



GOOD MORNING

NORMAL PERIODONTIUM

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Introduction

- The normal periodontium provides the support necessary to maintain teeth in function.

It consists of four principal components:

- Gingiva,
- Periodontal ligament,
- Cementum, and
- Alveolar bone.

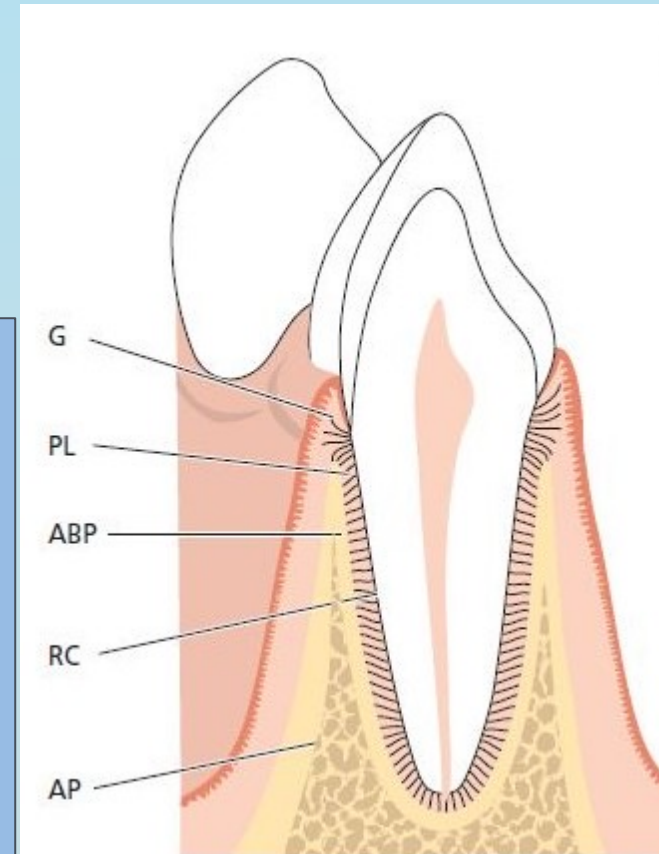
G —Gingiva

PL —Periodontal ligament

ABP—Alveolar bone proper

RC —Root cementum

AP —Alveolar process



NORMAL

GINGIVA



ATTACHED GINGIVA

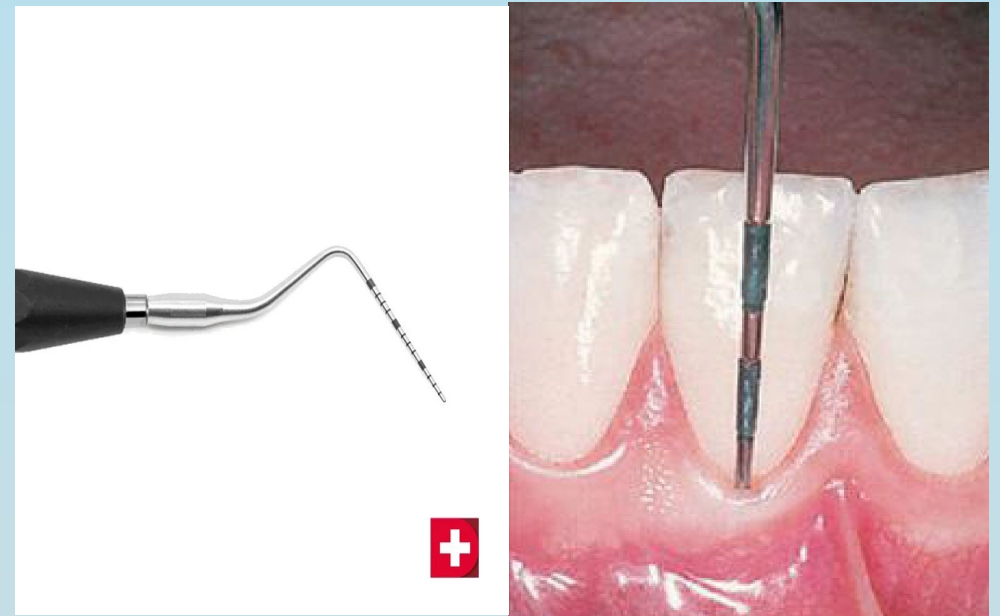
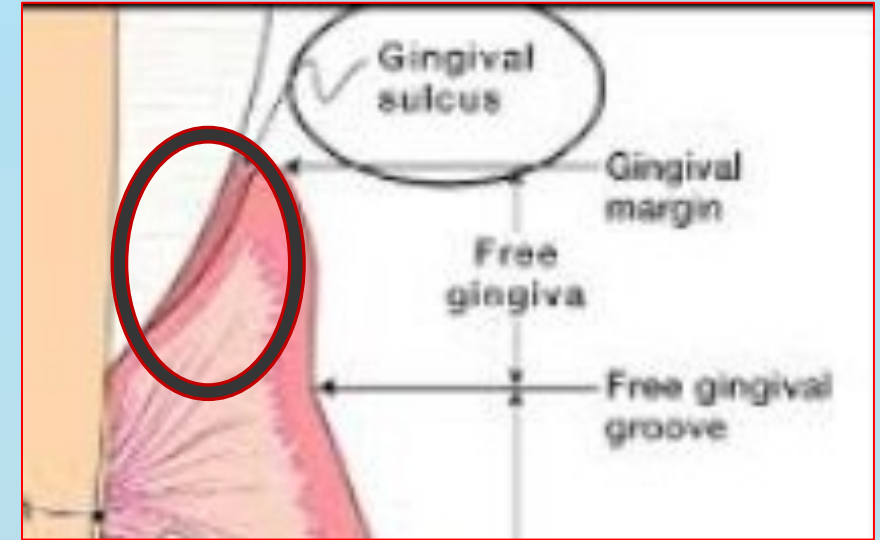
MARGINAL GINGIVA

INTERDENTAL GINGIVA

Gingival sulcus/ crevice

NORMAL

- A shallow crevice or space around the tooth bounded by the **surface of the tooth on one side** and the **epithelium lining the free margin of the gingiva on the other side**.
- V-shaped, and it barely permits the entrance of a periodontal probe
