



KING SAUD UNIVERSITY
College of Dentistry
Department of Periodontics and Community
Dentistry



Periodontology Clinical Manual

**Periodontology Clinics for
Third and Fourth year
Dental Students**

PCS 313, 413

4.0 Credits/Course

Division of Periodontology

College of Dentistry

King Saud University

Reviewed and Updated by

PCS Department Courses Review and Update Committee

- | | |
|-------------------------------|--------------------|
| - Prof. Nahid Ashri | Chairperson |
| - Prof. Nadir Babay | Member |
| - Dr. Salwa Al Sadhan | Member |
| - Dr. Amel Darwish | Member |
| - Dr. Reem Al Kattan | Member |
| - Dr. Mansour Al Askar | Member |

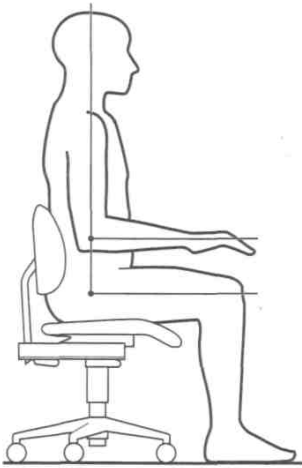
PRINCIPLES OF PERIODONTAL INSTRUMENTATION

Dental Operator and Chair Position

Neutral Position for the Clinician

Research indicates that over 80 percent of dental hygienists complain of pain in the upper body and back. This musculoskeletal pain often is the direct result of body positioning and movements made by dental healthcare professionals in their daily work.

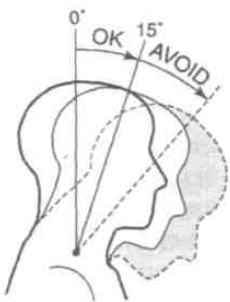
Neutral position is the ideal positioning of the body while performing work activities and is associated with decreased risk of musculoskeletal injury. It is generally believed that the more a joint deviates from the neutral position, the greater the risk of injury.



Neutral Seated Position

1. Forearms parallel to the floor.
2. Weight evenly balanced.
3. Thighs parallel to the floor.
4. Hip angle of 90°.
5. Seat height positioned low enough so that you are able to rest the heels of your feet on the floor.
6. When working from clock positions 9-12:00 (or 12-3:00), spread feet apart so that your legs and the chair base form a tripod, somewhat like the legs of a three-legged stool. This tripod formation creates a very stable position from which to work.

AVOID positioning your legs under the back of the patient chair. In this position the patient chair will be too high and you will need to raise your upper arms to reach the patient's mouth

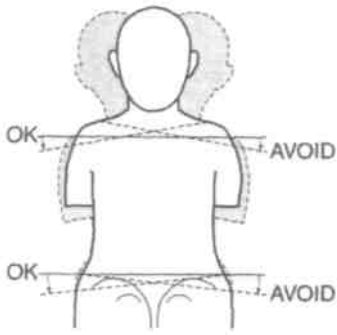


Neutral Neck Position

- Head tilt of 0° to 15°
- The line from your eyes to the treatment area should be as near to vertical as possible

AVOID:

- Head tipped too far forward
- Head tilted to one side

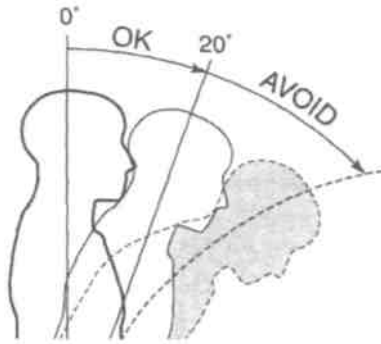


Neutral Shoulder Position

- Shoulders in horizontal line
- Weight evenly balanced when seated

AVOID:

- Shoulders lifted up toward ears
- Shoulders hunched forward
- Sitting with weight on one hip



Neutral Back Position

- Leaning forward slightly from the waist or hips
- Trunk flexion of 0° to 20°

AVOID:

- Over flexion of the spine (curved back)

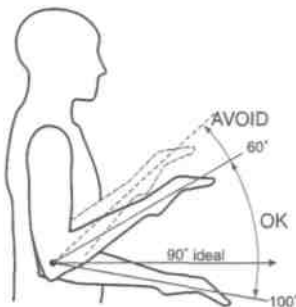


Neutral Upper Arm Position

- Upper arms hang in a vertical line parallel to long axis of torso
- Elbows at waist level held slightly away from body

AVOID:

- Greater than 20° of abduction of elbows away from the body
- Elbows held above waist level

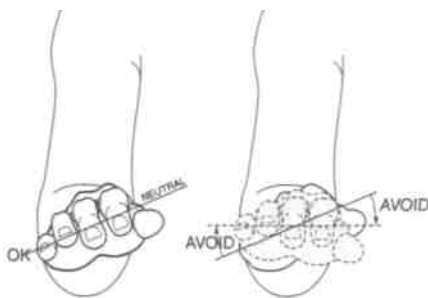


Neutral Forearm Position

- Held parallel to the floor
- Raised or lowered, if necessary, by pivoting at the elbow joint

AVOID:

- Angle between forearm and upper arm of less than 60°



Neutral Hand Position

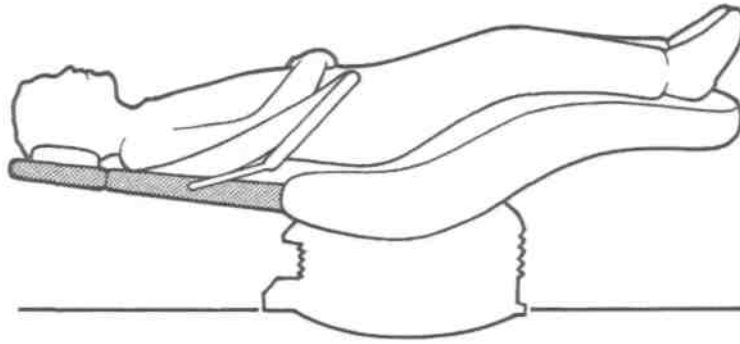
- Little finger-side of palm is slightly lower than thumb-side of palm
- Wrist aligned with forearm

AVOID:

- Thumb-side of palm rotated down so that palm is parallel to floor
- Hand and wrist bent up or down

Patient Position- Supine Patient Position

Supine position—the position of the patient during dental treatment, with the patient lying on his or her back in a horizontal position and the chair back nearly parallel to the floor.



The Supine Patient Position

Recommended position

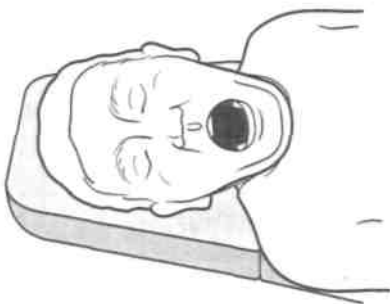
Body - The patient's heels should be slightly higher than the tip of his or her nose. This position maintains good blood flow to the head. An apprehensive patient is more likely to faint if positioned with the head **higher** than the heels. The chair back should be nearly parallel to the floor for maxillary treatment areas. The chair back may be raised slightly for mandibular treatment areas.

Head - The top of the patient's head should be even with the upper edge of the headrest. If necessary, ask the patient to slide up in the chair to assume this position.

Headrest - If the headrest is adjustable, raise or lower it so that the patient's neck and head are aligned with the torso.

Patient head positions

The patient's head position is an important factor in determining whether the clinician can see and access the teeth in a treatment area. Unfortunately, many clinicians ignore this important aspect of patient positioning. A clinician may contort his or her body into an uncomfortable position instead of asking the patient to change head positions. Working in this manner not only causes stress on the clinician's musculoskeletal system, but also makes it difficult to see the treatment area. Remember that the patient is only in the chair for a limited period of time while the clinician spends hours at chair-side day after day.



The patient should be asked to adjust his head position to provide the clinician with the best view of the treatment area.

Basic Patient Head Positioning

Recommended Position

Position on headrest

For you to be able to see and reach the patient's mouth comfortably the top of the patient's head must be even with the end of the headrest.

