

# PROSTHODONTICS III

## Introduction to COMPLETE DENTURE

### LESSON 01



Prepared By

Peter Pascual Flores DMD, MS

# Definition of Terms



# 1. **Prosthodontics**

- a branch of dentistry pertaining to the restoration and maintenance of oral function, comfort, appearance, and health of the patient by the restoration of the natural teeth or the replacement of missing teeth and contiguous oral and maxillofacial tissues with artificial substitutes.



## 2. Prosthetics

- the art and science of supplying missing parts of the human body



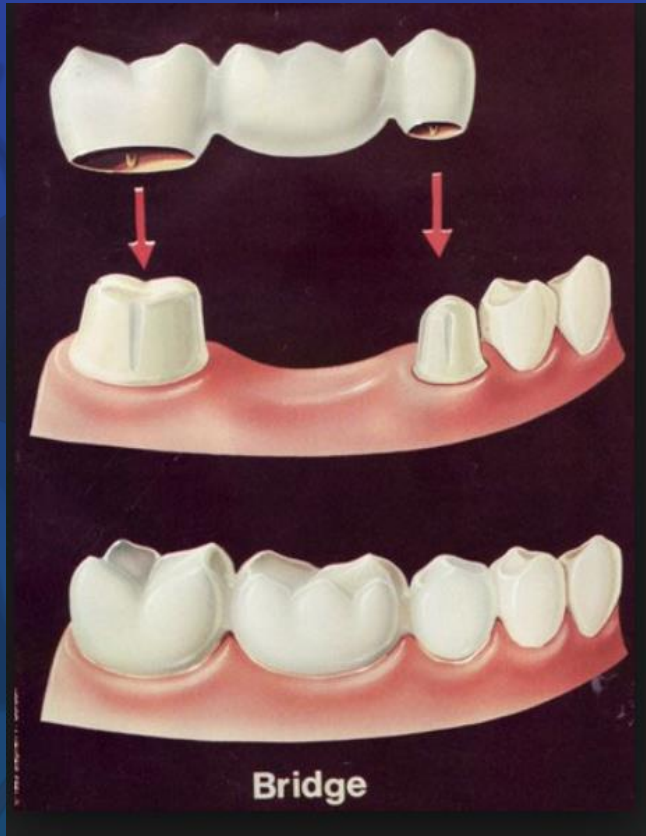
### 3. Prosthesis

- an artificial substitute for a missing organ or tissue, used for functional or cosmetic reasons, or both, such as an eye, leg or denture



## 4. Dental Prosthesis

- an artificial replacement of missing dental and oral structures used for function, cosmetic and phonetics





# Complete denture

- a kind of dental prosthesis that replaces all the missing natural teeth and associated structures in a completely edentulous patient



## **Partial denture**

- a kind of dental prosthesis that replaces part but not all of the dentition.

## a. Removable Partial Denture

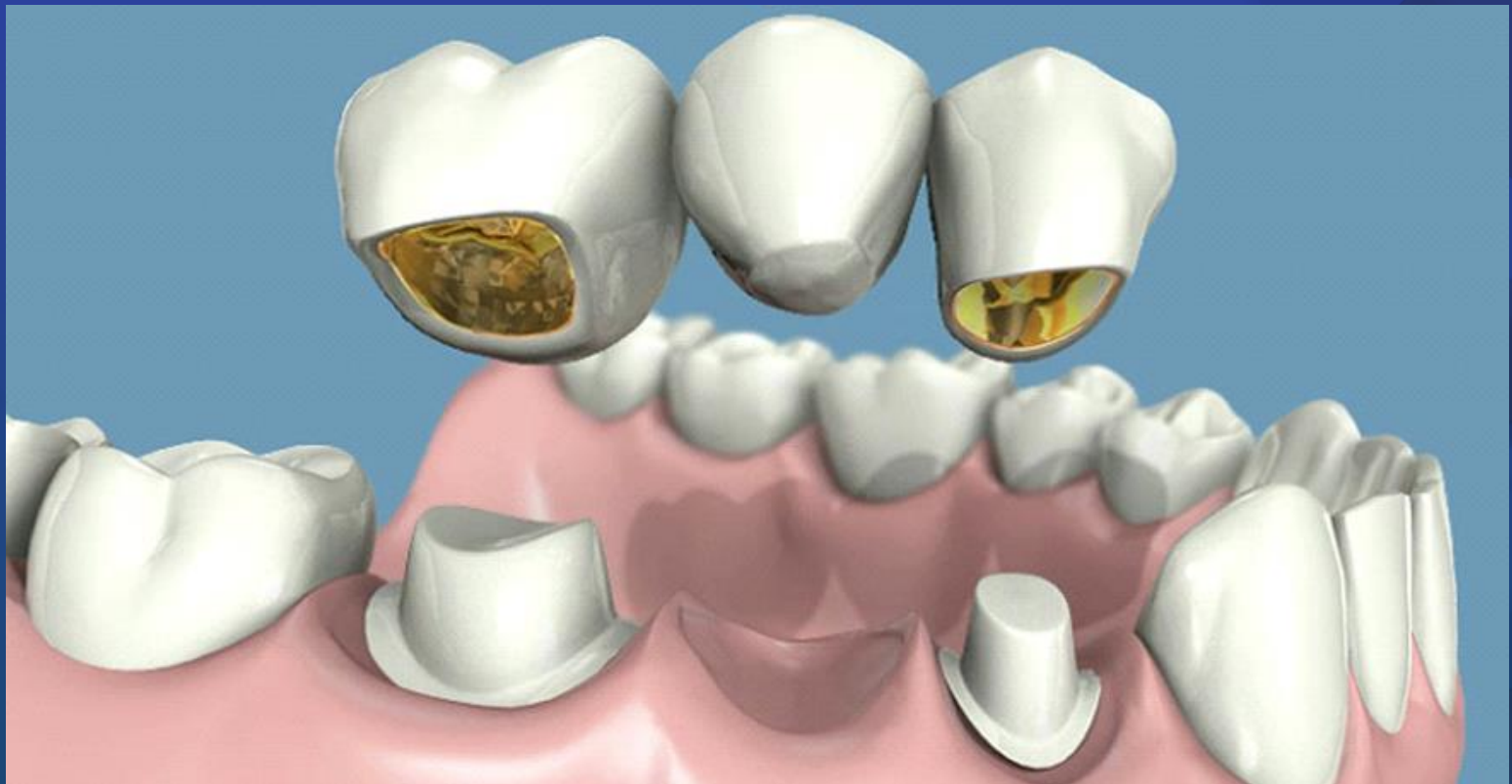


## **b. Fixed Partial Denture**

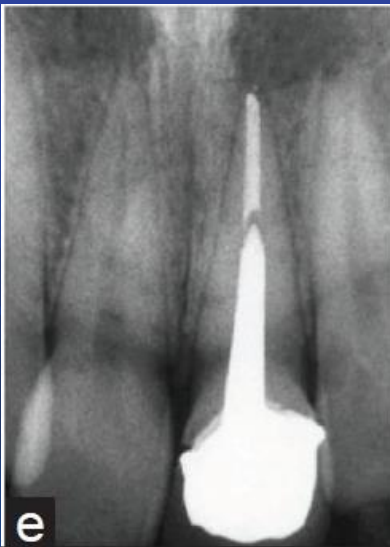
- a partial denture that is luted or otherwise securely retained to the natural teeth, tooth roots, and/or dental implant abutments that furnish the primary support to the prosthesis.



FPD which is luted to natural teeth



FPD which uses tooth roots as abutments



# FPD which uses dental implant abutments



## 5. Prosthodontist

- a dentist who specializes in prosthodontics





## 5. Prosthodontist

- a dentist who specializes in prosthodontics



## 6. Prosthetist

- a person skilled in prosthetics and practicing its application





## **7. Dentulous**

- an individual who has his/her natural teeth present



## 7. Edentulous

- an individual who has lost his/her natural teeth. They may be:

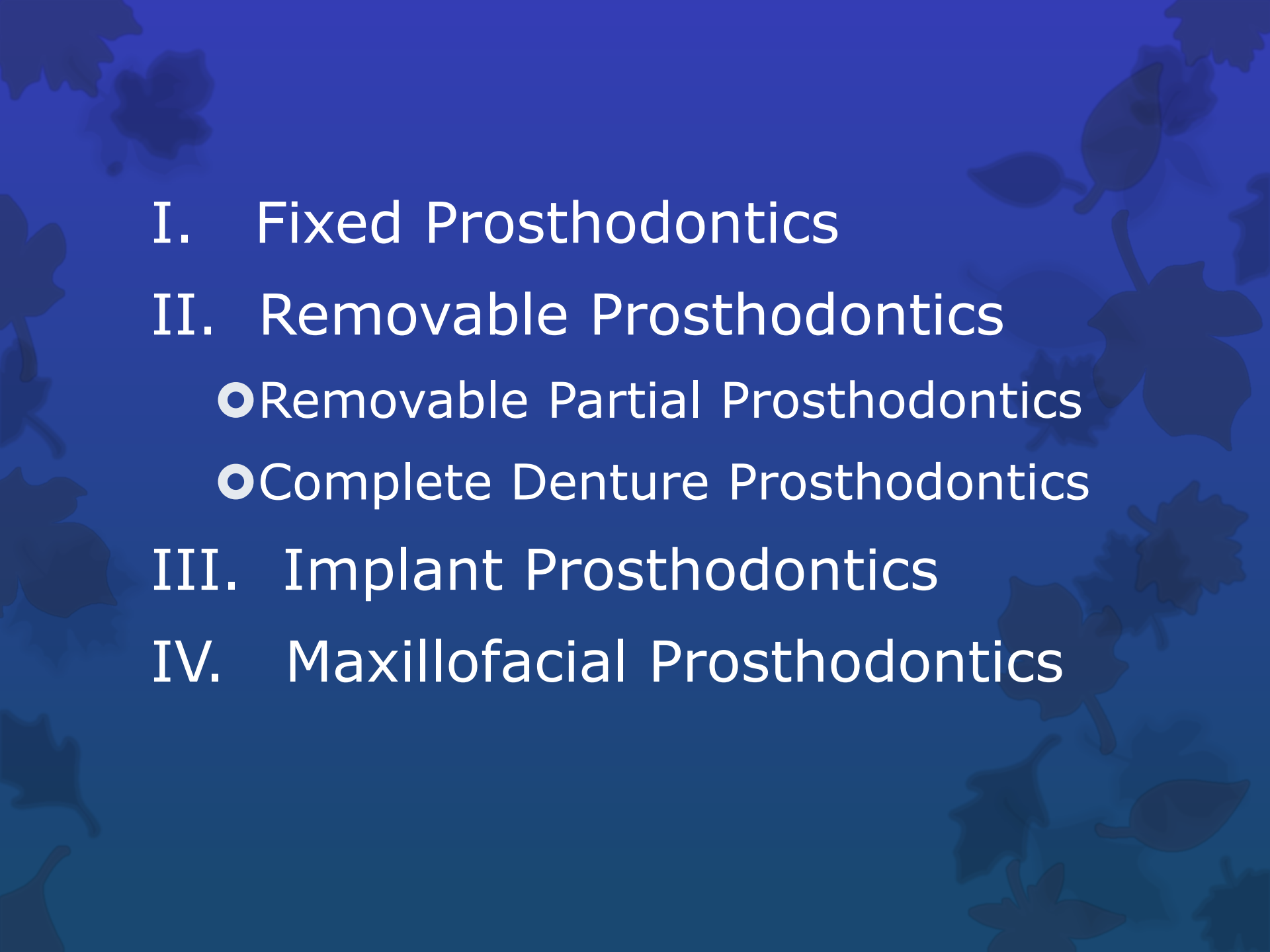
*Partially edentulous*



*Completely edentulous*



# **BRANCHES OF PROSTHODONTICS**



I. Fixed Prosthodontics

II. Removable Prosthodontics

- Removable Partial Prosthodontics

- Complete Denture Prosthodontics

III. Implant Prosthodontics

IV. Maxillofacial Prosthodontics

# 1. Fixed Prosthodontics

- concerned with the replacement or restoration of teeth or both, by artificial substitutes that are not readily remove from the mouth.





## **2. Removable Prosthodontics**

The branch of prosthodontics concerned with the replacement of teeth and contiguous structures for edentulous or partially edentulous patients by artificial substitutes that are readily removable from the mouth.

# A. Partial Denture Prosthodontics

- concerned with the replacement of teeth and contiguous structures for **partially edentulous patient**



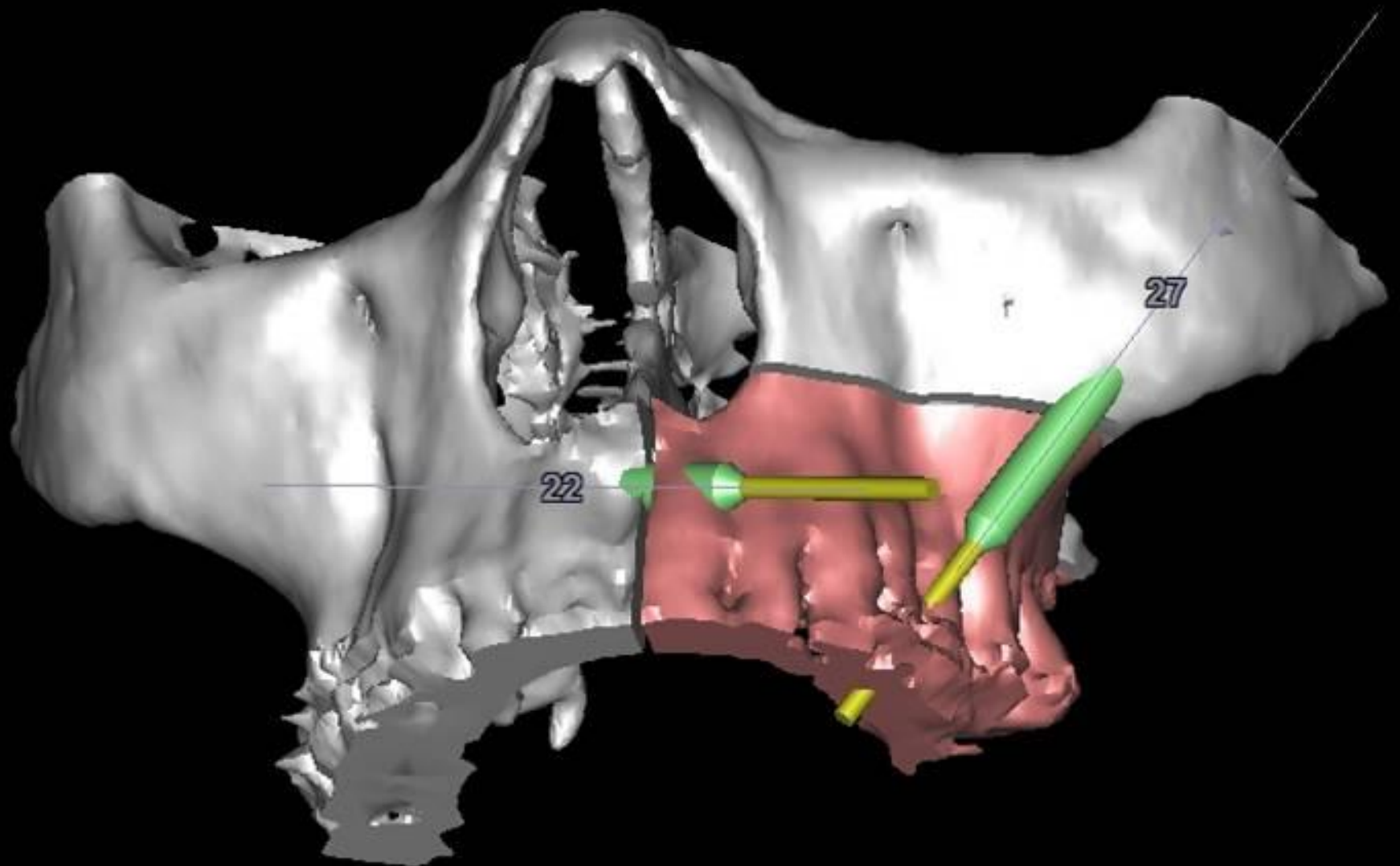
## B. Complete Denture Prosthodontics

- concerned with the replacement of all missing natural teeth and contiguous structures for **completely edentulous patient**



### **3. Maxillofacial Prosthodontics**

- concerned with the restoration and/or replacement of stomatognathic and associated facial structures that have been damaged, absent, or malformed due to illness, injury, congenital defects, or surgical intervention, by artificial substitutes that may or may not be removed.





# Cleft Palate



# 4. Implant Prosthodontics

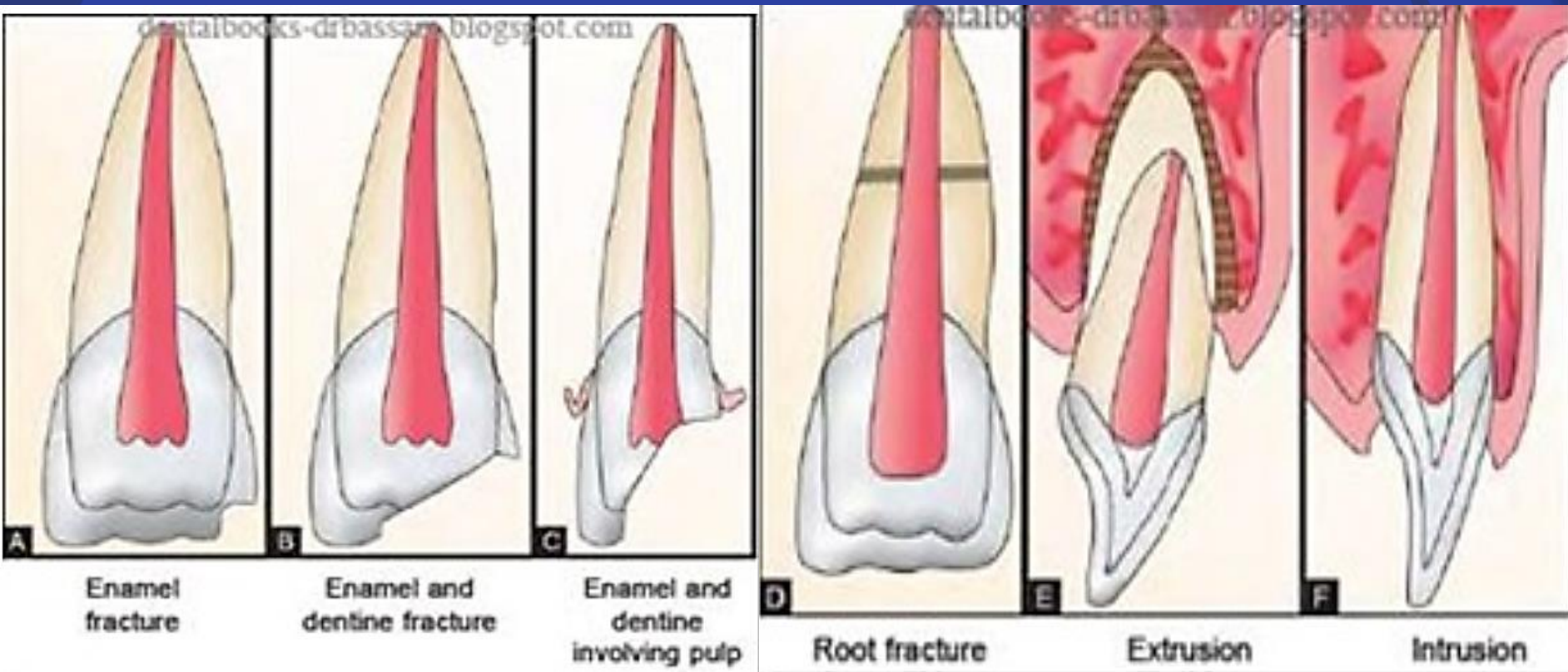
- concerning the replacement of missing teeth and/or associated structures by restorations that are attached to dental implants.



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# **Causes of Tooth Loss**

# Traumatic Injuries



# Dental Caries





# Periodontal diseases

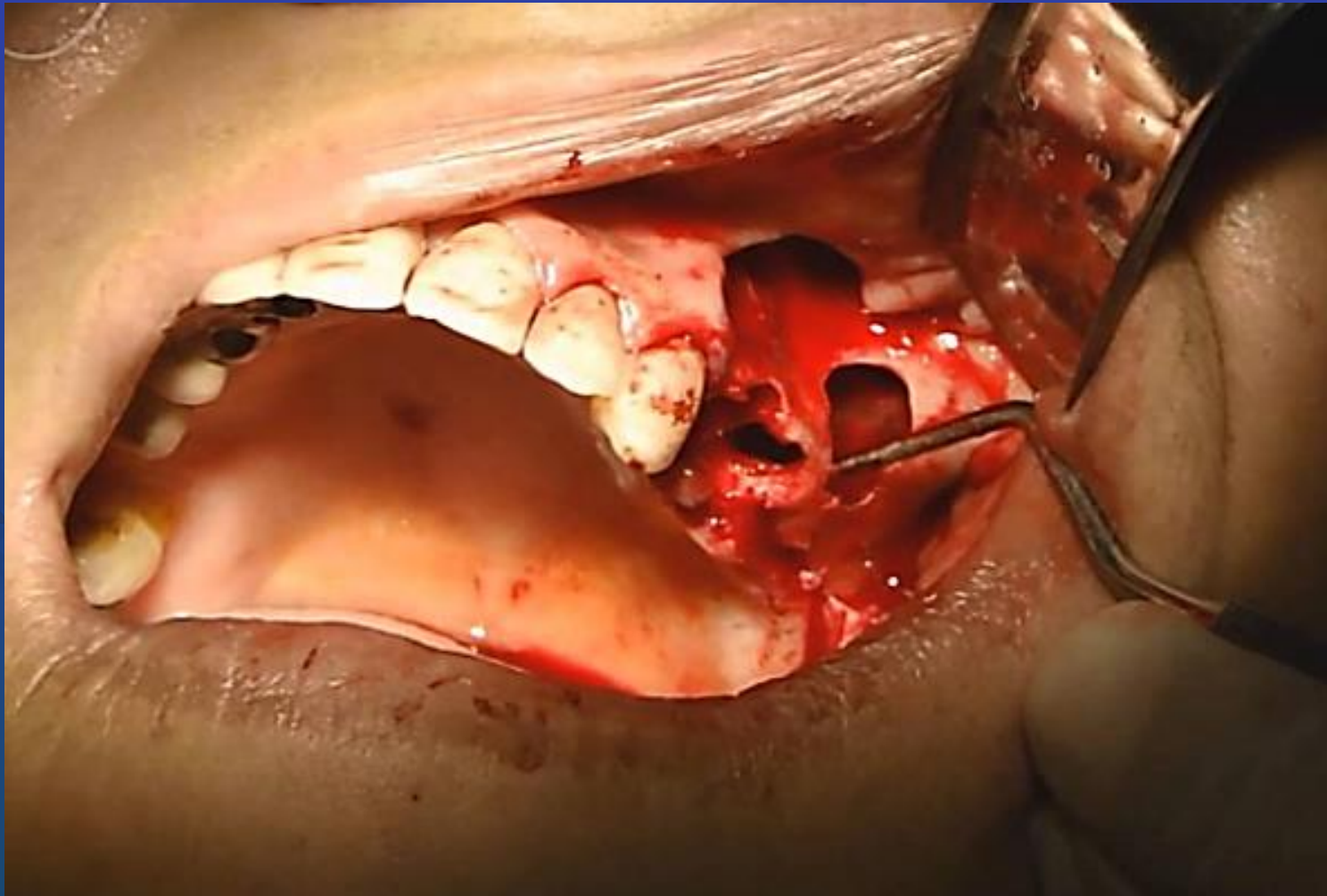


# Infections





# Cysts, malignancies and tumors



# Radiation Therapy



# Grossly malaligned teeth/ Iatrogenic extractions





# Congenitally missing teeth



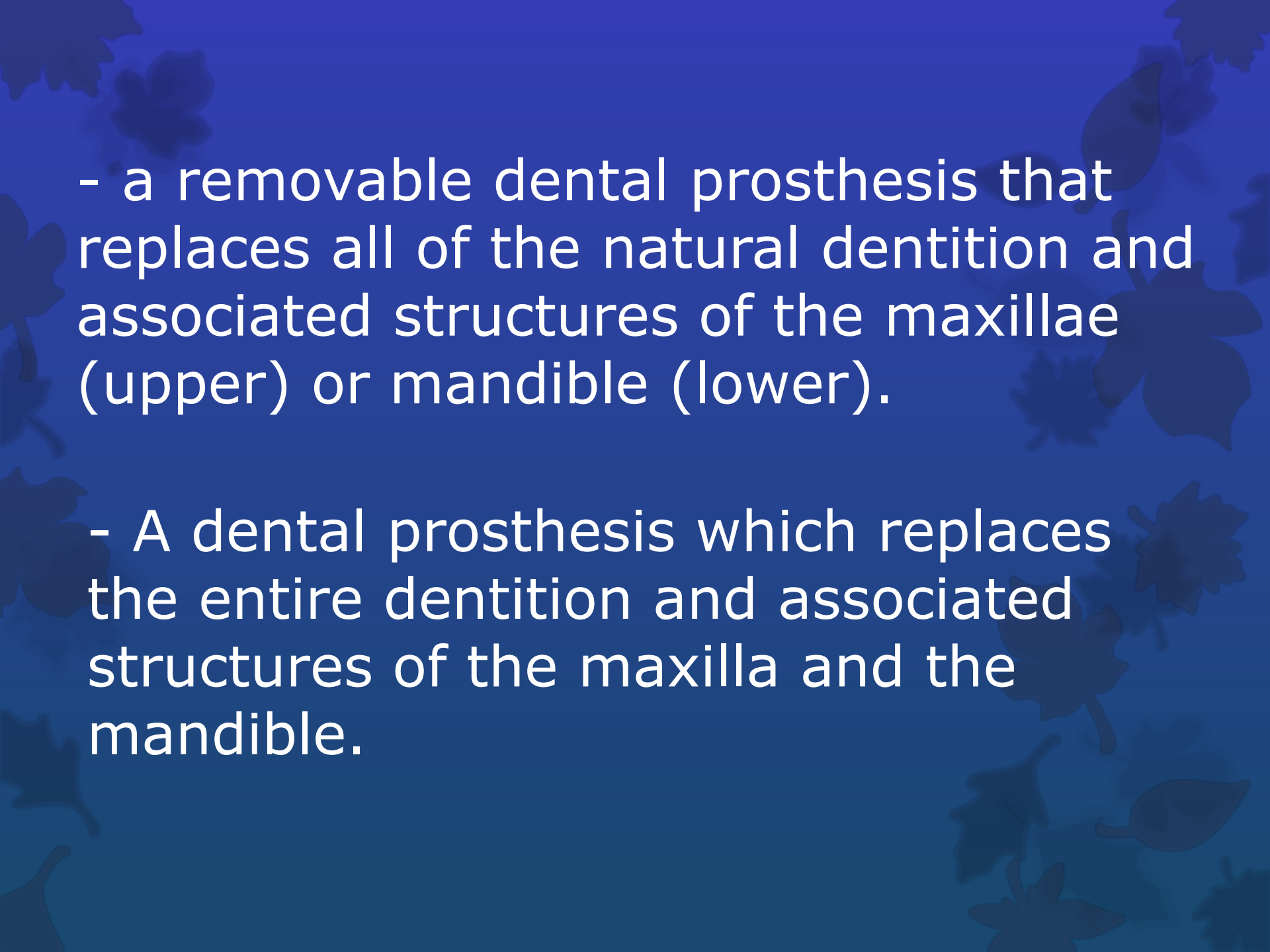
# Failure to erupt





# COMPLETE DENTURE





- a removable dental prosthesis that replaces all of the natural dentition and associated structures of the maxillae (upper) or mandible (lower).

- A dental prosthesis which replaces the entire dentition and associated structures of the maxilla and the mandible.



## **Functions of a Complete Denture**

## **1. *Aesthetics***

**- should restore the lost facial contours, vertical dimensions, etc.**





## 2. *Mastication*

- a complete denture should have proper balanced occlusion in order to enhance the stability of the denture.





### 3. *Phonetics*

- One of the most important function of a denture is to restore the speech of the patient!



# ***INDICATIONS***

1. Completely edentulous maxillary and mandibular ridges
2. Patient whose prognosis of remaining teeth is poor
3. Patient with remaining natural teeth that can serve as overdenture abutment

# Overdenture

- a complete or partial removable denture supported by retained roots that is intended to provide improved support, stability, and tactile and proprioceptive sensation and to reduce ridge resorption.



# ***CONTRAINDICATIONS***

1. Medically compromised patient
2. Mentally handicap patient
3. Infected socket after tooth extraction
4. Necrosis of bone
5. Abscesses, ulcers, cysts
6. Embedded and impacted roots and teeth
7. Tumors
8. Any inflammatory condition that would be increased by the irritation of complete denture

The background is a solid blue gradient, transitioning from a lighter blue at the top to a darker blue at the bottom. It is decorated with faint, dark blue silhouettes of various leaves and floral patterns, primarily concentrated along the left and right edges.

# **COMPONENT PARTS OF A COMPLETE DENTURE**



# **Surfaces of Complete Dentures**

# 1. Impression Surface

- that portion of the denture surface which has its contour determined by the impression.



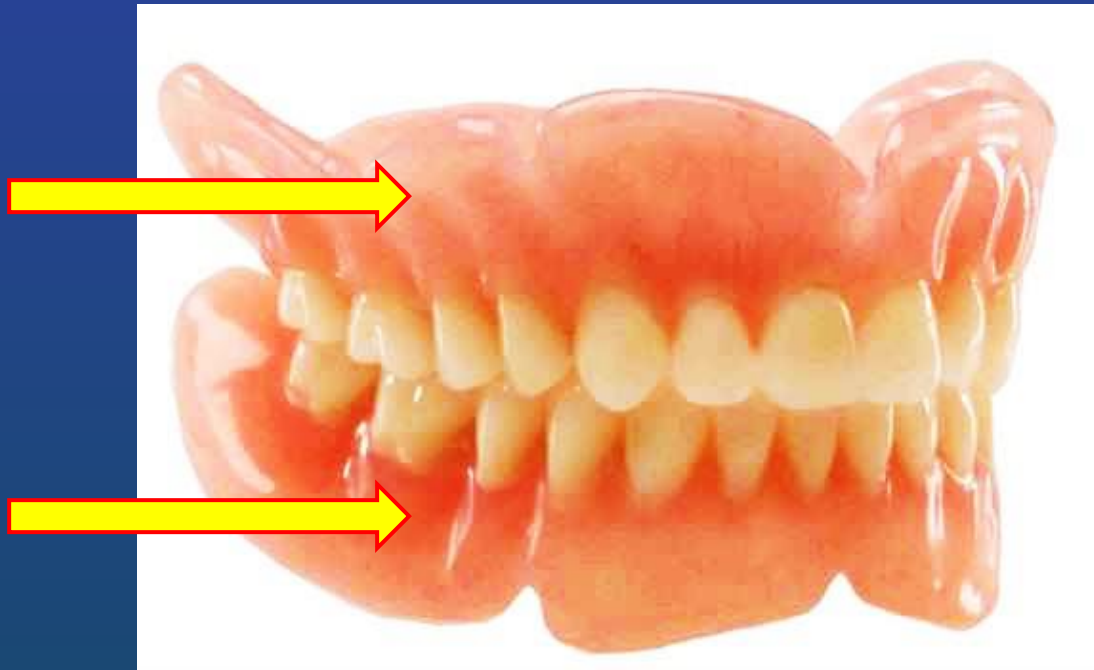
## 2. Polished Surface

- that portion of the denture surface which extends in an occlusal direction from the border of the denture and includes the palatal surface.
- it includes the lingual and buccal surfaces of teeth.



The ***polished surface*** is further divided into:

***Facial surface*** - both maxillary and mandibular dentures



The ***polished surface*** is further divided into:

***Facial surface*** - both maxillary and mandibular dentures

***Palatal Surface*** - maxillary denture

***Lingual surface*** - mandibular denture





### 3. Occlusal Surface

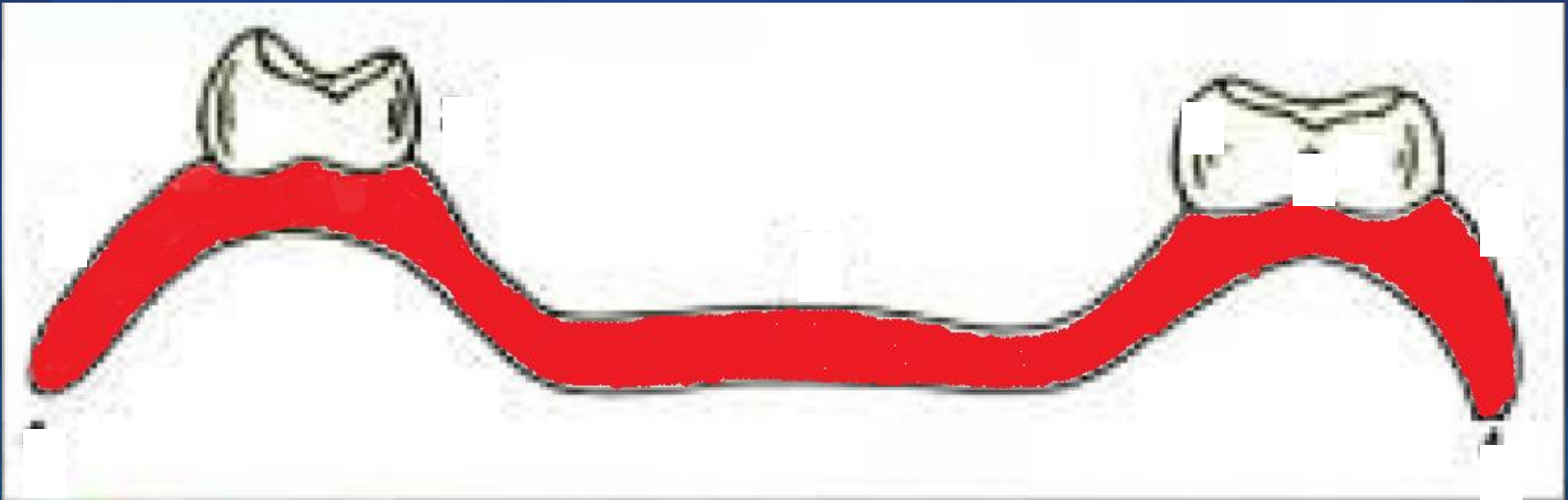
- that portion of the denture surface which makes contact or near contact with the corresponding surface of the opposing denture.



# **Parts of a Complete Denture:**

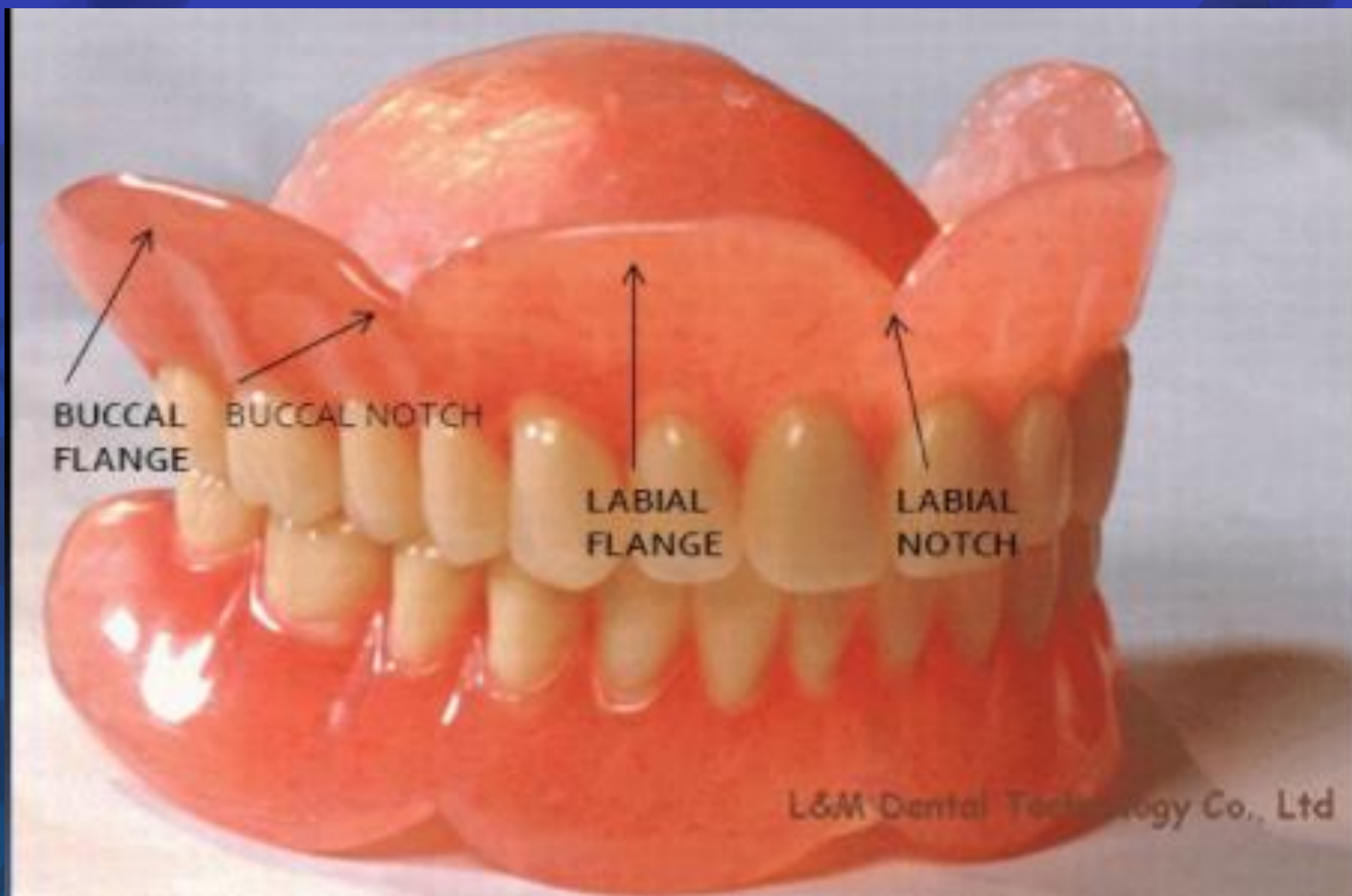
# 1. Denture base

- that part of the denture which rests on the oral mucosa and to which teeth are attached.



## **2. Denture Flange**

- vertical extension from the body of the denture into one of the vestibules of the oral cavity.
- on the mandibular denture, vertical extension along the lingual side of the alveololingual sulcus.



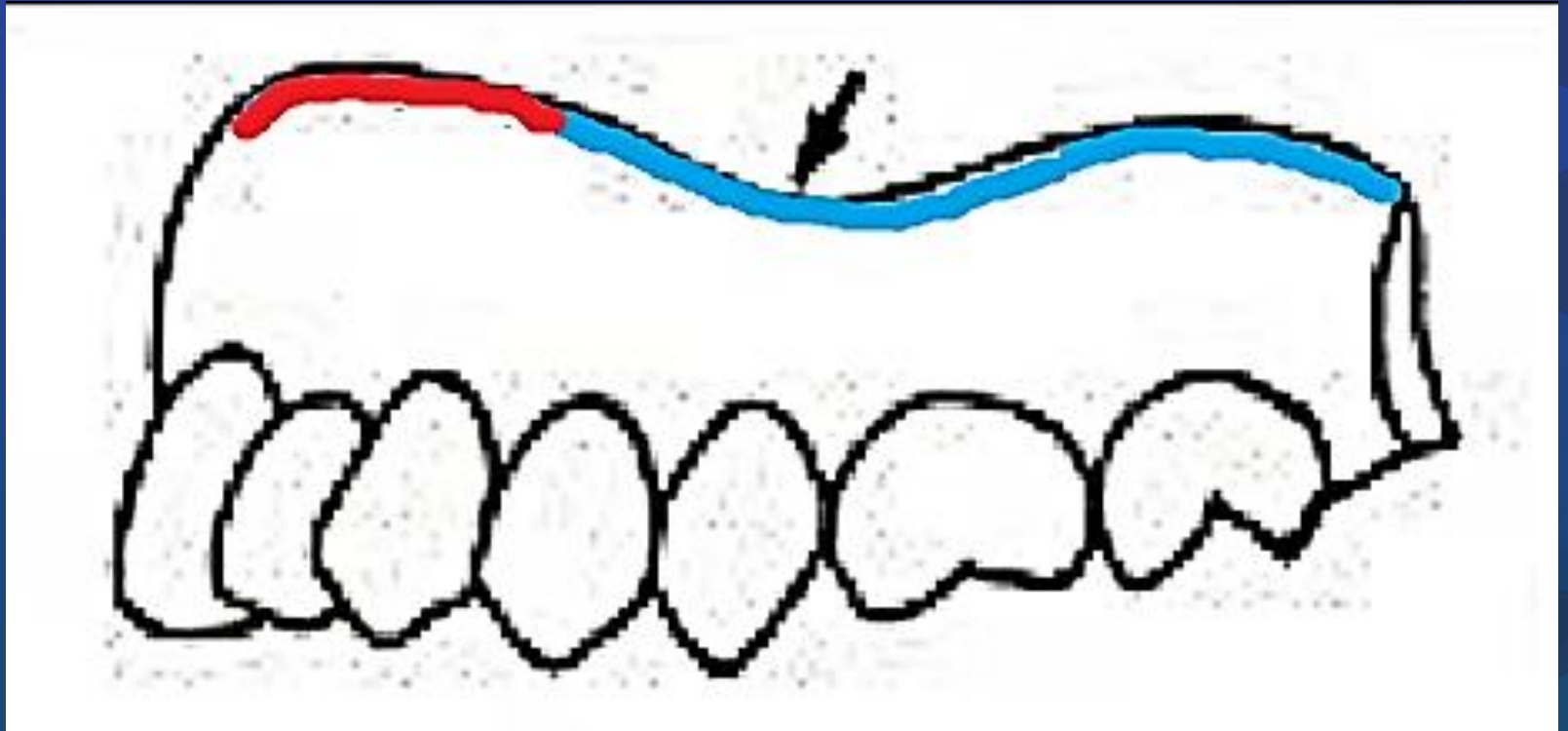
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# Flanges of the Maxillary Denture

Red - labial flange

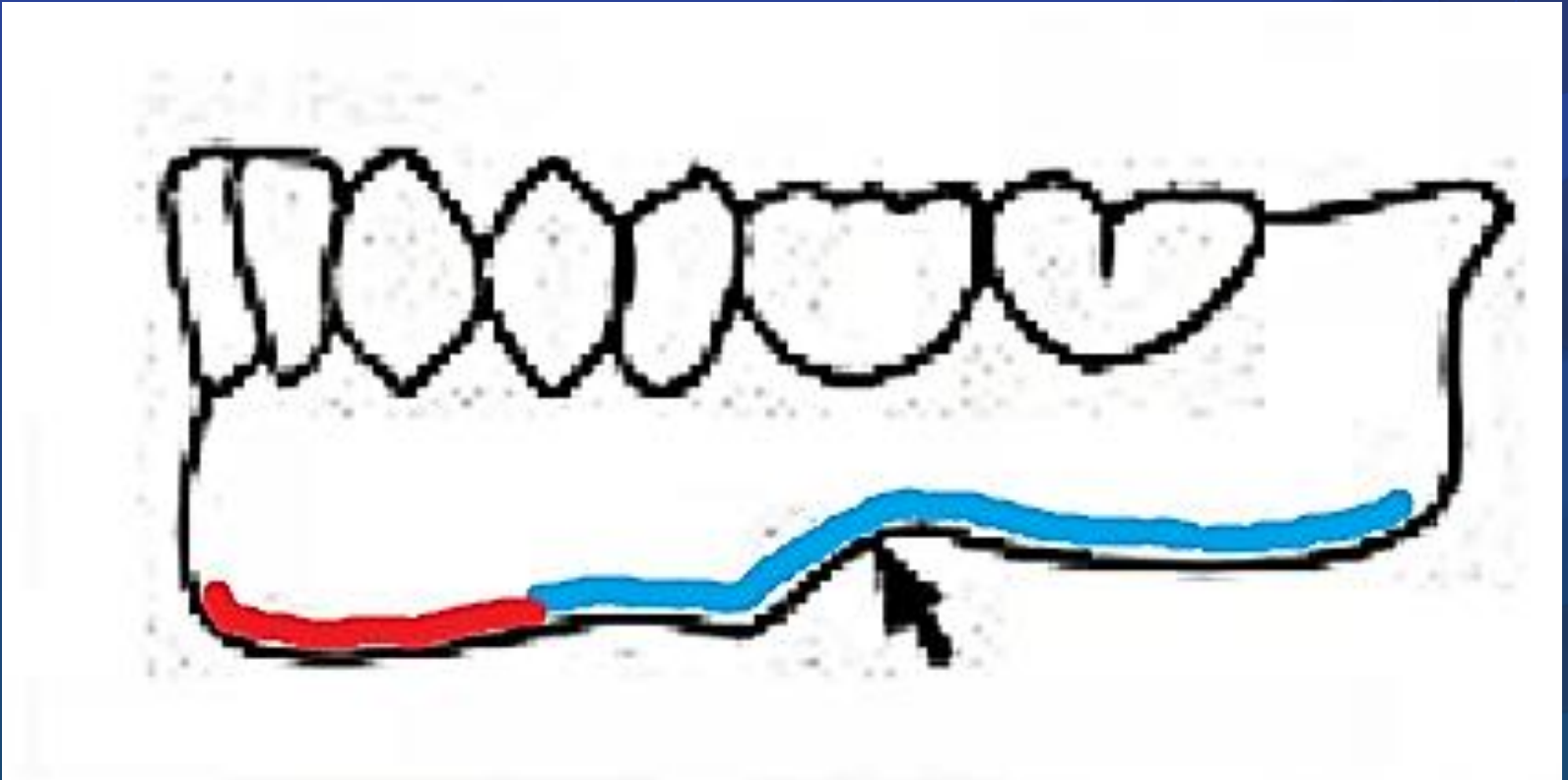
Blue - buccal flange



# Flanges of the Mandibular Denture

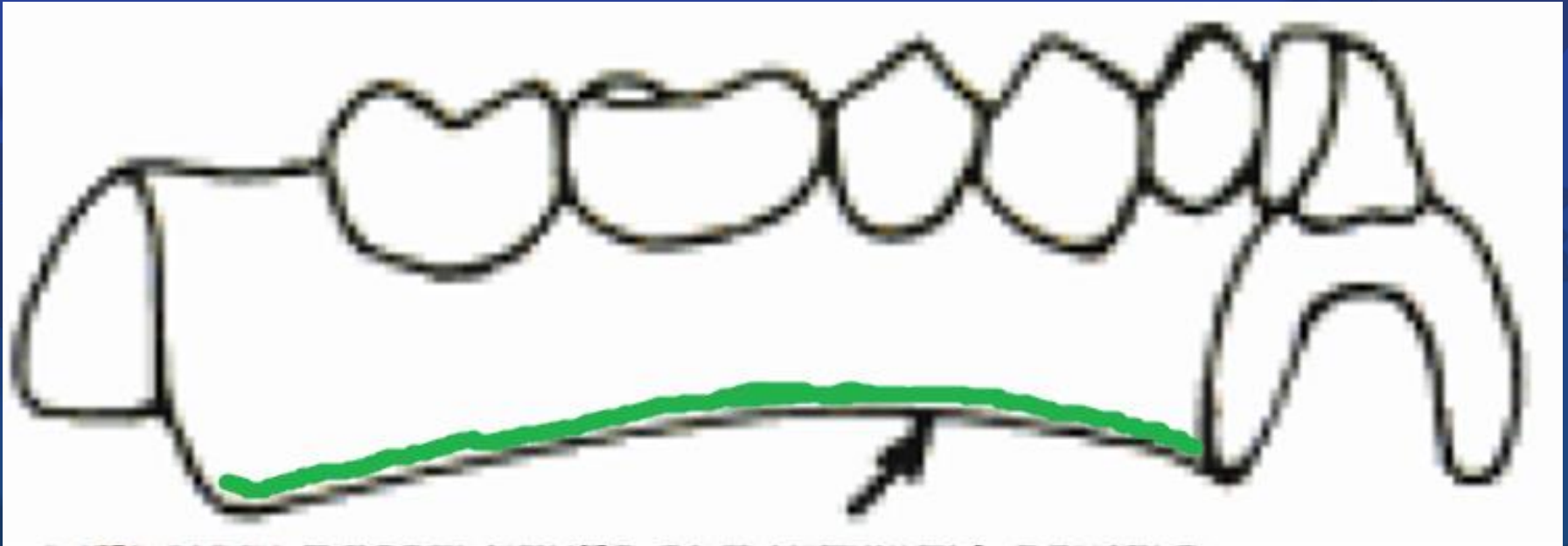
Red - labial flange

Blue - buccal flange



# Flanges of the Mandibular Denture

Green - lingual flange



### 3. Denture Border

- the margin of the denture base at the junction of the polished surface and impression surface.



## 4. Denture Teeth

- it is the most important part of the complete denture, in the patient's point of view.
- usually made up of acrylic resin or porcelain

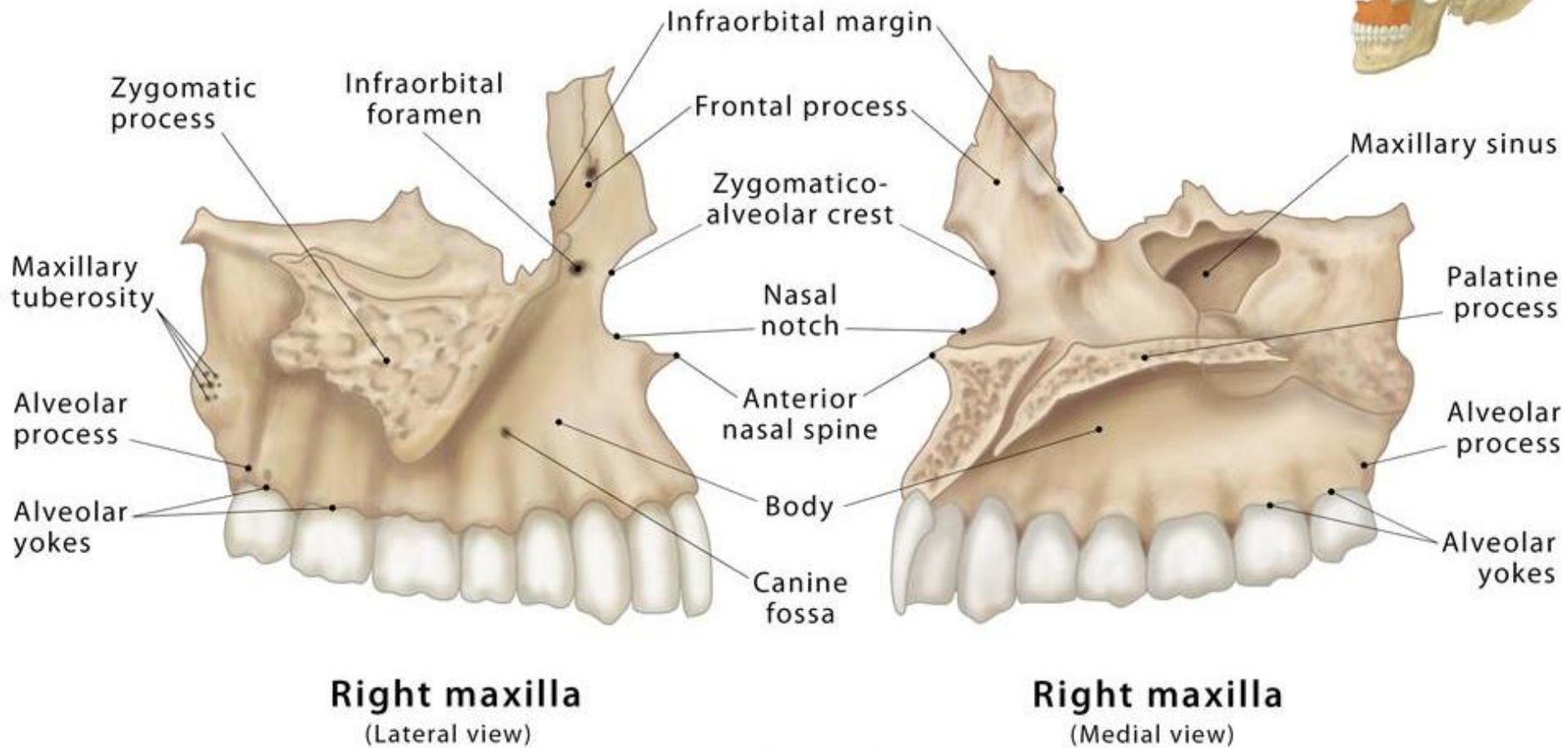




# REVIEW OF ANATOMY

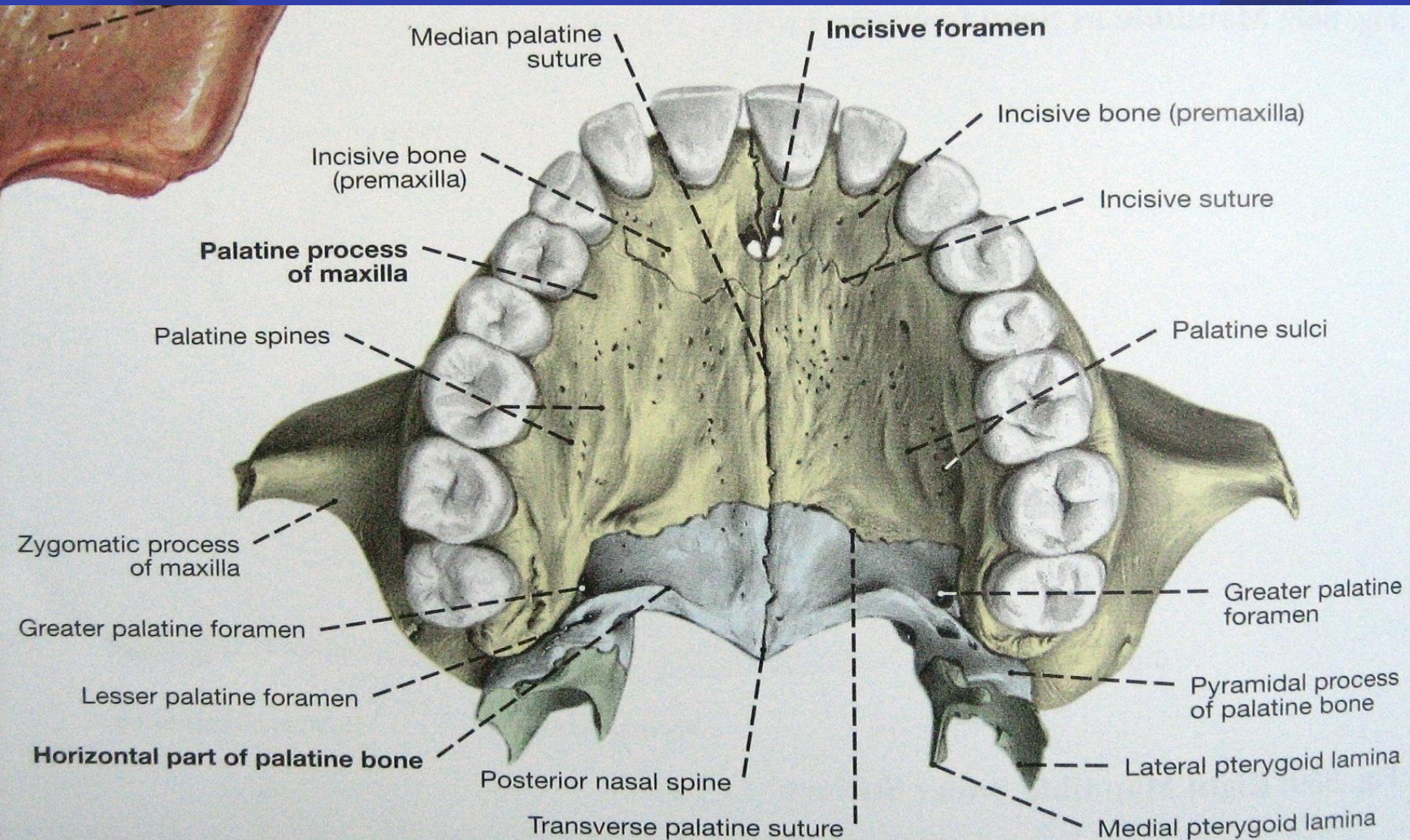
# The Maxilla

# Maxillary View of the Maxilla



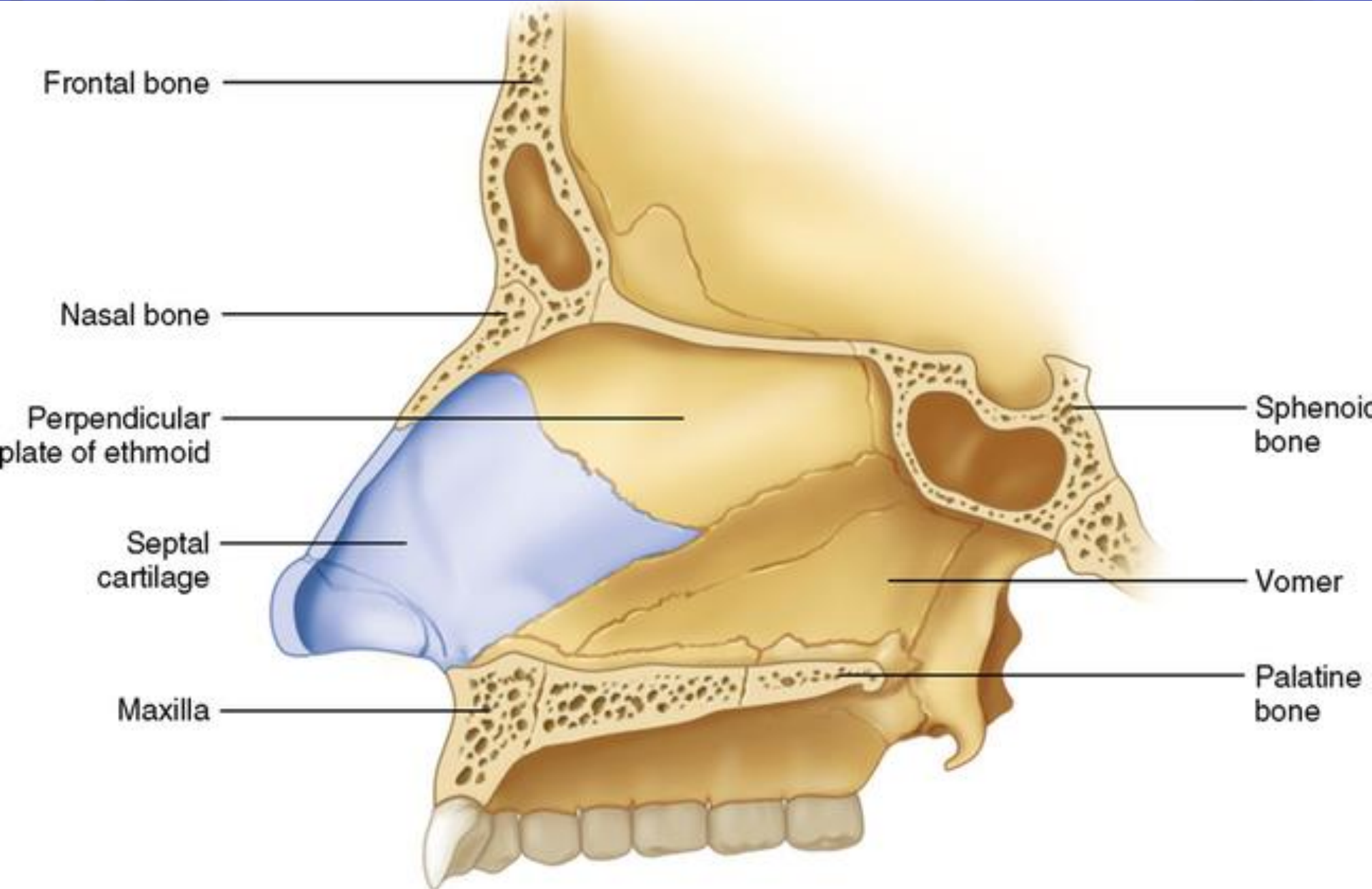


# Inferior View of the Maxilla





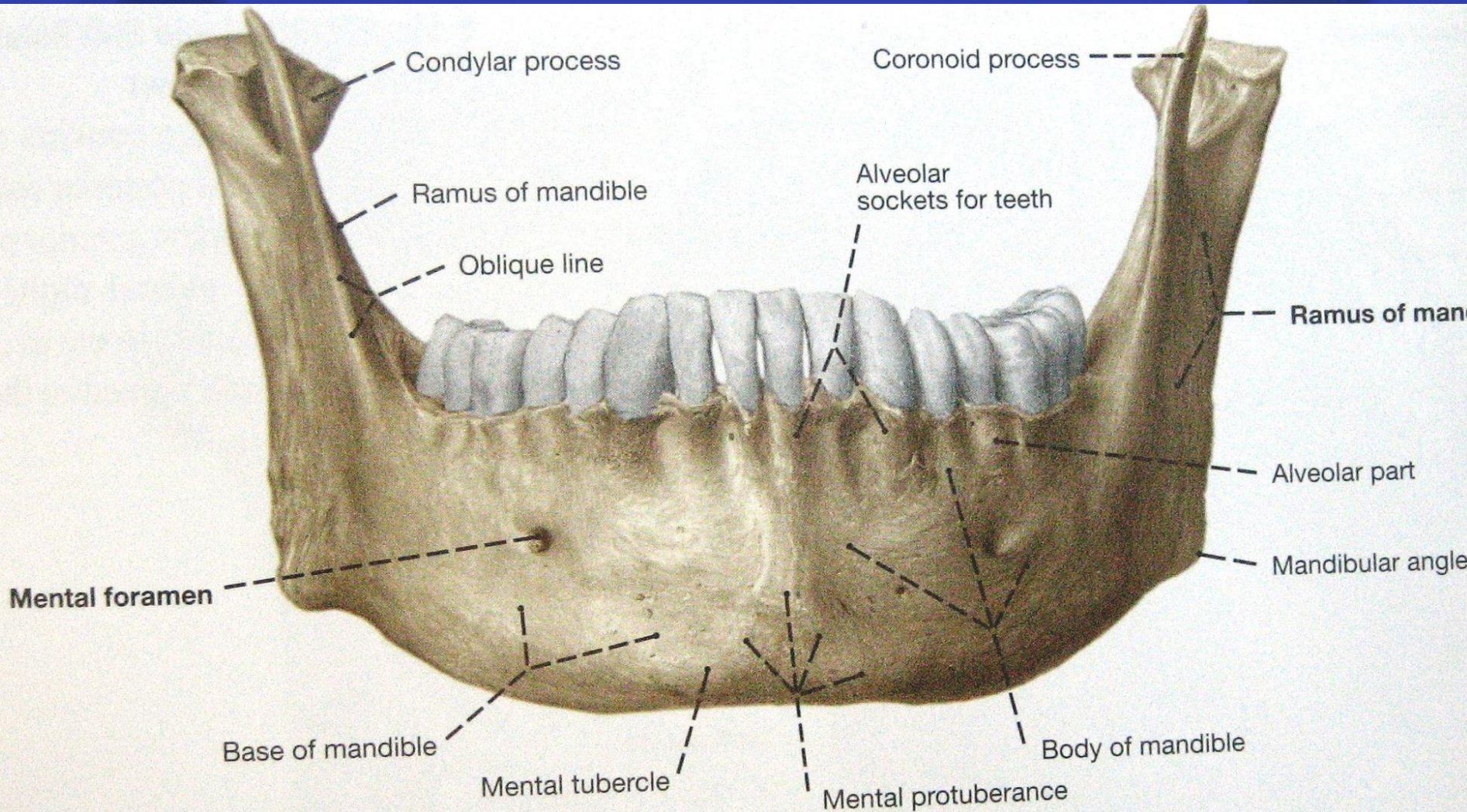
# Sagittal View of the Maxilla





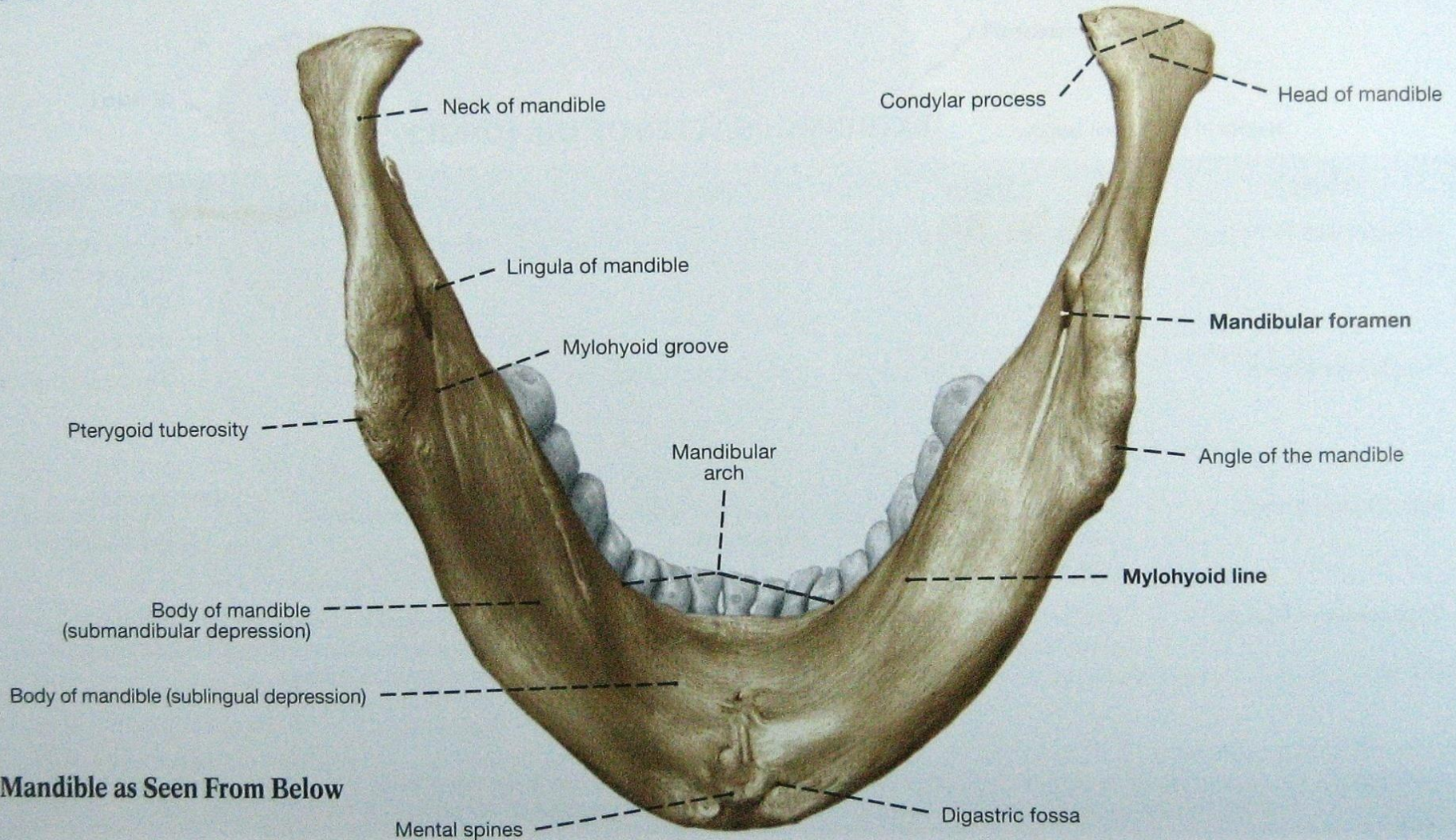
# The Mandible

# Frontal View of the Mandible





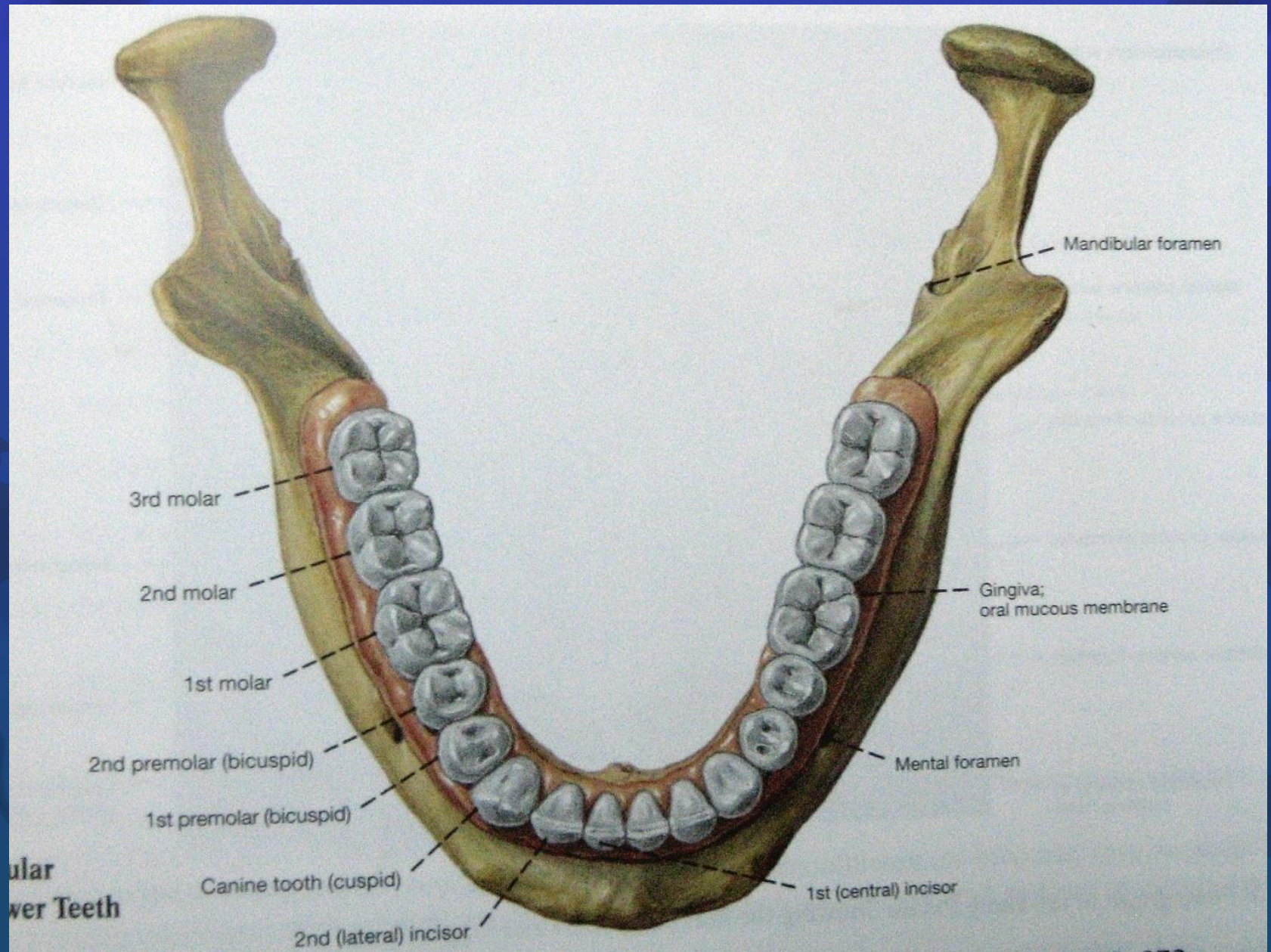
# Inferior View of the Mandible



57: Mandible as Seen From Below

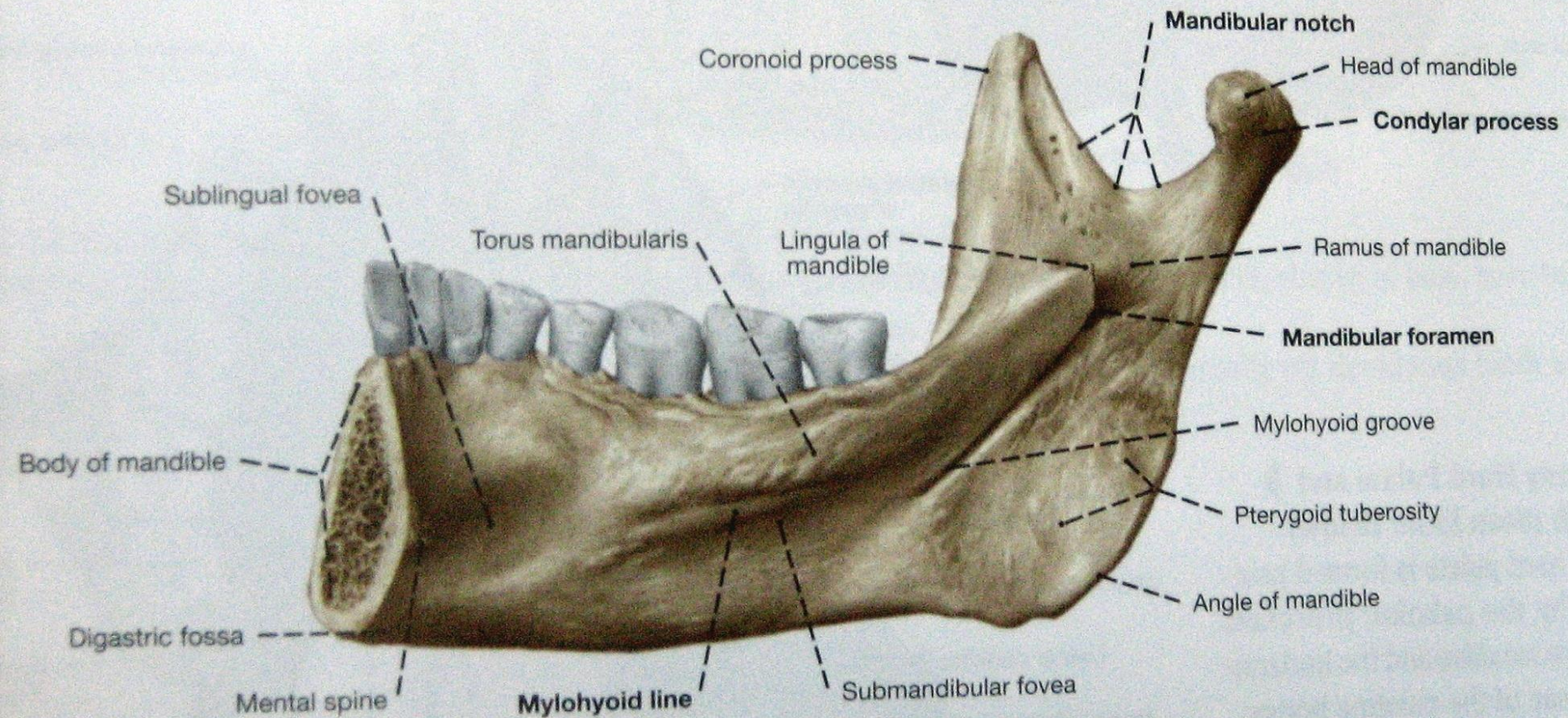


# Superior View of the Mandible





# Medial View of the Mandible





# The Muscles of Mastication

# Muscles of Mastication

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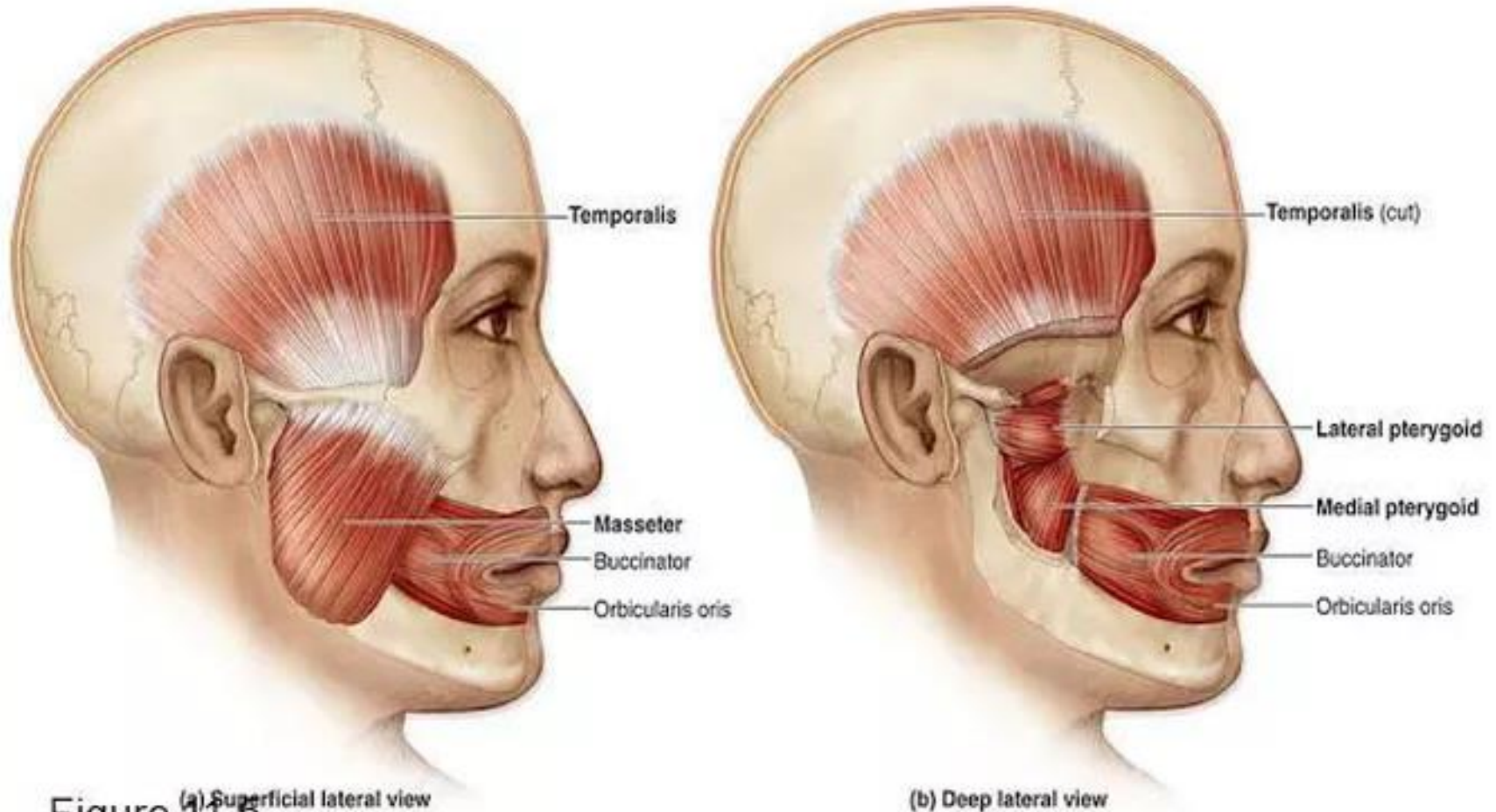


Figure 11.5

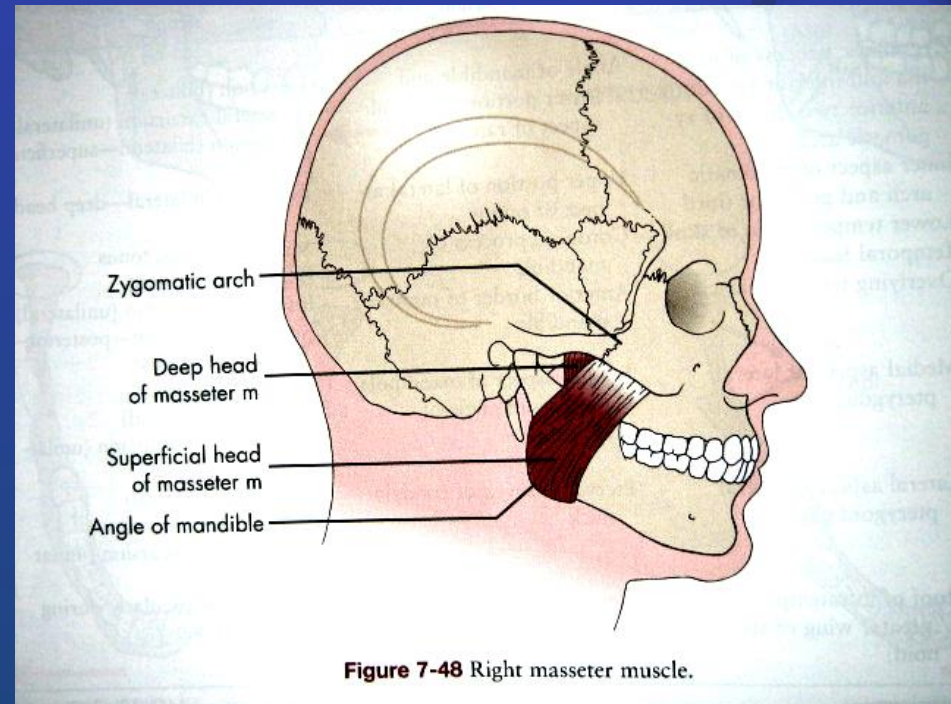
# Functions of the Muscles of Mastication

- To move the mandible
- To secure then stabilize the mandibular positions
- To determine the direction of mandibular movements

# The Masseter Muscle



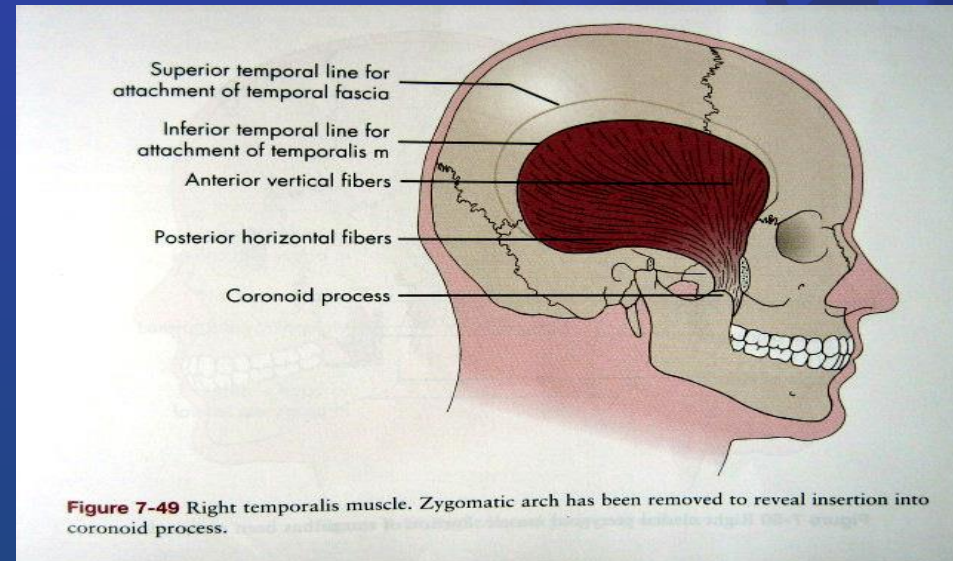
| Muscle                              | Action                                                                                                          |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| <b>Masseter</b><br>Superficial head | Elevation<br>(bilateral)<br>Ipsilateral excursion<br>(unilateral)<br>Protrusion<br>(bilateral superficial head) |
| Deep head                           | Retrusion<br>(bilateral)                                                                                        |



The background features a blue gradient that transitions from a lighter blue at the top to a darker blue at the bottom. Scattered throughout the background are various leaf shapes in a darker blue color, some appearing as simple outlines and others with more detailed vein patterns.

