Periodontal Disease Detection, Examination and Diagnosis

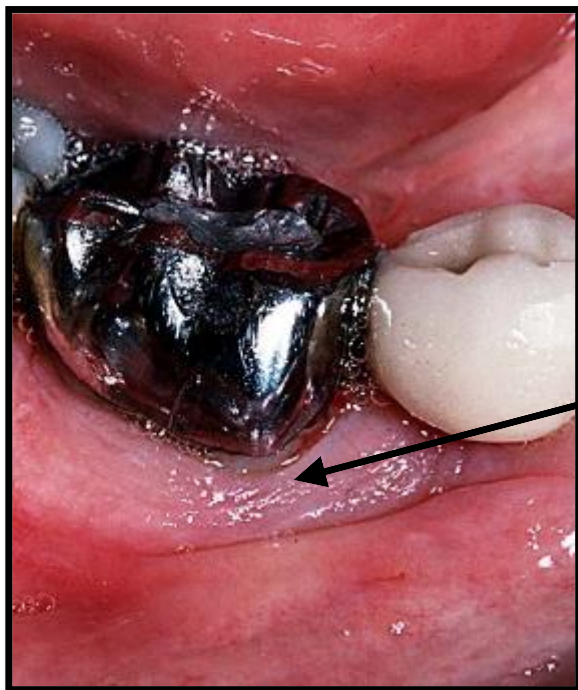
A Guide for IHS Dental Professionals
August 24, 2016
IHS CDE Webinar

Purpose/Learning Objectives

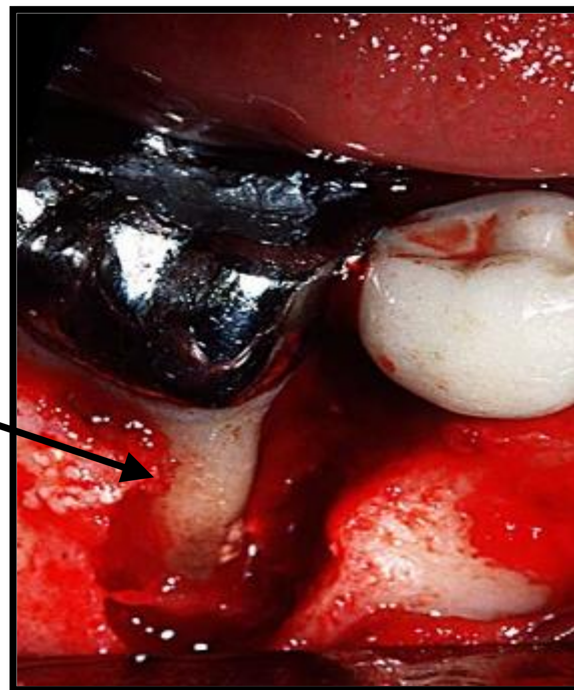
- The purpose of this presentation is to provide dental professionals with the knowledge and skills to detect and diagnose periodontal disease.
- At the conclusion of this presentation, the participant should be able to:
  - Explain and properly use the Community Periodontal Index (CPI) in screening patients for periodontal disease;
  - Describe the examination protocol for periodontal disease and when to conduct a full periodontal workup following a CPI screening; and
  - Develop a periodontal diagnosis based on the screening, periodontal workup, and other indicators.

Detecting Periodontal Disease

- Sometimes things aren't what the appear to be…



Is this health?



No!!!

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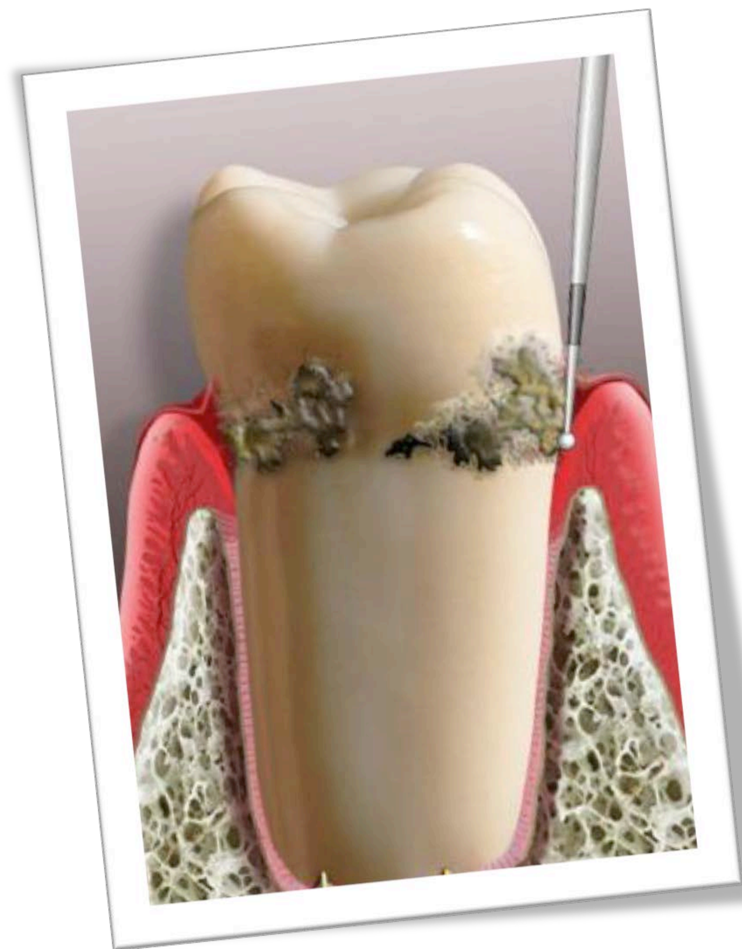
Detection Methods

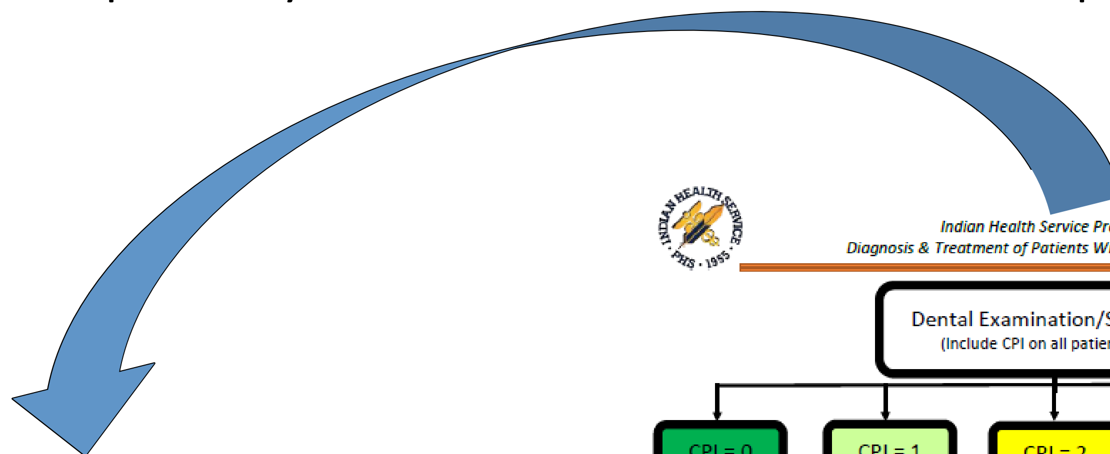
- Conventional methods:
  - Visual changes
  - Radiographs
  - Mobility
  - Probing depths and attachment levels

- Others:
  - Enzymes- GCF or saliva
  - DNA/RNA probes
  - Cytokines

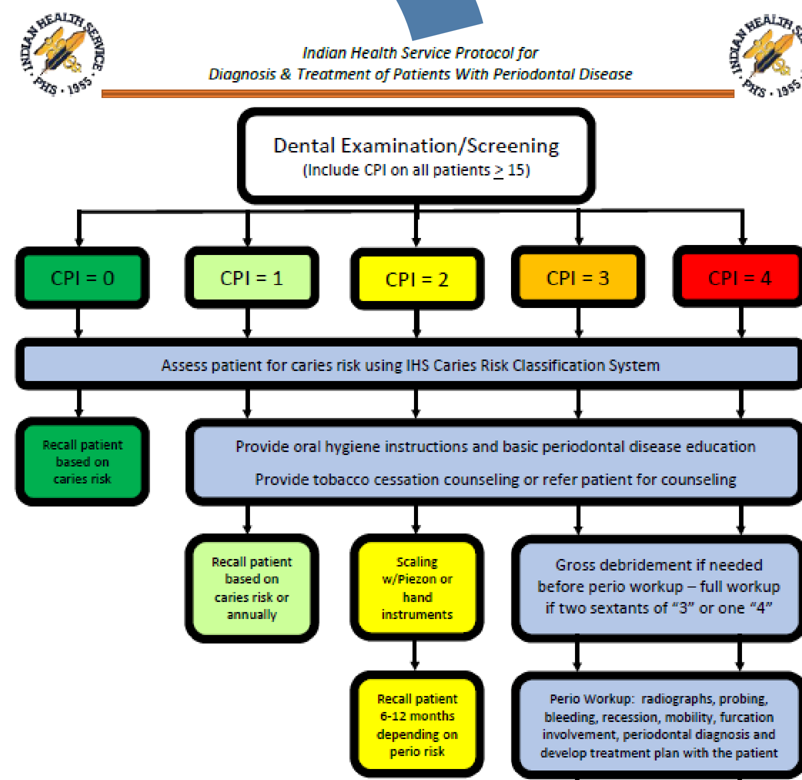


Community Periodontal Index (CPI)

- The first step in early detection is to conduct a CPI on all patients ≥ 15



Dental Examination/Screening
(Include CPI on all patients ≥ 15)

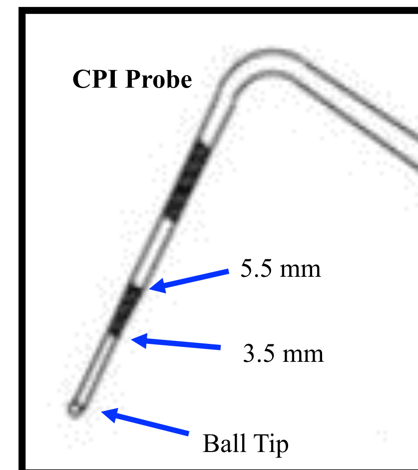


About the CPI

- Created in 1978 by the World Health Organization to provide a global standard for screening periodontal disease

- It is an index only; it does not replace the need for a comprehensive periodontal examination when indicated

- The CPI probe has a ball tip and the first black band begins at 3.5 mm and ends at 5.5 mm

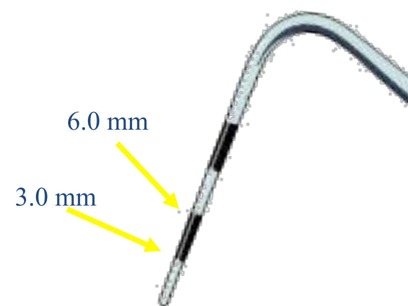


Use of the 3-6-9-12 Probe

- If a CPI probe is not used, then any probe may be used, realizing that you will need to estimate probing depths of 3.5 and 5.5 mm.

