Clinical examination of periodontal patients. Subjective and objective examination. Hygiene and periodontal indices.

PATIENT EVALUATION/EXAMINATION

- Evaluation of the patient's periodontal status requires obtaining a relevant medical and dental history and conducting a serious clinical and radiographic examination with evaluation of extra-oral and intra-oral structures.

https://www.perio.org/sites/default/files/files/parameters.pdf

- All relevant findings should be documented. When an examination is performed for limited purposes, such as for a specifically focused problem or an emergency, records appropriate for the condition should be made and retained.

https://www.perio.org/sites/default/files/files/parameters.pdf

Periodontal Examination Objectives:

- 1. Identify the pathological changes of the periodontal tissues
- 2. Describe the above in professional jargon.
- 3. Accurately collect/chart following clinical data:

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- A. Probing depth.
- B. Bleeding on probing points/Suppuration
- C. Furcation involvements.
- D. Tooth mobility/ fremitus.
- E. Gingival recession.
- F. Mucogingival defects.
- G. Plaque score.
- 4. Analyze the clinical data and develop an overall diagnosis for the patient.

Review of medical/dental history.

- Gingival Examination.
- Probing Depth (PD).
- Clinical Attachment Level (CAL).
- Bleeding upon Probing (BOP).
- Mobility Assessment/fremitus.
- Furcation Assessment

- Occlusal Assessment
- Mucogingival Assessment
- Radiographs
- Tooth vitality
- Etiologic/risk factors

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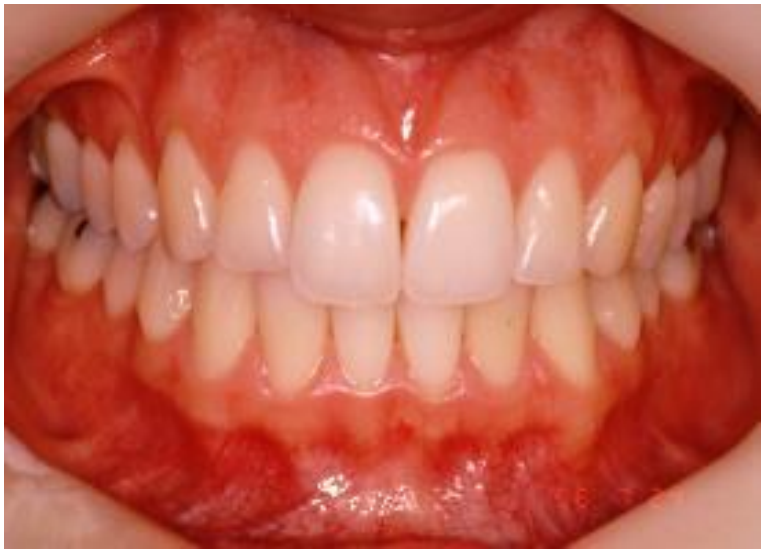
Gingival Examination

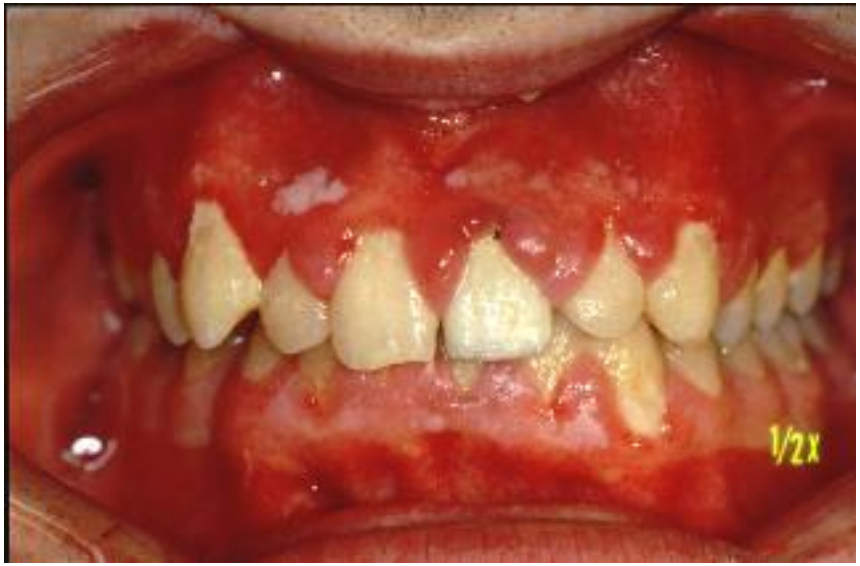
- Evaluate tissue changes in terms of:
- **Color.**
- **Consistency.**
- **Contour.**

Healthy vs. Diseased

	Normal	Diseased
Color	Pale pink ± pigmentation	Acute: Red Chronic: bluish pink bluish red (cyanotic)
contour	Marginal gingiva Knife-edge margin ±stippling Follows a curved line about the tooth Papillae: (1)Normal contact, papilla is pointed and pyramidal, fills the interproximal area. (2)Space(diastema): flat or saddle - shape	Marginal gingiva: Rounded Rolled bulbous Papillae: Bulbous Flattened blunted Cratered
Consistency	Firm, resilient	Edematous fibrotic

Healthy vs. Diseased Tissues





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Gingival Indices

- ***Gingival Indices***
- Used for evaluation and quantitation of gingivitis.
- Used for epidemiological studies.

Gingival Indices:

- Gingival Index (GI) (Loe& Silness1963).
- Papilla Bleeding Index (PBI) (Saxter& Muhleman1975).
- Gingival Index Simplified(GI-S) (Lindhe1983) which corresponds to Gingival Bleeding Index (GBI) (Ainamo&Bay1975).

Gingival Index (GI) (Loe& Silness):

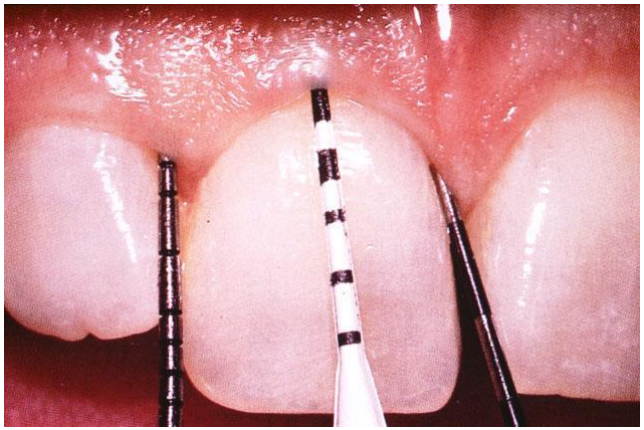
- Widely used in epidemiological studies.
- Scores gingival inflammation from 0-3 on the facial, lingual and mesial surfaces of all teeth

Gingival Index (GI)

- Grade
- 0 - Normal gingiva, no inflammation, No discoloration, no bleeding.
- 1 - Mild inflammation, Slight color change, mild alteration of gingival surface, no bleeding.
- 2 - Moderate inflammation, erythema, swelling, bleeding on probing or when pressure applied.
- 3 - Severe inflammation, severe erythema and swelling, tendency toward spontaneous hemorrhage, some ulceration