# The Temporalis

| Muscle     | Action                                                                                           |
|------------|--------------------------------------------------------------------------------------------------|
| Temporalis | Elevation<br>(bilateral)<br>Ipsilateral<br>excursion<br>(unilateral)<br>Retrusion<br>(bilateral) |



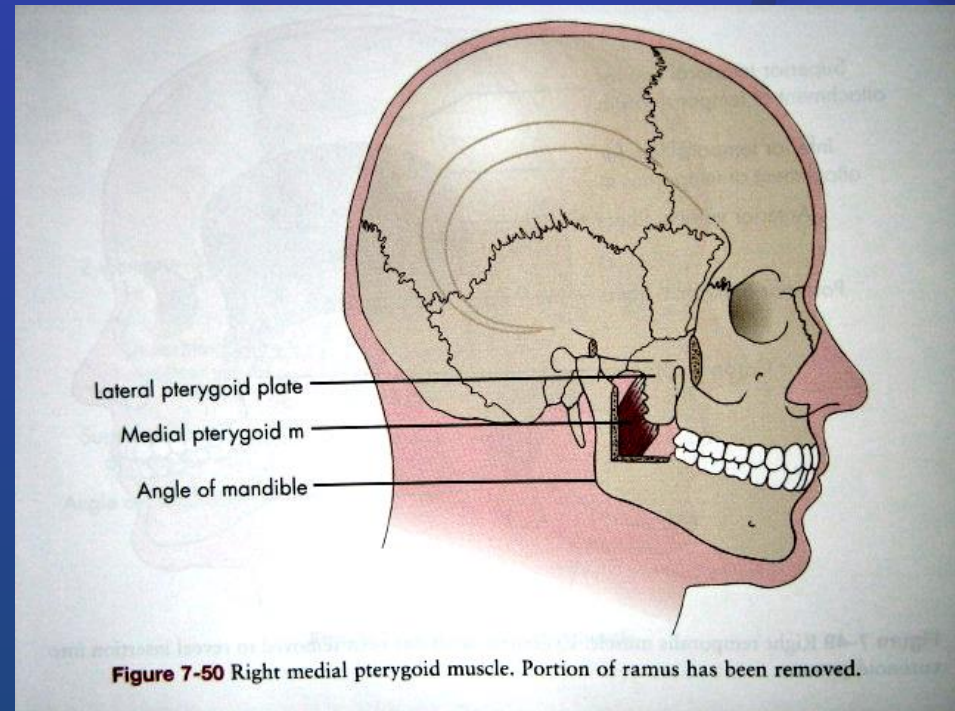
# **Pterygoid Muscles**

1. Medial Pterygoid
2. Lateral Pterygoid



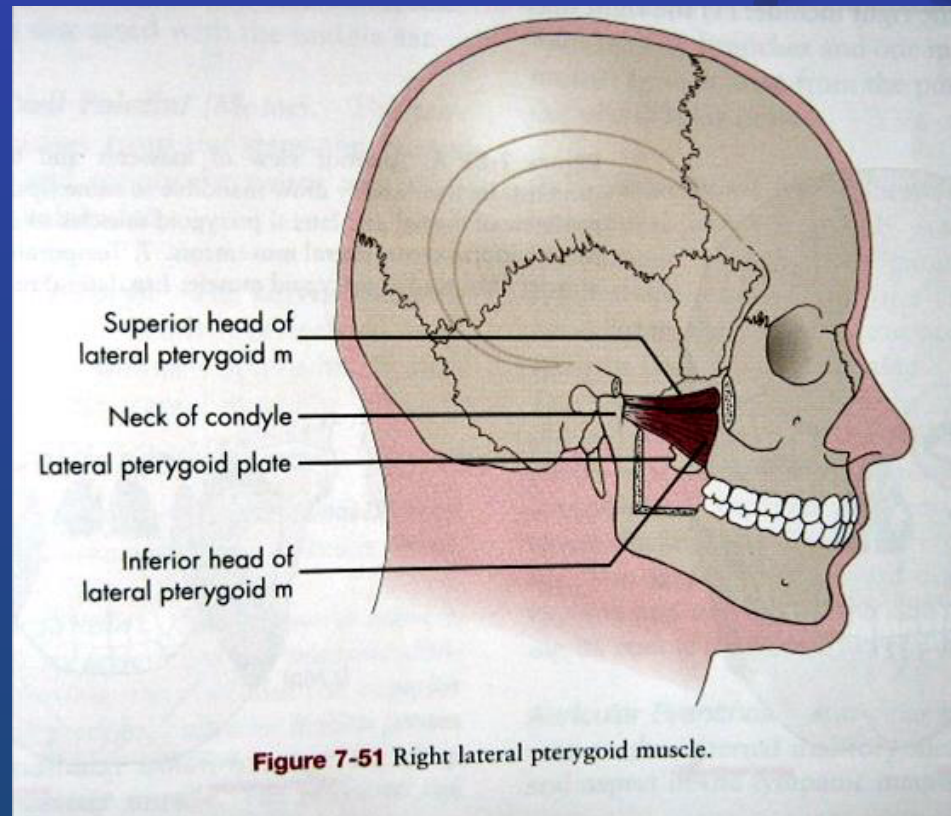
# The Medial Pterygoid

| Muscle           | Action                                                                                           |
|------------------|--------------------------------------------------------------------------------------------------|
| Medial Pterygoid | Elevation<br>(bilateral)<br>Protrusion<br>(bilateral)<br>Contralateral excursion<br>(unilateral) |



# The Lateral Pterygoid

| Muscle                             | Action                                                                                               |
|------------------------------------|------------------------------------------------------------------------------------------------------|
| Lateral pterygoid<br>Inferior head | Depression<br>(bilateral)<br>Protrusion<br>(bilateral)<br>Contralateral<br>excursion<br>(unilateral) |
| Lateral pterygoid<br>Superior head | Elevation<br>-particularly<br>during power<br>stroke                                                 |



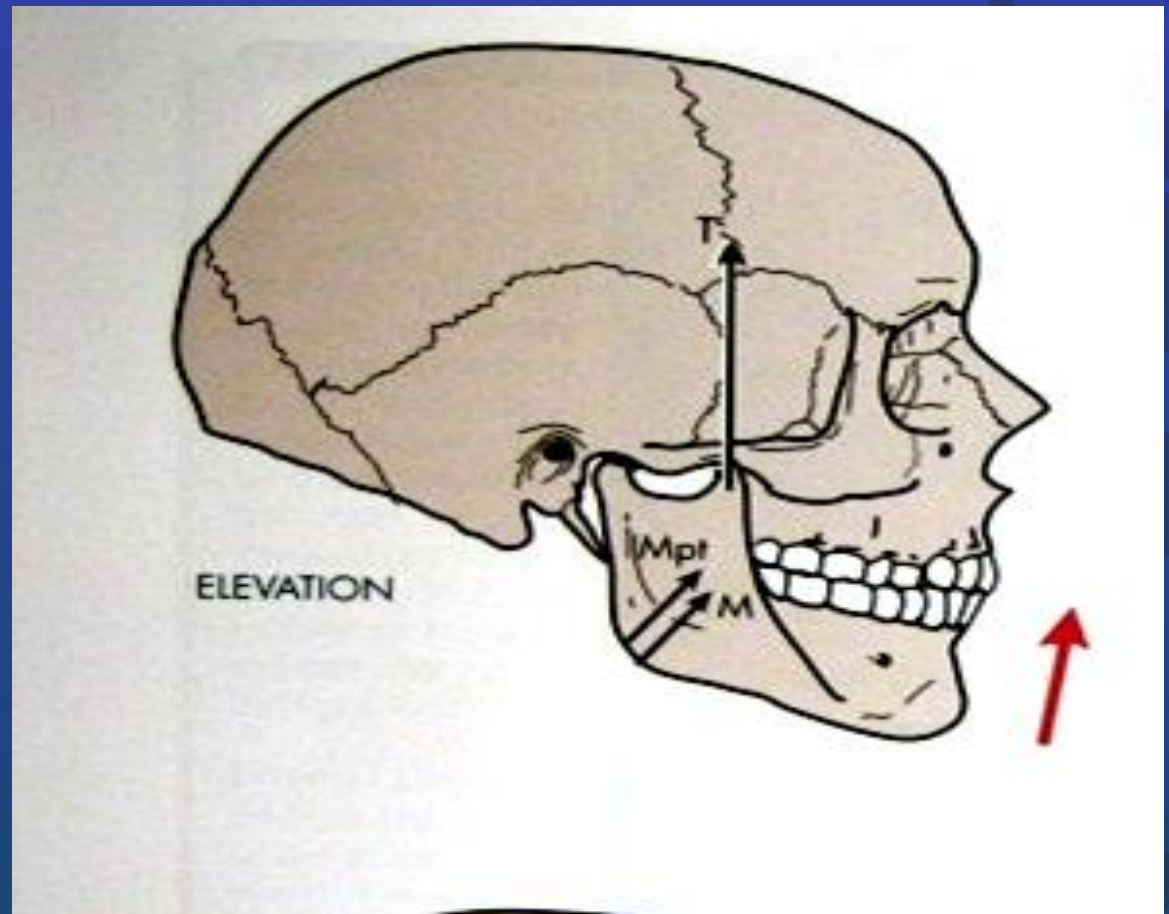




# **Summary of Actions of the Muscles of Mastication**

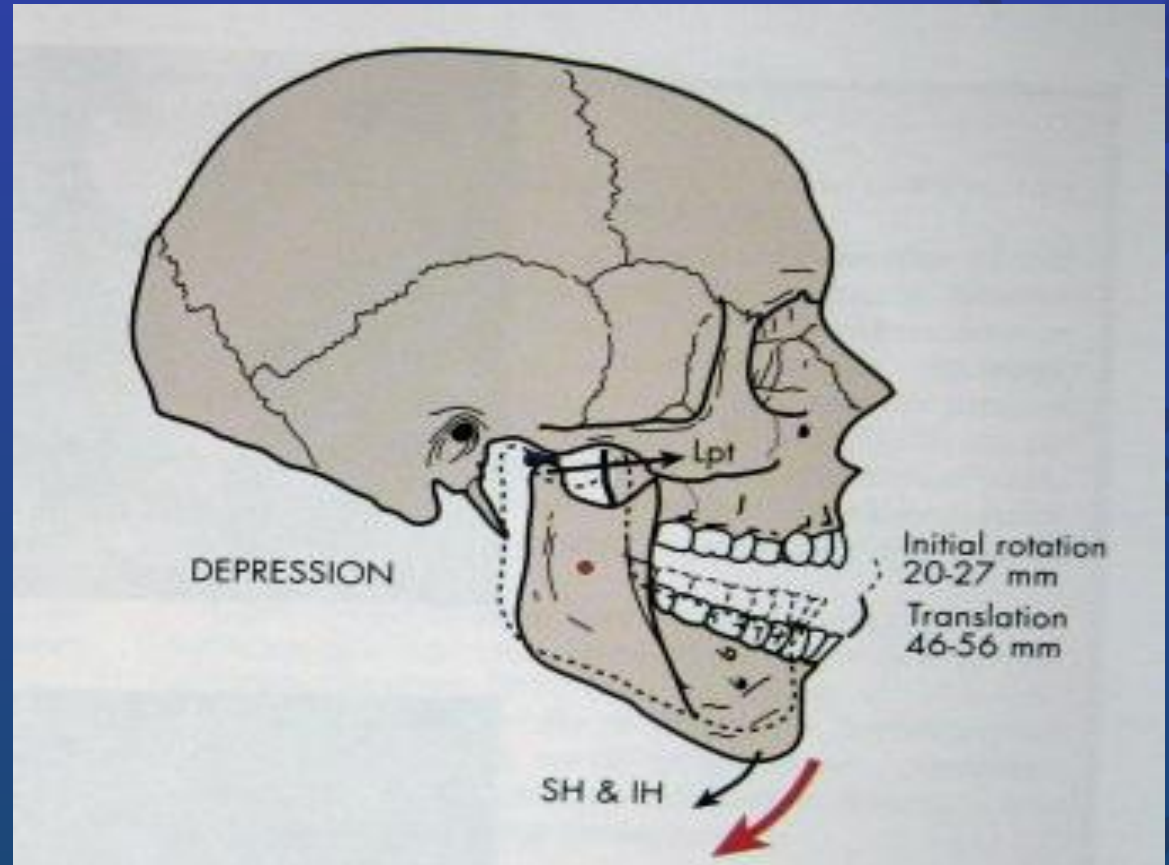
# Elevation

1. the right and left temporalis
2. the right and left masseter
3. the right and left medial pterygoid muscles



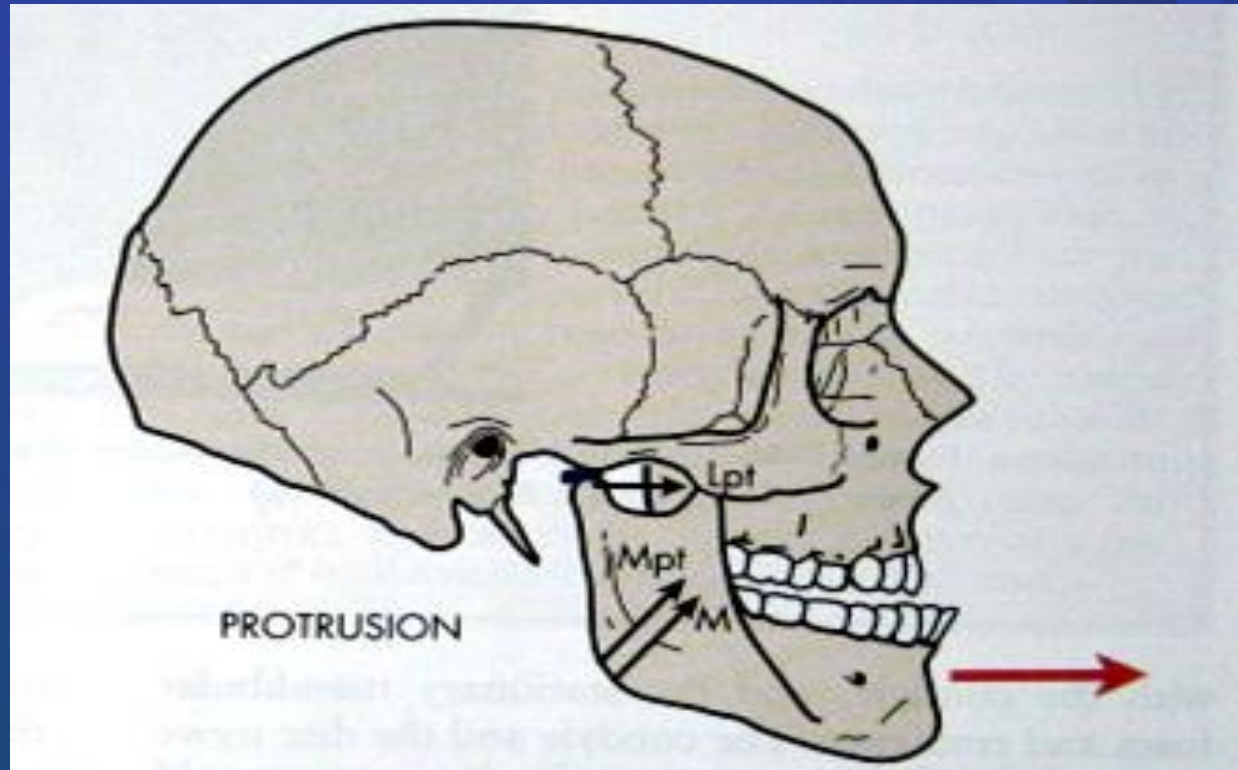
# Depression

1. the inferior head of the right and left lateral pterygoid muscles
2. the right and left suprahyoid muscles of the neck
3. the right and left infrahyoid muscles of the neck



# Protrusion

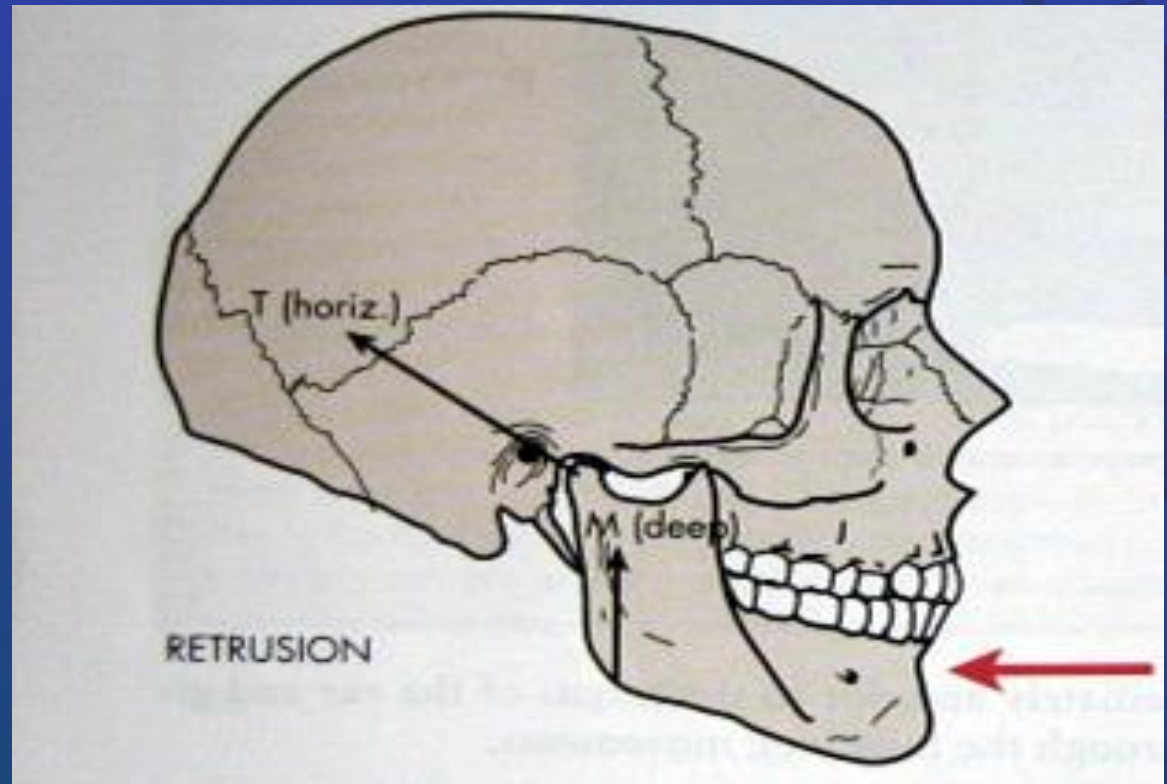
1. the right and left lateral pterygoid muscles
2. the right and left medial pterygoid muscles
3. the right and left superficial heads of the masseter muscles





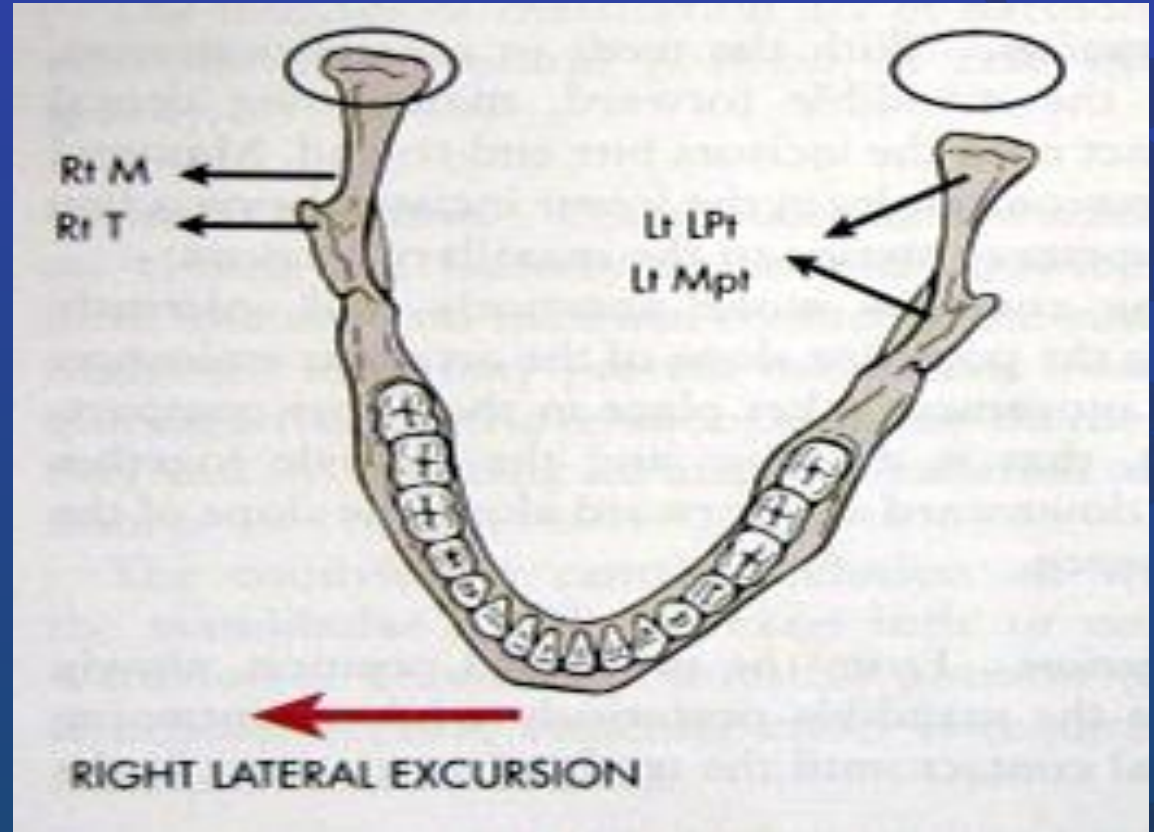
# Retrusion

1. The posterior fibers of the right and left temporalis muscles
2. deep heads of the right and left masseter muscles



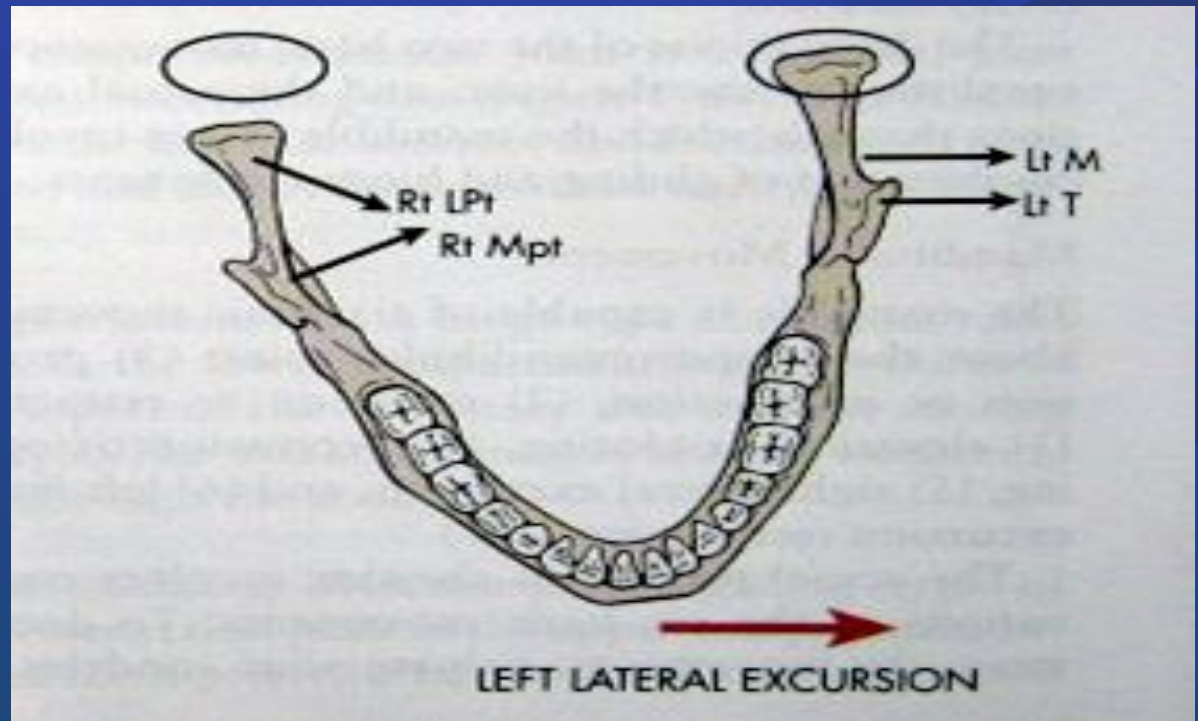
# Right Lateral Excursion

1. the right masseter
2. the right temporalis
3. the left medial pterygoid
4. the left lateral pterygoid



# Left Lateral Excursion

1. the left masseter
2. the left temporalis
3. the right medial pterygoid
4. the right lateral pterygoid



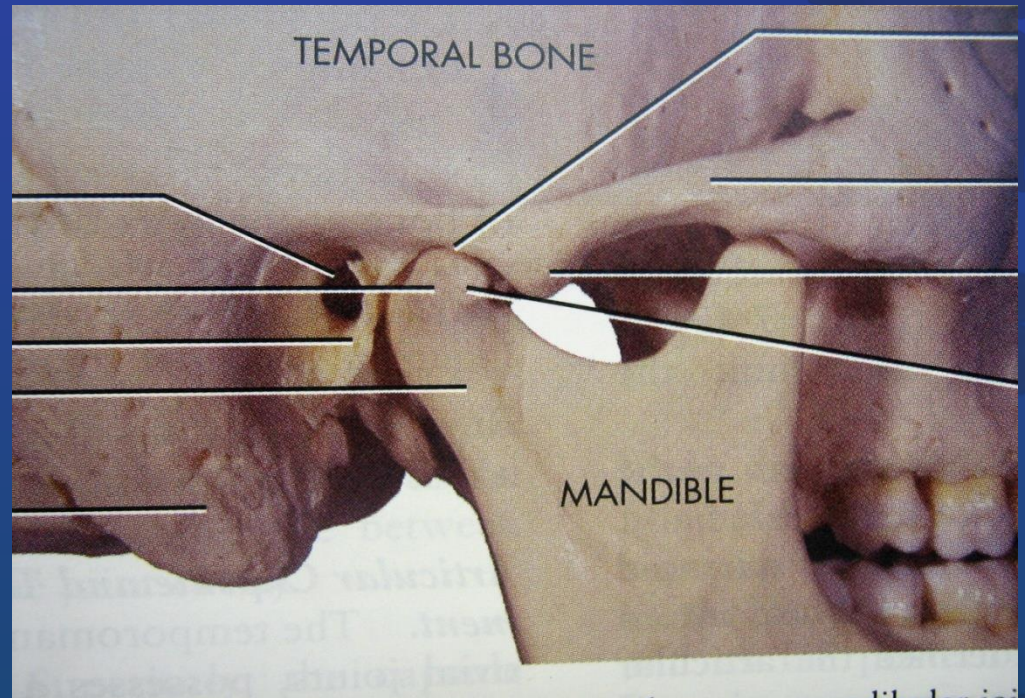
# **The Temporomandibular Joint**



- is a complex articulation of the movable mandible and the base of the skull.

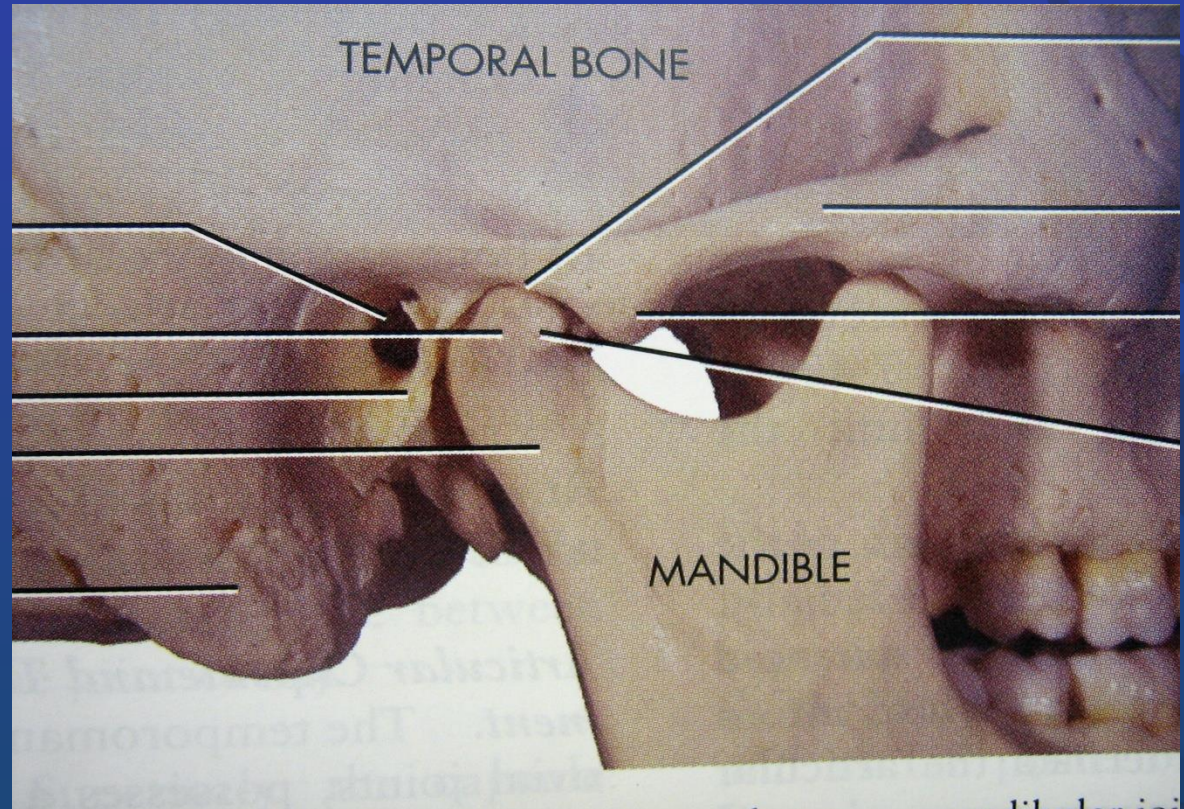
**Articulation takes place in two areas:**

1. Between maxillary and mandibular teeth  
(interjaw dental occlusion),  
and
2. Between the mandibular condyle and the temporal bone.



# Bones Involved in the TMJ

1. Condylar process or condyle of the mandible
2. Mandibular fossa
3. Articular eminence of the temporal bone

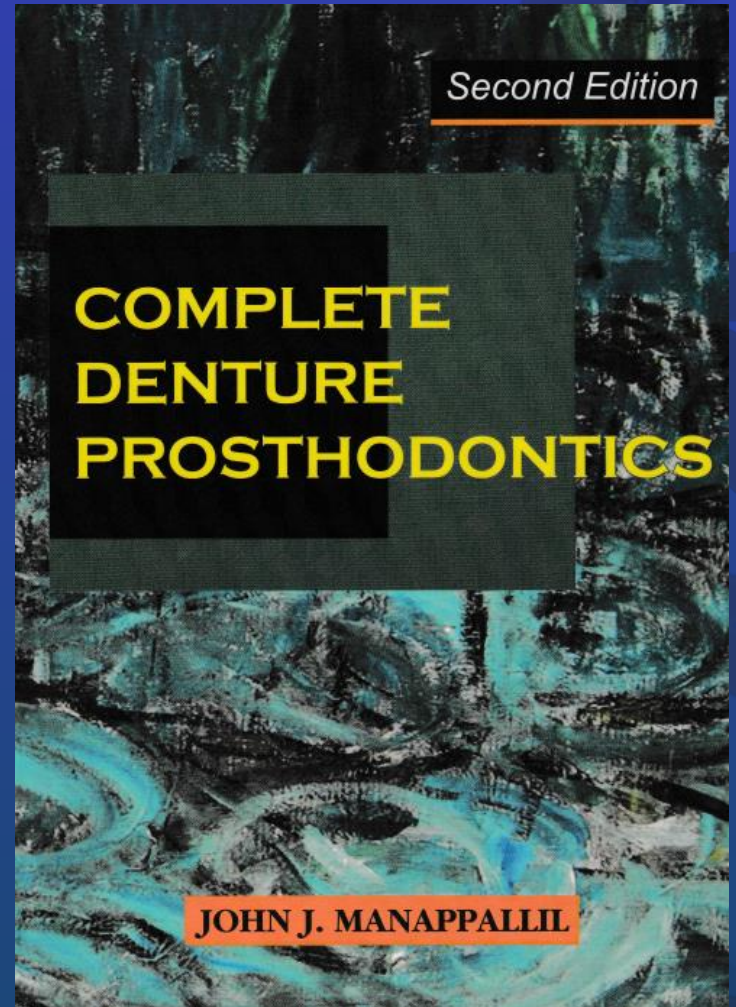




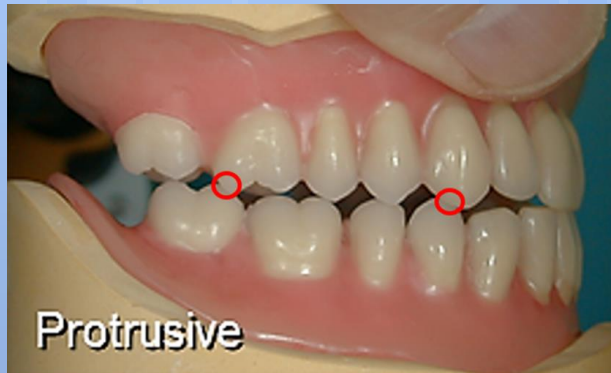
# QUESTIONS

Reference:

Complete Denture Prosthodontics,  
2nd Edition, 2006 by  
John Joy Manappallil



# THANK YOU



## LESSON 2

# PHYSICAL AND BIOMECHANICAL CONSIDERATIONS

Prepared By:  
Peter Pascual Flores, DMD, MS

# Treatment Objectives

- 
- The complete denture prosthesis is a mechanical object in a biological environment.



# 1. Patient Education

- patients must be educated on every aspect of denture construction, use, and maintenance.



## 2. Esthetics

- one of the primary reasons many patients want to restore their teeth.
- it improves the appearance of the face by:
  - a. Restoring the esthetic natural display of teeth and gums*



*b. Restoring lower facial height*

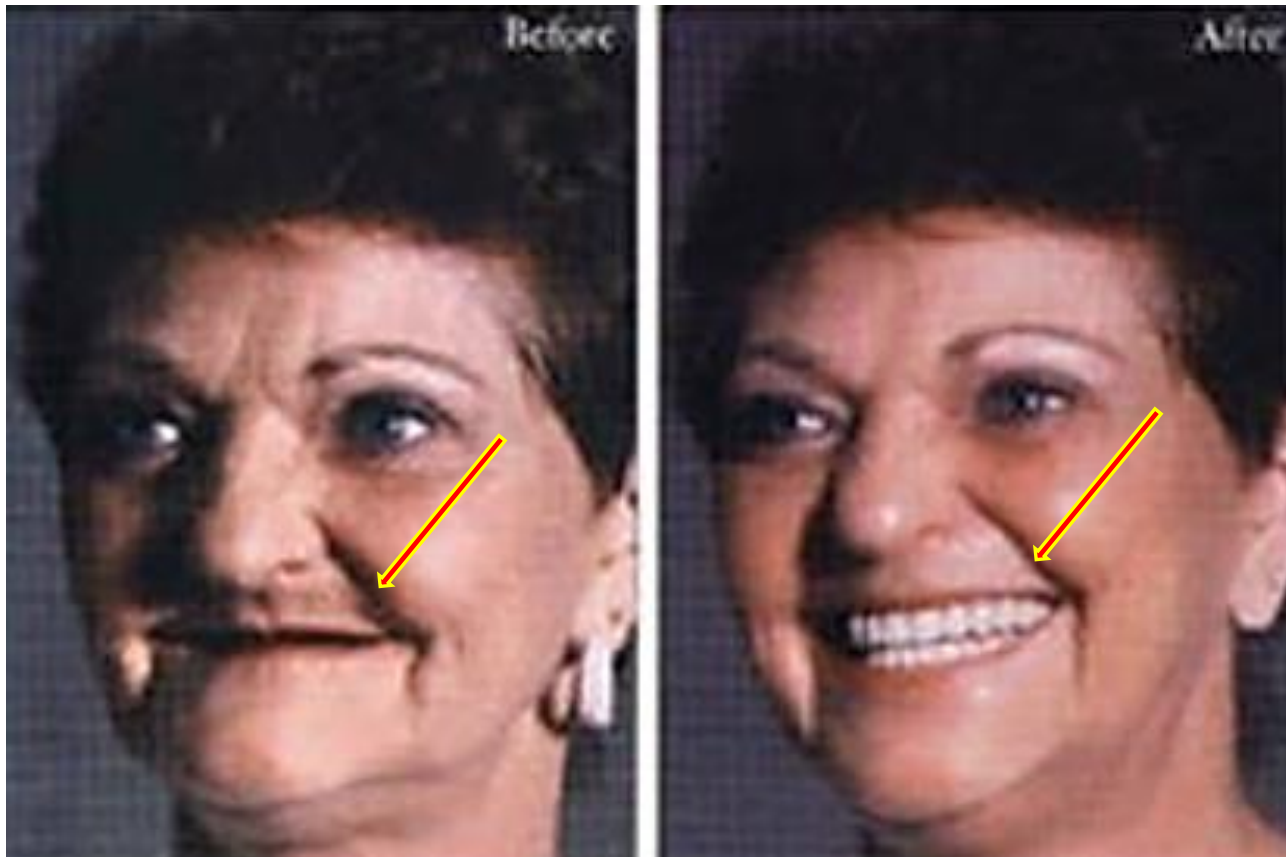


- b. Restoring lower facial height*
- c. Restores lip and cheek fullness*





- b. Restoring lower facial height*
- c. Restores lip and cheek fullness*
- d. Fills out wrinkles and creases*



### **3. Mastication**

- denture must be well retained, well supported and stable to be able to chew again

### **4. Speech**

- restore ability to speak clearly and distinctly.

## 5. Preservation of Remaining Oral Structures

- when teeth are lost, the supporting alveolar bone responds by **resorption** and **remodelling**.

## 6. Maintenance of Oral Health and Comfort

- maintain the residual ridge height, health of oral mucosa after denture delivery.

## **7. Health Of the TMJ**

- the TMJ relation is closely linked to that of the teeth.

## **8. General Physical and Psychological Well Being**

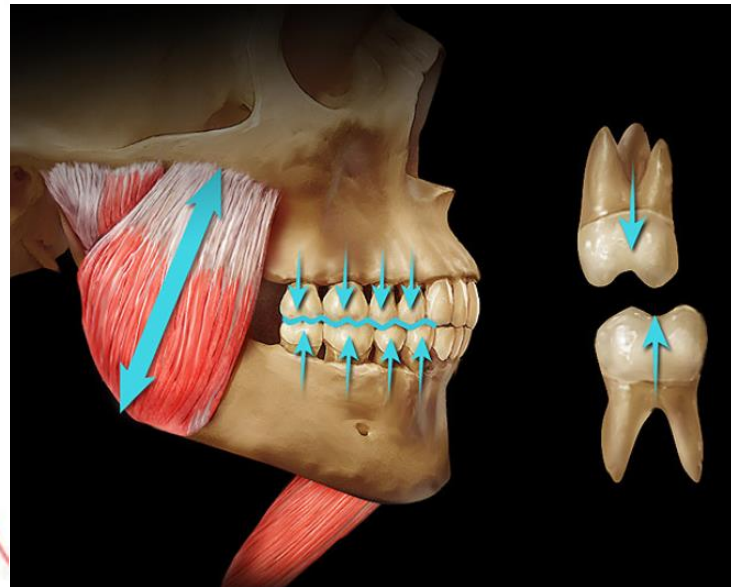
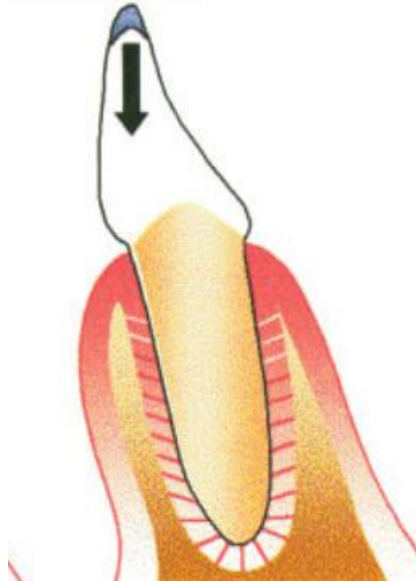
- often overlooked aspect of complete denture treatment is its tremendous physical and psychological influence on the patient.



# **Greatest Forces Acting on Teeth**

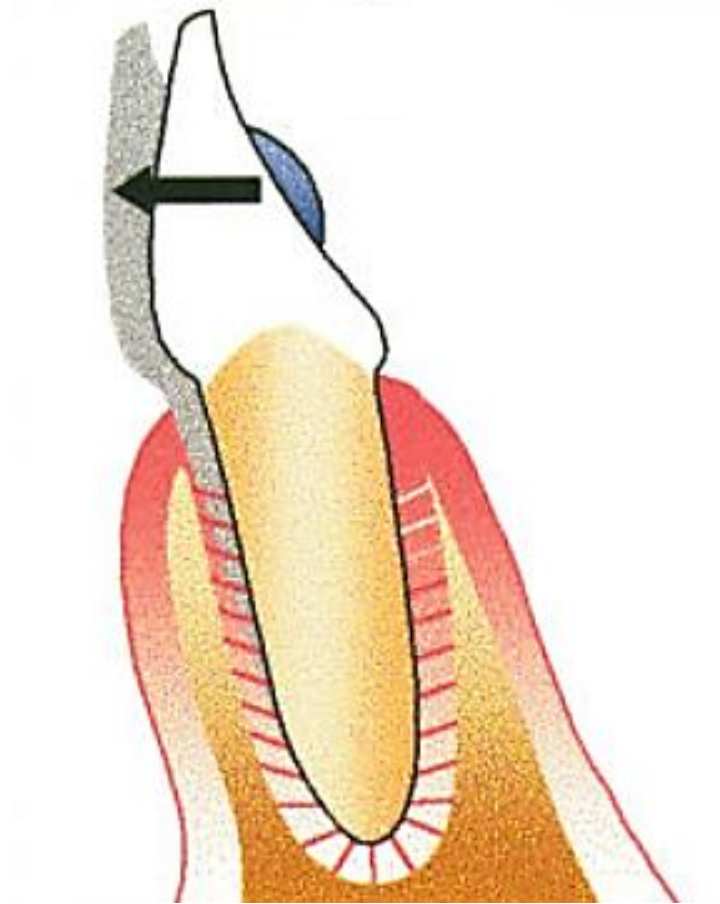
# Vertical Direction

1. Mastication
2. Deglutition



# Horizontal Direction

1. Tongue
2. Lips
3. Cheeks

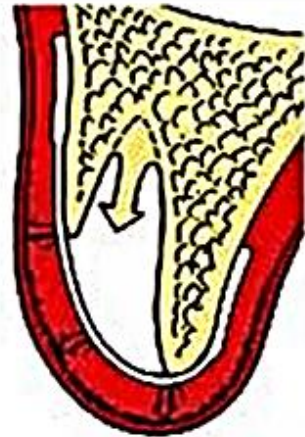


# FORCES GENERATED

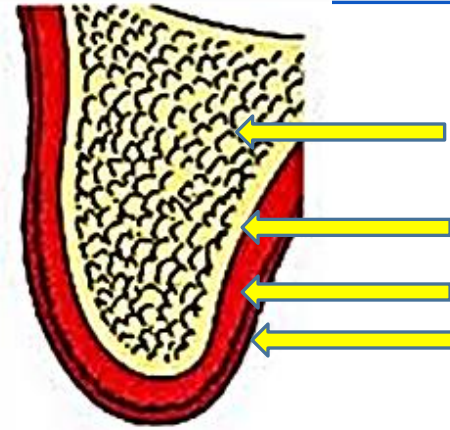
| MOVEMENTS                                                                                                                        | DIRECTION                                 | DURATION & MAGNITUDE                                            |
|----------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|-----------------------------------------------------------------|
| <b><u>Functional</u></b><br>1. Mastication<br>2. Swallowing                                                                      | Mainly vertical                           | Intermittent and light<br>Diurnal only                          |
| <b><u>Parafunctional</u></b><br>1. Bruxism<br>2. Tongue thrusting<br>3. Gnashing<br>4. Response of lower lip and mentalis muscle | Frequently horizontal as well as vertical | Prolonged, possibly excessive<br><br>Both diurnal and nocturnal |

# Support Mechanism for Complete Dentures





Bone defect with membrane surgically placed under the gum



Healthy bone ridge 6 - 9 months later, membrane has been removed

|          | Complete Denture |
|----------|------------------|
| Support` | Residual ridge   |
|          | - mucosa         |
|          | - submucosa      |
|          | - periosteum     |
|          | - residual bone  |

# Mucosal Support and Masticatory Loads

- The area of mucosa available to receive the load from **complete dentures is limited** when **compared** with the corresponding areas of support available for **natural dentitions**

# MASTICATORY LOAD

- Forces generated by complete denture wearers are only **10 – 15%** of those with natural teeth
- **During swallowing**, forces are a little **higher** than the average chewing forces **in complete denture wearers**.
- *An average person swallows an average of 1000 times per day.*

# Residual Ridge

A term used to describe the clinical shape of the clinical alveolar ridge after healing of bone and tissues following tooth extraction.



- ◉ Plays a very important role in complete denture construction
- ◉ Unfortunately, residual ridge undergoes continuous resorption
- ◉ Poorly made, poorly maintained, or expired dentures hasten resorption



# Residual Ridge Reduction (RRR)

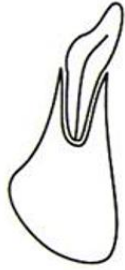
- A phenomenon in which the size of the residual ridge is reduced **most rapidly in the first six months after extraction**, but the bone resorption activity of the residual ridge **continues throughout life at a slower rate**, resulting in removal of a large amount of jaw structure.

# **SIX ORDERS OF RESIDUAL RIDGE REDUCTION**

By Atwood

## SIX ORDERS OF RESIDUAL RIDGE REDUCTION

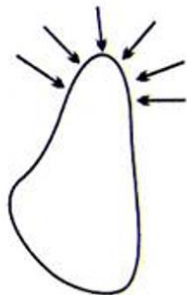
Order 1 - Preextraction



Order 2 - Postextraction



Order 3 - High, well-rounded



Order 4 - Knife edged



Order 5 - Low, well-rounded



Order 6 - Depressed



# PATTERN OF RESORPTION

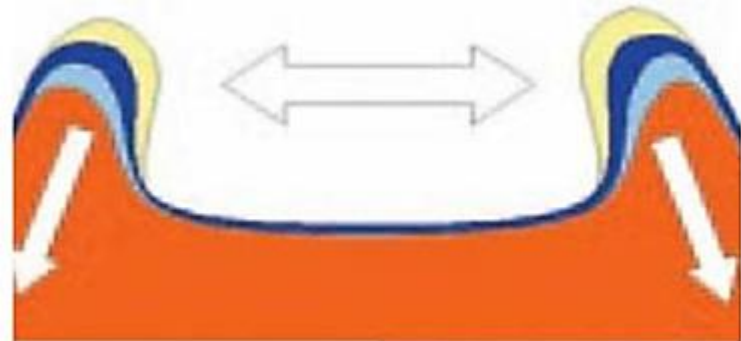
- **Maxilla**

- ridge resorbs upward and inwards



- **Mandible**

- ridge resorbs downward and outwards



- The end result is that over a period of time:
  - the **maxillary arch** become progressively **smaller**,  
whereas
  - the **mandibular arch** becomes **wider**.



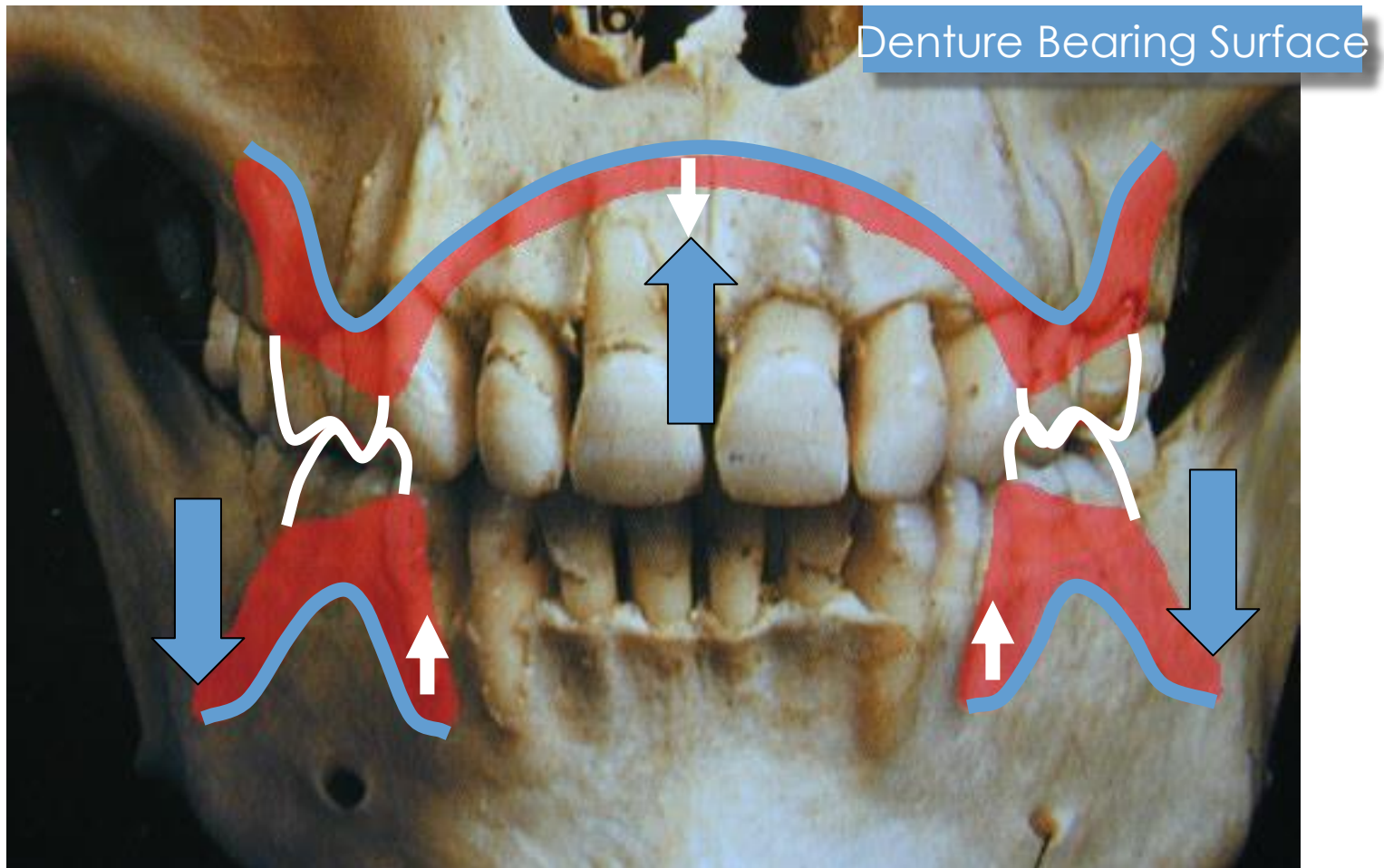
# Three Important Qualities for a Denture to Function Properly:

1. **Retention,**
2. **Stability**
3. **Support**

# 1. Retention

- It is the quality inherent in the prosthesis acting to resist the forces of dislodgment
- The resistance to removal in a direction opposite that of its insertion

- **Retention** - Resistance to dislodgment forces in a vertical direction away from the bearing surface



# Forces of Dislodgment

- Act of chewing food
- Sticky food
- Gravity
- Surrounding musculature
- Prematurities in occlusion

# Physical Forces in Denture Retention

1. Adhesion
2. Cohesion
3. Interfacial Surface tension
4. Atmospheric Pressure
5. Capillarity
6. Gravity



# 1. Adhesion

- The physical force of **attraction between dissimilar molecules**, such as:
  - between saliva & mucosa,
  - and between saliva & denture base
- Factors affecting adhesion
  1. saliva ( moderate flow, serous type)
  2. extension of the denture base

## 2. Cohesion

- Physical force of **attraction between similar molecules**
- Occurs within the saliva located between the mucosa and the denture base
- For the cohesive factor to be effective in denture retention, layer of saliva should be thin

### 3. Interfacial Surface Tension

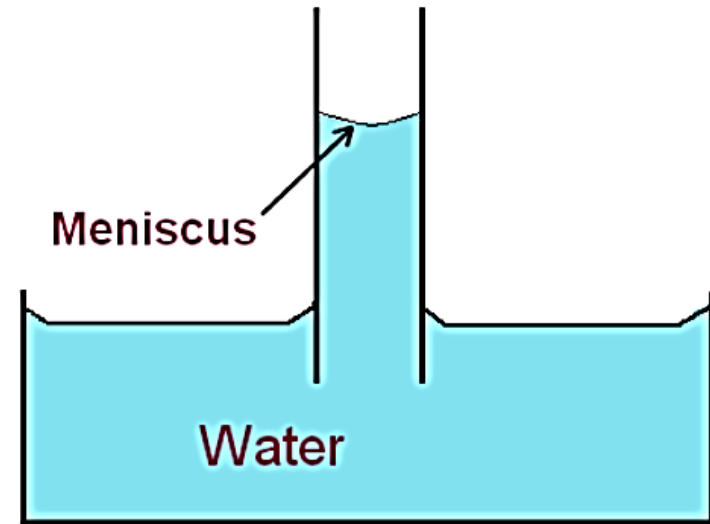
- The resistance to separation of two parallel surfaces that is imparted by a film of liquid between them
- Intimacy of contact of the tissues and impression surface of the denture

## 4. Atmospheric pressure

- Has been called “suction”
- Directly proportional to the area coverage;  
the greater surface area, the greater retention
- Denture must have adequate seal around its entire border

## 5. Capillarity

- Capillary attraction
- Causes a liquid to rise in a capillary tube
- Space between the denture acts like a capillary tube and helps retain the denture

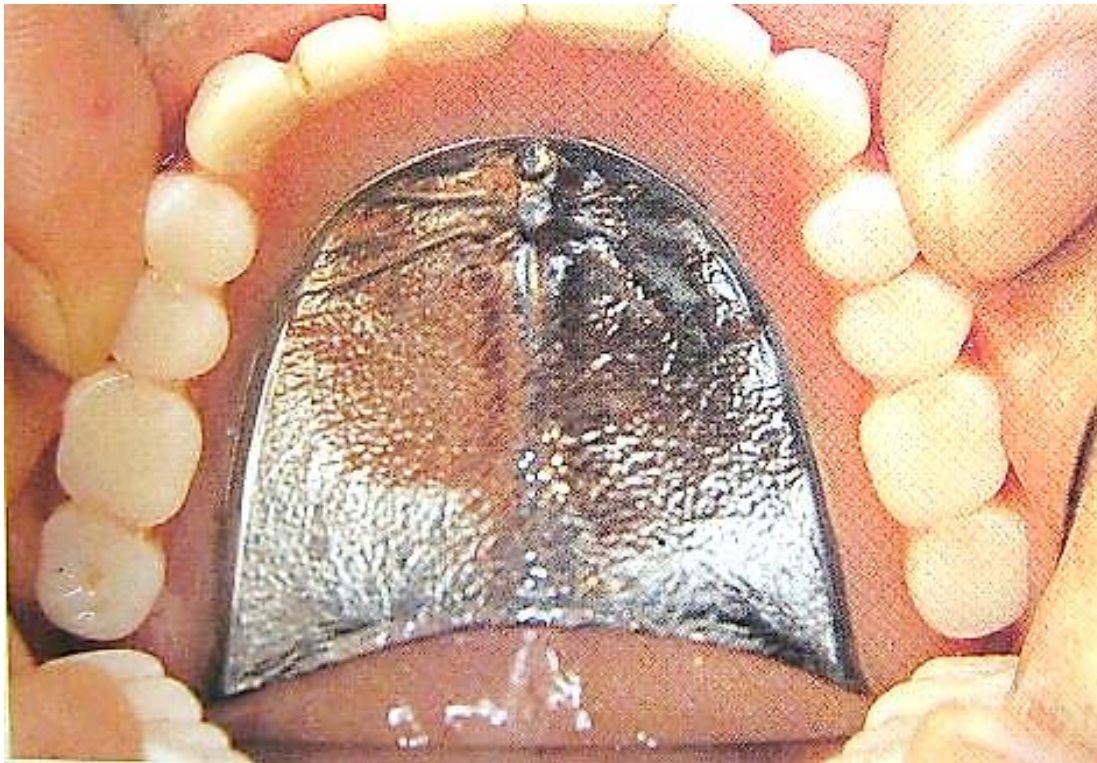


Capillary rise of water in a small tube



## 6. Gravity

- Can be both beneficial and harmful
- Provided by the weight of the denture



# Factors Affecting the Physical Forces in Denture Retention

1. Saliva
2. Surface Area
3. Intimacy of Contact
4. Peripheral seal

# Saliva

- One of the most important factor affecting retention.
- None of the physical forces can take effect without saliva.

## Qualities of Saliva:

1. **Quantity** – adequate
2. **Quality** -

*Serous - thin, wets the denture base*

*Mucous – thick, viscous, adhesive*

*Mixed - ideal, both in wetabilibity and adhesiveness*

# Surface Area

- The larger the surface area, the greater the retention.

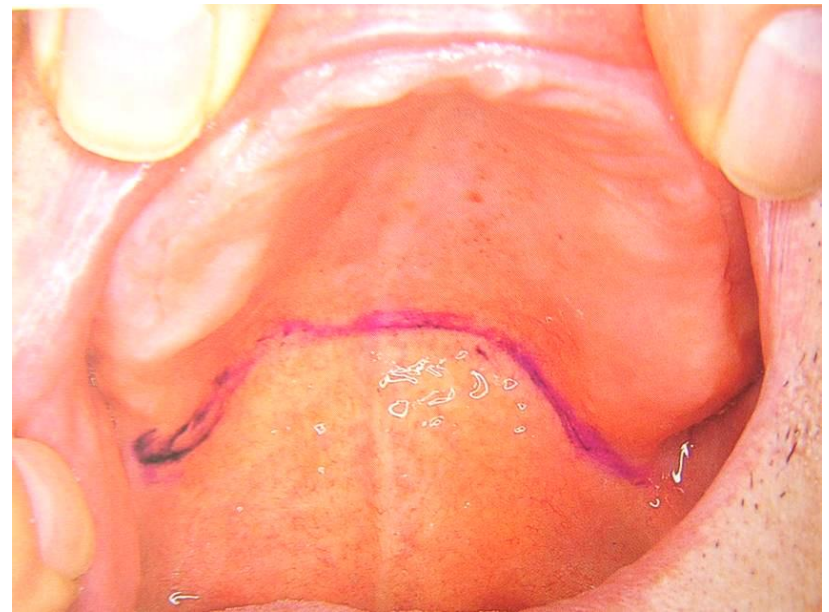
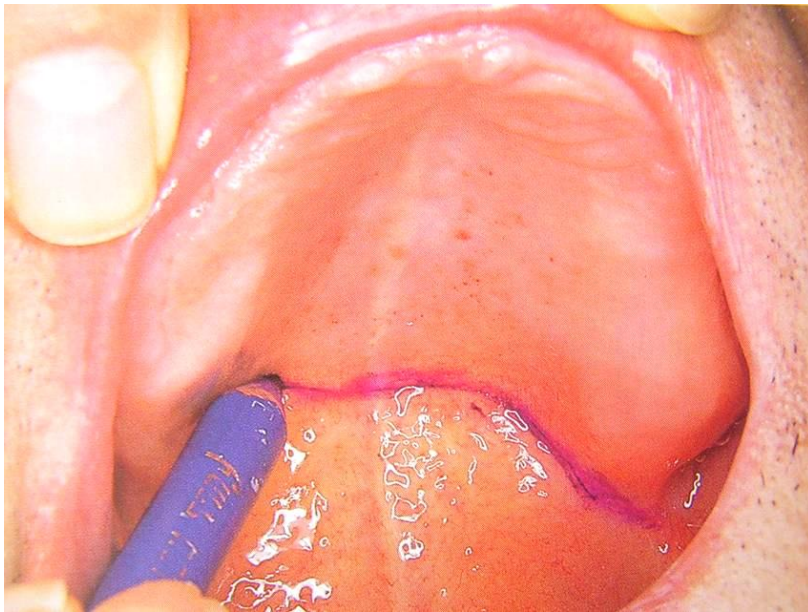
# Intimacy of Contact

- The closer the contact between the tissues and the impression surface of the denture, the greater the retention.



# Peripheral Seal

- Prevents the entry of air between the denture and the basal seat tissues.

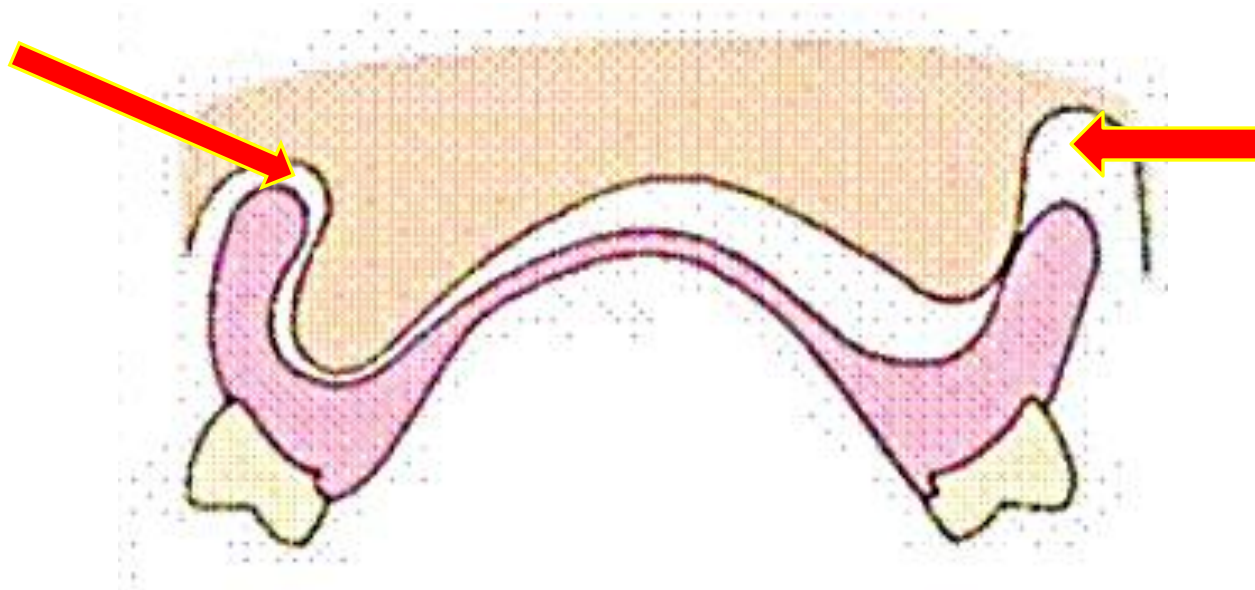


# Mechanical Aids in Denture Retention

1. Undercuts
2. Over-denture Attachments
3. Implants
4. Mucosal Inserts
5. Suction Chambers
6. Magnets

# 1. Undercuts

- Depressed portion of the sides of the ridge that lies apical to the prominent portion.



## 2. Over-denture Attachments

- This is retention acquired from remaining teeth or roots.
- Precision attachment, bar and clip mechanism



### 3. Implants





## 4. Mucosal Inserts

- These are small, mushroom shaped metal appliances attached to the tissue side of the maxillary denture.
- When dentures are inserted into the mouth, these studs insert into specially prepared *receptor sites* within the mucosa, thereby retaining the denture.



**Surgical procedure on the mucosa by using special drill in low speed and water cooling after local anesthesia**



**Fig.3 Mucosa aspect right after the surgical procedure**



**Fig.4 Mucosa aspect 15 days after the surgical procedure**



**Fig.1 Denture with the zirconium oxide inserts in it**

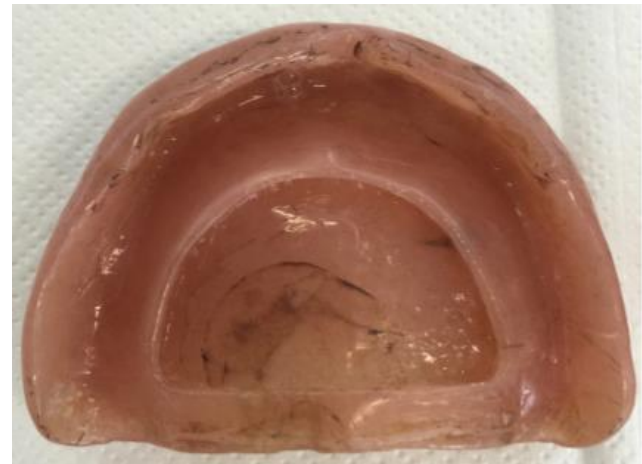


## 5. Suction Chambers

A relief chamber with definite margin is created on the palatal side of the denture

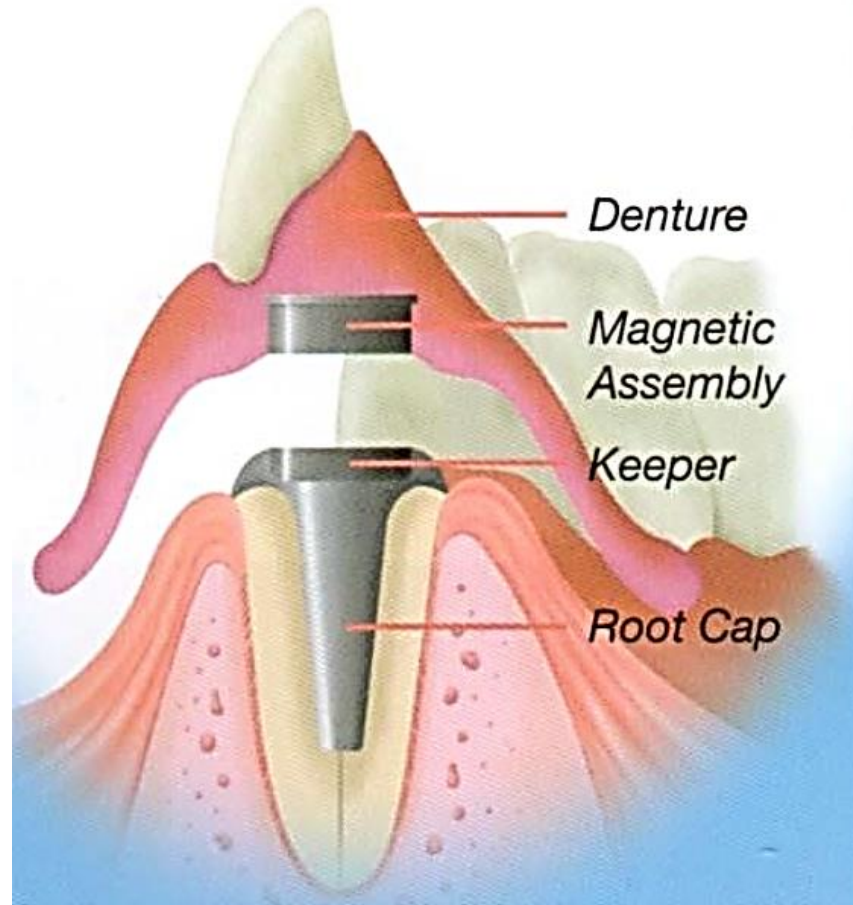
Partial vacuum within the chamber is created with repeated swallowing and sucking action.

They are now avoided due to their potency for creating palatal hyperplasia



## 6. Magnets

- A small magnet is placed in the premolar region with like poles facing each.





*Have a break,  
10 minutes  
have a KitKat®.*

**15 minutes**



# **Secondary Retentive Features and other Factors Affecting Denture Retention**

# 1. Musculature

- Cheek, lips, modiolus, tongue, floor of the mouth, soft palate, masseter, neutral zone
- Should be in harmony with the denture

*\*neutral zone – potential space between the lips and cheeks on one side and tongue on the other, where forces between them should be equal.*



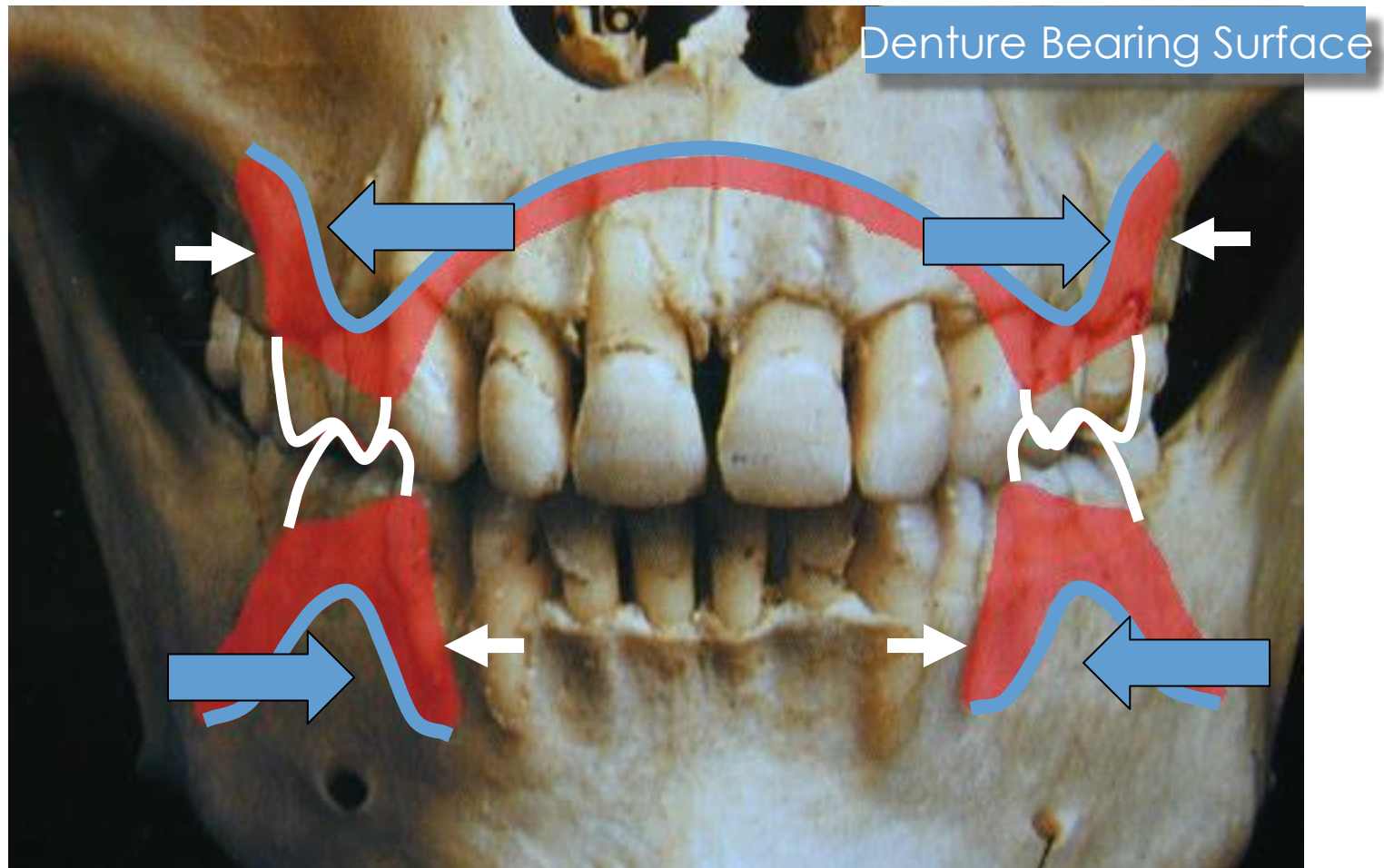
- 
2. Shape of the denture borders and flanges
  3. Overextended denture borders
  4. Border moulding (muscle trimming)
  5. Coronoid process
  6. Occlusal Schemes
  7. Neuromuscular Control
  8. Psychological Factor
  9. Proper Patient instructions

## 2. Stability



- The resistance against **horizontal** movement and forces.
- The quality of a denture to be firm, steady, and constant in position when forces are applied to it.

