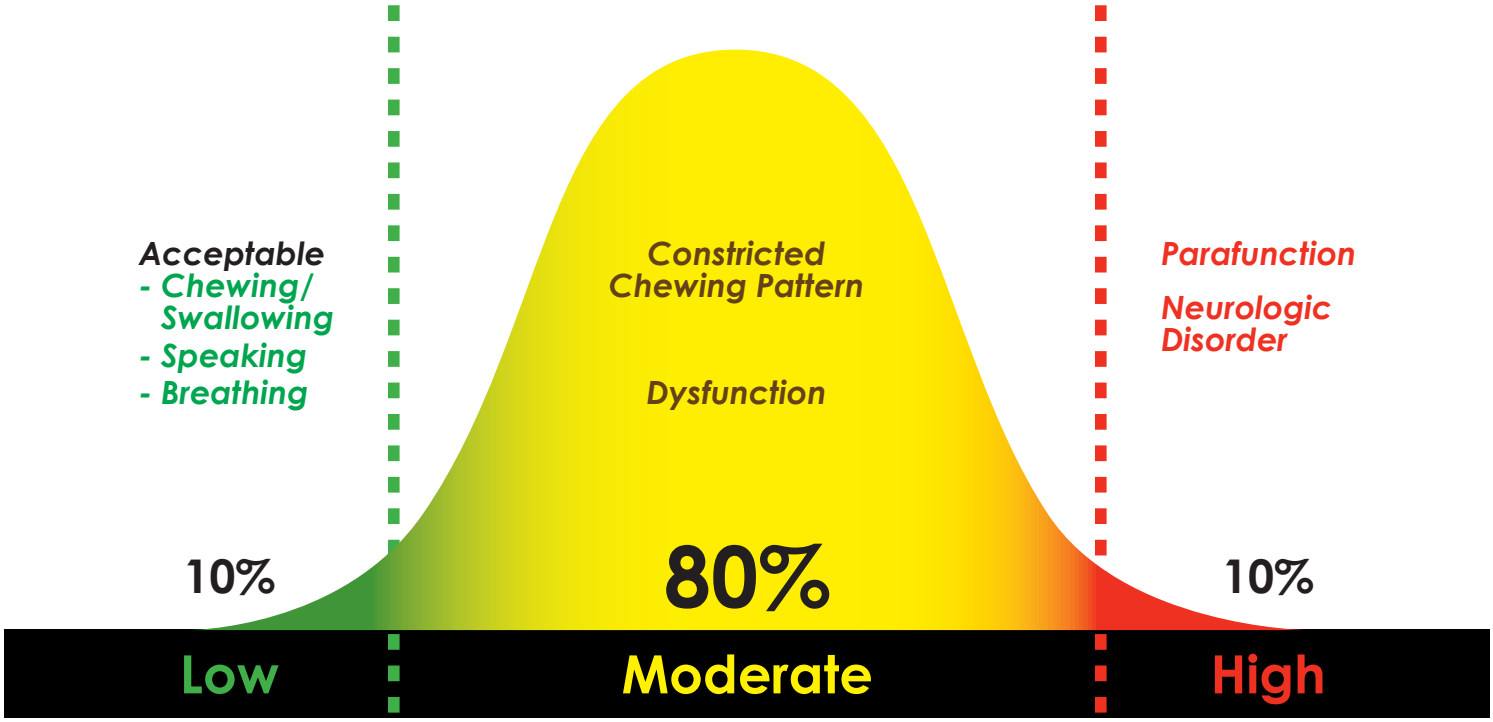
## DENTAL HISTORY

### SMILE CHARACTERISTICS

| | | YES | NO |
|---|---|---|---|
| *33. | Is there anything about the appearance of your teeth that you would like to change? | ☐ | ☐ |
| 34. | Have you ever whitened (bleached) your teeth? | ☐ | ☐ |
| 35. | Have you felt uncomfortable or self conscious about the appearance of your teeth? | ☐ | ☐ |
| 36. | Have you been disappointed with the appearance of previous dental work? | ☐ | ☐ |