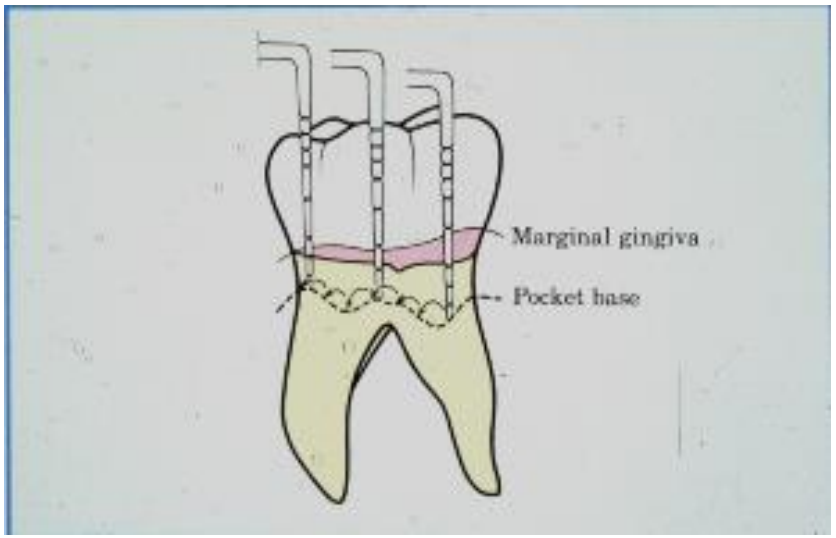
Probing Depth:

- The distance from the soft tissue
- (gingiva or alveolar mucosa)
- margin to the tip of the periodontal probe during usual periodontal diagnostic probing. The health of attachment can

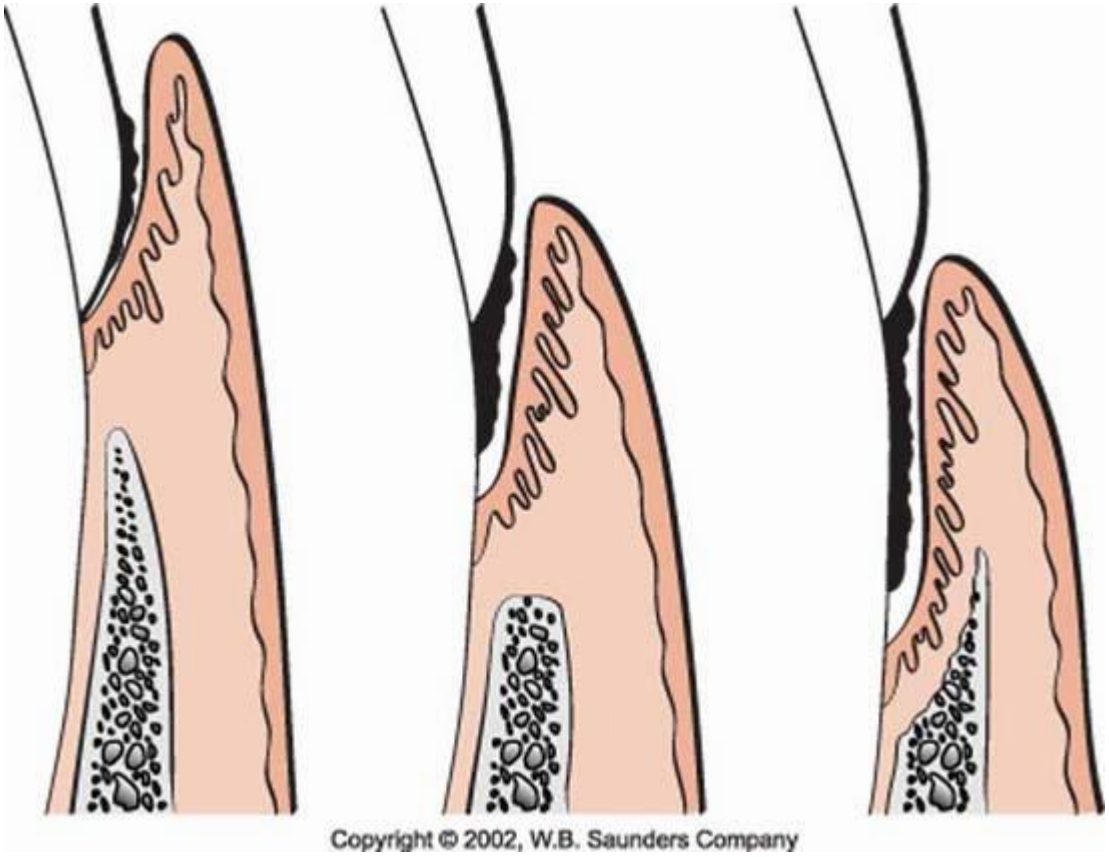


Information from probing:

- Pocket depth/probing depth
- Bleeding on probing
- Attachment loss
- Root deposits
- Furcation involvement
- Anatomy of the root
- Configuration of the pocket
- Bone sounding/configuration of bone defects

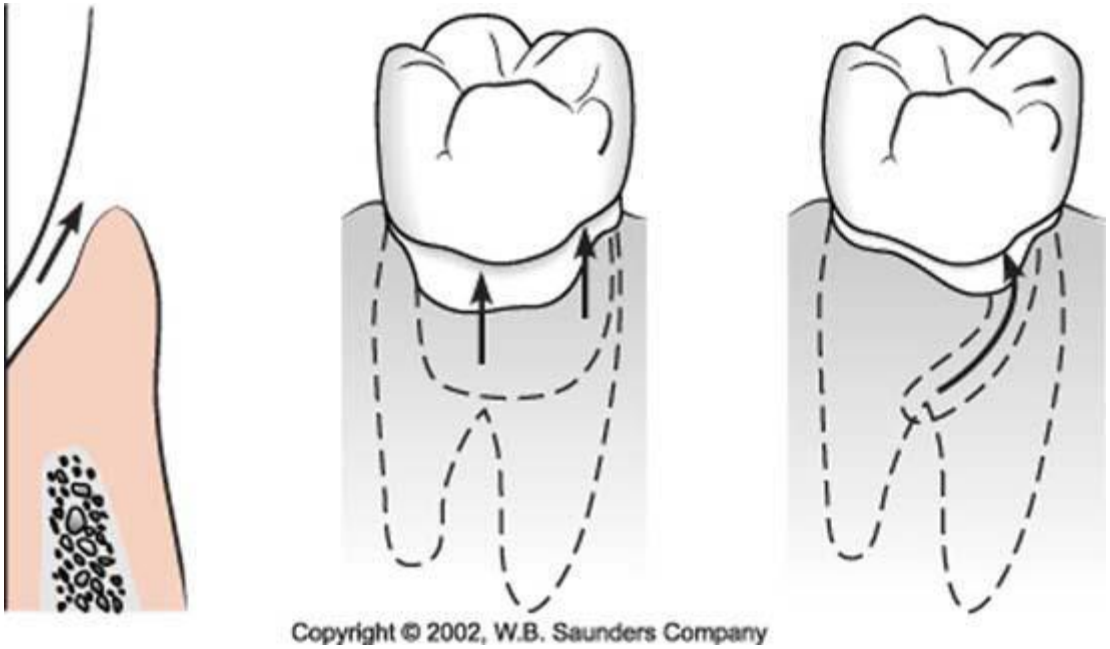


Periodontal pocket



A: gingival pocket.
B: suprabony pocket.
C: intrabony pocket

Periodontal pocket



A:simple pocket.
B:compound pocket.
C:complex pocket.

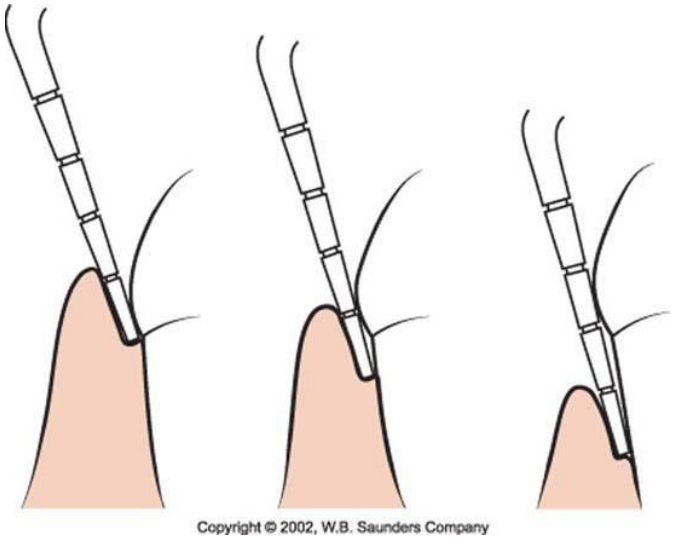
Factors Affecting Probing Depth Inflammation.