- **Stability** - Resistance to laterally oriented dislodgment forces



# Factors involved in the Stability of Denture

## **1. Size & form of the tissue-ridge morphology**

- residual ridge size, shape and quality; palatal vault; ridge relationship

## **2. Quality of final impression**

- intimate tissue contact

## **3. Proper location and arrangement of artificial teeth**

- proper occlusion, teeth in neutral zone

## **4. Muscle control of the patient**

# 3. Support

- The property which resists **vertical** movement or displacement of the denture **towards the basal seat area**.



# Importance of Support

1. By preventing tissueward movement of the denture, it complements retention and stability.
2. Good support is needed to improve masticatory function.
3. Good support is needed to maintain occlusal relationships.

# Requirements of Support

*Tissues capable of support should have the following features:*

1. Firm and resilient, covered by keratinized tissue and firmly attached to the underlying bone.
2. Uniform thickness
3. Underlying bone should be resistant to bone resorption
4. Support areas should be at right angles or as near right angled as possible to occlusal forces

# Factors involved in the support of the denture

1. amount of denture bearing area
2. quality of supporting bone
3. ridge morphology

# Basal Seat

- ◉ **Bone**

- ◉ Spongy or cancellous (crest of lower ridge)
- ◉ Compact (max residual ridge/buccal shelves)

- ◉ **Mucosa**

- ◉ Masticatory (ridge crest, hard palate)
- ◉ Lining (sulcus region)
- ◉ Specialized (tongue)

# **ANATOMIC LANDMARKS**



# Maxillary Landmarks

## 1. Supporting/ denture bearing structures:

- a. Residual ridge
- b. Rugae
- c. Hard palate
- d. Maxillary tuberosity



# Maxillary Landmarks

## 2. Limiting Structures

- a. labial vestibule
- b. buccal vestibule
- c. hamular notch
- d. fovea palatinae
- e. vibrating line

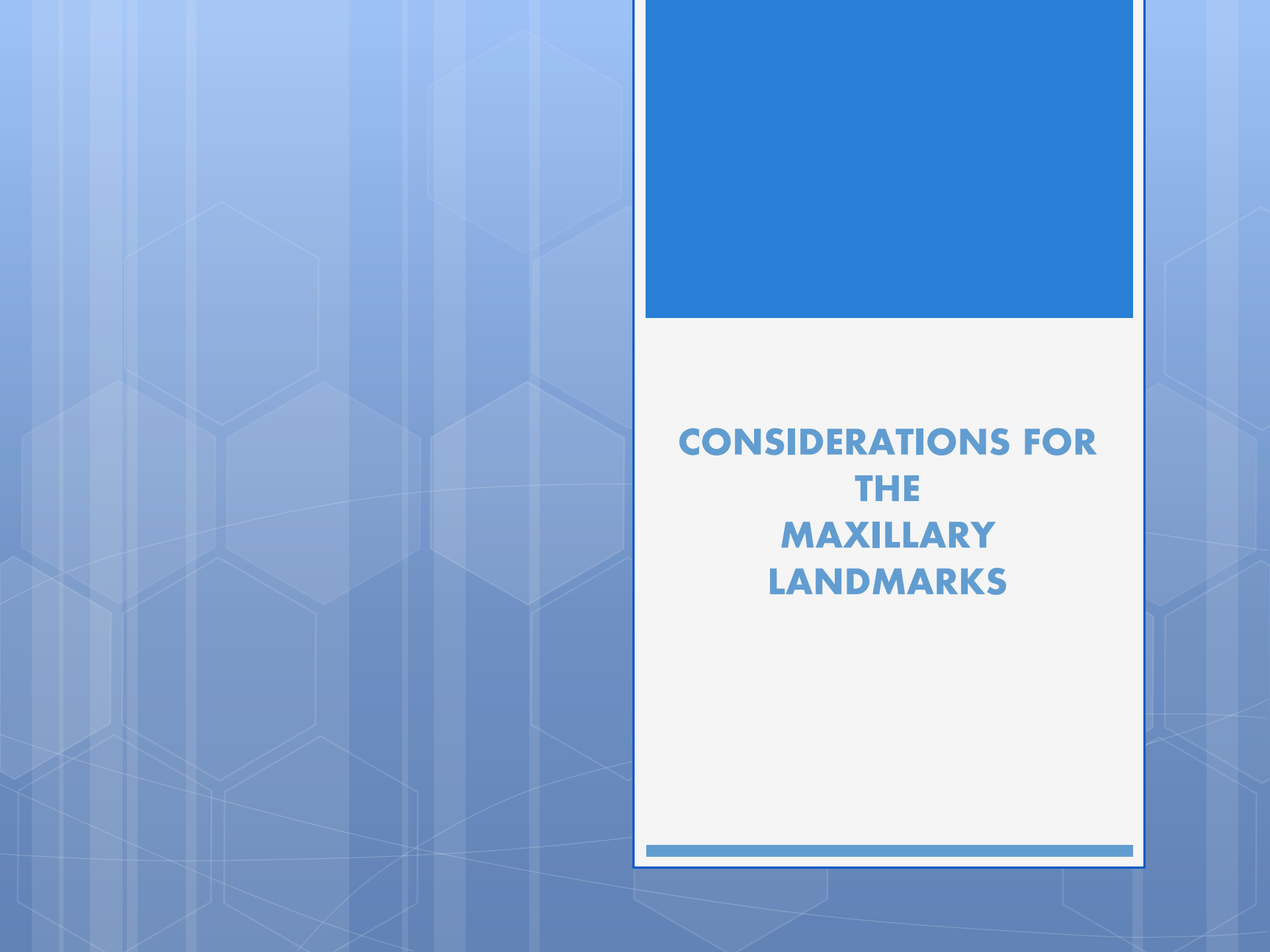


# Maxillary Landmarks

## 3. Relief Structures

- a. incisive papilla
- b. median palatine raphe
- c. labial frenum
- d. buccal frenum
- e. pterygomandibular raphe

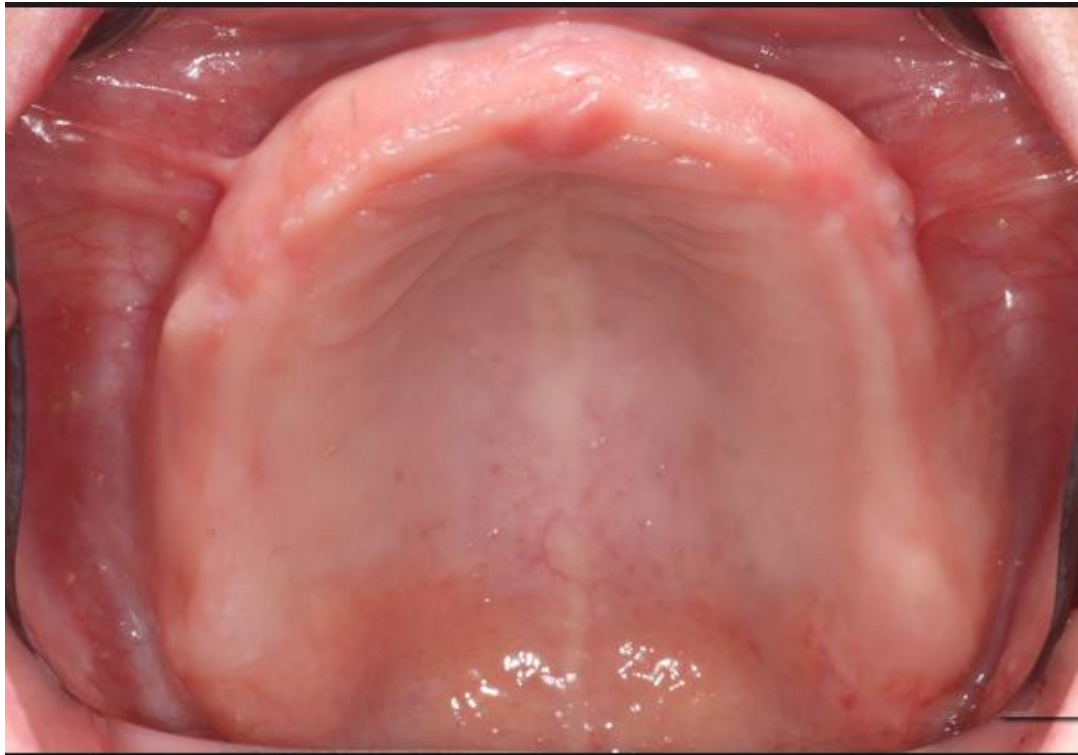


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# **CONSIDERATIONS FOR THE MAXILLARY LANDMARKS**

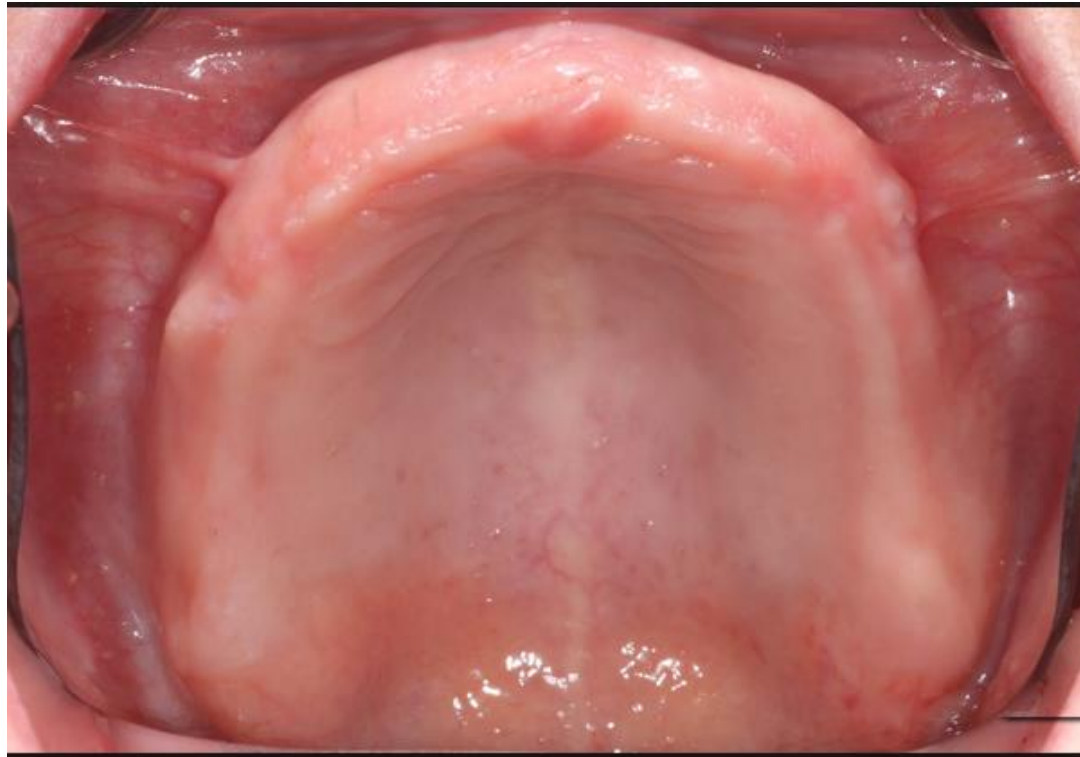
## Maxillary Residual Ridge

- Primary stress bearing area
- Has compact type of bone
- Covered with fibrous connective tissue that is firmly attached



## Rugae

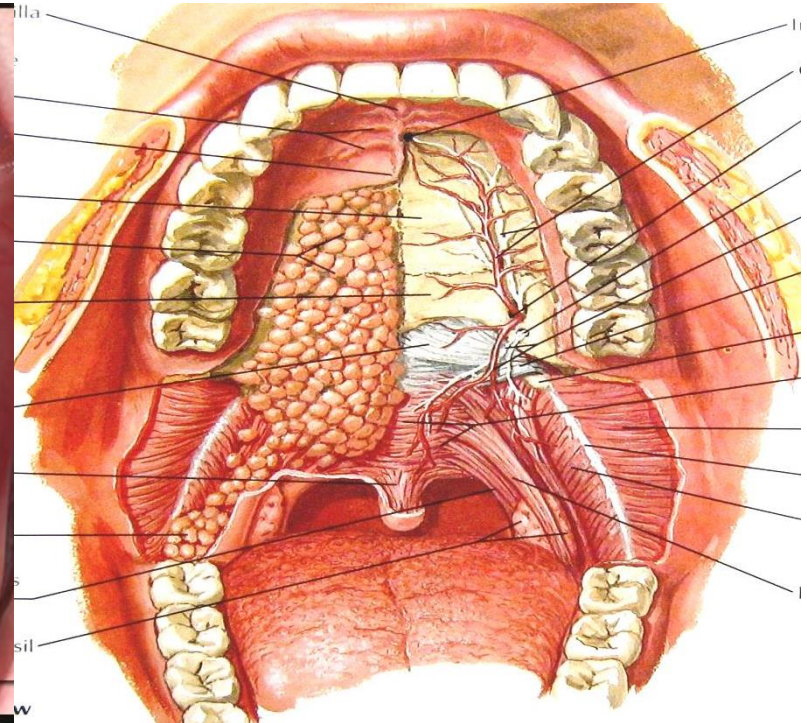
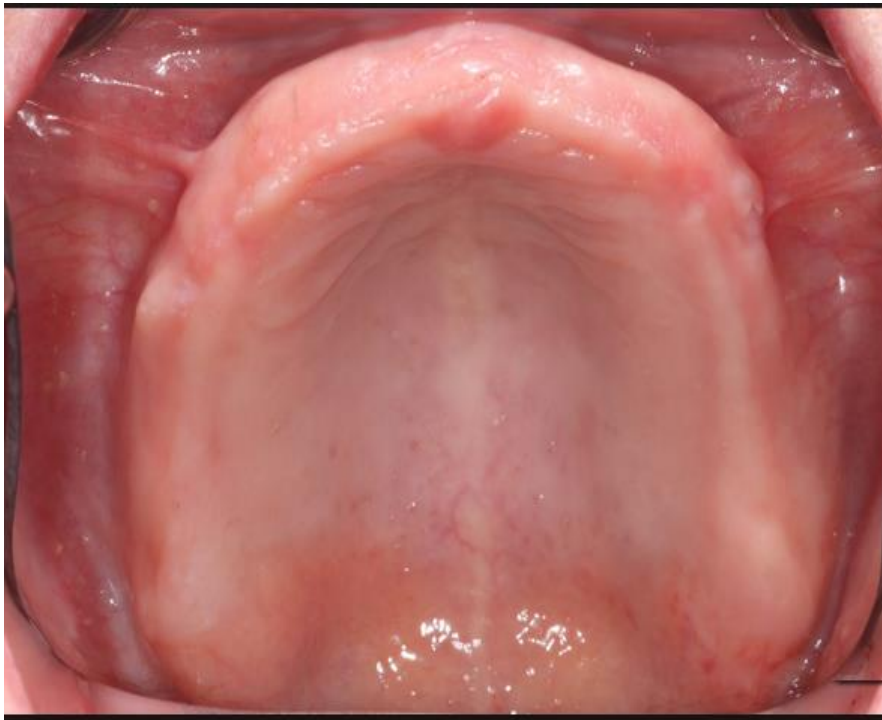
- Secondary stress bearing area
- Should be recorded without pressure





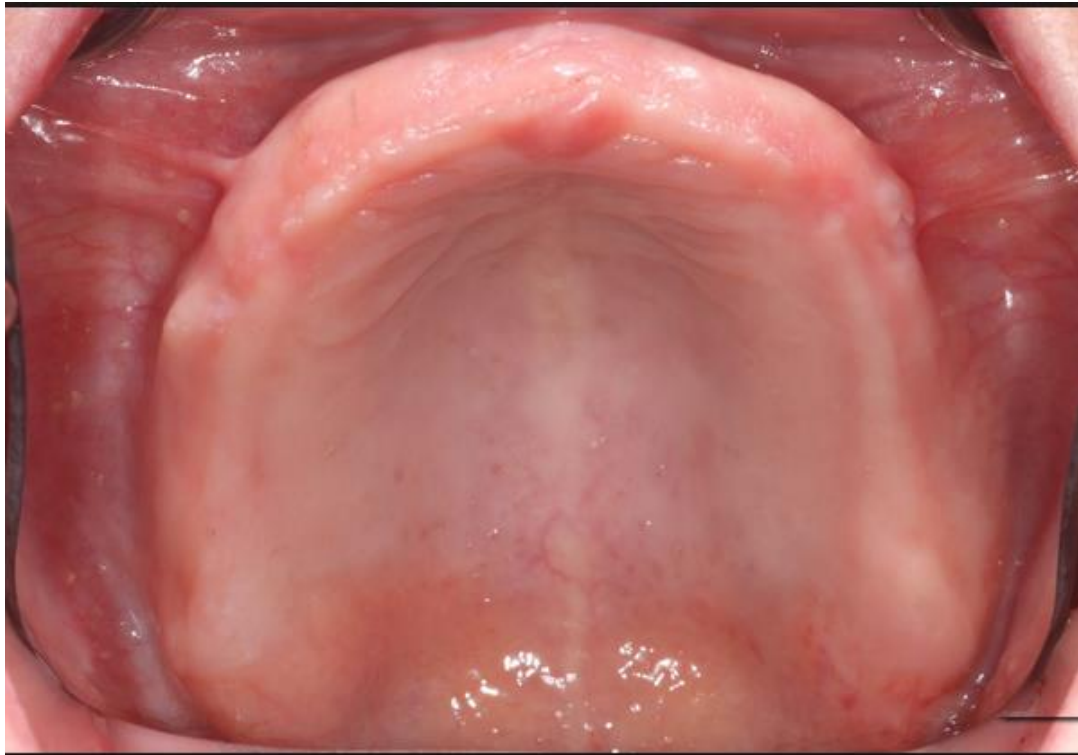
## Hard Palate

- Anterolateral (fatty zone)
  - Forms part of the **secondary stress bearing area**
- Posterolateral (glandular zone)
  - Forms part of the **secondary retentive area**



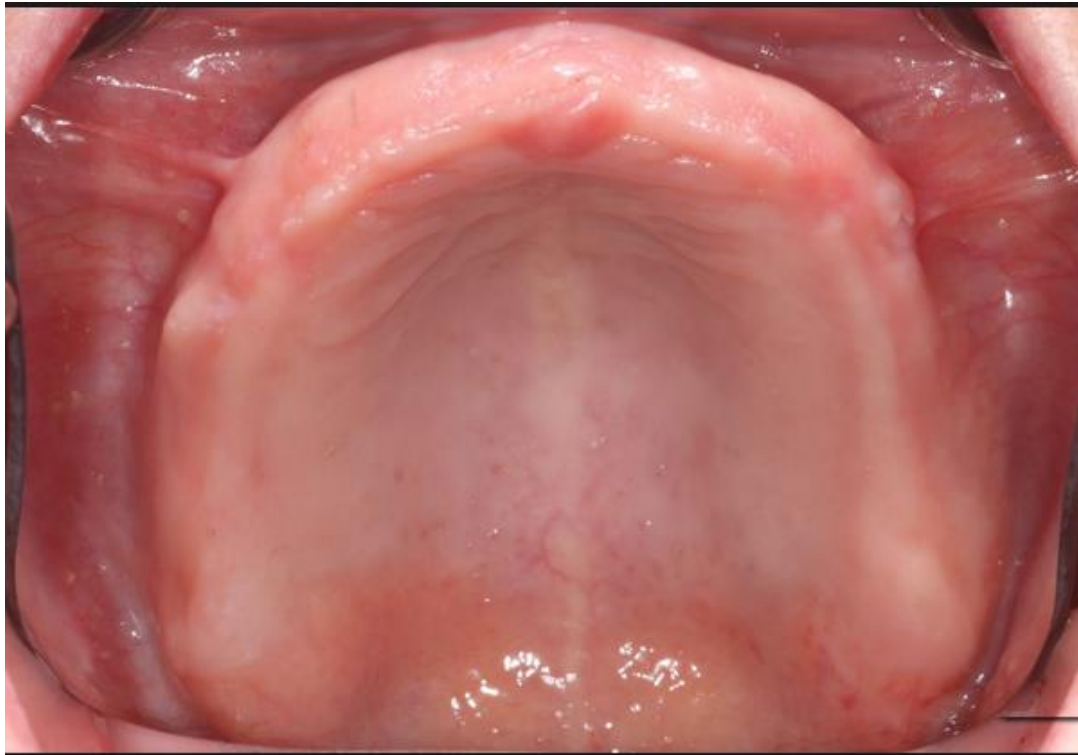
## **Incisive Papilla**

- relief provided to prevent pressure on the nasopalatine nerves and vessels
- pressure can cause paresthesia, pain, burning sensation and other vague complaints



## Median Palatine Raphe

- Relief area due to very thin and non resilient mucosa causing soreness or severe pain
- can act as fulcrum point leading to rocking of the denture



## Canine Eminence

- A round bony elevation in the corner of the mouth.
- It represents the location of the root of the canine.
- Used as a guide for the selection and arrangement of maxillary anterior teeth.

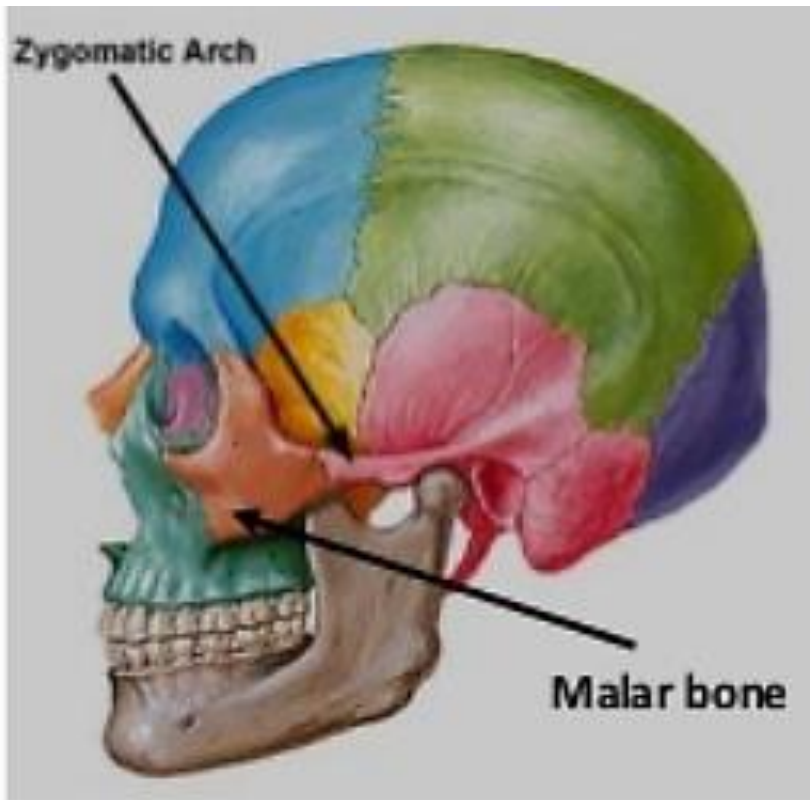


*Figure (2-11):  
Canine eminence.*



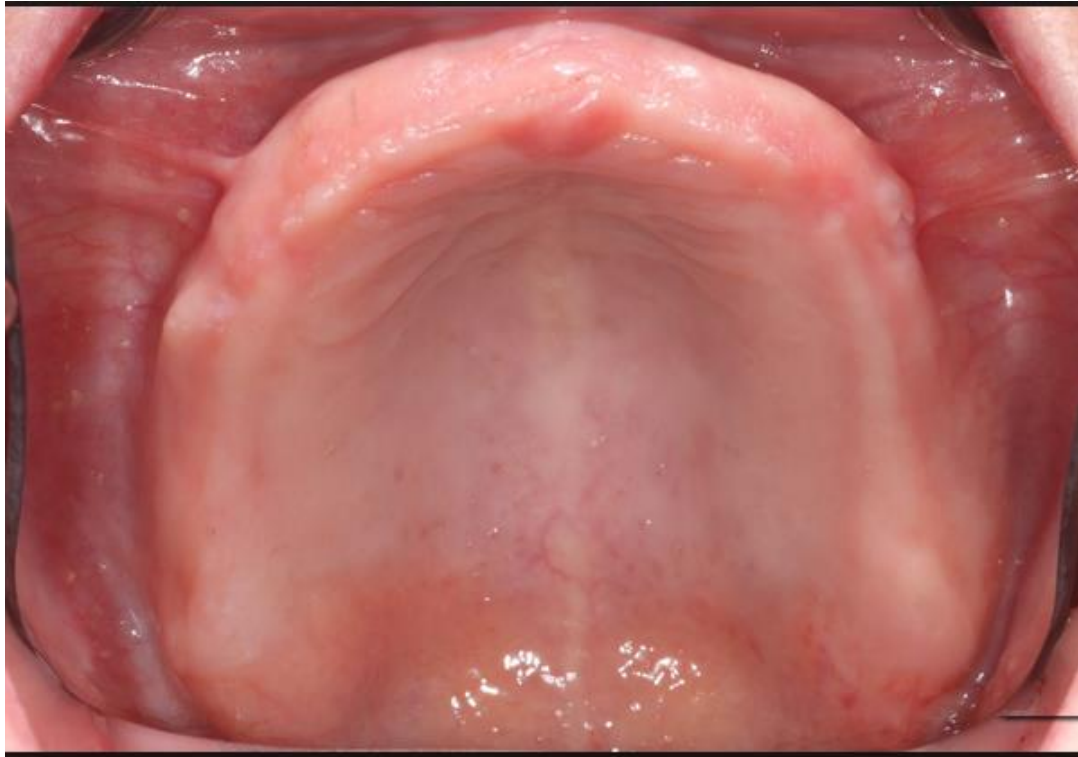
## Zygomatic Process (Malar Process)

- relieved when prominent to prevent soreness
- located on the first molar region



## Maxillary Tuberosity

- teeth are not set on the tuberosity region
- covered by impression

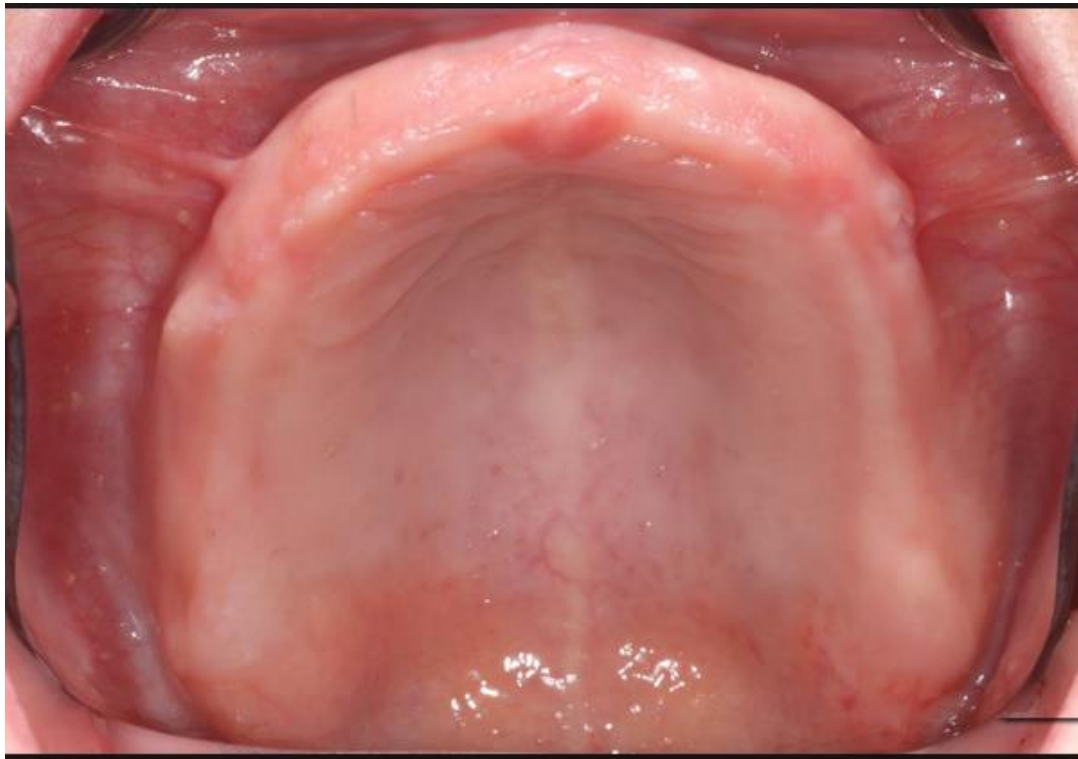






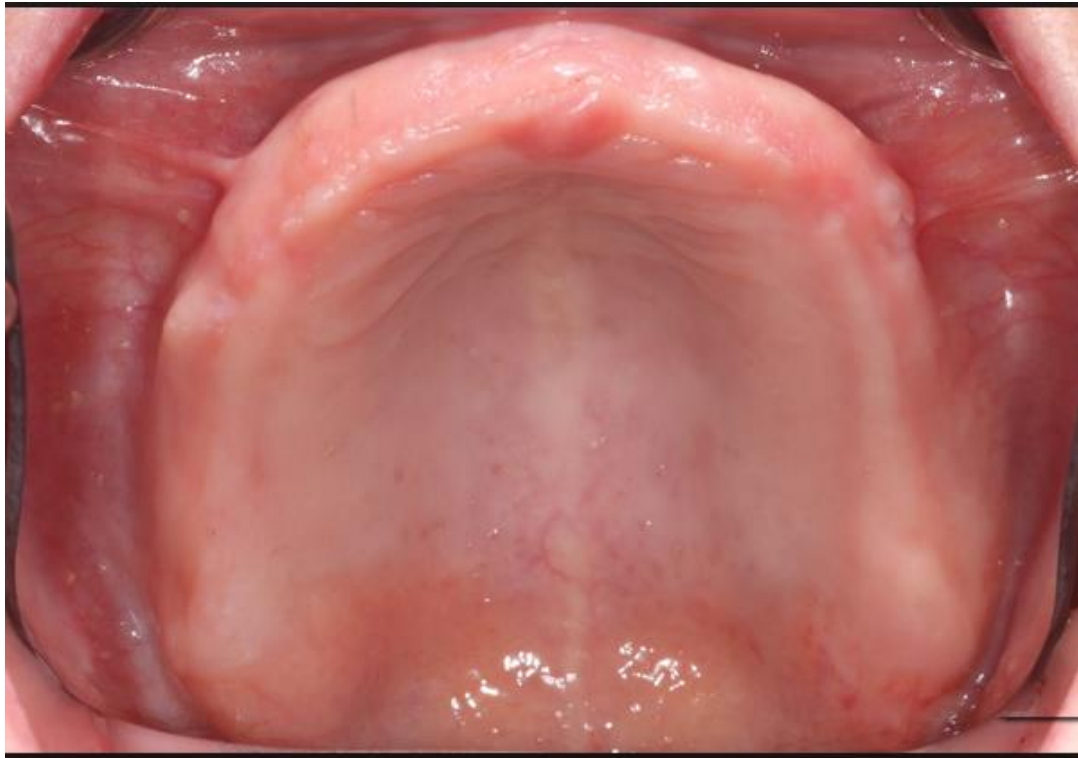
## Labial Frenum

- Relief area if not can lead to irritation
- Can affect denture seal and retention if close to the ridge



## Buccal Frenum

- Maybe single or double, broad or fan shape
- Relief area

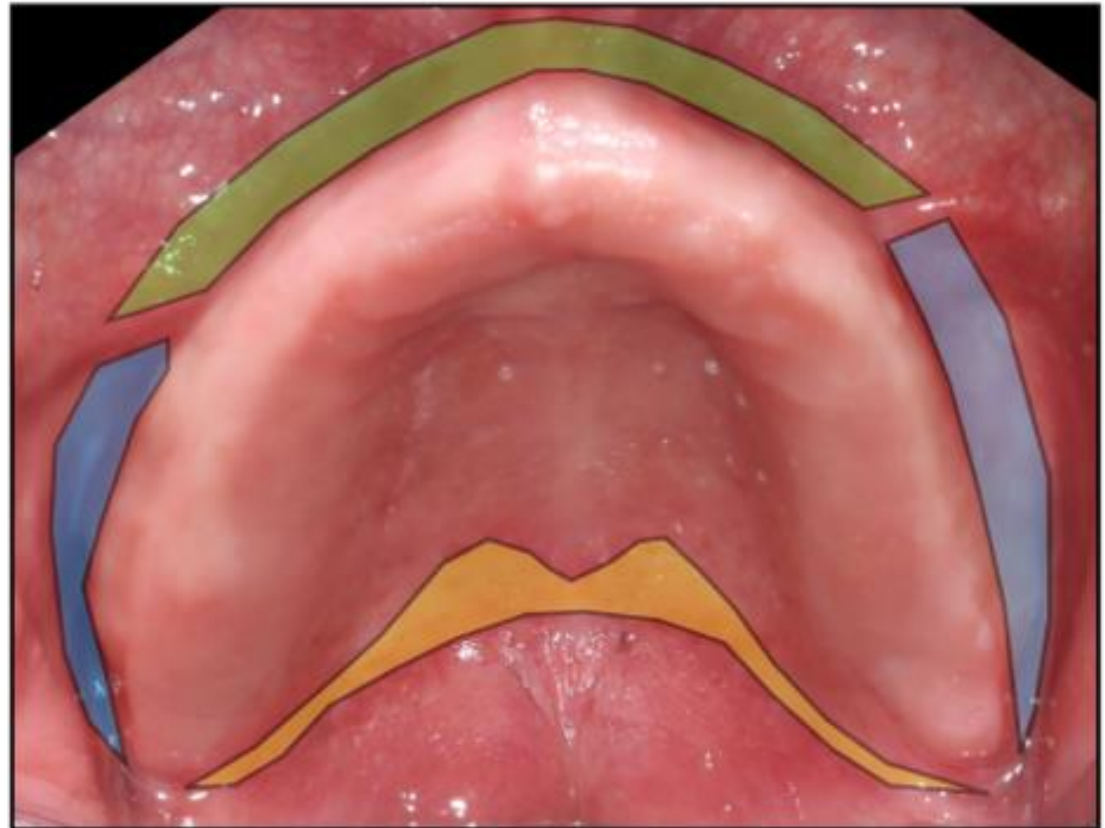


# Labial Vestibule

- Provide valve seal
- Affect appearance if not properly supported
- Elastic so easil under extendec or overextende

## Areas:

- 1- Labial vestibule
- 2- Buccal vestibule
- 3- Posterior Palatal seal

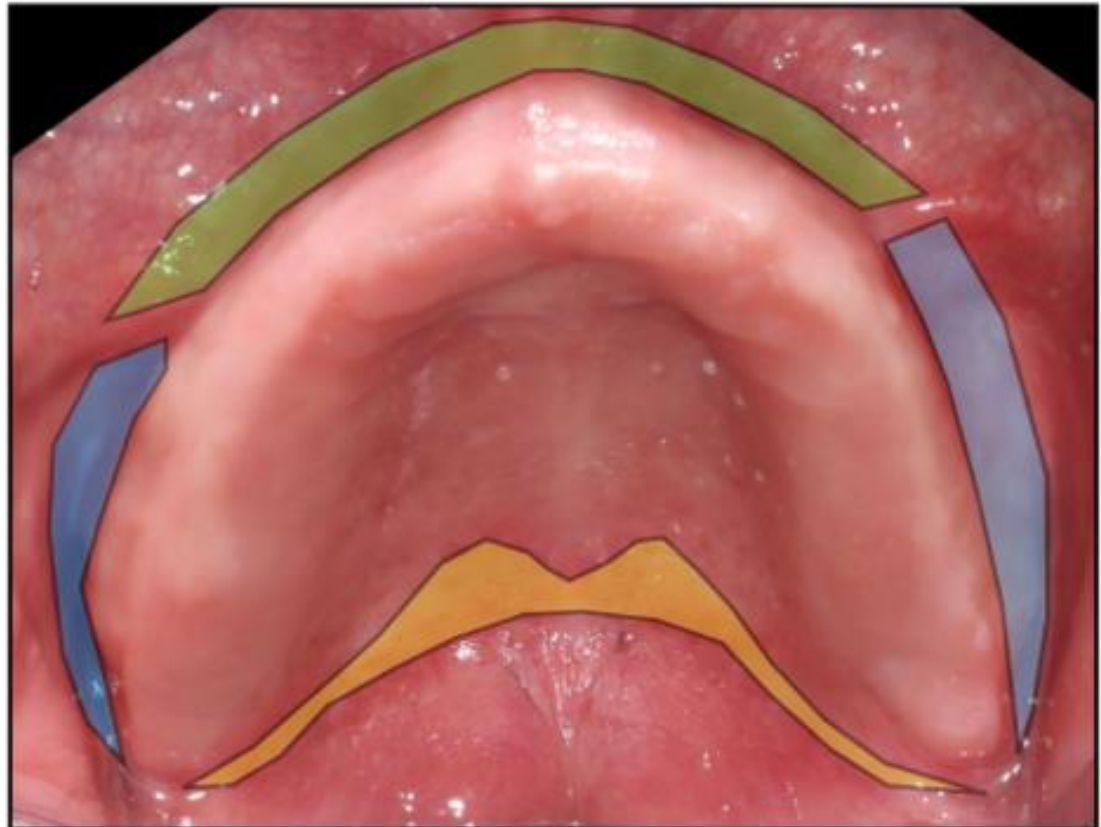


# Buccal vestibule

- Provide peripheral seal
- Width affected by masseter muscle and coronoid process

## Areas:

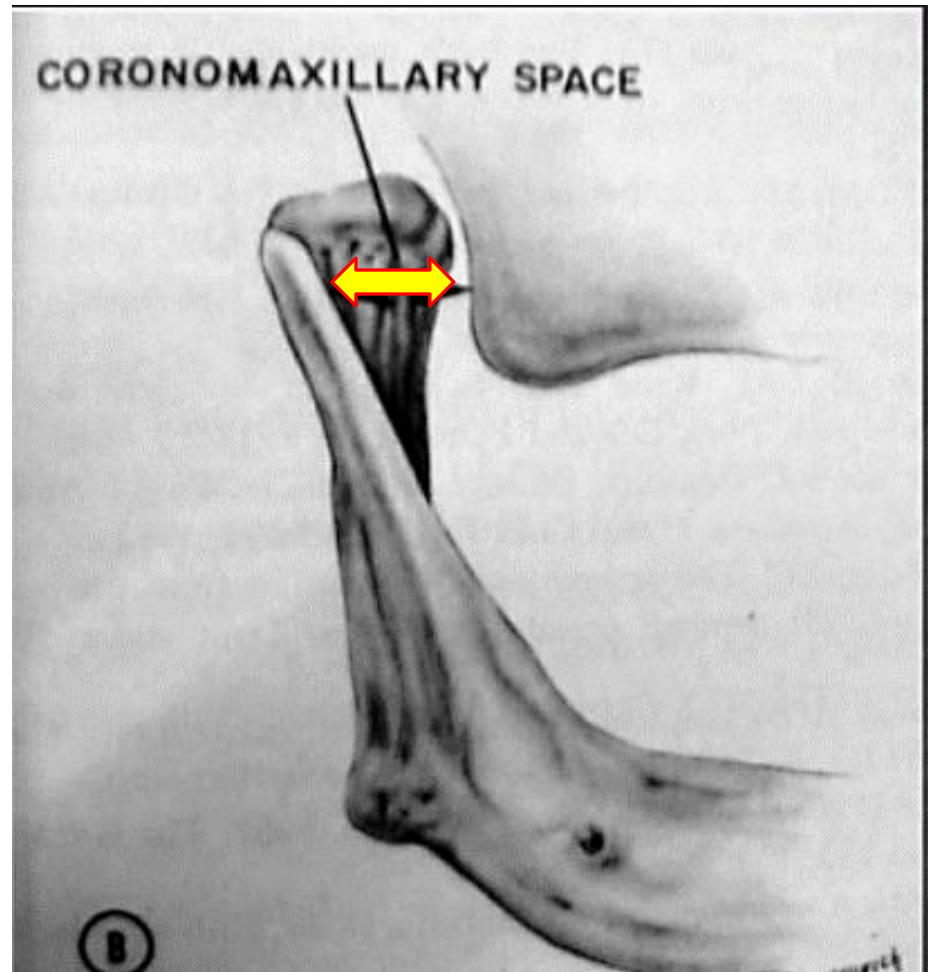
- 1- Labial vestibule
- 2- Buccal vestibule
- 3- Posterior Palatal seal





## Coronoid Process

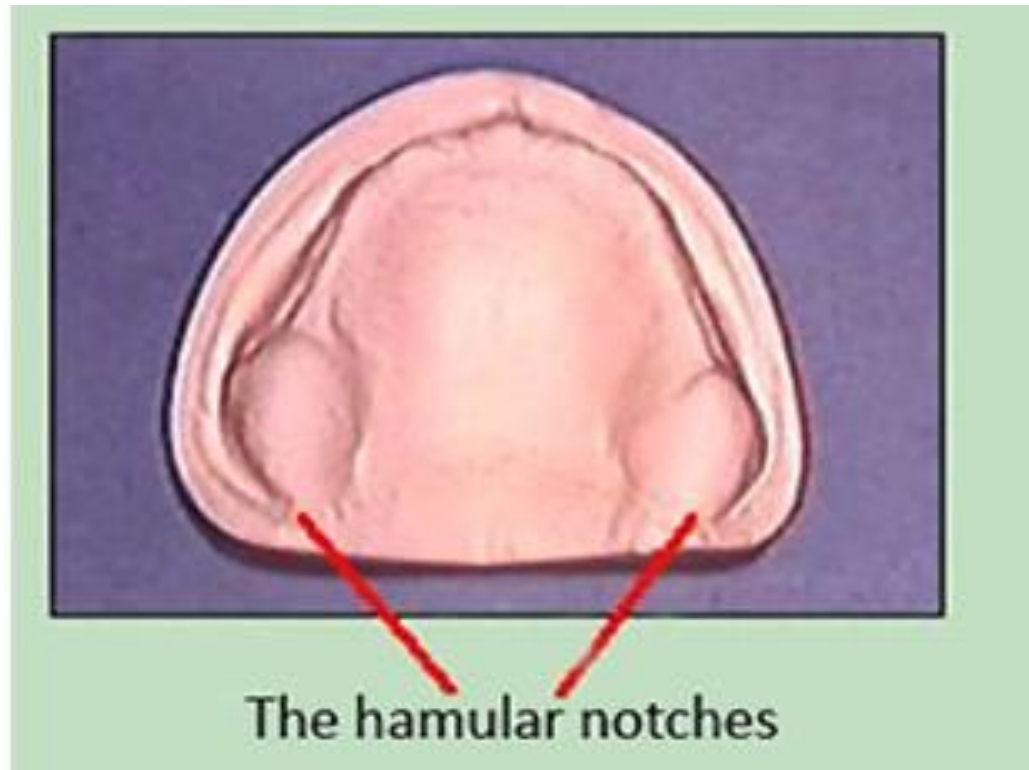
- Affect the maxillary buccal flange as the mandible moves forward, side to side or opened wide
- can dislodge the upper denture if buccal flange is too thick





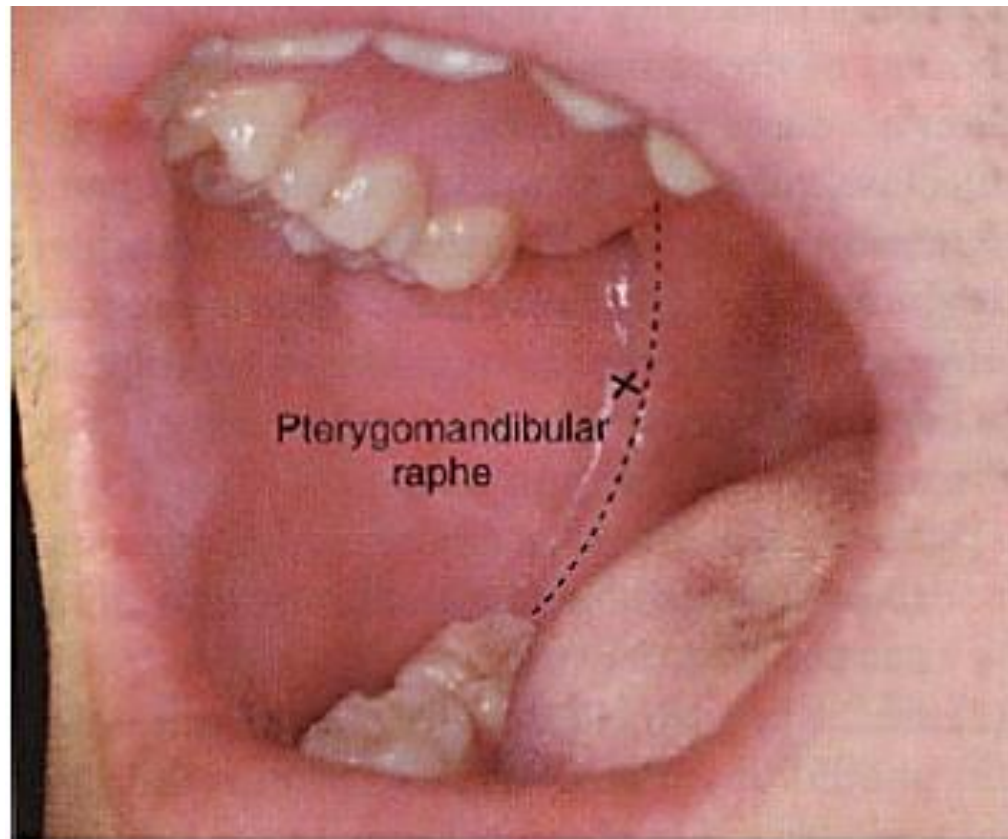
# Pterygomaxillary Notch

- Marks the posterior limit of the denture
- Additional pressure can be placed to produce a seal (posterior palatal seal)



## Pterygomandibular Raphe

- Extend from the hamulus to the distolingual corner of the retromolar pad
- recorded when mouth is opened wide



## Palatine Fovea

- 2 small indentations in the posterior palate near the midline
- Formed by the joining together of several mucous gland ducts
- Serve as guide for the location of the position of the border of the denture ( *usually the posterior vibrating line is **2mm** anterior to fovea* )



## Posterior Palatal Seal Area

- Area between the anterior and posterior vibrating line
- shape like a Cupid's bow
- Additional pressure maybe placed in this area to effect a seal
- Posterior vibrating line marks the posterior limit of the denture



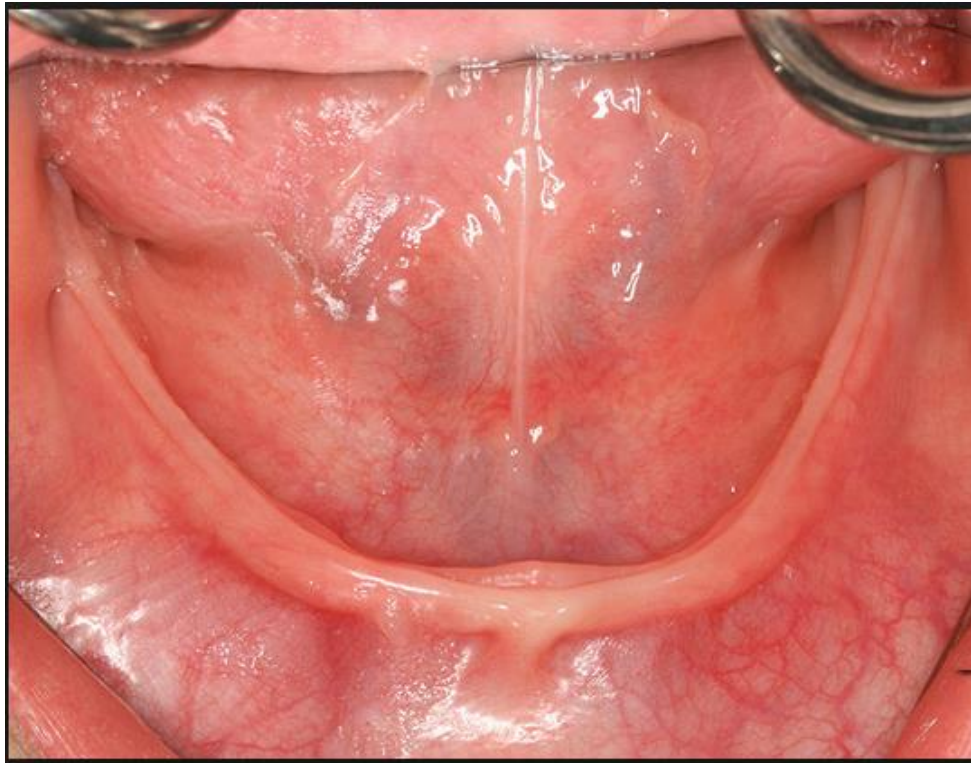


# **Mandibular Landmarks**

# Mandibular Landmarks

## 1. Supporting Structures

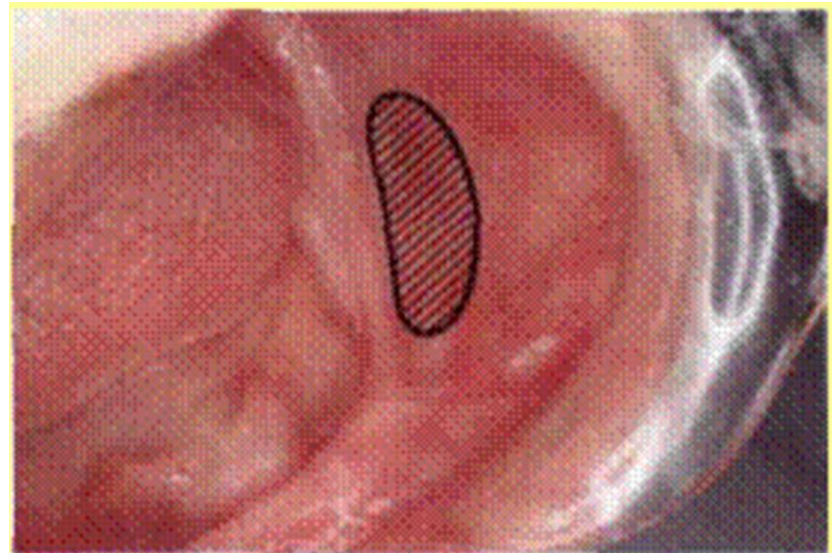
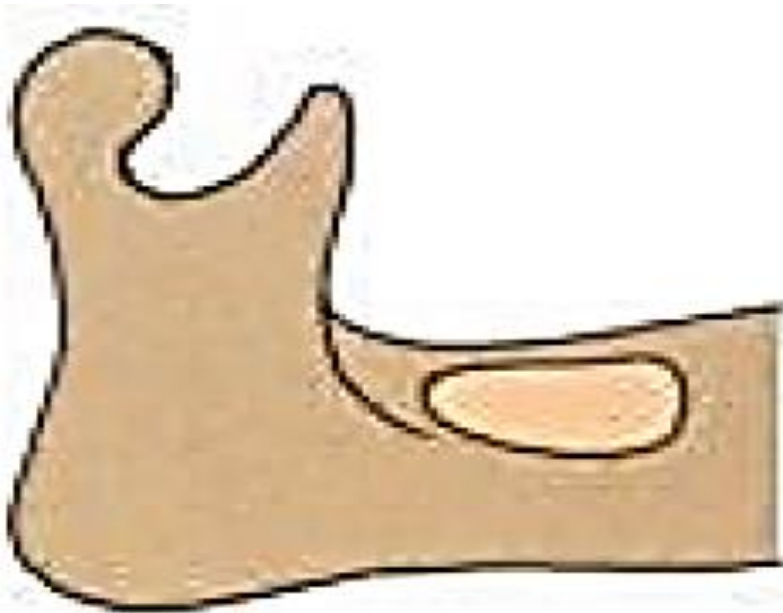
### *a. Slopes of the Residual ridge*





## b. **Buccal Shelf Area**

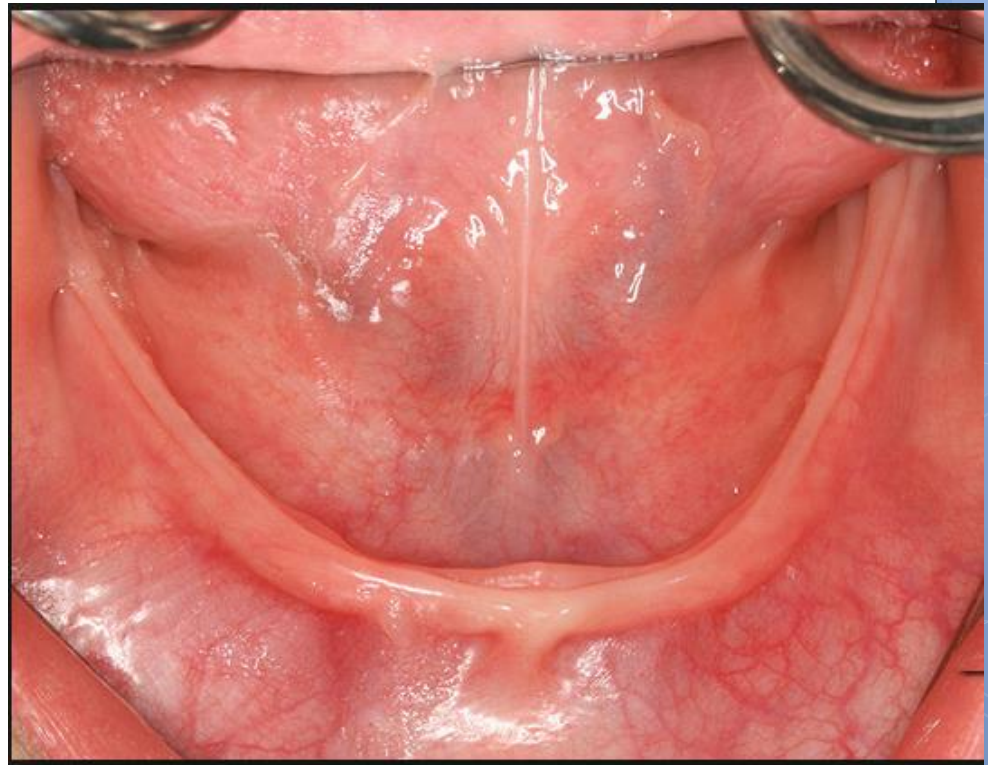
- Area between the buccal frenum and the anterior border of the masseter.
- Boundaries:
  - Anterior - buccal frenum
  - Medial - crest of the ridge
  - Distal - retromolar pad
  - Lateral - external oblique ridge



# Mandibular Landmarks

## 2. Limiting Structures

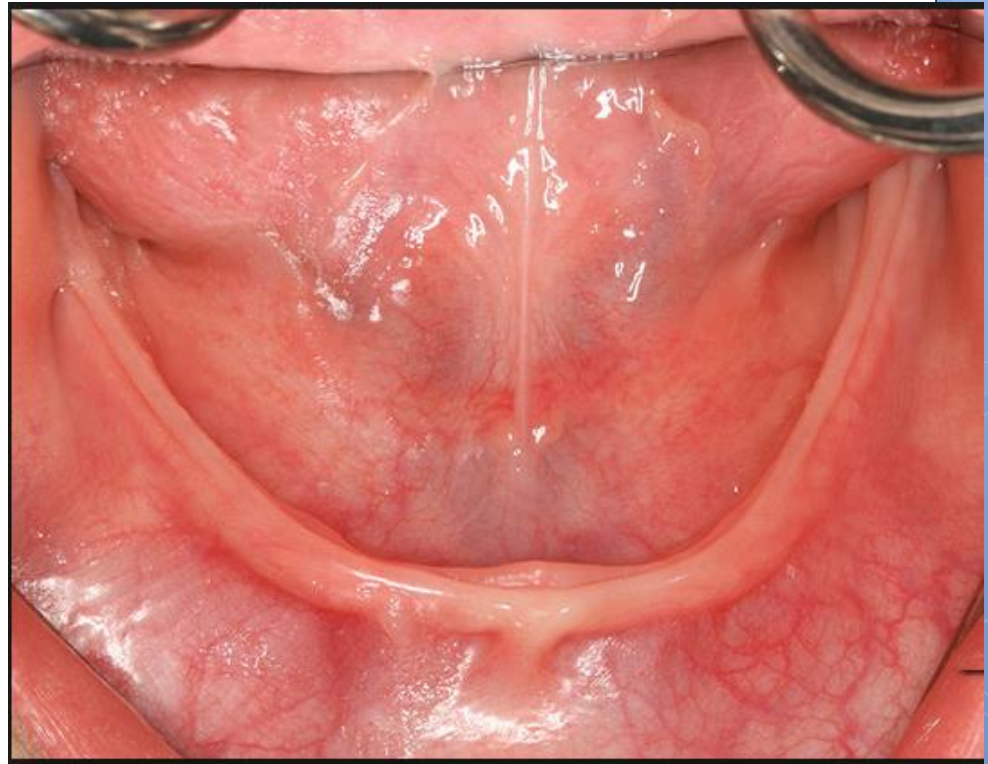
- a. labial vestibule
- b. buccal vestibule
- c. retromolar pad
- d. alveololingual sulcus
- e. retromylohyoid space



# Relief Structures

## 3. Relief Structures

- a. Labial frenum
- b. Buccal frenum
- c. Crest of residual ridge if sharp
- d. Mental foramen area if ridge is flat

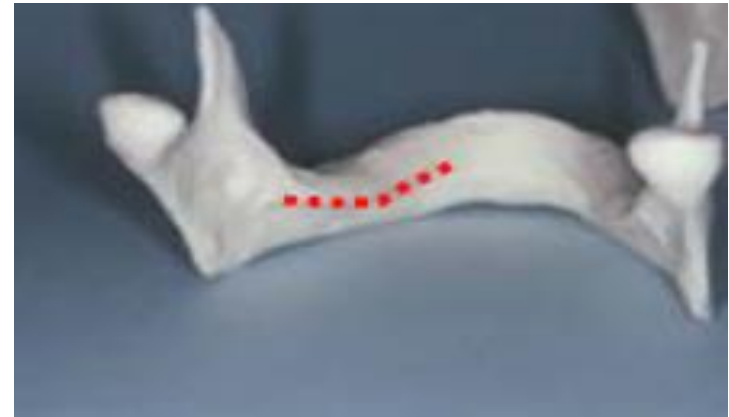


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## **CONSIDERATIONS FOR THE MANDIBULAR LANDMARKS**

## Lower Residual Ridge

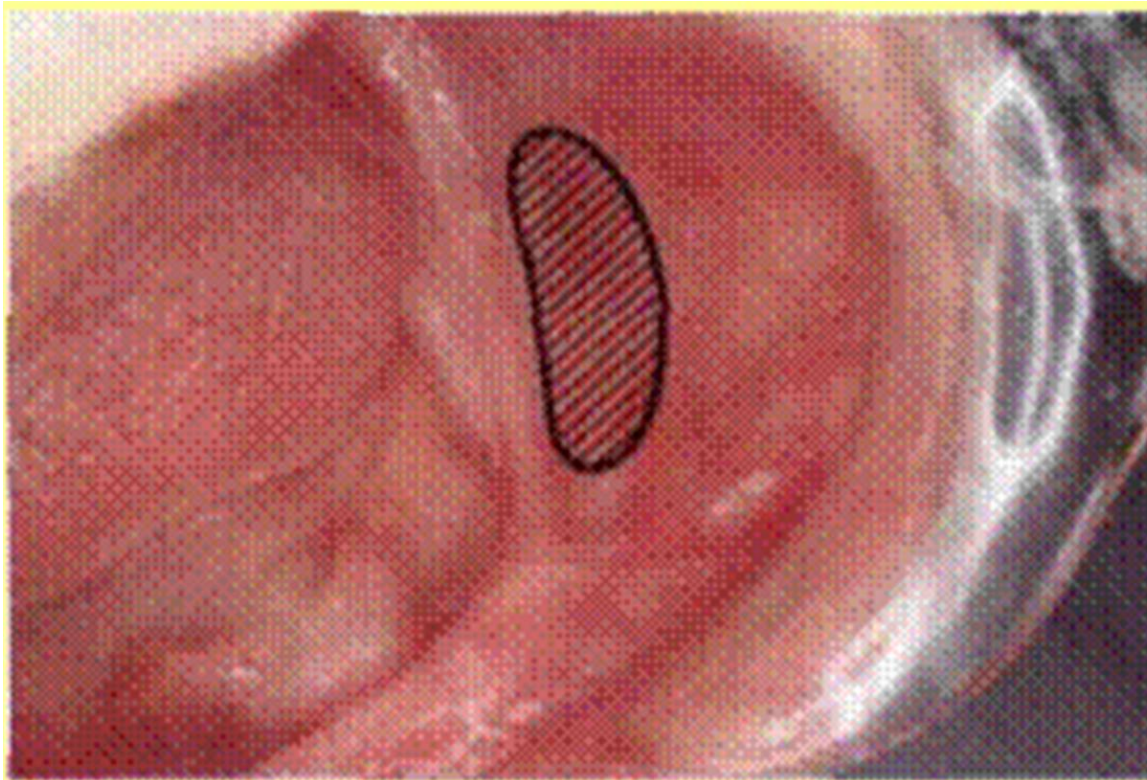
- Crest ( secondary relief area, made up of cancellous bone)
- Slope ( secondary stress bearing area, has thin plate of cortical bone)





## Buccal Shelf Area

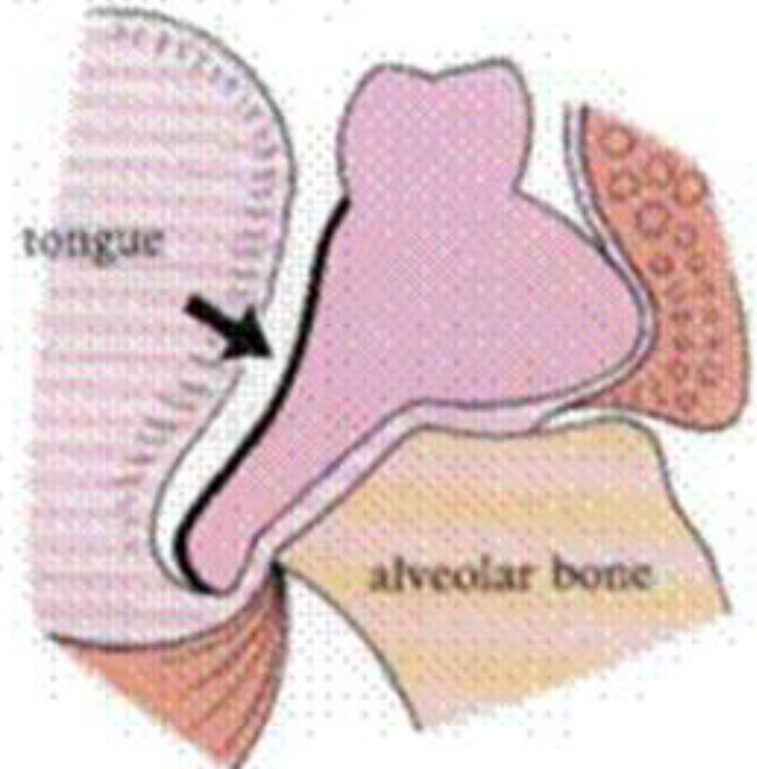
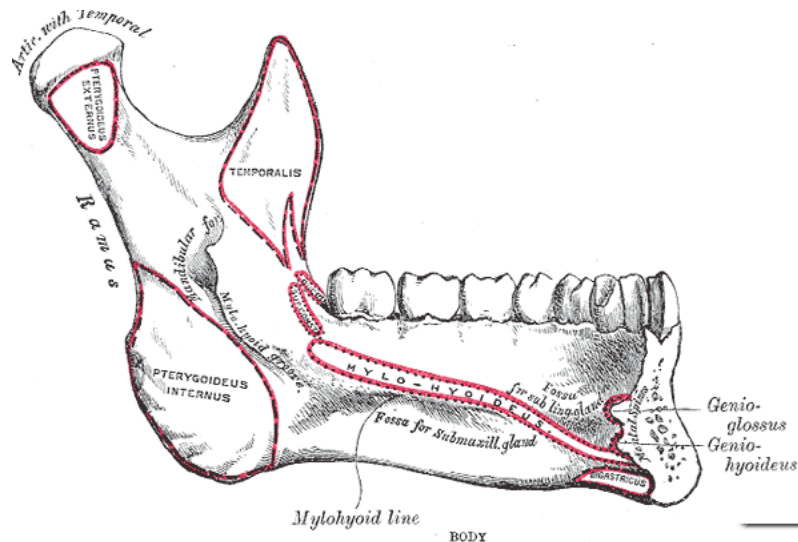
-Primary stress bearing area with dense smooth cortical bone





# Mylohyoid Ridge

- Where mylohyoid muscle is attached
- If the denture border is short of the mylohyoid ridge, it will dig into the residual ridge and cause pain.



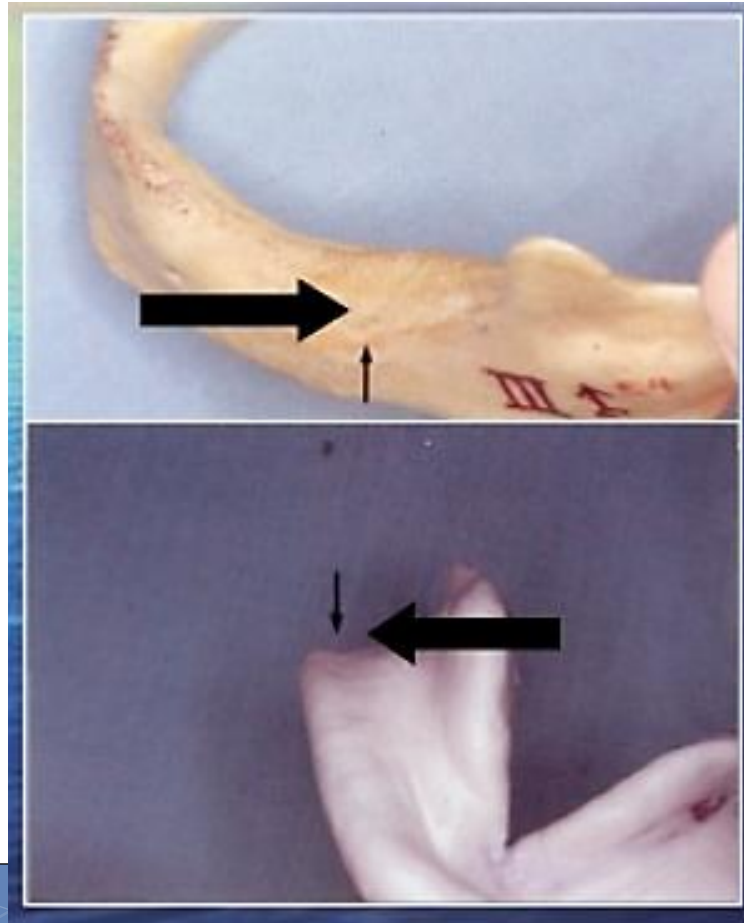
## Mental Foramen

- Relief area in cases of extremely resorbed ridges
- Pressure can cause numbness of the lip



## External Oblique Ridge

- Does not govern the extension of the buccal flange
- Denture border may extend 1 – 2mm beyond this ridge



# Retromolar Pad

-Forms part of the valve seal area



## Retromylohyoid Curtain

- Limits the distolingual part of the denture flange
- this is pulled forward when tongue is thrust out
- supported superiorly by the superior constrictor muscle and lingually by the anterior pillar of fauces



**Fig. 5.28:** Retromylohyoid fossa,  
Green: Mylohyoid muscle;  
Blue: Submandibular salivary gland



## Alveololingual Sulcus

- Extends from the lingual frenum to the myolohyoid curtain

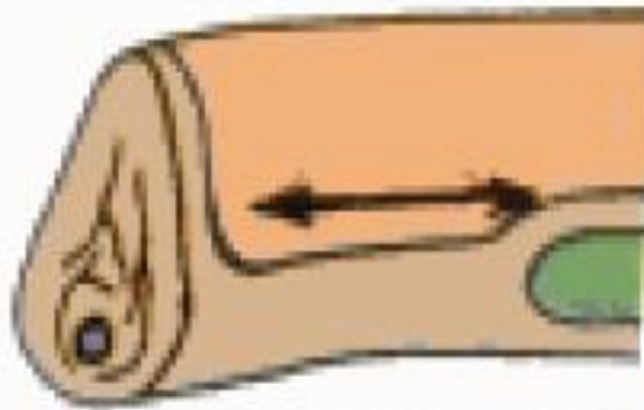
### Three regions:

1. Anterior
2. Middle
3. Posterior



## 1. ANTERIOR REGION

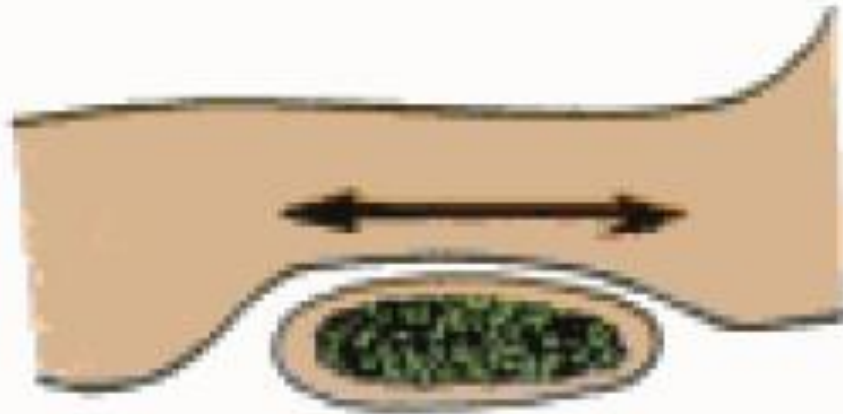
- Extends from the lingual frenum to the premylohyoid fossa.



**Fig. 5.25:** Anterior portion of the alveololingual sulcus

## 1. MIDDLE REGION

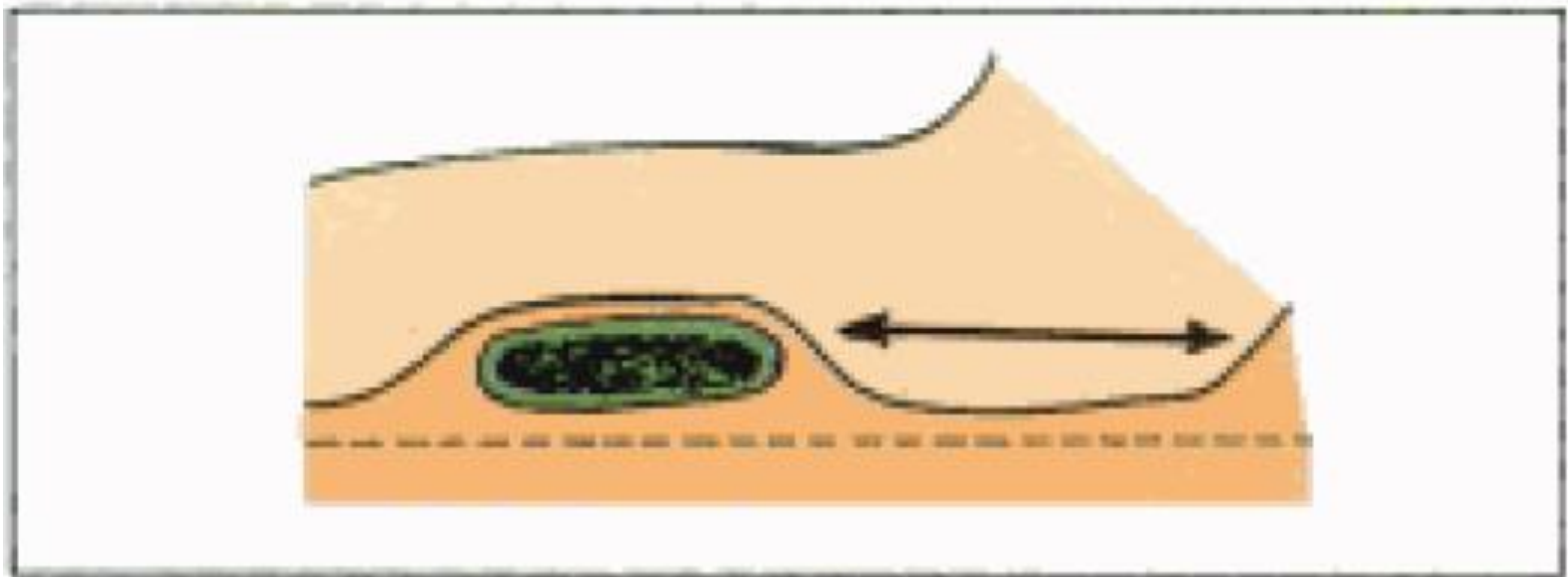
- Extends from the premylohyoid fossa to the distal end of the mylohyoid ridge.



**Fig. 5.26:** Middle portion of the alveololingual sulcus:  
Note that it is shallower than the anterior portion

## 1. POSTERIOR REGION

- The retromylohyoid fossa is present here.