* Ask Key Question: "*Are we creating the smile you used to have or a smile you never had?*"

# Functional Risk Assessment




## PRINCIPLES Functional Diagnosis

- Attrition
- Primary Occlusal Traumatism (Mobility)
- TMD
- Stability

## "Occlusion Stress Test"

### DENTAL HISTORY

**BITE AND JAW JOINT** YES NO

**Adaptive Mediated**

21. Do you have problems with your jaw joint? (pain, sounds, limited opening, locking, popping) ☐ ☐
22. Do you feel like your lower jaw is being pushed back when you bite your teeth together? ☐ ☐
23. Do you avoid or have difficulty chewing gum, carrots, nuts, bagels, baguettes, protein bars, or other hard, dry foods? ☐ ☐
24. Have your teeth changed in the last 5 years, become shorter, thinner or worn? ☐ ☐
25. Are your teeth becoming more crooked, crowded, or overlapped? ☐ ☐
26. Are your teeth developing spaces or becoming more loose? ☐ ☐
27. Do you have more than one bite, squeeze, or shift your jaw to make your teeth fit together? ☐ ☐
28. Do you place your tongue between your teeth or close your teeth against your tongue? ☐ ☐

**Brain Initiated**

29. Do you chew ice, bite your nails, use your teeth to hold objects, or have any other oral habits? ☐ ☐
30. Do you clench your teeth in the daytime or make them sore? ☐ ☐
31. Do you have any problems with sleep (i.e. restlessness), wake up with a headache or an awareness of your teeth? ☐ ☐
32. Do you wear or have you ever worn a bite appliance? ☐ ☐

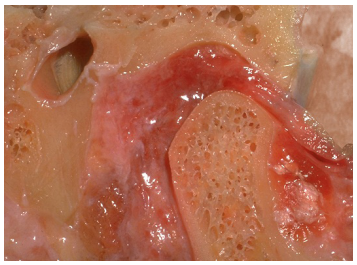
# ALWAYS

## Functional Occlusion
## Therapeutic Considerations

### P1

## Position (Orthopedic Position of Mandible)

- MIP
- CR/Adapted Centric Posture
- Myocentric



**Objective**
- Reference/Starting Point

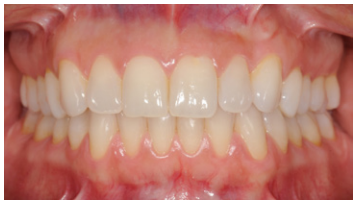
**Technique**
- Flawed

**Concerns**
- MIP – Remaining Dentition
- CR – Manipulation Techniques
- NM – Muscles, Head Posture, Neurologic system

### P2

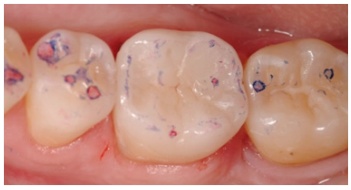
## Place (Occlusion, Esthetics)

- Bilateral Equal Intensity Simultaneous Contact Cuspids- Posterior
- Esthetics – OVD?



**Objective**
- Vertical Support/Posterior Teeth or Anterior Platform?

**Technique**
- Articulation Paper
- Shim Stock
- T – Scan
- Digital Palpation

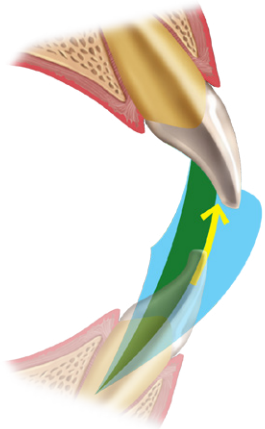


**Concerns**
- Mandibular Flexure
- Worn Teeth
- Periodontal Ligament
- Pulpal Status

### P3

## Pathway vs. "Guidance"

- Steepness vs. Flatness



**Objective**
- Minimize Friction and Load
- Avoid Chewing Interferences

**Technique**
- Articulation Paper – 200 microns
- Digital Palpation
- Assess Phonetics

**Concerns**
- Envelope Retrained?
- Overload Anterior Teeth

# Management of the Envelope of Function

## 1. Position of Maxillary Anterior Teeth

**Anatomic Reference**

Treatment Options:

- Orthognathic
- Orthodontic
- Restorative

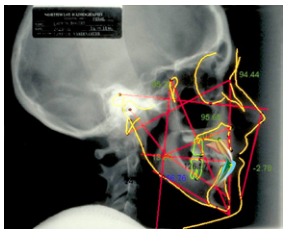


Figure 1

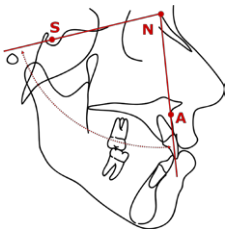



Figure 2

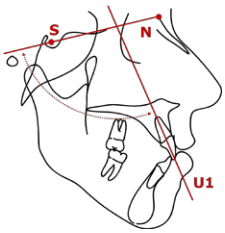



Figure 3

## 2. Condylar Position

Slightly Back

Slightly Anterior

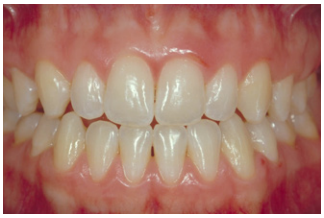


Figure 4

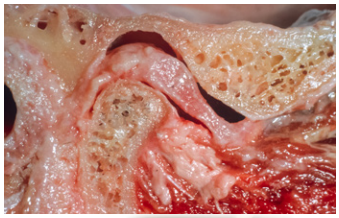


Figure 5

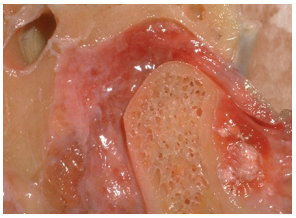


Figure 6

**Orthopedic Position of the Mandible-Reference System:**

- Teeth
- TMJ
- Muscles

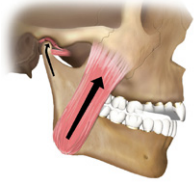


Figure 7

## 3. Position of Mandibular Anterior Teeth

**Anatomic Reference - Treatment Options:**

- Orthognathic
- Orthodontic
- Restorative
- Limited

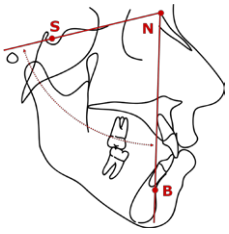



Figure 8

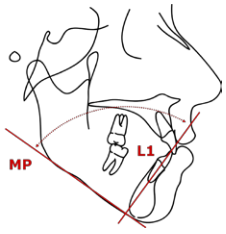



Figure 9

## 4. Alteration of OVD

**Rationale:**

- Facial Balance/Esthetics
- Functional
- Structural Concerns
- Speech

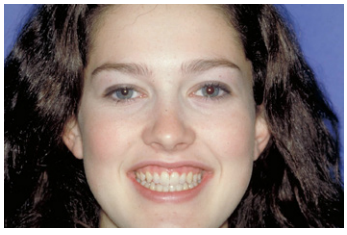


Figure 10

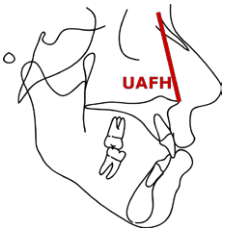



Figure 11

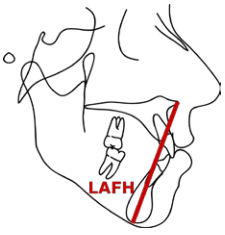



Figure 12