- Inflammation.
- Presence of subgingival calculus.
- Angulation of probe.
- Probing force.
- Probe tip diameter.
- Patient comfort and tolerance.

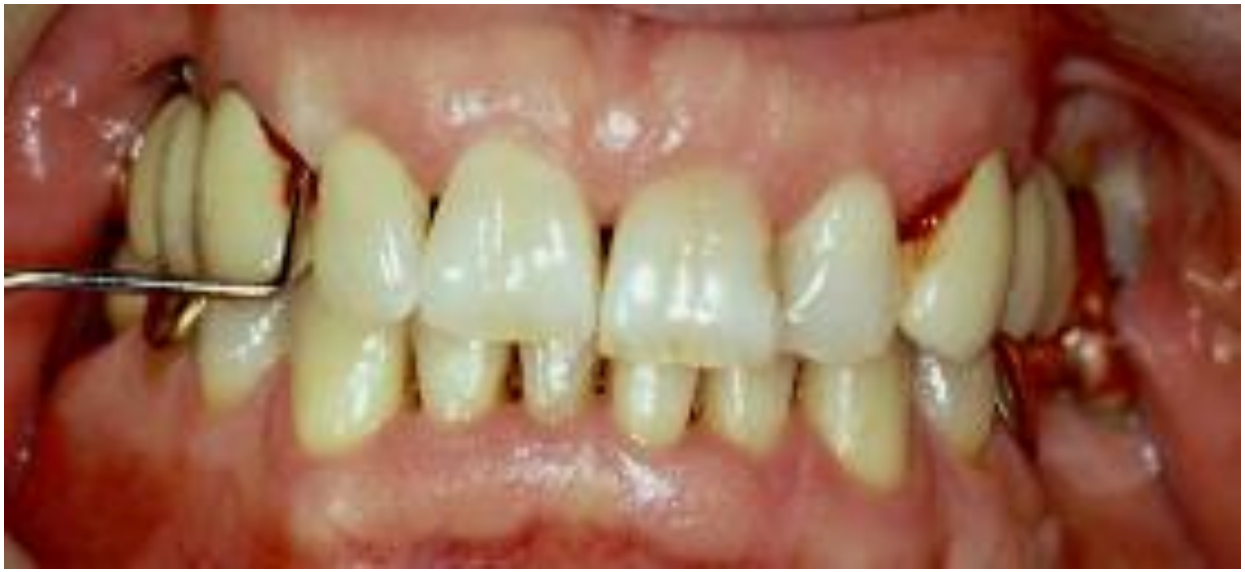
Clinical Attachment level

Definition:

the distance from CEJ to the tip of a periodontal probe during usual periodontal diagnostic probing. The health of Attachment apparatus can affect the measurement.



Bleeding on Probing (BOP) Objective sign of gingival inflamation



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Causes of BOP:

- Gingival inflammation.
- -Multiple repeated probe insertion at a single site.
- -Excessive probing force.
- -Probing force >0.25N results in BOP in healthy sites

Bleeding on Probing (BOP)
Clinical significance:

- At a single examination, presence BOP from a site is not strongly related to progression of Periodontitis.

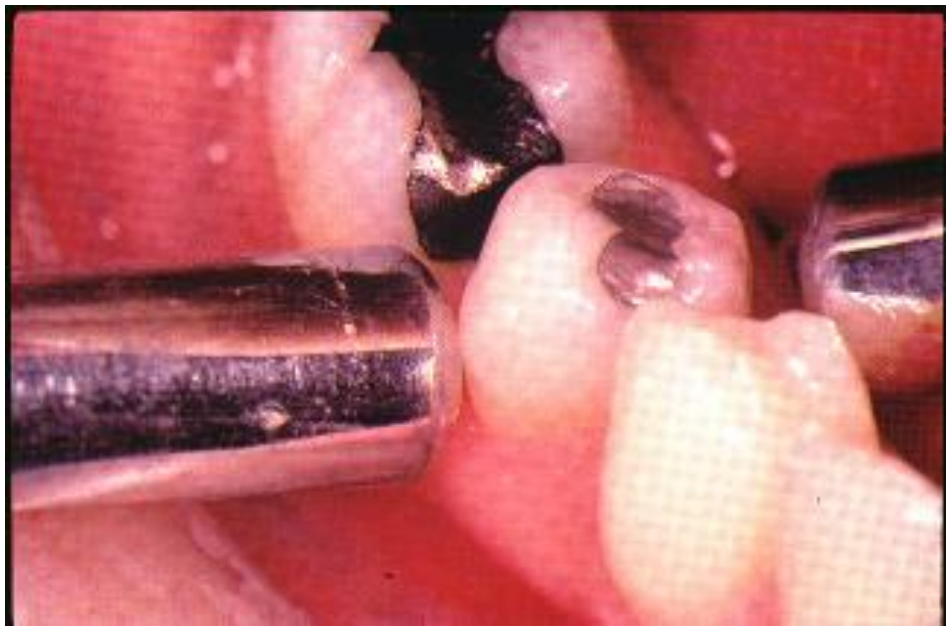
- -In treated patients on recall program continual absence of BOPis an excellent predictorof periodontal stability.

Tooth Mobility

- Trauma from occlusion.
- Inflammation.
- Loss of support.
- Non-periodontal causes.

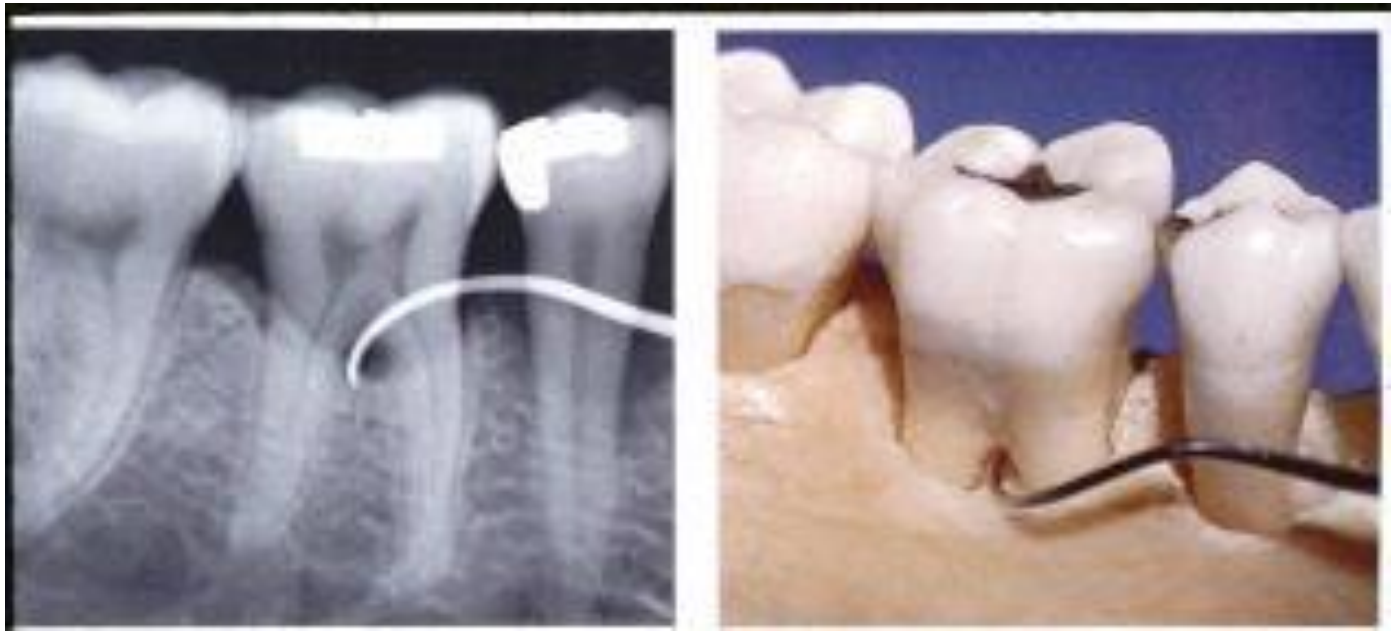
Scale for Mobility Assessment

- **Grade I Slight Up to 1 mm**
- **Grade II Moderate Between 1-2mm**
- **Grade III Advanced Over 2 mm**