**Fig. 5.27:** Posterior portion of the alveolo-lingual sulcus. It is commonly known as lateral throat form

## Lingual frenum

- Attaches the tongue anteriorly
- failure to relieve can cause soreness and dislodgement



## Genial Tubercle

- prominent only in severe ridge resorption
- relieve to avoid pain and soreness
- denture border should not rest on it

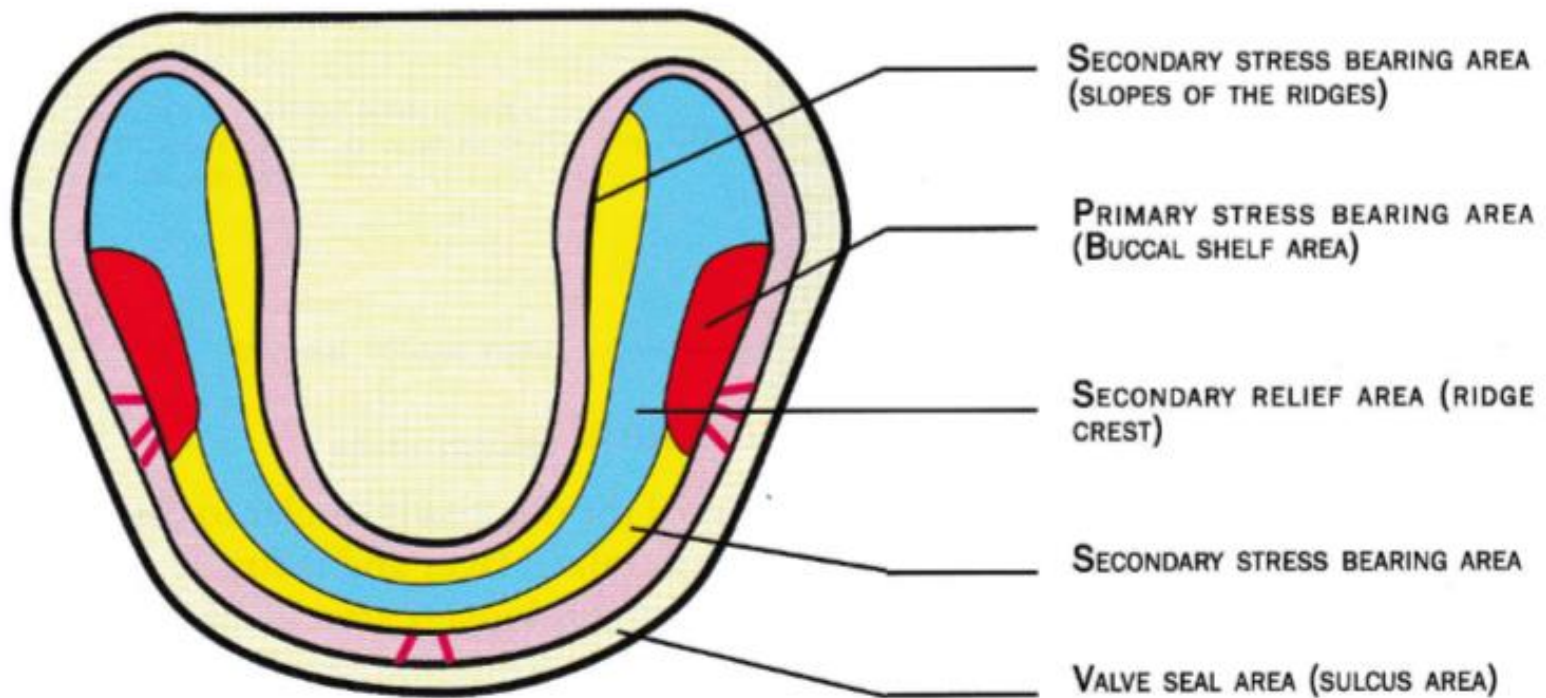


## Sublingual Gland Region

- sublingual gland comes close to the crest of the ridge when floor of the mouth is raised
- affects height of the flange









# QUESTIONS

THANK YOU

# DIAGNOSING THE COMPLETELY EDENTULOUS PATIENT



Prepared By:  
Peter Pascual Flores, DMD, MS

**Long term wear of  
dentures lead to changes  
in the oral tissues**

# Soft Tissue Reaction to Denture Wearing

# 1. Injury and inflammation

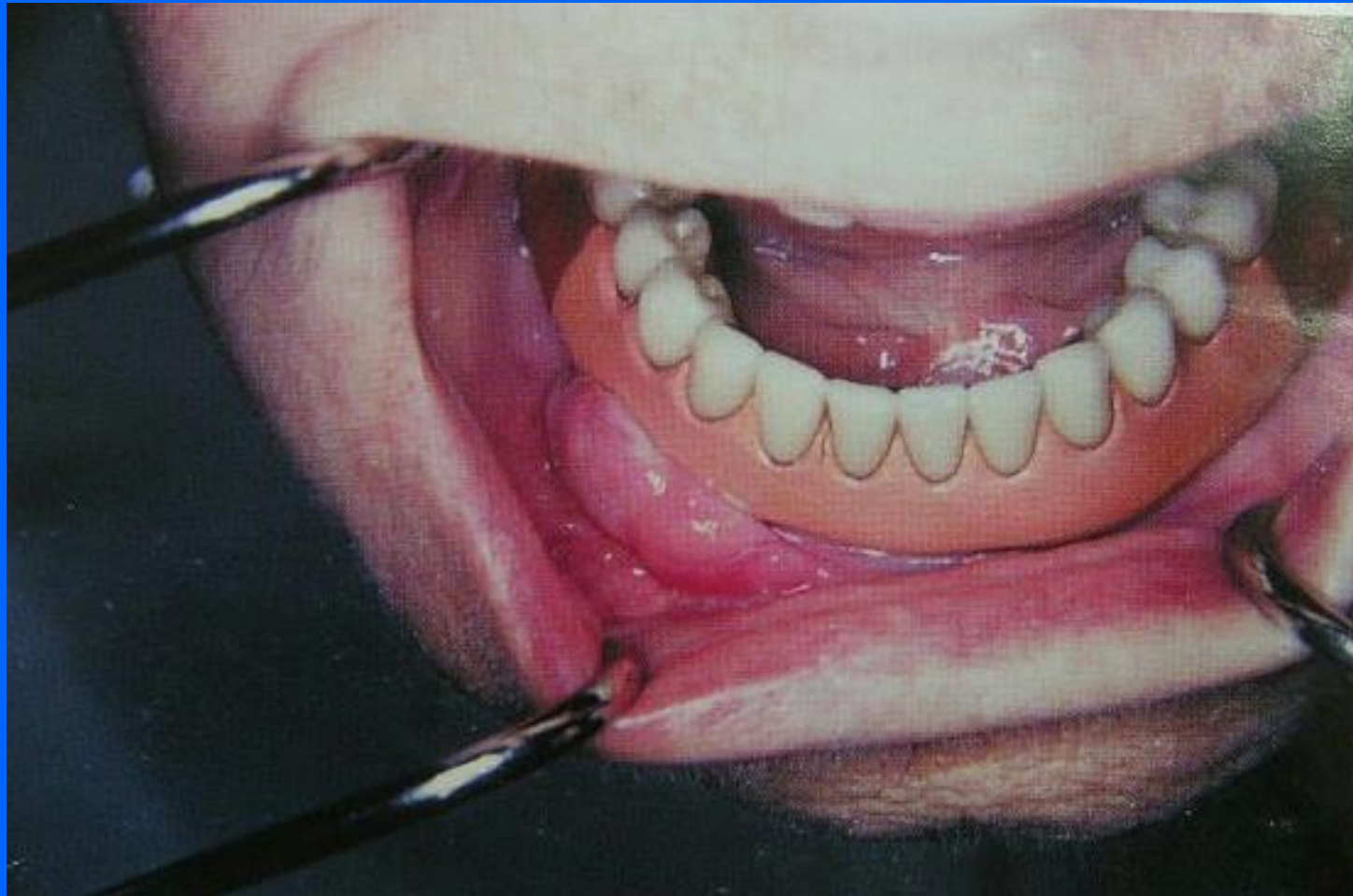
- if tolerance is low





## 2. Fibrous tissue growth ( flabby hyperplastic tissue)

- if tolerance is high and trauma tolerable



# Causes of Mucosal Irritation

1. Mechanical irritation by denture
2. Accumulation of microbial plaque on denture
3. Toxic or allergic reaction to constituents of denture material

*\* Local irritation of mucosa, increase mucosal permeability to allergens or microbial antigen*

# DIRECT SEQUELAE OF WEARING DENTURE

# **1. Denture Induced Stomatitis**

- ▶ Mild erythema or redness of the mucosa under the denture.
  - ▶ Usually occurs in the maxilla
  - ▶ Common in complete denture wearers
- 
- ▶ Incidence
    - ▶ Middle to old age
    - ▶ More common in females
    - ▶ Has been found in up to 70% of denture wearers



# Predisposing Factors

- ▶ Wearing dentures at night
- ▶ Dry mouth
- ▶ Diabetes
- ▶ Increased carbohydrate diet
- ▶ HIV





# Etiology

- ▶ Changes in the oral environment related to presence of dentures or removable orthodontic appliance
- ▶ Poor oral and denture hygiene
- ▶ Candida is the main cause (70%)
- ▶ Can also occur because of mechanical irritation and bacterial infections



# **Classifications of Denture Stomatitis: (Newton's Classification)**

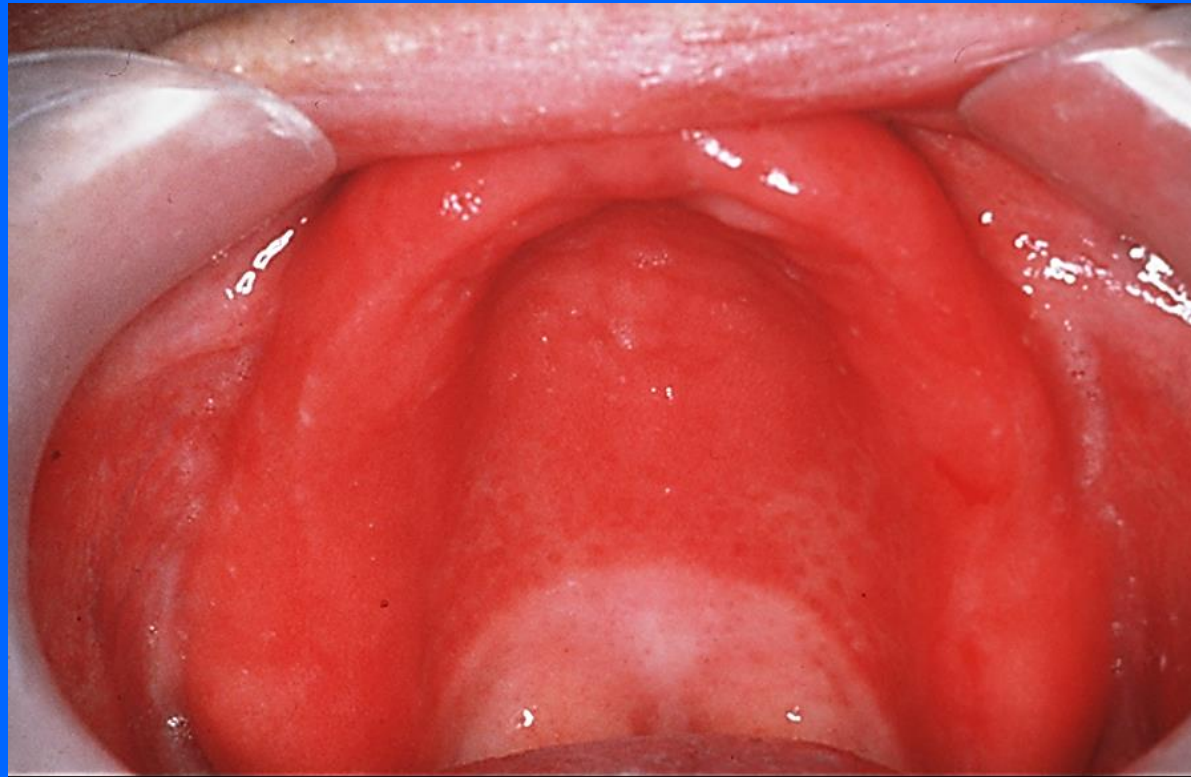
## A. Type I

- localized simple inflammation or pinpoint hyperemia,



## B. Type II

- a more diffuse erythema ( redness) involving a part or all the mucosa which covered by the denture.



## C. Type III

- inflammatory nodular/papillary hyperplasia commonly involving the central part of the hard palate and alveolar ridge



# **Management of Denture Stomatitis:**



# 1. Correction of ill-fitting dentures

- ▶ - relining with soft tissue conditioner
- ▶ - new denture when mucosa has healed

## Soft tissue conditioner/liner

a soft high-molecular material which is applied to the impression surface of the denture base, to release the distortion and indentation of mucosa.





## 2. Efficient plaque control (oral & denture hygiene)

► a. remove and clean denture after meal



► b. clean & massage mucosa with soft toothbrush



► c. remove dentures at night



### 3. Anti-fungal therapy

#### **Local therapy**

- a. ketoconazole
- b. amphotericin B
- c. miconazole
- d. clotrimazole

#### **Systemic therapy**

- a. Nystatin
- b. Fluconazole

## 2. Angular Cheilitis

Angular Cheilosis

Perleche

Stomatitis



► Often correlated with **candida-associated denture stomatitis.**

► **Predisposing Factors**

1. overclosure of jaw
2. nutritional deficiencies
3. iron deficiency anemia

**80% of angular cheilitis cases are associated with Denture wearers**

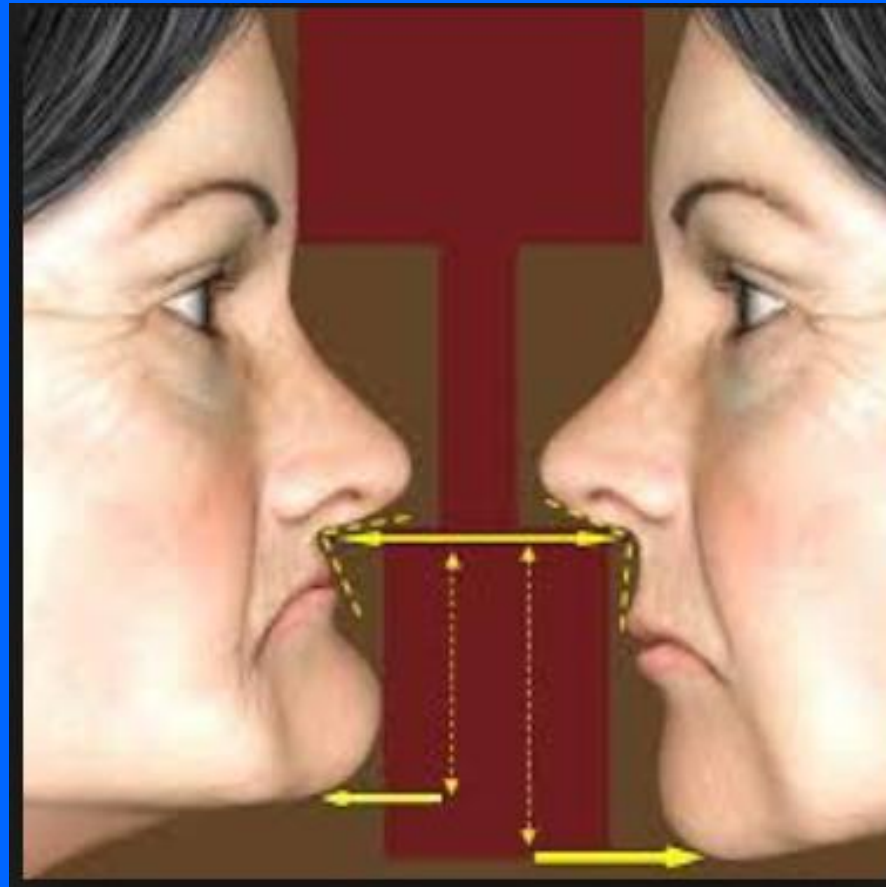


## Long term denture wearers:

attrition of teeth due to prolonged usage, and resorption of the residual ridges, results to decreased vertical dimension.



Decreased vertical dimension results to deepening of the nasolabial groove, specially at the corners of the mouth, which leads to collection of saliva in this area resulting in skin being dry and fissured



# **Management of Angular Cheilitis:**

- ▶ Due to its varied etiology, unless the primary cause is corrected, the infection is not primarily cured
- ▶ Antifungal, anti-inflammatory, or antimicrobial suspensions
- ▶ Corticosteroids
- ▶ Intralesional injections
- ▶ New dentures



### 3. Flabby Ridge



- ▶ Due to replacement of bone by fibrous tissue
- ▶ Most common in **anterior part of maxilla** when opposed by remaining anterior teeth in the mandible
- ▶ Cause by **excessive load of residual ridge and unstable occlusal condition**



# Management:

## **1. Remove surgically**

- to improve stability & to minimize alveolar ridge resorption

**2. In extreme atrophy,** not totally removed because vestibule will be eliminated.

## 4. Denture Irritation Hyperplasia (Epulis Fissuratum)

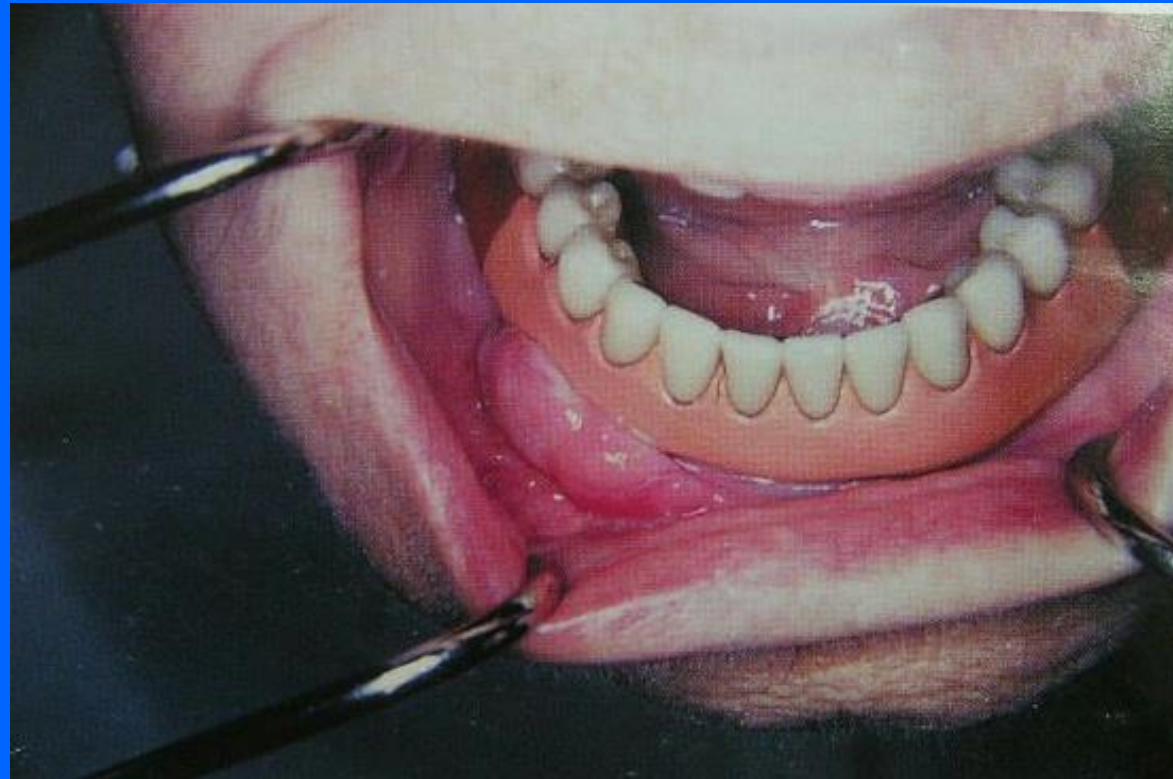
inflammatory fibrous hyperplasia,  
Denture-induced fibrous inflammatory hyperplasia,  
Denture injury tumor,  
Denture **epulis**,  
Denture induced granuloma  
, and Granuloma **fissuratum**

- a benign hyperplasia of fibrous connective tissue which develops as a reactive lesion to chronic mechanical irritation produced by the flange of a poorly fitting denture



# Causes:

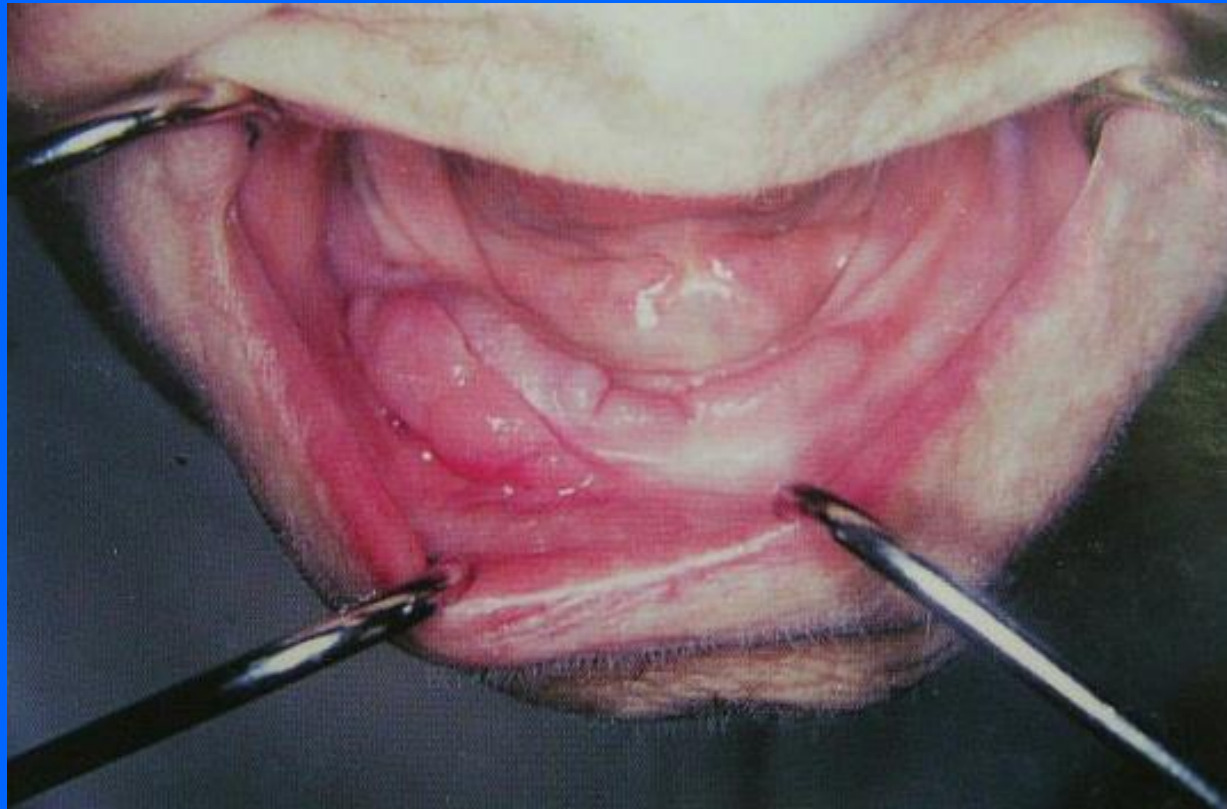
1. Chronic injury by unstable denture
2. Thin, overextended denture flange





# Signs

1. Maybe single or quite numerous
2. Composed of flaps of hyperplastic connective tissue





# Management

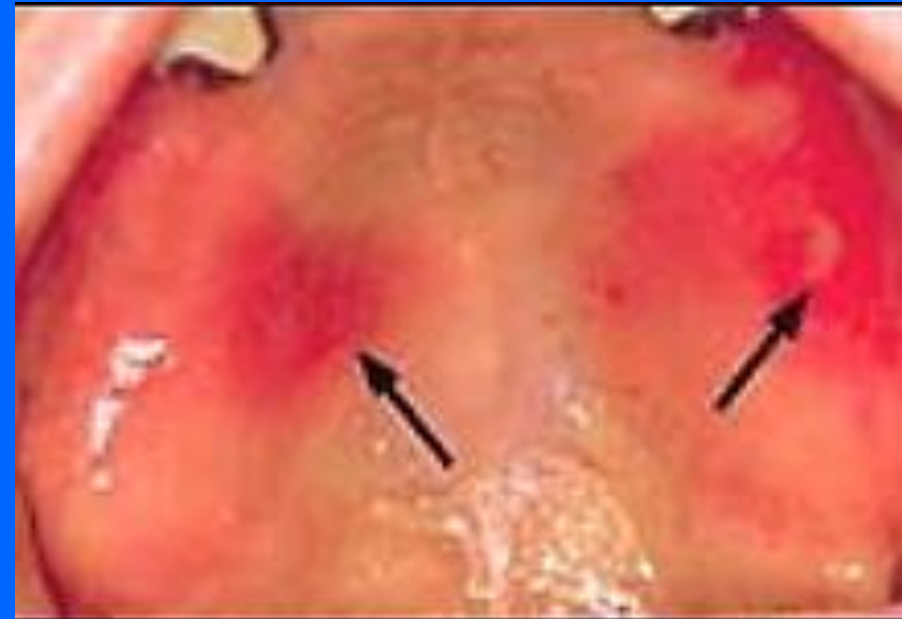
1. Adjustment of denture
2. Replacement of denture
3. Surgical excision



## 5. Traumatic Ulcers (Sore spots)

# Causes

1. Overextended denture flange
2. Unbalanced occlusion
3. Nodules on the impression surface



# Signs

1. Develop within 1 to 2 days after placement of new denture
2. Small and painful lesion, covered by a gray necrotic membrane, surrounded by an inflammatory halo with firm elevated border

# Management

- Adjustment of denture

- \* If not corrected may develop into denture irritation hyperplasia



## 6. Burning Mouth Syndrome (BMS)

the medical term for ongoing (chronic) or recurrent burning in the mouth without an obvious cause.

- ▶ This discomfort may affect the tongue, gums, lips, inside of your cheeks, roof of your mouth or widespread areas of your whole mouth.
- ▶ The burning sensation can be severe, as if you scalded your mouth.



# Signs

1. Burning sensation
2. Oral mucosa appears healthy
3. >50 yr. old females wearing denture
4. Often appears for the first time in association with the placement of new denture
5. Feeling of dry mouth with persistent altered taste perception
6. Headache, insomnia, decreased libido, irritability, depression

# Causes

| LOCAL                                                                                                                                                             | SYSTEMIC                                                                                                                                                                                                          | PSYCHOGENIC                                                                                                        |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"><li>A. mechanical irritation</li><li>B. allergy</li><li>C. infection</li><li>D. oral habits</li><li>E. myofacial pain</li></ul> | <ul style="list-style-type: none"><li>A. Vitamin deficiency ( Vit B12, Folic acid)</li><li>B. Iron deficiency anemia</li><li>C. Xerostomia (radiation therapy)</li><li>D. Menopause</li><li>E. Diabetes</li></ul> | <ul style="list-style-type: none"><li>A. Anxiety</li><li>B. Depression</li><li>C. Psychosocial stressors</li></ul> |

# Management

▶ depends on the cause

# 7. Gagging

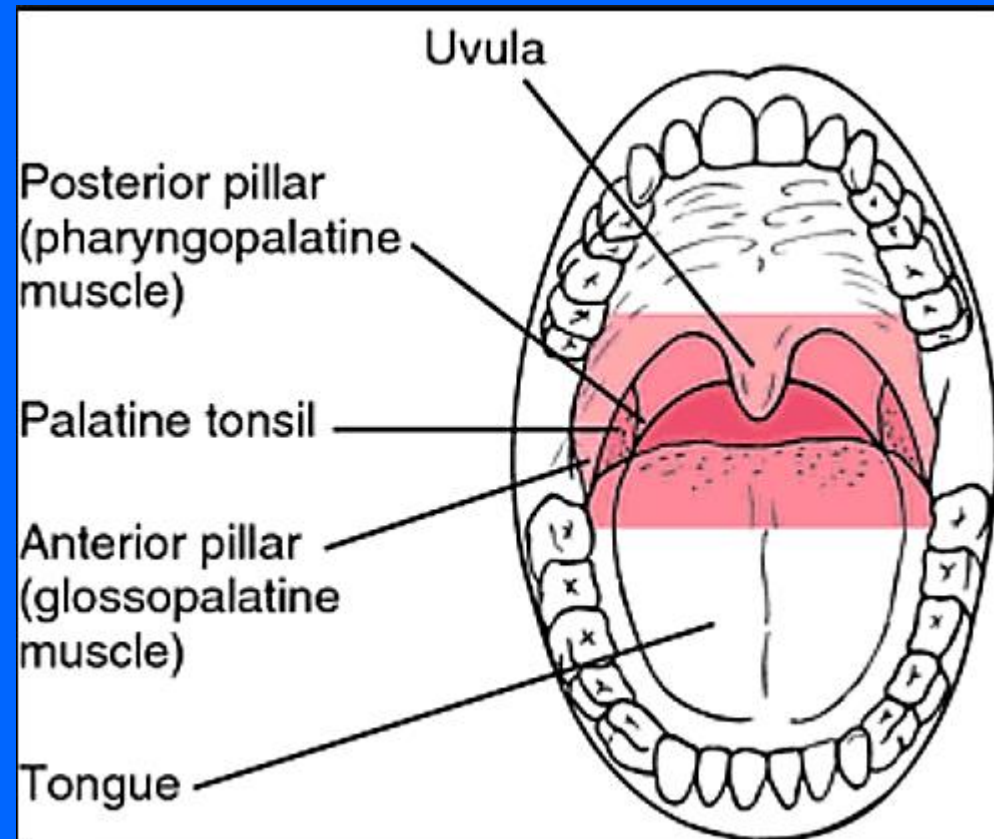
## Gag Reflex





- ▶ a normal mechanism which prevents unwanted material from entering the pharynx, larynx or trachea.
- ▶ It occurs from an “involuntary contraction of the muscles of the soft palate or pharynx
- ▶ primarily controlled by the parasympathetic division of autonomic nervous system.

- Normally, the palatoglossal and palatopharyngeal folds, base of tongue, palate, uvula, and posterior pharyngeal wall are trigger points of gag reflex



## CAUSES:

1. overextended borders
  - posterior part of maxillary denture
  - distolingual part of maxillary denture
2. poor retention of maxillary denture
3. unstable occlusal condition
4. increased vertical dimension at occlusion

# INDIRECT SEQUELAE OF WEARING DENTURE

# 1. Atrophy of masticatory muscles (masseter and medial pterygoid)

\*Cause – reduce bite force and chewing efficiency

## \* Preventive Measures and Management

A. use of overdenture

B. use of implant supported denture



## 2. Nutritional deficiency

### **\*Causes**

1. ill-fitting denture
2. salivary gland hypofunction
3. altered taste perception

### **\*Management**

- mechanical preparation of food before eating



# EXAMINATION & TREATMENT PLANNING OF COMPLETELY EDENTULOUS PATIENT



# **Definition of Terms:**

## ▶ *Diagnosis*

- ▶ - Art of distinguishing one disease from the other, determination of the nature of a case of a disease, an evaluation of an existing condition.

- ***Treatment Planning***

- -The process of matching possible treatment options with the patient needs and systematically arranging the treatment in order of priority but in keeping with a logical or technically necessary sequence

- ***Treatment Plan***
  - - An initial, tentative outline of therapeutic measures to be undertaken in accordance with diagnostic data and indications.

After having the complete case history and diagnosis, the dentist should create in his mind how to follow or what further steps to make, before the commencement of the treatment.

- ▶ ADJUNCTIVE CARE:
- ▶ 1. ELIMINATION OF INFECTION
- ▶ 2. ELIMINATION OF PATHOLOGY
- ▶ 3. PREPROSTHETIC SURGERY
- ▶ 4. TISSUE CONDITIONS
- ▶ 5. NUTRITIONAL COUNSELING



- ***Prognosis***

- Probable outcome of the treatment

# DATA COLLECTION AND RECORDING

- ▶ Questions
- ▶ Records
- ▶ Visual Observation
- ▶ Radiographic Examination
- ▶ Palpation
- ▶ Measurement
- ▶ Diagnostic Cast

CHART NO. \_\_\_\_\_  
DATE: \_\_\_\_\_**NATIONAL UNIVERSITY  
COLLEGE OF DENTISTRY  
PATIENT'S CHART**

Medical Alert

**PERSONAL DATA**

|                                                                                        |                                             |                |                          |                 |
|----------------------------------------------------------------------------------------|---------------------------------------------|----------------|--------------------------|-----------------|
| <input type="checkbox"/> Mr <input type="checkbox"/> Miss <input type="checkbox"/> Mrs | Print full legal name: Last/ First / Middle |                |                          |                 |
| Preferred name:                                                                        |                                             |                |                          |                 |
| <input type="checkbox"/> Female <input type="checkbox"/> Male                          | Date of birth:                              | Age:           | Religion:                | Marital Status: |
| Occupation:                                                                            | No. of Kids:                                | Height:        | Weight:                  |                 |
| Permanent address:                                                                     |                                             |                |                          |                 |
| Telephone #:                                                                           | Cell Phone #:                               | E-mail address |                          |                 |
| Emergency contact person: Last/ First /Middle                                          |                                             |                | Relationship to patient: |                 |
| Address:                                                                               |                                             | Telephone #:   | Cell Phone #:            |                 |

**CHIEF COMPLAINT:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**HISTORY OF PRESENT ILLNESS:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**PHYSICAL ASSESSMENT:**

VITAL SIGNS: Date and Time taken: \_\_\_\_\_

BP: \_\_\_\_\_ PR: \_\_\_\_\_ RR: \_\_\_\_\_ TEMP: \_\_\_\_\_

**MEDICAL HISTORY**

Under a physician's care? \_\_\_\_\_

Hospitalization \_\_\_\_\_

Allergies \_\_\_\_\_

Illnesses \_\_\_\_\_

List of medications, vitamins or herbal supplements \_\_\_\_\_

Childhood disease History \_\_\_\_\_

**MEDICAL HEALTH QUESTIONNAIRE**

CHECK IF YOU HAVE BEEN/ARE DIAGNOSED/ARE FEELING ANY OF THE FOLLOWING:

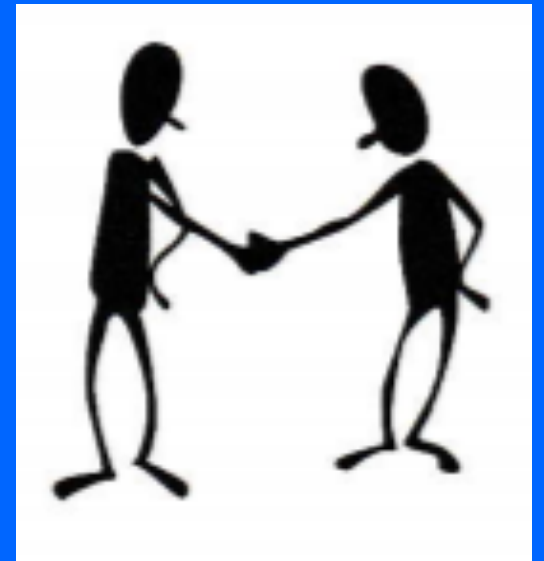
- |                                                       |                                              |                                                       |
|-------------------------------------------------------|----------------------------------------------|-------------------------------------------------------|
| <input type="checkbox"/> High blood pressure          | <input type="checkbox"/> Afternoon fever     | <input type="checkbox"/> Abdominal discomfort         |
| <input type="checkbox"/> Diabetes                     | <input type="checkbox"/> Chronic cough       | <input type="checkbox"/> Acidic Reflux                |
| <input type="checkbox"/> Osteoporosis                 | <input type="checkbox"/> Bloody Sputum       | <input type="checkbox"/> Bleeding or bruising easily  |
| <input type="checkbox"/> Herpes/ Cold sores           | <input type="checkbox"/> Tuberculosis        | <input type="checkbox"/> Recreational Drugs           |
| <input type="checkbox"/> Radiation treatments         | <input type="checkbox"/> Frequent headaches/ | <input type="checkbox"/> Steroid therapy              |
| <input type="checkbox"/> Chemotherapy                 | Dizziness                                    | <input type="checkbox"/> Blood / pus in the urine     |
| <input type="checkbox"/> Artificial heart valves      | <input type="checkbox"/> Visual impairment   | <input type="checkbox"/> Pain upon urination          |
| <input type="checkbox"/> Heart attack                 | <input type="checkbox"/> Hearing impairment  | <input type="checkbox"/> Kidney / liver problems      |
| <input type="checkbox"/> Pacemakers                   | <input type="checkbox"/> Arthritis           | <input type="checkbox"/> Hepatitis (A, B, C, D)       |
| <input type="checkbox"/> Angioplasty with stent       | <input type="checkbox"/> Pain in joints      | <input type="checkbox"/> HIV positive                 |
| <input type="checkbox"/> Stroke                       | <input type="checkbox"/> Tremors             | <input type="checkbox"/> Sexually transmitted Disease |
| <input type="checkbox"/> Angina pectoris (chest pain) | <input type="checkbox"/> Swollen ankles      | (please indicate)                                     |
| <input type="checkbox"/> Frequent high fever          | <input type="checkbox"/> Goiter              | <input type="checkbox"/> Fainting spells              |
| <input type="checkbox"/> Sinusitis                    | <input type="checkbox"/> Frequent thirst     | <input type="checkbox"/> Depression                   |
| <input type="checkbox"/> Emphysema                    | <input type="checkbox"/> Frequent hunger     | <input type="checkbox"/> Others (please               |
| <input type="checkbox"/> Asthma                       | <input type="checkbox"/> Frequent urination  | indicate)                                             |
| <input type="checkbox"/> Breathing Problems           | <input type="checkbox"/> Sudden weight loss  |                                                       |

**NATIONAL UNIVERSITY  
COLLEGE OF DENTISTRY****REMOVABLE PROSTHODONTICS – COMPLETE DENTURE**

|                                                                                                                                                                                                       |            |                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|---------------------|
| CLINICIAN'S NAME                                                                                                                                                                                      |            | DATE STARTED        |
| FACULTY APPROVAL                                                                                                                                                                                      |            | ARCH TO BE RESTORED |
| <b>CHOSEN TREATMENT OPTION</b><br>___ Conventional Complete Denture ___ Immediate Denture ___ Overdenture (Please specify abutments)<br>___ Reline/Rebase                                             |            |                     |
| PATIENT'S NAME                                                                                                                                                                                        | AGE/GENDER | OCCUPATION          |
| <b>CHIEF COMPLAINT</b>                                                                                                                                                                                |            |                     |
| <b>SYSTEMIC STATUS</b> (Last Physical Check up/Medical History/Medications)                                                                                                                           |            |                     |
| <b>DENTAL HISTORY</b><br>Reasons for loss of tooth/teeth: ___ Periodontal ___ Caries ___ Other (Please specify)<br>Recently extracted edentulous site? ___ Yes ___ No Months extracted? ___ Location: |            |                     |
| Number of dentures worn:                                                                                                                                                                              |            |                     |
| Type of previous dentures:                                                                                                                                                                            |            |                     |
| <b>MENTAL ATTITUDE</b><br>___ Philosophical ___ Exacting ___ Hysterical ___ Indifferent                                                                                                               |            |                     |
| <b>PATIENT EXPECTATIONS</b><br>___ Understands limitations ___ Function ___ Esthetics                                                                                                                 |            |                     |
| <b>DIAGNOSIS</b>                                                                                                                                                                                      |            |                     |
| Roentgenographic Findings (if necessary)                                                                                                                                                              |            |                     |
| Facial Profile ___ Straight ___ Concave ___ Convex                                                                                                                                                    |            |                     |
| Facial Form ___ Ovoid ___ Tapered ___ Square ___ Others (Please specify)                                                                                                                              |            |                     |
|                                                                                                                                                                                                       | Maxillary  | Mandibular          |
| Residual Ridge Contour                                                                                                                                                                                |            |                     |
| Mucosa (keratinized/nonkeratinized)                                                                                                                                                                   |            |                     |
| Tongue (size, position)                                                                                                                                                                               |            |                     |
| Frenum Attachments                                                                                                                                                                                    |            |                     |
| Tori/Exostoses                                                                                                                                                                                        |            |                     |
| Salivary Flow                                                                                                                                                                                         |            |                     |
| Muscle Tonus                                                                                                                                                                                          |            |                     |
| <b>SURGICAL PRE PROSTHETIC PROCEDURES NECESSARY</b>                                                                                                                                                   |            |                     |
| ___ Extraction of roots remaining (Tooth #/s _____)                                                                                                                                                   |            |                     |
| ___ Extraction of unerupted (Tooth #/s _____)                                                                                                                                                         |            |                     |
| ___ Removal of torus/exostosis (Site _____)                                                                                                                                                           |            |                     |
| ___ Others: _____                                                                                                                                                                                     |            |                     |

# The First Meeting

- ▶ Most important
- ▶ Prior to meeting, you should review general information
- ▶ Your confidence is as important as the treatment itself
- ▶ You should be a good listener
- ▶ Your communication should be simple and truthful.



**EXAMINATION**

## ▶ **Case History**

- ▶ General information, chief complaint, history of present illness, past history, systems review

## ▶ **Clinical Examination**

- ▶ General appraisal of the patient, detailed oral exam, special exam when indicated

## ▶ **Diagnosis**

- ▶ Etiology and significance
- ▶ prognosis

## ▶ **Treatment Plan**

- ▶ Ideal
- ▶ alternative



# Case History

# 1. General Information

- ▶ **Name** (address by name to add a personal touch)
- ▶ **Address & telephone number** (contact)
- ▶ **Birth or age** (capacity to withstand stress, healing, diseases)
- ▶ **Occupation** (value on esthetic and quality of the denture, type of work, working schedule, financial status)
- ▶ **Sex** (women on appearance, men on comfort & function)



CHART NO. \_\_\_\_\_  
DATE: \_\_\_\_\_



**NATIONAL UNIVERSITY  
COLLEGE OF DENTISTRY  
PATIENT'S CHART**



Medical Alert

**PERSONAL DATA**

|                                                                                        |  |                                             |      |                          |                 |
|----------------------------------------------------------------------------------------|--|---------------------------------------------|------|--------------------------|-----------------|
| <input type="checkbox"/> Mr <input type="checkbox"/> Miss <input type="checkbox"/> Mrs |  | Print full legal name: Last/ First / Middle |      |                          |                 |
| Preferred name:                                                                        |  |                                             |      |                          |                 |
| <input type="checkbox"/> Female <input type="checkbox"/> Male                          |  | Date of birth:                              | Age: | Religion:                | Marital Status: |
| Occupation:                                                                            |  | No. of Kids:                                |      | Height:                  | Weight:         |
| Permanent address:                                                                     |  |                                             |      |                          |                 |
| Telephone #:                                                                           |  | Cell Phone #:                               |      | E-mail address           |                 |
| Emergency contact person: Last/ First /Middle                                          |  |                                             |      | Relationship to patient: |                 |
| Address:                                                                               |  | Telephone #:                                |      | Cell Phone #:            |                 |

**CHIEF COMPLAINT:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**HISTORY OF PRESENT ILLNESS:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## 2. Personal & Social History

- ▶ **Marital status**

- ▶ duration, number of children, etc

- ▶ **Habits**

- ▶ Alcohol, oral habits, tobacco

- ▶ **Personality**

- ▶ Moody, sociable, easygoing, complaining ,etc

- ▶ **Weight**

- ▶ Recent loss or gain of weight

## 2. Chief Complaint

- ▶ A symptom or symptoms in the **patient's own words** relating to the presence of an abnormal condition
- ▶ Why is he seeking treatment?
- ▶ Assess if the patient's expectation is realistic or not

# 3. History of Present Illness

- ▶ A **chronological account of the chief complaint** and associated symptoms from the time of onset to the time the history is taken
- ▶ Include the date of onset of the chief complaint, type of onset, character, location, and relation to other activities



# CENTRO ESCOLAR UNIVERSITY

School of Dentistry

Manila \* Malolos \* Makati

Oral Diagnosis Section

## Oral Diagnosis Form

Name: LOLITA Z. REY Home Address: 6373 MN DEL PILAR ST. LA HUERSA PARAÑAQUE  
Birth Date: MARCH 9 1950 Age: 43 Gender: F Ht: 4'9 Wt: 127.5 Civil Status: MARRIED  
Tel No. \_\_\_\_\_ Nationality: PHILIPINO Occupation: SELF EMPLOYED Religion: CATHOLIC

### CASE HISTORY

#### A. Chief Complaints:

1. "HAINIRAPAN AKO KUMAIN"

2. "NINSA NATATANSAL KAPAG NAPOBO AKO"

3. \_\_\_\_\_

4. \_\_\_\_\_

B. History of Present Illness: THE PATIENT IS EXPERIENCING DIFFICULTY WHEN SHE IS  
EATING. SHE IS COMPLAINING BECAUSE HER DENTURE IS NOT FITTING. HER LAST VISIT TO THE  
DENTIST WAS ON THE YEAR 1981 FOR THE CONSTRUCTION OF HER COMPLETE DENTURE

# 4. Past Medical History

- ▶ Patient's general health prior to the onset of the present illness
- ▶ **Medical conditions**
- ▶ **Medications**

**PHYSICAL ASSESSMENT:**

VITAL SIGNS: Date and Time taken: \_\_\_\_\_

BP: \_\_\_\_\_ PR: \_\_\_\_\_ RR: \_\_\_\_\_ TEMP: \_\_\_\_\_

**MEDICAL HISTORY**

Under a physician's care? \_\_\_\_\_

Hospitalization \_\_\_\_\_

Allergies \_\_\_\_\_

Illnesses \_\_\_\_\_

List of medications, vitamins or herbal supplements \_\_\_\_\_

Childhood disease History \_\_\_\_\_

**MEDICAL HEALTH QUESTIONNAIRE**

CHECK IF YOU HAVE BEEN/ARE DIAGNOSED/ARE FEELING ANY OF THE FOLLOWING:

☐ High blood pressure☐ Afternoon fever☐ Abdominal discomfort☐ Diabetes☐ Chronic cough☐ Acidic Reflux☐ Osteoporosis☐ Bloody Sputum☐ Bleeding or bruising easily☐ Herpes/ Cold sores☐ Tuberculosis☐ Recreational Drugs☐ Radiation treatments☐ Frequent headaches/☐ Steroid therapy☐ Chemotherapy

Dizziness

☐ Blood / pus in the urine☐ Artificial heart valves☐ Visual impairment☐ Pain upon urination☐ Heart attack☐ Hearing impairment☐ Kidney / liver problems☐ Pacemakers☐ Arthritis☐ Hepatitis (A, B, C, D)☐ Angioplasty with stent☐ Pain in joints☐ HIV positive☐ Stroke☐ Tremors☐ Sexually transmitted Disease☐ Angina pectoris (chest pain)☐ Swollen ankles

(please indicate)

☐ Frequent high fever☐ Goiter☐ Fainting spells☐ Sinusitis☐ Frequent thirst☐ Depression☐ Emphysema☐ Frequent hunger☐ Others (please☐ Asthma☐ Frequent urination

indicate) \_\_\_\_\_

☐ Breathing Problems☐ Sudden weight loss

# Medical Conditions Directly Affecting the Mouth

## 1. Anemia

- soreness of tongue and palate may occur
- in severe cases, pallor & breathlessness

## 2. Stroke

- may lead to loss of use of muscles of the face

## 3. Arthritic disease

- rheumatoid arthritis or osteoarthritis may rarely affect the TMJ
- special trays are needed if unable to open mouth wide, jaw relation recording may be difficult

# Medical Conditions Directly Affecting the Mouth

## 4. Diabetes

- more susceptible to infection
- healing maybe slower
- rate of bone resorption may increase

## 5. Epilepsy & Blackouts

- danger of fracture of denture

## 6. Parkinson's disease

- loss of muscular coordination

## 7. Allergies

- hypersensitivity to materials

# Medical Conditions Directly Affecting the Mouth

## 8. Cardiovascular diseases and disorders

- short appointments with premedication (history of angina & heart attack)
- antibiotic prophylaxis
- increased blood pressure is not contraindicated if under medication

## 9. Transmissible diseases

- diseases can be transmitted from patient to dentist and laboratory personnel
- tuberculosis, AIDS, hepatitis, herpes, SARS

## 10. Psychological disorders

- anxiety, depression or hysteria might be difficult patients



# Drugs Adversely Affecting CD

## 1. Steroids

- suppress the inflammatory reaction
- retard healing of mucosa after trauma
- osteoporosis of jaw bones is likely
- dryness of mouth
- confusion
- behavioral changes

## 2. Antidepressants

- some suppress salivary secretions

# Drugs Adversely Affecting CD

## 3. Diuretics

- dryness of mouth
- change in the shape of the mucosa

## 4. Immunosuppressants

- mucosa is slow to heal

## 5. Anti-hypertensive

- dry mouth
- postural hypertension

# Drugs Adversely Affecting CD

## 6. Anticoagulants

- important considerations when preprosthetic surgery or deep scaling is planned.

## 7. Antiparkinsonism

- dryness of skin and mucosa
- confusion
- behavioral changes

# Mental Health / Attitude

## House's Classification of Patients

| Type of patient               | Attitude    | Principal Characteristics  | Prognosis |
|-------------------------------|-------------|----------------------------|-----------|
| <b>Philosophical</b>          | trusting    | Accepts advise             | good      |
| <b>Exacting / critical</b>    | doubting    | Gives advise to surgeon    | Fair/poor |
| <b>Hysterical / Skeptical</b> | demanding   | Unpleasant past experience | poor      |
| <b>Indifferent</b>            | unconcerned | Sent by relatives          | fair      |

# 5. Past Dental History

- ▶ Etiology of tooth loss
- ▶ Previous denture
- ▶ Existing denture
  - degree of wear
  - cleanliness
  - type of denture
  - retention & stability
  - occlusion
  - fit

# 6. Family History

- ▶ General health of the family
- ▶ History of mental disease
- ▶ Cause of death of parent if deceased
- ▶ Diseases in the family



# 7. Systems Review

- ▶ **Head**-headache, eyes, ears, nose, throat
- ▶ **Cardiorespiratory**-chest pains, rheumatic fever, dyspnea
- ▶ **Gastrointestinal**-sore tongue, nausea & vomiting, diarrhea
- ▶ **Genitourinary**-polyuria, edema, menopause
- ▶ **Neuromuscular**-paresthesia, arthritis, paralysis, tremors

# QUESTIONS?

Thank you !!!  
**15 MINUTES BREAK**



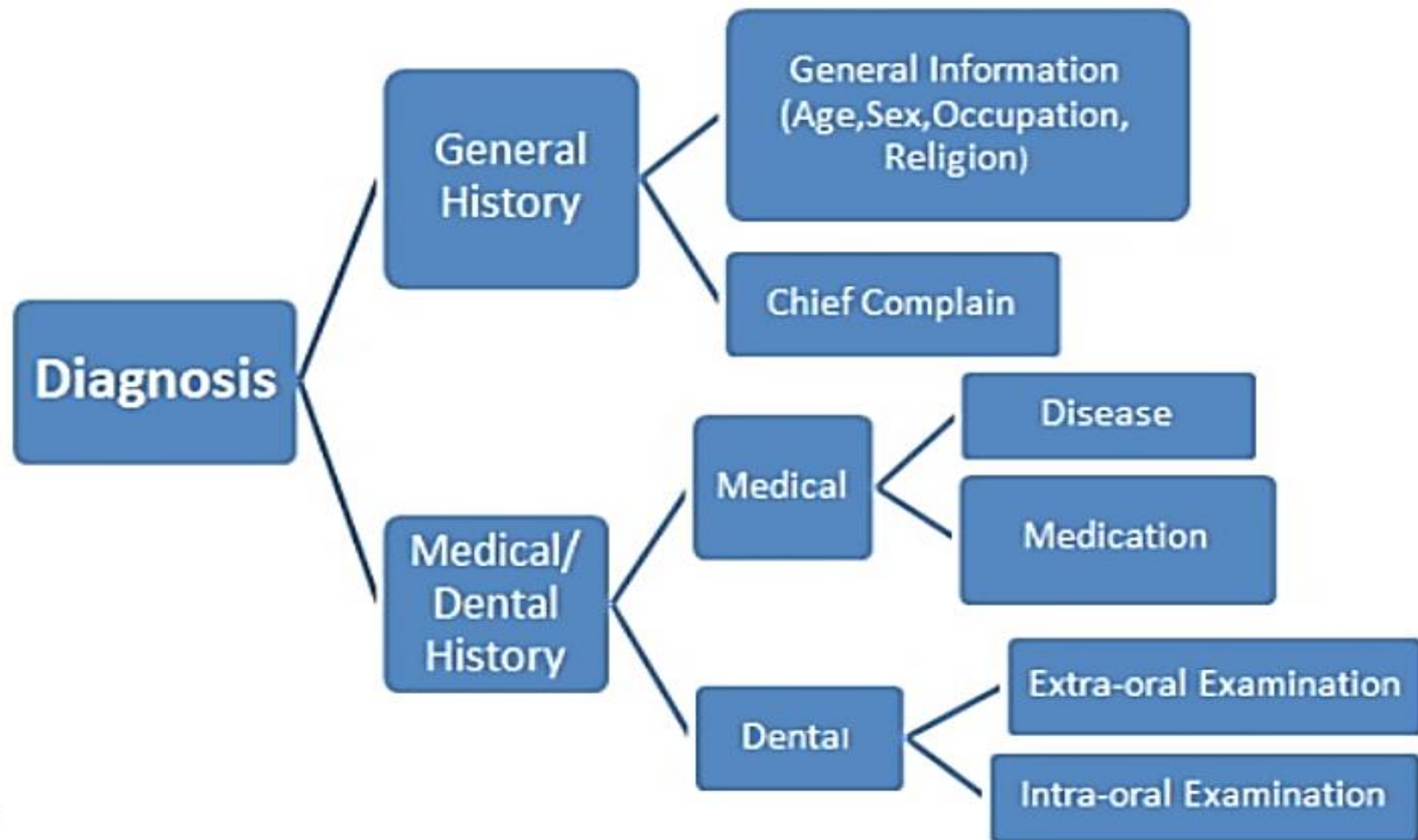
**LORD DONKEY**



## LESSON 04

# History & Clinical Examination

Prepared By:  
Peter Pascual Flores, DMD, MS





# CLINICAL EXAMINATION

INCLUDES:

EXTRA-ORAL EXAMINATION

INTRA-ORAL EXAMINATION



# ***EXTRAORAL EXAMINATION***



# Extraoral Observations

- ▶ Appearance
- ▶ Bearing and manner
- ▶ Gait (manner of walking)
- ▶ Facial color, sweating
- ▶ Any obvious swelling or disproportion of face
- ▶ Wearing eyeglasses, hearing aids

## DIAGNOSIS

Roentgenographic Findings (if necessary)

Facial Profile   ☐ Straight   ☐ Concave   ☐ Convex

Facial Form   ☐ Ovoid   ☐ Tapered   ☐ Square   ☐ Others (Please specify)

Maxillary

Mandibular

Residual Ridge Contour

Mucosa (keratinized/nonkeratinized)

Tongue (size, position)

Frenum Attachments

Tori/Exostoses

Salivary Flow

Muscle Tonus



# **Frontal Face Form Classification (Outline of the Face)**

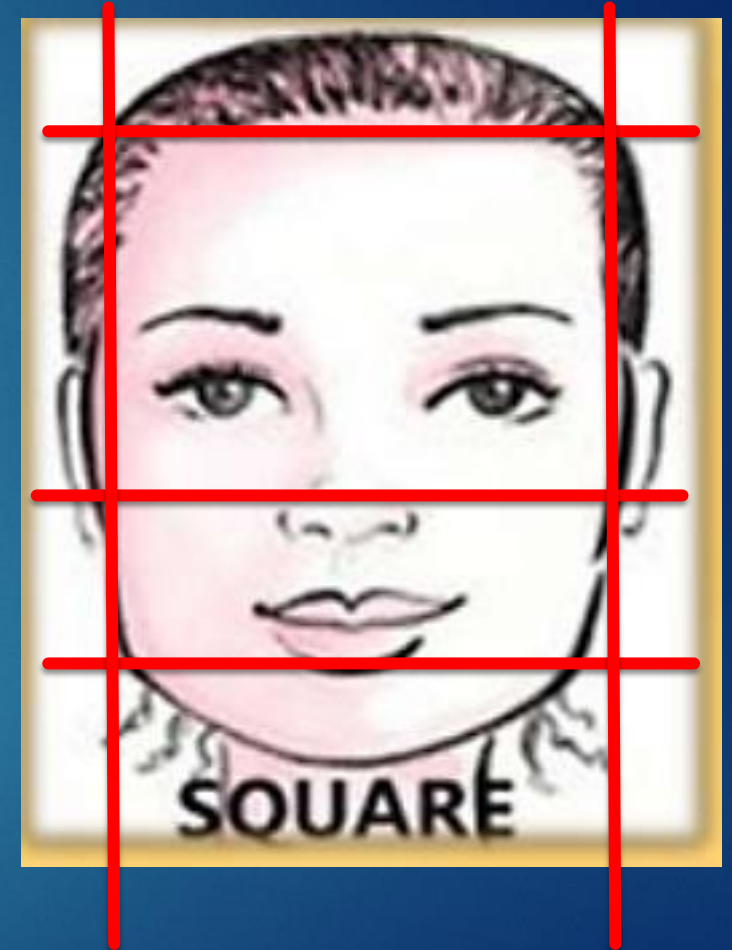


# According to House & Loop, Frush, Fisher & Williams:

- a. Square
- b. Tapering
- c. Ovoid
- d. Square Tapering

# *The Square Face*

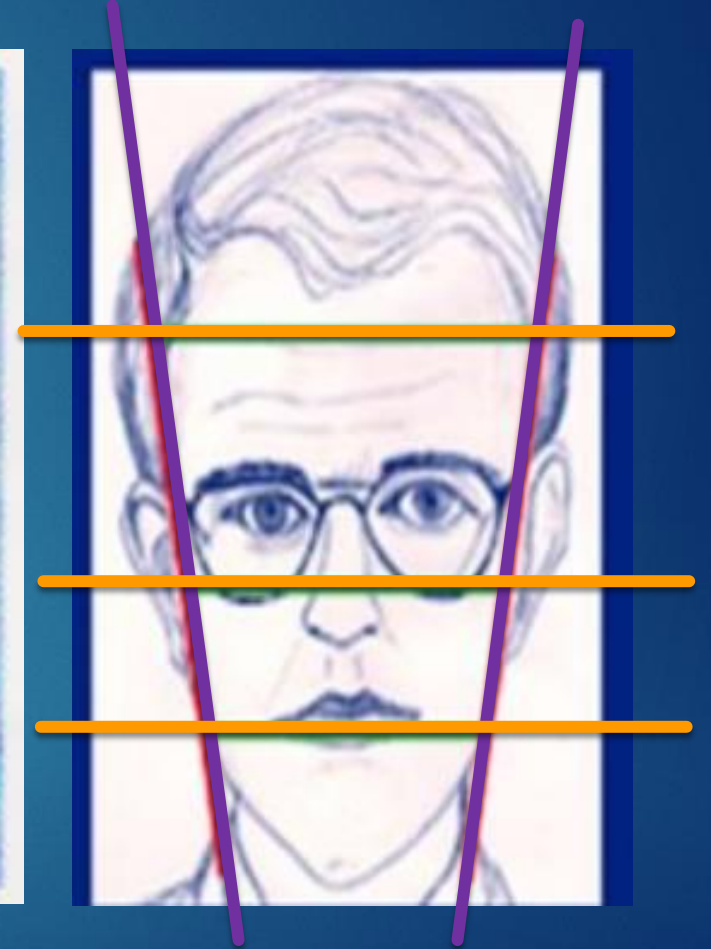
- ▶ From the hairline, to the levels of the condyle, to the angles of the jaw, the sides of the face are straight and parallel.





# *The Tapering Face*

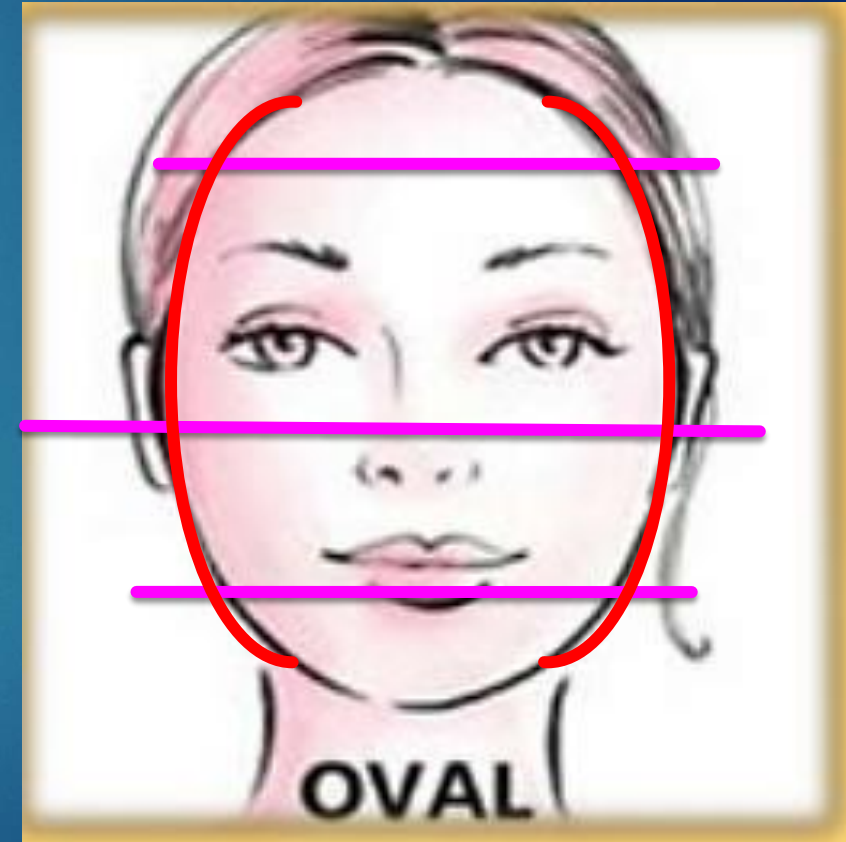
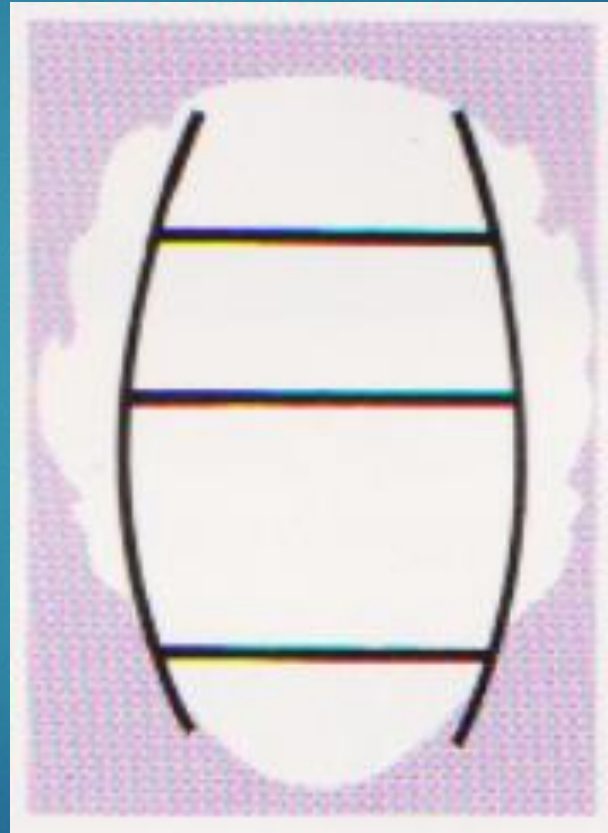
- Is widest at the hairline and narrowest at the angles of the jaw. The lines on the sides of the face converge in towards the jaw.





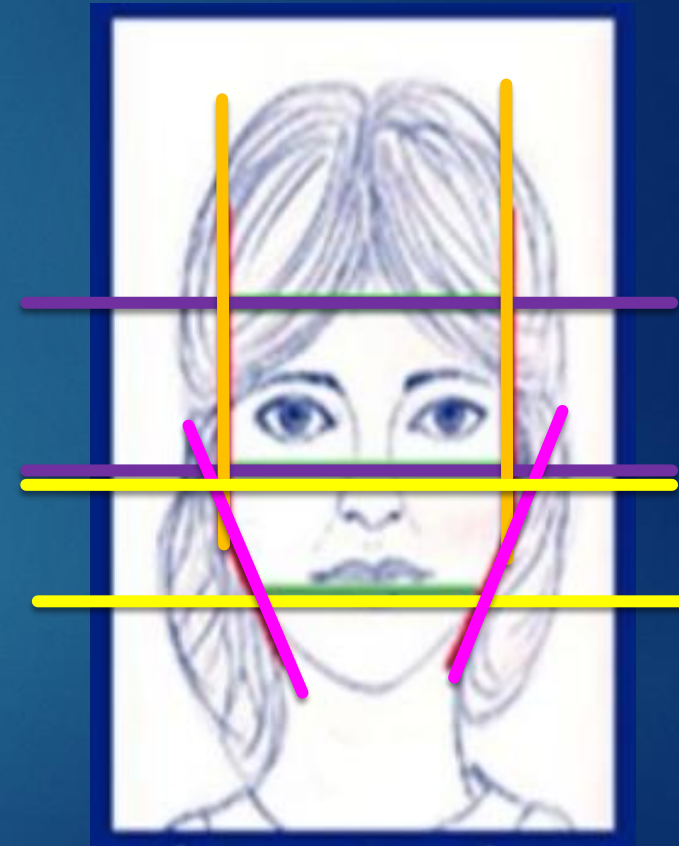
# *The Ovoid Face*

- Is widest through the center at the level of the condyles. It curves upward and downward to form an oval outline



# *The Square Tapering Face*

- ▶ from the hairline down to the condyles, the sides of the head are parallel.
- ▶ From the condyles down to the angle of the mandible along the sides of the face, the outline tapers to the angle of the jaw.



# Lateral Face Form Classification

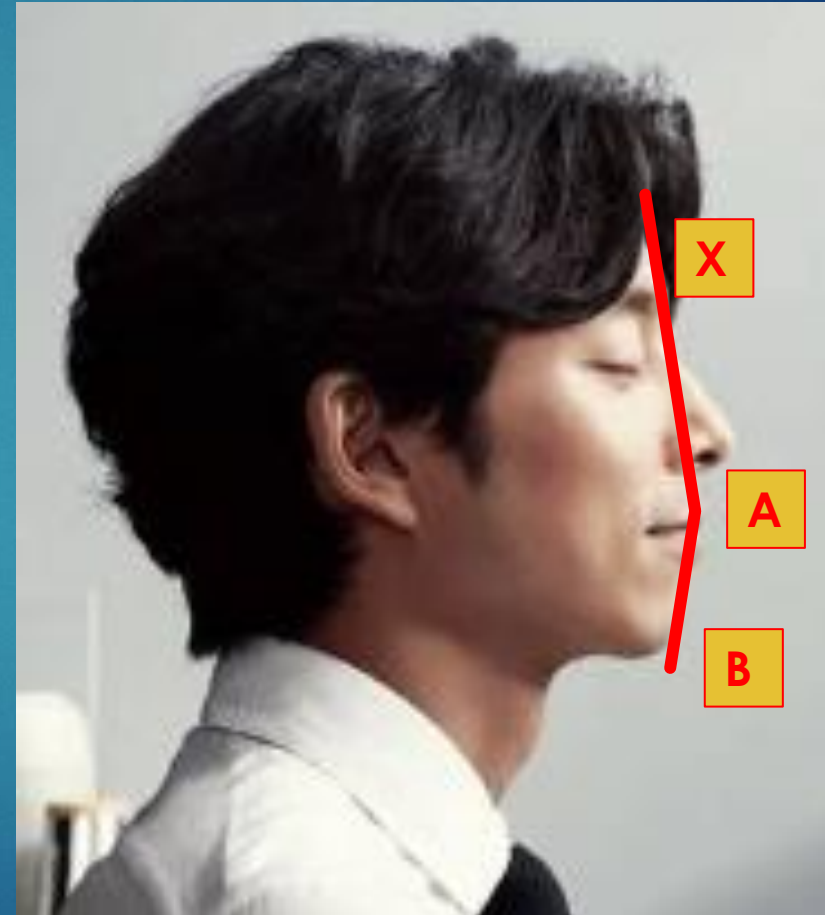
# Facial Profile

- examined by viewing patients from the side.

► **Profile** is obtained by joining two reference lines.

- line joining the nasion (**X**) and the deepest point in the curvature of the upper lip (**A**) subnasion .

- line joining point (**A**) and the most anterior point of the chin (**B**) (pogonion)

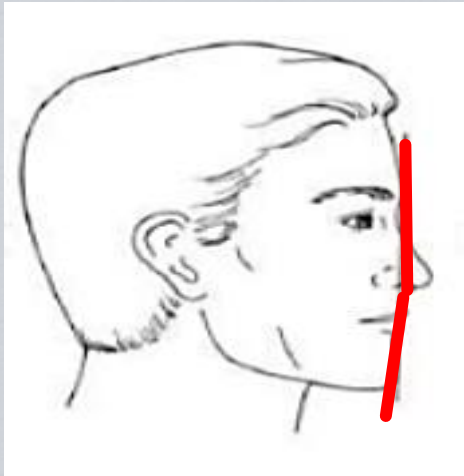




# According to Angle

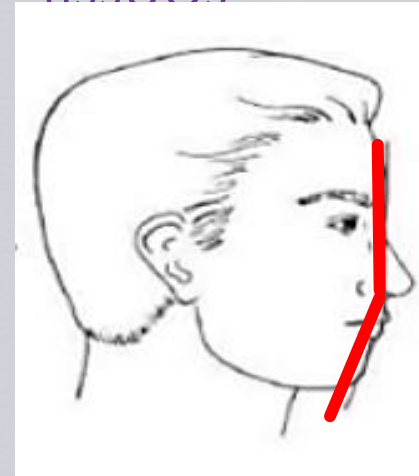
## Class I – **Straight form**

- two lines nearly form a straight line



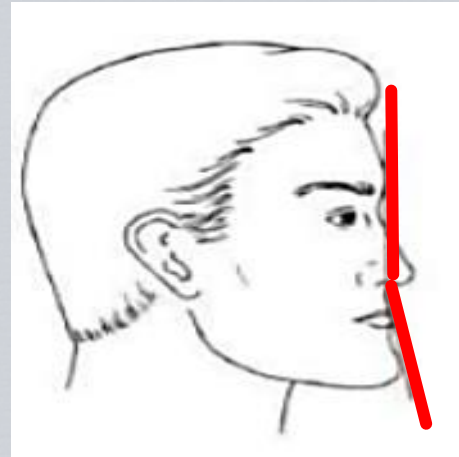
## Class II – **Retrognathic**

- lines form convexity towards tissues



## Class III – **Prognathic**

- lines form an angle with concavity towards tissues



# Lips Classification



**Lip Length** ( long, medium, short)

**Lip Thickness** (thin or thick)

**Lip mobility**

Class I normal

Class II reduced mobility

Class III paralysis

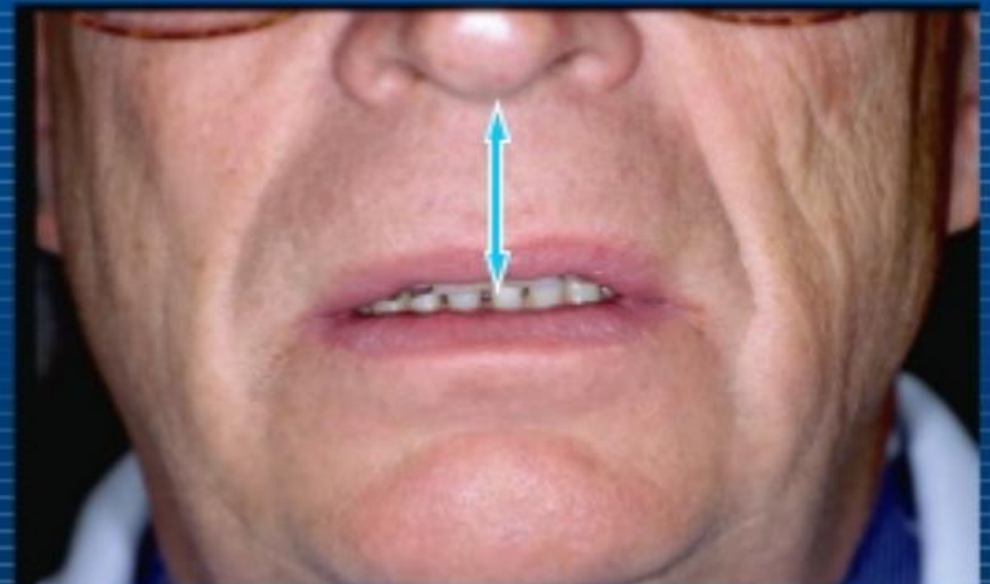
**Smile or Lip line** (High lip line, low lip line, normal)

**Lip support** (adequate or inadequate)

# Lip Length vs. Incisal Display

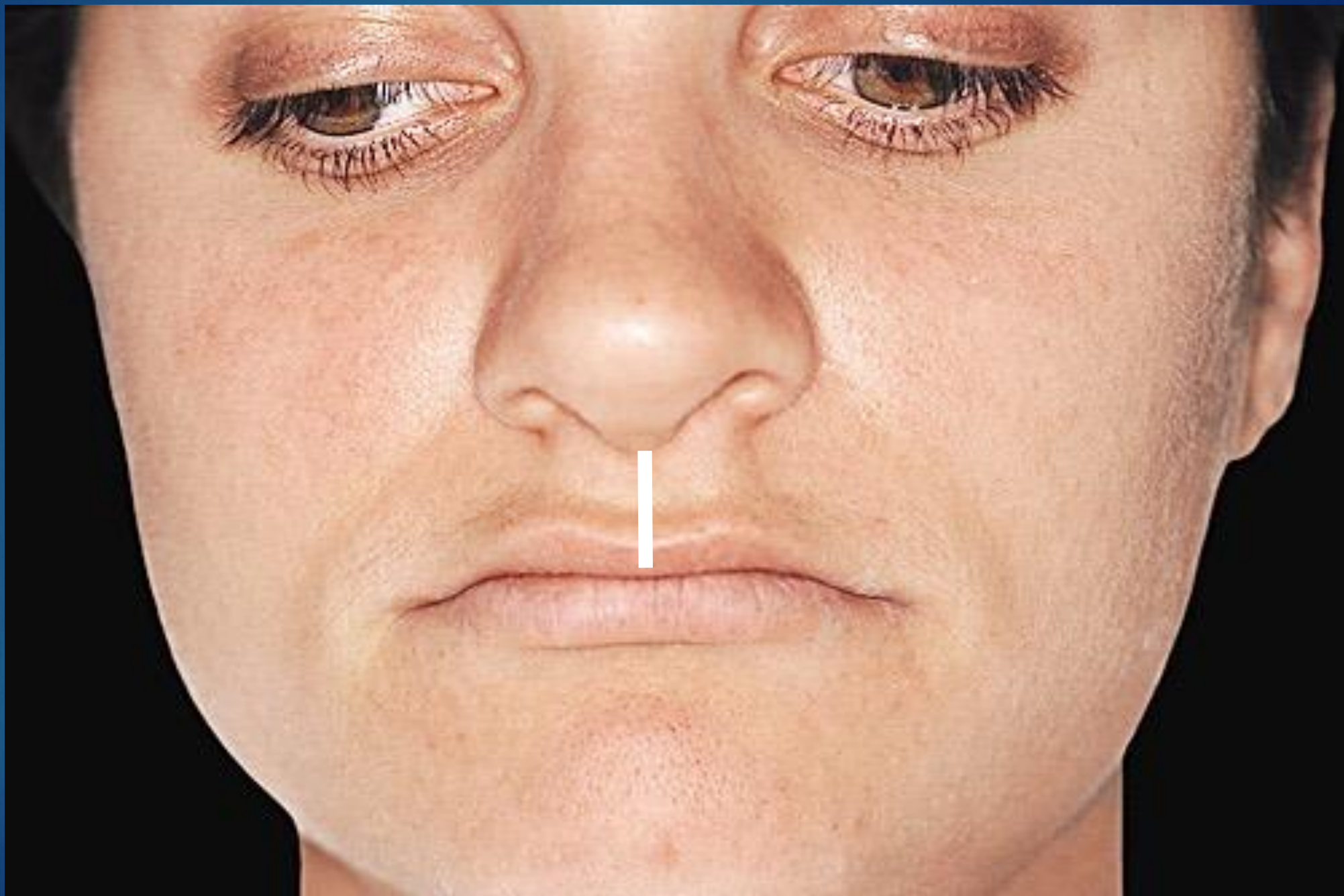
## Lip Length      Incisal Display

|           |       |
|-----------|-------|
| 10-20mm   | 3-4mm |
| 20-25mm   | 2mm   |
| 26-30mm   | 1mm   |
| 30 & over | 0     |



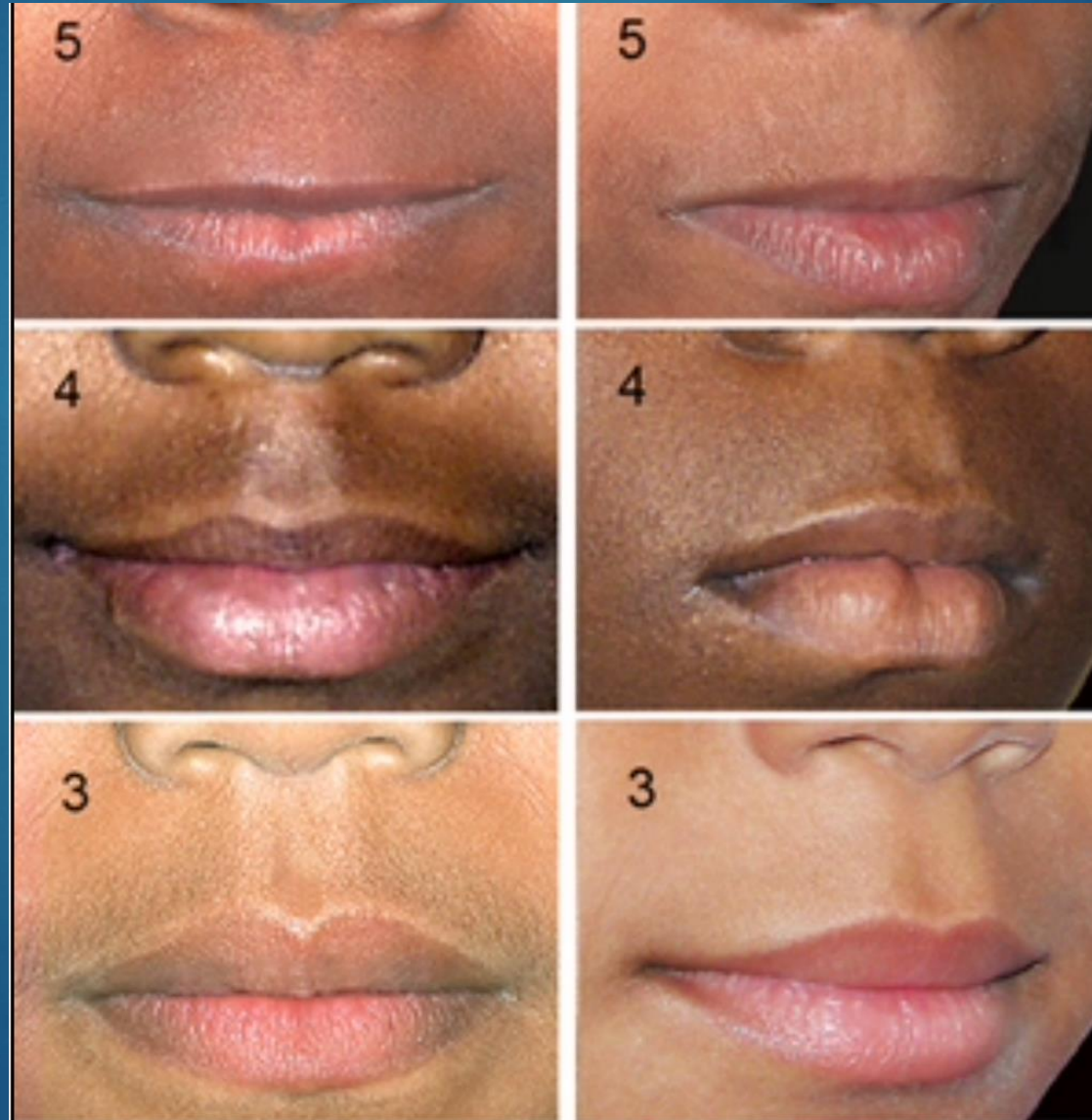
## Sex & Age

|        | <u>Female</u> | <u>Male</u> |
|--------|---------------|-------------|
| Young  | +2            | +1          |
| Middle | +1            | 0           |
| Old    | 0             | -1          |





# Lip Thickness



# Lip (smile) line \*



High smile line



Normal smile line

# Neuromuscular Coordination Classification

- ▶ Ability to perform various mandibular movements
  - ▶ Class I – excellent
  - ▶ Class II – fair
  - ▶ Class III – poor



# TMJ

- ▶ Pain or difficulty in mouth opening
- ▶ Uncoordinated jerky movements
- ▶ Tenderness, clicking or crepitus

# INTRAORAL EXAMINATION



- CHEEKS, TONGUE, FLOOR OF THE MOUTH (FOM), MAXILLARY TUBEROSITY, HARD PALATE, SOFT PALATE, ARCH RELATIONSHIP, RESIDUAL RIDGE FORM, SALIVA, UNDERCUTS