Mandibular areas

Ask your patient to open the mouth and tilt the head downward. The term for this patient head position is the *chin-down* position.

Maxillary areas

Ask your patient to open the mouth and position the head in a neutral position. The term for this patient head position is the *chin-up* position.

Clinician Stool And Patient Chair

The Adjustable Clinician Chair

Ergonomics is the science of adjusting the design of tools, equipment, tasks, and environments for safe, comfortable and effective human use. Manufacturers of dental equipment are constantly working to design seating for clinicians that is more ergonomic in design. Blood circulation to your legs, thighs, and feet is maintained by adjusting the stool to a proper height. Minimize stress on your spine by moving the chair back closer or farther away from the seat so that your upper arms and torso are aligned with the long axis of your body. Each individual who uses the chair should readjust it to fit his or her own body. A chair that is adjusted correctly for another person may be uncomfortable for you. Just as each driver of the family car must change the position of the driver's seat and mirrors; you should adjust the stool height and seat back to conform to your own body proportions and height.

The chair should have the following design characteristics:

1. Legs—five legs for stability; casters for easy movement
2. Height
 - Should allow clinician to sit with thighs parallel to the floor. A seat height range of 14 to 20 inches will accommodate both tall and short clinicians.
 - Should be easily adjustable from a seated position.
3. Seat
 - Fabric that breathes (ex: cloth rather than vinyl).
 - Front edge of seat should have a waterfall shape (rounded front edge).
 - Should not be too heavily padded; thick padding requires constant minor readjustments in order to maintain balance.
 - When seated with the back against the backrest, the seat length should not impinge on the back of the clinician's knees. A seat length of 15 to 16 inches will fit most clinicians.
4. Backrest
 - Should be adjustable in both vertical and horizontal directions so that it can be positioned to touch the lumbar region of the back when comfortably seated.
 - Angle between the seat and the chair back should be between 85- and 100-degrees.

Patient Position Relative To The Clinician

Once comfortably seated, several other factors influence the clinician's ability to maintain correct neutral positioning. While working, the clinician must be able to gain access to the patient's mouth and the dental unit without bending, stretching, or holding his or her elbows above waist level. To maintain neutral position, the patient and the dental unit must be positioned correctly in relation to the clinician.

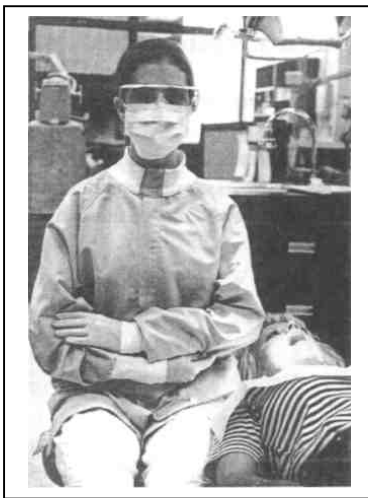


Establishing neutral position

1. First, adjust the height of the clinician chair to establish a hip angle of 90°.
2. Next, lower the patient chair until the tip of the patient's nose is below waist level. Your elbow angle should be at 90° when your fingers are touching the teeth in the treatment area.

An easy technique for establishing neutral position in relation to the patient

The most common ergonomic hazard during instrumentation is positioning the patient too high in relation to the clinician.



Determining the proper placement of the patient

Sit alongside of the patient with your arms against your sides and crossed at your waist. The patient's open mouth should be *below* the point of your elbow.

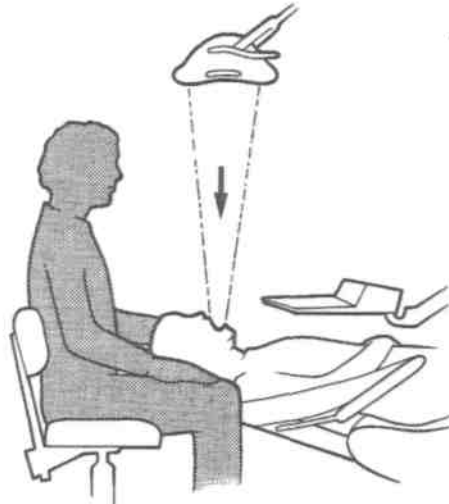
With the patient in this position, the clinician will be able to reach the mouth without placing stress on the muscles of her shoulders or arms.

Summary Sheet: Relationship to Patient and Dental Unit

Description	
Clinician chair	<p>Your thighs should be parallel to the floor and you should be able to rest your heels on the floor.</p> <p>When working from clock positions 9-12:00 (or 12-3:00), your legs and the stool base should form a tripod, somewhat like the legs of a three-legged stool. This tripod formation creates a very stable position from which to work.</p>
Height of patient chair	<p>TEST FOR PROPER NEUTRAL POSITION: Fold your arms across your waist. The tip of the patient's nose should be lower than your elbows.</p>
Clinician's body position	<p>You should not have to raise your elbows above waist level when working in the patient's mouth.</p> <p>Your <i>lower arms</i> should be in a horizontal position or raised slightly so that the angle formed between your lower and upper arms is slightly less than 90 degrees. In this position, your muscles are well positioned to control fine wrist and finger movements.</p> <p>Your shoulders should be level and should not be hunched up toward your ears.</p>
Bracket table	<p>Position it slightly above the patient's body. The lower the tray level, the easier it will be for you to see the periodontal instruments resting on it.</p>
Dental light	<p>Position the light as far away from the patient's face as possible while still keeping it within easy reach</p>

Dental Light Position

Mandibular Treatment Areas



For the mandibular treatment areas, position the dental light directly above the patient's head, so that the light beam shines directly down into the patient's mouth. Remember to keep the light at arm's length.

Maxillary Treatment Areas

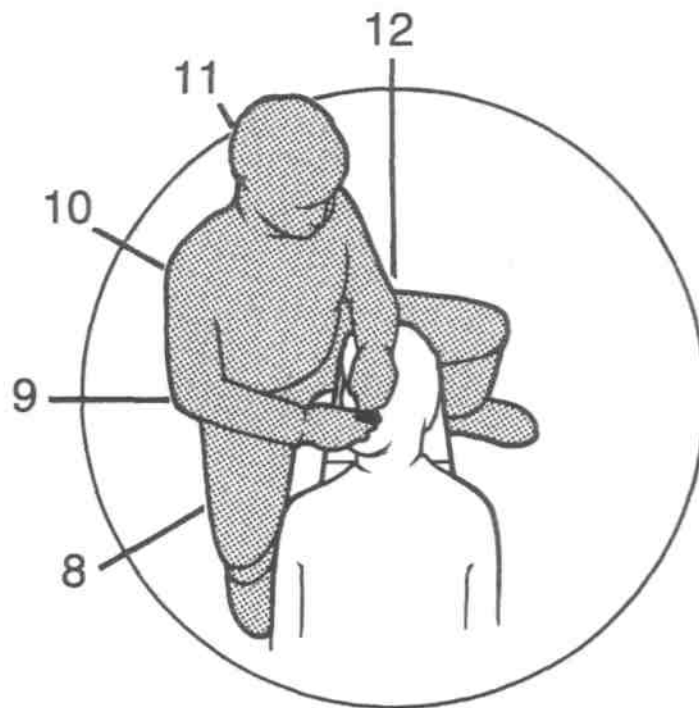


Position the dental light above the patient's chest area for maxillary treatment areas. Tilt the dental light so the light beam shines into the patient's mouth at an angle. Remember to keep the light at arm's length.

Dental Clinicians Chair Positions – (Clock Positions)

Instrumentation of the various treatment areas may be accomplished from one of four basic clinician positions. The four basic clinician positions are usually identified in relation to a 12-hour clock face:

1. the 8 o'clock position, to the front of the patient's head,
2. the 9 o'clock position, to the side of the patient's head,
3. the 10 to 11 o'clock position, to the back of the patient's head, or
4. the 12 o'clock position, directly behind the patient's head.