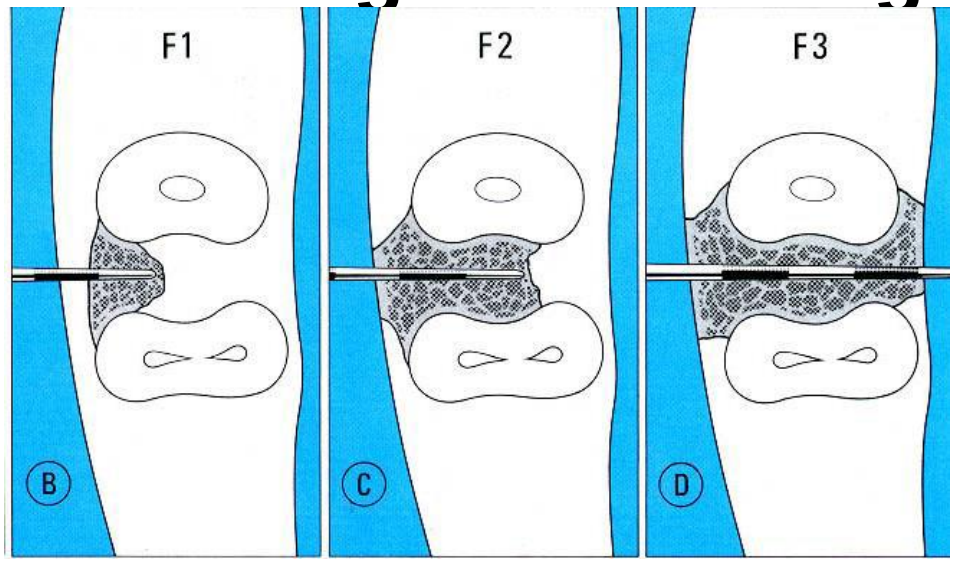
Furcation Assessment
How do you evaluate?

- 1. by probing
- 2. radiographs



Furcation Classification: Hamp 1975

- Grade I:horizontal penetration < 3mm
- Grade II:horizontal penetration > 3mm but not through and through.
- Grade III: through and through

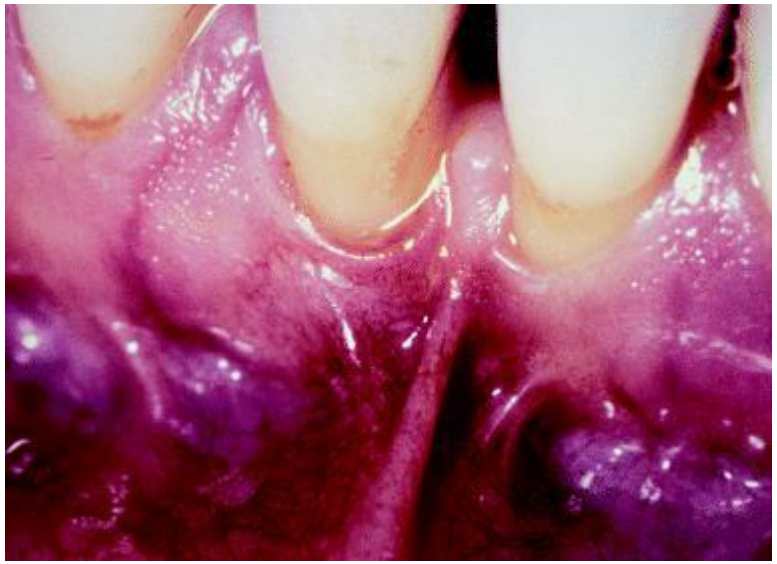


Mucogingival Assessment

- Includes:
- -Marginal tissue recession.
- -Inadequate attached gingiva.
- -High frenum

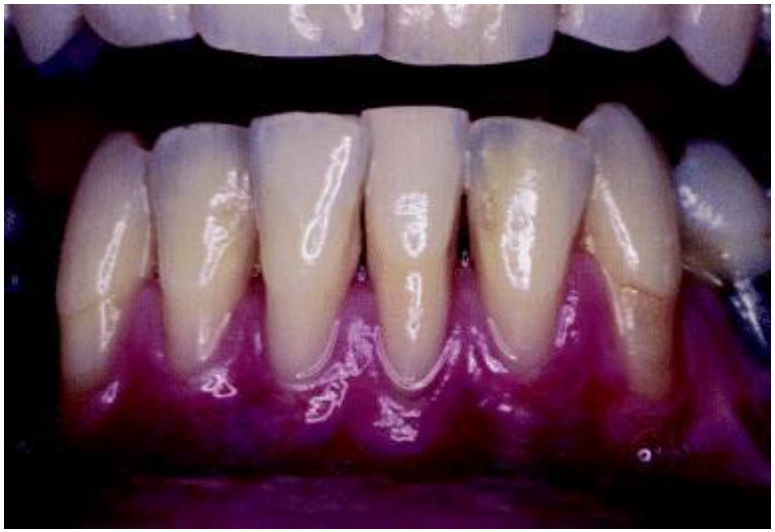
Mucogingival problem:

- Marginal tissue recession high frenum inadequate attached gingiva.

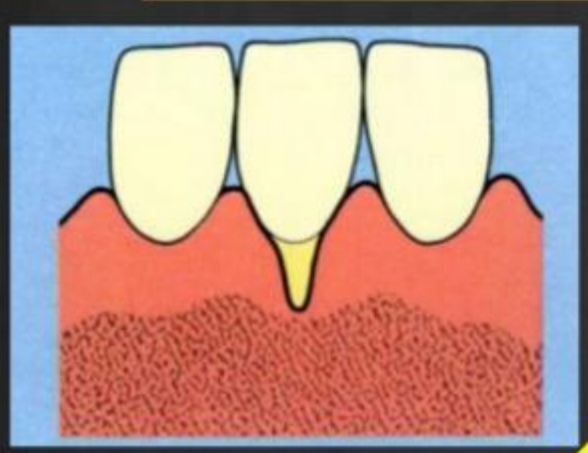


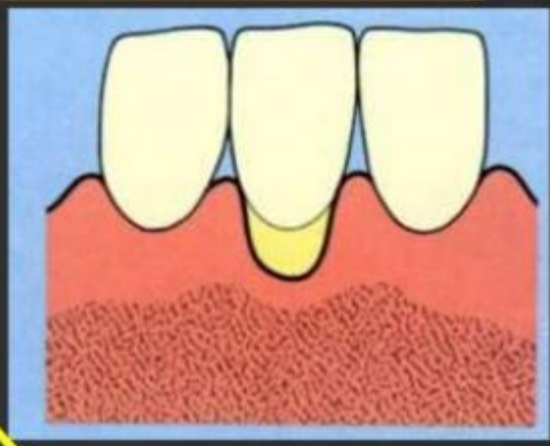
Muccogingival Assessment Marginal tissue recession

- Marginal tissue recession and lack of keratinized gingiva on mandibular anterior teeth