- **Clinical probing depth—2 to 3 mm**



Attached Gingiva



- Firm, resilient, and tightly bound to the underlying periosteum

NORMAL

Mucogingival junction (MGJ)



MGJ demarcates attached gingiva from the relatively loose and movable alveolar mucosa

Interdental Gingiva

- Interdental gingiva occupies the gingival embrasure, can be **Pyramidal, or Col**
- Interdental papillae (*arrow*) with a central portion formed by the attached gingiva.



If a diastema is present, the gingiva is firmly bound over the interdental bone to form a smooth, rounded surface without interdental papillae



**An absence of
interdental papillae
and col where the
proximal tooth
contact is missing.**

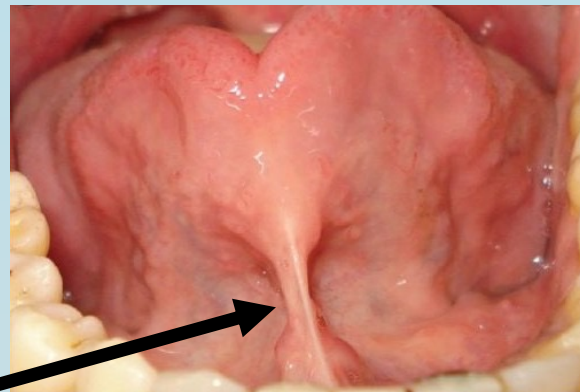
Frenum Attachments

- Frenum attachments are folds of mucosal tissues, often including muscle fibers, that join the movable mucosa to attached or specialized mucosa