The 8 o'clock Position (Front Position)



- Sit facing the patient with your hips in line with the patient's elbows.
- To reach the patient's mouth, hold your arms slightly away from your sides. Hold your lower right arm over the patient's chest. The side of your left hand rests in the area of the patient's right cheekbone and upper lip. NOTE: Do not rest your arm on the patient's head or chest.
- Your line of vision is straight ahead, into the patient's mouth.

The 9 o'clock Position (Side Position)



- Sit facing the side of the patient's head. The midline of your torso is even with the patient's mouth.
- To reach the patient's mouth, hold the lower half of your right arm in approximate alignment with the patient's shoulder. Hold your left hand and wrist over the region of patient's right eye.
- Your line of vision is straight down into the mouth.

The 10 to 11 o'clock Position (Back Position)



- Sit at the top right corner of the headrest; the midline of your torso is even with the temple region of the patient's head.
- To reach the patient's mouth, hold your right hand directly across the corner of the patient's mouth. Hold your left hand and wrist above the patient's nose and forehead.
- Your line of vision is straight down into the mouth.

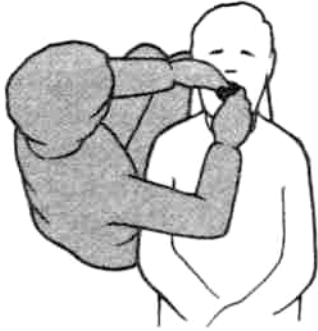
The 12 o'clock Position (Directly behind Patient)



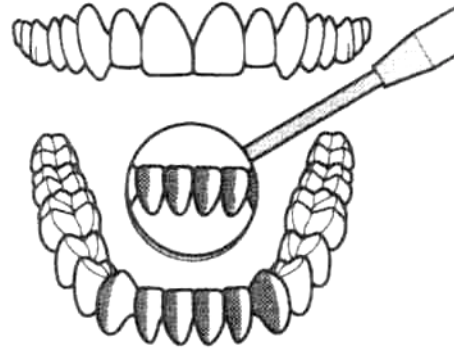
- Sit directly behind the patient's head.
- To reach the patient's mouth, hold your wrists and hands above the region of the patient's ears and cheeks.
- Your line of vision is straight down into the patient's mouth.

Positioning for the Anterior Sextants

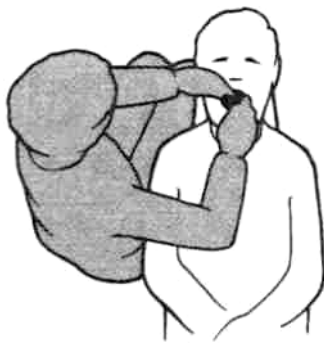
Anterior Surfaces toward the Clinician



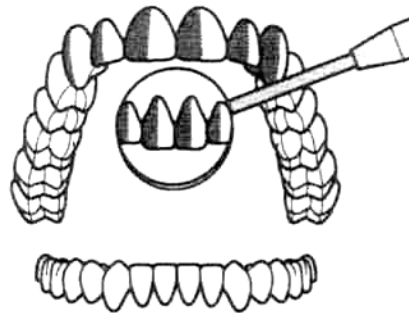
8 to 9 o'clock position



1. Head turned slightly toward the clinician
2. Chin-down position



8 to 9 o'clock position

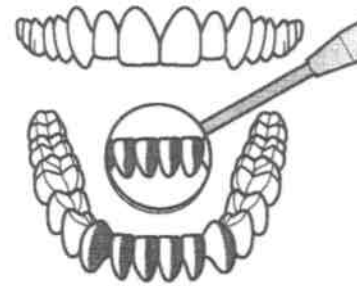


1. Head turned slightly toward the clinician
2. Chin-up position

Anterior Surfaces Away From the Clinician



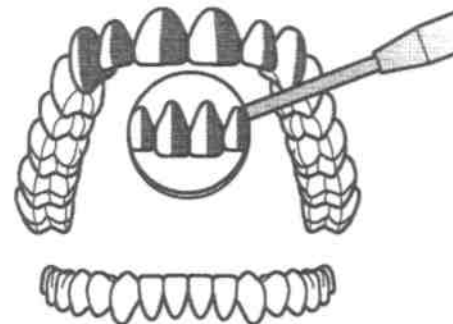
12 o'clock position



1. Head turned slightly toward the clinician
2. Chin-down position



12 o'clock position



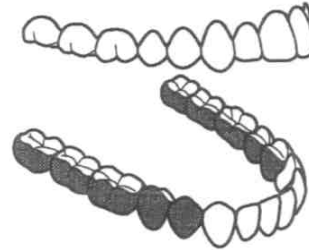
1. Head turned slightly toward the clinician
2. Chin-up position

Positioning for the Posterior Sextants

Posterior aspects toward the Clinician



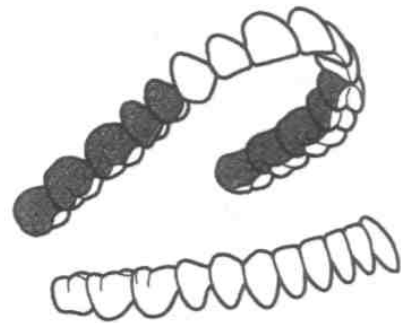
9 o'clock position



1. Head turned slightly away from the clinician
2. Chin-down position



9 o'clock position

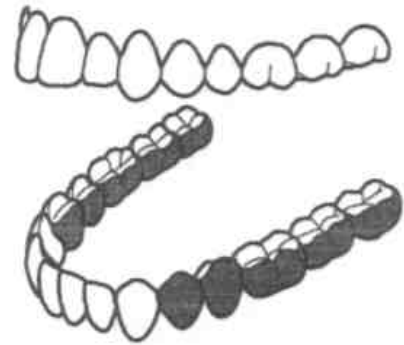


- Head turned slightly the
- away from clinician
- Chin-up position

Posterior Aspects Away From the Clinician



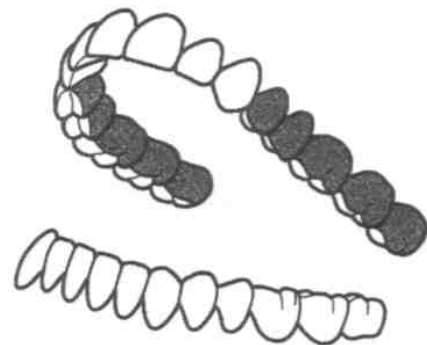
10 to 11 o'clock position



1. Head turned toward the clinician
2. Chin-down position



10 to 11 o'clock position



1. Head turned toward the clinician
1. Head turned toward the clinician
2. Chin-up position

Reference Sheet: Positioning for the RIGHT-Handed Clinician

Positioning Summary

Treatment Area	Clock Position	Patient Head Position
Anterior surfaces, toward Mandibular arch	8 - 9:00	Slightly toward Chin-down
Anterior surfaces, toward Maxillary arch	8 - 9:00	Slightly toward Chin-up
Anterior surfaces, away Mandibular arch	12:00	Slightly toward Chin-down
Anterior surfaces, away Maxillary arch	12:00	Slightly toward Chin-up
Posterior aspects, toward Mandibular arch (right facial and left lingual)	9:00	Slightly away Chin-down
Posterior aspects, toward Maxillary arch (right facial and left lingual)	9:00	Slightly away Chin-up
Posterior aspects, away Mandibular arch (right lingual and left facial)	10-11:00	Toward Chin-down
Posterior aspects, away Maxillary arch (right lingual and left facial)	10-11:00	Toward Chin-up

Reference:

Nield-Gehrig JS. Fundamentals of periodontal instrumentation – 4th ed, 2000 Lippincott Williams and Wilkins, Philadelphia.

INTRA-ORAL EXAMINATION

The aim of the clinical examination is to identify signs of a possible disease including changes in the color, shape, consistency and height of the gingiva and changes in other oral structures such as the lips, mucosa, tongue, oropharynx, floor of the mouth, hard and soft palate. It is important to examine both the general aspect of these structures and also any possible localized alteration.