Sullivan and Atkins. (1968)



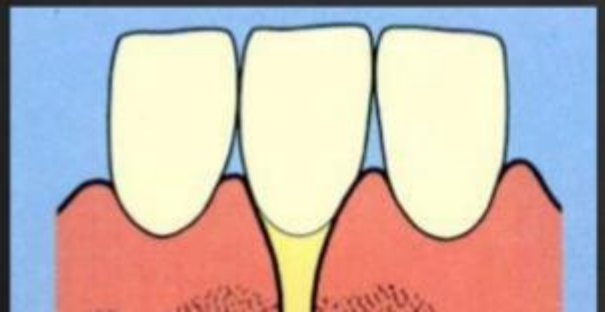


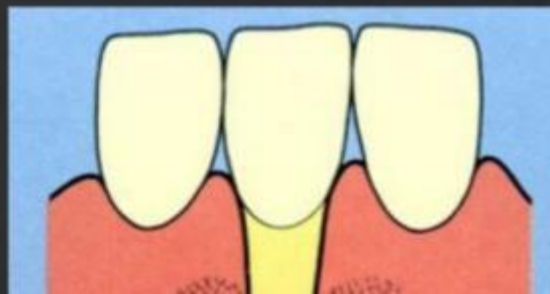
Shallow

Narrow

Wide

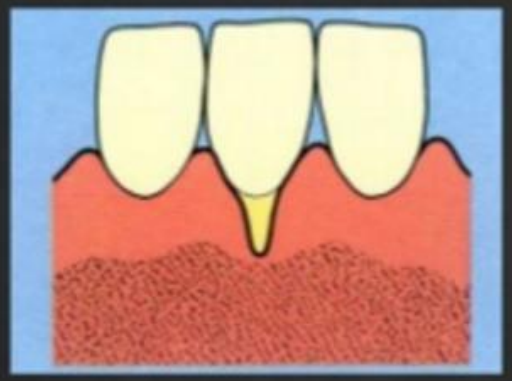
Deep

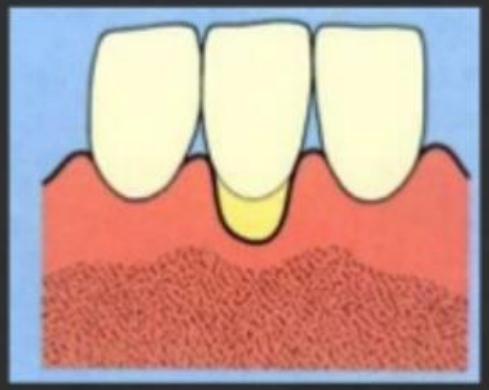




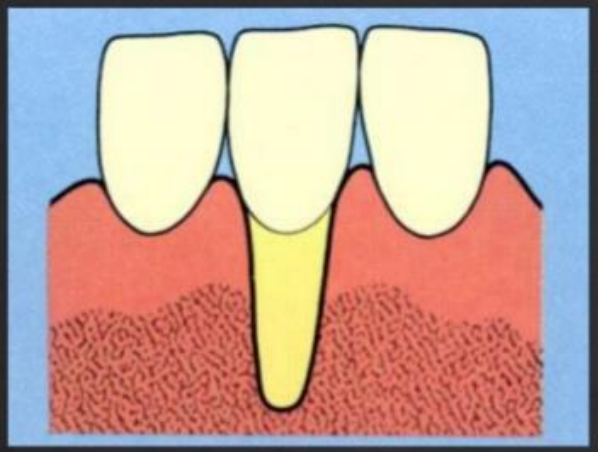
Miller's Classification of Marginal Tissue Recession

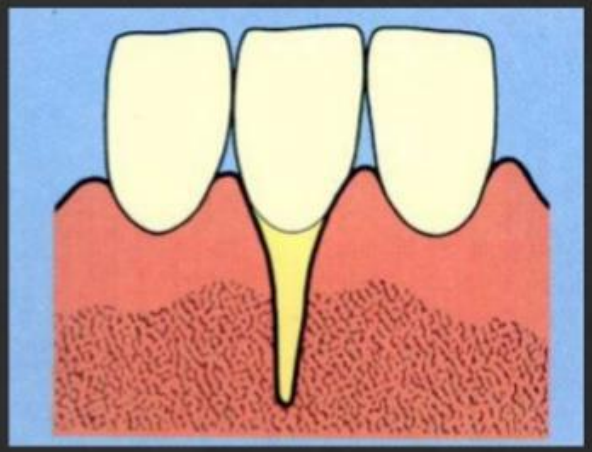
Class I: Marginal tissue recession not extending to the mucogingival junction (MGJ). No loss of interdental bone or soft-tissue. 100% root coverage



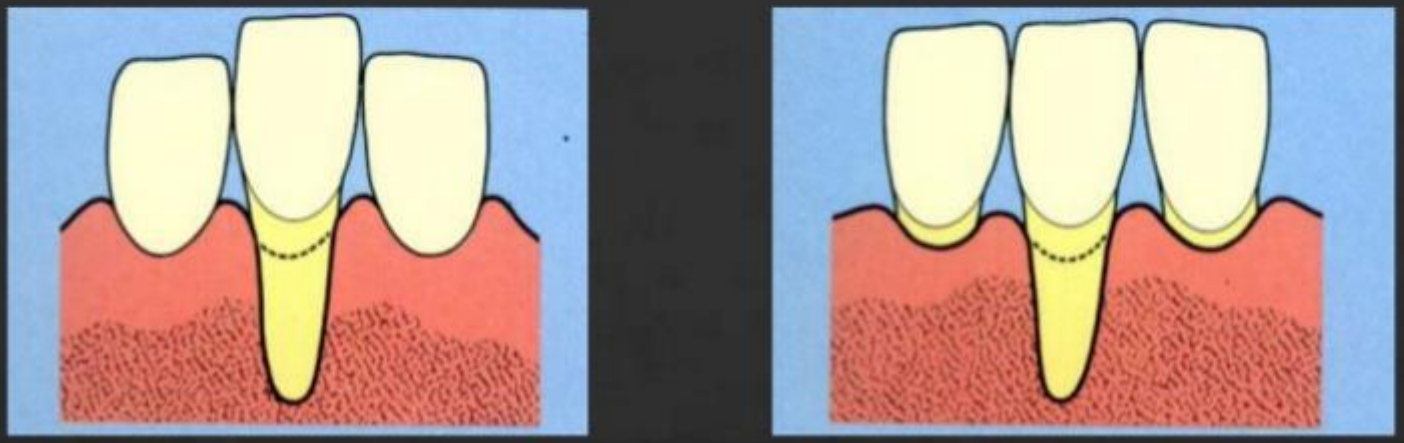


Class II: Marginal recession extending to or beyond the MGJ. No loss of interdental bone or soft-tissue. 100% root coverage.