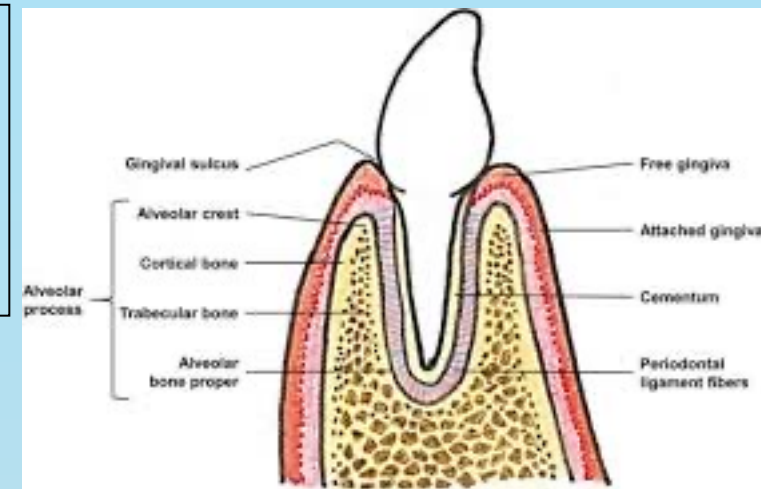
- Maxillary and mandibular anterior frenum--midlines of the maxillary and mandibular central incisors



- The lingual frenum--located on the underside of the tongue



Alveolar process : the part of the maxilla or mandible that forms and supports the sockets of the teeth.



Lamina Dura

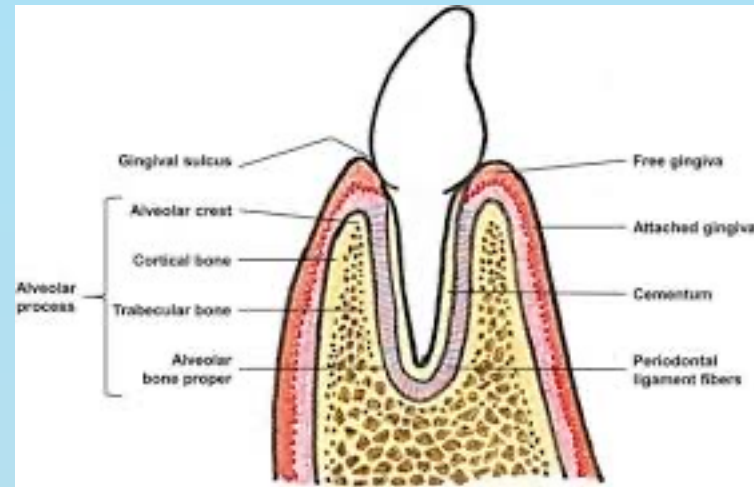
-(Alveolar bone proper)



Supporting Alveolar Bone

- CORTICAL PLATES
- SPONGY BONE

LAMINA DURA



**Alveolar
Crest**

Lamina Dura

-DENSE RADIOPAQUE

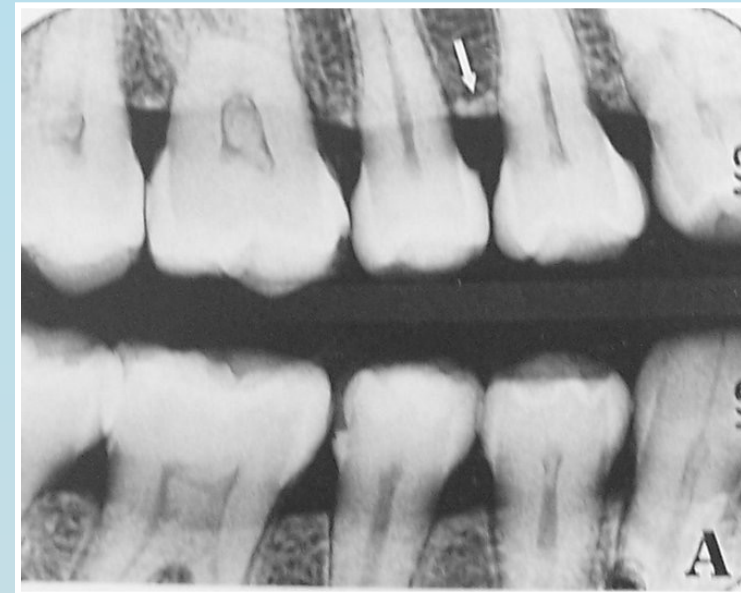
- a thin outer layer of dense cortical bone that lines the tooth socket and gives attachment to the principal fibers of the periodontal ligament.