- With the 3-6-9-12 probe if the first black band is partially visible but more than 1/2 mm into the sulcus, the sextant is scored a “3.”

- If the first black band is not visible or is only barely visible (just a 1/2 mm), the sextant is scored a “4.”



How do I score using the CPI?

- Divide the teeth into six sextants
- Measure pocket depths at six sites around each tooth (MB, B, DB, DL, L, ML)
- Use light probing pressure, walk the tip of the probe around the tooth until it meets resistance at the base of the pocket
- Record the worst score for the sextant; if a score of 4 is achieved, there is no need to probe additional teeth in the sextant
- For sexants with less than two teeth, use code “x” for that sextant

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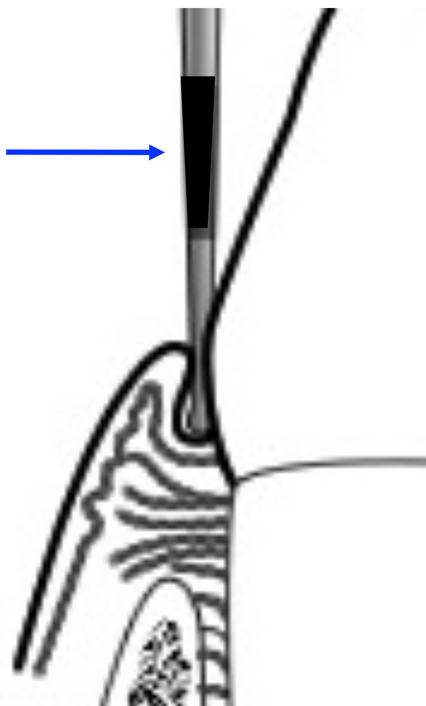
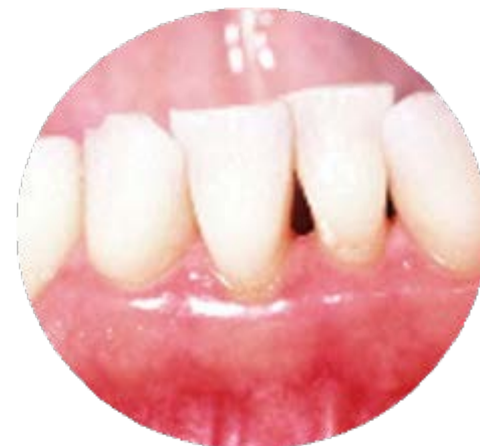
Code 0 - Health



No pockets $\geq$ 3.5mm (black band **fully visible**)



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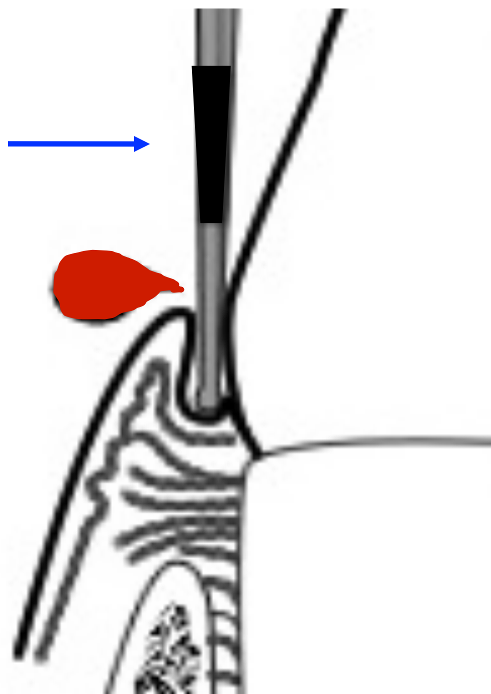
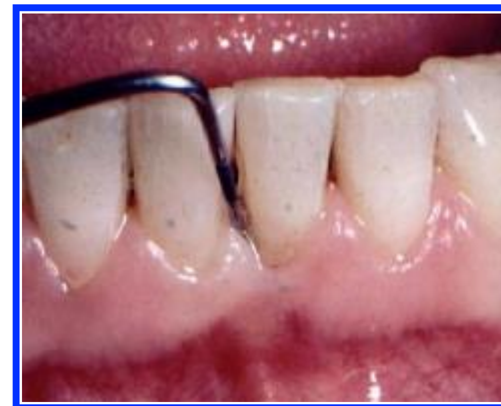
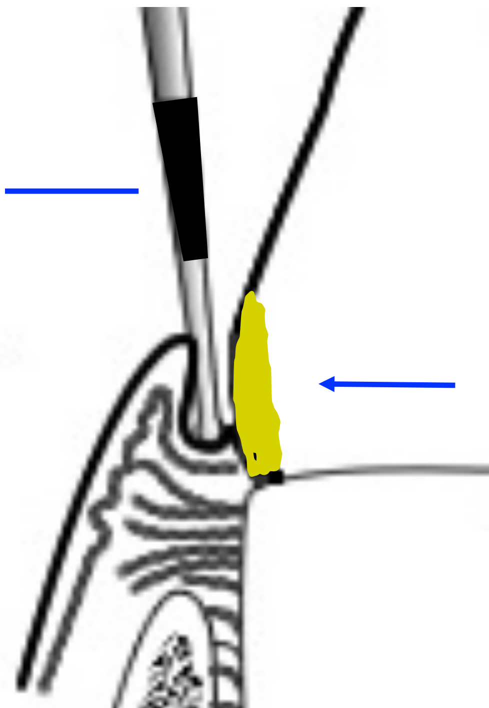
Code 1 - Gingivitis



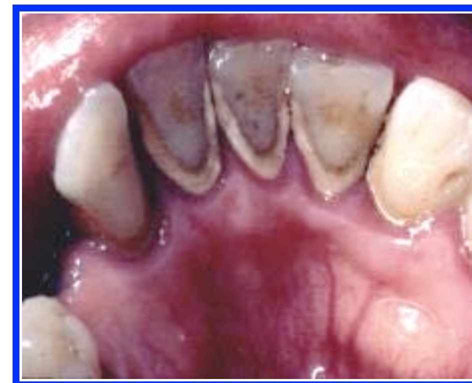
- No pockets $\geq$ 3.5mm
- Bleeding on probing
- Black band **fully visible**
- No calculus present



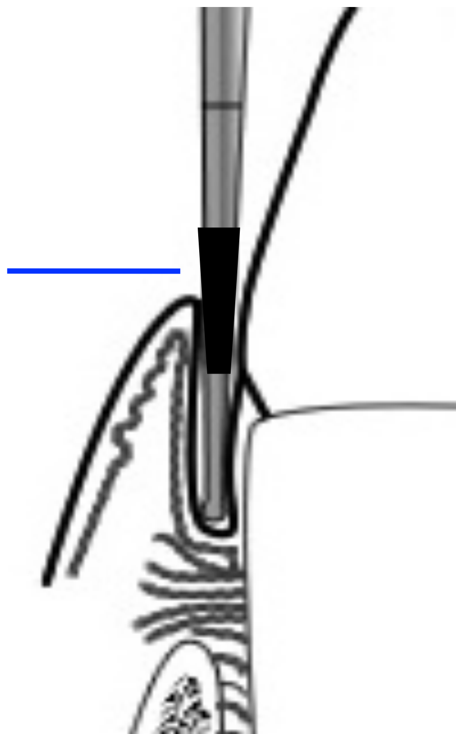
Code 2 - Calculus



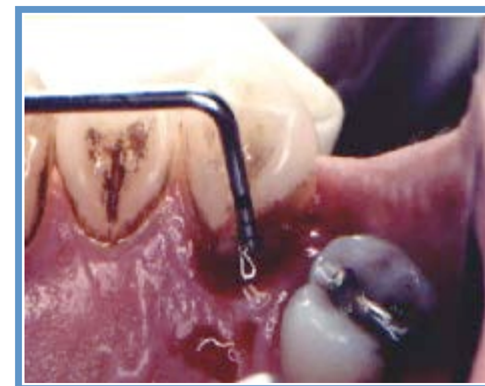
- No pockets $\geq$ 3.5mm
- Calculus present
- Black band **fully visible**
- May or may not have bleeding



Code 3 – Pocketing <5.5mm



- Pocket $\geq$ 3.5mm but < 5.5 mm
- (black band **partially visible**)
- May or may not have bleeding
- May or may not have calculus present