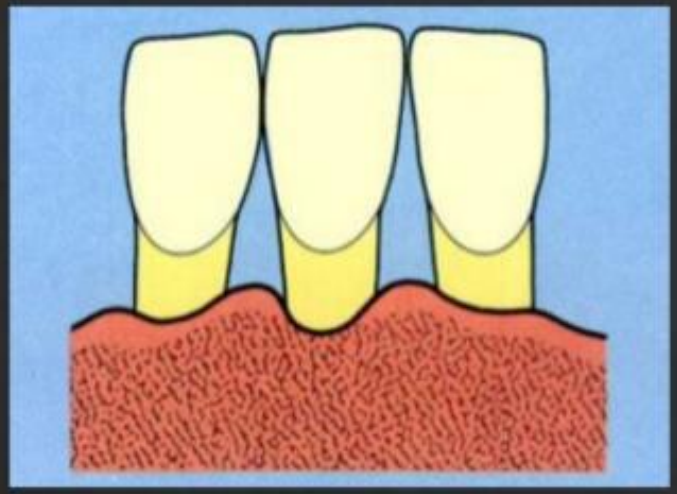


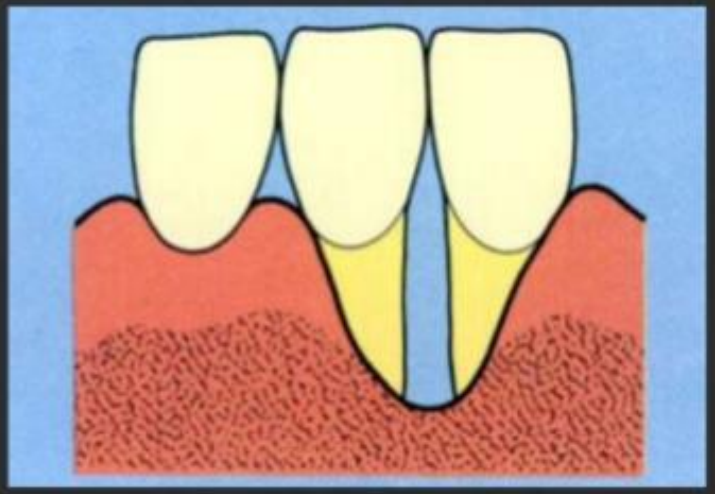


Class III: Marginal tissue recession extends to or beyond the MGJ. Loss of interdental bone or soft-tissue is apical to the CEJ, but coronal to the apical extent of the marginal tissue recession. Partial root coverage

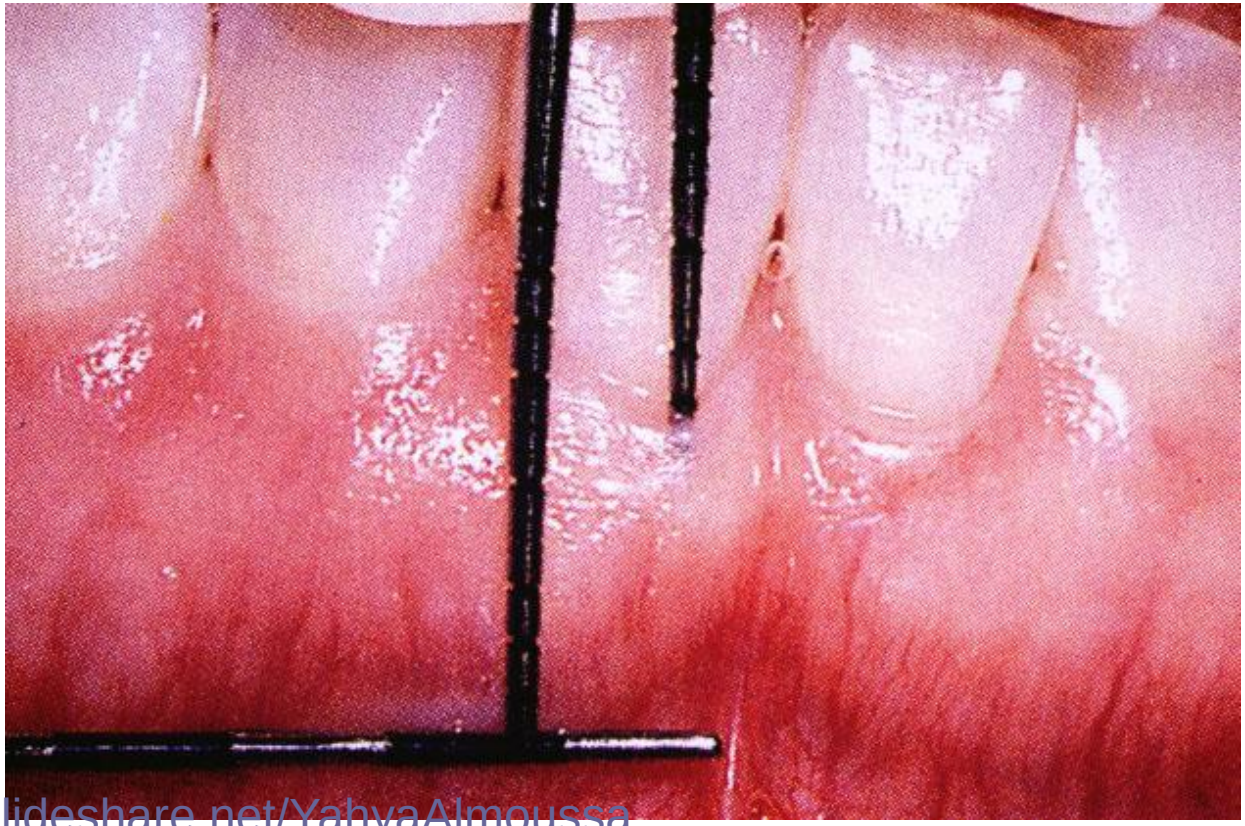


Class IV: Marginal tissue recession extends to or beyond the MGJ. Loss of interdental bone extends to a level apical to the extent of the marginal tissue recession. No root coverage .