-This layer is continuous with cortical bone of the alveolar crest.

Alveolar crest: The coronal margin of the alveolar bone processes found bw teeth are called alveolar crests. The level of this bony crest is considered normal when it is not more than 1.5-2 mm from the cementoenamel junction of the adjacent teeth



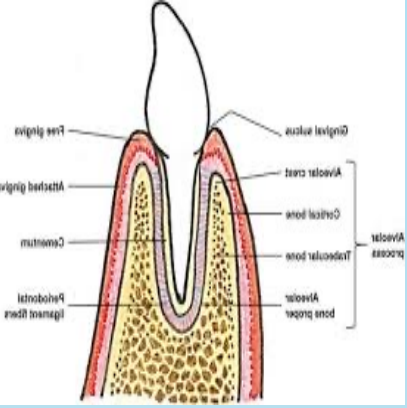
- Crest of bone is continuous with lamina dura & forms sharp angle.
- Rounding – PDL disease



Periodontal Ligament Space

PDL is composed primarily of collagen, it appears as a **radiolucent space** between the tooth root and the lamina dura.

Widest at:- coronally , slightly narrow –apex.

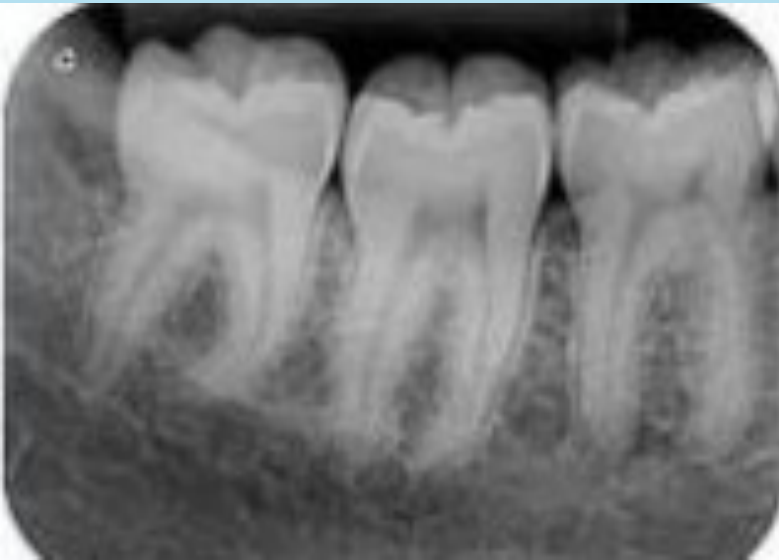


Lamina Dura

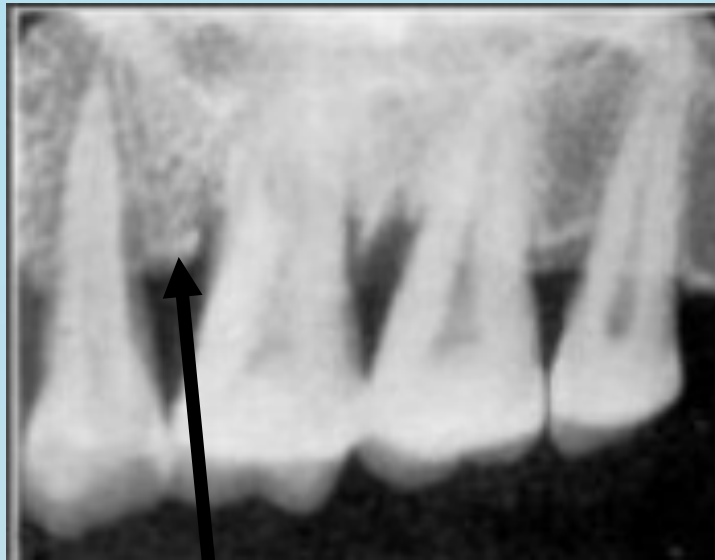
Periodontal Ligament Space



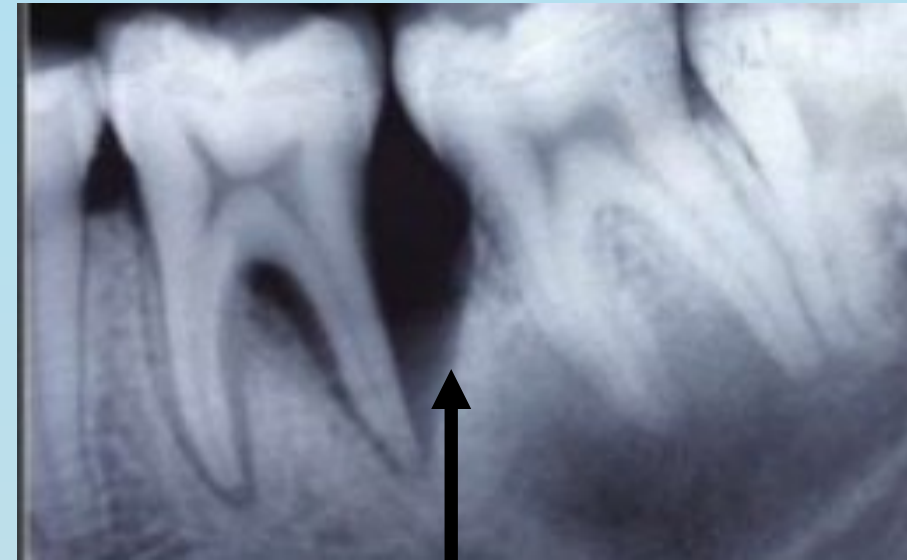
Bone levels in health and disease



Health



Horizontal bone loss



Vertical / angular bone loss

Gingival examination

- The gingiva must be **dried** before accurate observations can be made
 - ✓ **V**isual examination and
 - ✓ Exploration with instruments,
 - ✓ **Firm gentle palpation** to detect pathologic alterations in normal resilience
- Features of the gingiva to consider include color, size, contour, consistency, surface texture, position, ease of bleeding, and pain