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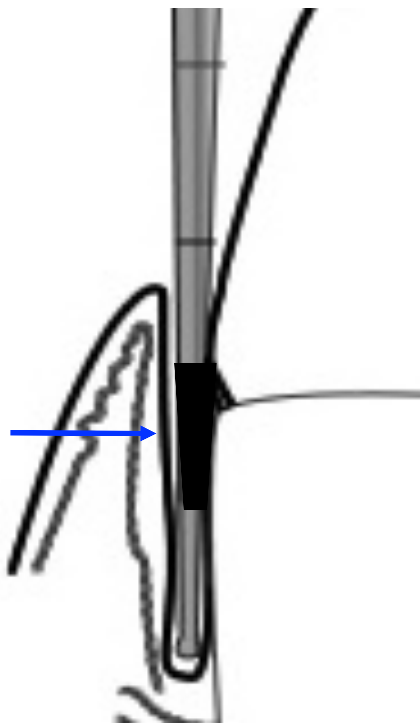
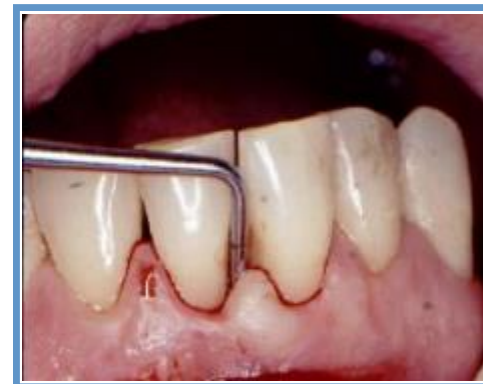
Code 4 – Pocketing ≥ 5.5 mm



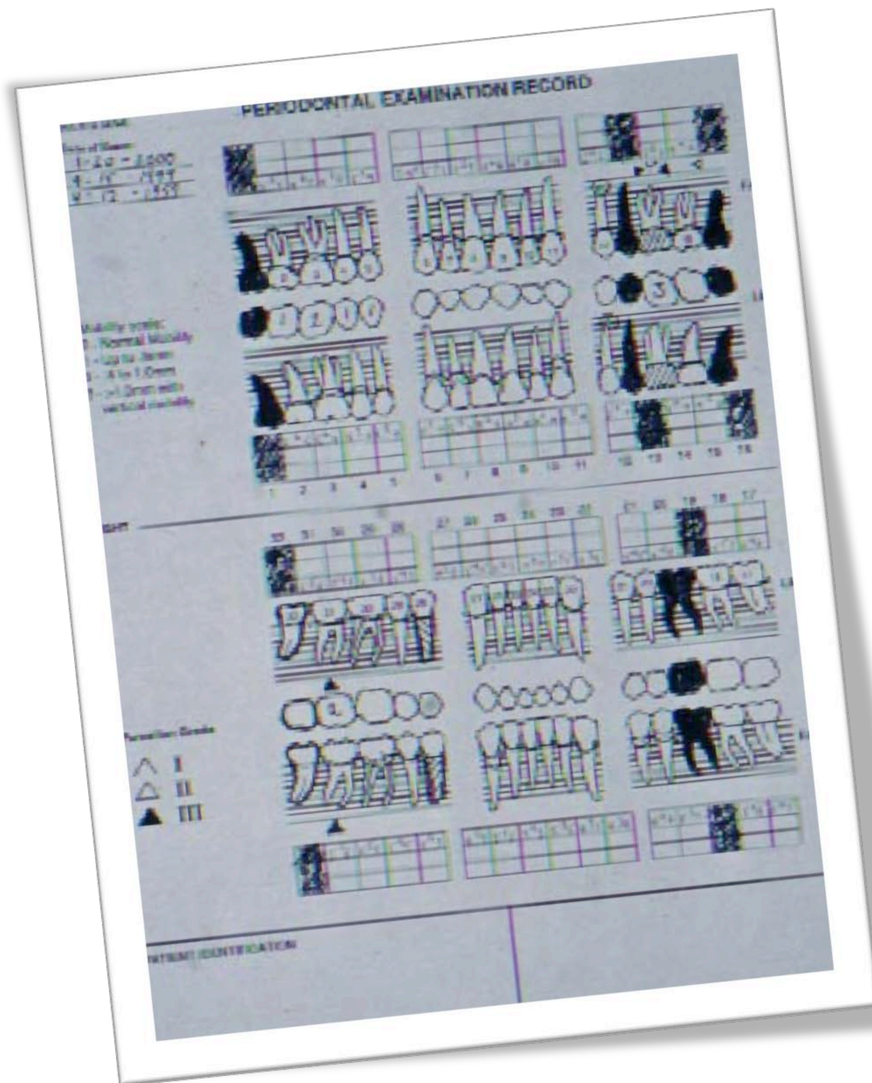
- Pocket ≥ 5.5mm
- Black band **not visible**
- May or may not have bleeding
- May or may not have calculus present

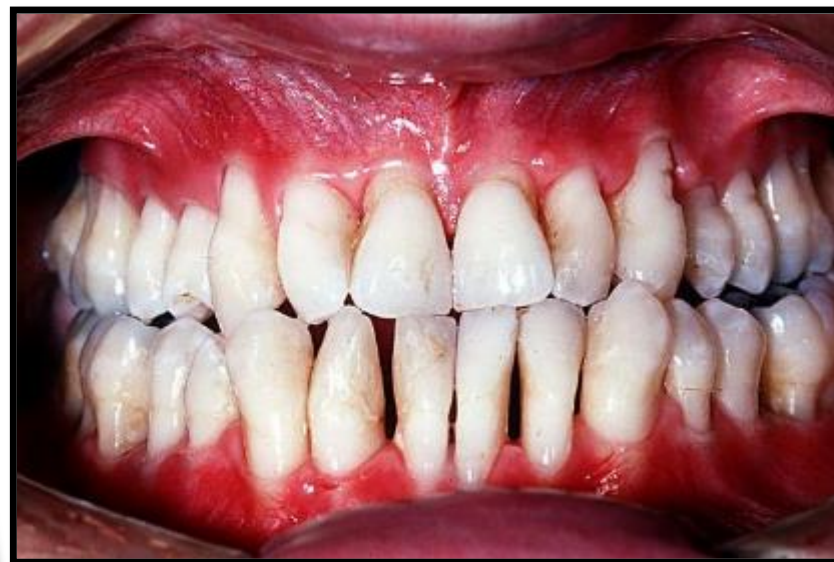


Limitations of the CPI

- A score of 3 or 4 denotes probing depth present but gives no information on the presence or absence of bleeding on probing or calculus
  - A patient on recall may still present with pockets of 4-5 mm and would still be scored a 3
- The CPI doesn't assess bone levels and recession
  - A patient with a history of severe periodontitis and advanced recession could have sextant scores of 0, 1, and 2
- Some sextant scores may change after an initial gross debridement
  - A patient may have inflammation and pseudo-pockets and have CPI scores of 3s and 4s, but after debridement may re-present with CPI scores of 0s and 1s
  - A patient may have a calculus bridge and present with CPI scores of 1s and 2s, but after debridement may re-present with deep pockets and CPI scores of 3s and 4s

The Periodontal Examination


PERIODONTAL EXAMINATION RECORD

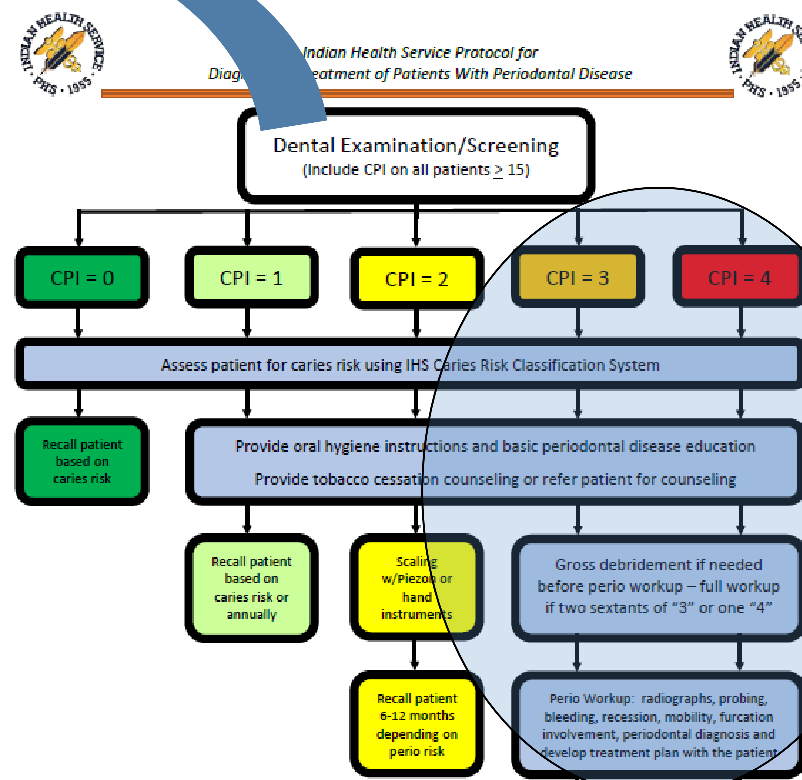


0	0	1
0	2	1

When is a Perio Workup recommended?

- If two sextants are scored 3 or a single sextant is scored 4 (if scaling and root planing is indicated)

Perio Workup: radiographs, probing, bleeding, recession, mobility, furcation involvement, periodontal diagnosis and develop treatment plan with the patient