EXAMINATION FOR DENTAL PLAQUE

Examination for plaque is the most useful introduction to the examination of the adjacent periodontal tissues due to the inter-relationship between the plaque and inflammatory changes within the tissues. Dental plaque can be detected clinically by:

1. **Visual detection** - Plaque can be seen as a white-creamy film on the tooth surface. It is more visible if the tooth has been dried or if the plaque is of sufficient thickness.
2. **Use of instrument** - The use of a dental instrument (e.g. periodontal probe) is useful and convenient for plaque detection. The probe is run along the tooth surface in the region of the gingival margin. The presence of plaque is recorded if it can be collected on the probe. This method has an advantage of detecting the plaque in the inter-proximal areas (where the plaque is not immediately visible to the examiner) as well as the plaque of insufficient thickness.
3. **Use of disclosing agents** - These are dyes used to stain dental plaque and make it more visible. As color changes in the tissues may be obscured by the dye, it is advisable to examine the periodontal tissues before using the dye.

EXAMINATION OF THE PERIODONTAL TISSUES

Examination of the periodontal tissues is important in the diagnosis and treatment planning.

I - Examination For Marginal Gingival Inflammation

Gingiva should be dried before examination as light reflection from moist gingiva may obscure details. Color, size, contour, consistency, surface texture, position in relation to the cement-enamel junction, cause of bleeding and pain if present should be carefully evaluated and recorded. The gingiva is assessed on the basis of the following parameters:

PARAMETERS		NORMAL (examples)	DISEASED (examples)
Color		Coral pink with/without melanin pigmentation	Red, bluish red- cyanotic, whitened.
Contours	<i>Papillary</i>	Papillae fill embrasures, pointed tip, pyramidal	Blunted, bulbous, cratered
	<i>Marginal</i>	knife edged	Rolled

Consistency (Tone)	Resilient, firm, non-retractable with air	Edematous, soft & spongy, air retractable
Texture	Stippled	Smooth & shiny (loss of stippling)
Position	At cemento-enamel junction	More coronal - More apical

The common signs of inflammation around the gingival margin are **swelling** (with change in contour, consistency and texture of the gingiva), **redness and bleeding**. Swelling and redness of the marginal gingiva can be clear and useful indicators for periodontal inflammation. However, these changes are not always easily detected especially when they are less marked. Furthermore, this method of assessment is based on the superficial changes in the appearance of the marginal gingiva. These changes are dependent on many variables and can only be appreciated subjectively. Thus, it is difficult to achieve standardization between different examiners in the interpretation of these superficial changes. Gingival bleeding on probing is a more consistently reliable method to assess **ongoing** inflammation in the periodontal tissues. It is based on the **presence or absence of bleeding** from the marginal gingiva, following gentle probing. Placing a **periodontal probe** inside the gingival sulcus and in contact with the inflamed gingiva is sufficient to evoke bleeding. BOP indicates some sort of destruction or ulceration of the sulcular epithelium and bleeding from lamina propria.

Recording BOP

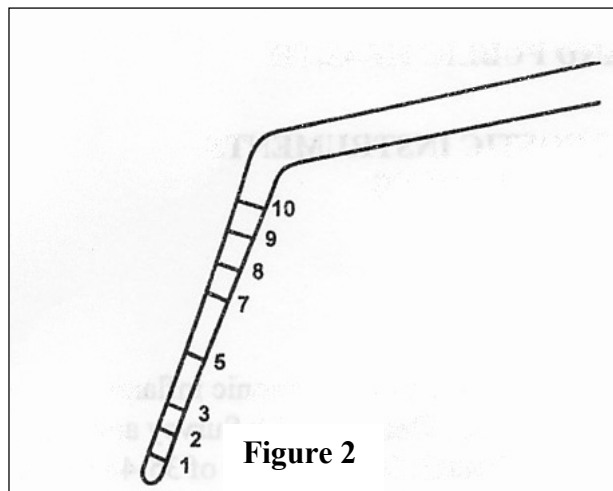
$$\text{Bleeding Index} = \frac{\text{Total number of bleeding points} \times 100}{\text{Total number of teeth} \times 6}$$

In addition to swelling, redness and bleeding of the inflamed marginal gingiva, other parameters such as probing pocket depth, gingival recession, tooth mobility and bone contour/level (determined by x-ray) are assessed to judge the presence and severity of periodontal disease. Of these parameters, probing pocket depth is perhaps the most objective and recordable one.

II- Periodontal Probing

Measuring of the periodontal pocket's depth should ideally be a normal part of the dental diagnostic visit. Periodontal pockets should be examined for their presence, type and distribution in relation to each tooth in the dentition. This can be done by systematic and careful probing for all surfaces of each tooth with a **periodontal probe**. During probing, the probe should be used with gentle pressure. A probing force of **25 grams (0.75 Newtons)** has been found to be well tolerated and accurate. The probe should be inserted **parallel to the long axis of the tooth** and it should be "walked" around the entire circumference of each tooth. Probing depth is recorded for **six** locations per tooth (mesio-buccal, buccal, disto-buccal, mesio-lingual, lingual, and disto-lingual).

Williams Periodontal Probe



Williams periodontal probe is a round, conical-shaped device used to assess the progression and extent of a disease within the periodontal tissues. The probe is marked in millimeters (mm) from its tip as following: **1, 2, 3, 5 then 7, 8, 9 and 10 mm.** The spaces between the 3 and 5 mm markings and between the 5 and 7 mm markings are to avoid confusion in the reading of the measurement. The probe may be available with color coding (Figures 1 and 2).

Periodontal Pocket

Pocket depth is measured as the distance between the gingival margin and the probe tip at the base of the pocket. The average healthy pocket depth is registered at a range of 0-3 mm with no bleeding upon probing. Depths greater than 3 mm can be associated with or without "**attachment loss**" of the tooth to the surrounding alveolar bone. More than 3 mm pocket depth **with attachment loss** is a characteristic feature of **periodontitis (true periodontal pocket)**. More than 3 mm pocket depth **with no loss of periodontal attachment** can be a sign of **gingival overgrowth (false pocket)** (Figure 3).

Measuring and Recording the Probing Pocket Depth (PPD)

Proper use of the periodontal probe is necessary to maintain accuracy.

1. Use William's periodontal probe.
2. Insert the probe tip down into the gingival sulcus with gentle pressure of 25 gm (no blanching). This results in obscuring a section of the periodontal probe.
3. Keep the probe parallel to the long axis of the tooth and gently "walk" the probe's tip along the bottom of the pocket.
4. The first marking visible above the gingival margin indicates the measurement of the depth of the sulcus/pocket (Figure 4).
5. Record the measurements at six locations (mentioned above).
6. Interproximally, the probe should be inserted at 10-15° below the contact area (Figures 5 & 6).
7. In the periodontal chart, write dash (-) for 1 and 2 mm, and (10⁺) for more than 10 mm. If the gingival margin is located between two marks, select the greater one (e.g. if it is between 2 and 3 mm, record it 3 mm).