CLINICAL FEATURES OF HEALTHY GINGIVA

Color : Coral pink or salmon pink

Consistency : Firm and resilient / tight, well adapted

Contour : Scalloped, Knife-edge margin with sharp pointed papillae

Surface texture : Matte, Stippled

Marginal bleeding : Absent or slight

Tissue resistance : Present to probe penetration

Bleeding on probing : absent or slight

Pain on probing : absent or slight

Color

In Health	Factors responsible
Gingiva: Coral Pink	<ul style="list-style-type: none">-Vascular supply-Thickness & degree of keratinization of epithelium-Presence of pigment containing cells
Alveolar mucosa: Red	<p>Epithelium--thin and non-keratinized</p> <p>Numerous blood vessels in connective tissue</p>



Color changes in Gingivitis



Clinical description

*Color—pink / Reddish
pink / bluish red / bluish
pink*

Arytheomatters

Localized / generalized



Size

Sum total of the bulk of cellular & intercellular elements & their vascular supply



Clinical description

- Normal / Increased (gingival enlargement)
- Localized / generalized

Condition	Clinical Description
Health	Gingival margin -scalloped and knife-edged Interdental papilla -pointed
Gingival / periodontal Disease	Margin -rounded/ rolled and scalloped/absence of scalloping. Interdental papilla —bulbous/ blunted/ absent
Distribution	Localized / generalized