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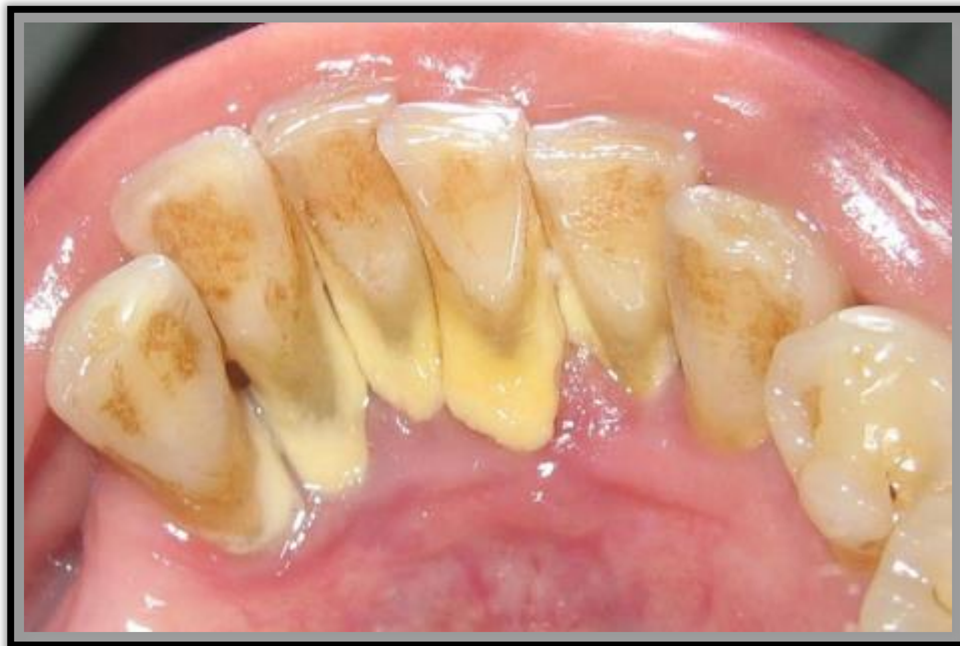
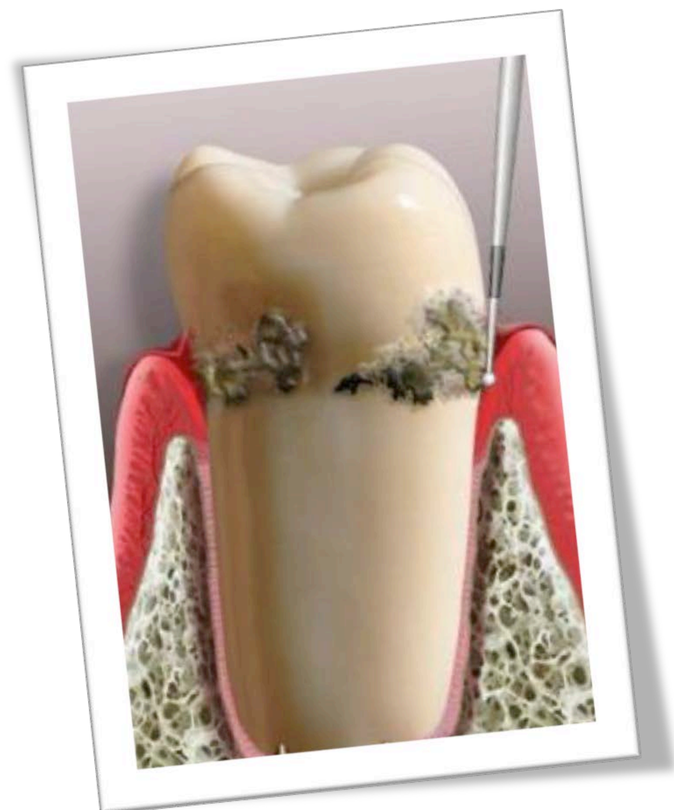
Gross Debridement

- Occasionally (not always) – depending on calculus and inflammation – a gross debridement is needed to prepare the patient for the full periodontal exam



Components of a Perio Exam

- Review of medical history and contributing factors/risk assessment
- Periodontal probing/pocket depths
- Bleeding on probing (BoP)
- Recession from the CEJ
- Assessment of furcation involvement
- Assessment of tooth mobility
- Radiographic examination
- Diagnosis and Treatment Planning



Periodontal Probing/Pocket Depths: Paper Form

IHS 514

PERIODONTAL EXAMINATION RECORD

Date of Exam:

Mobility scale:
0 - Normal Mobility
1 - Up to .5mm
2 - .5 to 1.0mm
3 - >1.0mm with vertical mobility

FACIA

LINGU

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

RIGHT

LEF

32 31 30 29 28 27 26 25 24 23 22 21 20 19 18 17

LINGU

FACIA

Furcation Grade
I
II
III

PATIENT IDENTIFICATION

Pocket depths: 3 per box

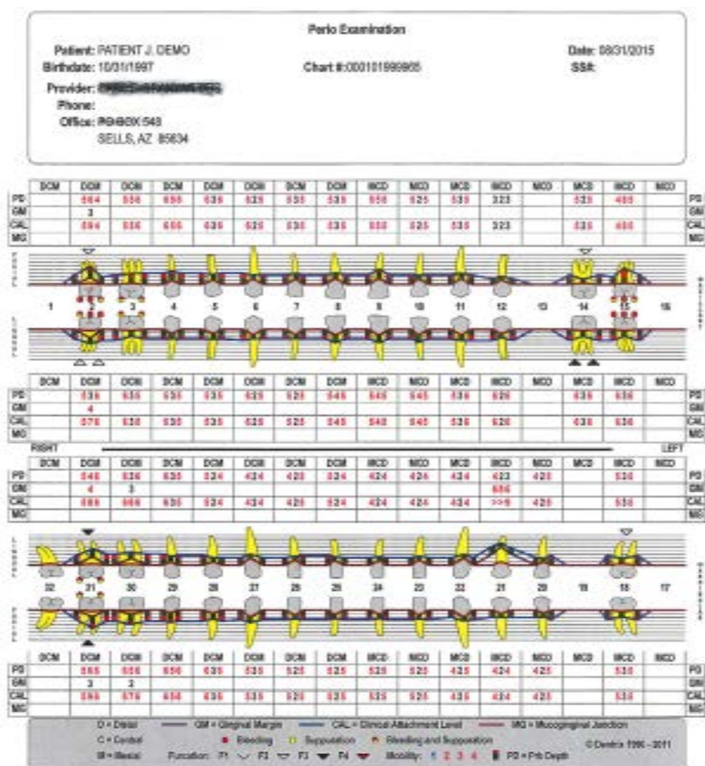
3 2 3	4 3 4	5 2 5	4 8 5	5 3 5

FACIAL

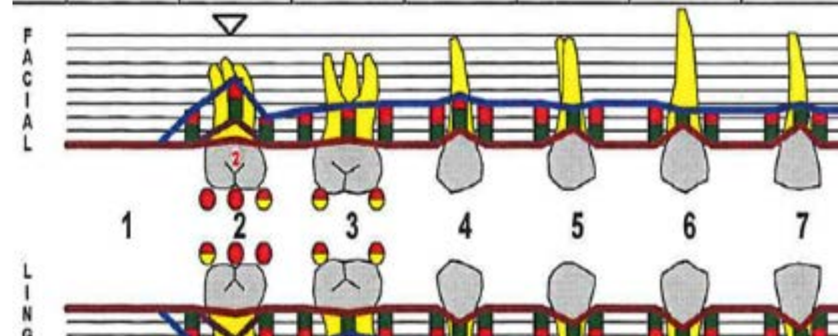
12 13 14 15 16

Periodontal Probing/Pocket Depths: EDR

Dentrix/Electronic Dental Record



Pocket depths: 3 per box



Recession

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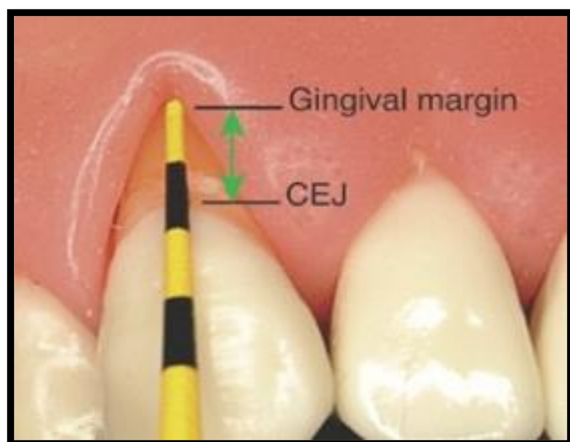
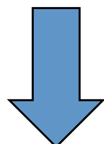
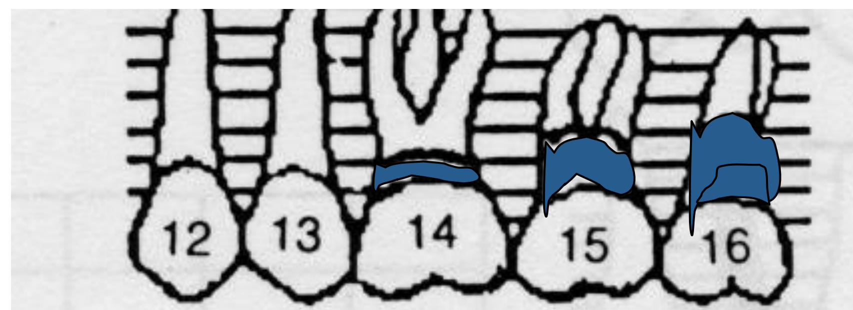
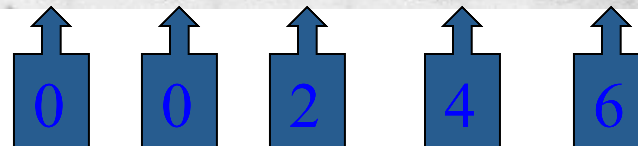
- Measure distance from CEJ to gingival margin and record





T#	1	2	3	4	5	6	7	8
PD	333	423	323	323	333	312	222	323
Bld								
Sup								
GM			021			050		
CAL	333	423	344	323	333	362	222	323
MG								
FG			100					
TC								
PMB								