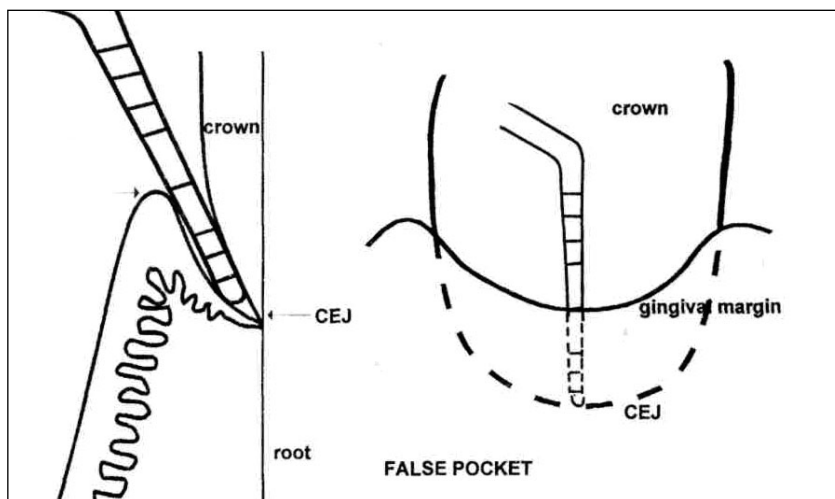


Figure 3: Although probe indicates probing depth of 5mm measured from the gingival margin, note the probe tip ends at the CEJ. This is a **FALSE POCKET**

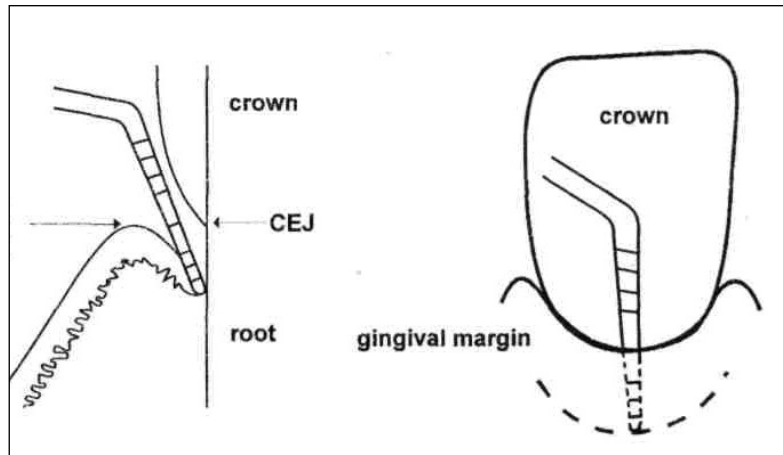


Figure 4: Probe indicates a probing depth of 5 mm measured from the gingival margin

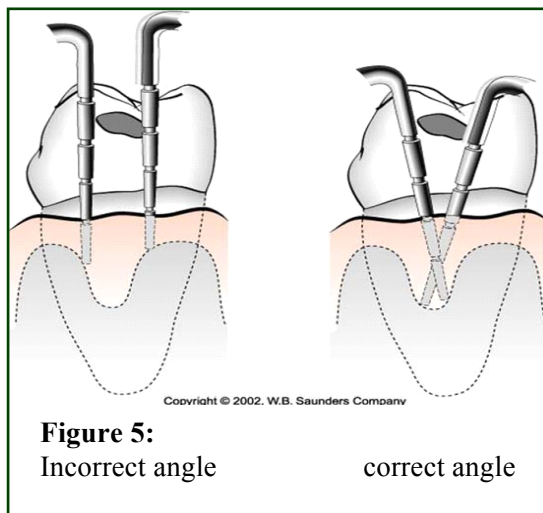


Figure 5:
Incorrect angle

correct angle

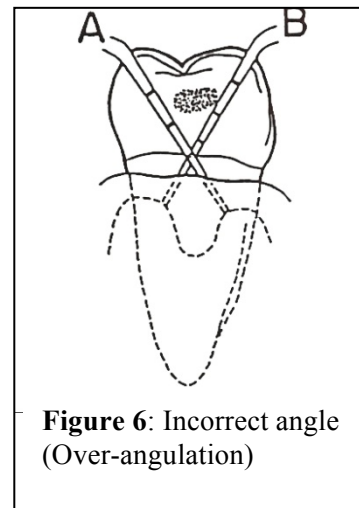


Figure 6: Incorrect angle
(Over-angulation)

III - Gingival Recession

Gingival recession refers to the location of the gingival margin apical to the cemento-enamel junction (CEJ) resulting in exposure of the root surface to the oral environment. It is a common problem in adults over the age of 40, but it may also occur starting from the teens. Gingival recession is measured from the visible CEJ to the gingival margin using the periodontal probe as a measuring instrument.

Measuring And Recording Gingival Recession

1. Determine the location of CEJ.
2. Measure the distance from GM to CEJ with a periodontal probe at six locations per tooth (Figure 7).
3. In the corresponding column in the periodontal chart, record gingival recession (CEJ-GM) as follows:
 - a. 0 mm if GM coincides with the CEJ.
 - b. + value if GM is apical to CEJ (e.g. 4 mm if GM is 4 mm apical to CEJ).
 - c. - value if GM is coronal to CEJ (e.g. -2 mm if GM is 2 mm coronal to CEJ (gingival overgrowth/false pocket).

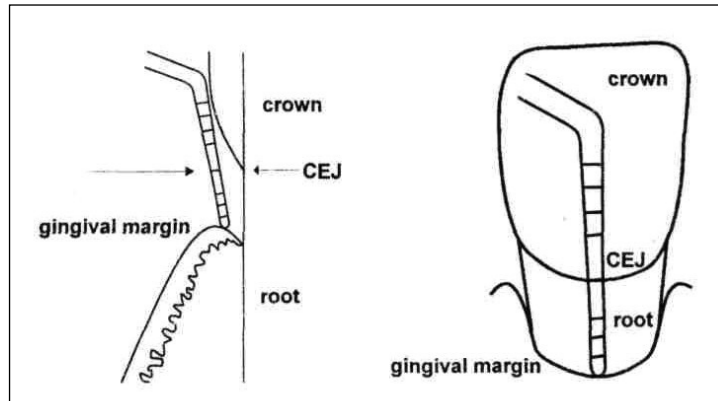


Figure 7: Probe indicates 5 mm of recession measured from GM to CEJ.

Although the probing depth has great significance, it is not enough to make periodontal diagnosis. Why? What is the attachment level? How can you measure it and use it to help your patients?

IV - Periodontal Connective Tissue Attachment

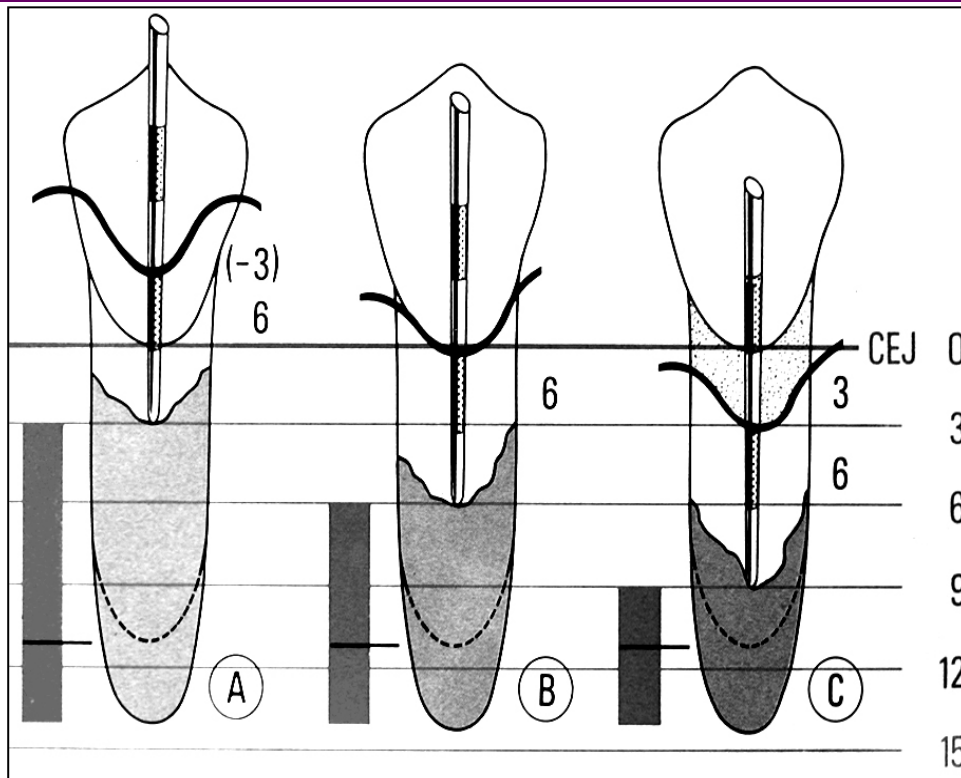
There are two types of inflammatory changes existing within the periodontal tissues in response to plaque: 1) One type causes **no destruction of the periodontal connective tissue attachment** and its evidence exists at the gingival margins; 2) The other type is **destructive** as it destroys the periodontal connective tissue attachment and leaves an evidence of previous history of attachment loss (destruction). The evidence of **loss of attachment** can be in the form **recession, pockets, or recession + pockets**.