PATIENT NAME: \_\_\_\_\_

CHART NUMBER: \_\_\_\_\_

| Normal | Abnormal | Description (Mark correspondence with an X. If Abnormal fill in description)                     |
|--------|----------|--------------------------------------------------------------------------------------------------|
| _____  | _____    | Skin: _____                                                                                      |
| _____  | _____    | Eyes: _____                                                                                      |
| _____  | _____    | Neck: _____                                                                                      |
| _____  | _____    | TMD:    *Circle ALL that apply       Normal    Crepitus R.    Crepitus L.    Popping    Clicking |
| _____  | _____    | Lymph Nodes: _____                                                                               |
| _____  | _____    | Lips: _____                                                                                      |
| _____  | _____    | Buccal Mucosa: _____                                                                             |
| _____  | _____    | Vestibule: _____                                                                                 |
| _____  | _____    | Alveolar Ridge: _____                                                                            |
| _____  | _____    | Hard/Soft Palate: _____                                                                          |
| _____  | _____    | Oro-Pharynx: _____                                                                               |
| _____  | _____    | Tongue: _____                                                                                    |
| _____  | _____    | Floor of Mouth: _____                                                                            |
| _____  | _____    | Salivary Glands: _____                                                                           |

Occlusion:       ☐ Class I    ☐ Class II div 1    ☐ Class II div 2    ☐ Class III

Other Occlusal Abnormalities: \_\_\_\_\_

Parafunctional Oral Habits: \_\_\_\_\_

Plaque (circle):    Light       Moderate       Heavy.       ☐ Generalized \_\_\_\_       ☐ Localized \_\_\_\_

Enamel (circle):    Erosion       Demineralization       Attrition       Abfraction       Fluorosis       Abrasion

# Mucous Membrane

Color

Firmness

Painful area

Thickness



# Cheek

- ▶ **Essential for peripheral seal** due to placement of tissues over the buccal flanges of the denture
- ▶ Commonly seen lesions
  1. lichen planus
  2. Submucosal fibrosis
  3. White lesions
  4. Malignancies

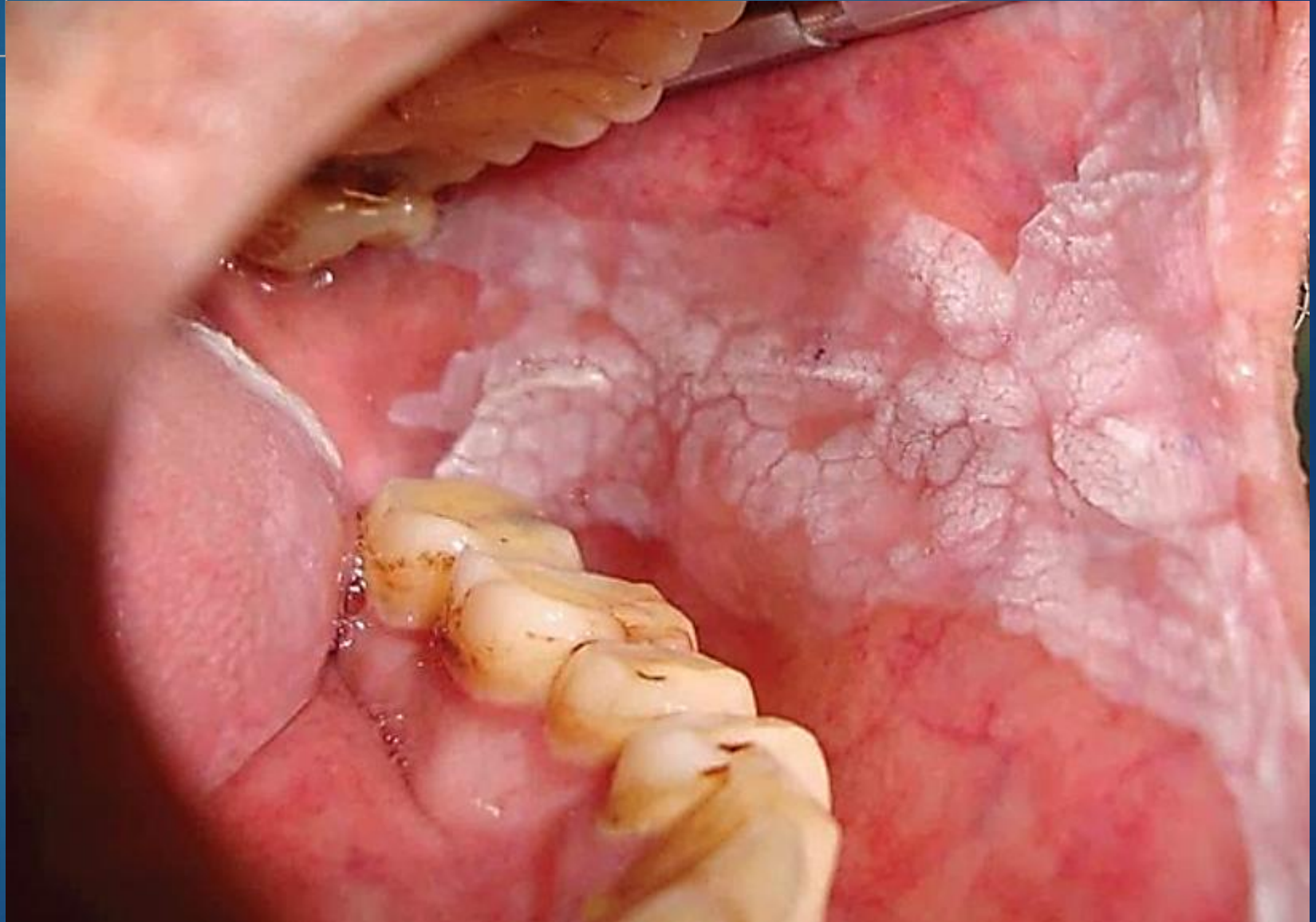


# Lichen Planus





# Submucosal Fibrosis

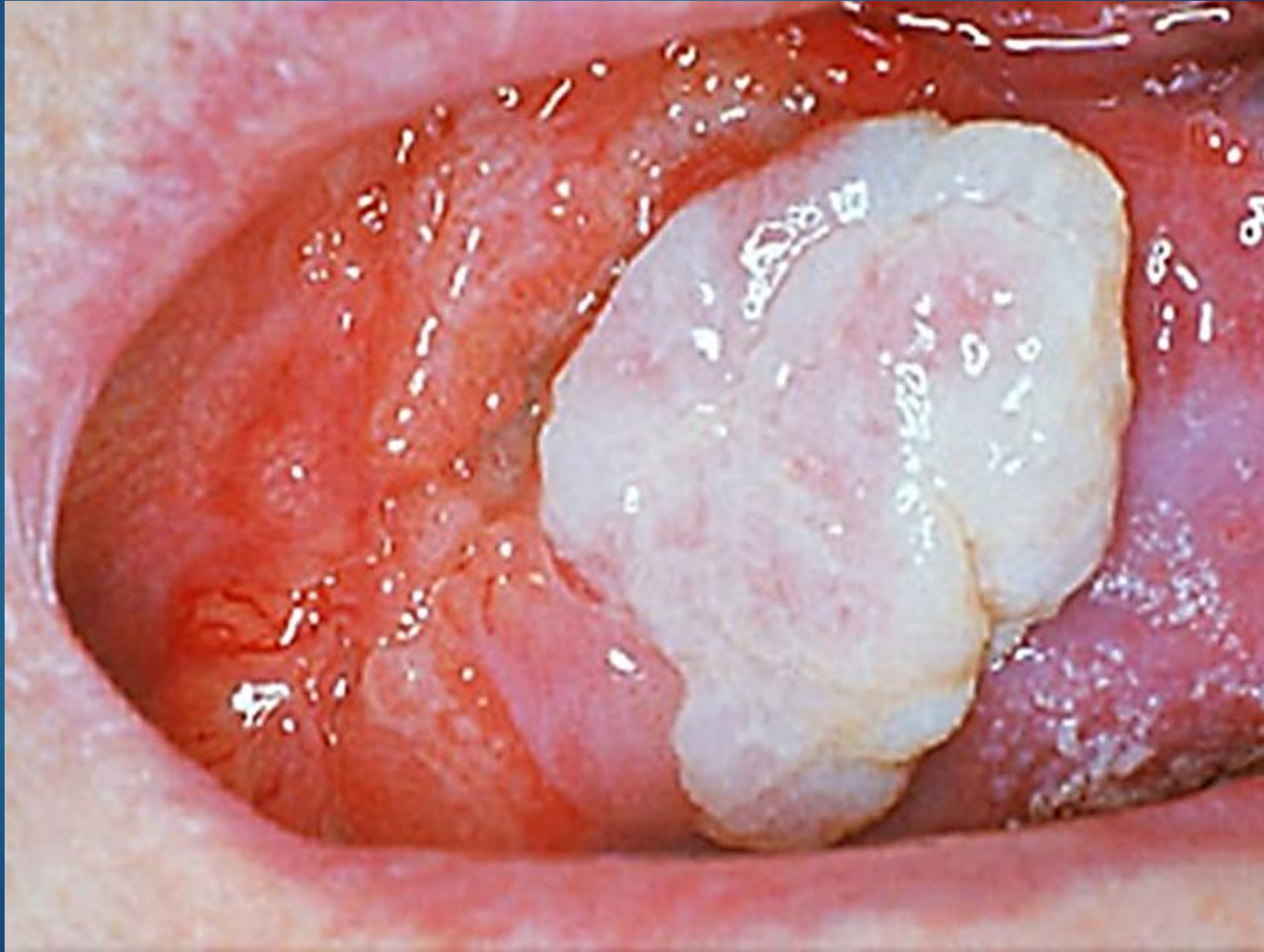


# White lesions





# Malignancies



# Tongue Size



**CLASS I**  
Complete  
visualization of  
the soft palate



**CLASS II**  
Complete  
visualization  
of the uvula



**CLASS III**  
Visualization  
of only the  
base of the uvula



**CLASS IV**  
Soft palate  
is not  
visible at all

# Frenal Attachment Classification

**Class I** – sulcal or low attachment

**Class II** – attaches midway between the sulcus and of the ridge

**Class III** – crestal or near crestal (high) attachment

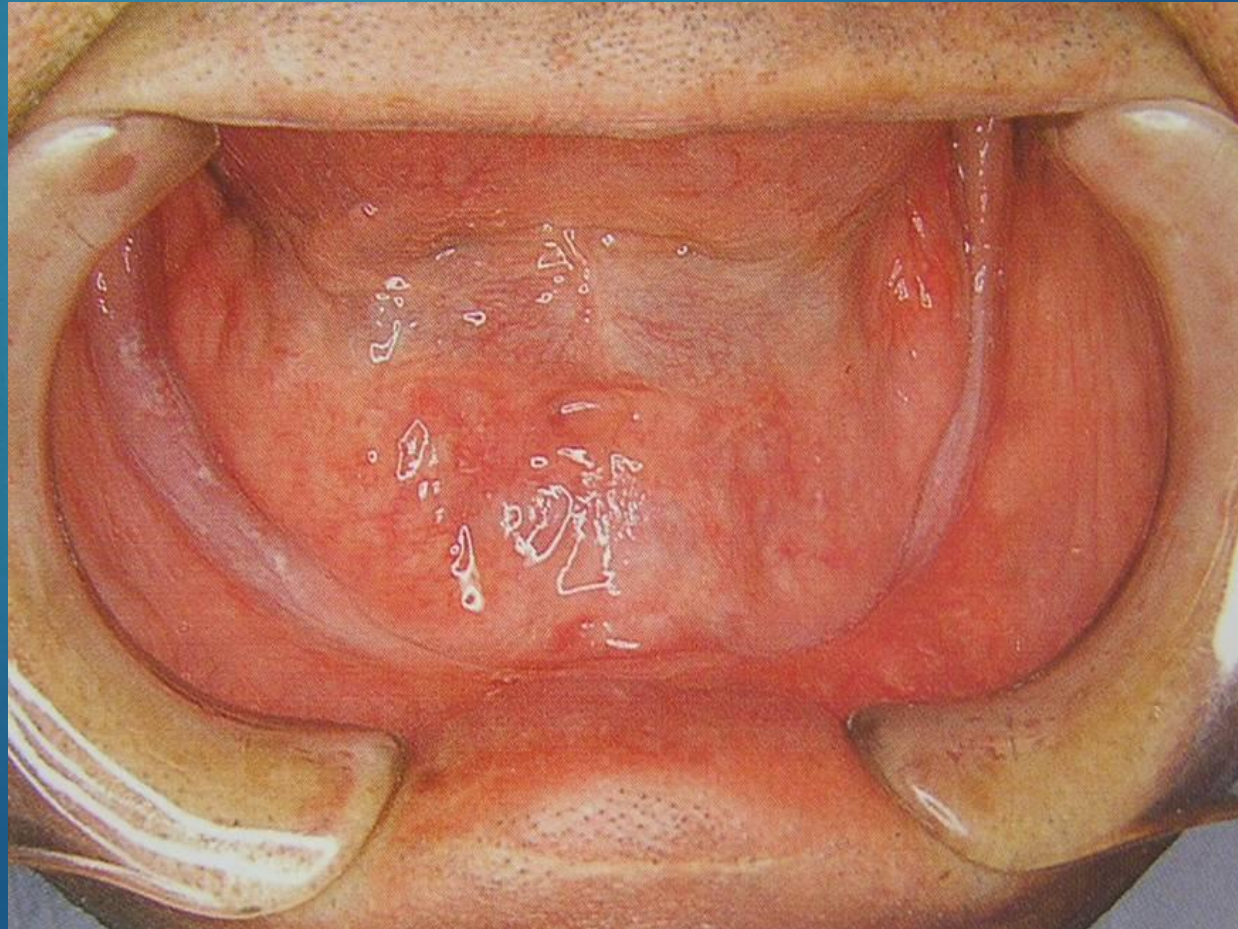






# Floor of the Mouth

The floor of the mouth can affect the prognosis of the mandibular denture



- 
- ▶ Near or at level of the ridge crest
  - ▶ Hyperactive floor
  - ▶ Ridge resorption so great that the floor of the mouth in the **sublingual gland** and mylohyoid region spill onto the ridge

# Maxillary Tuberosity

## Undercut

(unilateral or bilateral)

- Denture insertion and removal difficult and painful

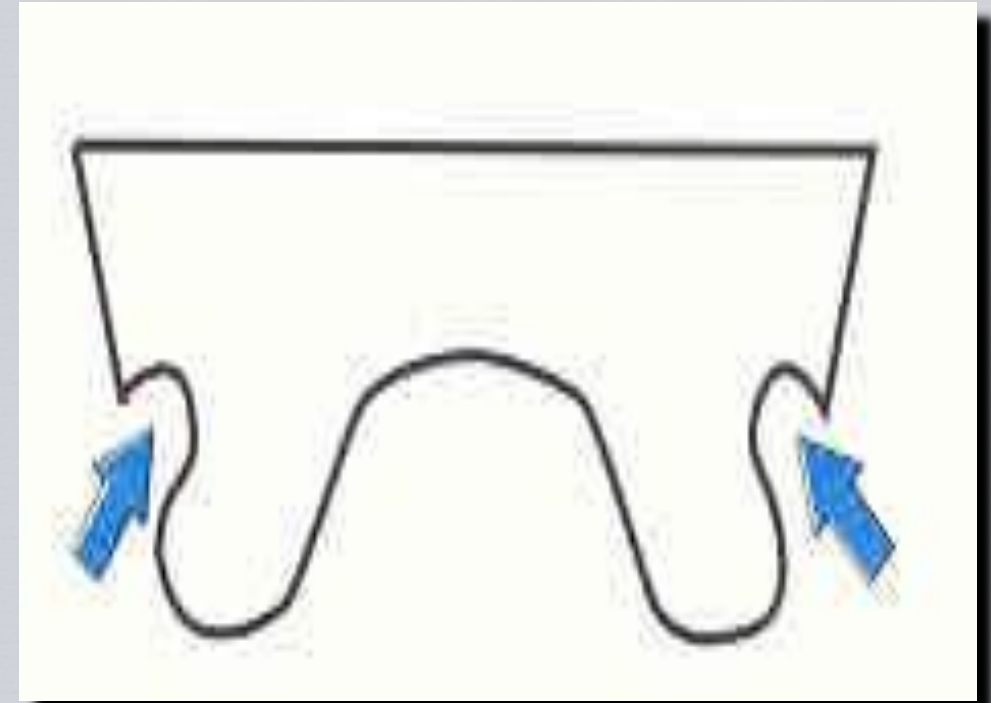
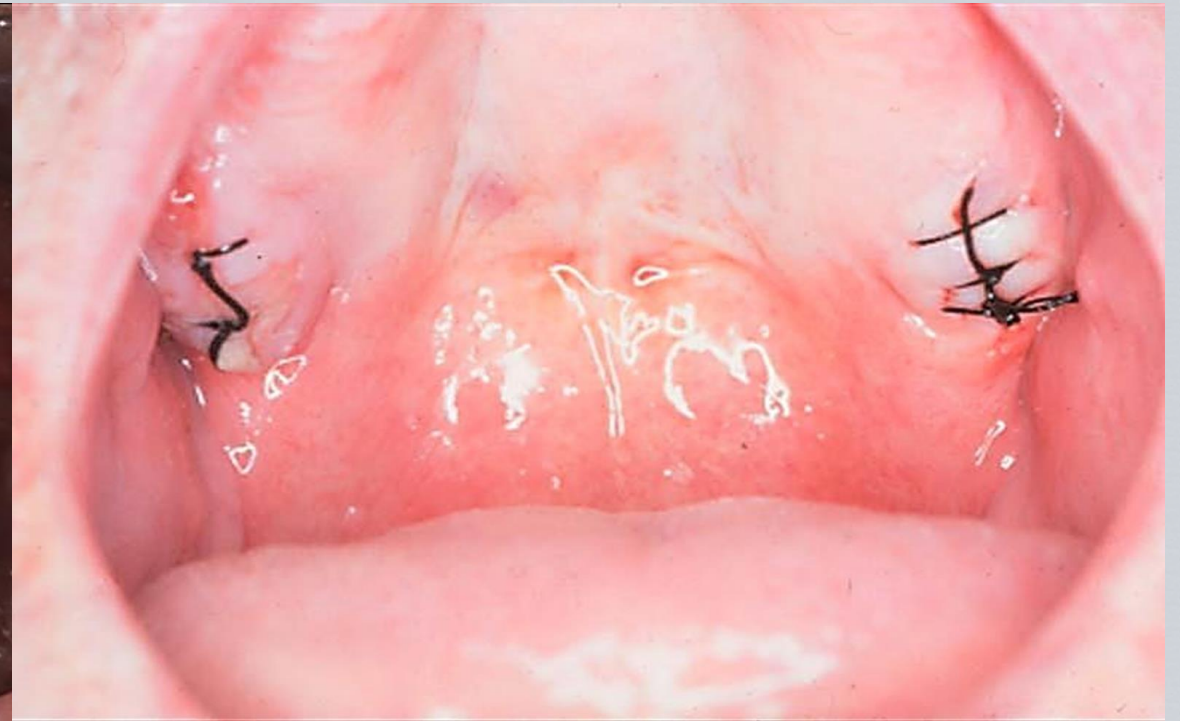


FIG. 3-16. A BILATERAL POSTERIOR UNDERCUT. SEVERE UNDERCUTS CAN MAKE DENTURE INSERTION AND REMOVAL DIFFICULT AND PAINFUL



- **Enlarged**

- Back end of occlusal plane may be placed too low
- Not enough space to set all molars



# Hard Palate Classification

## Class I – U shaped

Most favorable for retention & stability



Figure 2.10 Well-developed ridges; palate of moderate depth

## Class II – V shaped

Not very favorable

Slight movement will break seal and cause loss of retention

Associated with tapered arch

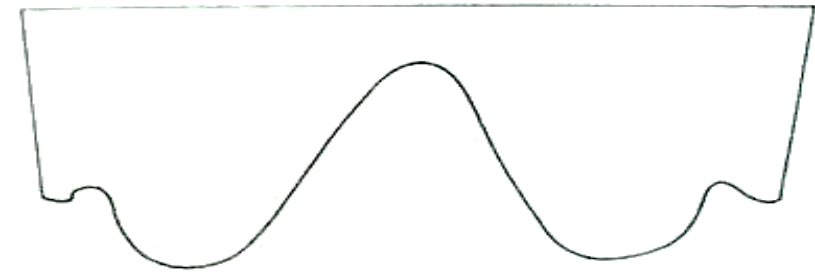


Figure 2.11 High v-shaped palate and well-developed ridges

## Class III – Flat or Shallow vault

Not very favorable

Poor resistance to lateral forces

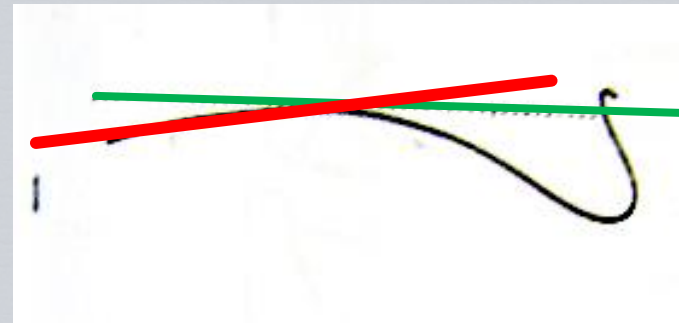


Figure 2.12 Flat palate with small ridges and shallow sulci

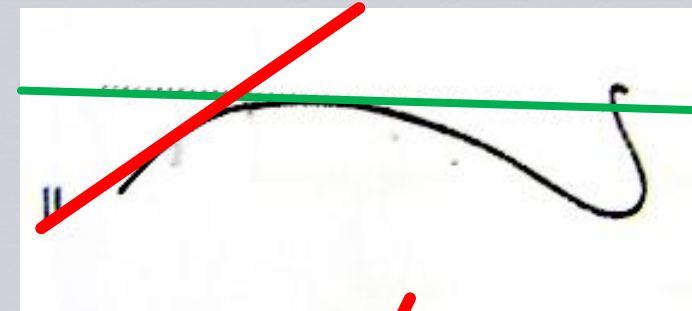
# Soft Palate Classification

Determines the extent of additional area available for retention as well as the width of the posterior palatal seal area

**Class I** – almost horizontal to the hard palate



**Class II** – slope about 45 degrees from the hard palate



**Class III** – slope about 70 degrees from the hard palate





# Arch Size & Form Classification

## Arch Size

Class I – Large

Class II – Average

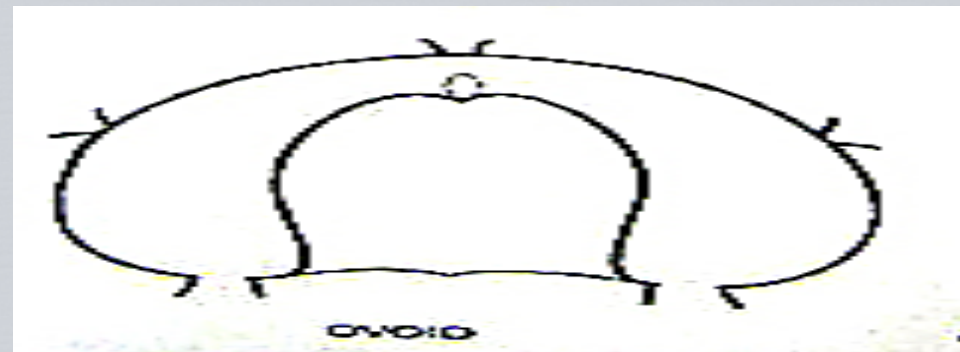
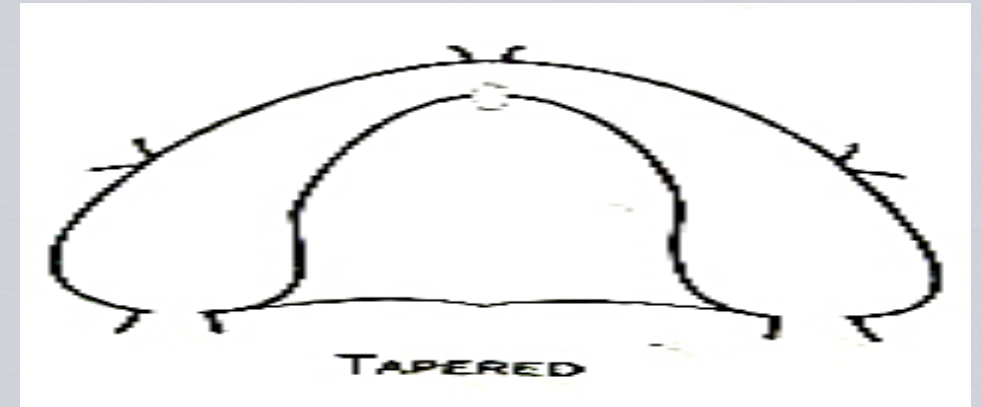
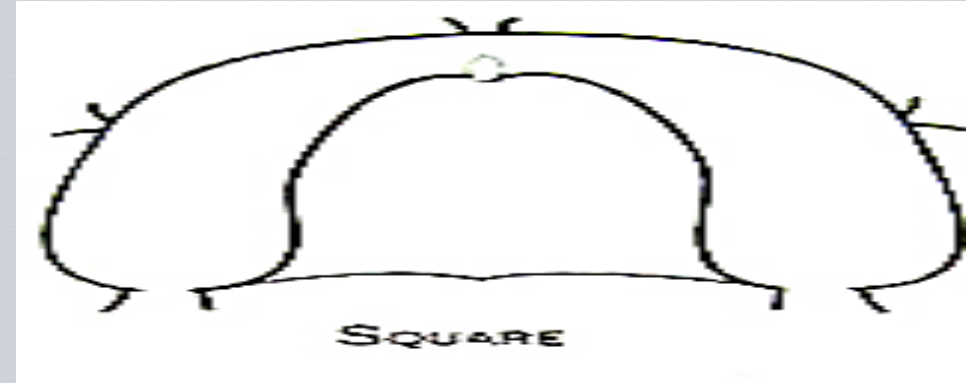
Class III – Small

## Arch Form

Class I – Square

Class II – Tapered

Class III – Ovoid



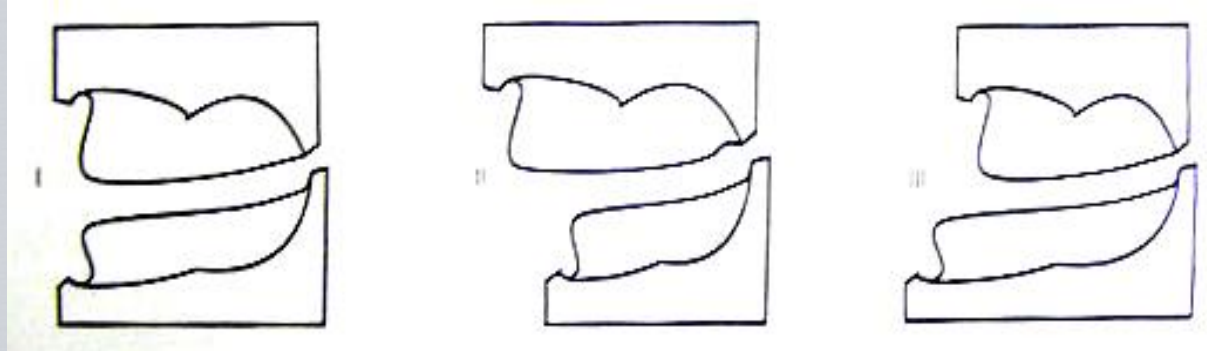
# Arch Relationship Classification

## Anterior

Class I

Class II

Class III



I – Orthognathic

II- Retrognathic

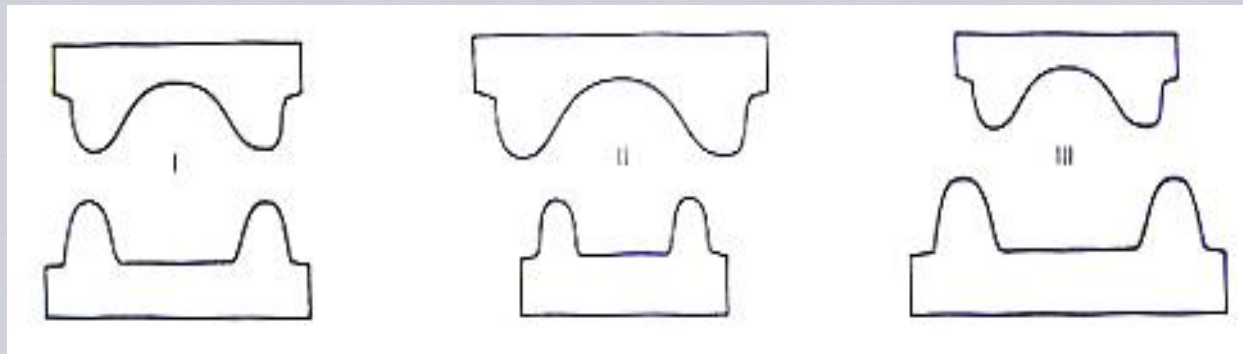
III - Prognathic

## Posterior

Class I

Class II

Class III



# Interarch Space

## Class I – Normal

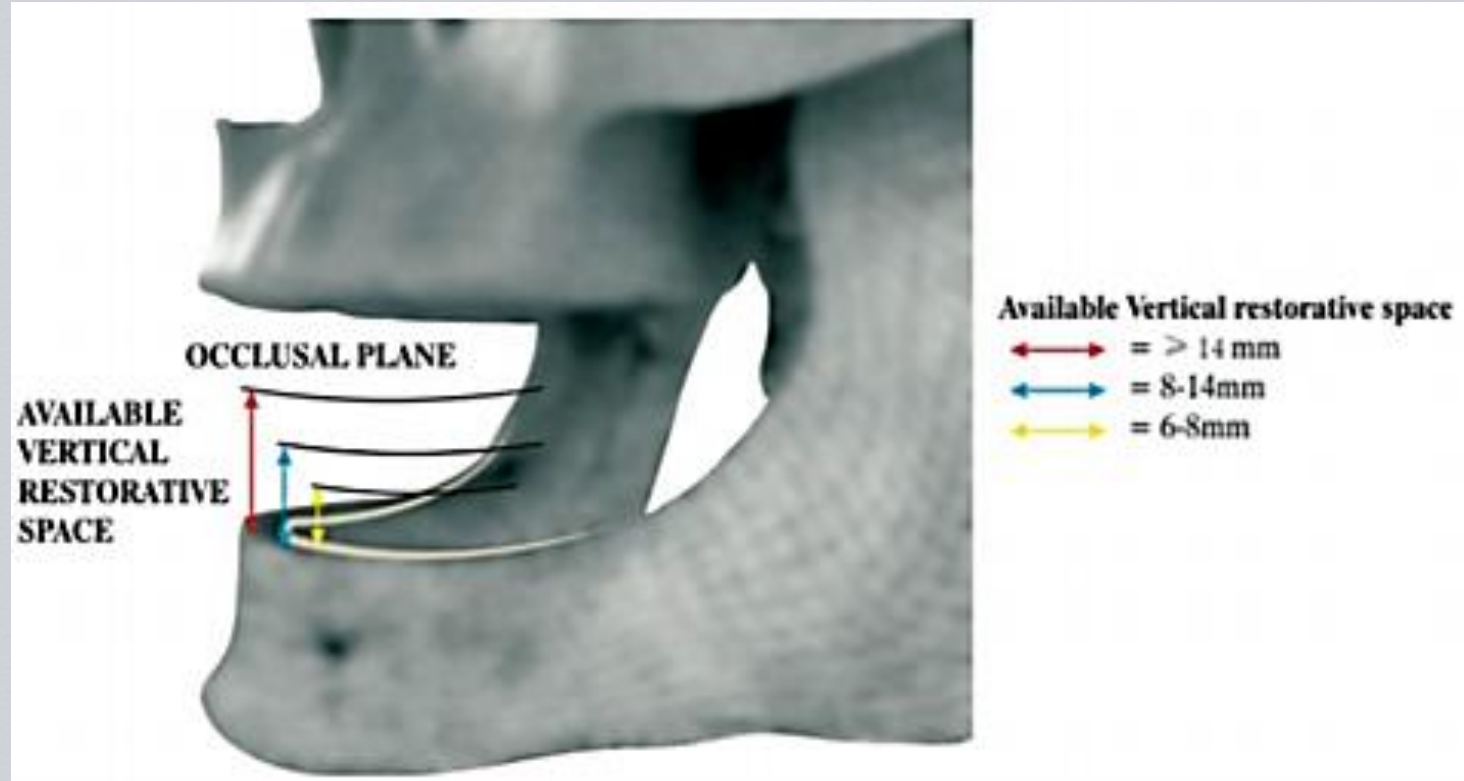
- 16- 20 mm. adequate for the accommodation of artificial teeth

## Class II – Excessive

- Associated with highly resorbed ridge

## Class III – Insufficient

- Setting difficult, each tooth might be ground to fit space
- Associated with large ridge







# Residual Ridge Classification

## Class I

Residual bone height of **>21mm** measured at the least vertical height of the mandible

Class I maxillomandibular relationship

## Class II

Residual bone height of **16-20mm**

Class I maxillomandibular relationship

## Class III

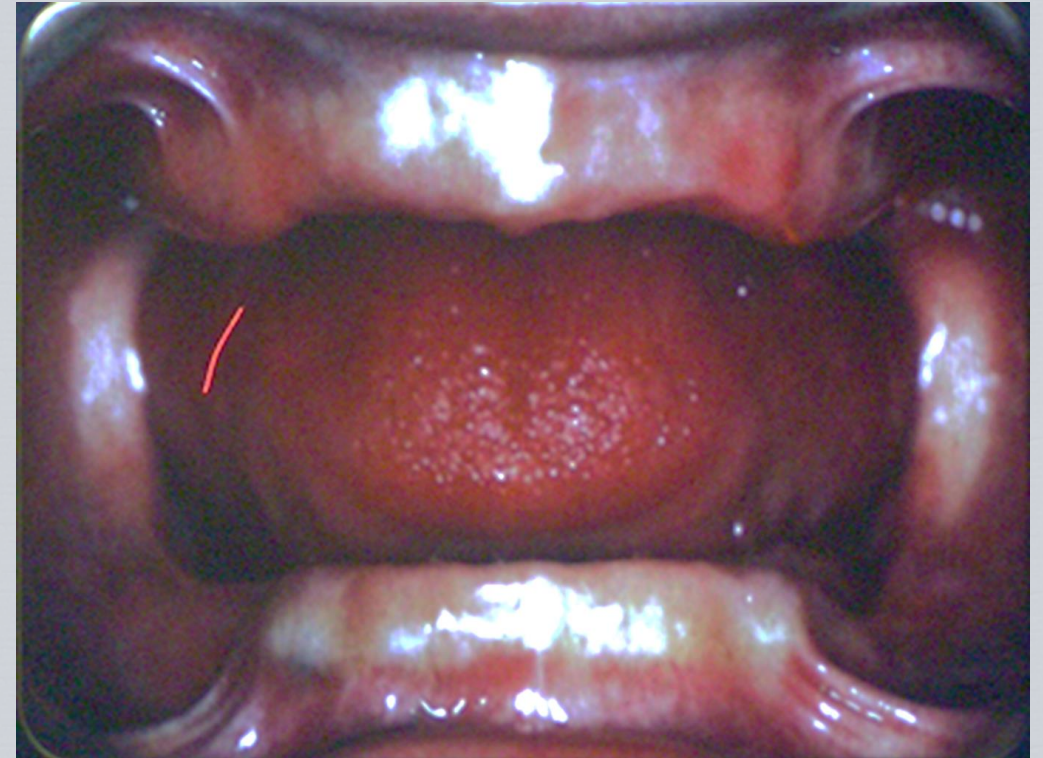
Residual bone height of **11-15mm**

Class I, II, III maxillomandibular relationship

## Class IV

Residual bone height of **<10mm**

Class I, II, III maxillomandibular relationship



# Saliva

## ▶ Consistency

- ▶ Thin serous (favorable for denture retention)
- ▶ Thick mucus (tends to displace denture)
- ▶ Mixed (contains both)

## ▶ Amount

- ▶ **Class I** - Normal (ideal for denture retention)
- ▶ **Class II** - Excessive (makes construction difficult & messy)
- ▶ **Class III** - Reduced/ Xerostomia (reduced retention, increase tissue soreness)





**5 minutes  
break**



# Preprosthetic Procedures

**“PROCEDURES INTENDED TO IMPROVE THE  
DENTURE BEARING SURFACES OF THE  
MANDIBLE AND MAXILLA”**

# Types of Preprosthetic Procedures:





# NON-SURGICAL METHODS

# 1. Rest for the Denture Supporting Tissues

- Removal of denture for extended period
- Use of temporary soft liner (for several days)
- Regular finger or toothbrush of denture bearing mucosa, especially the edematous and enlarged





## 2. Occlusal Correction of the Old Prosthesis

To restore vertical dimension using interim resilient lining material

Correction of the extent of the tissue coverage





# 3. Good Nutrition

Eat a variety of food

Build diet around complex carbohydrates: fruits, vegetables, whole grains and cereals

Eat at least five servings of fruits and vegetables daily

Select fish, poultry, lean meat, or dried peas and beans every day

Obtain adequate calcium

Limit intake of bakery products high in fat and simple sugars

Limit intake of process foods high in sodium and fat

Consume 8 glasses of water daily

# Oral Signs of Nutrient Deficiencies

| Nutrients                        | Oral Symptoms                                                                                                                                                                                |
|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Proteins                         | Decreased salivary flow<br>Enlarged parotid glands                                                                                                                                           |
| Vitamin B Complex, iron, protein | Lips<br>Cheilosis<br>Angular stomatitis<br>Angular scars<br>Inflammation<br>Tongue<br>Edema<br>Magenta tongue<br>Atrophy of filiform papillae<br>Burning sensation<br>Soreness<br>Pale, bald |
| Vitamin C                        | Edematous oral mucosa<br>Gingiva<br>Spontaneous bleeding                                                                                                                                     |

## 4. Conditioning of Patient's Musculature

Use of jaw exercises can permit relaxation of the muscles of mastication and strengthen their coordination

Eg. Stretch relax exercises

- open wide, relax
- move to the left, relax
- move to the right, relax
- move forward, relax

\* do it 4x in each, 4 sessions a day



# **SURGICAL METHODS**

## **(PRE-PROSTHETIC SURGERY)**

**“ANY SURGICAL PROCEDURE PERFORMED ON A PATIENT  
AIMING TO OPTIMIZE THE EXISTING ANATOMIC  
CONDITIONS OF THE MAXILLARY OR MANDIBULAR  
ALVEOLAR RIDGES FOR SUCCESSFUL PROSTHETIC  
REHABILITATION”**

# Classification:

1. Related to the development of a retentive denture
2. Related to the provision of a stable denture
3. Those which will allow the establishment of a correct vertical dimension



## **Surgical procedures included are:**

1. Improve the bony foundation
2. Improve the soft tissue foundation
3. Improve ridge relationship
4. Implant procedures





# Conditions that Affect the Bony Foundation

# Torus Mandibularis

Prevent proper  
extension of the  
denture base

Border seal cannot be  
made

Soreness can occur  
due to thin tissues

Fracture of the  
denture base



# Torus Palatinus

Affect denture stability

May cause sore spot

Interfere with tongue  
function

Affects post-damming

May fracture denture





# Indications for Removal of Torus

1. Extremely large torus that prevents the formation of an adequately extended and stable denture
2. Traps food debris due to undercuts causing chronic inflammatory conditions
3. Torus that extends past the junction of the hard and soft palate (prevents formation of posterior palatal seal)
4. Patient concern (cancerophobia)

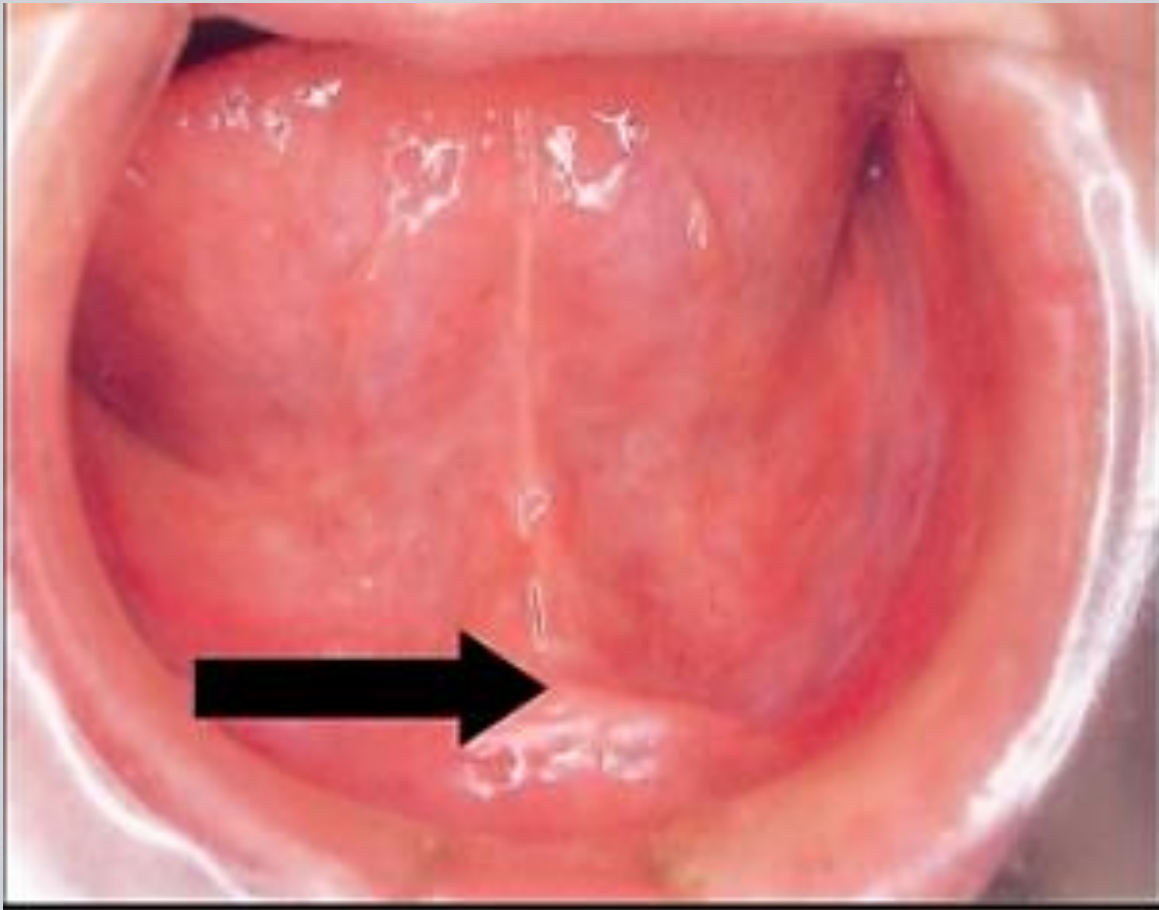
# Alveolar Exostosis

- an **exostosis** (bone prominence) on the buccal surface (cheek side) of the **alveolar** ridge of the maxilla or mandible.



# Genial tubercle

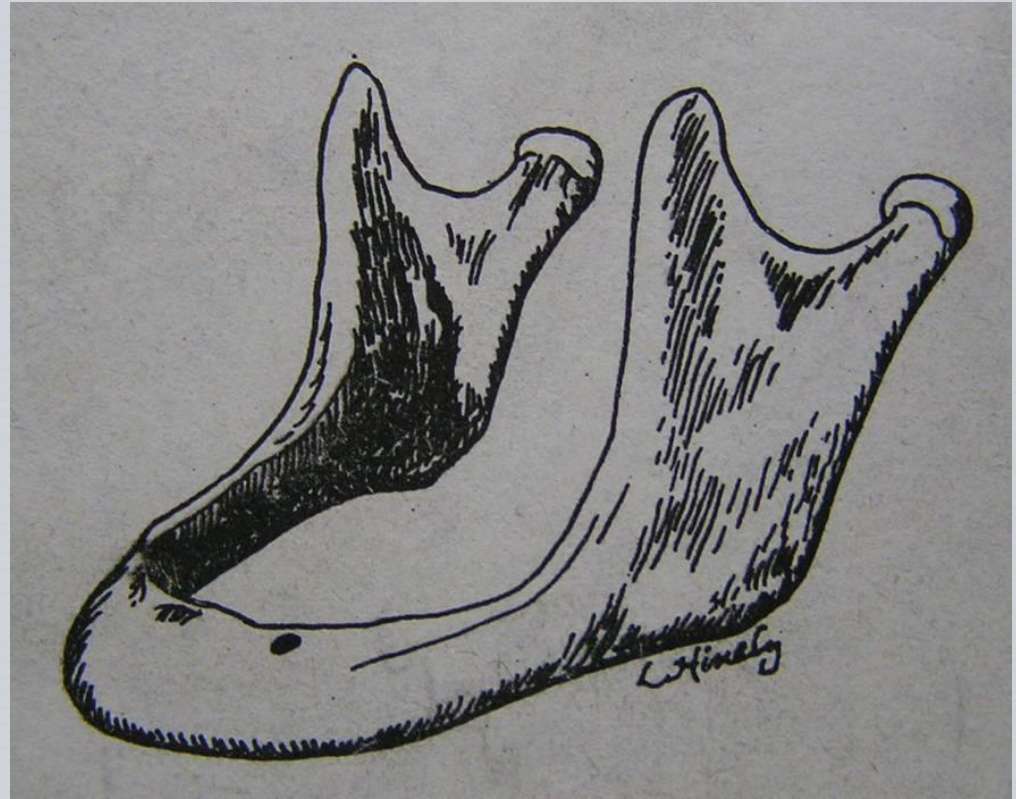
Creates discomfort causing displacement





# Pressure in mental foramen

Present in extreme mandibular resorption,  
causing pain





# Common Procedures to Improve Bony Foundation

- 
- ▶ Simple Alveoloplasty
  - ▶ Intraseptal Alveoloplasty
  - ▶ Maxillary Tuberosity Reduction
  - ▶ Buccal Exostosis and Excessive Undercut Removal
  - ▶ Maxillary Tuberosity Reduction (osseous)
  - ▶ Genial Tubercle Reduction
  - ▶ Maxillary Tori Reduction



# Conditions that Affect the Soft Tissue Foundation



# Hyperplastic ridge

Interfere with optimal seating of the denture  
Affects denture stability



# Epulis fissuratum

Interfere with optimal seating of the denture





# Papillomatosis

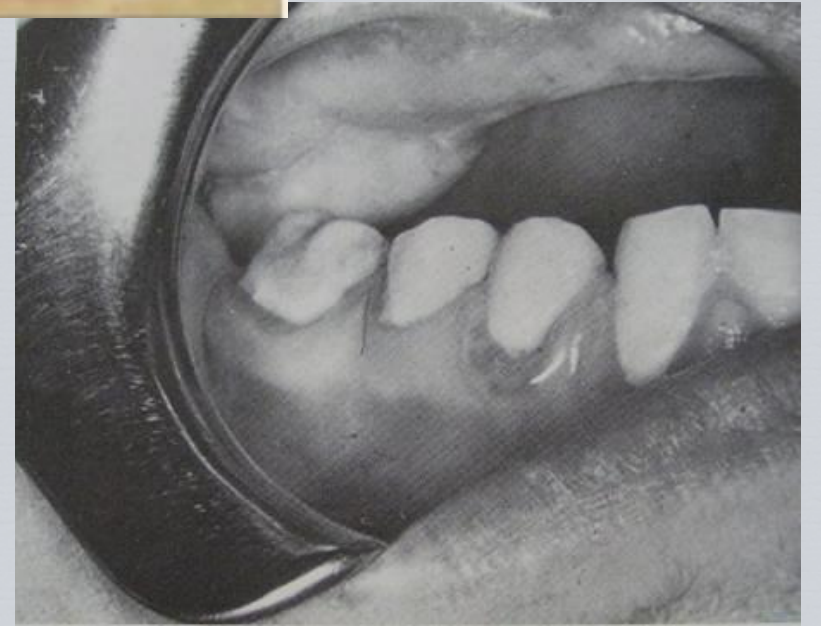
Harbors micro-organisms

Removal using  
electrosurgery or  
microabrasion



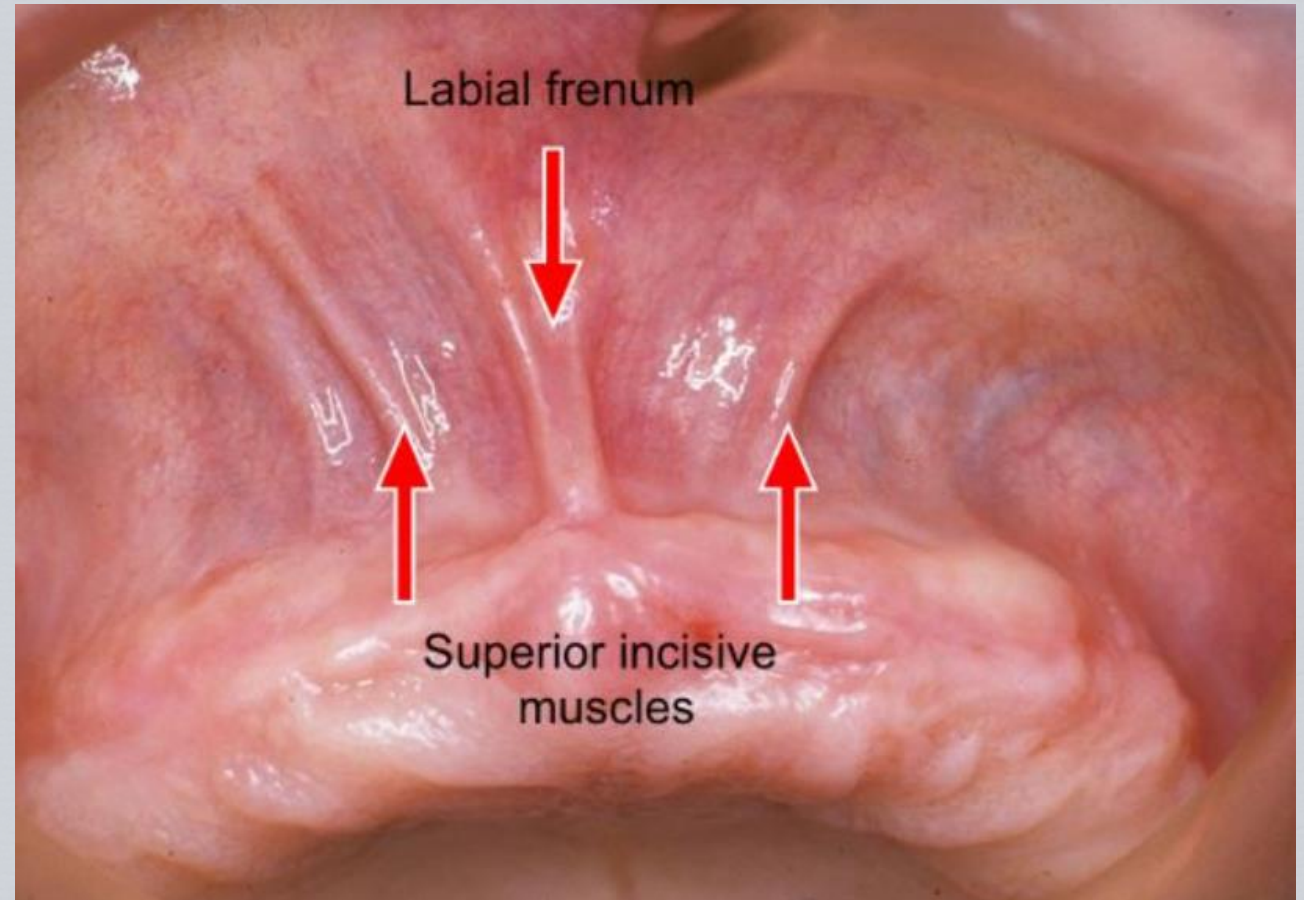
# Pendulous fibrous maxillary tuberosities

Encroachment or  
obliteration of  
interarch space



# Frenular Attachment ( Close to the Ridge Crest)

Difficult to obtain ideal  
extension  
Affects peripheral seal





# Procedures to Improve Soft Tissue Foundation

- 
- ▶ Soft tissue plasty/recontouring
  - ▶ Soft tissue reductions
  - ▶ Soft tissue excisions
  - ▶ Soft tissue repositioning
  - ▶ Soft tissue grafting



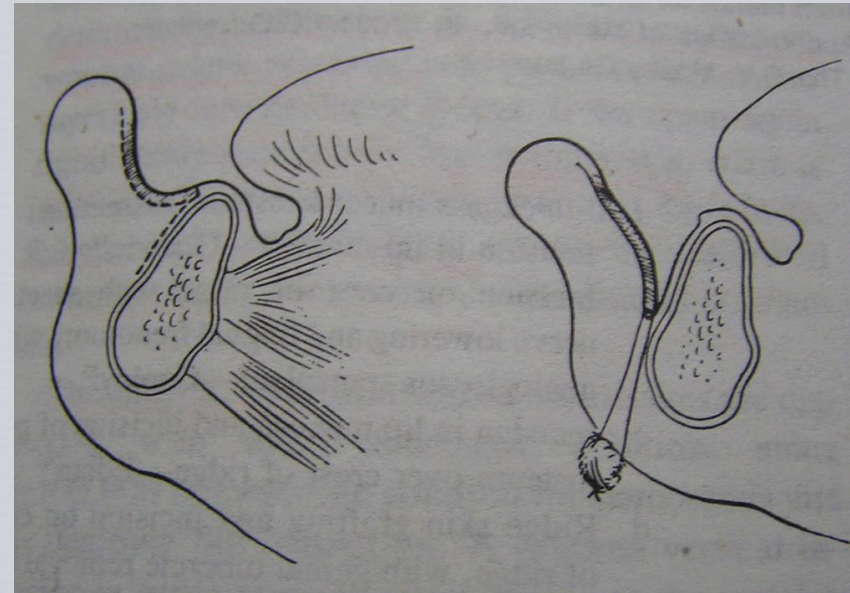
# **Management to Improve Ridge Relationship**



# Vestibuloplasty

Increases the vertical  
extension of the  
denture flanges

Reposition muscle  
attachment from  
crest of the ridge



Anterior Sulcus slide

**Fig. 1.** Prior treatment.



**Fig. 2.** During treatment.



**Fig. 3.** One week post treatment (sutures removed)



**Fig. 4.** One week post treatment (with preliminary dentures)





**Fig. 5.** One month post treatment



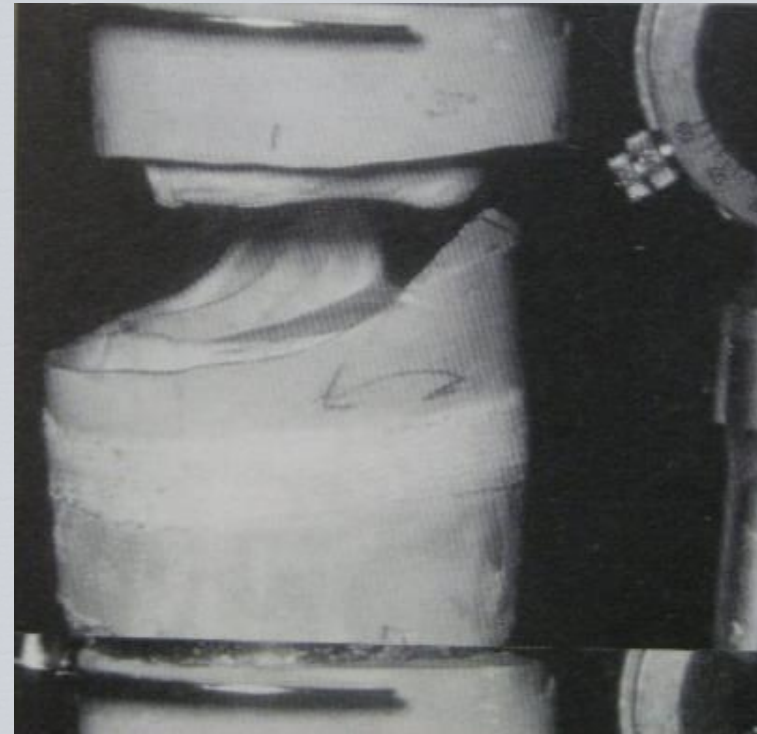
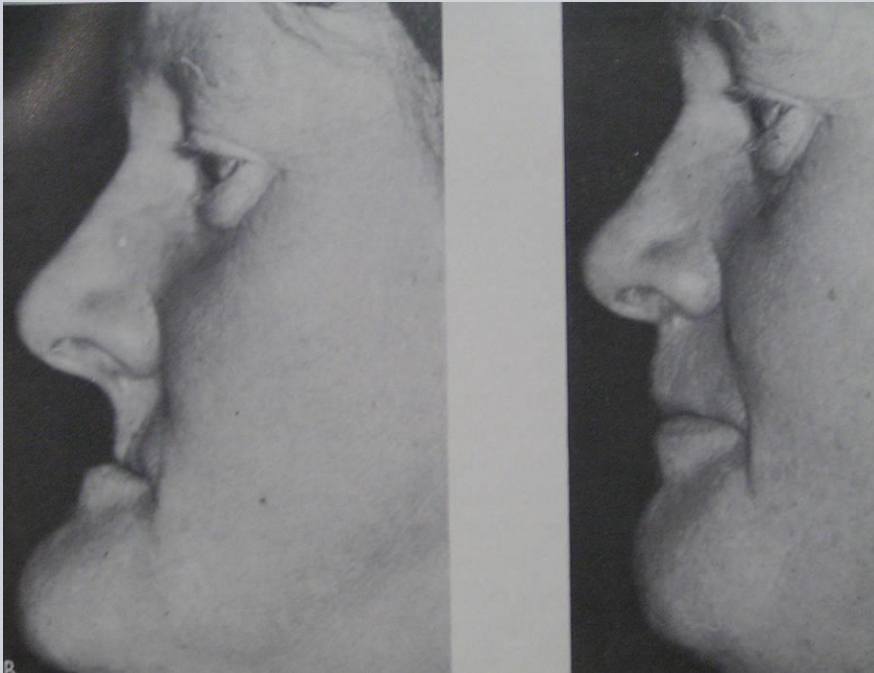
**Fig. 6.** Denture refitted



### 3. Procedures to Improve Ridge Relationship

# Discrepancies in Jaw Size

Places considerable stress and unfavorable leverages on the basal seat



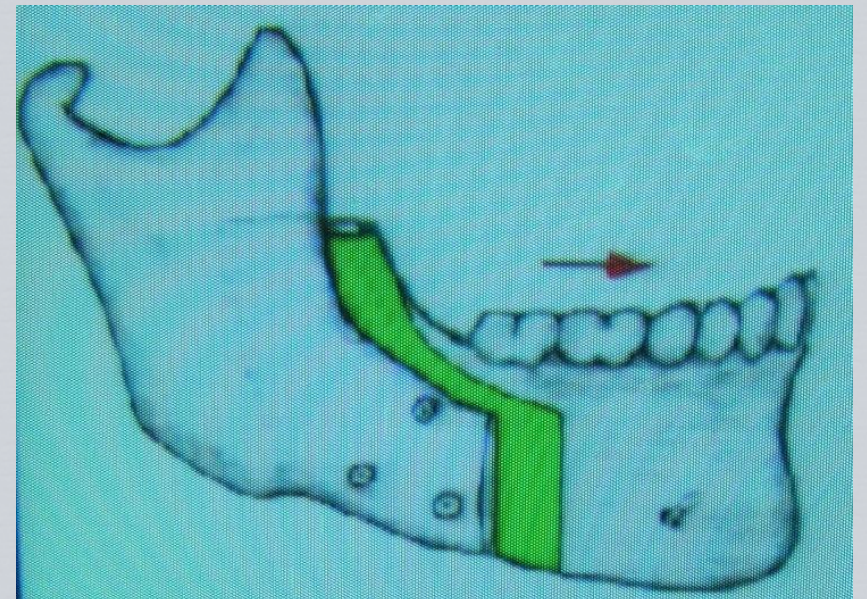
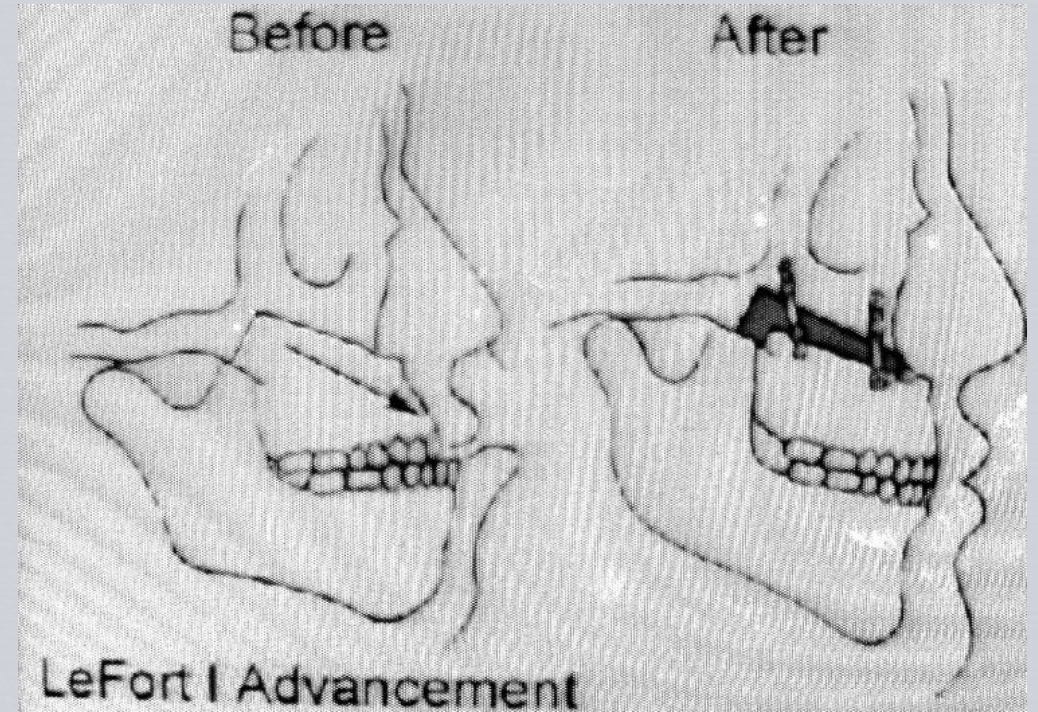


**Maxillary advancement  
procedures**

**Maxillary retrusion procedures**

**Mandibular advancement  
procedures**

**Mandibular retrusion procedures**



# Ridge Augmentation

- ▶ Increase bulk of the ridge
- ▶ Eg. Onlay grafts from iliac, ribs
  - Particulate bone and marrow
  - Hydroxyapatite crystals
    - (nonresorbable & nonosteogenic)
  - Tricalcium phosphate
    - (resorbable & osteogenic)
  - Visor or vertical osteotomy
  - horizontal or sandwich osteotomy





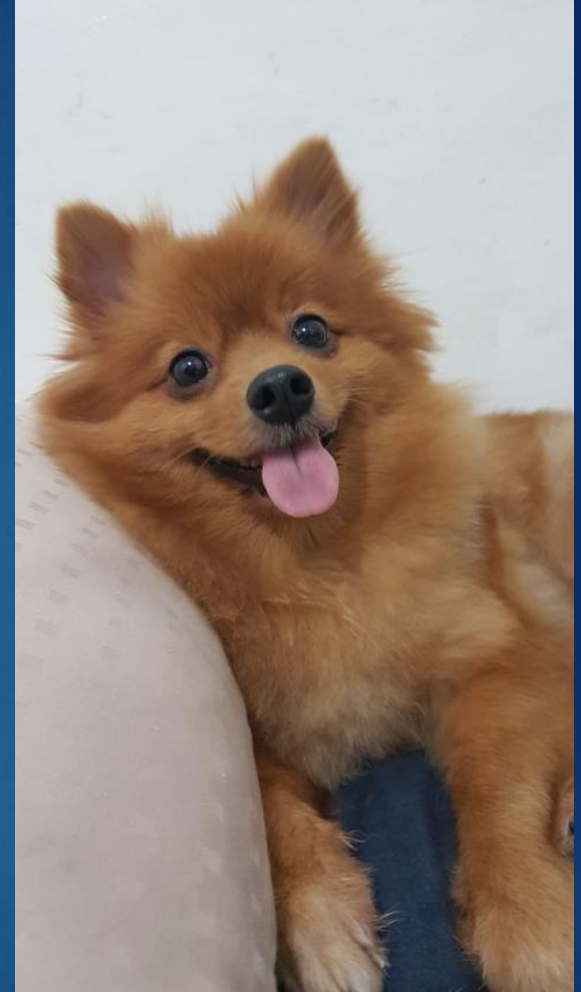
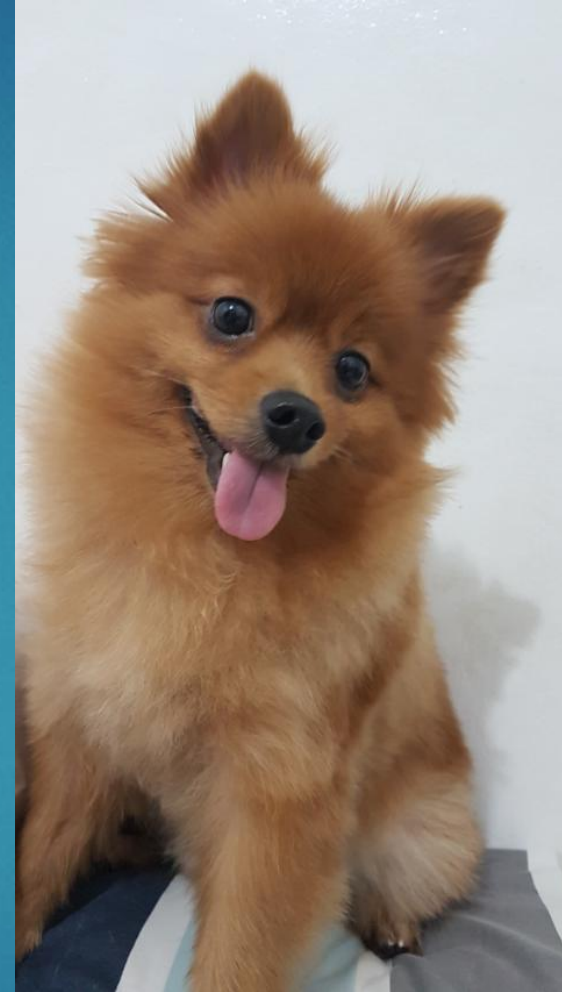
# Ridge Augmentation (Hydroxy-apatite)

# 4. Dental Implants



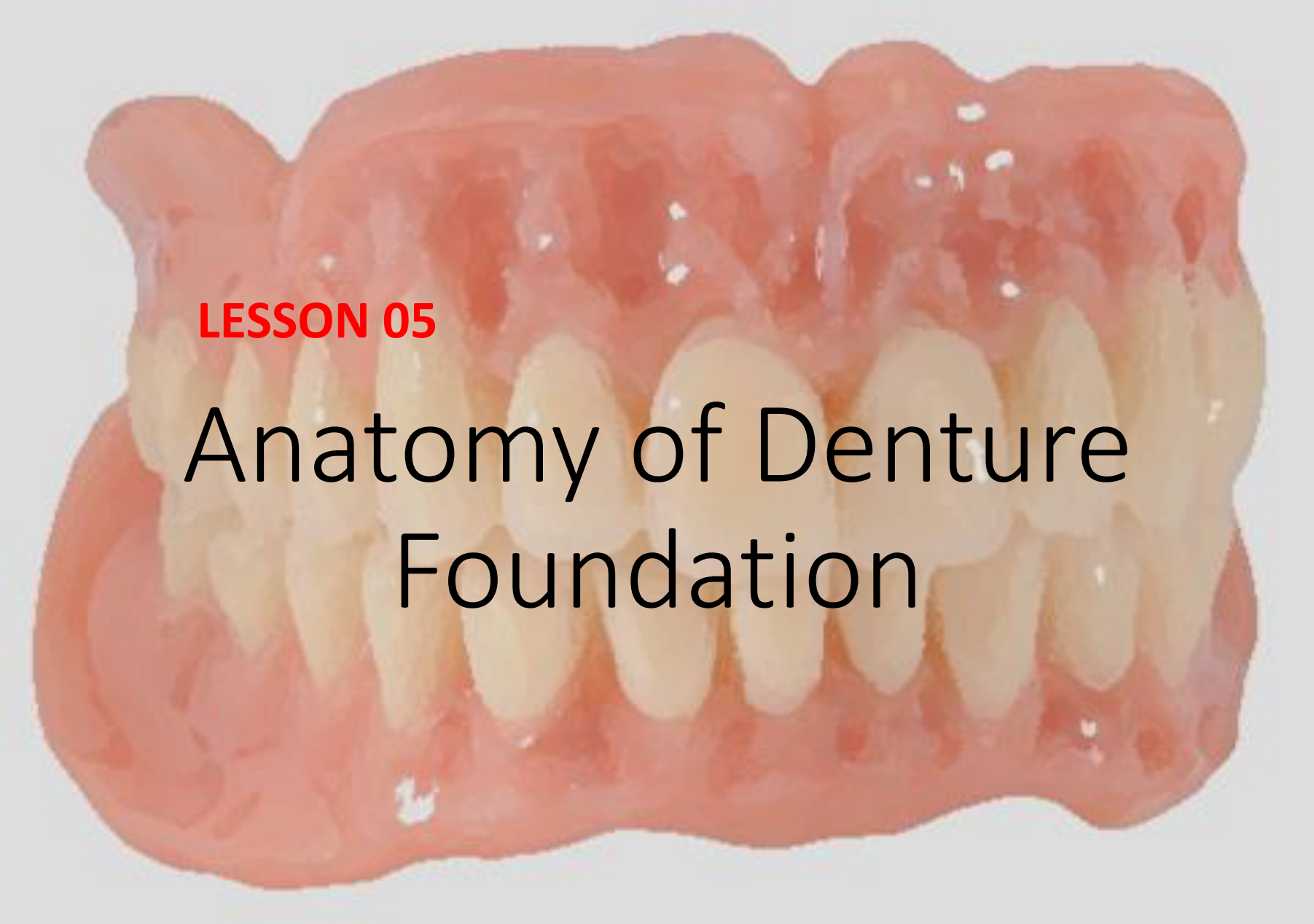
# QUESTION?

# THANK YOU



**LADY FARKLE**





**LESSON 05**

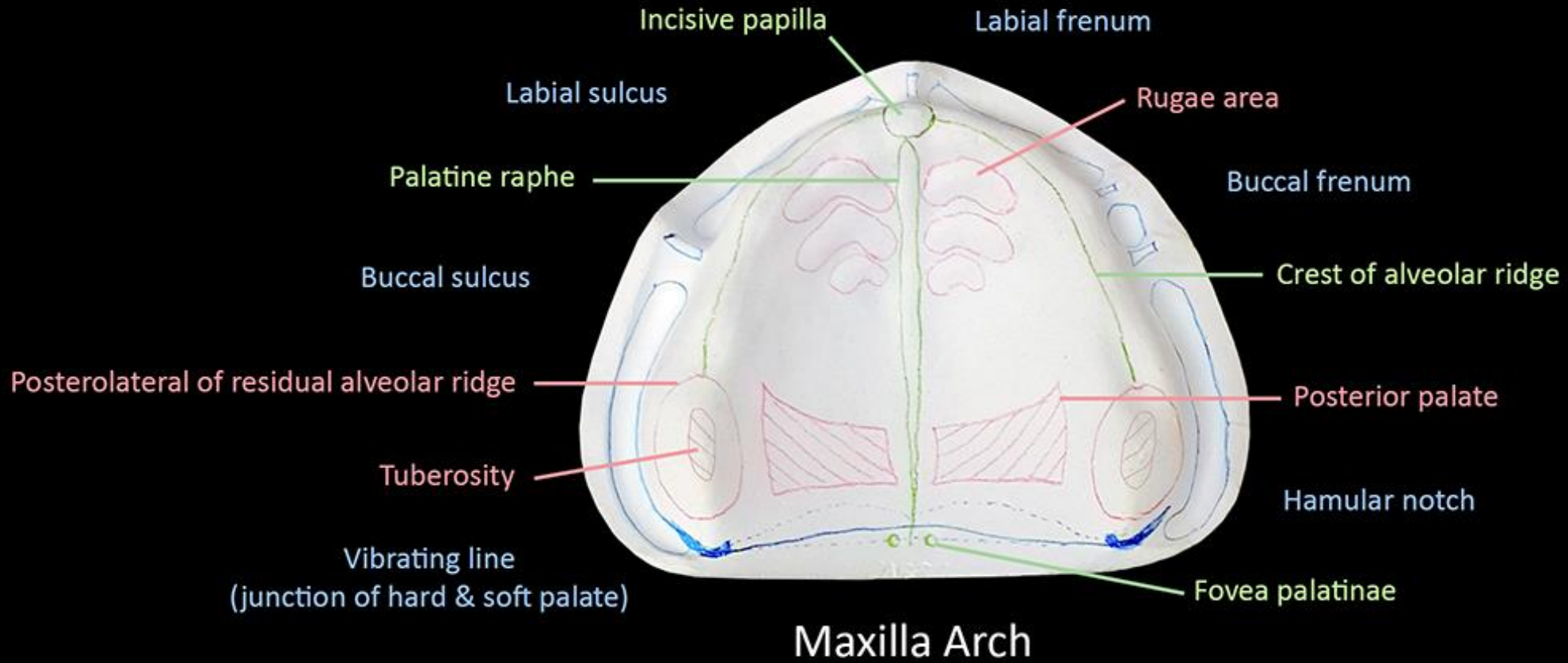
# Anatomy of Denture Foundation





Maxillary

# Supporting structures



# Anatomy of supporting structures

## Ideal features:

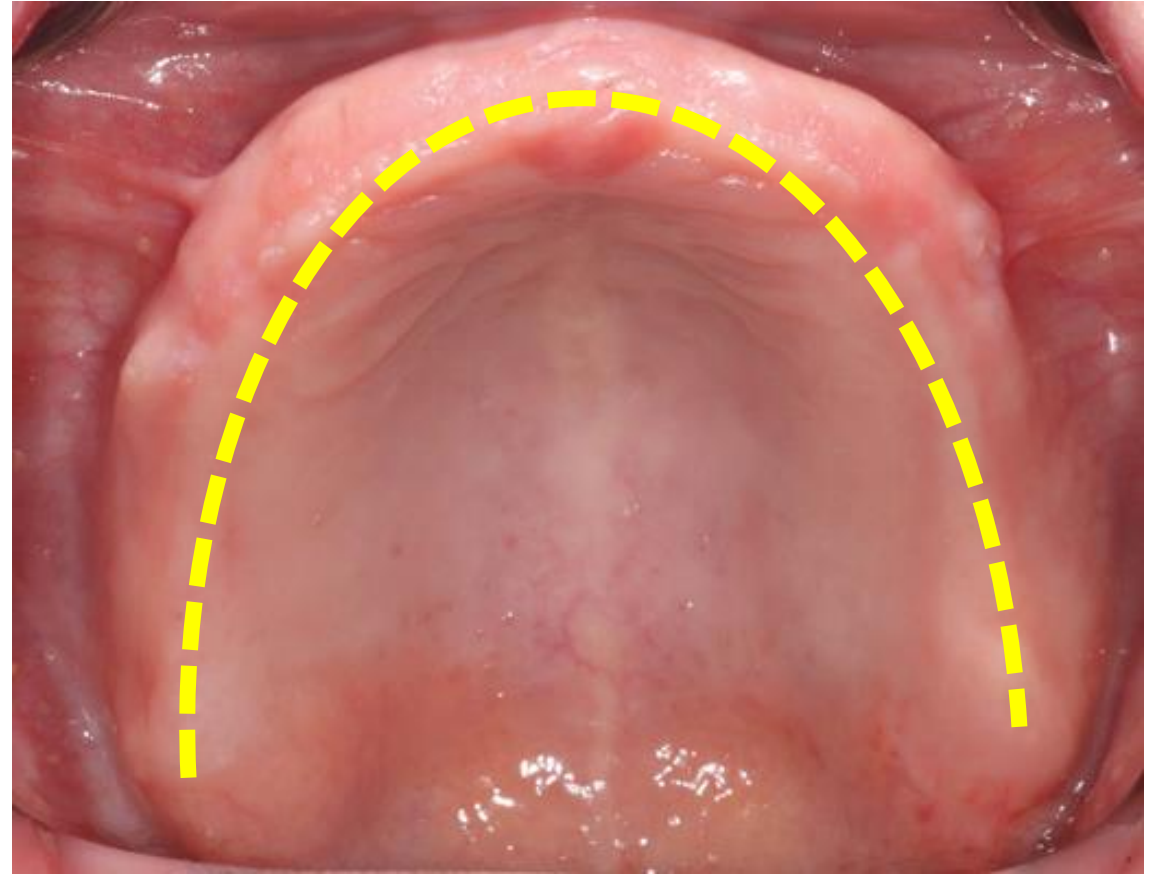
- Firmly attached
- Keratinized or masticatory type
- The submucosa should be resilient, fibrous connective tissue having average thickness and should be firmly attached

The average available denture-bearing area for an edentulous mandible is 14 cm<sup>2</sup>, whereas for edentulous maxillae it is 24 cm<sup>2</sup>

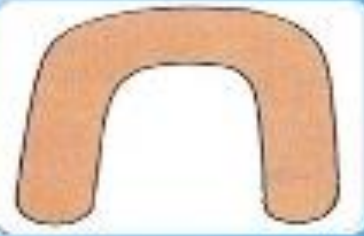
# Residual ridge

Function: Primary stress bearing area.