	DCM	DCM	DCM	DCM
PD		546	636	635
GM		4	3	
CAL		586	666	635
MG				

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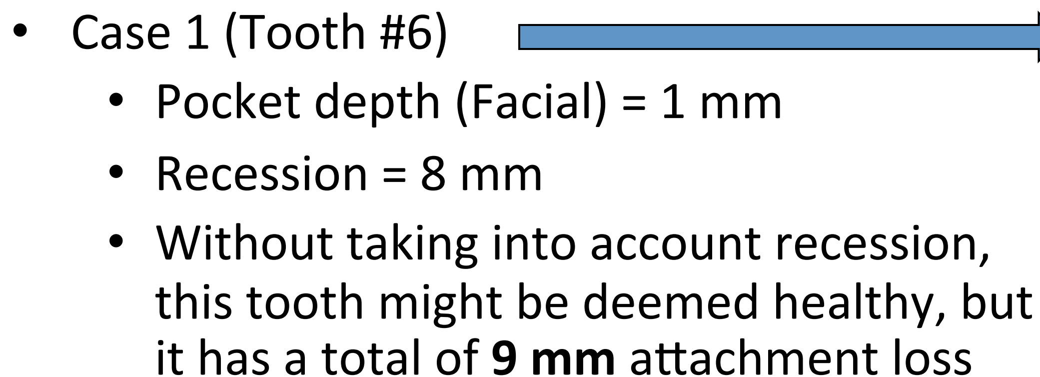
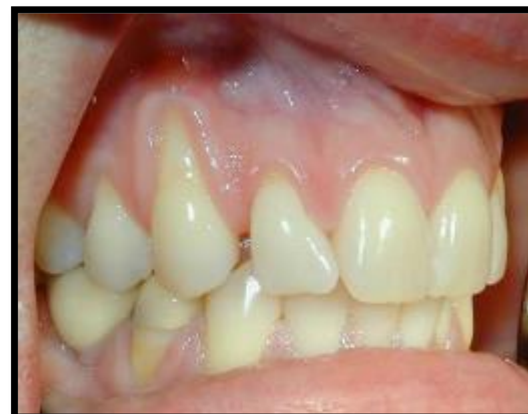
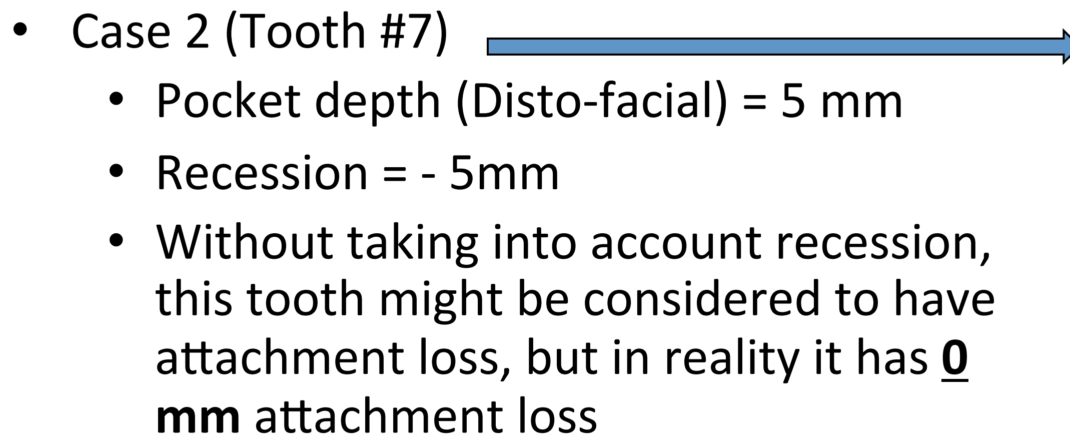
Why worry about recession?

- Pocket depth + recession index = attachment loss

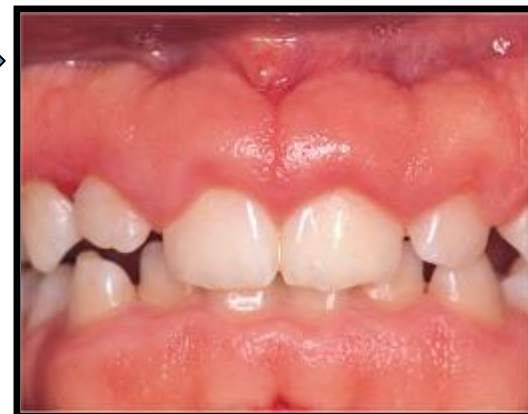


- Case 1 (Tooth #6)
  - Pocket depth (Facial) = 1 mm
  - Recession = 8 mm
  - Without taking into account recession, this tooth might be deemed healthy, but it has a total of **<u>9 mm</u>** attachment loss

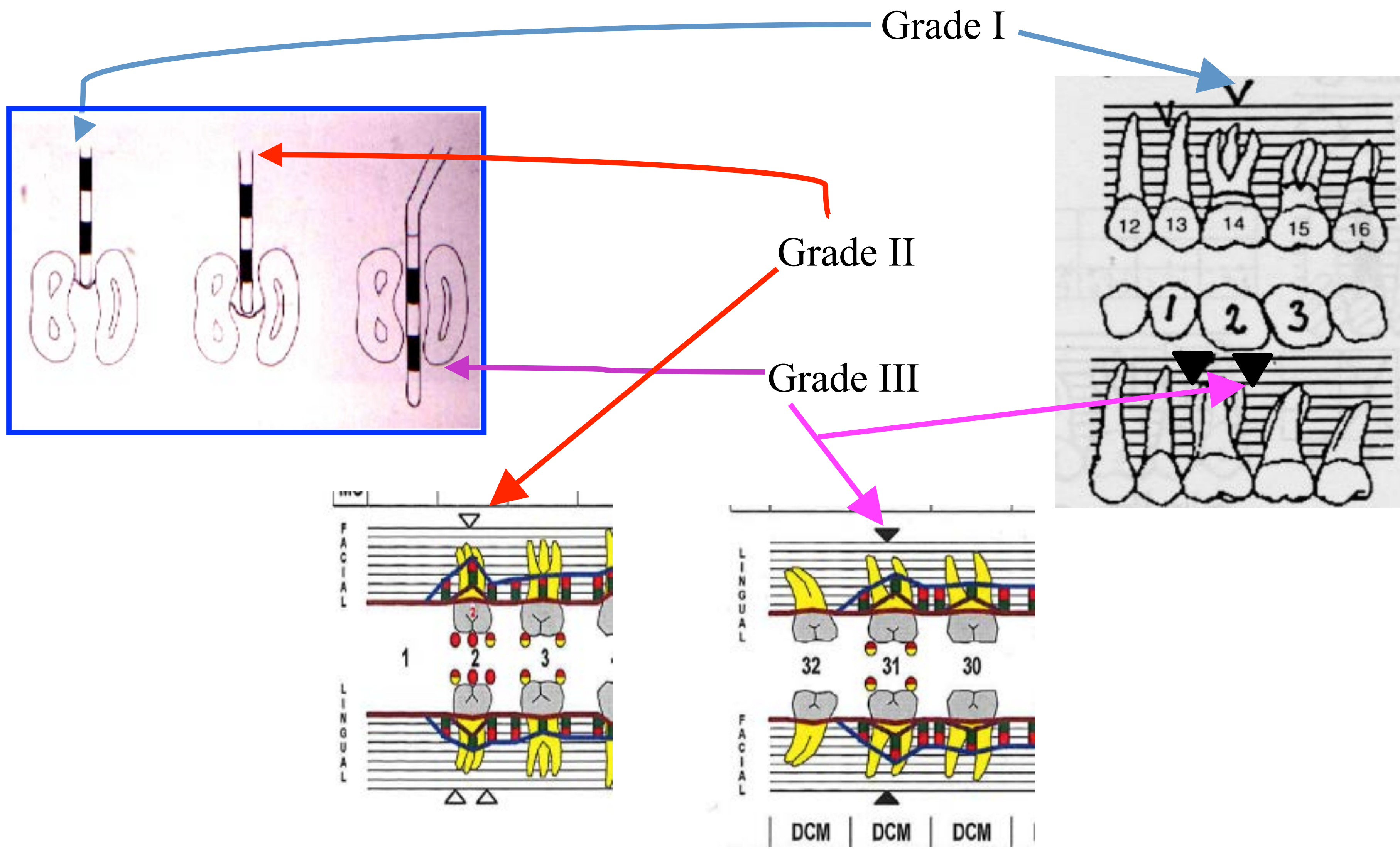




- Case 2 (Tooth #7)
  - Pocket depth (Disto-facial) = 5 mm
  - Recession = - 5mm
  - Without taking into account recession, this tooth might be considered to have attachment loss, but in reality it has **<u>0 mm</u>** attachment loss



Furcation Involvement



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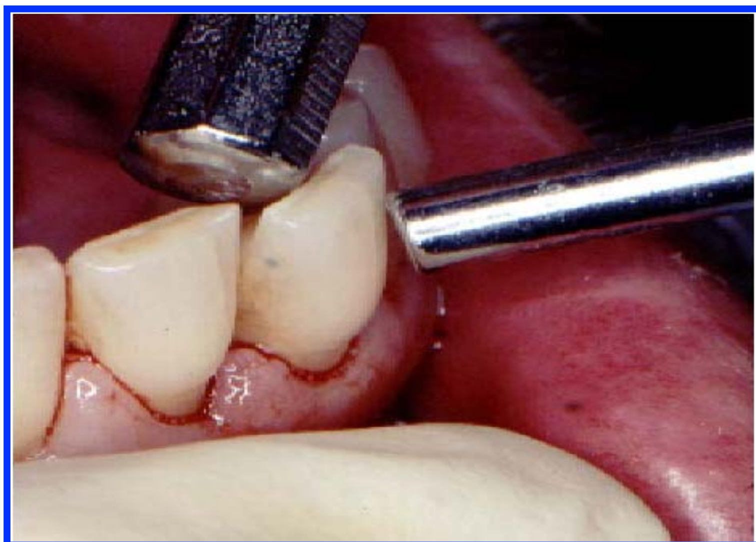
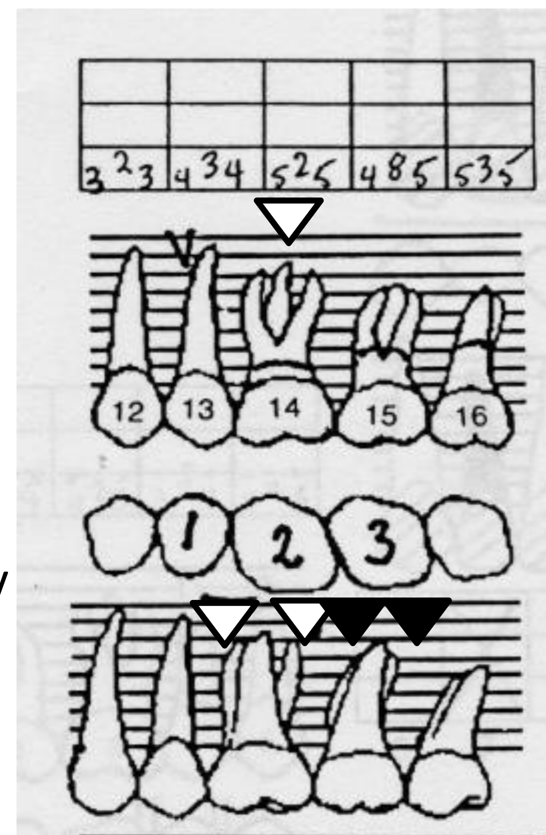
Mobility