The periodontal probe is suitable for the assessment of loss of attachment. In the clinic, the Williams probe is used. CEJ is the landmark of the attachment loss as it marks the most coronal termination of the periodontal attachment.

Clinical Attachment Level

Clinical attachment level (CAL) is the amount of space between the attached periodontal tissues (base of the pocket) and a fixed point, usually CEJ. CAL represents the **best measure of disease severity** in terms of loss of support for the teeth. Furthermore, it is used to assess the **stability** of attachment as part of a periodontal maintenance program as it allows the dentist to accurately monitor the progression of disease over time. For more detailed records, CAL may be recorded at 6 locations per tooth (as with probing depth and gingival recession).

CAL is calculated as follows: $CAL = (PD) + (CEJ - GM)$. When the gingival margin coincides with the CEJ (no recession), the loss of attachment and the pocket depth are equal. If the gingival margin is apical to CEJ (+ value), the loss of attachment will be greater than the pocket depth. If the gingival margin is coronal to CEJ (- value), the loss of attachment will be less than the pocket depth (Figure 8).



CEJ-GM = - 3
 PPD = 6
 CAL = 3

CEJ-GM = 0
 PPD = 6
 CAL = 6

CEJ-GM = 3
 PPD = 6
 CAL = 9

V- Examination for Calculus

Calculus is divided into two types:

1. **Supragingival calculus:**

It is derived from the plaque which calcifies above the gingival margin. Its mineral salts are obtained from saliva. It is creamy white in color and comparatively easy to remove. Supragingival calculus is easy to recognize, because it is visually apparent.

2. **Subgingival calculus:**

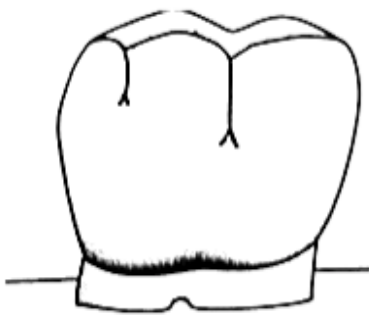
It commences its calcification subgingivally, irrespective of its final location. At examination, it may be supragingival due to gingival recession occurring after its initial calcification. It derives its mineral salts from the inflammatory fluid of inflamed marginal gingiva. It is dark in color due to the inclusion of blood pigments. Such inflamed gingival margins with their tendency for hemorrhage will contribute to this feature of color as well as providing the mineral salts. Subgingival calculus is comparatively more difficult to remove than supragingival calculus. Often, it is not visible and, therefore, must be detected by feeling it with a suitable instrument.

Importance of Calculus

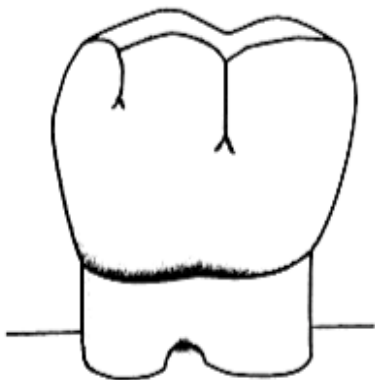
Calculus makes the task of mechanical plaque control difficult for patients. Therefore, its removal is an essential component of treatment.

VI- Furcation Involvement

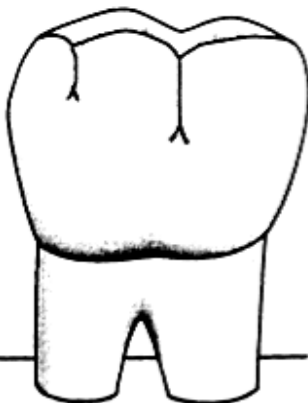
For multi-rooted teeth (e.g. molars and possibly premolars), loss of periodontal attachment may involve the root furcation. In those circumstances, furcation involvement must be recorded. Furcation involvement can be readily detected in good periapical or bitewing radiographs. Clinically, it can be confirmed by using the **Nabers probe**. Furcation involvement is recorded on the basis of class I, II, III and IV according to the Glickman's classification of furcation involvement as follows:



Class I Involvement: Pocket formation into the fluting of the furca, but the inter-radicular bone is intact. No gross or radiographic evidence of bone loss. This is recorded on the periodontal chart as ^



Class II Involvement: Inter-radicular bone is destroyed on one or more aspects of the furcation, but a portion of alveolar bone and periodontal ligament remains intact. This is recorded on the periodontal chart as △



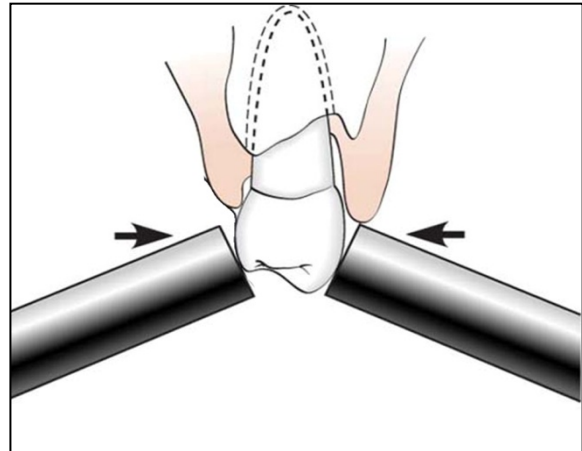
Grade III Involvement: The furcation is occluded by gingiva but the inter-radicular bone has been destroyed so that a probe can be passed through from one surface to the other. This is recorded on the periodontal chart as ▲

Grade IV Involvement: The periodontium is destroyed to such a degree that the furcation is open, exposed and clinically visible. This is recorded on the periodontal chart as ▼

VII - Tooth Mobility

Tooth mobility, if present, is recorded by the Roman numerals **I, II or III**. Mobility is detected by using the ends of the handles of two instruments (e.g. mirror and periodontal probe).

I	Detectable increased tooth mobility ≤ 1 mm in bucco-lingual direction.
II	Detectable increased tooth mobility > 1 mm, but < 2 mm in bucco-lingual direction.
III	Detectable increased tooth mobility > 2 mm in bucco-lingual direction and/or clinically evident apical movement upon application of force with an instrument handle on the tooth crown directed in an apical direction.



VIII- Radiographic Evaluation

Examine the C.M.S radiographs in an orderly sequence so that you do not miss any significant finding. Start with tooth #18 and work your way clockwise to tooth # 48. Assess, identify and record the following:

Plaque Retention Factors

Assess for visible calculus deposits, caries at or near the gingival margin and defective restorations (overhanging margins, poor contour and open margins). Record the presence of these factors by tooth number and their location (e.g. # 14 (m), 15 (m,d))

Alveolar Bone Assessment

Observe the general pattern of bone resorption and notice whether it is **horizontal, vertical or combined**. Always report your findings by sextant.

Horizontal Bone Loss (%)

It is necessary to consider the percentage of bone loss that exists radiographically when making the diagnosis. Measure the distance between the CEJ and the alveolar bone crest, estimate the percentage of the bone loss (%) and record sextant by sextant as follows (any significant exceptions may be noted separately):

1.	0% bone loss	Bone level 1.5 mm apical to the CEJ with no signs of loss of crestal density. It suggests normal bone level.
2.	20% bone loss	Bone level between 2 - 4 mm apical to the CEJ. It suggests slight bone loss.
3.	20%-50% bone loss	Bone level > 4 mm, but < 6 mm apical to the CEJ. It suggests moderate bone loss.
4.	50% bone loss	Bone level > 6 mm apical to the CEJ. It suggests severe bone loss.

Note: Bone loss may exhibit different severity in different areas of the mouth. This must be taken into

consideration while making individual tooth diagnosis.