- Crest: compact bone covered with a layer of fibrous connective tissue that is firmly attached

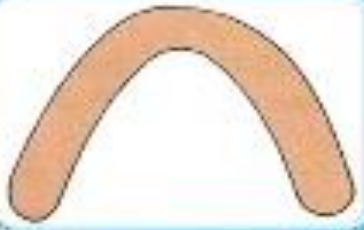


# Classification based on arch form (House)



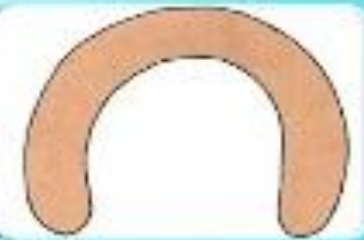
## Class I : Square

- more surface area
- favorable shaped



## Class II : Tapered:

- Associated with a high arched palate.
- less retention and stability.



## Class III : Ovoid

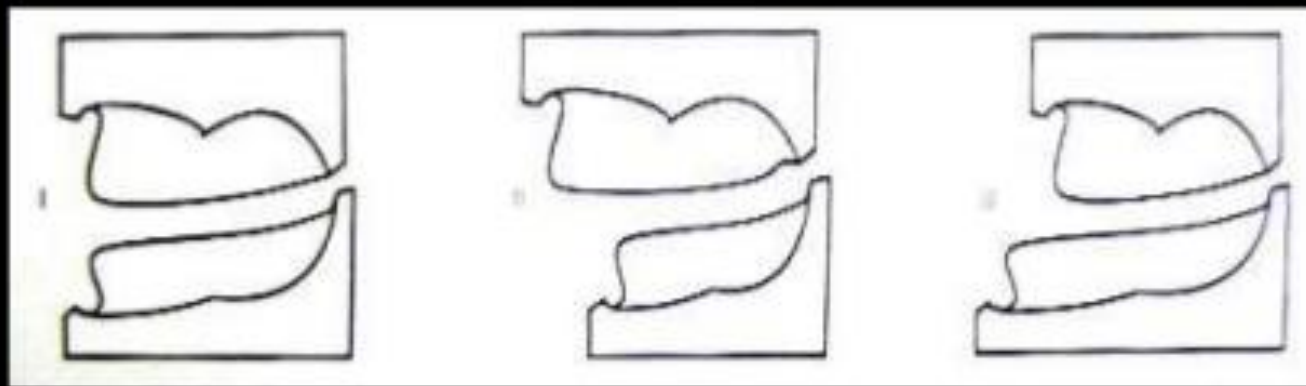
- Comparatively less common.



# Classification based on interridge relationship

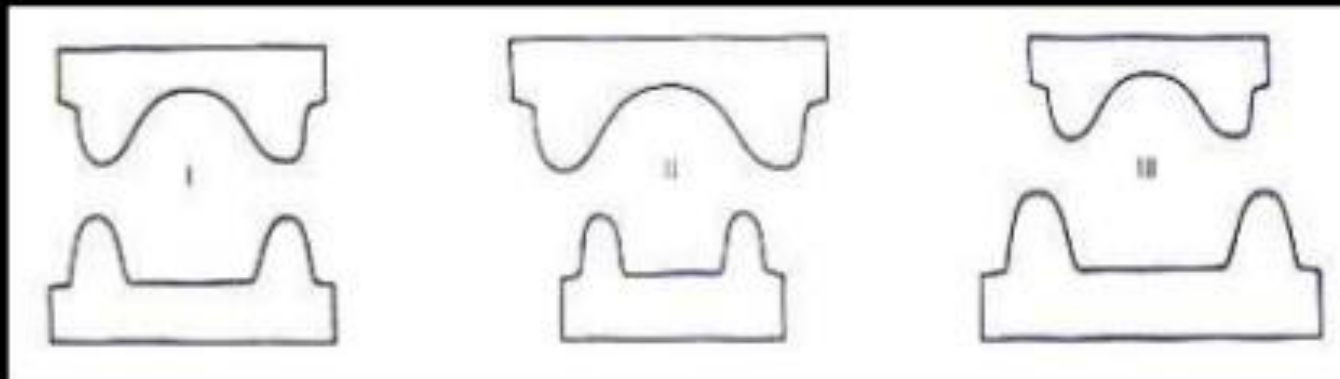
## ● Anterior

- Class I
- Class II
- Class III



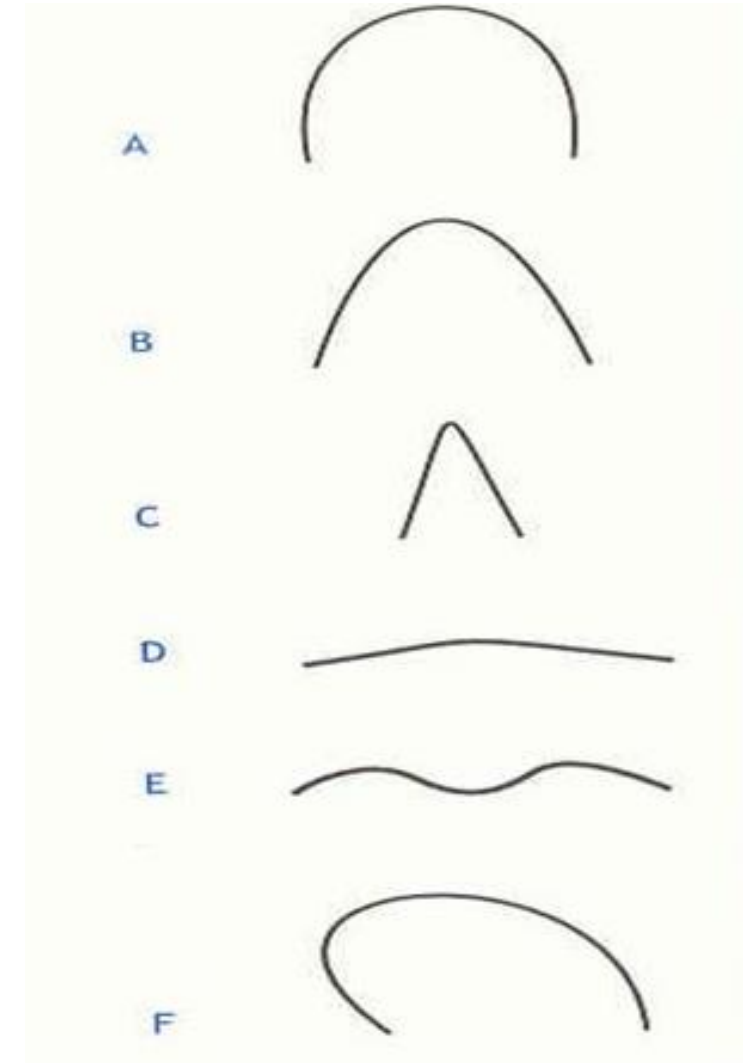
## ● Posterior

- Class I
- Class II
- Class III



# Types based on the shape (cross section)

- A. U shape – Good prognosis
- B. V shaped/ tapered – favorable prognosis. Common in mandible
- C. Knife edge – poor prognosis. Usually seen in mandible
- D. Flat – poor prognosis
- E. Inverted – poor prognosis
- F. Undercut – potential for difficulties.

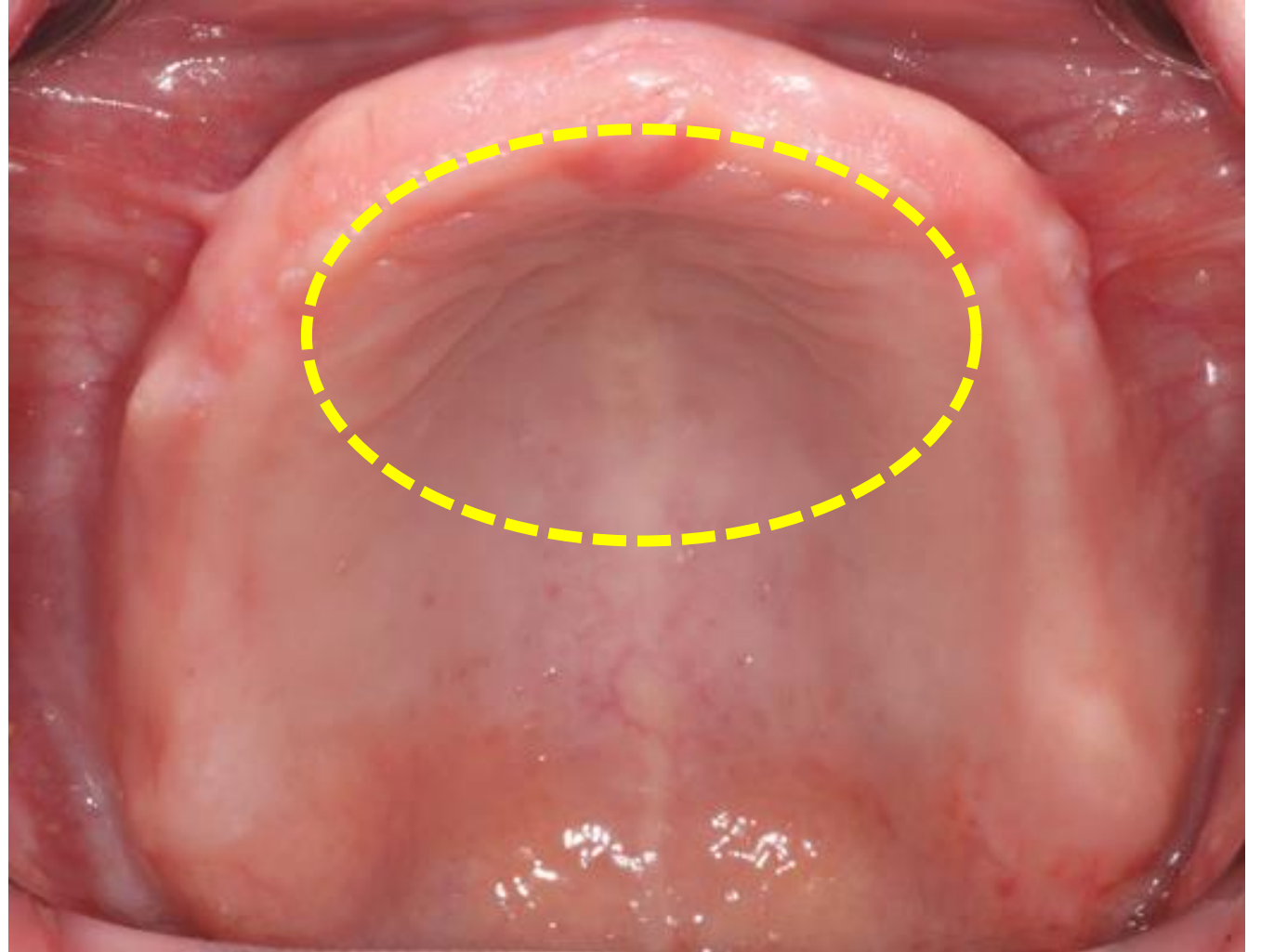


# Rugae area

Location: anterior part of hard palate

Function: Secondary stress bearing area

- Made up of keratinized fibrous connective tissue
- It resist forward movement of the denture

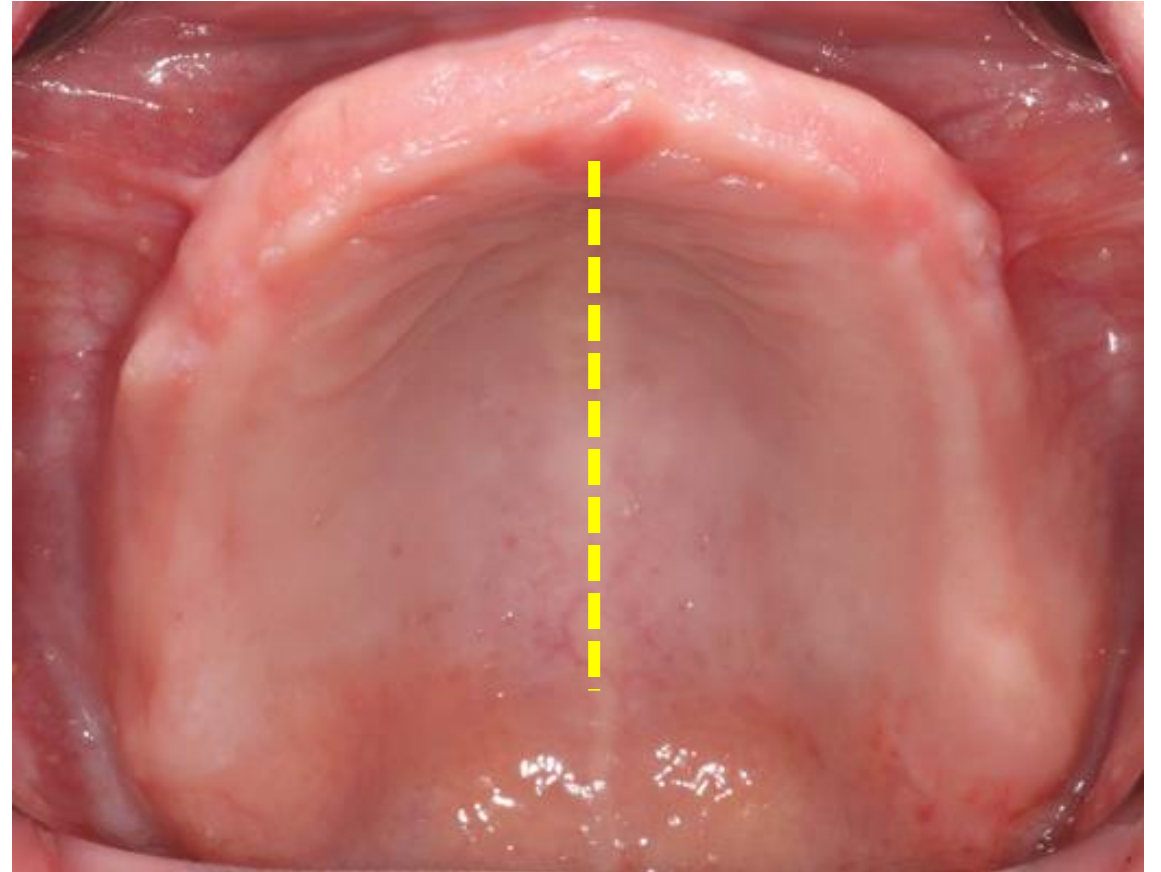


# Median palatine raphe

Location: Slightly raised bony ridge along the midline of hard palate

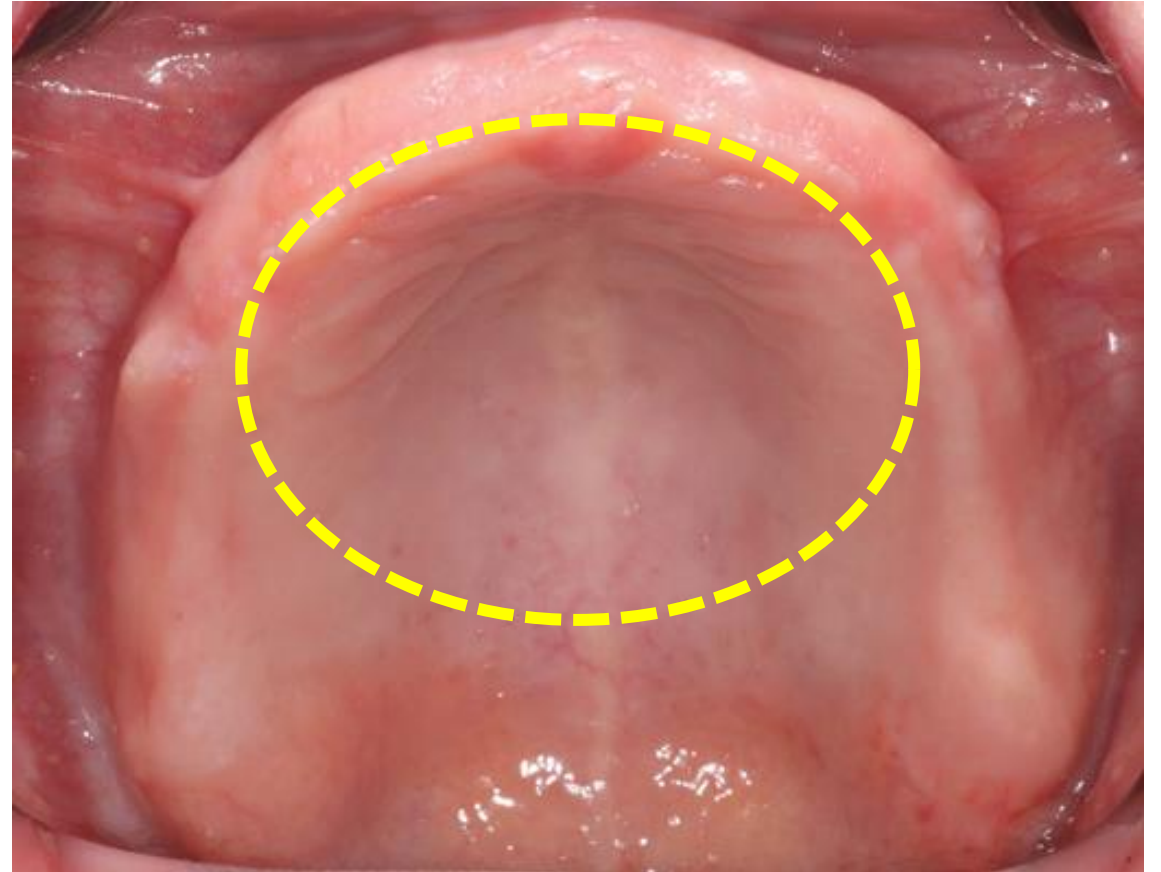
Significance: relief area

- Mucosa is thin and non resilient
- Fulcrum point: cause rocking of the denture



# Hard palate

- Anterolateral
  - Submucosa contains adipose tissue
  - Significance: secondary retentive area
- Posterolateral
  - Glandular region
  - Significance: secondary retentive area
  - Should not be compressed as it can interfere with the function of the glands





# Classification of hard palate according to shape

## Class I – U shaped

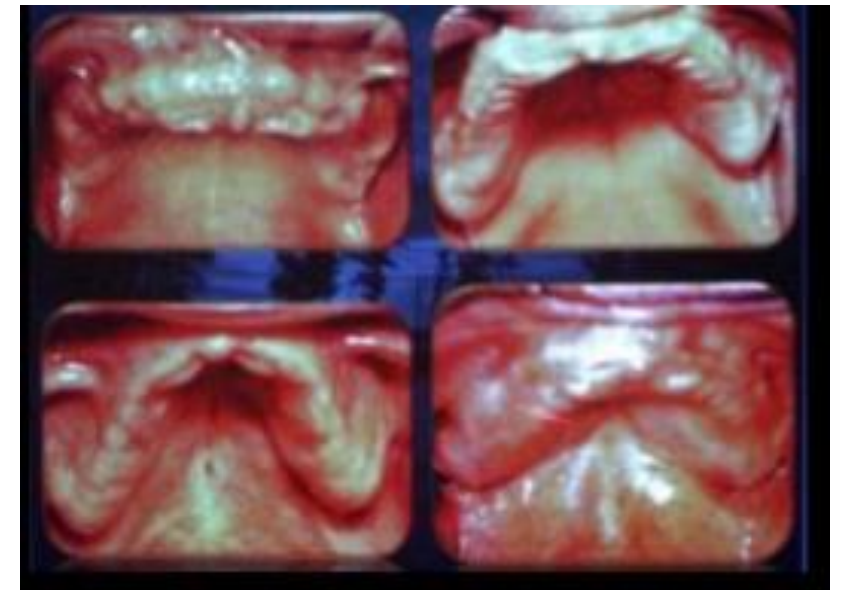
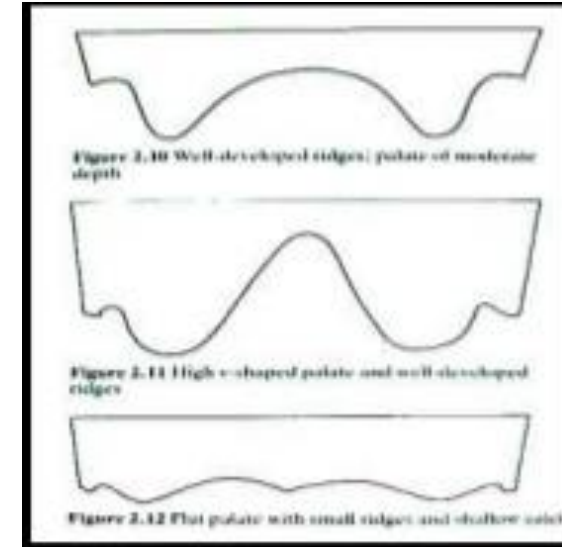
- Most favorable for retention & stability

## Class II – V shaped

- Not very favorable
- Slight movement will break the seal and cause loss of retention
- Associated with tapered arch

## Class III – Flat or shallow

- Not very favorable
- Poor resistance to lateral forces



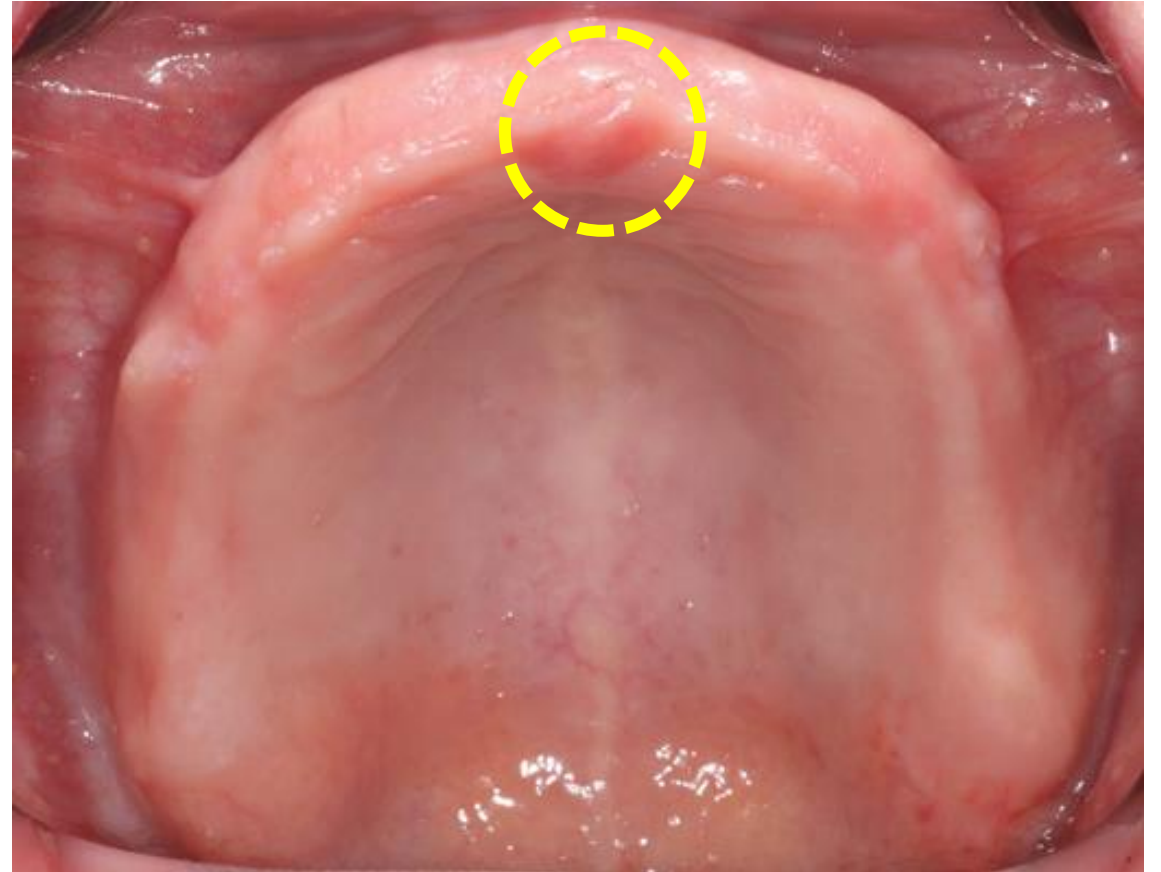
# Incisive papilla

Location: behind and between central incisors/ crest

Small tissue projection that covers incisive foramen through which nasopalatine nerves and vessels pass

Significance: Relief area

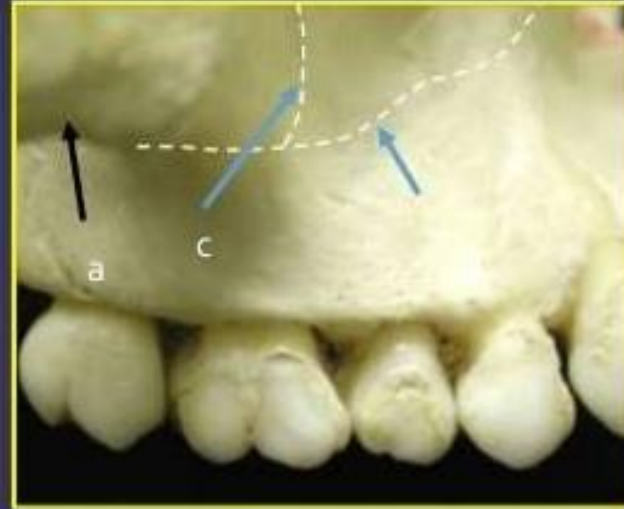
- Pressure on nasopalatine nerve can cause paresthesia, pain, burning sensation



# Zygomatic process (malar process)

Location: buccal to first molar region

Function: relived when prominent to prevent soreness

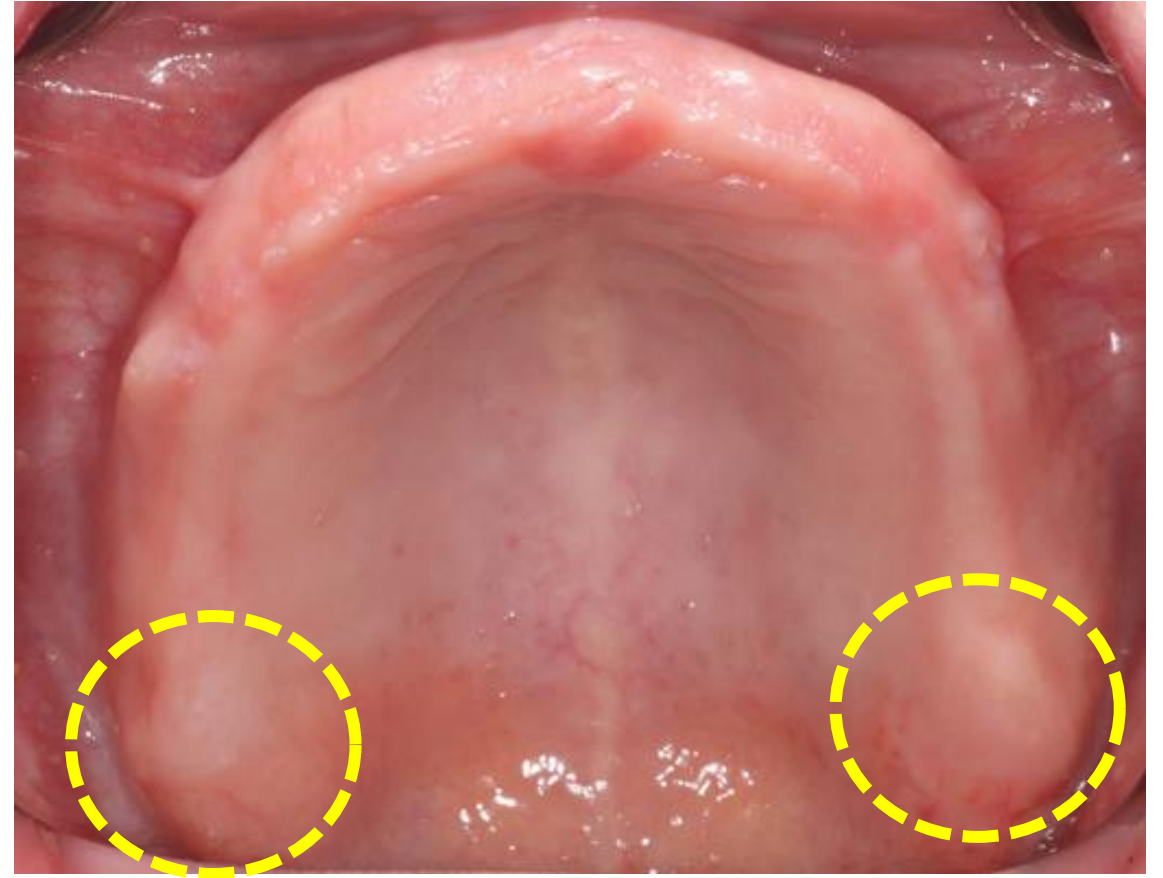


a: Malar process  
c: Sinus septum  
d: Maxillary sinus

# Maxillary tuberosity

Location: posterior most part of maxillary edentulous ridge

Significance: it should be covered, teeth are not set on the tuberosity region



# Limiting structures

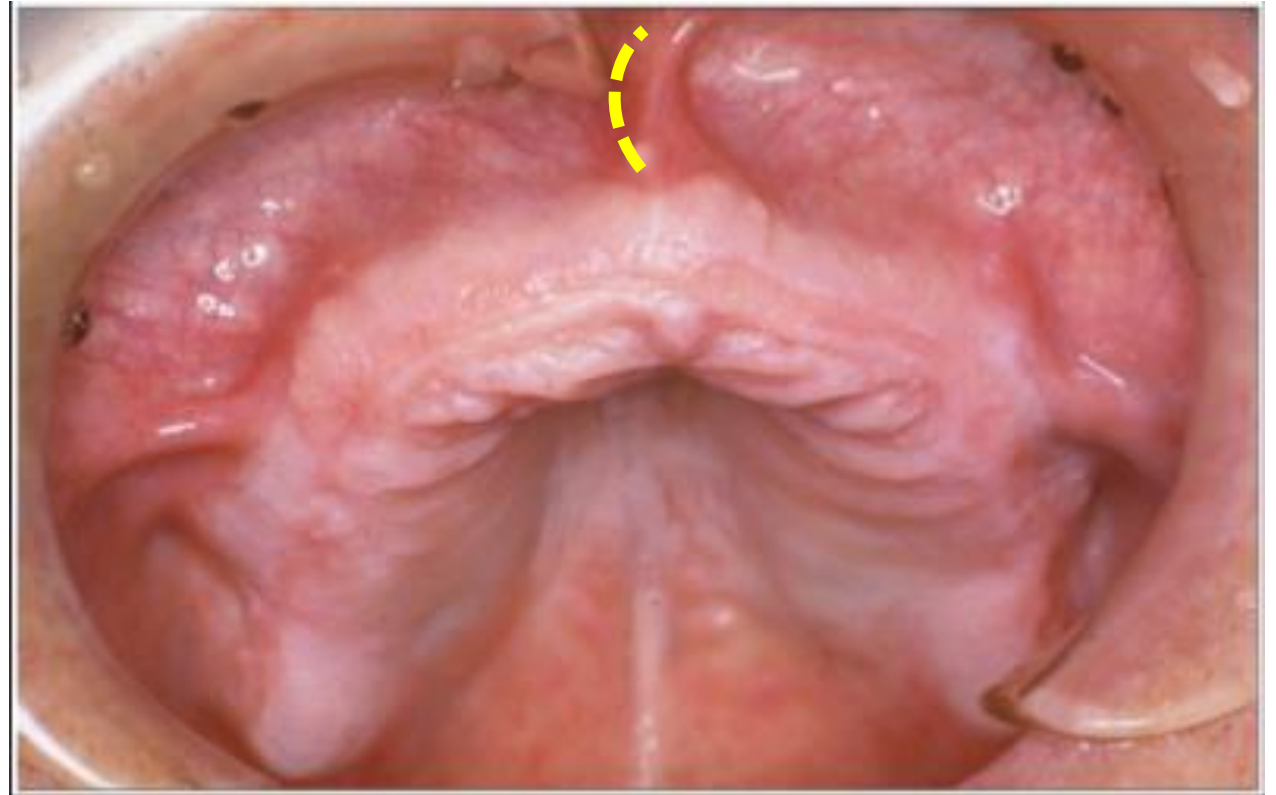
- Labial frenum
- Buccal frenum
- Labial vestibule
- Buccal vestibule
- Pterygomaxillary(hamular) notch
  - Fovea palatinae
  - Vibrating lines



# Labial frenum

Location: fold of mucous membrane at the median line

Significance: relief area (labial notch)



# Buccal frenum

Location: fold of membrane found on the buccal side

- Single fold, double fold, broad and fan shape

Significance: relief area (buccal notch)



# Frenal Attachment Classification

- **Class I** – sulcal or low attachment
- **Class II** – attaches midway between the sulcus and crest of the ridge
- **Class III** – crestal or near crestal (high) attachment

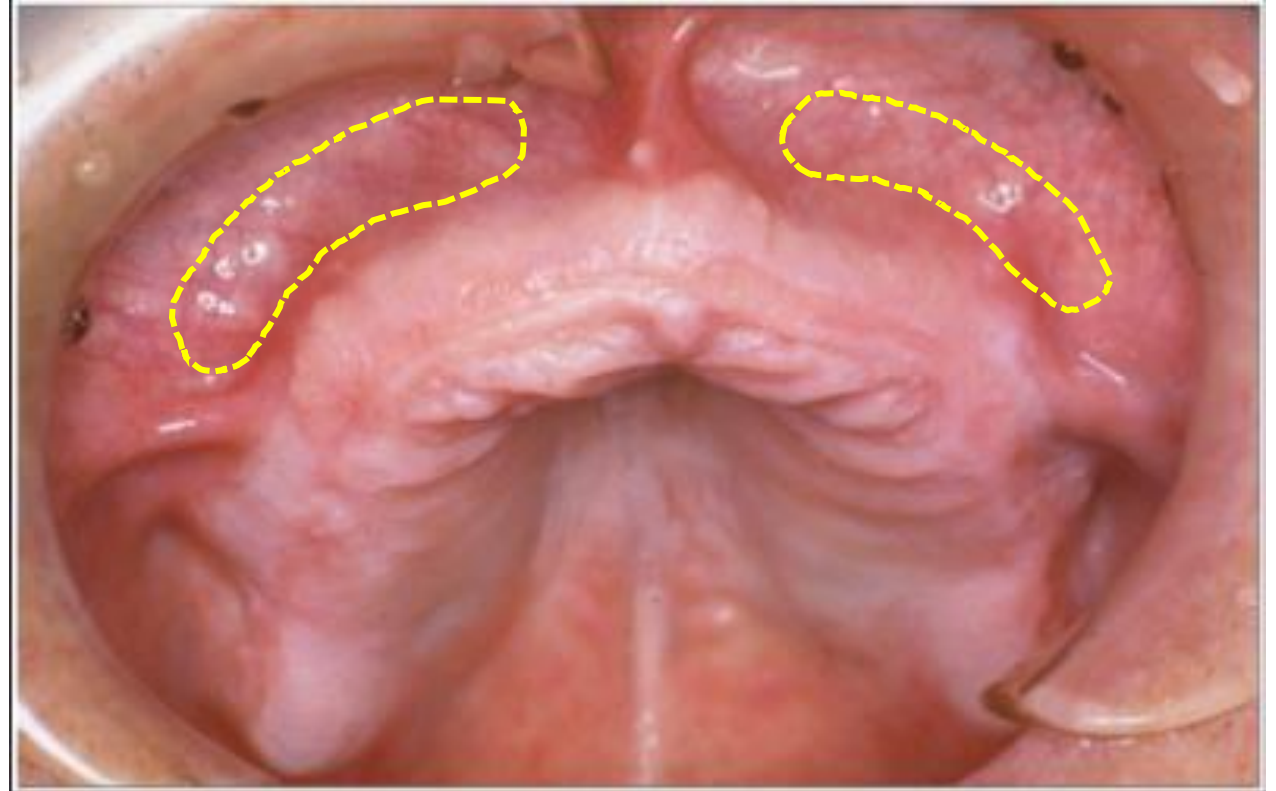


# Labial vestibule

Location: sulcus area between labial and buccal frenum

Significance:

- Accommodates labial flange of the denture
- Valve seal
- Affects the appearance of the patient



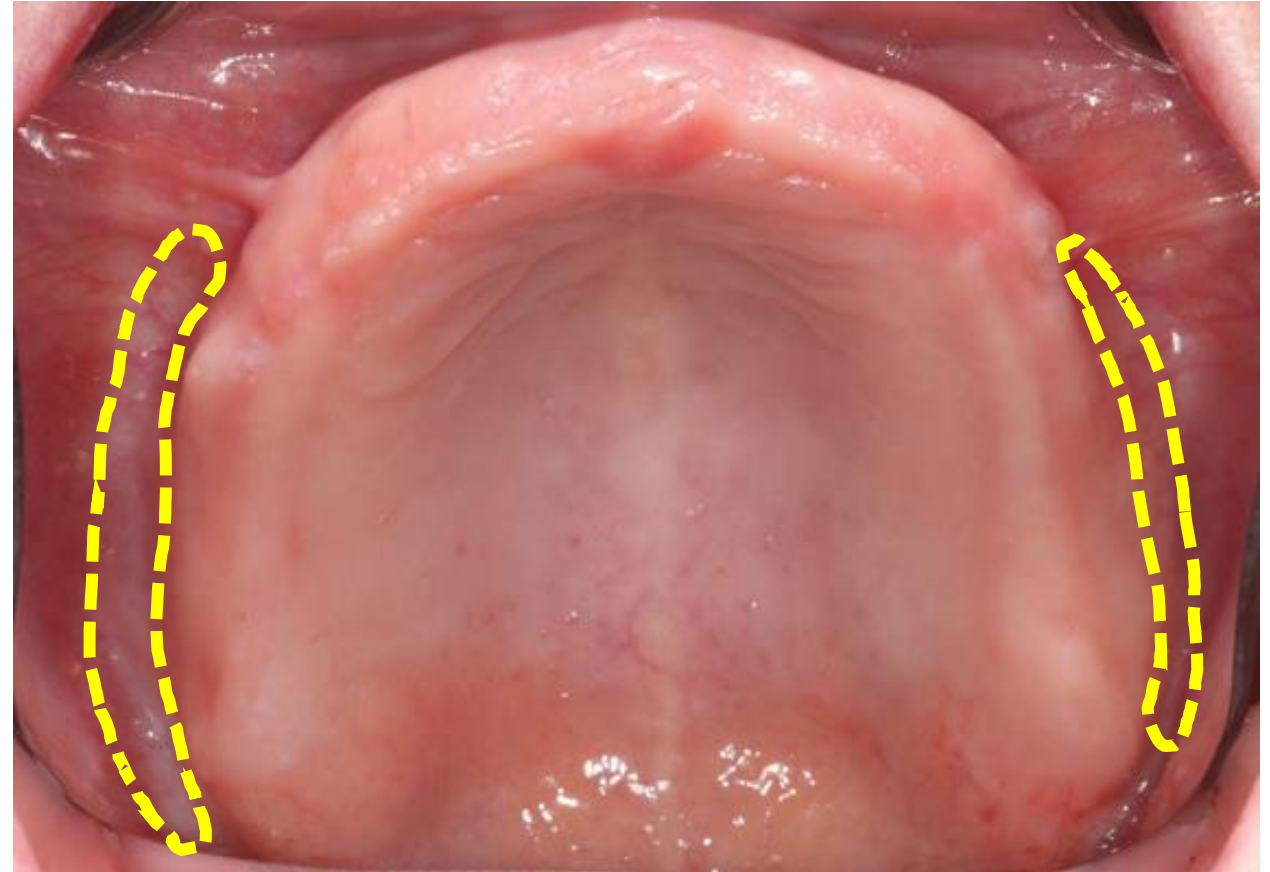


# Buccal vestibule

Location: sulcus area from buccal frenum to the hamular notch

Significance:

- Accommodates buccal flange of the denture
- Peripheral seal
- Vestibular space is affected by the action of the masseter muscle and coronoid process





# Coronoid process

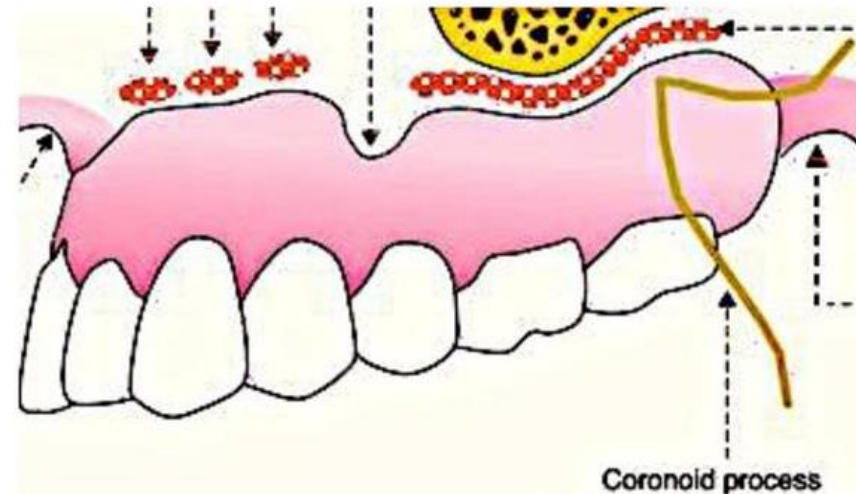
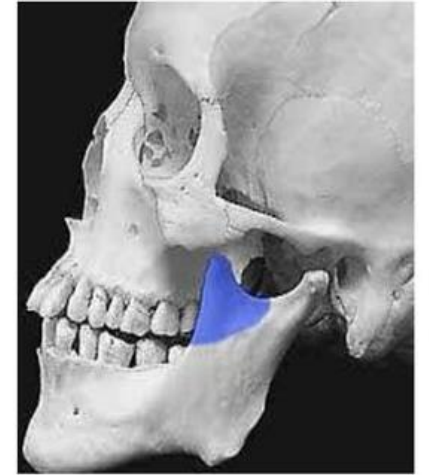
Location: buccal to maxillary tuberosity

Significance: as the mandible moves forward, it affects the buccal flange.

## Coronoid process:

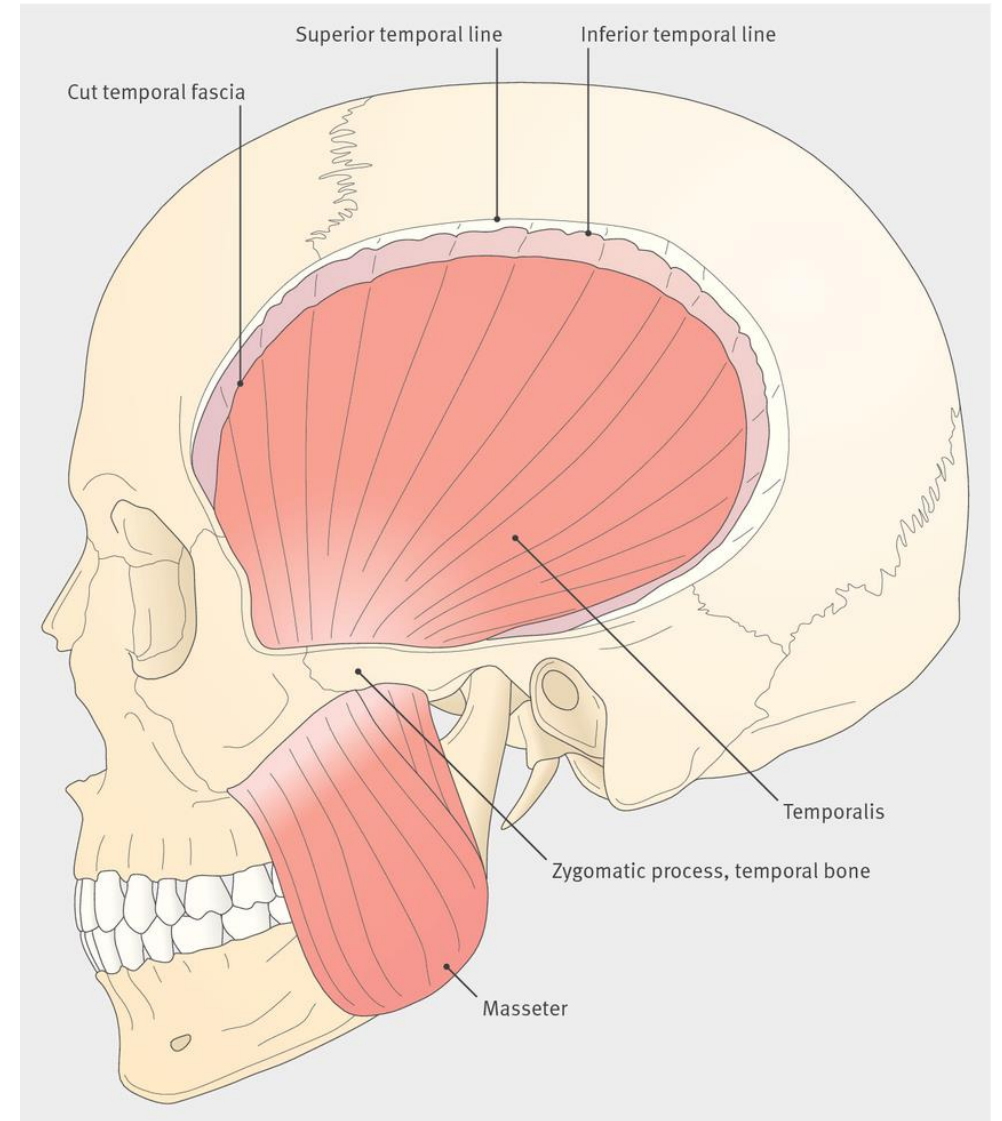
Dist buccal portion of upper denture....

dislodge when mouth opened



# Masseter muscle

Significance: Reduces distobuccal space under heavy biting pressure that can destabilize denture



# Pterygomaxillary (hamular) notch

Location: distal to maxillary tuberosity

Significance:

- Marks the posterior limit of the denture
- Additional pressure can be placed in the notch to produce a seal (pterygomaxillary seal)



# Pterygomandibular raphe

Location: extends from the hamulus to the distolingual corner of retromolar pad

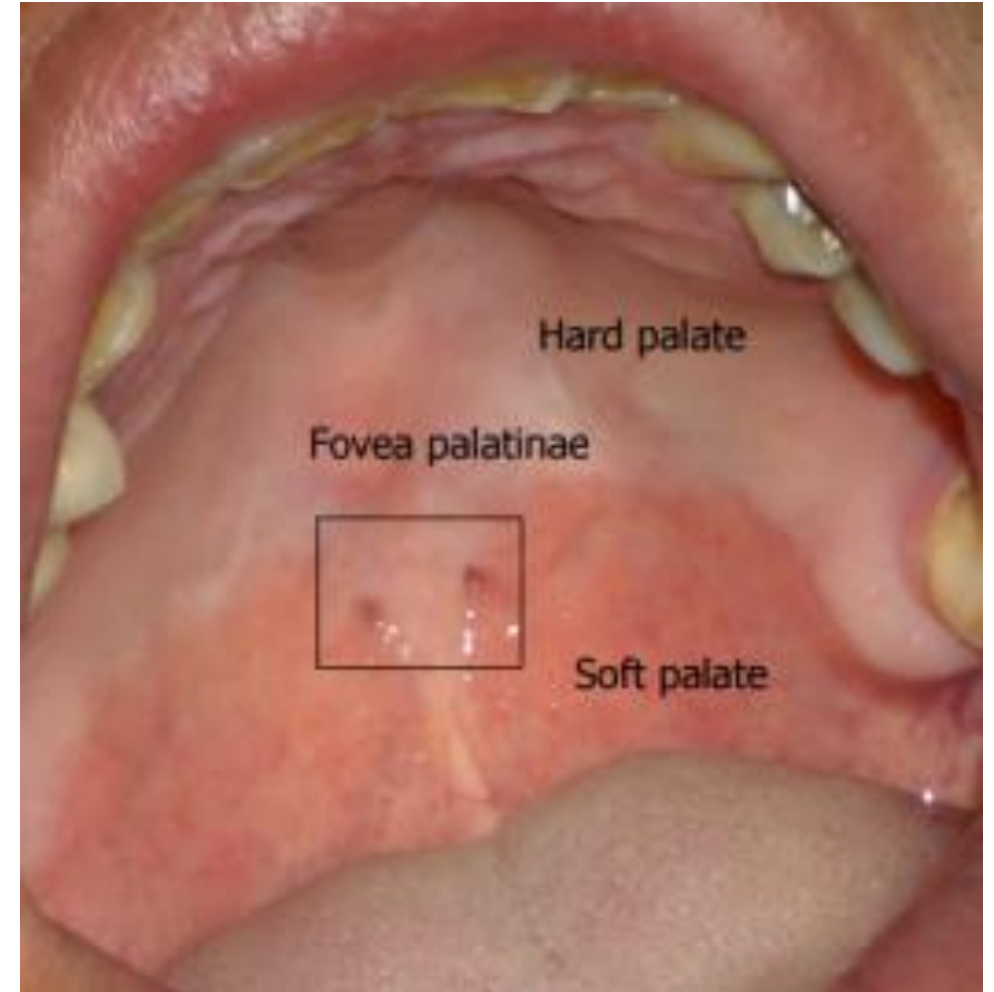
Significance: extension of denture beyond hamular notch can cause tissue injury upon opening of the mouth



# Palatine fovea

Location: two small indentations found on the posterior part of the palate of the midline

Significance: guide for the posterior boarder of denture (posterior vibrating line is 2mm anterior to the foveae)



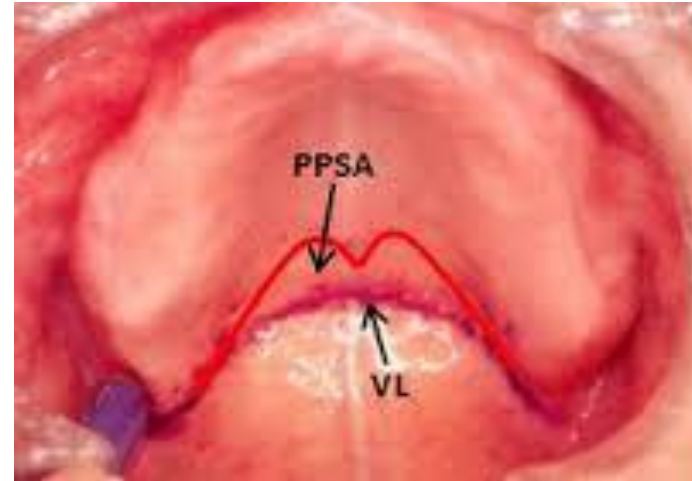


# Posterior palatal seal

Location: between anterior and posterior vibrating line (Cupid's bow shape)

Function:

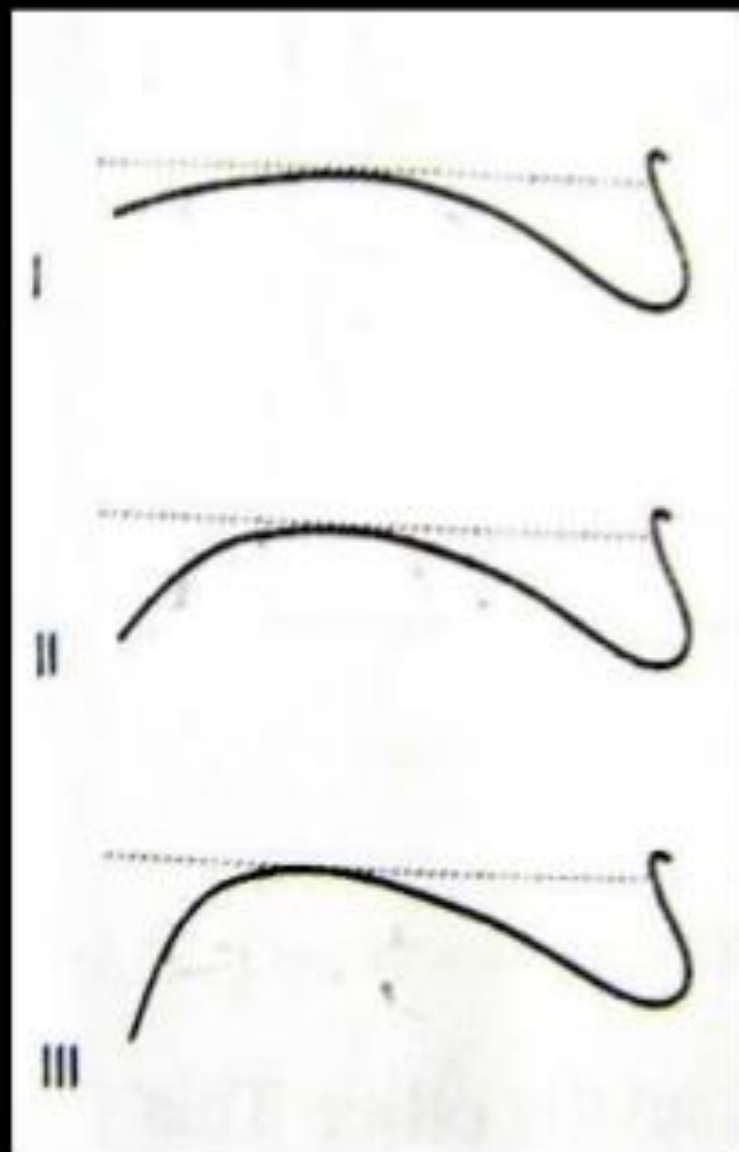
- Additional pressure may be placed in this area to effect a seal
- Posterior vibrating line marks the posterior limit of the denture





# Soft Palate Classification

- Determines the extent of additional area available for retention as well as the width of the posterior palatal seal area
- **Class I** – almost horizontal
- **Class II** – slope about 45 degrees from the hard palate
- **Class III** – slope about 70 degrees from the hard palate

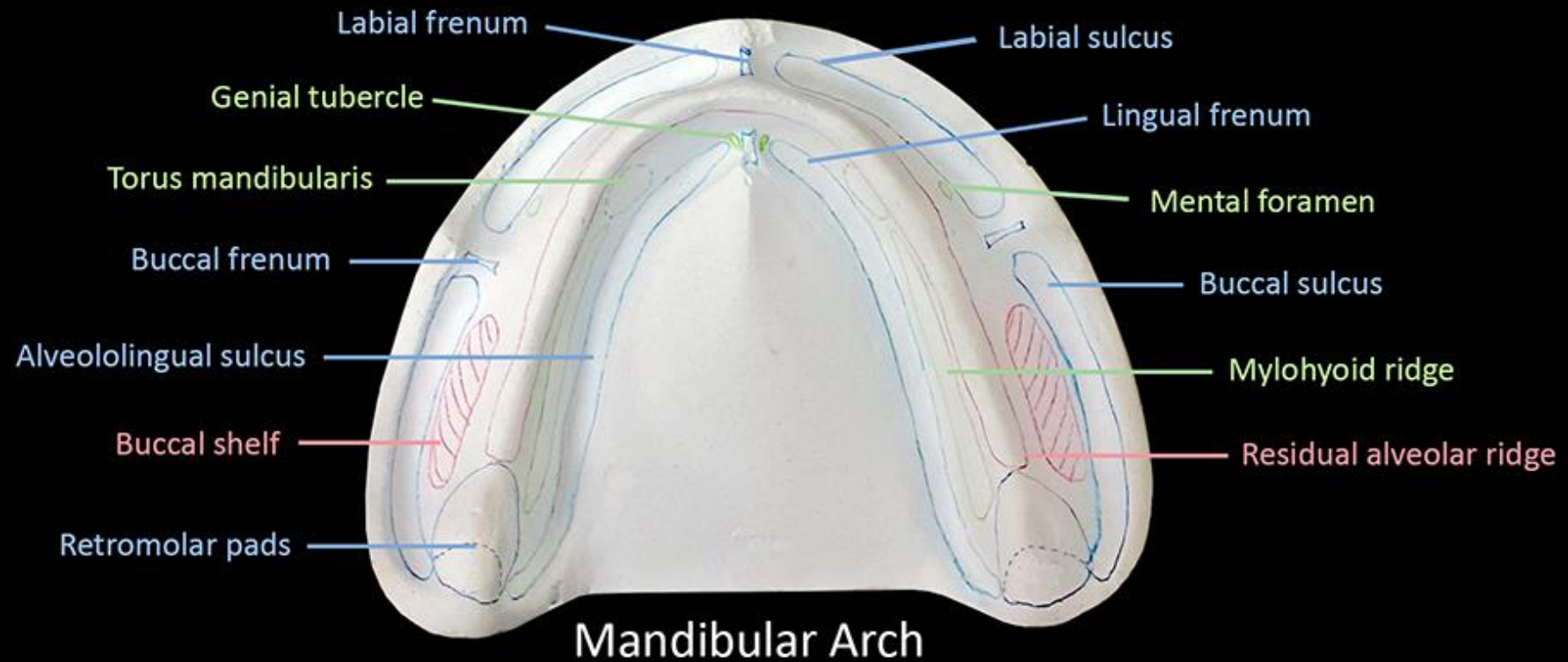




Mandibular



# Supporting structures



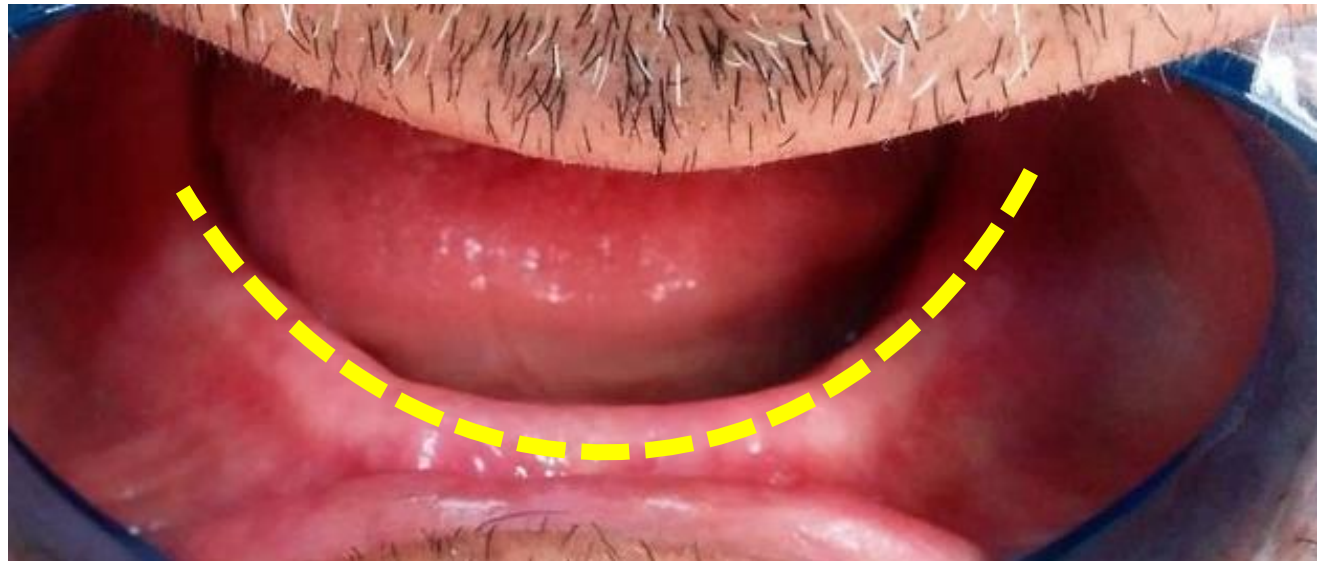


# Crest of residual alveolar ridge

Histology: covered by keratinized layer firmly attached to the periosteum.  
Cancellous bone

## Significance

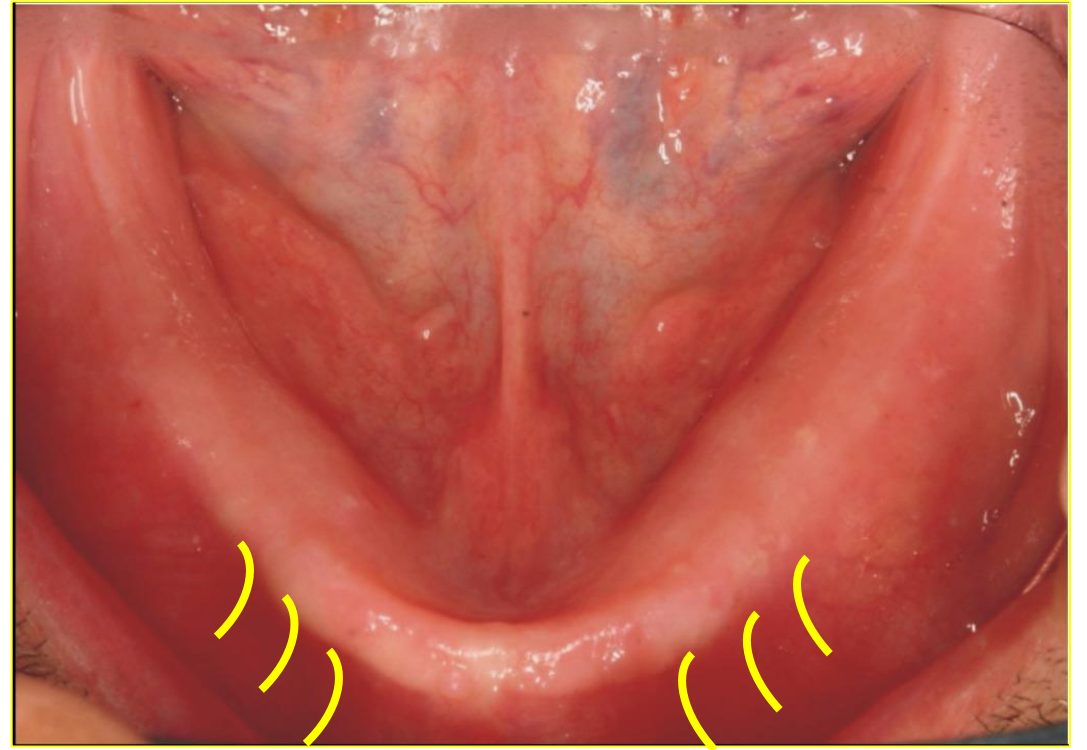
- Secondary relief area – relieved especially if it is sharp, spongy or full of nutrient canals



# Slopes of the residual ridge

- Thin plate of cortical bone

Function: secondary stress bearing



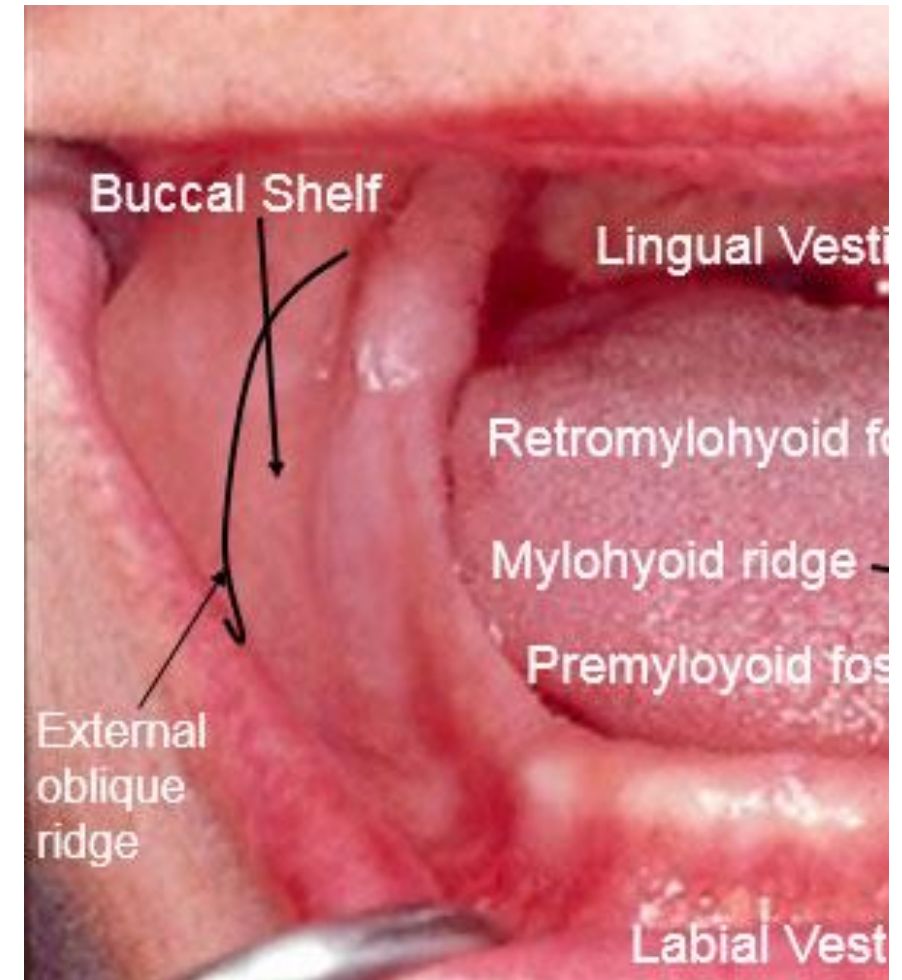
# Buccal shelf area

## Boundaries:

- Anteriorly – buccal frenum
- Posteriorly – retromolar pad
- Medially – crest of the ridge
- Laterally – external oblique line

Histology: mucosa is less keratinized and loosely attached

Function: primary stress bearing area because it is at right angle to vertical occlusal force and covered with dense smooth cortical bone

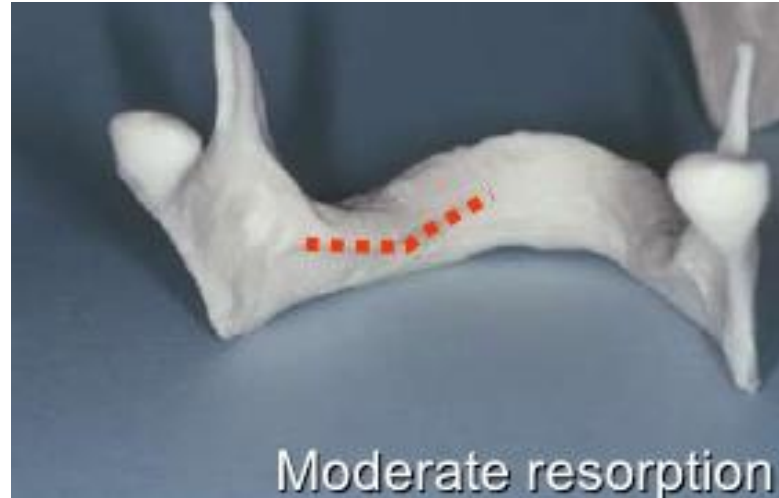
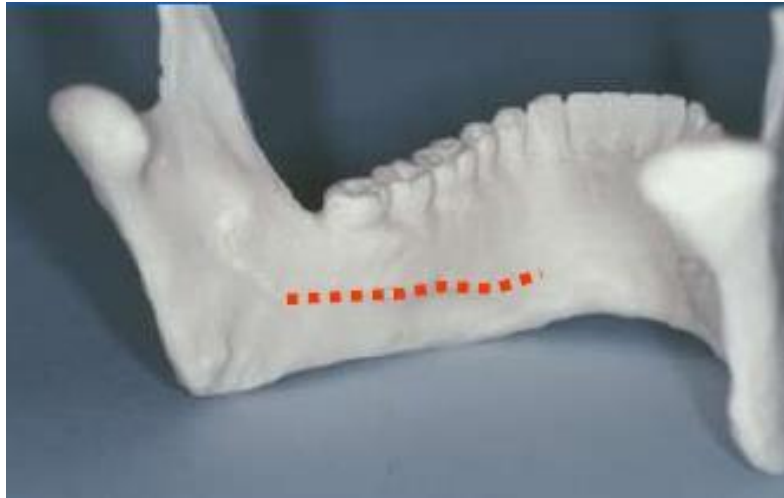


# Mylohyoid ridge

- Bony ridge on the lingual side of the mandible.

Function: determines the height of the lingual flange

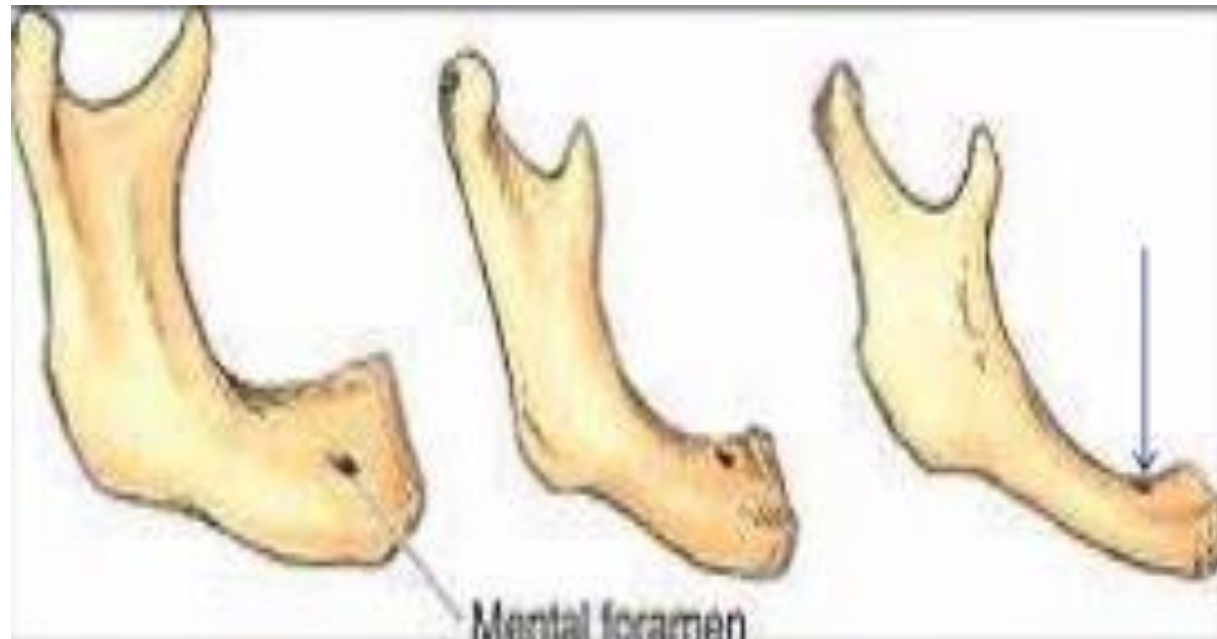
\*varies widely between patients



# Mental foramen

Location: near or on the ridge crest in the premolar region

Function: relieved – pressure on the mental nerve can cause numbness of the lip





# Torus mandibularis

- Relieved/ surgically removed



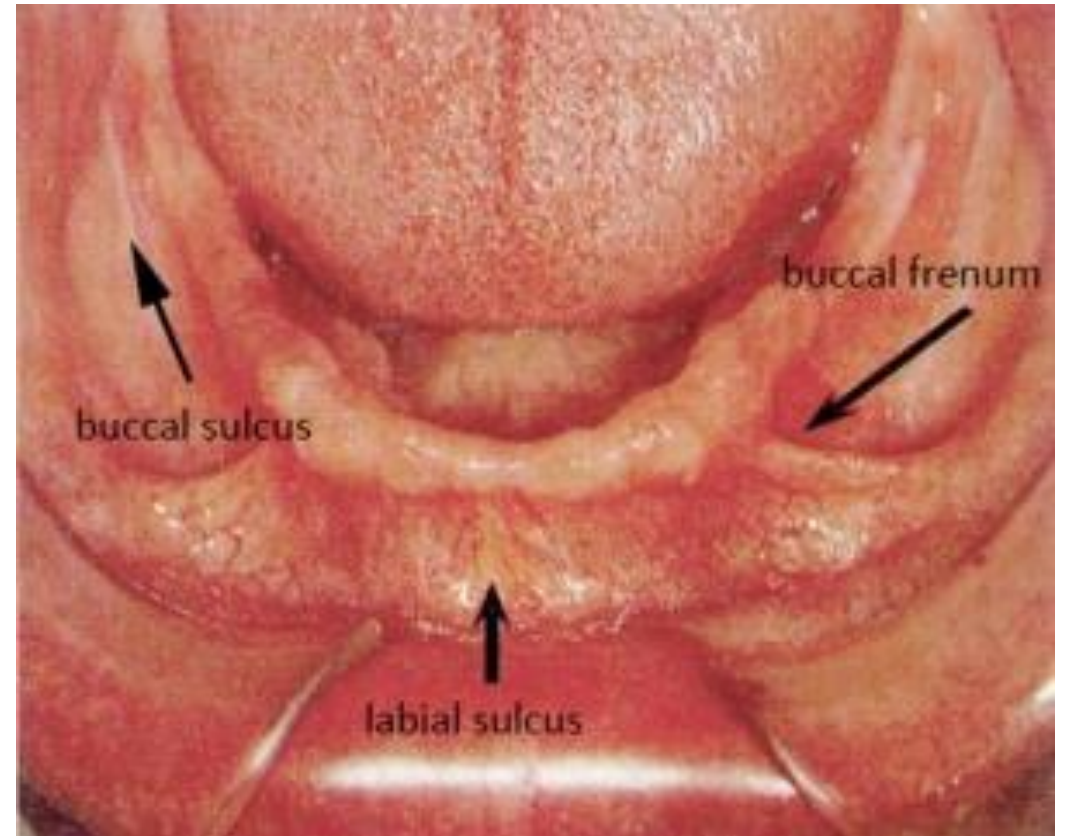
# Limiting structures

- Labial frenum
- Buccal frenum
- Labial vestibule
- Buccal vestibule
- Retromolar pad
- Retromylohyoid curtain
- Alveololingual sulcus
- Lingual frenum

# Labial frenum & Buccal frenum

Band of fibrous connective tissue

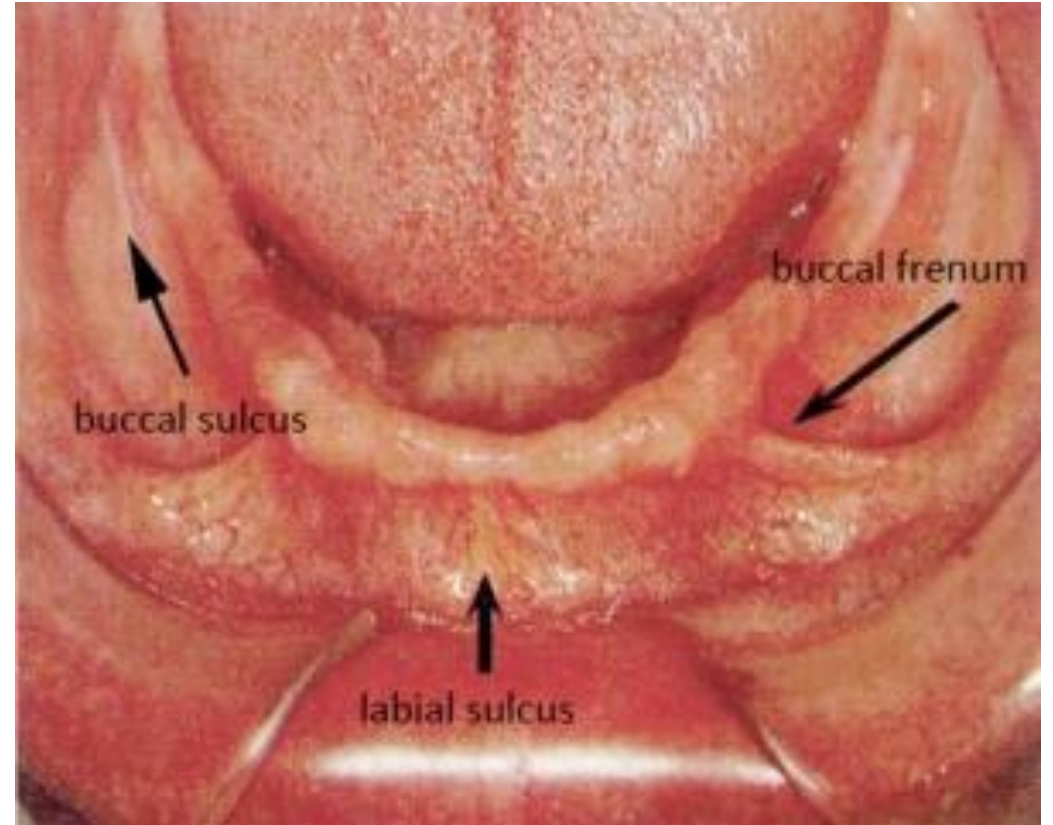
Significance: relief area



# Labial & Buccal sulcus/ vestibule

## Significance:

- Accommodates labial & buccal flange of the denture
- Forms part of the valve seal



# External oblique ridge

It does not govern the extension of the buccal flange but by the mucobuccal fold.

Significance: palpation of the external oblique ridge helps to judge the amount of the resistance or lack of resistance offered by the border tissues of this region.