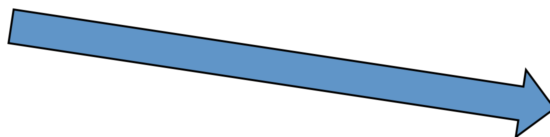


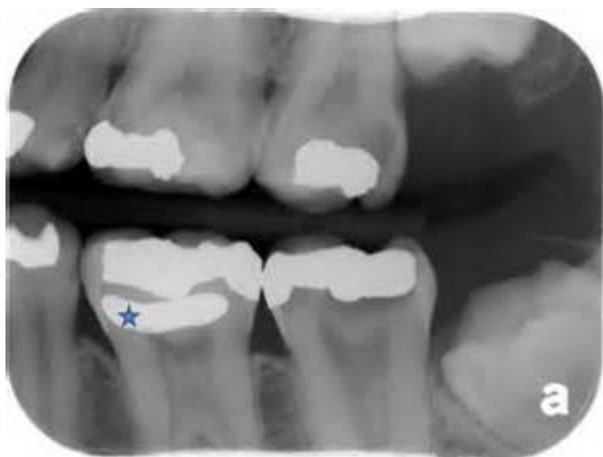
- Two blunt instruments are used to assess mobility (such as end of mirror and probe)
- Miller's index of mobility:
  - Grade 0: Normal physiological mobility (<1mm)
  - Grade 1: Movement up to 1 mm in horizontal plane
  - Grade 2: Movement greater than 1 mm in horizontal plane
  - Grade 3: Severe mobility greater than 2mm OR vertical mobility

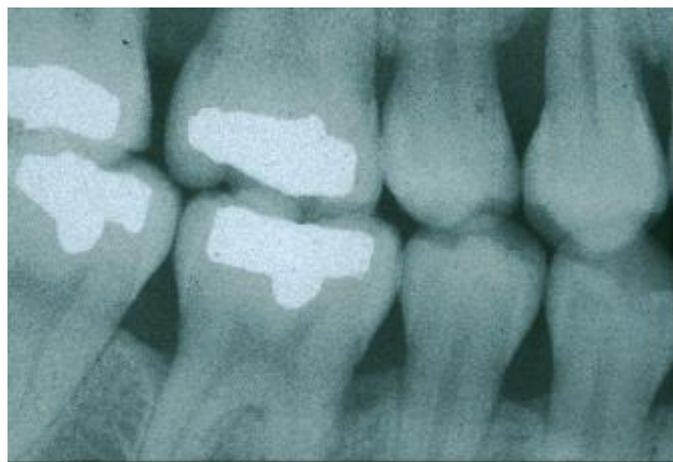
Radiographic Examination

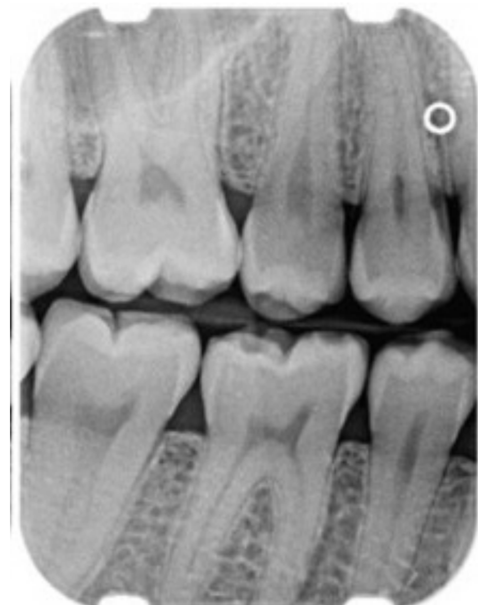
- At a minimum, the patient should have at least four current bitewing radiographs if posterior teeth are present

- Often, vertical bitewings show a better picture of the bone than do horizontal radiographs









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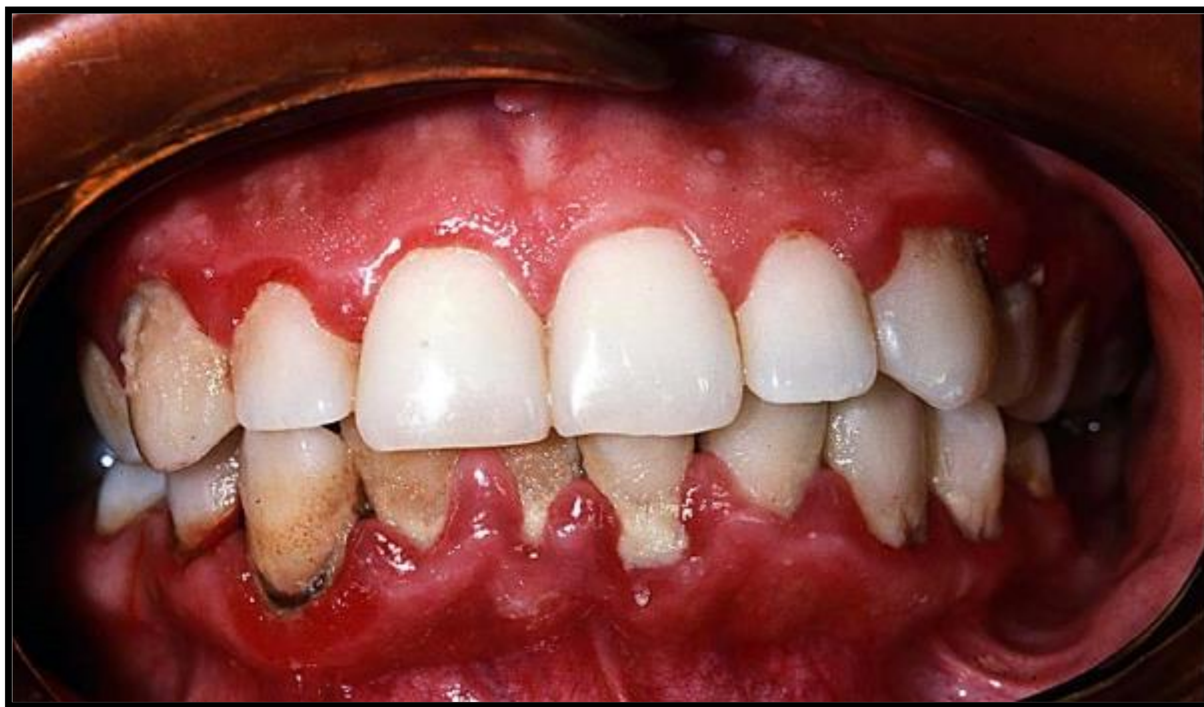
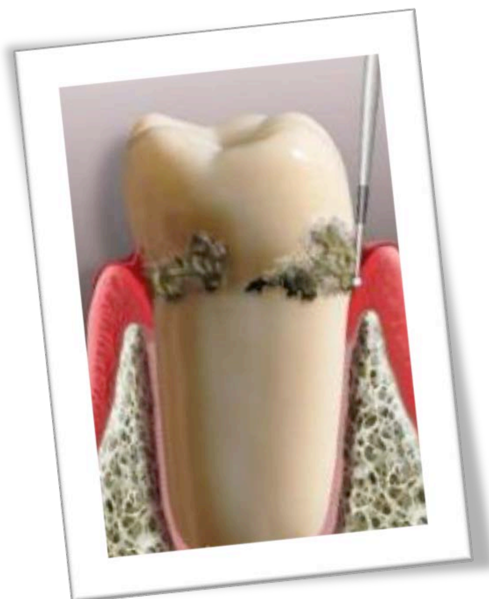
Periodontal Diagnosis

Standard: A written periodontal diagnosis should accompany each periodontal examination



IWCP Classification (1999)

- Developed at the International Workshop for Classification of Periodontal Diseases in 1999
- Also referred to as the AAP (American Academy of Periodontology) Classification
- Based on loss of attachment
- For chronic periodontitis, severity is categorized as:
  - Slight: 1-2 mm of loss of attachment
  - Moderate: 3-4 mm of loss of attachment
  - Severe: $\geq$ 5 mm of loss of attachment
- 8 main categories of classification



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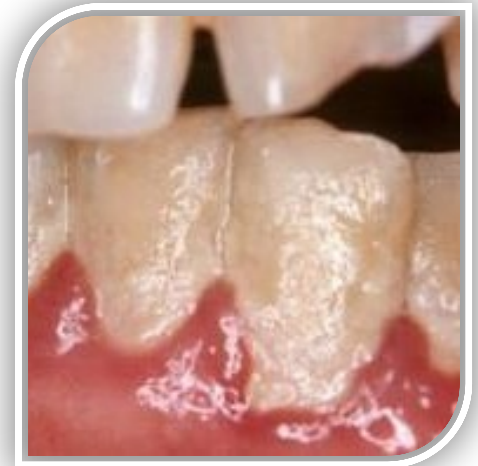
I. Gingival Diseases

- Dental plaque-induced gingival diseases (gingivitis due to local or systemic factors)
- Non-plaque-induced gingival lesions (viral or bacterial causes)
- Gingival diseases of fungal origin (candidosis)
- Gingival lesions of genetic origin (fibromatosis)
- Gingival manifestations of systemic conditions (lichen planus, lupus, pemphigoid, allergic reactions, etc.)
- Traumatic lesions (chemical, physical, thermal)
- Foreign body reactions



II. Chronic Periodontitis

- Slowly progressing
- Localized: <30% of sites involved
- Generalized: >30% of sites involved

Severity:

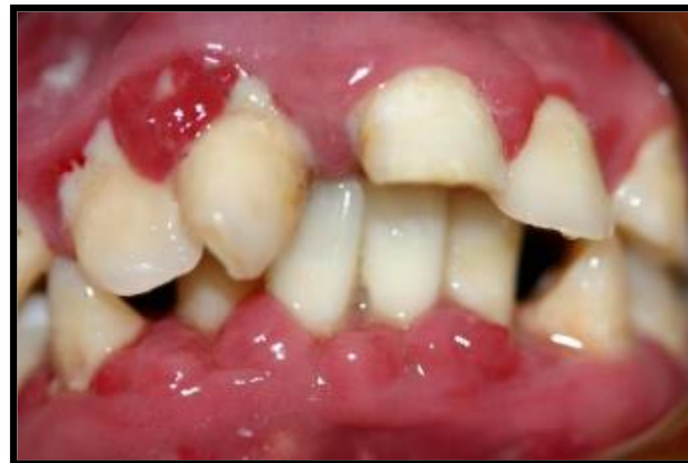
- Slight: 1-2 mm of loss of attachment
- Moderate: 3-4 mm of loss of attachment
- Severe: $\geq$ 5 mm of loss of attachment

III. Aggressive Periodontitis

- Highly destructive, with rapid attachment loss and bone destruction, usually affecting patients under age 30 years of age

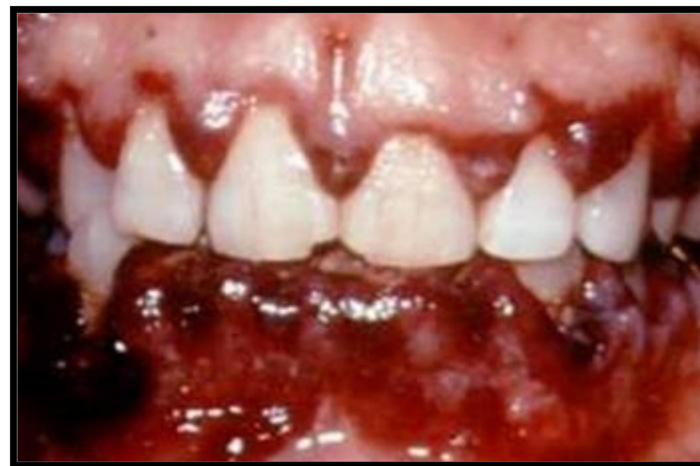
- Localized: <30% of sites involved

- Generalized: >30% of sites involved



IV. Periodontitis as a Manifestation of Systemic Diseases

- Less common
- Familial neutropenia
- Down Syndrome
- Histiocytosis
- Leukemia
- Other rare disorders



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V. Necrotizing Periodontal Diseases

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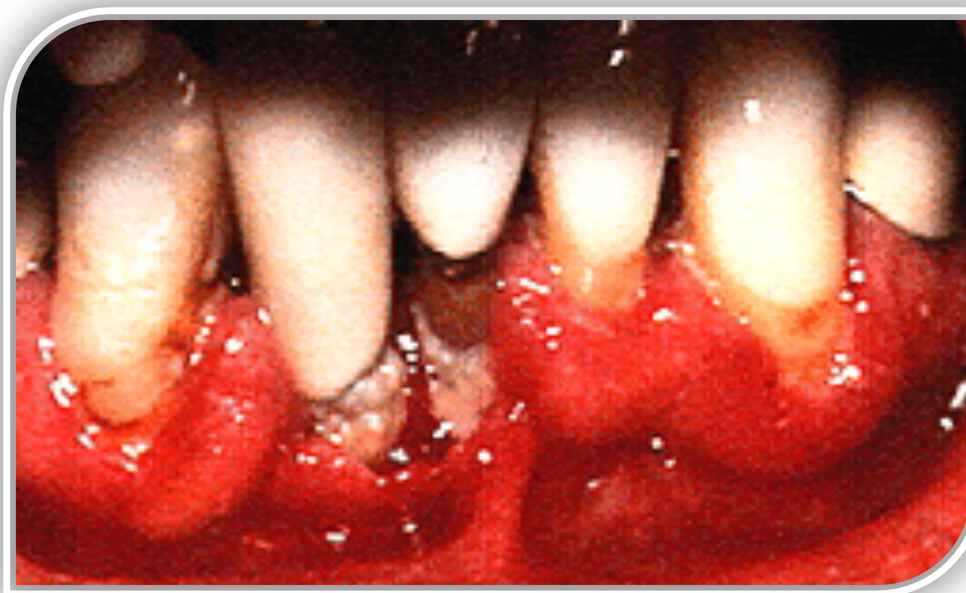
- Necrotizing Ulcerative Gingivitis (NUG) and Periodontitits (NUP)



VI. Abscesses of the Periodontium

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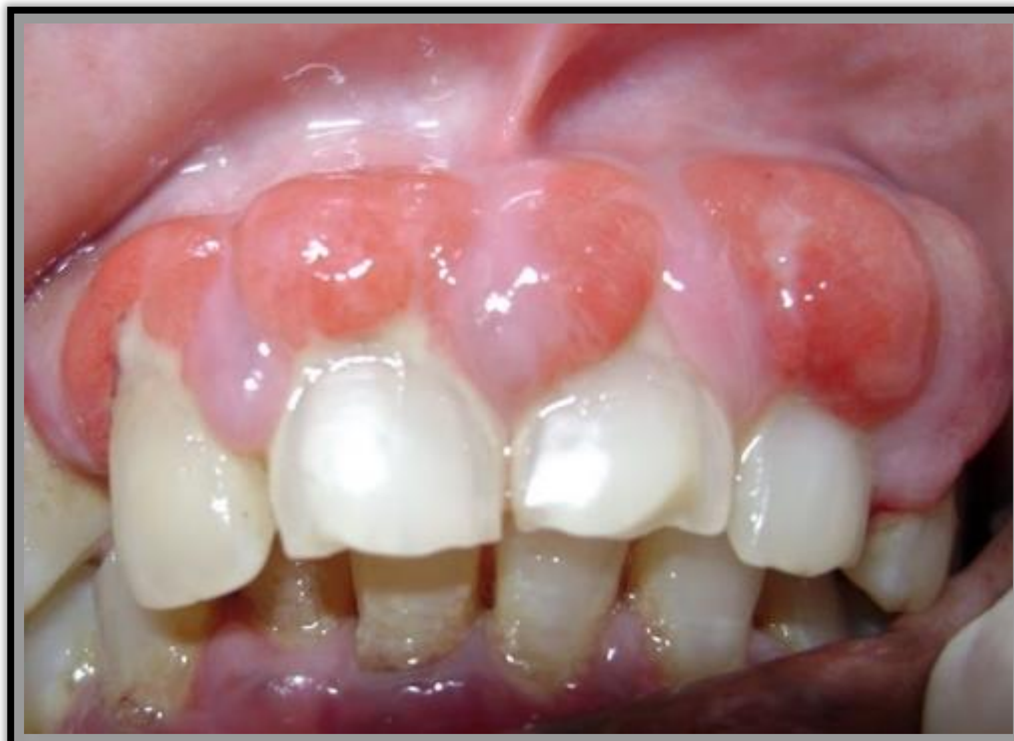
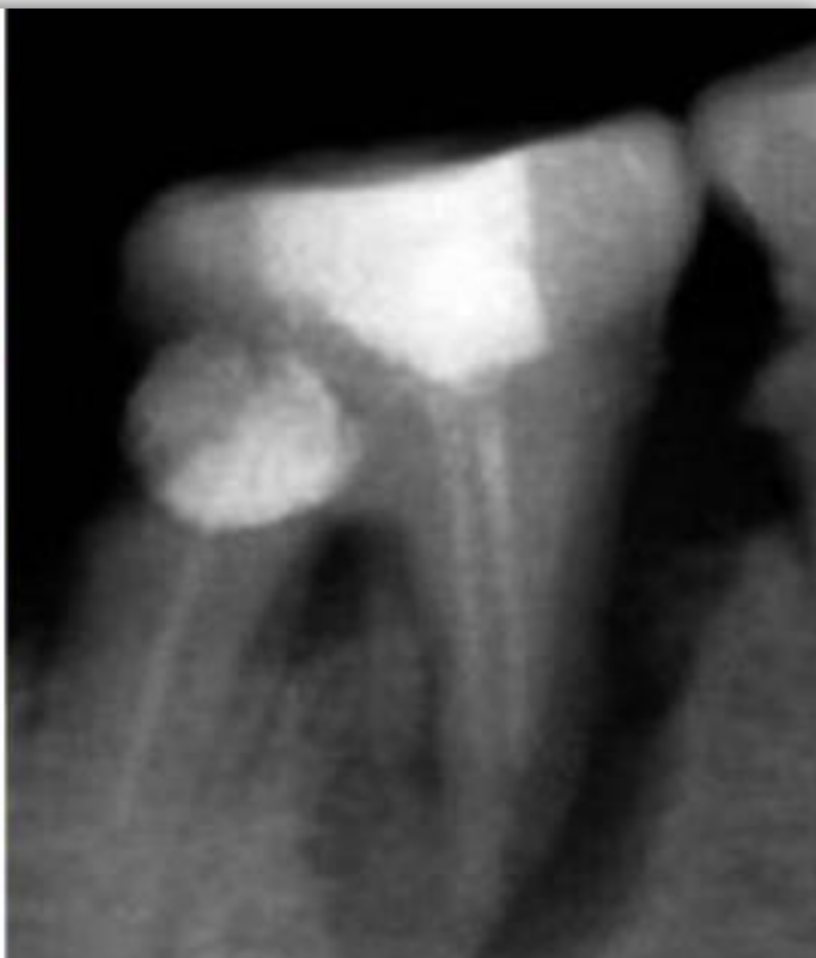
- Gingival, periodontal, or pericoronal