Contour / shape



Gingival margin in health and disease



Knife edge margins



Round margins

Interdental papilla in health and disease

Pointed



Blunted



Absent



Bulbous



Changes in Gingival Consistency

Condition	Clinical description
Health	Firm and resilient
Disease	Soft and edematous ,Firm and fibrotic Firm and nodular/leathery
Distribution	Localized / generalized



The consistency - firm when palpated with the side of a blunt instrument, such as a **periodontal probe**

In the presence of inflammation, the gingiva may be soft and edematous, and easily deflected away from the tooth with an instrument or a blast of air.



Surface texture

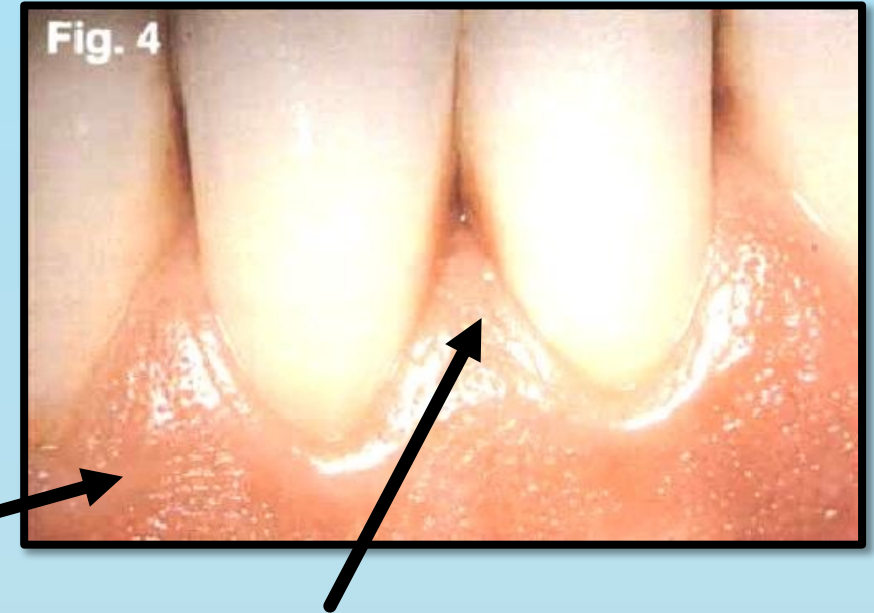
Orange peel appearance ; Stippling

Gingiva--dried and checked for stippling

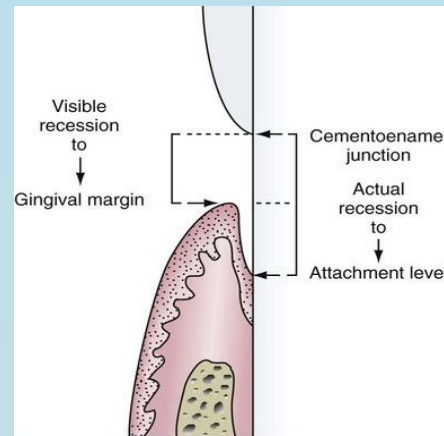
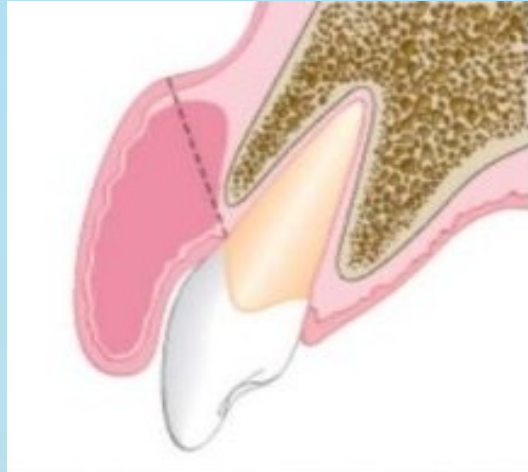
Less prominent on lingual surfaces