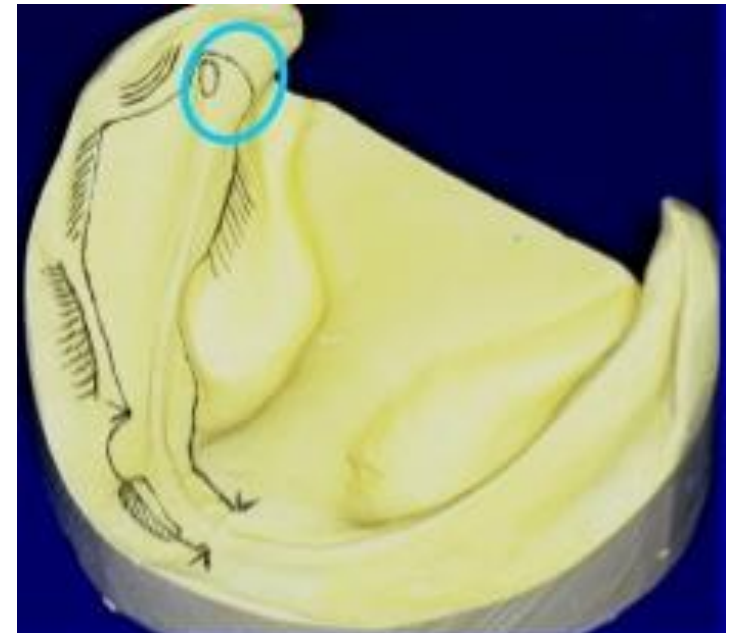
- A bony ridge runs antero-posteriorly outside the buccal shelf.
- Denture border 1-2 mm beyond this ridge.
- Shows as Groove in impression.



# Retromolar pad

- A triangular pad that contains glandular tissue, loose areolar connective tissue, the lower margin of the pterygomandibular raphe, fibers of the buccinator, and superior constrictor and fibers of the temporal tendon

Significance: forms part of the valve seal area



# Lingual border anatomy

- Retromylohyoid curtain
- Alveololingual sulcus (lingual vestibule)
- Lingual frenum
- Mylohyoid muscle
- Mylohyoid ridge
- Genial tubercle
- Sublingual gland region

# Retromylohyoid curtain

- Wall of mucous membrane which limits the distolingual part of the denture flange.

## Significance:

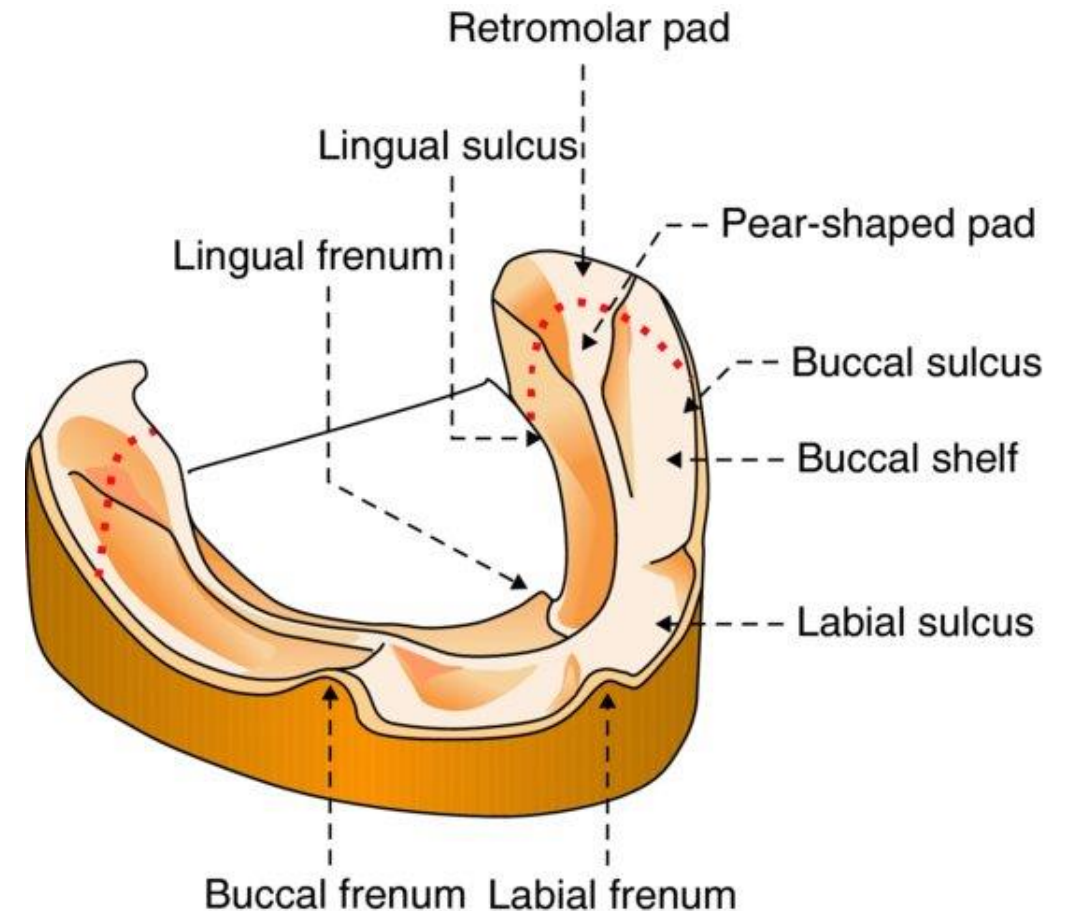
- Accommodates the distolingual part of the denture
- Pulled forward when the tongue is thrust out
- Forms part of the peripheral valve seal area



# Alveololingual sulcus (lingual vestibule)

- Anterior part: premylohyoid fossa
  - Between lingual frenum and premylohyoid fossa
- Middle region: mylohyoid
  - From premylohyoid fossa to distal end of mylohyoid ridge
- Posterior region: retromylohyoid fossa
  - From mylohyoid ridge to the retromylohyoid curtain

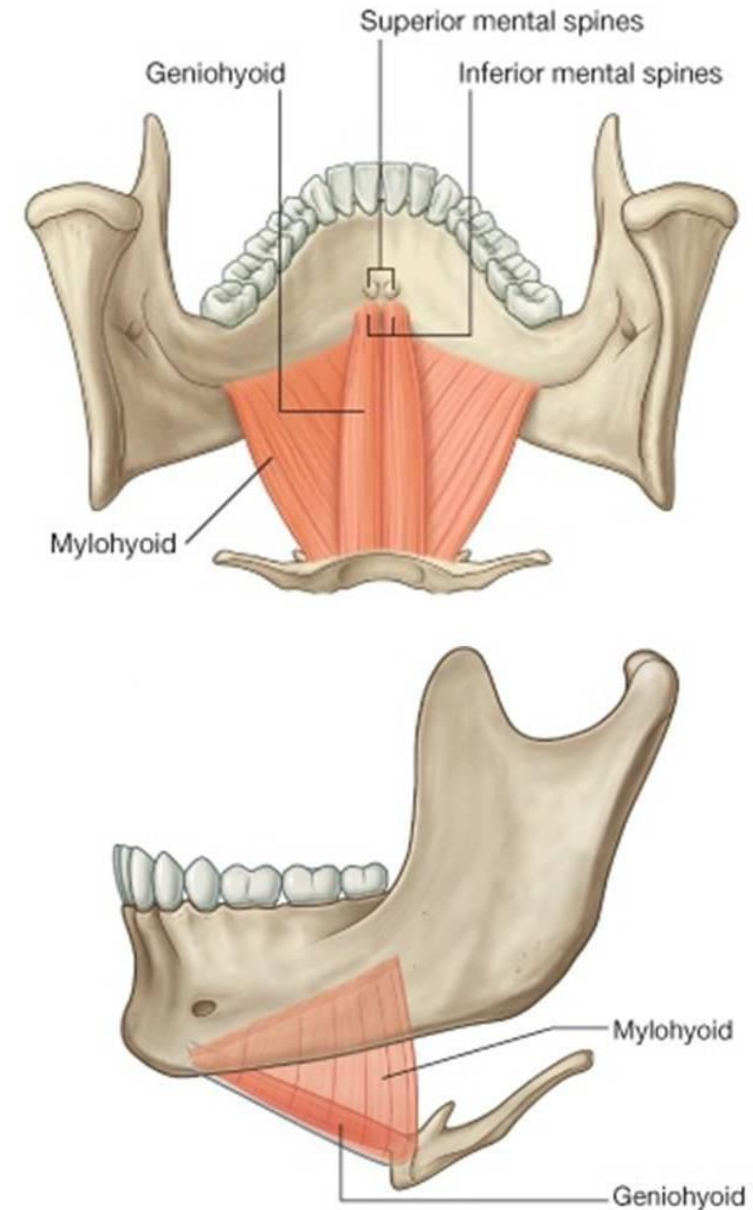
\*the action of the mylohyoid muscle gives the characteristic “S” curve of the lingual flange



# Mylohyoid muscle

- Posteriorly – 1cm distal to end of the mylohyoid ridge
- Anteriorly – up to the midline
- Medially – mylohyoid muscle of both side join to form the floor of the mouth

Significance: extension of the lingual flange is influenced by the action of mylohyoid muscle





# Mylohyoid ridge

- Attachment of mylohyoid muscle

## Significance:

- Denture flange should extend below the mylohyoid ridge. If border rest above the ridge, there will be displacement of the denture, soreness, and the seal will be broken easily
- Severe resorption – it becomes prominent. Should be surgically corrected or relieved in the impression



# Lingual frenum

- Attaches the tongue anteriorly

Significance: relief area

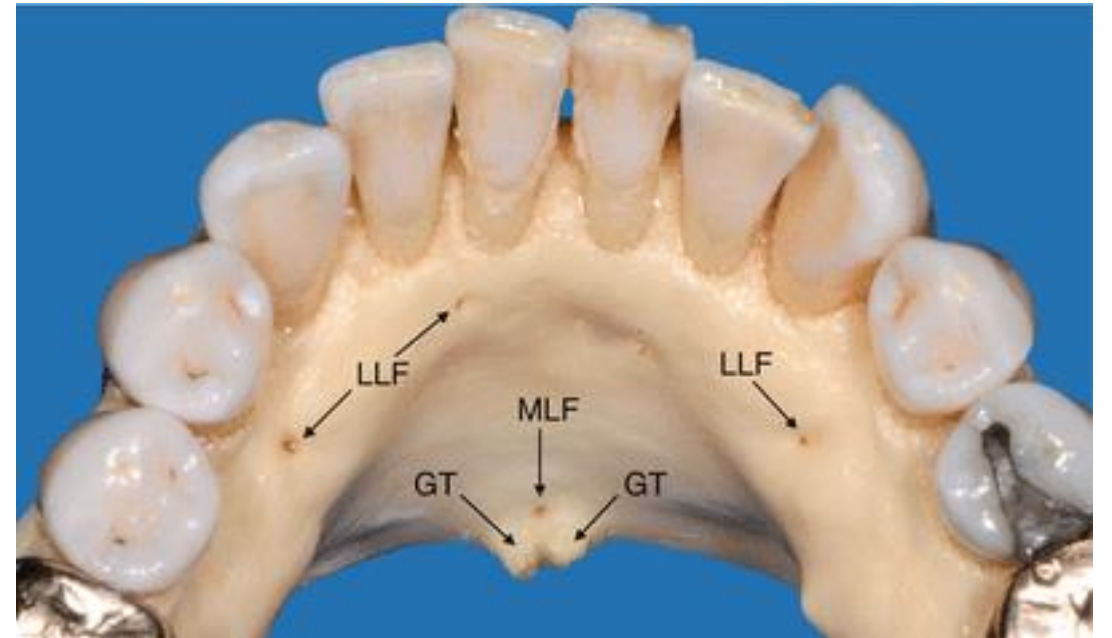


# Genial tubercle

- Hard projection on the lingual side of the mandible in the midline
- Prominent on excessively resorbed ridge

Significance:

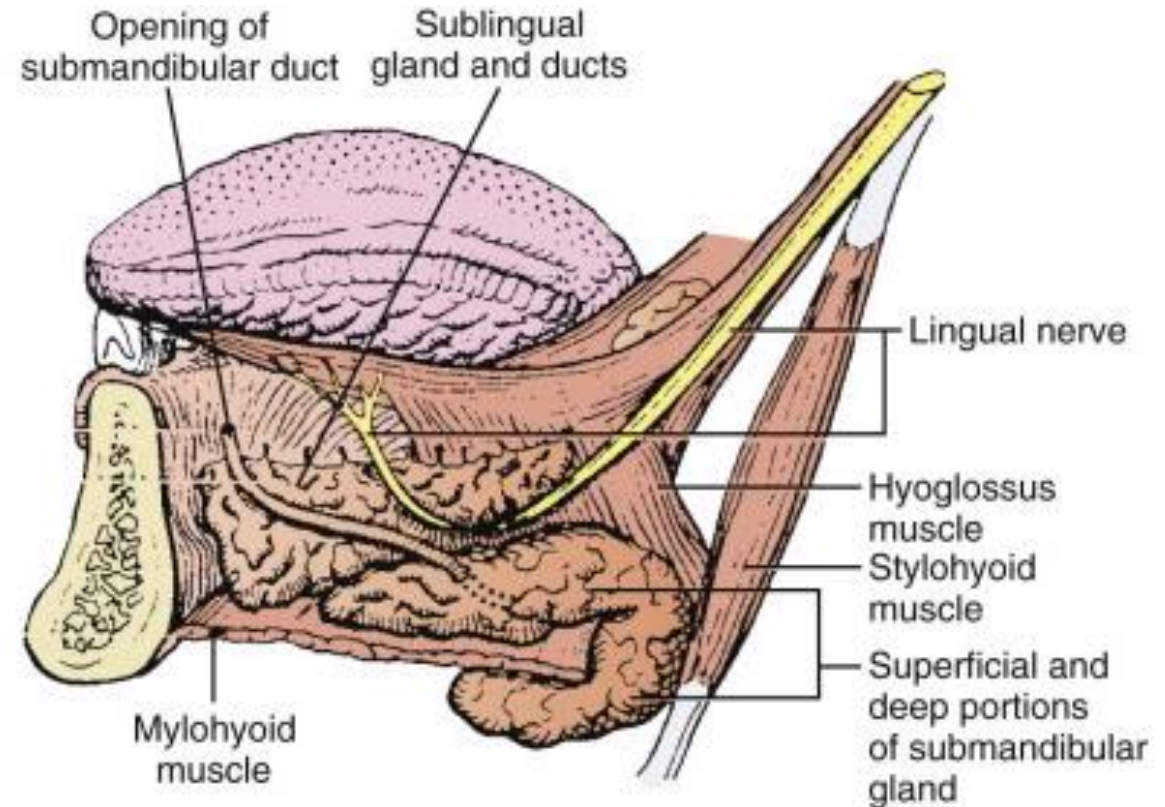
- Relieved to avoid pain



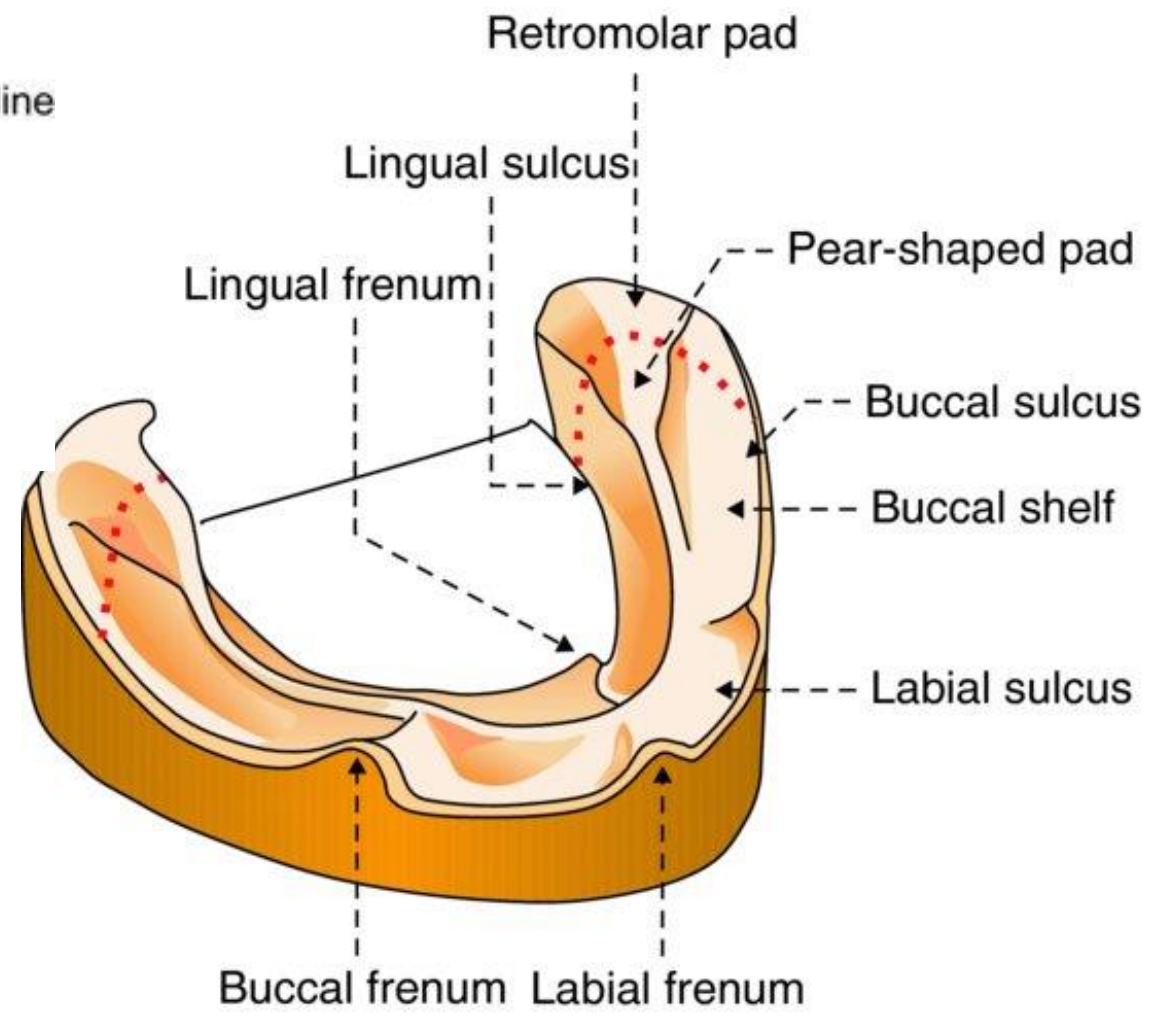
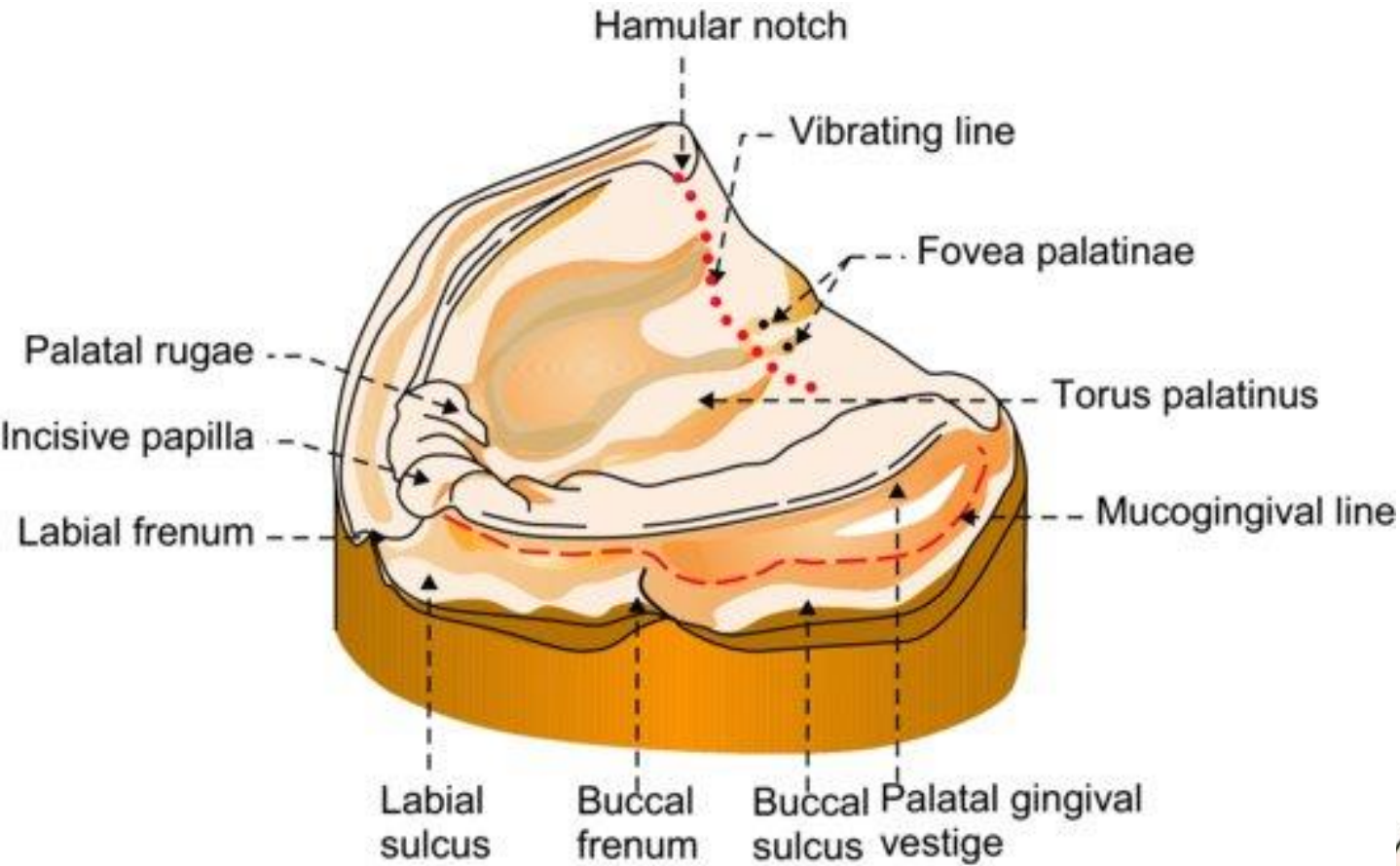
# Sublingual gland region

- Rest on the anterior region of the mylohyoid muscle

Significance: limits the height of lingual flange. When the floor of the mouth is raised, the gland comes close to the crest of the ridge.









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# Impression Theories and Techniques

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LESSON 06

# Definition

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**Impression** – negative likeness or copy in reverse of the surface of an object

**Cast** – positive replica of denture foundation tissues



# Objectives of impression taking

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Preservation  
of the  
alveolar ridge

Retention

Stability

Support

Esthetics

# Classification of impression techniques

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## **A. Based on theories of impression**

- Pressure theory
- Minimal pressure theory
- Selective pressure theory

## **B. Based on the position of the mouth while making the impression**

- Open mouth
- Closed mouth

## **C. Based on the method of manipulation for border molding**

- Hand manipulation
- Functional movements



# Theories of Impression

# 1. Pressure theory

(Mucocompressive or definite pressure)

- Was proposed on the assumption that **tissues recorded under functional pressure** (mastication) provided better support and retention for the denture.
- Heavy bodied material (Impression compound)

## Advantage:

Better retention and support during occlusal functions like mastication

# 1. Pressure theory

(Mucocompressive or definite pressure)

## Disadvantages:

- Excess pressure could lead to increased alveolar bone resorption – loose denture
- Excess pressure result in transient ischemia
- Dentures which fit during mastication tend to rebound when the tissue resume to their normal resting state
- Pressure on sharp spiny ridges or other bony areas often resulted in pain

## 2. Minimal pressure theory (mucostatic or nonpressure or passive technique)

- **Interfacial surface tension** was the only significant way of retaining complete denture. Retention is achieved through accurate tissue adaptation
- Covers firmly **attached mucosa** – shorter flanges
- **Equal transmission of pressure to all part**

## 2. Minimal pressure theory (mucostatic or nonpressure or passive technique)

### Advantage:

- Tissue health and preservation

### Disadvantages

- Shorter flanges prevent the wider distribution of masticatory stresses
- Reduced coverage, reduced retention
- Lack of border molding reduces effective peripheral seal therefore reduced retention



## 2. Minimal pressure theory (mucostatic or nonpressure or passive technique)

### Disadvantages

- Short denture borders provoke irritation to the tongue
- Shorter flanges reduce support for the face which affects the esthetics
- Shorter flanges, less lateral stability
- Patients with poor residual ridge were difficult to treat

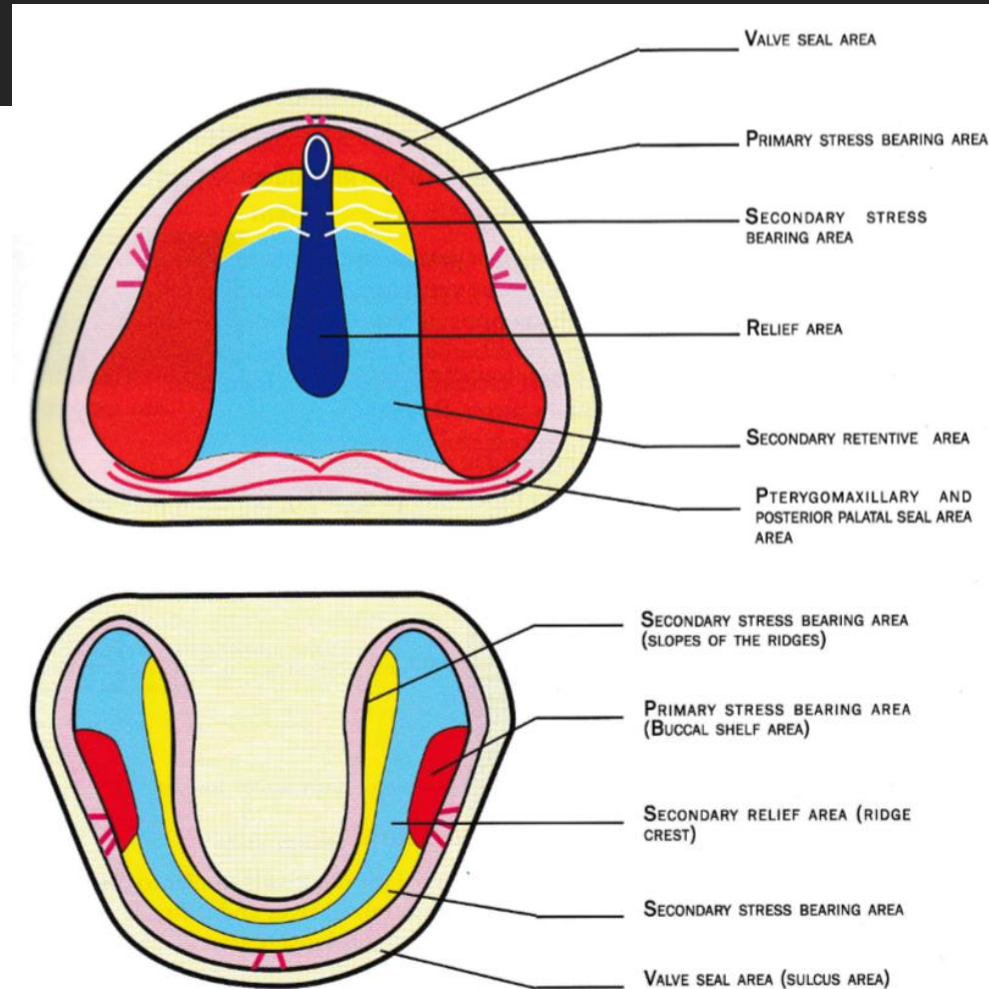
# 3. Selective pressure theory

- Combines the principles of both pressure and minimal pressure technique

## Zones of basal seat:

- Primary stress bearing area
- Secondary stress bearing area
- Relief areas

Advocates maximum extension within the comfort and functional limits of the surrounding muscle and tissue



# 3. Selective pressure theory

## Advantage:

- Considers the physiologic functions of the tissues of the basal seat and therefore appears more sound and appealing.

## Disadvantages:

- Some feel that it is impossible to record areas with varying pressure
- Since some areas are still recorded under functional load, the denture still faces the potential danger of rebounding and losing retention

# Selection of impression material

# Classification of impression material

---

## Based on elasticity:

- Rigid – ZOE impression paste, impression compound, impression plaster
- Elastic – alginate, elastomeric impression material

## Based on its prosthodontic use:

- Preliminary impression material
- Final impression material

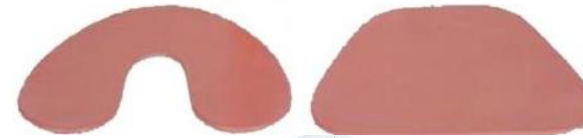


# Preliminary impression material

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## Modelling Compound

1. Impression compound
2. Tray compound
3. Stick compound



# Preliminary impression material

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**Alginate** – used both for preliminary impression material as well as final impression material





# Final impression material

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1. Alginate
2. Rubber base
3. Zinc oxide eugenol paste
4. Impression plaster
5. Waxes







# Selection of impression tray

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# Impression tray

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A DEVICE USED TO CARRY,  
CONFINE, AND CONTROL  
IMPRESSION MATERIAL WHILE  
MAKING AN IMPRESSION



# Classification of impression trays

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Based on fabrication:

1. Stock tray
2. Custom tray

Based presence of retentive holes:

- A. Perforated
- B. Nonperforated



A

B

# Classification of impression trays

Based on use:

1. Dentulous trays
2. Edentulous trays
3. Combination trays (RPD)



Preliminary  
impression

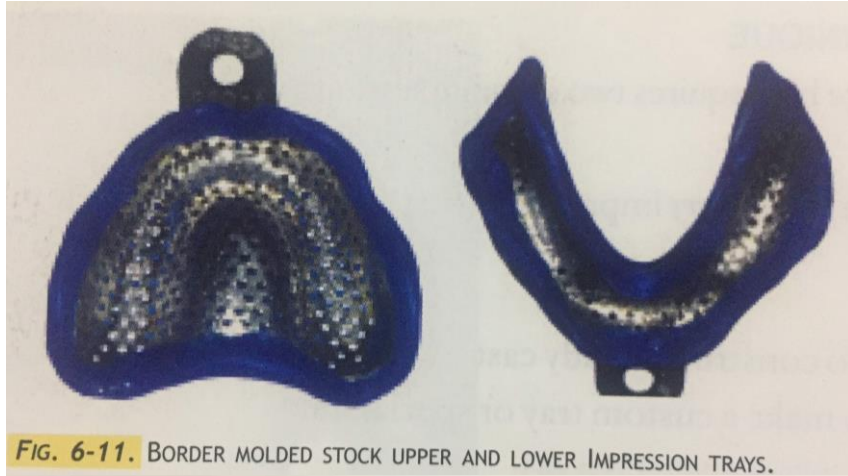


FIG. 6-11. BORDER MOLDED STOCK UPPER AND LOWER IMPRESSION TRAYS.



## Preliminary impression (primary impression)

---

A **negative likeness** made for the purpose of diagnosis, treatment planning, fabrication of custom tray

Made using:

- **Alginate** – flabby ridges, severe undercut ridges
- **Impression compound** – preferred material, contraindicated for hypermobile ridges

# Preliminary impression (primary impression)

## Storage and handling:

- **Alginate** – poured immediately (prevents syneresis) / covered in moist gauze and enclosed in a sealed bag.
- **Compound** – poured immediately for greater accuracy

## Disinfection:

Rinsed in a running water and sprayed with disinfecting solution





The image shows two preliminary dental casts, likely made of a light-colored wax or plaster, positioned side-by-side on a light-colored, textured surface. Each cast features a series of concentric, hand-drawn outlines in red, blue, and purple ink, defining the shape of the teeth and the surrounding gingival tissue. The casts are slightly curved, suggesting they are for a maxillary or mandibular arch. A dark, semi-transparent rectangular box is overlaid on the left side of the image, containing the text 'Preliminary cast' in a white serif font, with a thin orange horizontal line positioned below the text.

Preliminary cast

# Preliminary cast

---

Used for diagnosis, treatment planning, and fabrication of impression tray

Pouring technique:

1. Nonboxing method
2. Boxing method
3. Pumice-plaster method





1. Nonboxing method



2. Boxing method



3. Pumice-plaster method

Fabricating  
custom tray



# Fabricating Custom Tray

---

Designed to provide more pressure in the primary stress bearing areas and little or minimal pressure in the non stress bearing or relief areas by constructing the tray with wax spacer.

## Marking the Cast:

Blue – tray extension

Red – denture base extension





# Fabricating Custom Tray

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## Wax spacer and relief

Relief – reduction or elimination of undesirable pressure or force from a specific region under denture base.

- creation of space in an impression tray for the impression material



## A Clinical Review of Spacer Design for Conventional Complete Denture

Ashish R Jain\* and Dhanraj M

*Department of Prosthodontics, Saveetha Dental College and Hospitals, Saveetha University, Chennai, India*

**\*Corresponding author:** Dr. Ashish R Jain, MD.ACU.VARMA, MDS Assistant professor, Research Scholar, Department of Prosthodontics, Saveetha Dental College and Hospitals, Saveetha University, Chennai, India. Email: [dr.ashishjain\\_r@yahoo.com](mailto:dr.ashishjain_r@yahoo.com)

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### Abstract

One of the key factors affecting the outcome of the treatment is the impression procedure involved in the fabrication of complete denture prosthesis. Various impression philosophies have been proposed over years by various authors, out of which the selective-pressure impression technique is most accepted. In this technique, by using custom trays with spacers of different materials and designs, vulnerable tissues are relieved and stresses are distributed selectively to biomechanically sound tissues. But the dentist usually uses stock tray for making primary impression as well as final impression due to the lack of knowledge of the following: optimum material for making custom impression tray, adequate extension, required thickness and designs of spacer, tissue stops, escape holes, tray handles, and polymerization time regarding custom impression trays in prosthodontics. This article will give a clear view to the dentists to use accurate spacer design, material and thickness, tissue stops, and escape holes, based on various clinical situations in their practice.





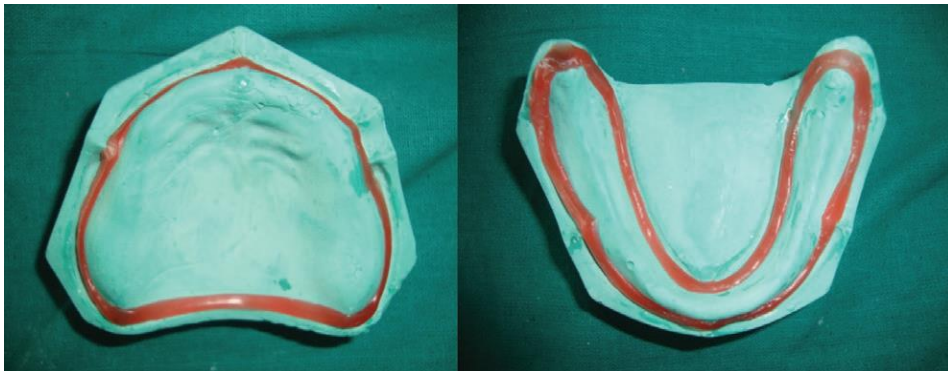
**Figure 1:** Boucher's spacer design for maxillary arch and mandibular arch



**Figure 4:** Bernard and Levin's spacer design for maxillary arch



**Figure 2:** Morrow, Rudd, and Rhoads' spacer design for maxillary arch



**Figure 5:** Halperin's spacer design for maxillary arch and mandibular arch

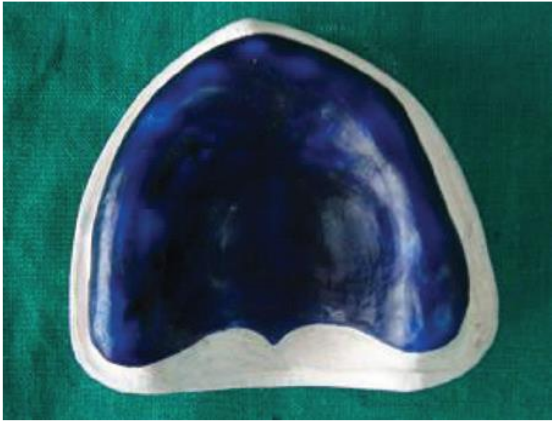


**Figure 3:** J. J. Sharry's spacer design for maxillary arch and mandibular arch



**Figure 6:** A. Roy Mac Gregor's spacer design for maxillary arch

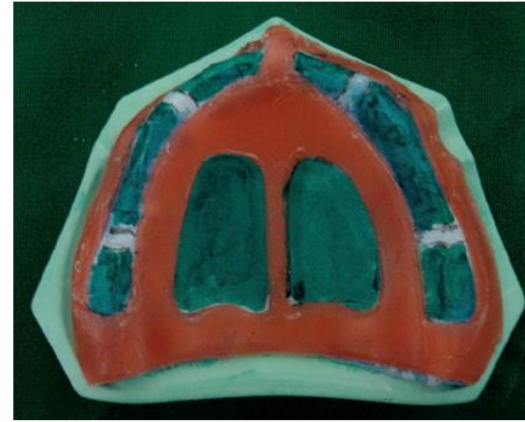




**Figure 7:** Neil's spacer design for maxillary arch



**Figure 8:** Sheldon's spacer design for maxillary arch



**Figure 9:** Sanath Shetty's spacer design for maxillary arch



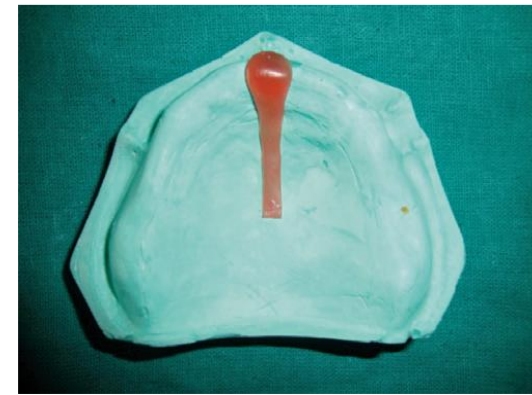
**Figure 10:** Dale E. Smith's spacer design for maxillary arch



**Figure 11:** Miscellaneous spacer design for maxillary arch



**Figure 12:** Miscellaneous spacer design for mandibular arch



**Figure 13:** I-spacer design for maxillary arch

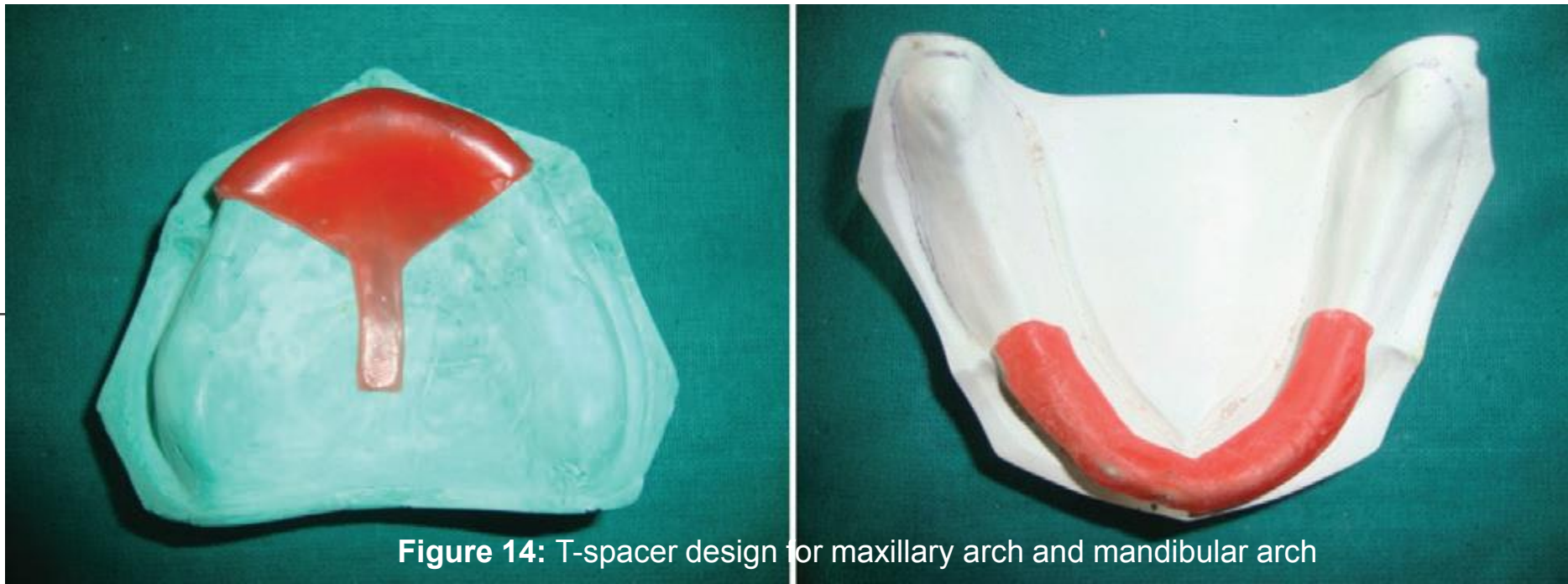


Figure 14: T-spacer design for maxillary arch and mandibular arch

## Spacer Materials Used Over the Years

- **Tin foil**, first recommended by Roy Mac Gregory in the region of incisive papilla and midpalatine raphe.
- **Casting wax** in thickness of 0.9 mm advocated by Neil and to be adapted all over except PPS area.
- **Nonasbestos ring liner (wet)** used as spacer when shellac is used for custom tray fabrication.
- **Base-plate wax** used as spacer when acrylic resin is used for custom tray fabrication.



|                          |                           |
|--------------------------|---------------------------|
| Zinc oxide eugenol paste | no spacer wax (0.5-1mm)   |
| Silicone (medium body)   | 1.5-3mm (1 layer of wax)  |
| Alginate                 | 3mm (2 layers of wax)     |
| Silicone (heavy body)    | 3-4.5mm (3 layers of wax) |
| Impression plaster       | 4.5mm (3 layers of wax)   |

## Space requirement for impression materials:

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\*JOHNSON, TONY(BASICS OF DENTAL TECHNOLOGY, STEP BY STEP APPROACH)

# Fabricating Custom Tray

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## Application of separating media

- Allow to dry



# Fabricating Custom Tray

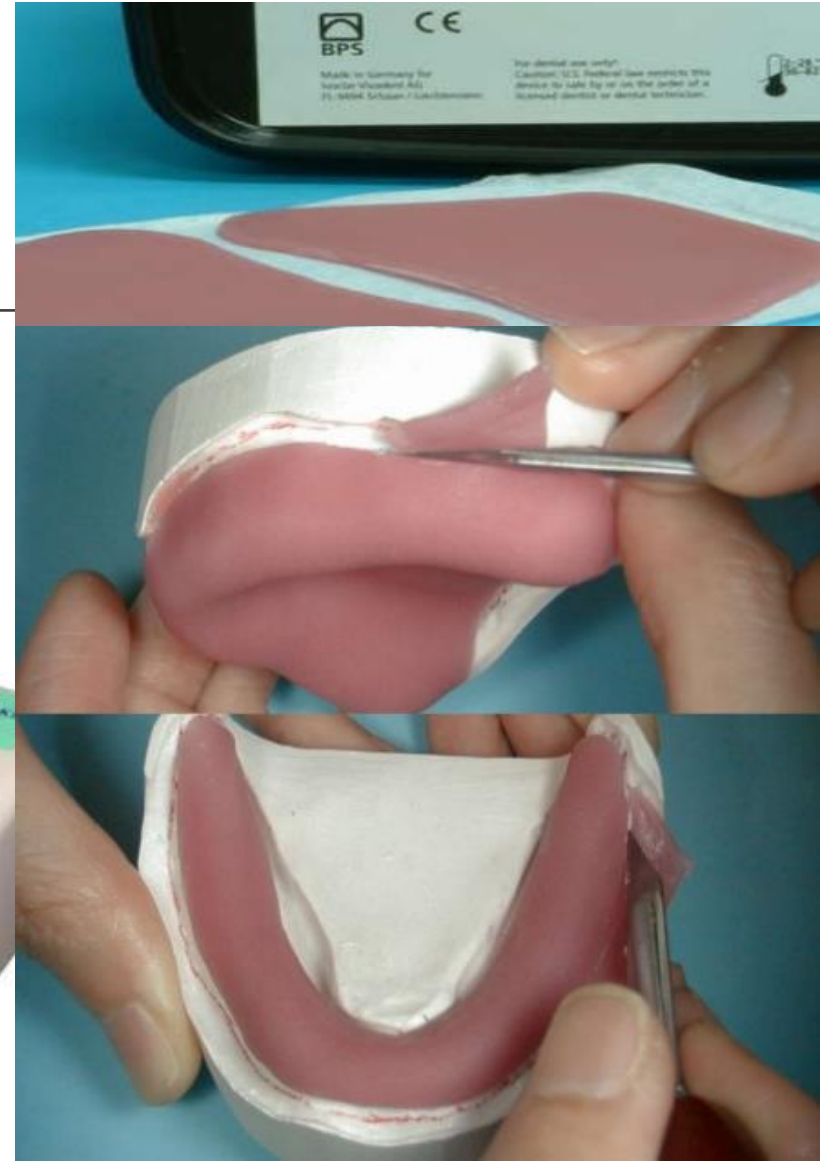
## Materials used:

- Self-cured resin
- Visible light cured resin
- Shellac
- Vacuum formed tray

# VLC

---

1. Tray material is adapted to the cast and the excess is trimmed away with a knife
2. Handle and finger rest is created with the excess material
3. Light cure for 10-15mins
4. Trim and smoothen the edges
5. with acrylic bur

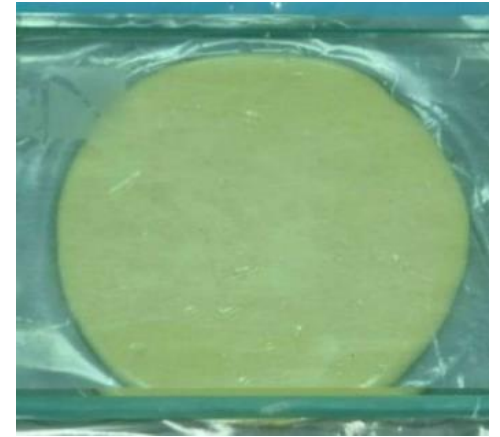


# Self-cured Acrylic resin

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## Glass slab technique

1. Mix the powder and liquid resin and wait until it reaches doughy consistency
2. Press material with a wet glass slab to obtain proper thickness
3. Adapt the material to the cast and trim excess with a knife
4. Place additional material for handle and finger rest
5. Allowed to polymerize
6. Trim and smoothen with acrylic bur





# Border Molding

# Border Molding

(Muscle trimming/ Peripheral tracing)

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The shaping of border areas of an impression tray by functional or manual manipulation of the tissue adjacent to the borders to duplicate the contour and size of the vestibule

Determining the extension of a prosthesis by using tissue function or manual manipulation of the tissues to shape the border areas of an impression material

# Methods of border molding

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## 1. Functional method

- Mold the borders in harmony with the natural functional movements of daily life

## 2. Manual or digital manipulation which simulates the muscle action

- Digital(finger) manipulation of the cheeks and lips

## 3. Combination

- Combination of digital and functional movements



# Functional movements

**Smiling, whistling and puckering motion** – molds the labial and buccal borders

**Sucking motion** – buccal frenum and buccal borders

**Licking the lips and other tongue movements** – lingual border

**Swallowing motion** – lingual border and floor of the mouth

**Occluding**

**Opening and closing and side to side movements of the jaw**

# Combination

- A. Open mouth technique – most common
- B. Closed mouth technique – requires occlusion rim or teeth



## MAXILLARY BORDER MOLDING

### **A: Buccal Flange**

- Extend cheek outward, downward, & inward
- Open wide & move from side to side
- Pucker & smile

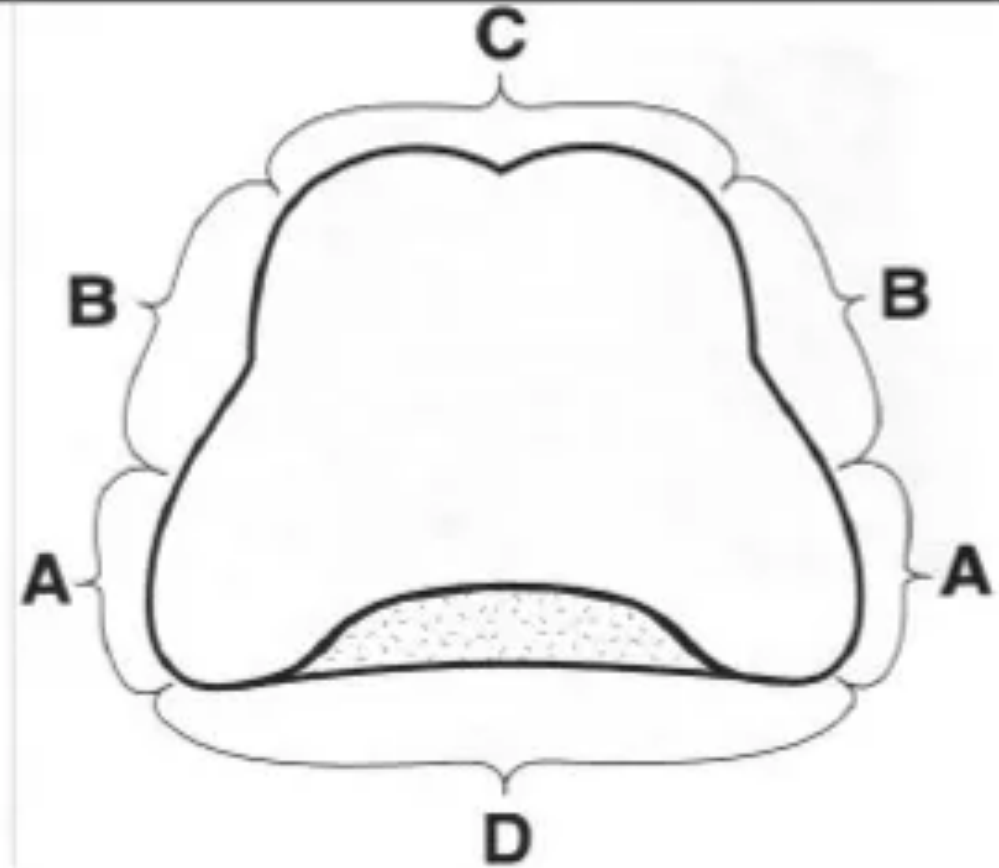
### **B: Buccal Frenum**

- Elevate cheek & pull outward, downward & inward
- Move backward & forward
- Pucker & smile

### **C: Anterior Region**

- Elevate lip & extend outward, downward & inward
- Pucker & smile
- Massage upper lip with a lateral motion

### **D: Posterior Limit**

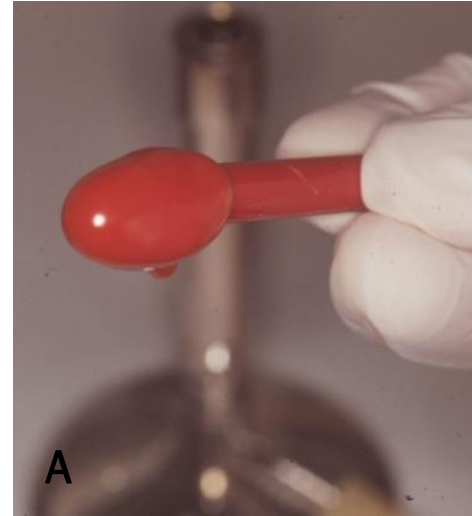


# Sequence of border molding

# Border molding with stick compound

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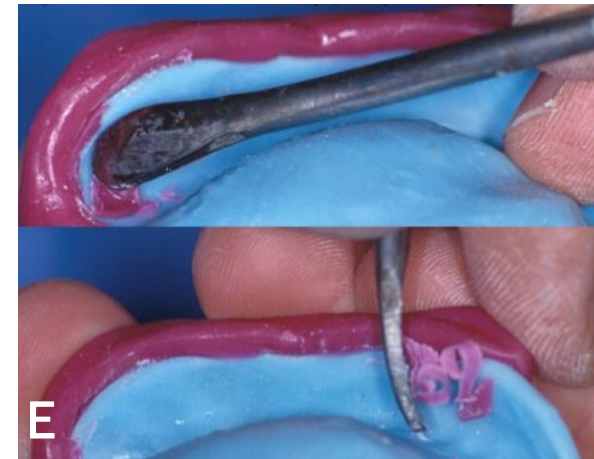
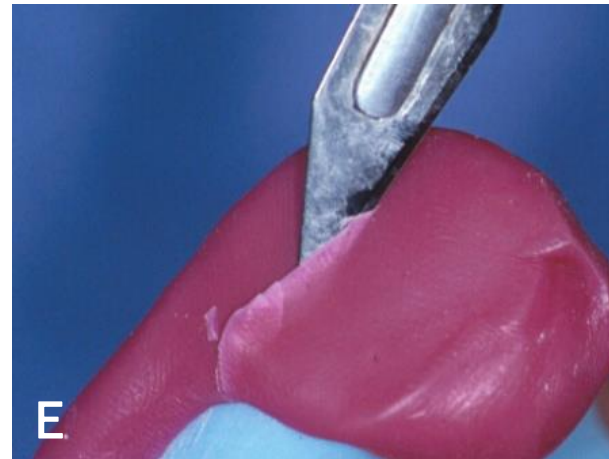
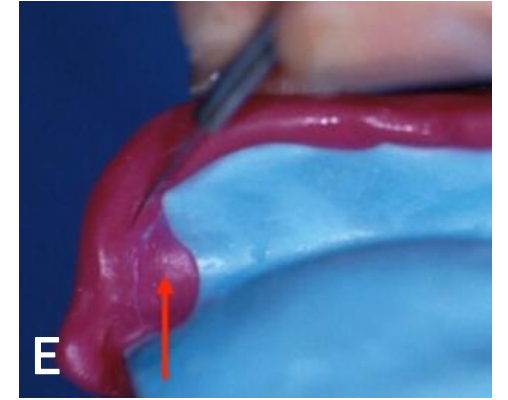
- A. Heating** – heating over a flame to soften
- B. Placing** – flowed along the border of the required segment
- C. Tempering** – tempered in warm water making it more comfortable for the patient



# Border molding with stick compound

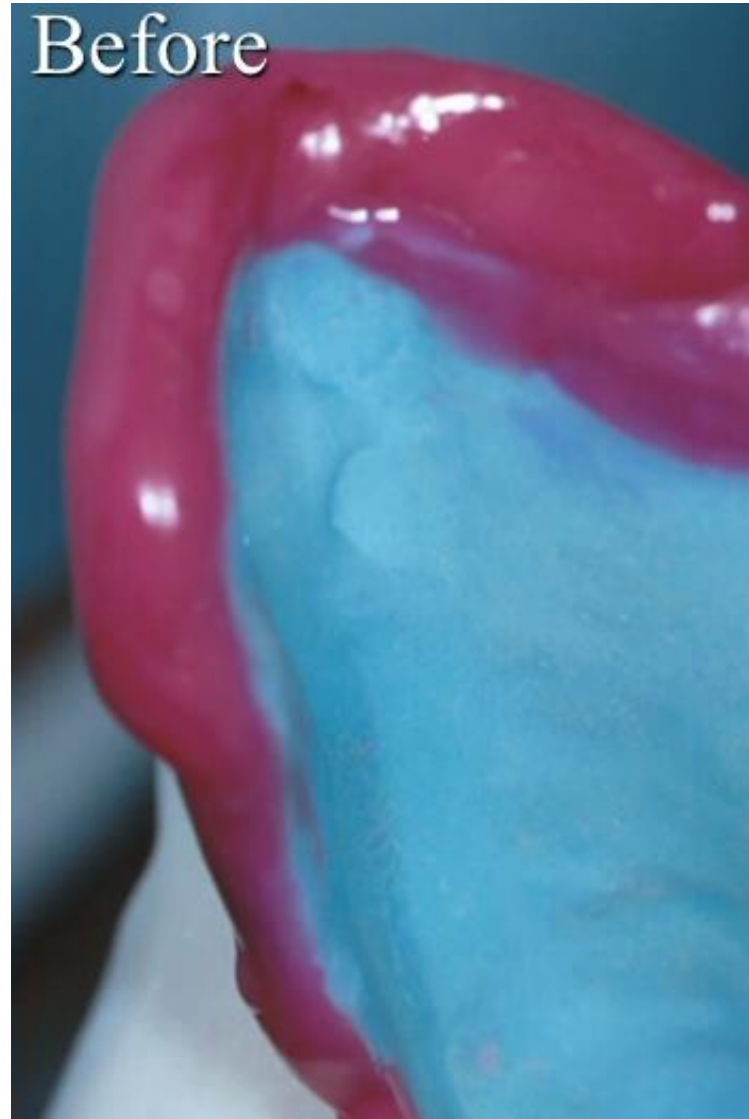
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- D. Inserting** – inserted carefully in the mouth after retracting the lip and cheek
- E. Trimming** - excess material on the inside of the tray is trimmed away.



Area “A” is molded by:

- Instructing the patient to move mandible laterally and anteriorly, pucker and smile
- Asking the pt. to open the mouth wide to record the movement of coronoid process







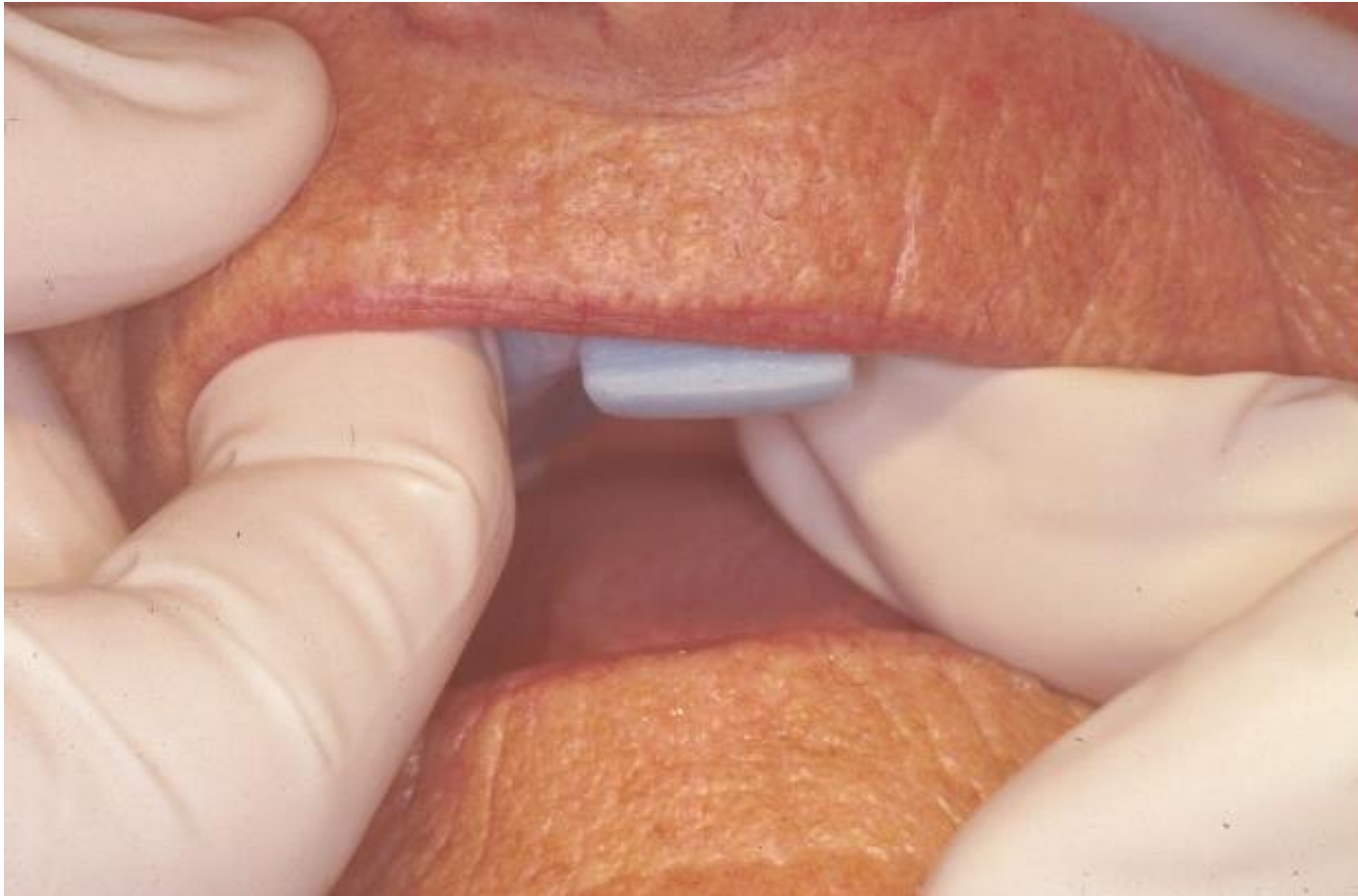
Anterior area (**Area “C”**) is molded by the following:

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- Massage the upper lip with a lateral motion
- Instruct the patient to pucker and smile
- Check the flange thickness for proper lip support



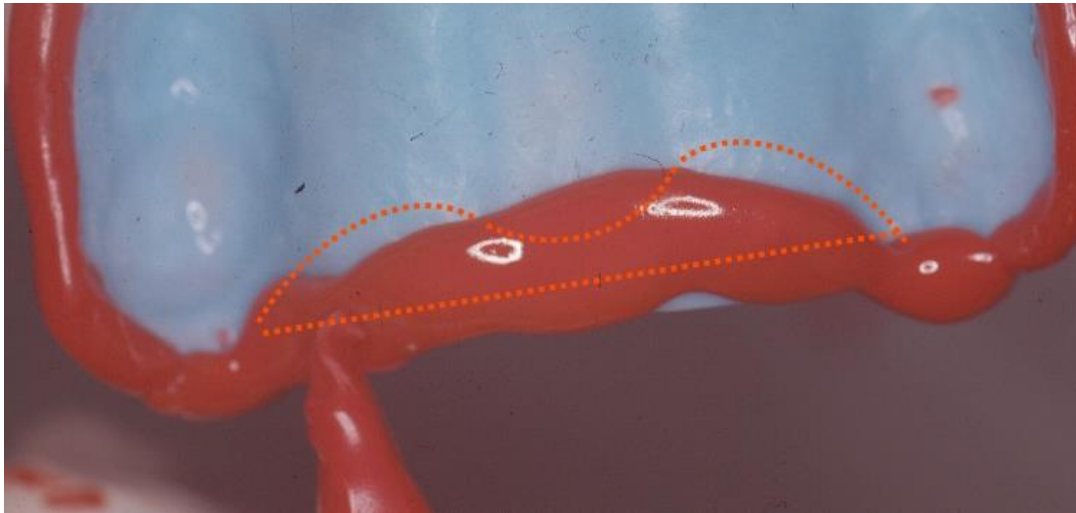




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Do not pull down on the lip.  
This will foreshorten the  
denture flange

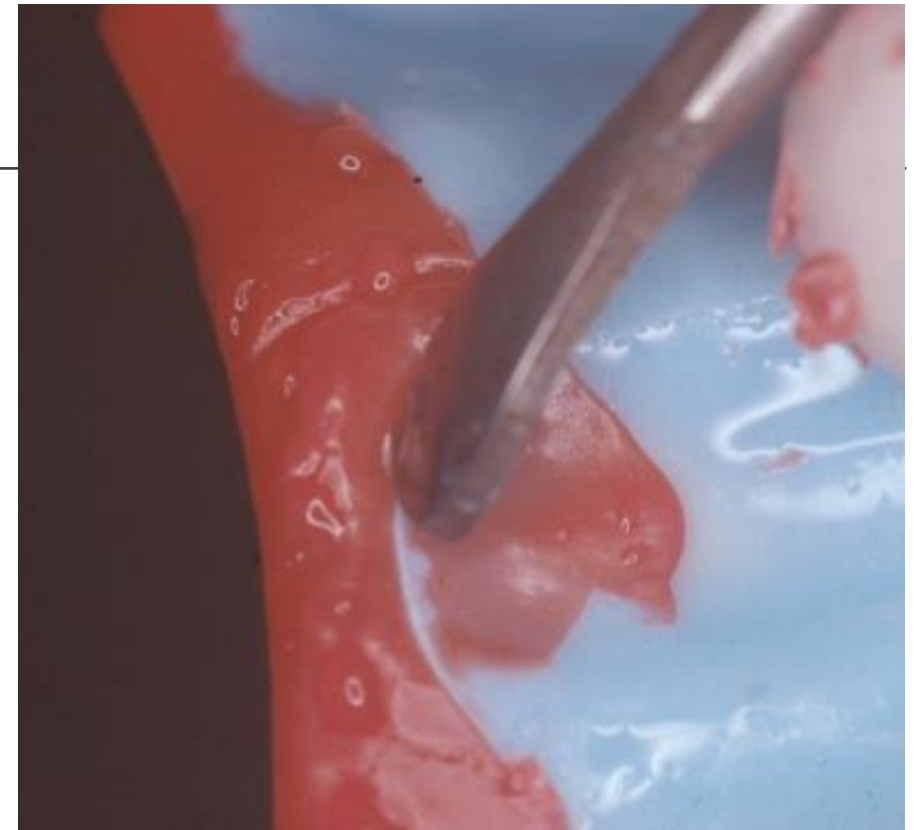
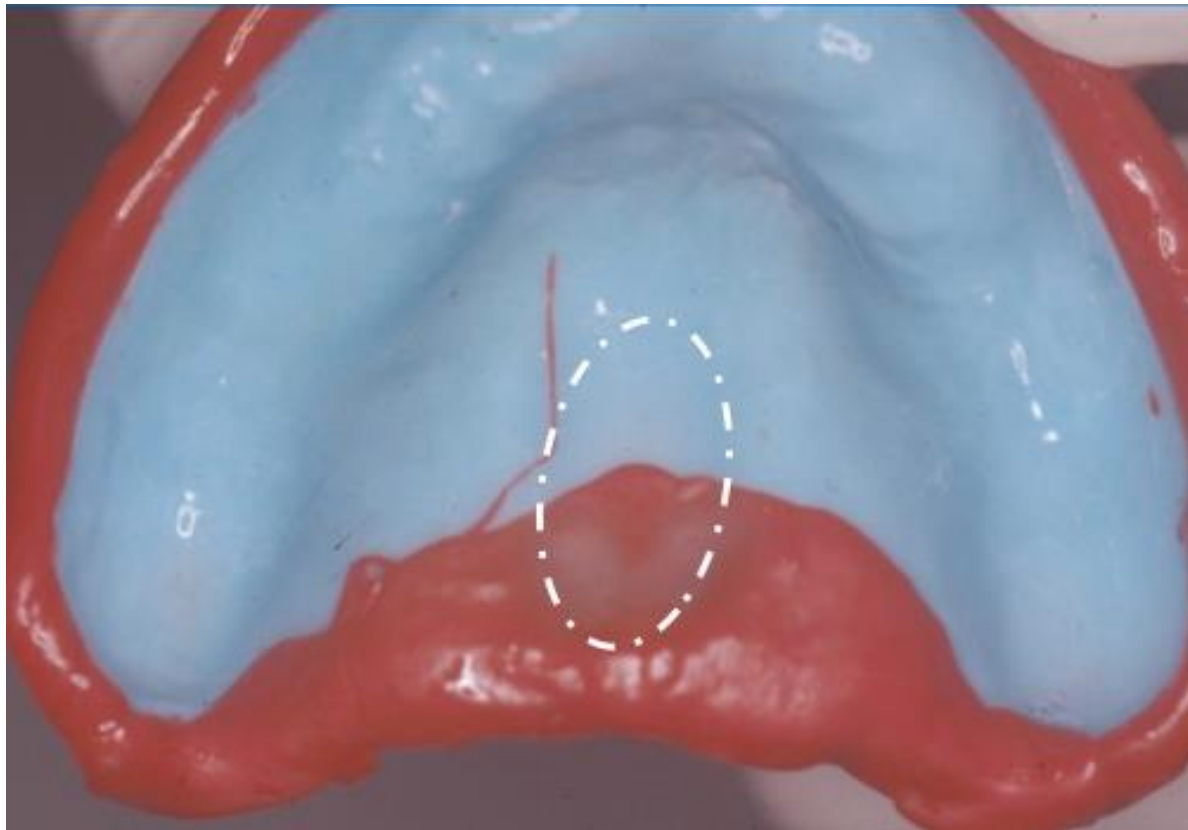
## Posterior palatal seal **Area “D”**



Place 2-3mm of compound on top of the tray in a butterfly configuration to displace the tissues in the posterior palatal seal area.



Seat the tray firmly. After the tray has been in position for 10 seconds, ask the pt. to swallow.



Remove excess material

# Sequence of border molding

## MANDIBULAR BORDER MOLDING

### **A: Buccal Frenum**

- Lift cheek outward, upward, inward, backward & forward
- Pucker & smile

### **B: Masseter Region & Retromolar Pad**

- Pull cheek bucally (ensures not trapped under tray)
- Cheek upward & inward
- Ask pt. to close while resisting closure with finger rests

### **C: Labial Flange**

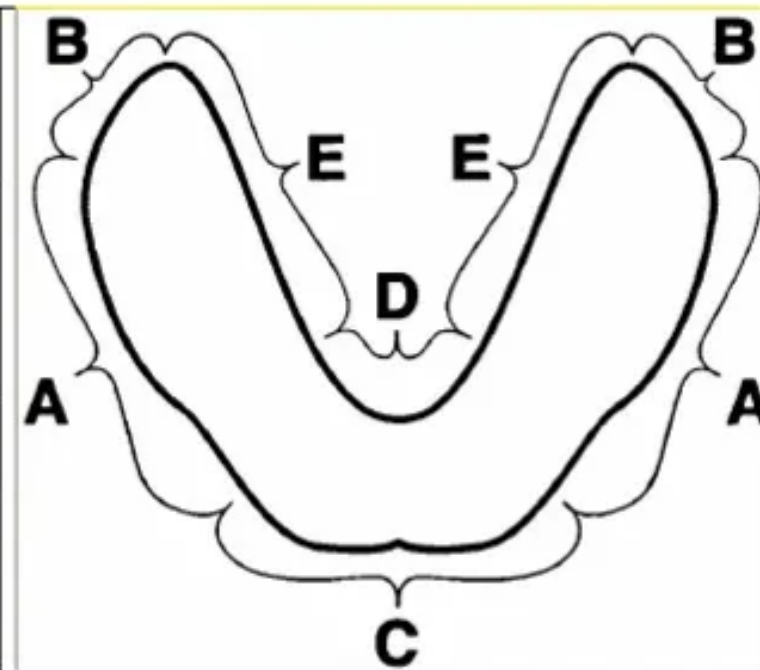
- Lower lip outward, upward & inward

### **D: Anterior Lingual Flange**

- Protrude tongue
- Push tongue against front part of palate
- Push tongue against thumb in lower incisor area

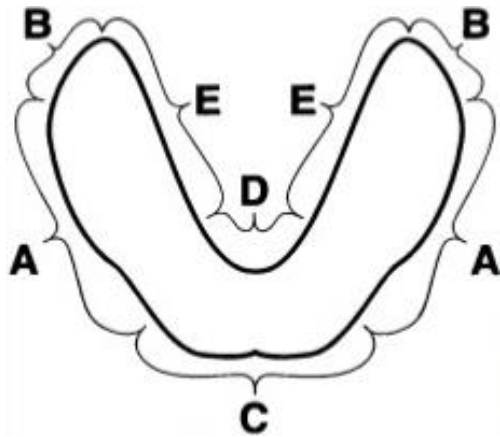
### **E: Molar Lingual Flange**

- Protrude tongue OR make 'K' sound
- Push tongue against thumb in lower incisor area
- Swallow



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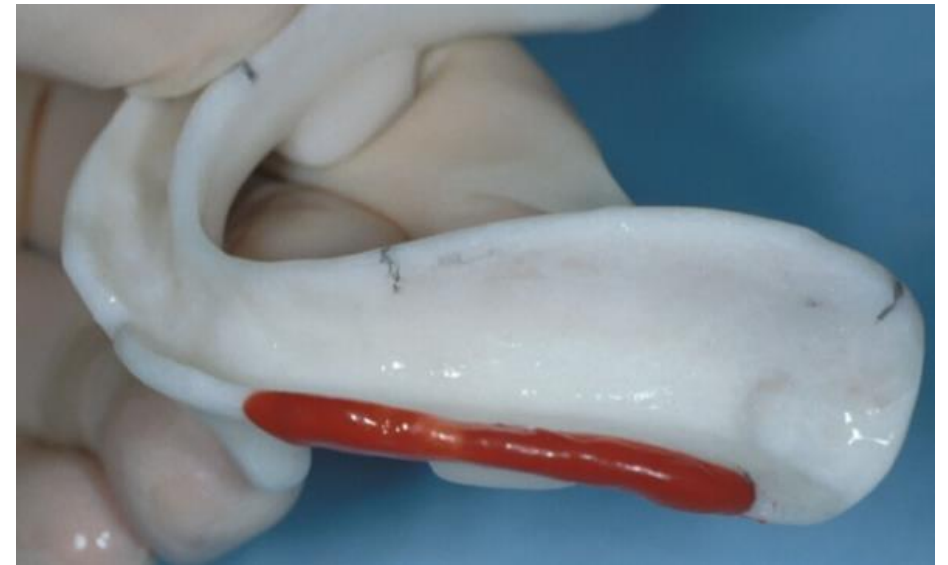
Area “A” is molded and defined by massaging the cheek and having the patient pucker and smile





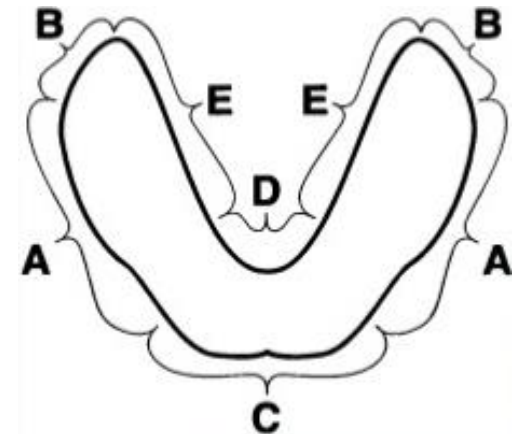
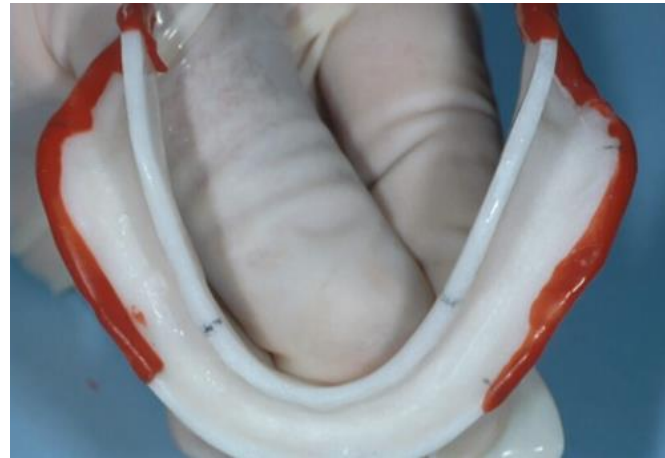
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Trim the excess material that has flowed onto the tissue surface or the external surfaces using a knife



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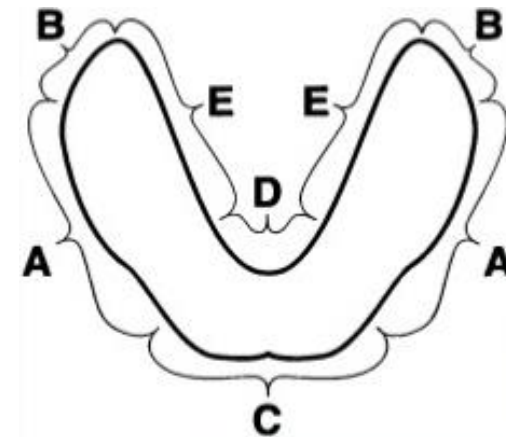
**Area “B”** is molded by asking the patient to carefully close their mouth while holding the tray in position, resisting the closure with your forefingers on the finger rest

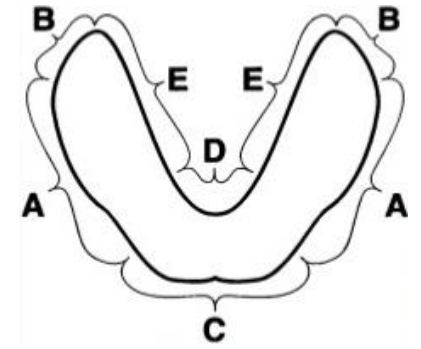




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**Area “C”** is molded by gently massaging the lower lip. Do not pull up the lip for it will foreshorten the labial vestibule

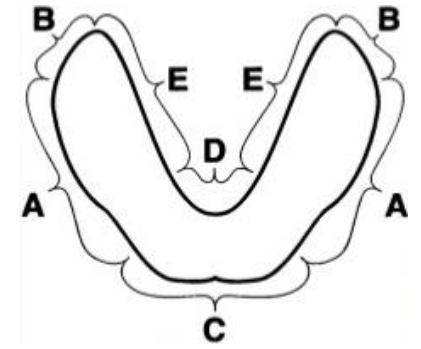




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**Area “D”** is molded by instructing the patient to push their tongue against your thumb placed in the lower incisor area.





**Area “E”** is molded by instructing the patient to push their tongue against your thumb placed in the lower incisor area and to swallow.