Measuring the width of Attached gingiva



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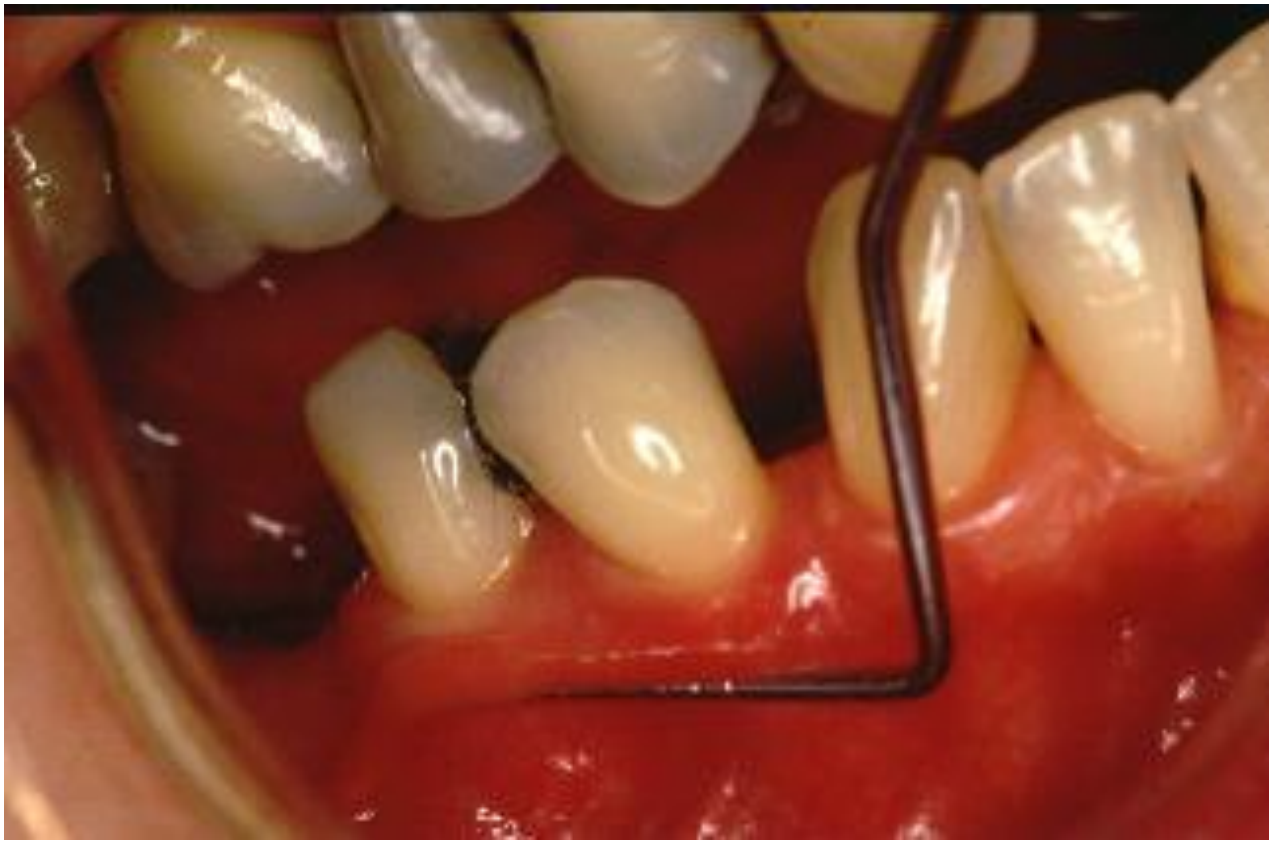
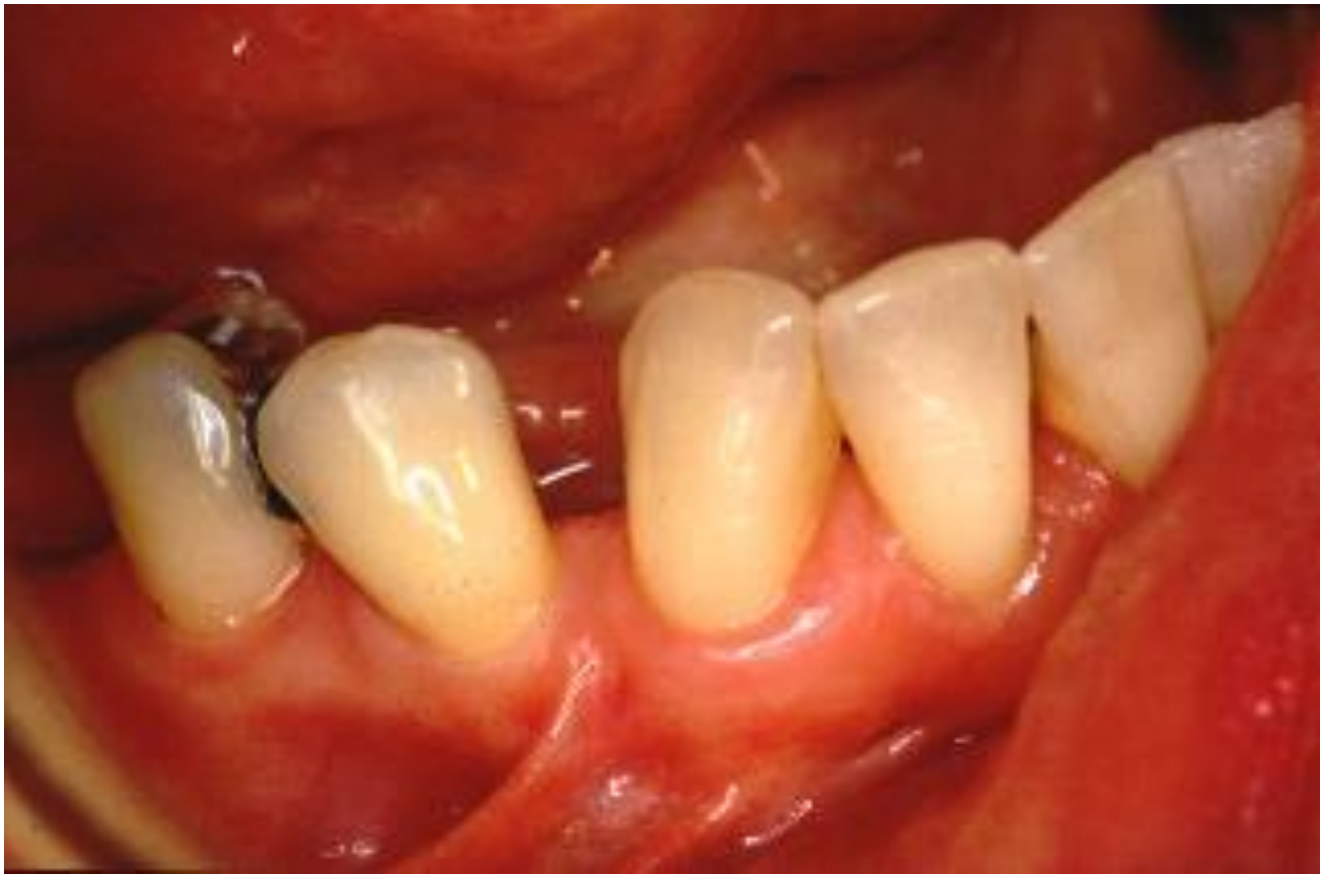
Site with inadequate Attached gingiva (arrow)



High frenum

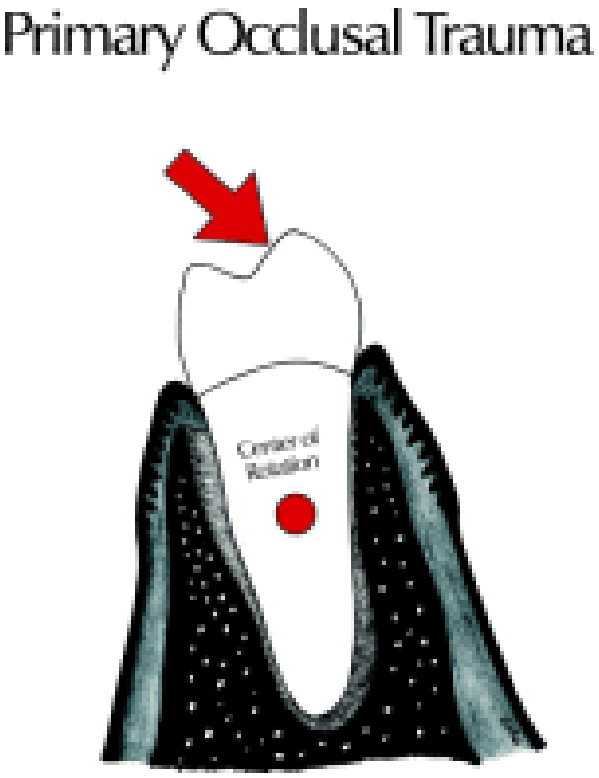


Occlusal Trauma

- An injury to the periodontal ligament and alveolar bone as a result of excessive forces.
- There are 2 types of occlusal trauma:
- Primary
- Secondary

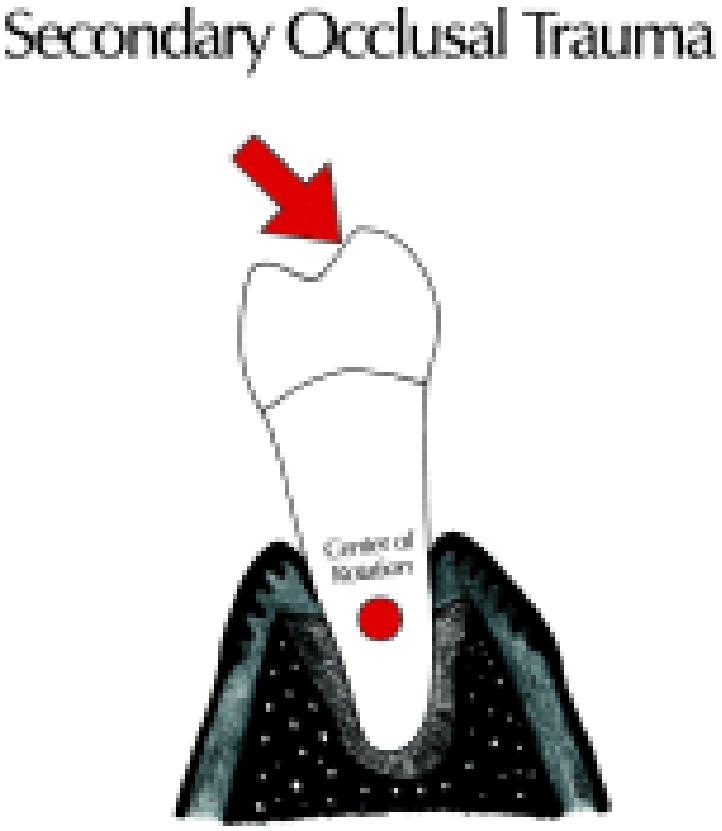
Primary occlusal traumar

- Results from excessive occlusal forces applied to a tooth with normal support. Note that the center of rotation is near the middle of the root.