Stippling varies with age

Condition	Clinical description
Health	Matte, stippled
Disease	Smooth, shiny, absence of stippling
Distribution	Localized / generalized



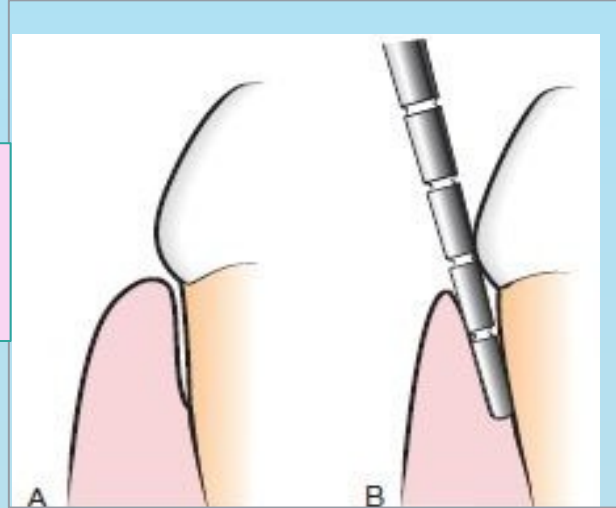
Gingival enlargement



Gingival recession

Probing depth

The probing depth is the depth of penetration of the probe

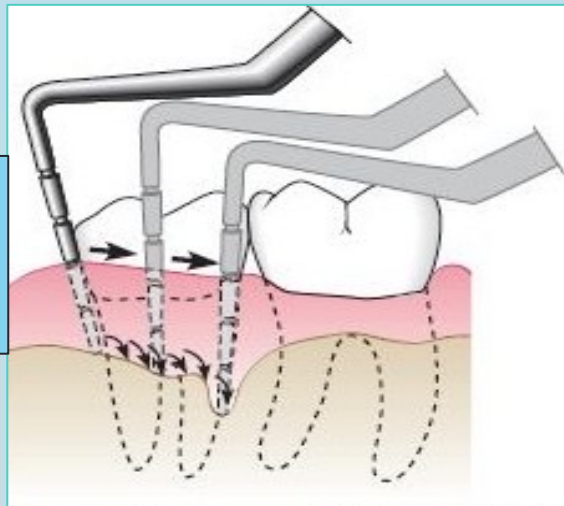


- Probe tip should be in contact with the tooth surface as it slides down along the tooth surface to get to the bottom of the gingival crevice

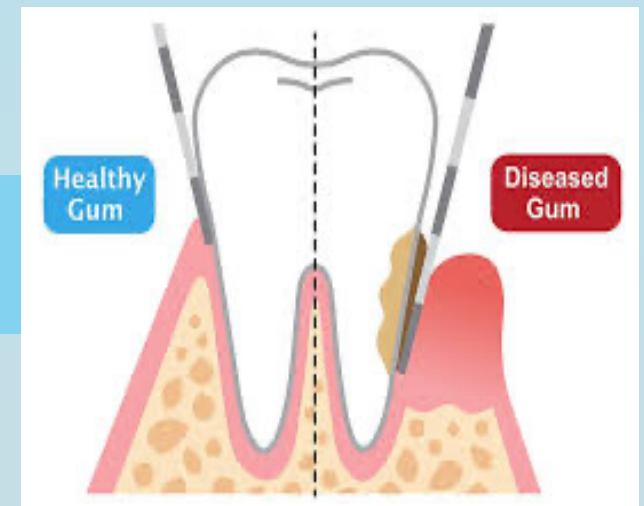
Gingival sulcus --- $\leq 3\text{mm}$

Periodontal pocket ---- $> 4\text{mm}$

“Walking” the probe to explore the entire pocket.



“Walk” the probe circumferentially



REFERENCES:

Carranza's Clinical Periodontology 14th edition pg 61-62

Thank you