Loss of Crestal Bone Density

Examine the crestal lamina dura for its **continuity**. When there is active destructive inflammation, the crestal bone will undergo resorption and will appear **less dense (fuzzy)** than normal on the radiographs. This appears more obvious on the bitewing films because of the x-ray orientation. Loss of crestal bone density may indicate presence of **periodontitis** which cannot be ascertained without clinical examination. The isolated areas with loss of continuity are recorded with the **tooth number**. If more than 3 interproximal areas are involved in a sextant, record it with the **sextant number** of the involved teeth.

Vertical Defects

Note the location, type, and extent of the defects. When you correlate between clinical and radiographic findings, it will be easier and more accurate to interpret vertical defects. Record the presence of vertical defects by tooth number and defect site, for example # 44 (m), # 46 (m,d)

Furcation Radiolucencies

Note the location and extent of any apparent furcation radiolucency and record the tooth number (e.g. # 46, 47). You should correlate this information with the clinical data.

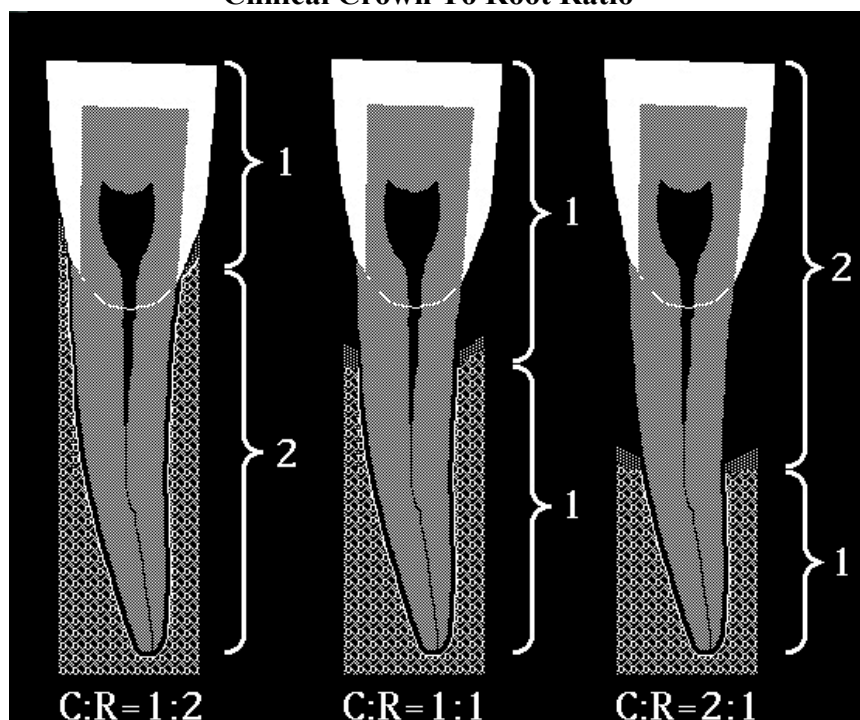
PDL Width

Record any tooth with obvious widening of the PDL space and record the tooth number and involved site (e.g. # 33 (m), 32 (m,d))

Root length/ form/proximity

Record the tooth number for any root abnormality seen radiographically such as short roots dilacerations, any approximated roots and crown to root ratio (C : R).

Clinical Crown To Root Ratio



Other Significant Findings

Any other factors which may be of significance such as periapical pathology, cyst, impacted teeth, etc. may be recorded.

STEPS FOR REEVALUATION

1. Examine the gingival tissues



2. Inspect for visible hard and soft deposits



3. Call your instructor



4. Record Bleeding Index & Plaque Index



IF



NO visible deposits

Bleeding Index < 18%

Plaque Index < 20%



PATIENT IS READY FOR REEVALUATION



Re-probe the periodontal pockets > 3 mm

Write the definitive treatment plan

Call your instructor

Bleeding Index > 18%

Plaque Index > 20%



PATIENT IS NOT READY FOR



Identify the causes

Record findings on patient's chart

OHI, scaling, polishing

Re-schedule the patient after 1- 2 weeks

Periodontal Examination & Charting Form

Student Name:

Computer No.:

Patient's Name:

File No.

Age: _____ yrs.

Gender:

Marital Status:

Nationality

Occupation:

Date

Chief Complaint:

Dental History

Medical History

I. Extra-Oral Examination:

Smoking:

No - Yes

(Type?, frequency?, how long?)

II. Intra-Oral Examination:

I.1. Buccal Mucosa

I.2. Gingiva

I.2.a. Color

I.2.b. Tone (consistency)

I.2.c. Contour

I.2.d. Attached Gingiva

I.3. Mucogingival Defects

Oral Hygiene Habits

• **Type of Tooth brush:**

Soft - Medium - Hard

• **Brushing Technique**

• **Interdental Aids**

Yes (type):

No

• **Miswak**

Yes - No

• **Other**

Pre-treatment ___ Re-evaluation ___ Recall-maintenance ___ Date ___

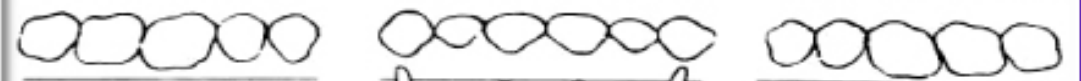
Diagnosis
CAL, Bleeding
PD, PI, Calc
CEJ-GM

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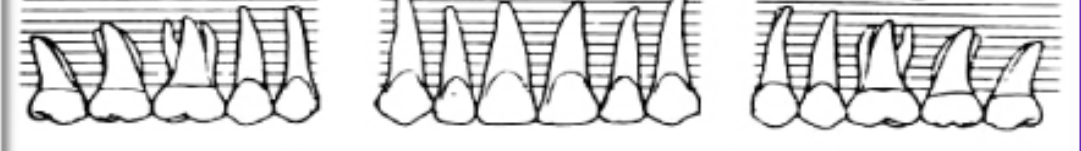
UB



Mobility



UL

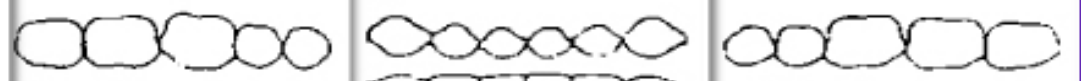


CEJ-GM
PD, PI, Calc
CAL, Bleeding
R
CAL, Bleeding
PD, PI, Calc
CEJ-GM

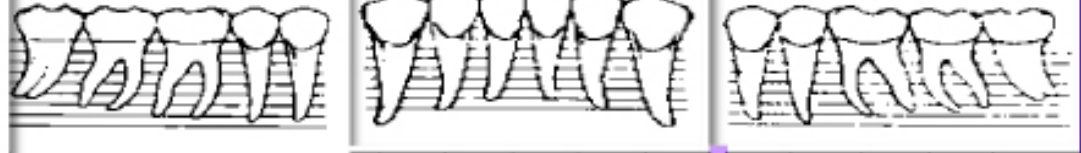
LL



Mobility



LB



CEJ-GM
PD, PI, Calc
CAL, Bleeding
Diagnosis

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GM - Gingival Margin
CAL - Clinical Attachment Loss
CEJ - Cementoenamel junction
PD - Probing Depth
PI - Plaque, if presents put *
Calc - Calculus, if presents put *
Bleeding: if presents put .