Secondary occlusal trauma:

- results from excessive/normal occlusal forces applied to a tooth with reduced periodontium.



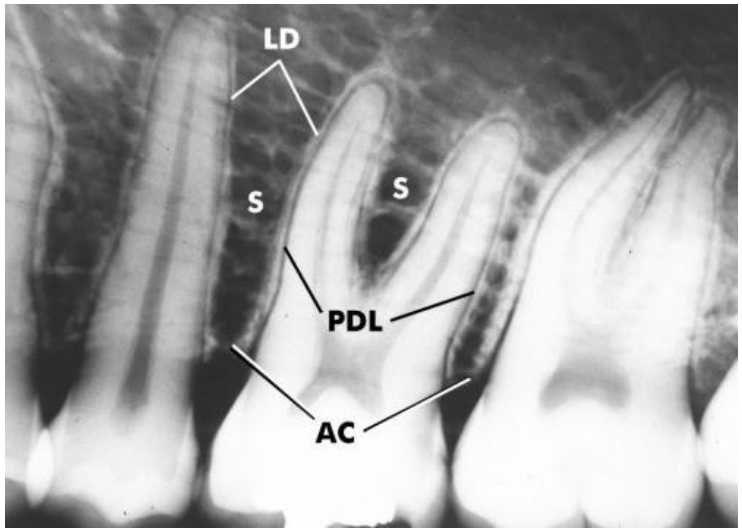
Clinical indicators of occlusal trauma:

- Mobility (progressive)
- –Fremitus
- –Premature occlusal contacts.
- –Wear facets in presence of other clinical indicators.
- –Tooth migration.
- –Fractured tooth
- –Thermal sensitivity.

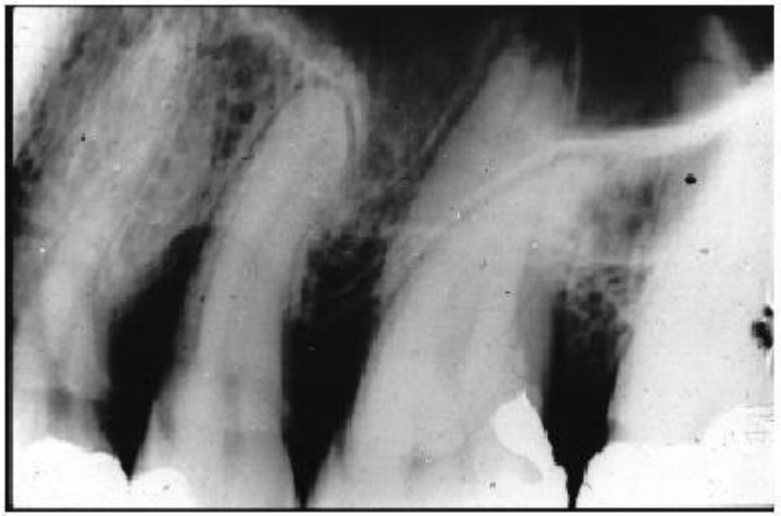
Radiographic indicators of occlusal trauma :

- Widened PDL.
- Bone loss.
- Root resorption.

Radiographic Assessment



Healthy Periodontium



Periodontitis

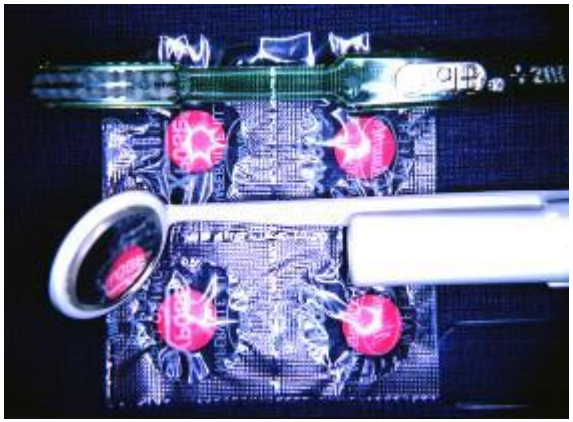
Radiographic Assessment of Bone Loss

- Bone Loss
- **Horizontal**
- **Vertical**
- Endodontic involvement
- Root deposits
- Root anatomy
- Root length

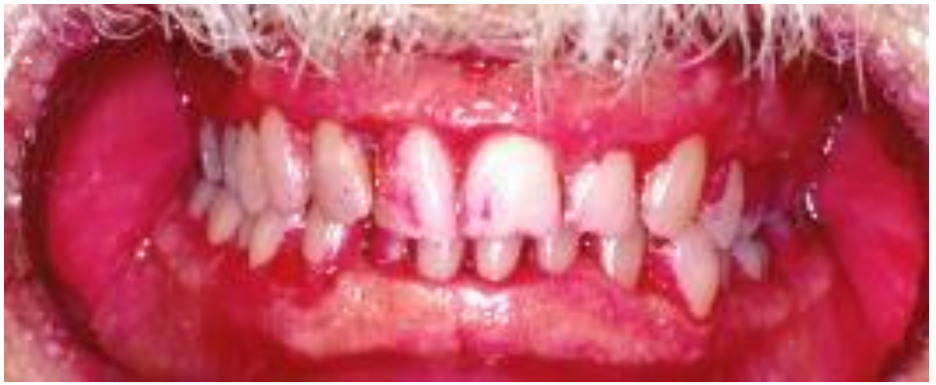
Plaque Control RecordO'Leary et al. 1972

- **Advantages:**
- -Gives the dentist, hygienist a simple method of recording plaque on individual tooth surface
- -Establishes an oral hygiene a baseline.
- -Patient education.
- -Requires a short time to perform.

Plaque Control RecordO'Leary et al. 1972



Disclosing tablets



Disclosed plaque

Plaque Control Record
O'Leary et al. 1972

- Plaque Score (%):

$$\frac{\text{Number of surfaces with plaque X 100}}{\text{Number of teeth X4}}$$

Factors that hinder patient's plaque control:

- Calculus.
- Poor restoration margins.
- Over-contoured restorations.
- Removable partial appliances.

Plaque Index (PI)(Silness & Loe)

Concerns *thickness of plaque along gingival margin.*

- Used in epidemiological studies.along with Gingival index.
- Time consuming.
- Less useful for routine charting.

Plaque Index (Sliness &Loe)

- **Scores Criteria**
- 0 No plaque
- 1 A film of plaque adhering to the free gingival margin and adjacent area of the tooth. The plaque may be seen in situ only after application of disclosing solution or by using the probe on the tooth surface.
- 2 Moderate accumulation of soft deposit s within the gingival pocket, or the tooth and gingival margin which can be seen with the naked eye.
- 3 Abundance of soft matter within the gingival pocket and/or on the tooth and gingival margin

THERAPEUTIC GOALS

- 1. To minimize the recurrence and progression of periodontal disease in patients who have been previously treated for gingivitis and periodontitis.

- 2. To reduce the incidence of tooth loss by monitoring the dentition and any prosthetic replacements of the natural teeth.

- 3. To increase the probability of locating and treating, in a timely manner, other diseases or conditions found within the oral cavity.