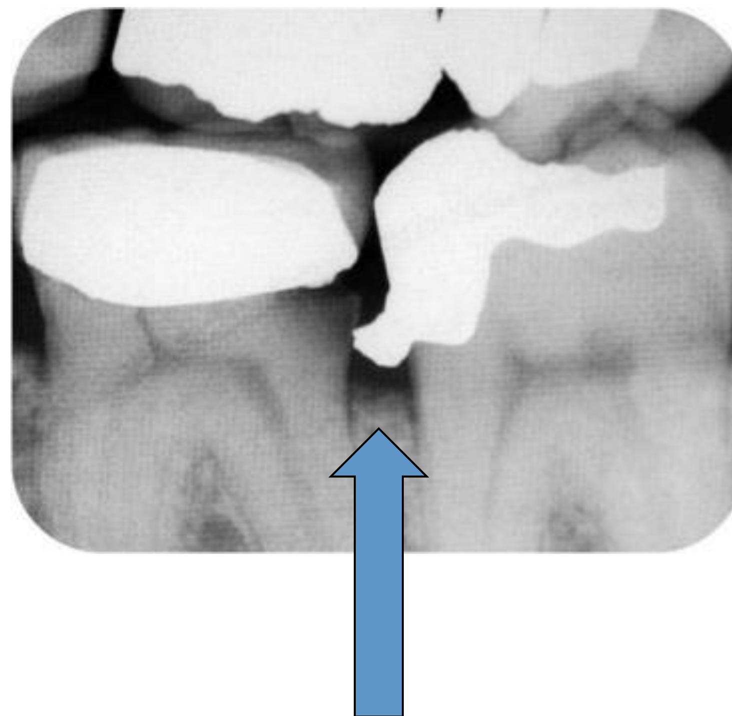


VII. Periodontitis Associated with Endodontic Lesions



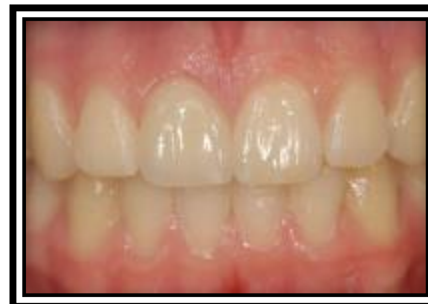
VIII. Developmental or Acquired Deformities and Conditions

- Dental restorations, overhangs
- Mucogingival deformities
- Lack of keratinized gingiva
- Pseudopocketing
- Occlusal trauma

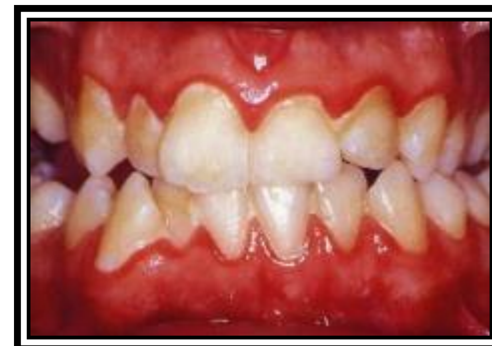


Most Common Diagnoses

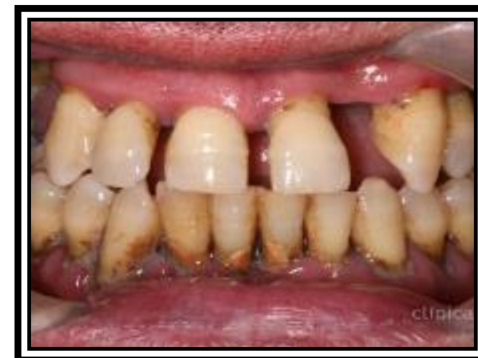
- Health: absence of disease or inflammation



- Gingivitis: most commonly plaque-induced gingivitis



- Periodontitis: most commonly generalized chronic periodontitis



Documenting Diagnosis

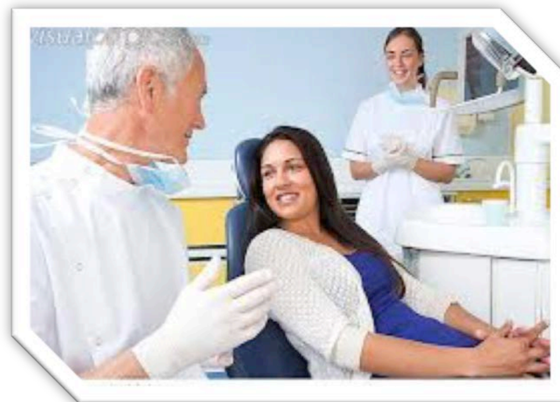
Location	Severity	Type of Disease
Localized (<30% of sites)	**Slight = 1-2 mm loss of attachment**	**Chronic Periodontitis**
Generalized (>30% of sites	**Moderate = 3-4 mm loss of attachment**	**Chronic Periodontitis**
	Severe ≥ 5 mm loss of attachment	**Chronic Periodontitis**
		Necrotizing Periodontitis Aggressive Periodontitis

Example diagnoses:

- Localized gingivitis
- Generalized moderate chronic periodontitis
- Generalized severe chronic periodontitis
- Localized aggressive periodontitis

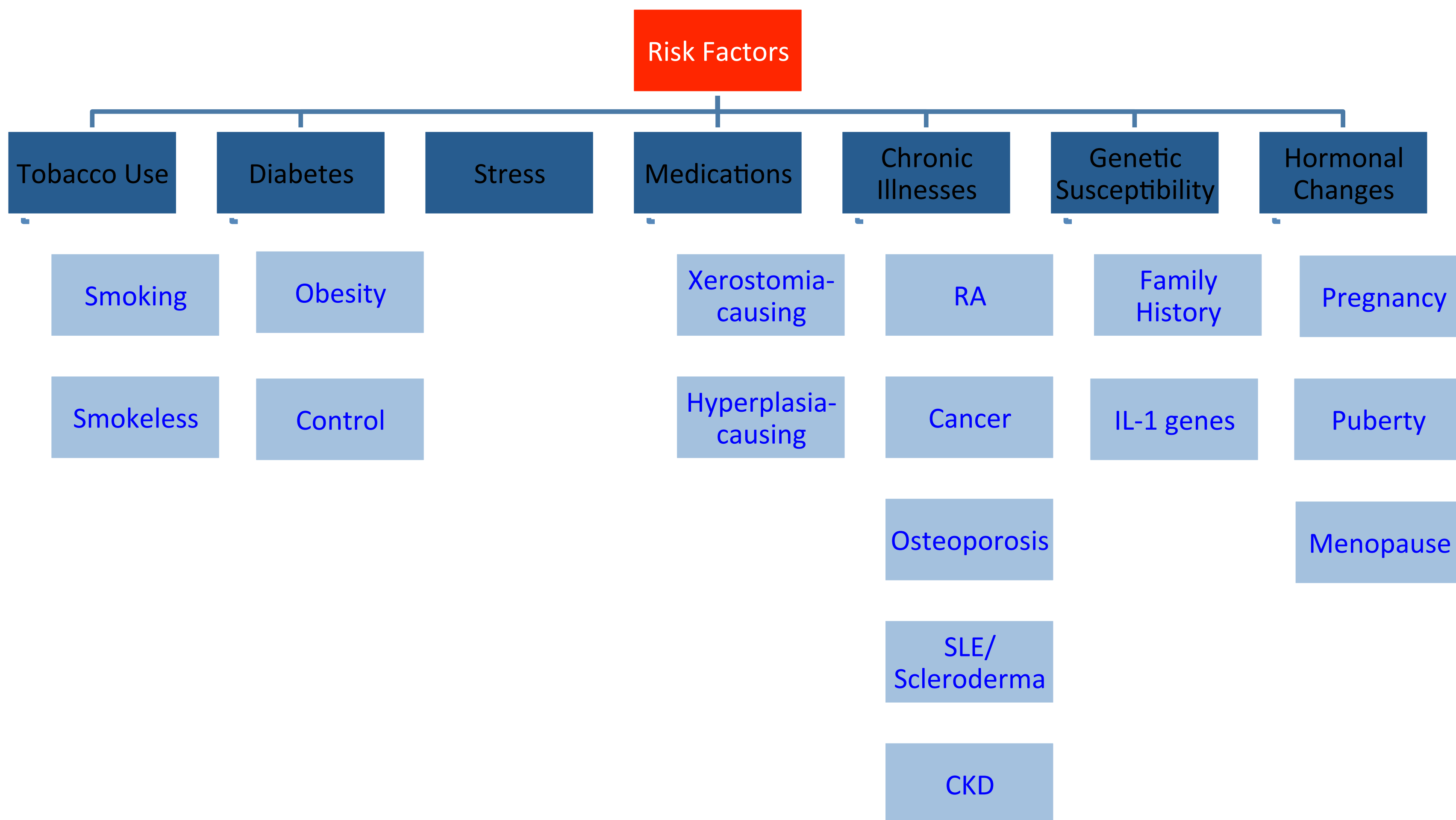
Treatment Planning

- Following a diagnosis, the dentist and the dental hygienist, therapist, and/or expanded function dental assistant should work together to communicate a treatment plan with the patient
- Treatment plan with consideration of periodontal risk
- Refer to the presentation "Periodontal Disease Management" for information on how to manage patients with periodontal diseases



Periodontal Risk Factors

- Evaluate the patient's medical history and risk factors that may affect the prognosis of treatment



Summary

- Understand and use the Community Periodontal Index (CPI) to detect periodontal disease
- Conduct a full periodontal workup – if resources are available (time, personnel) – for all patients with two sextants of 3 or a single sextant of 4; know what is involved in a full workup
- For patients with isolated pockets, recording only those teeth, without doing a full-mouth periodontal exam, may be acceptable.
- Before proceeding with treatment, make a written diagnosis and treatment plan with the patient
- Refer to the presentation "Periodontal Disease Management" for information on how to manage patients with periodontal diseases

Next IHS CDE Webinar

Date: Wednesday, September 28, 2016

Time: 1-2 EDT

Topic: Improving Access to Dental Care for 0-2 Year-Old AI/AN Children

Presenter: Dr. Bonnie Bruerd

CDE Credit

- Course Number: DE0659
- Course Completion Code: Initial

CDE credit is only available for those attending the live webinar; others may take the online course module (DE0666, open on 8/25/16)

Instructions for CDE Credit

1. Log into the IHS CDE Portal at www.ihs.gov/doh, click on "please login"
    1. If you are a new user to the system, click on "register here" after following step 1
    2. If you have forgotten your password, click on "forgot password" following step 1
2. Click on the "CDE" tab on the left-hand side, then click on "Catalog"
3. Find the course number (DE0659), click on it
4. Scroll halfway down the page and click on "click here to enter code"
5. Enter code, complete a short post-course survey
6. Once completed, you will be prompted to "print my CDE certificate"