UB - Upper Buccal
UL - Upper Lingual
LB - Lower Buccal
LL - Lower Lingual

Plaque Index
Bleed Index

Supervisor's Signature

PERIODONTAL DIAGNOSIS

Radiographic Evaluation

Plaque Retentive Factors:

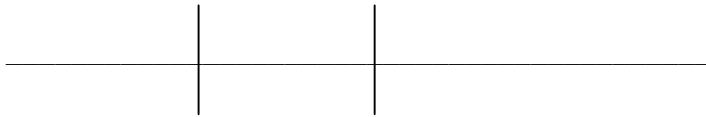
Over-hangs / defective restorations:

Calculus:

Caries:

Alveolar Bone Assessment:

Horizontal Bone Loss (%)



Crestal Bone Density:

Vertical Defects:

Furcation Radiolucencies:

PDL Width:

Root length/ form/proximity:

Other findings / pathology:

Supervisor's Signature

Date

Diagnosis (Oral Diagnosis)

Prognosis

Overall:

Individual:

Treatment Plan

Phase I

Phase II

Phase III

Phase IV

Supervisor's Signature

Date

Revaluation

Definitive Treatment Plan

Supervisor's Signature

Date

Recall and Maintenance

Supervisor's Signature

Date

Periodontal Examination & Charting Form (Sample)

STUDENT NAME: X STUDENT

COMPUTER NO. : XXXXXXXX

PATIENT'S NAME: X PATIENT

FILE NO. XXXXXXXX

AGE: _X YRS. GENDER: X OCCUPATION: XXXXXX

NATIONALITY XXXXXX

MARITAL STATUS: XXXXX

DATE X.X.09

CHIEF COMPLAINT:

“Used patient own word exactly”

DENTAL HISTORY

Date & Type of any previous dental work (fillings, prosthesis, extractions, periodontal treatment...etc)

MEDICAL HISTORY:

- Heart diseases / need for AB coverage
- Blood diseases
- Diabetes mellitus (Duration, Type, Hbc1?)
- Medications (Aspirin / blood thinner...etc) dose / for what ?

I. EXTRA-ORAL EXAMINATION:

L.N: Movable? Palpable? Tender?
 TMJ: Pain? Clicking? Any deviation during closure?
 Thyroid gland: Any swelling
 Any other observable extra-oral abnormalities

SMOKING: (NOW OR BEFORE ?)

IF SMOKER BEFORE → WHEN STOPPED?
 AND FOR HOW LONG USED TO SMOKE
No – YES (TYPE?, FREQUENCY?, HOW LONG?)

II. INTRA-ORAL EXAMINATION:

I.1. BUCCAL MUCOSA: Report if there is any linea alba, lesions, change in color ...etc?

I.2. GINGIVA:

I.2.A. COLOR:

I.2.B.TONE (CONSISTENCY)

I.2.C.CONTOUR

I.2.D.ATTACHED GINGIVA

I.3.MUCOGINGIVAL DEFECTS:

(obvious recession, high frenum attachment...etc?) Others: Report any lesions/ abnormalities in floor of the mouth, lips, checks, tongue..etc)

ORAL HYGIENE HABITS

◆ **TYPE OF TOOTH BRUSH:**

SOFT – MEDIUM - HARD

◆ **BRUSHING TECHNIQUE**

Horizontal- **Vertical** -
 Circular - Combination

◆ **INTERDENTAL AIDS**

YES (TYPE)

No

• **MISWAK**

• **OTHER**

(tooth pick, mouthwash, proxabrush , superfloss..etc)

PARAMETERS		NORMAL (examples)	DISEASED (examples)
Color		Pink, Pink with melanin pigmentation	Red, bluish red- cyanotic , whitened.
Contours	<i>Papillary</i>	Papillae fill embrasures, pointed, pyramidal	Blunted; bulbous; cratered
	<i>Marginal</i>	knife edged	Rolled
Consistency		Resilient, firm, non-retractable with air	Edematous , Soft and spongy, air retractable
Texture		Stippled	Smooth and shiny (loss of Stippling)
Position		At the cemento-enamel junction	More coronal - More apical

Radiographic Evaluation

LAQUE RETENTIVE FACTORS:

Calculus deposits

Caries at or near the gingival margin

Defective restorations (overhanging margins, poor contour and open margins)

ALVEOLAR BONE ASSESSMENT:

- 0% Bone Loss bone level 1.5 mm apical to the CEJ with no signs of loss of crestal density loss it suggest normal bone level.
- 20% Bone Loss bone level will be between 2-4 mm apical to the CEJ, it suggests slight bone loss.
- 20%-50% Bone Loss bone level more than 4 mm but <6 mm apical to the CEJ, it suggests Moderate bone loss.
- 50% Bone Loss bone level >6 mm apical to the CEJ it suggest severe bone loss.

HORIZONTAL BONE LOSS (%)

20%	30%	25%
30%	50%	25%

CRESTAL BONE DENSITY:

Examine the continuity of the crestal lamina dura (Less dense (Fuzzy) / Normal)

VERTICAL DEFECTS:

Correlate the clinical with radio-graphical findings to accurately evaluate the vertical defect (M #11)

FURCATION RADIOLUCENCIES:

Record the tooth number of teeth with furcation involvement.

#36 and #47

PDL WIDTH:

Record any areas with obvious widening of the PDL space.

Wide around #11 and #24

ROOT LENGTH/ FORM/PROXIMITY:

Record any root abnormalities seen radiographically, e.g. Dilaceration, periapical lesions, short roots (poor crown to root ratio).

Root proximity between 14 and 15

OTHER FINDINGS / PATHOLOGY:

(periapical pathology , cysts, impacted teeth..etc)

RL around #11 and Pericapical to #24

Supervisor's Signature

Date

Diagnosis (Overall Dental Diagnosis)

Multiple Caries lesion
Missing teeth #16, 26, 27,36,46,47
Priapical Pathosis 23, 24

Periodontal Diagnosis

Generalized moderate chronic periodontitis w/localized sever
chronic periodontitis

Prognosis

OVERALL: Fair

INDIVIDUAL: Poor for #11

Treatment Plan

PHASE I:

- Case presentation and pt motivation
- OHI:
 - * Soft (Aquafresh) tooth brush
 - * Waxed Floss (Johnson and Johnson)
 - * Proxabrush (Jordan)
 - * Brushing technique: Modified Stillman technique
- Gross U/L scaling and Selective root planning
- Polishing and fluoride application
- Restoration of carious teeth
- Endodontic treatment
- Re-evaluation of response to phase I

PHASE II: Replacement of missing teeth (RPD) and/or implant

PHASE III: Maintenance: Periodic recheck |(4-6 months)
Plaque and calculus
Gingival condition
Occlusion and mobility
Other pathological changes

SUPERVISOR'S SIGNATURE

DATE

Reevaluation

In this step you need to know if the patient is following a good oral hygiene regimen and if you did a good job with your scaling and root planning in addition to the hygiene instruction, so you should Re-evaluate results of initial therapy (4-6 weeks after initial therapy) and Re-evaluate oral hygiene status of the patient using the Bleeding and plaque score.

Compare with initial findings:

Therefore, **A PATIENT TO BE READY FOR RE-EVALUATION** must have no obvious calculus present clinically and have all local etiologic factors eliminated, "hopeless" teeth extracted, carious teeth filled, over hanged restorations or over contoured crowns corrected and the patients achieved a satisfactory level of oral hygiene (assess plaque control (<20%), bleeding score (<18%), assess tissues response to initial treatment, plan further treatment that should take the form of a definitive treatment plan and may include maintenance care or periodontal surgery.

Definitive Treatment Plan

A. POCKET ELIMINATION SURGERY

1. Gingival Curettage
2. Gingivectomy/Gingivoplasty
3. Various types of Flap Operations [Mucogingival Flap (unrepositioned) Mucogingival Flap (apically repositioned)]
4. Osseous Surgery (Bone Grafts Ostectomy/Osteoplasty)

B. NON-POCKET ELIMINATION SURGERY

Mucogingival Surgery
Free Gingival Graft
Pedicle Grafts
Bone Denudation procedures

Supervisor's Signature

Date

Recall and Maintenance

Recall/Maintenance (Supportive Therapy)

Recall visits should be depending on the Periodontal Status and clinicians judgment.

1. Patients with high motivation and no systemic conditions (every 6 months).
2. Patients with moderate or severe periodontal disease (3-4 months or even earlier in high risk patients).

On each recall visit. The following should be emphasized:

1. Evaluation of the current oral health status.
2. Necessary maintenance treatment.
3. See if recurrence of disease or any other dental treatment needed.
4. Provide necessary periodontal scaling and root planning.
5. Patient motivation

Supervisor's Signature

Date