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If the retention is adequate, you are ready to **CUT BACK** the compound

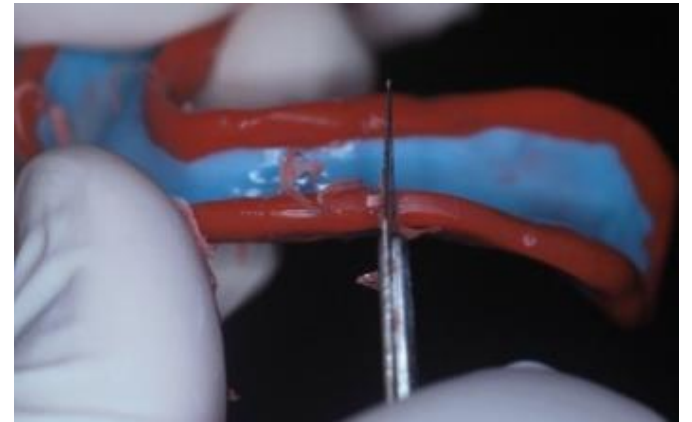
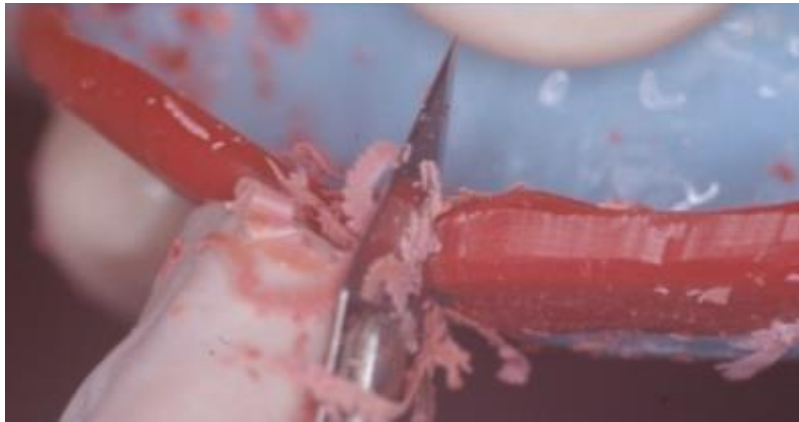
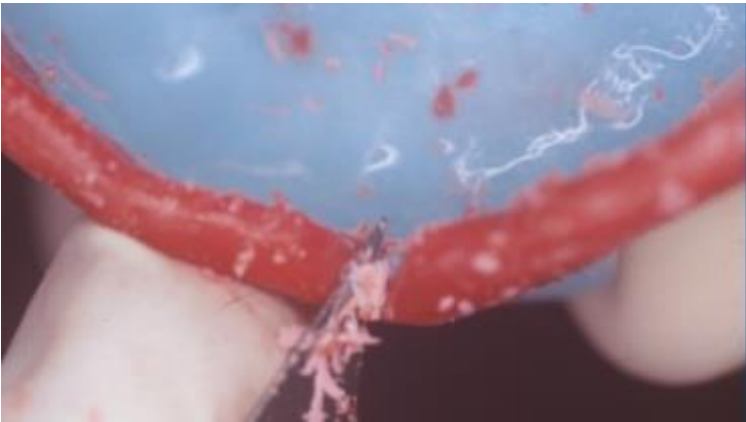


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## CUT BACK

Scrape away a thin layer of compound from the border molded periphery

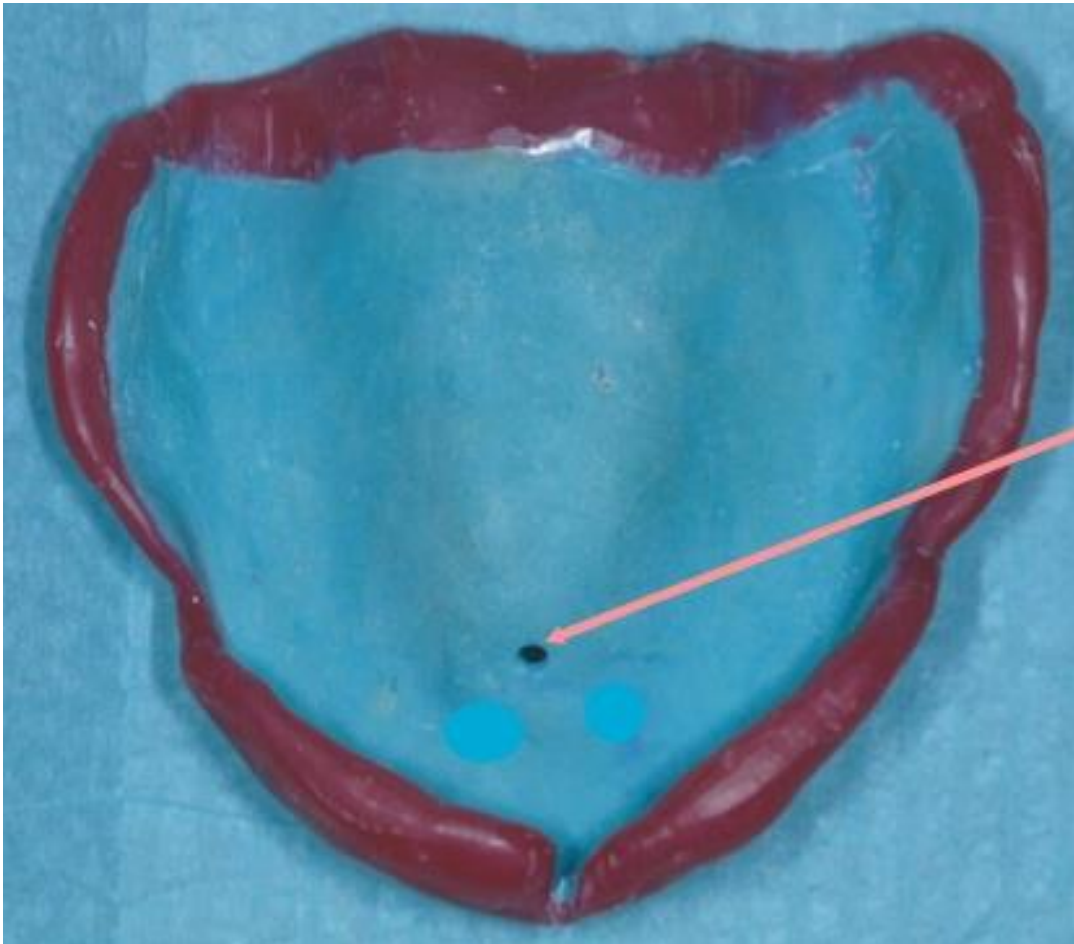
## REMOVE WAX SPACER



# Purpose of vent hole/ scape holes:

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- To permit proper seating of the loaded master impression tray while making the final impression.
- To relieve the pressure over the incisive papilla and the rugae/ **reduce the build-up of hydrostatic pressure** and facilitate the escape of the material
- To prevent entrapment of air bubbles in the impression



\*2mm diameter at 10mm interval, 2mm short from the border

# Final impression

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# Final impression material

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1. Alginate
2. Rubber base
3. Zinc oxide eugenol paste
4. Impression plaster
5. Waxes





# Selection of impression material

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- An elastic, free flowing, light body **polysulfide impression material** is recommended for most maxillary impressions
- **Polyvinylsiloxane (PVS)** impression material may also be used. It should have hydrophilic properties and adequate viscosity to reduce the probability of gagging

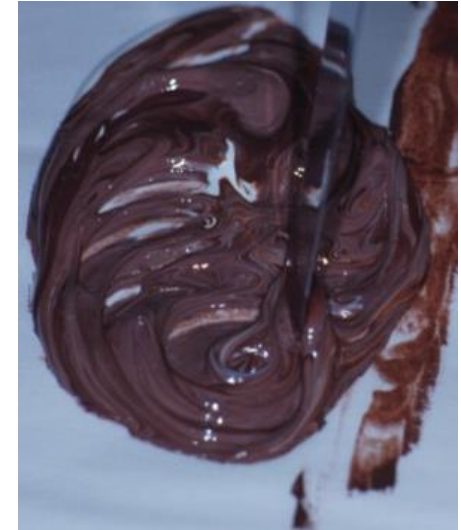


# Final impression

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**Mixing** – mix impression material according to the manufacturer's instruction.

**Loading** - material is spread out evenly to all parts of the tray. The material must be **free flowing and not viscous** as this can affect the pressure exerted on the tissues and the seating of the tray





# Final impression

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## Seating the tray

- Gently retract the lips with index finger or mouth mirror and insert the tray.
- Raise the lip and line the tray up to the frenum.
- Firmly seat the tray and allow the impression material to flow.



# Final impression

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After seating the tray, perform soft tissue manipulation process as during border molding:

- Massage face
- Pucker lips
- Smile
- Move jaw side o side



Instruct the patient to **breath deeply through their nose** and tilt their head forward



# Final impression

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Hold the tray in position until  
the impression material is  
set





# Final impression

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Criteria for good impression:

1. Smooth well defined peripheries
2. Maximum extension
3. Even pressure distribution (there should be no areas where the underlying tray or compound shows through)
4. There should be intimate tissue contact



# Trim and Disinfect the impression

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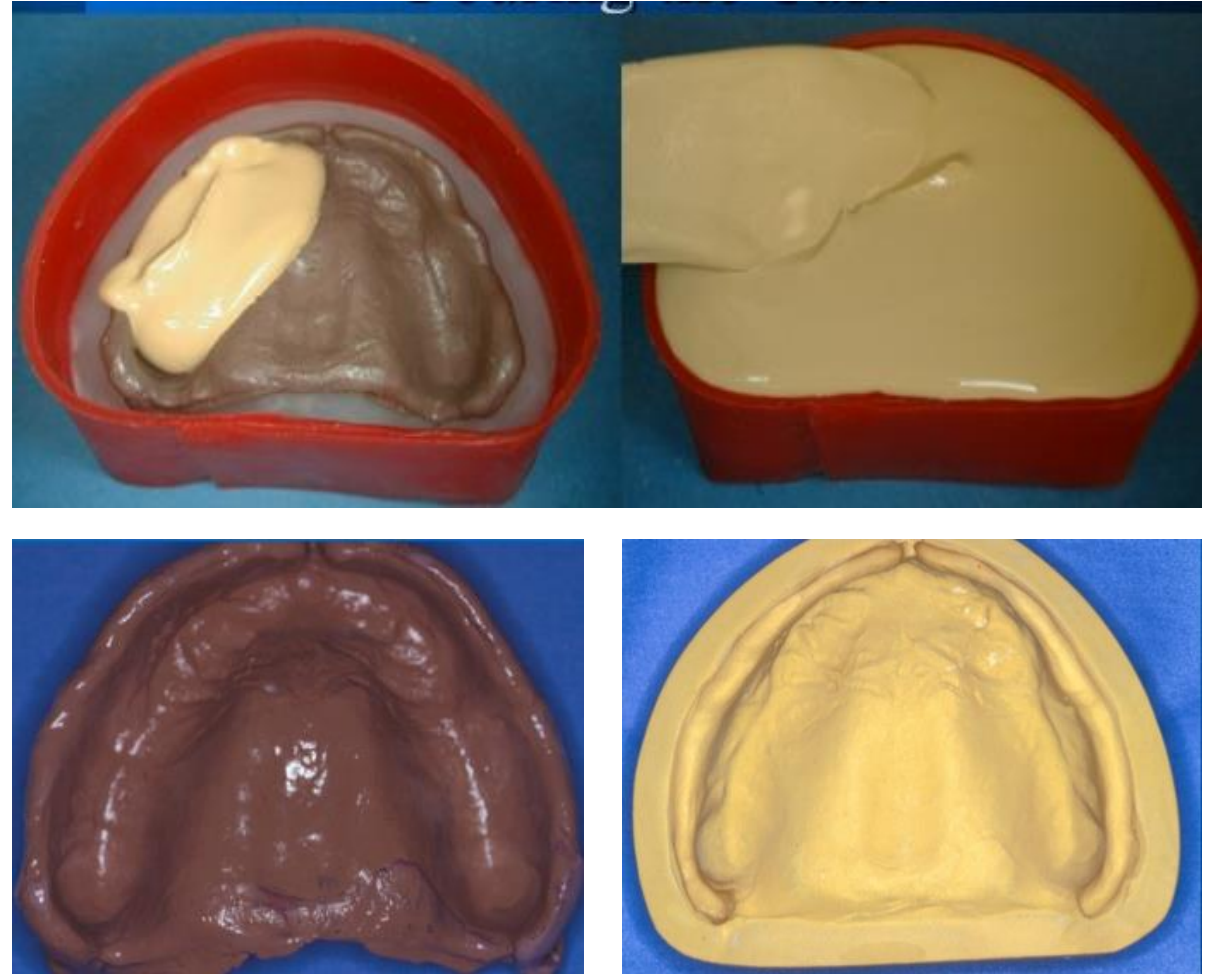
- Trim the excess unsupported impression material
- Spray appropriate disinfectant



# Boxing and Pouring

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- Inspect the impression for voids or bubbles
- Box impression and pour master cast



# Impression technique for Hypermobile Ridges



# Window Tray Impression Technique

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- This technique is used to record highly mobile or hypertrophic tissue with minimum displacement
- Mobile tissues are most often seen anteriorly and may be particularly prominent in patients with combination syndrome. It is advisable to remove these mobile tissues because the underlying bony ridge is usually knife edged. These tissues act as a cushion and rarely impinge upon the interocclusal space.



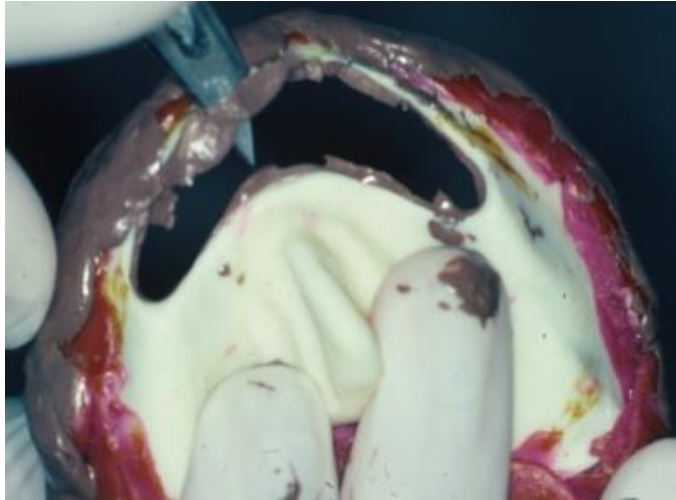




# Window Tray Impression Technique

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1. Outline the mobile tissue on your preliminary cast.
2. Construct the custom tray so that there is a window (open area) over the mobile tissue
3. The handle should be place in the middle of the palate
4. Border mold and make the polysulfide impression in the usual manner



# Window Tray Impression Technique

5. Cut out the polysulfide impression material in the window with a sharp scalpel

# Window Tray Impression Technique

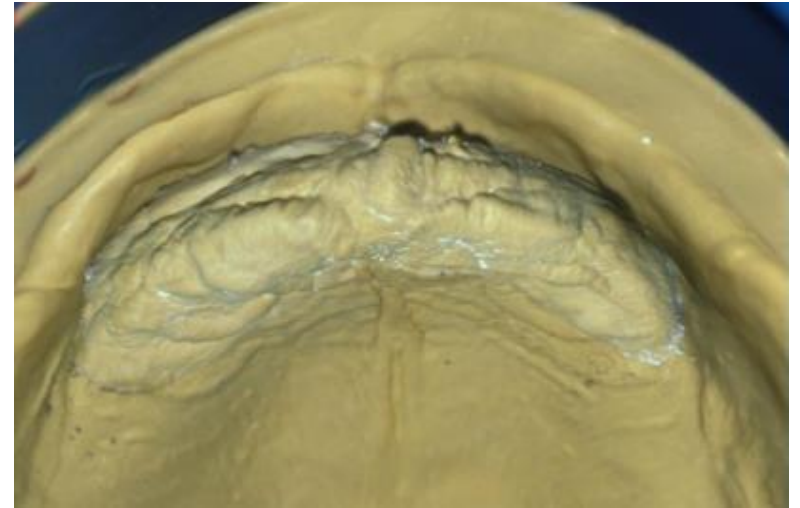
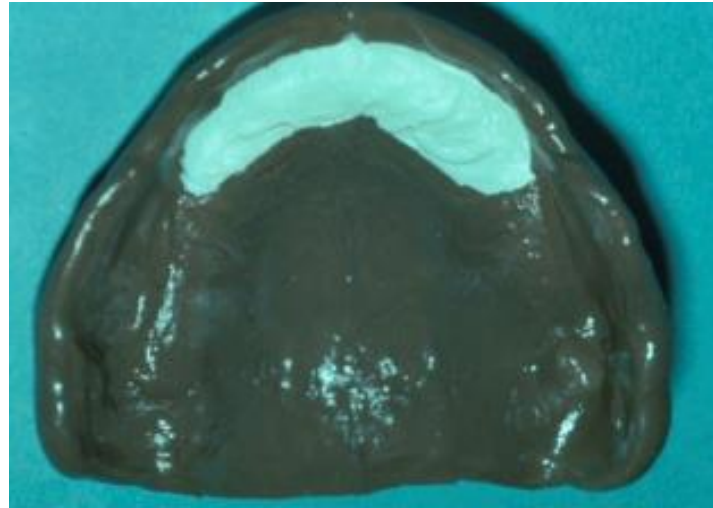
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6. The mobile tissue area will be recorded with zinc oxide impression material
7. Seat the impression back into the patients mouth
8. Mix the Zinc Oxide impression material and apply it over the mobile tissue with a small brush or syringe



# Window Tray Impression Technique

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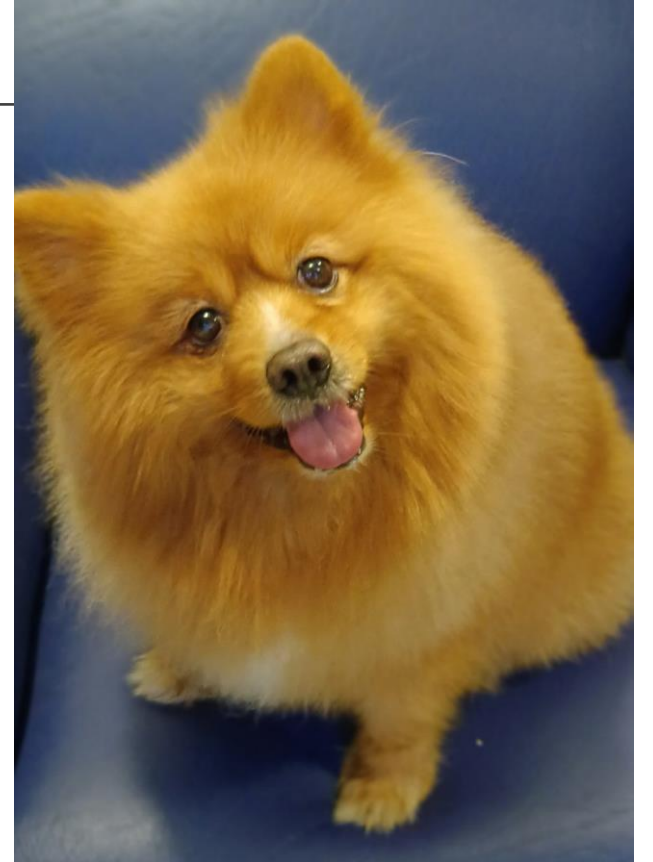


Completed impression



# QUESTIONS???

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## DUKE BROGAN



## LESSON 07

# RECORD BASES & OCCLUSION RIMS



Prepared By:  
DR. PETER PASCUA; FLORES, DMD, MS



**RECORD BASES**

# POURING THE FINAL IMPRESSION

## METHOD 1: BOXING USING BOXING WAX

- ▶ Can be used for most final impression except alginate impression (wax does not adhere to alginate material).

## METHOD 2: PUMICE-PLASTER METHOD

- ▶ Suitable for alginate impressions

**MATERIAL FOR POURING:** Type 3 stone/ dental stone

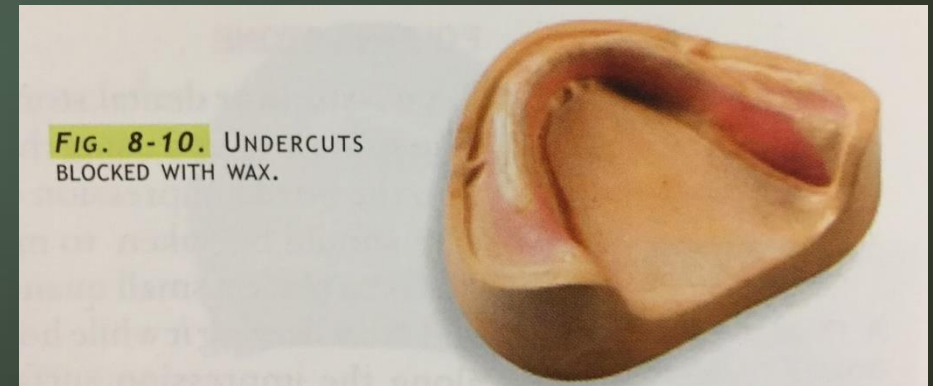
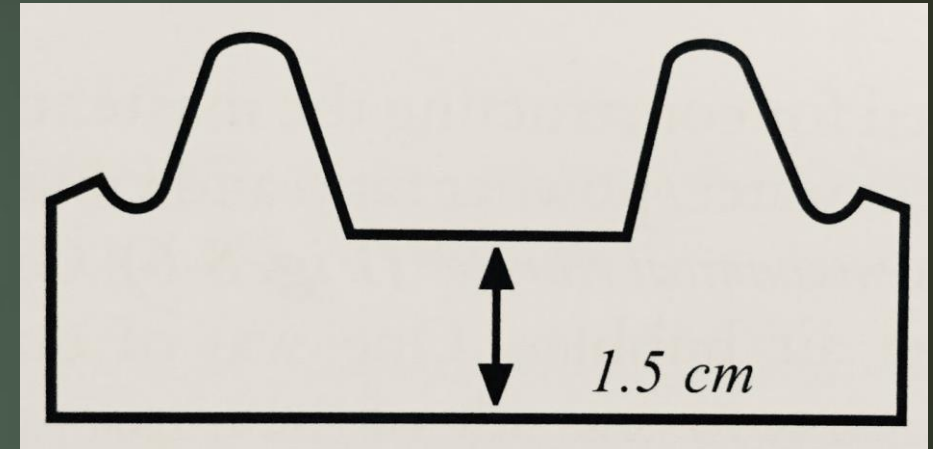


# MASTER CAST (DEFINITIVE OR FINAL CAST)

3 mm **Dimensions:**  
wide – land area

2-3 mm – sulcus  
depth

1.5 cm – base





# RECORD BASE

(Transfer base, trial denture base, temporary denture base)

- ▶ An interim denture base used to SUPPORT the record rim material for recording maxillomandibular records

## Use:

- ▶ Serve as a base to fabricate and support the wax occlusion rims and trial denture
- ▶ Determine accuracy of impression by checking the retention, stability and border extension of record base
- ▶ Check for gag reflex
- ▶ Observe adequate salivary flow



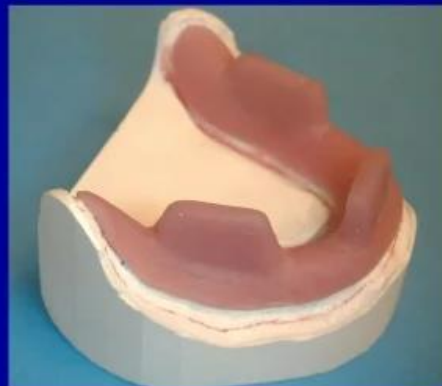
# REQUIREMENTS OF RECORD BASE

1. Well adapted to the final cast
2. Stable and retentive in the mouth
3. Rigid and dimensionally stable
4. Smooth and not irritate the oral tissue
5. 1mm thick on the crest and facial slope of the ridge, and 2mm thick in the palatal and lingual flange for rigidity
6. Borders should be smooth and rounded

# MATERIALS USED

## A. TEMPORARY BASES

1. Shellac
2. Autopolymerizing acrylic resin
3. Vacuum formed vinyl or polystyrene
4. Baseplate wax



## B. PERMANENT BASES

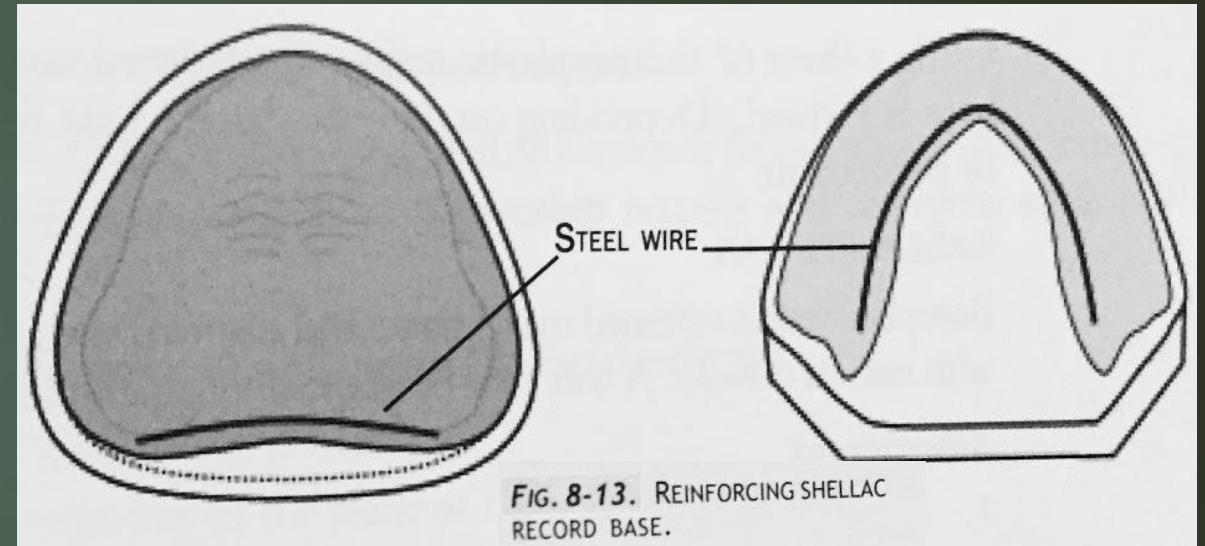
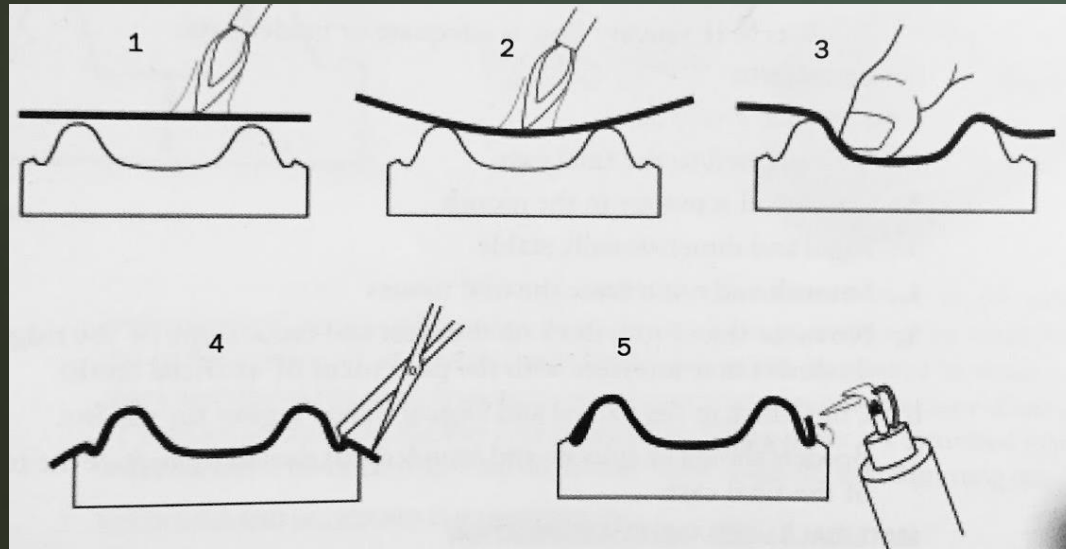
1. Heat cured acrylic resin
2. Gold alloy
3. Chrome cobalt alloy
4. Chrome nickel alloy
5. Swaged metal base



# TEMPORARY BASES

# SHELLAC

## ► Thermoplastic material



**Precautions:** overheating can cause the material to stick to the cast resulting in breakage during removal. It also causes bubbling, smoking and blackening.

# SHELLAC

## Advantages:

- ▶ Inexpensive and easily available
- ▶ Easy to use and adapt



## Disadvantages:

- ▶ Brittle
- ▶ Tends to warp or distort when heated repeatedly
- ▶ Difficulty in recording jaw relations if distorted and unstable



# Auto polymerizing resin

- A. Non flasking or Adapting method
- B. Sprinkled on technique (Alternate applications)
- C. Flasking method

\*self-cured acrylic resin is cured in a pressure pot (20-30mins) for improved strength and properties



# Vacuum formed bases

- Using a sheet of thermoplastic resin and a thermal vacuum machine



# Baseplate Wax

## Advantages:

- ▶ Inexpensive
- ▶ Easy to form
- ▶ Esthetic
- ▶ Easy to set teeth when interridge space is less

## Disadvantage:

- ▶ Lacks rigidity and dimensional stability



# PERMANENT BASES

# Heat Cured Resin

- ▶ A wax pattern of the denture base is made on a duplicate cast and processed with heat cured resin

## Advantages:

- Rigid, accurate, and dimensionally stable
- Retention and stability can be tested before delivery of denture

## Disadvantages:

- Duplicate cast is required
- Time consuming and more expensive





# Cast alloy denture base

- Gold alloys/ base metal alloys

## Advantages:

- ▶ Add more weight to the mandibular denture
- ▶ Good thermal conductivity, improved oral feelings and sensitivity
- ▶ High rigidity but thinner material
- ▶ Recommended on patients who repeatedly breaks their denture

## Disadvantages:

- Time consuming
- More expensive





**OCCLUSION RIMS**

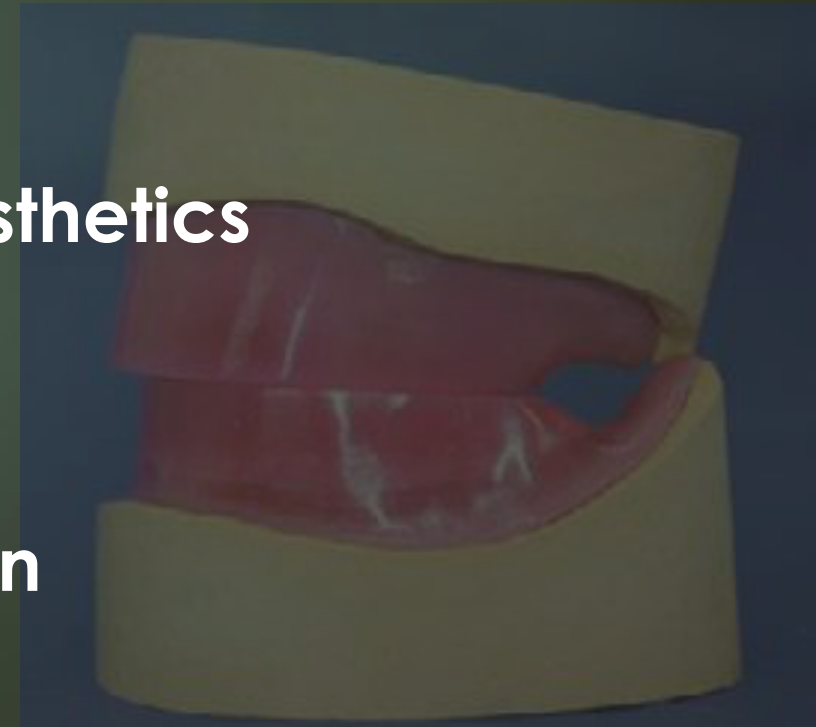
# Occlusion rims

(Record rims, bite rims, occlusal rims)

Occluding surfaces fabricated on interim or final denture bases for the purpose of making maxillomandibular relationship records and arranging teeth.

## Uses:

- ▶ Determination of lip support and facial esthetics
- ▶ Determination of archform
- ▶ Determination of plane of occlusion
- ▶ Aids in establishing teeth size and position



# Occlusion rims

(Record rims, bite rims, occlusal rims)

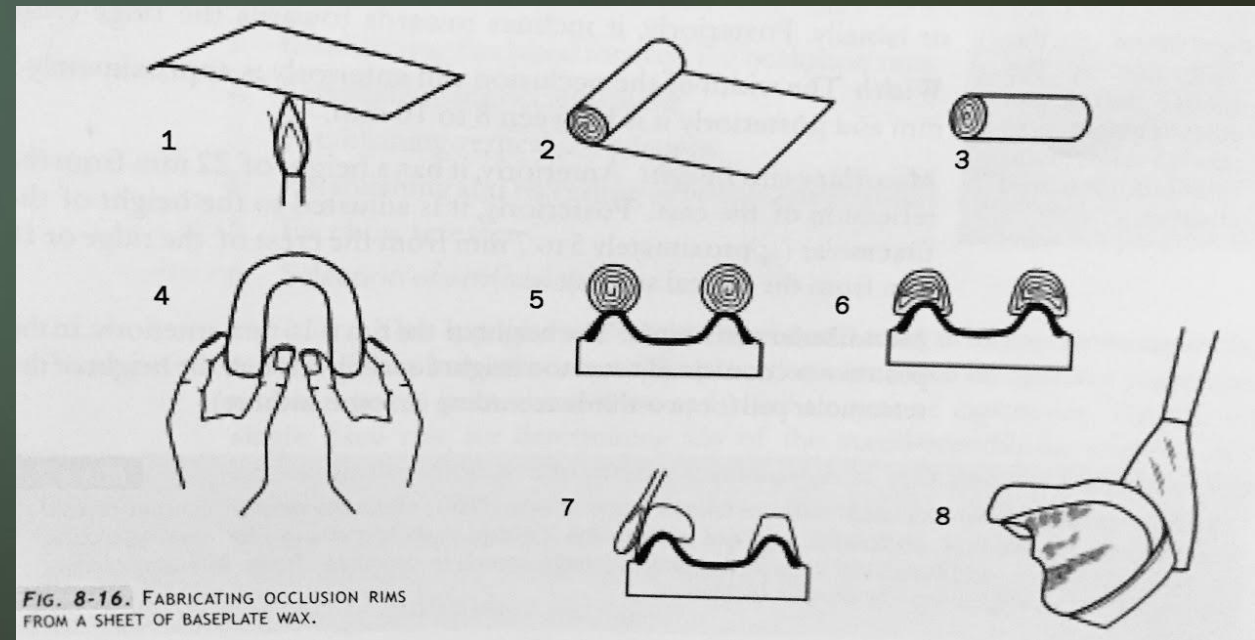
## Uses:

- ▶ To establish the contour of the polished surface
- ▶ For the (tentative) establishment, recording and transfer of jaw relation
- ▶ To see the patient's response to a denture-like form
- ▶ Arrangement of artificial teeth



# Fabrication of Occlusion Rims

1. Soften a sheet of pink wax with Bunsen burner.
2. Roll into soft cylindrical shape.
3. Bend to form an arch and adapt to the record base.
4. Seal the wax to the base with hot spatula.
5. Finish the contour with a broad bladed spatula following proper dimensions.

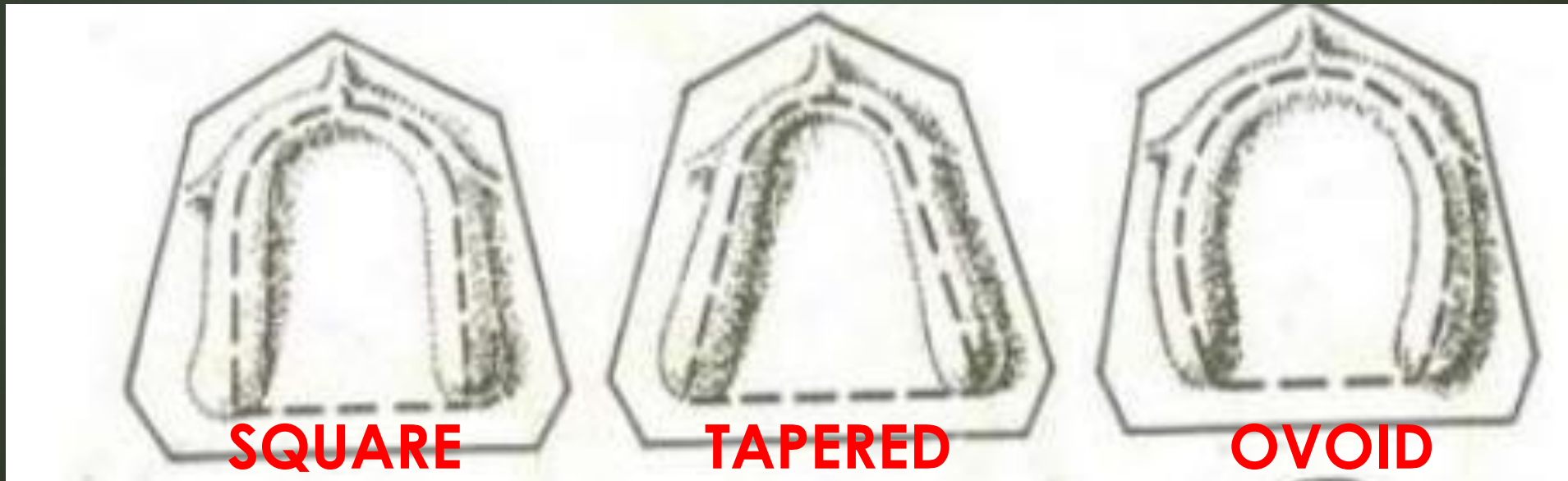




# Shape of Occlusion Rims

## Arch forms:

- A. Square (U shaped)
- B. Tapering (V shaped)
- C. Ovoid



# Dimensions and Position

## Position:

within **Neutral zone**

**Posterior:** over the crest

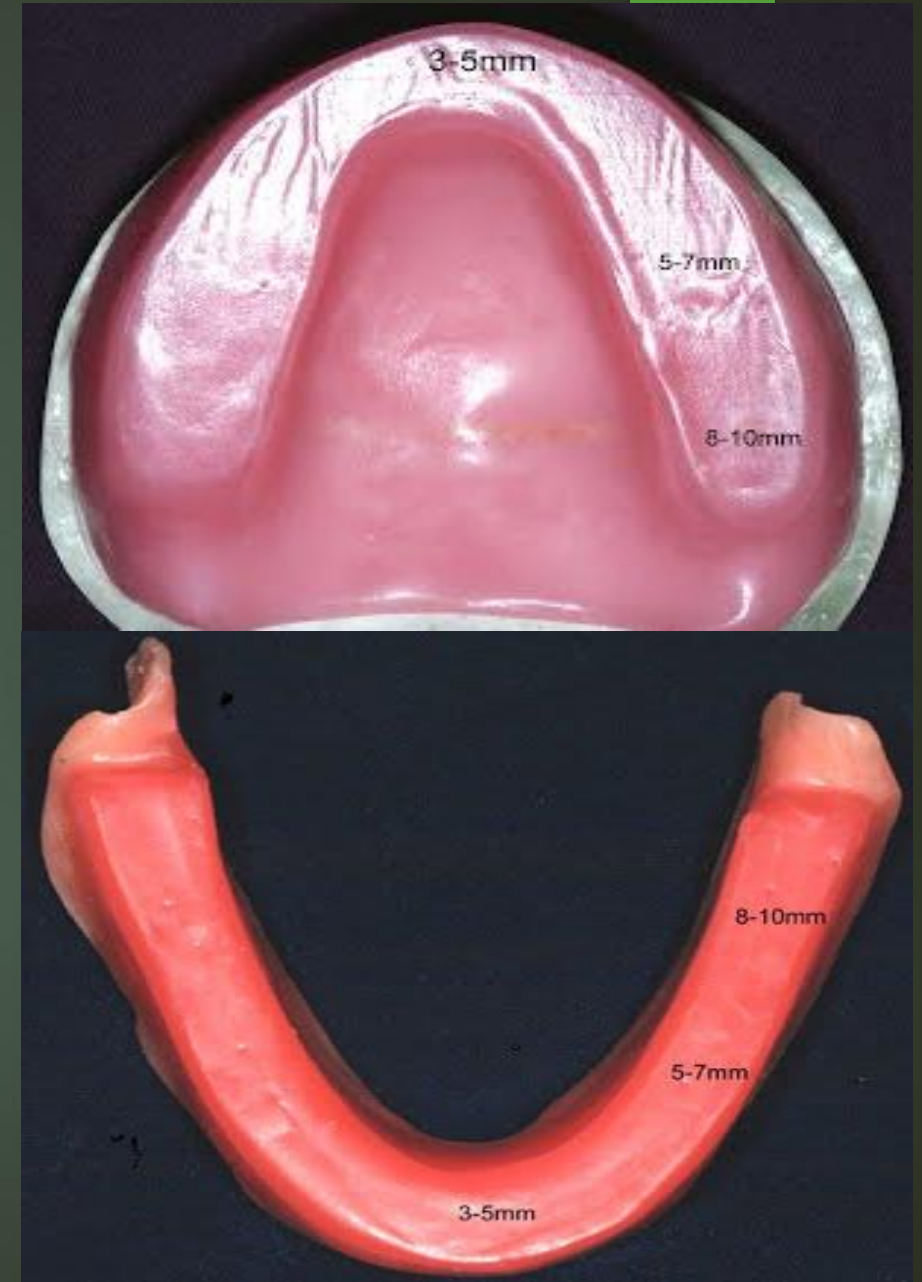
**Anterior:** slightly labial to the crest

## Width:

**Anterior:** 3-5 mm

**Premolar:** 5-7 mm

**Molar:** 8-10 mm



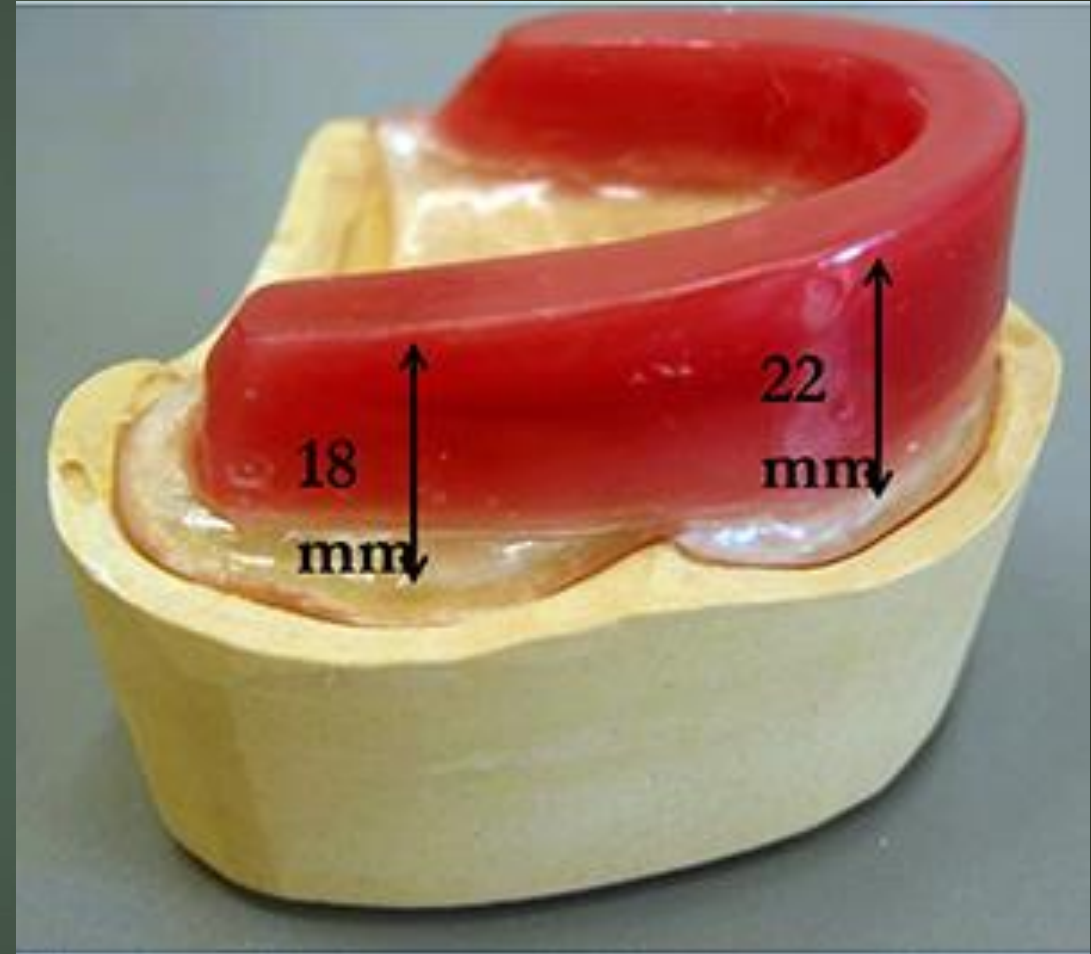
# Maxillary Occlusion Rim

## Height:

**Anterior:** 20-22 mm from sulcus/  
10-12mm from the crest

**Posterior:** 18 mm from sulcus /  
5-7 mm from crest

**Labial surface:** 8-10mm away  
from incisive papilla



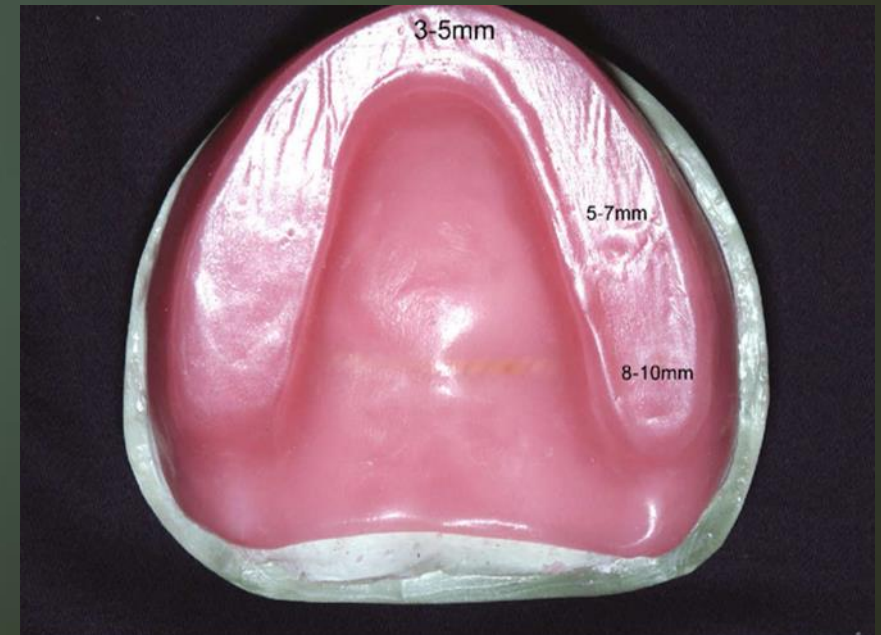
# Mandibular Occlusion Rim

## Mandibular rim height:

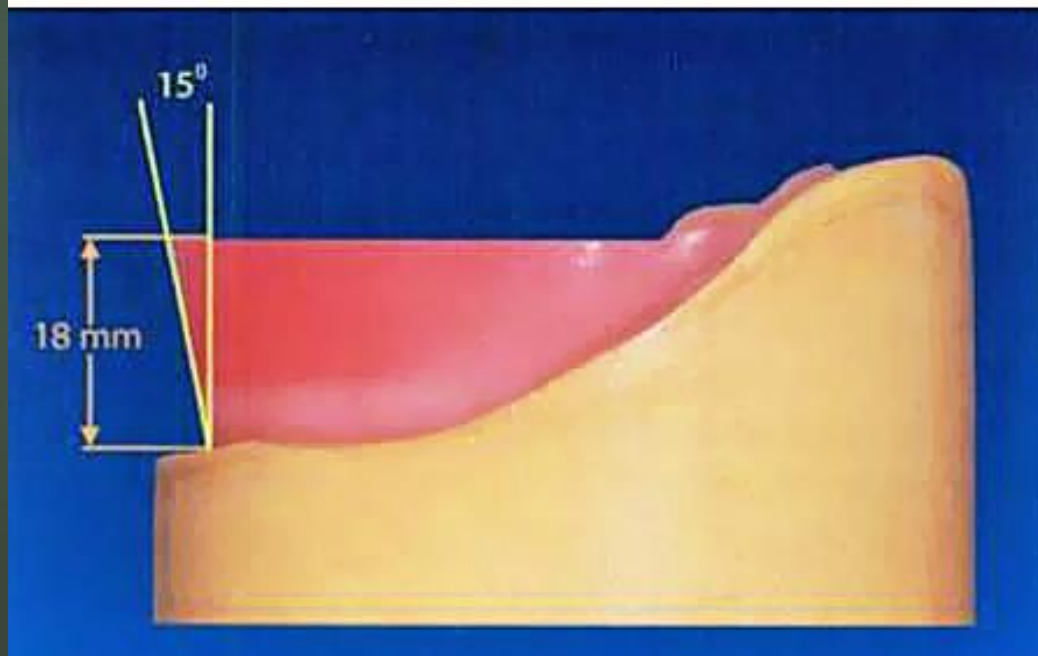
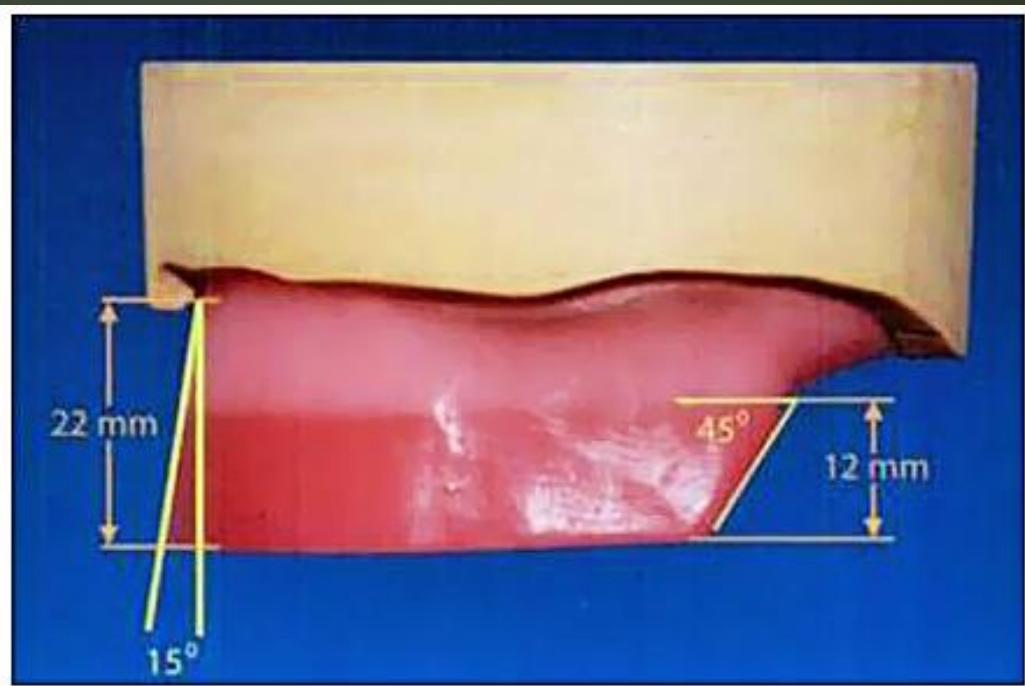
**Anterior:** 16 – 18 mm from the sulcus/

6-8 mm from the crest

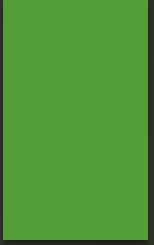
**Posterior:** 2/3 of retromolar pad  
3-6 mm from the crest



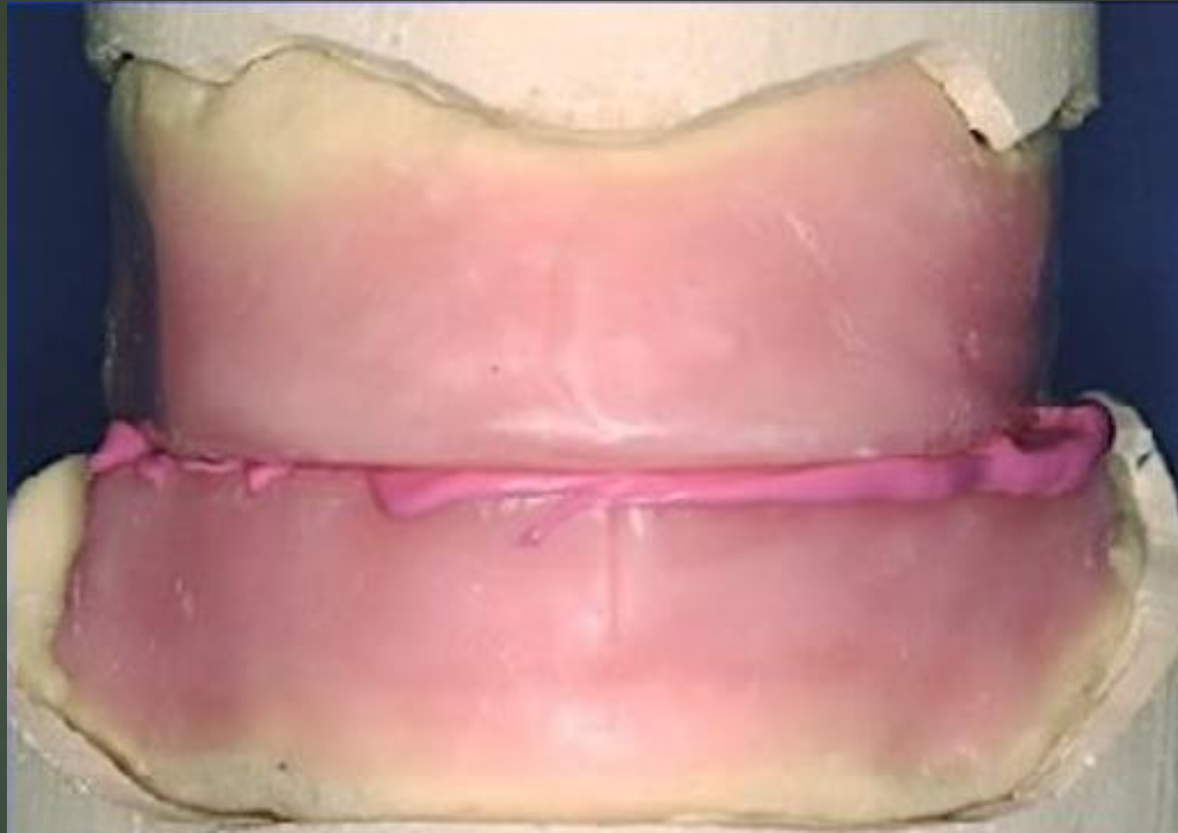








# Establishing **maxillo-mandibular** Relations



Shape and dimensions of the occlusion rims constructed in the laboratory are only tentative. During clinical phase, the occlusion rims are tried in the patient's mouth and reshaped. This appointment is the most vexing of all appointments.

# Establishing Labial Form of Occlusion Rim

**Aim:** establish anteroposterior position of the anterior teeth and the esthetics of the lips and face

## Facial esthetics as guide:

- ▶ Fullness of the upper lip
- ▶ Philtrum
- ▶ Nasolabial fold
- ▶ Commissures of the mouth



# Fullness of the Lips

## Inadequate support:

- ▶ upper lip looks flabby and unsupported
- ▶ Deepening of nasolabial creases/folds
- ▶ Loss of definition of the philtrum
- ▶ Drooping or lowering of the commissures of the mouth



# Fullness of the Lips



## Excessive fullness:

- “stretched look”
- Philtrum appears shallow
- Nasolabial fold appears smooth
- Corners of the mouth appears stretched outward



# Fullness of the Lips

- ▶ **Nasolabial fold** looks filled out or almost invisible when the occlusion rims are too far forward
- ▶ **philtrum** looks filled out or flattened when occlusion rim is too far forward or labial borders are too thick



# Commissures of the Mouth

- ▶ Guide to the shape of the occlusion rims and the vertical height

**Buccal corridor:** space between the buccal surface of the posterior teeth and the inner surface of the cheeks

**Excessive:** when posterior area of occlusion rim is positioned too far lingually. Dark space may appear excessive and unaesthetic

**Inadequate:** when the posterior teeth are positioned too buccally resulting in the obliteration of the buccal corridor.

# Shade of Teeth & Buccal Corridor Space



**Inadequate**

**Moderate**

**Excessive**

# Establishing level and inclination of the occlusal plane

**Aim:** establishes the superoinferior position of the teeth especially that of the anterior teeth. The level and slant of the plane of occlusion is also determined.

**Occlusal plane** – the plane at which the upper and lower teeth meet during occlusion.

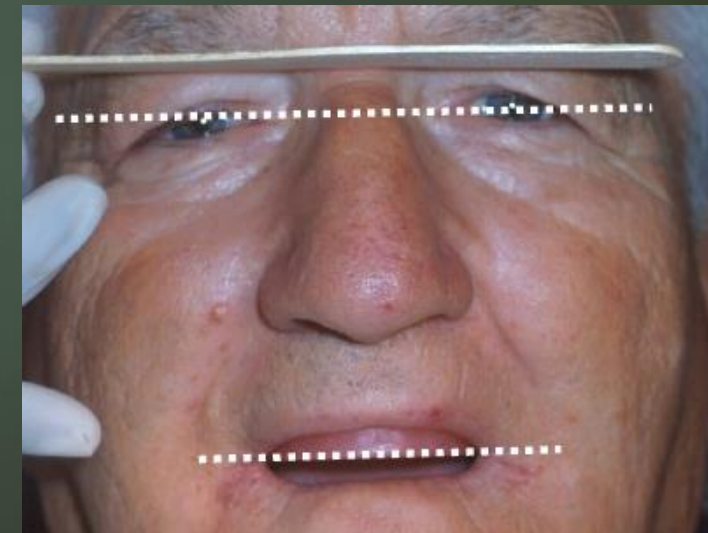
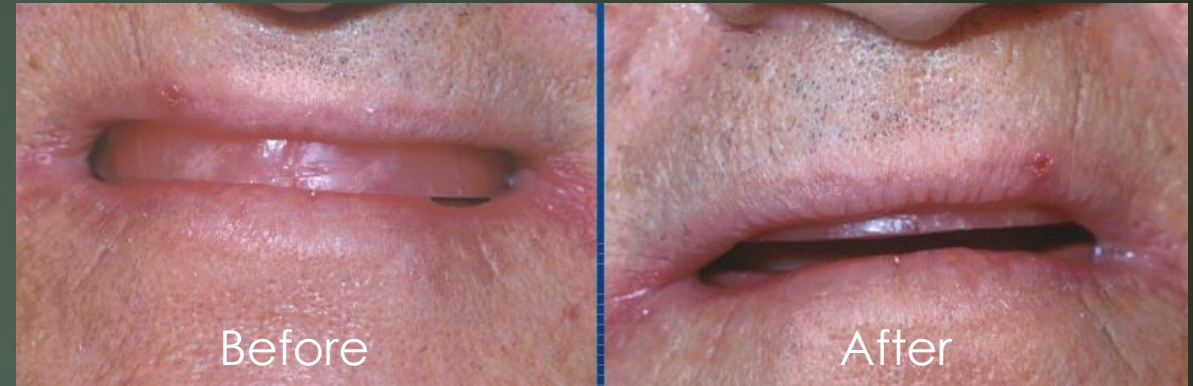
1. Method 1 - using maxillary occlusion rim
2. Method 2 – using mandibular rim

# Establishing occlusal plane using the maxillary occlusion rim

**Anterior height:**

**Incisal visibility** – 1-2mm visible when lips are at rest

**Interpupillary line** – parallel





# Establishing occlusal plane using the maxillary occlusion rim

**Posterior height:**

**Ala-tragus line (Camper's line)**

– parallel (using fox plane guide)

Once the occlusal height of the maxillary occlusion rim is established, the lower occlusion rim height is adjusted to provide for an interocclusal rest space of **2 to 4 mm**.



# Establishing occlusal plane using the mandibular occlusion rim

## Anterior height

- 0.5mm visible when jaws are at rest



## Posterior height

- 2/3 of the retromolar pad

Once the lower occlusal plane is established, the upper occlusion rim is adjusted so that there is an interocclusal rest space of 2 to 4 mm.

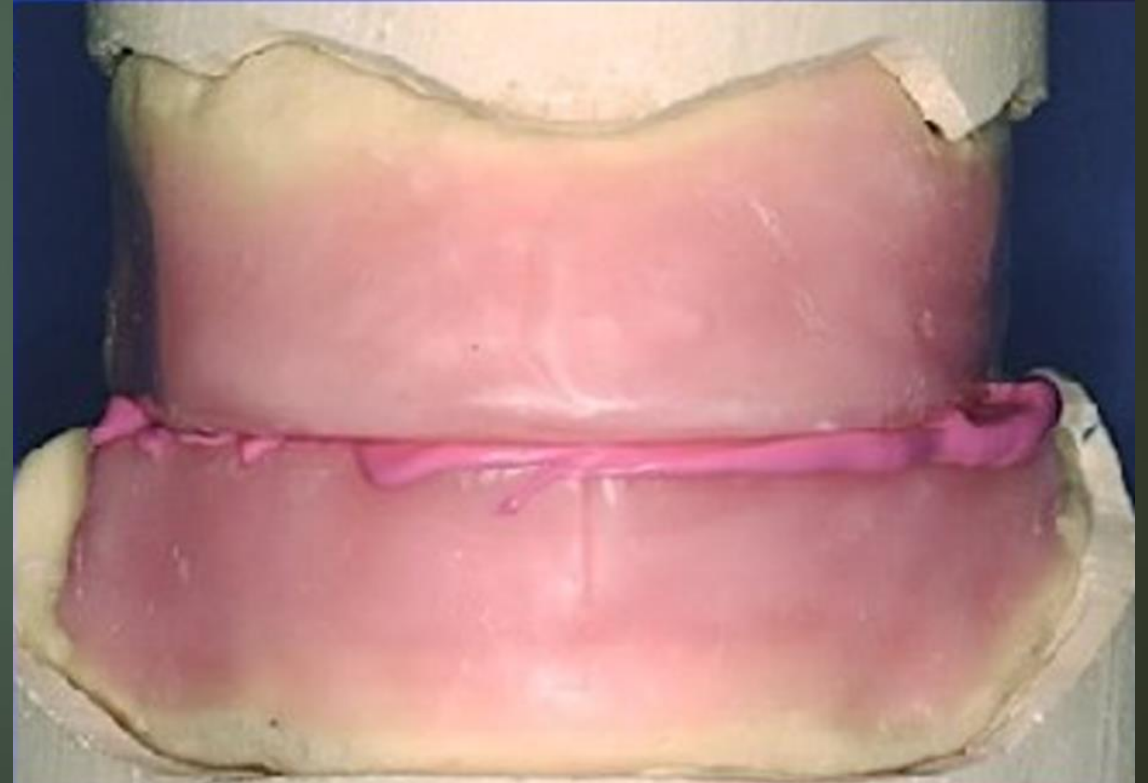


# Maxillo-mandibular Relations

- ▶ Any spatial relationship of maxillae to the mandible

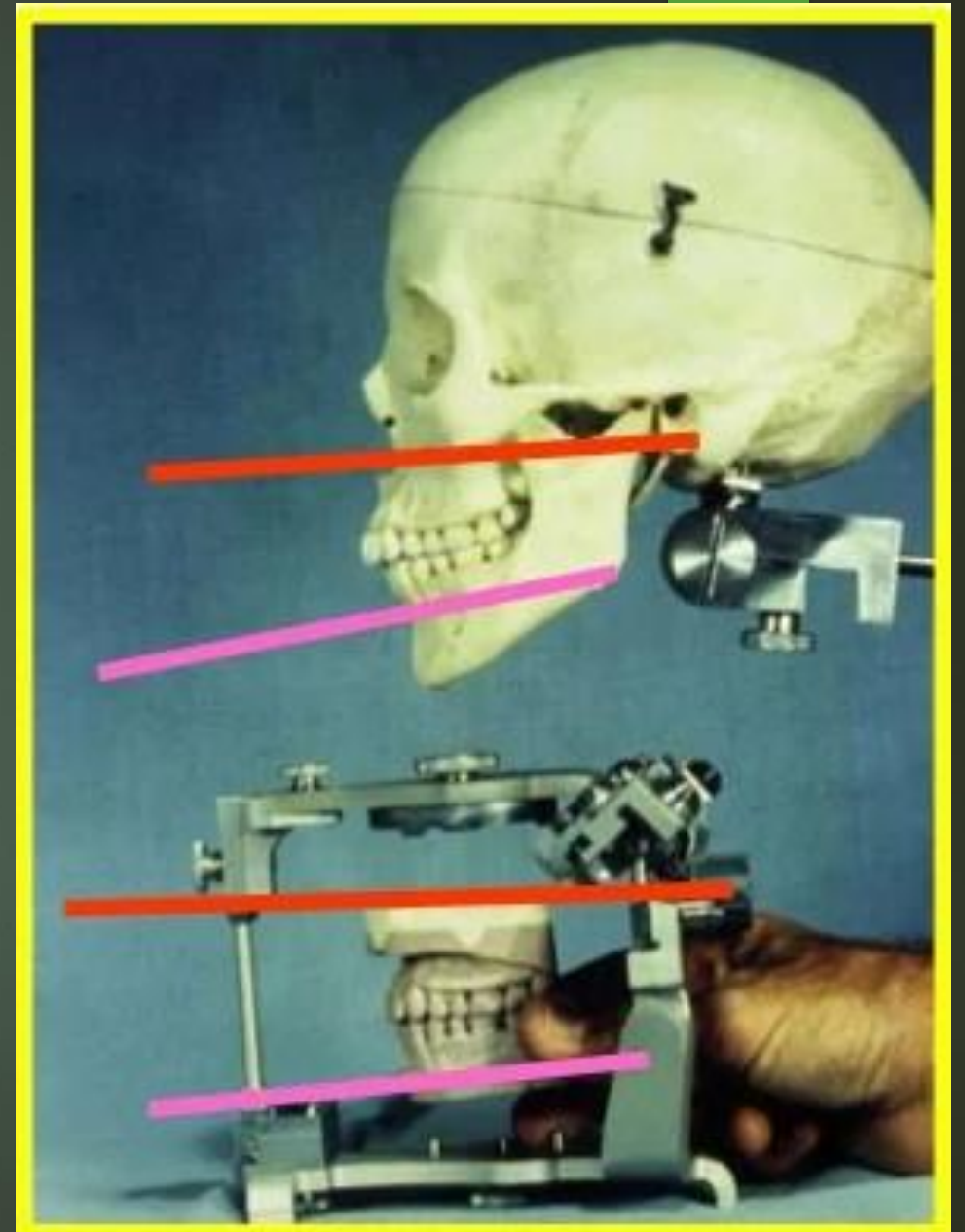
## Classification:

1. Orientation relations
2. Vertical relations  
(vertical dimension)
3. Horizontal relations



# Orientation Jaw Relation

Are those that orient the mandible to the cranium in such a way that, when the mandible is kept in its most posterior position, the mandible can rotate in the sagittal plane around an imaginary line passing through or near the condyles.





# Vertical relations (dimension)

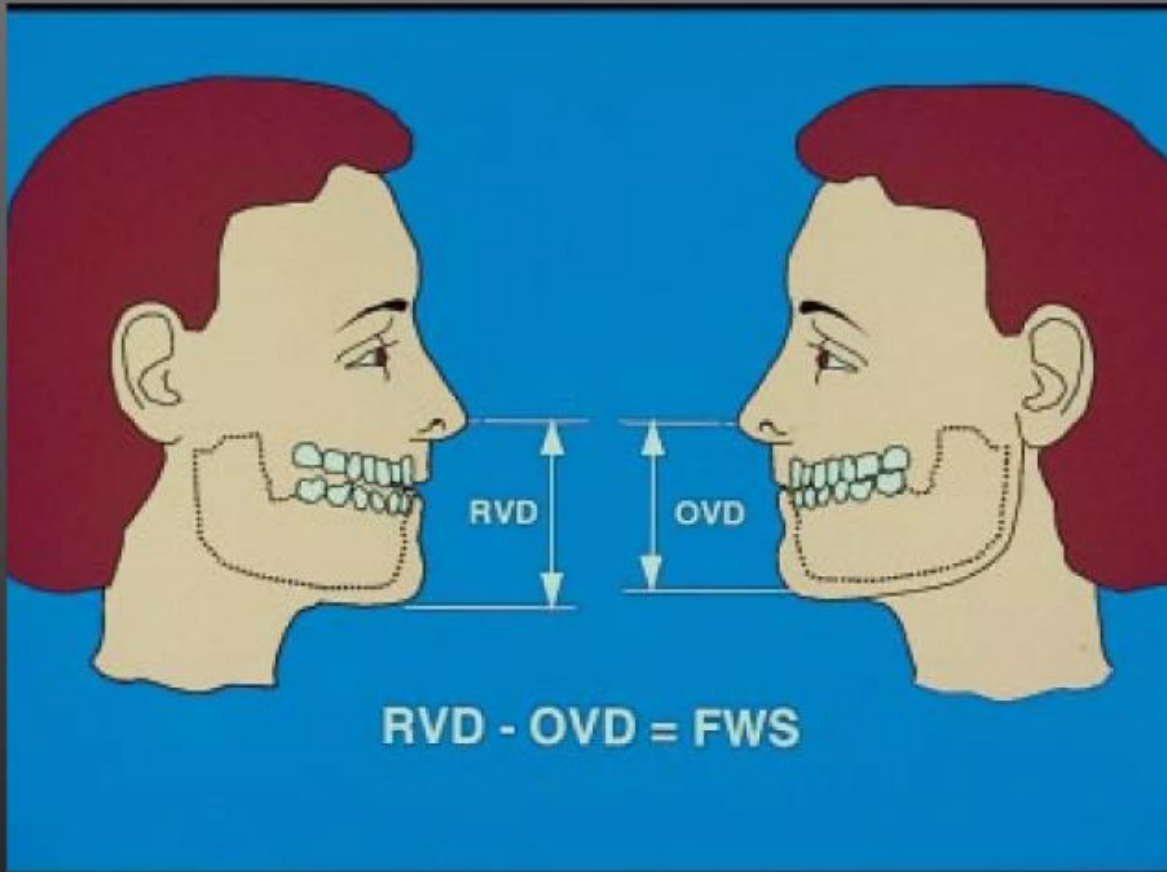
- ▶ Determine the amount of separation between two jaws and has to be established correctly for the proper comfort, health and function of the mouth.
- ▶ Distance between **2 anatomic or marked points**, one on a fixed (**tip of the nose**) and one on a movable member (**chin**).





# Vertical relations (dimension)

RELATION BETWEEN THE  
COMPONENTS



RVD – rest vertical dimension  
OVD – occlusal vertical dimension  
FWS – free way space

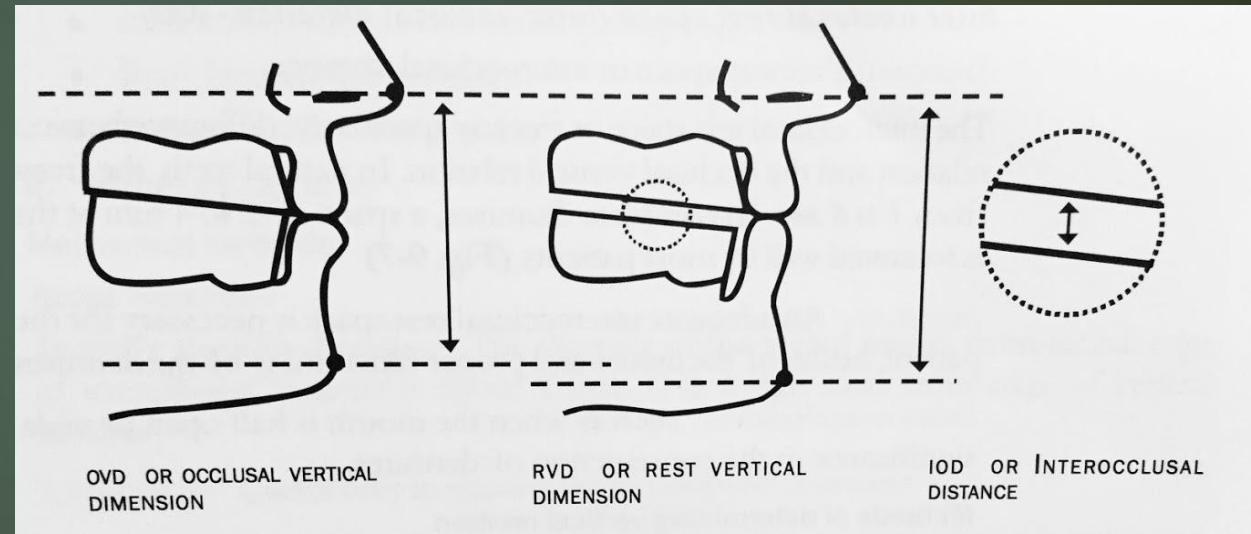
## Types:

1. Vertical dimension at rest (VDR/RVD)
2. Vertical dimension of occlusion (VDO)
3. Inter occlusal dimension (IOD)/FWS “freeway space”

**Physiologic rest position** – postural position of the mandible when an individual is resting comfortably in an upright position and the associated muscles are in state of minimal contractual activity.

**Factors affecting are:**

1. Tonicity of jaw muscle
2. Position of the head



**Vertical dimension of rest (VDR)** – distance between two selected measured when the mandible is in the physiologic rest position.

**Vertical dimension of occlusion (VDO)** – distance between two points when occluding members in contact.

- ▶ In **dentate patients**, it is established by occlusal stops provided by **teeth**.
- ▶ In **edentulous patients**, it is established with the help of **occlusal rims**.

$$\text{VDO} = \text{VDR} - \text{IOD} \quad \text{or} \quad \text{VDO} = \text{VDR} - 2 \text{ to } 4 \text{ mm}$$



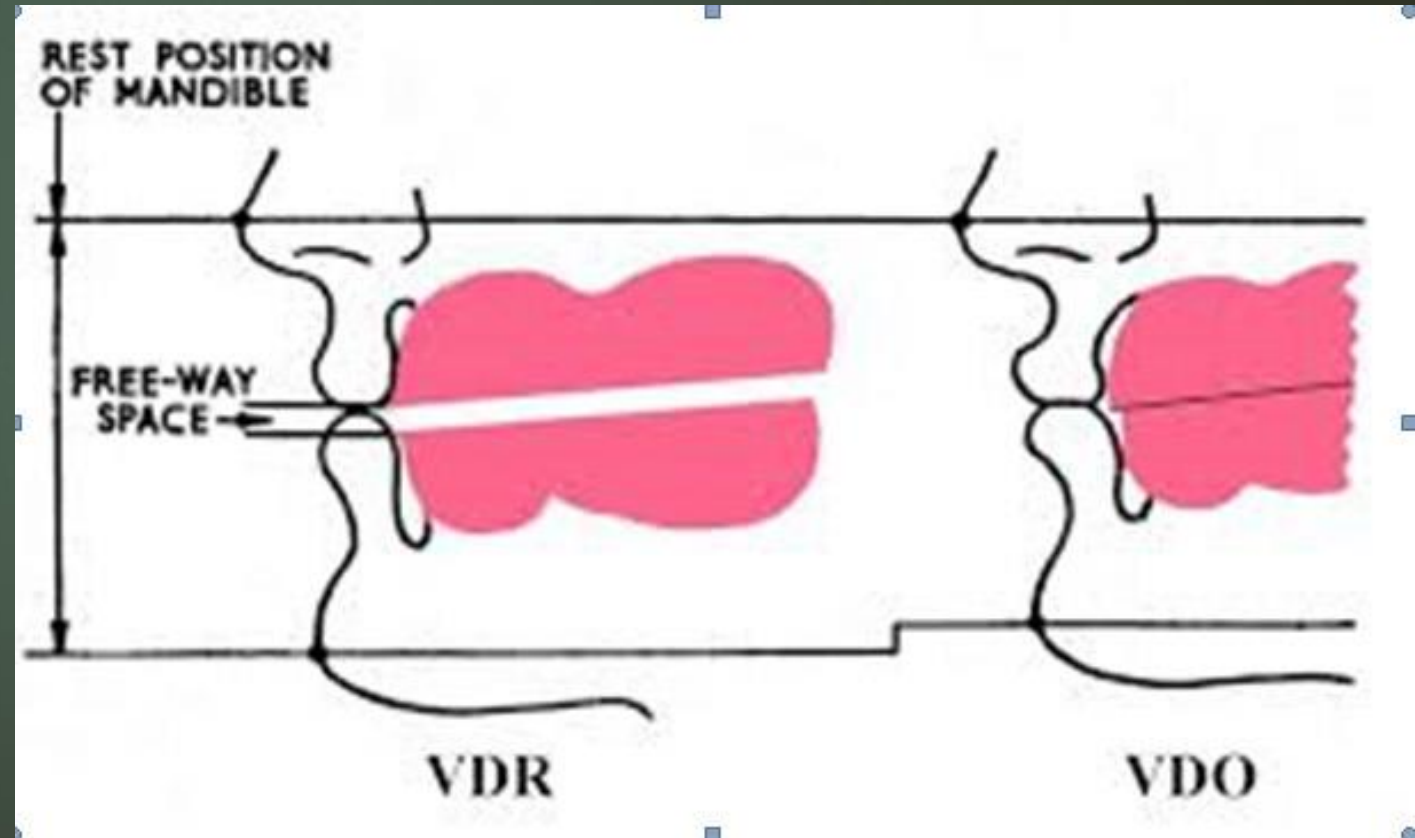
# Inter occlusal dimension (IOD) / Inter occlusal rest space / Freeway space / inter occlusal distance

– difference between the VDR and VDO

IOD = 2 – 4 mm

## Importance:

adequate freeway space is necessary for the comfort of the patient, health of the tissues and proper functioning of the dentures.



# Physiologic method of determining vertical relation

## Physiologic rest position tests

- ▶ **Swallow and relax** – patient is asked to swallow and relax, there should be 2-4mm of space between the rims in the pre molar region
- ▶ **Niswonger's method (1934)** – two markings are made and measured after the patient swallowed and relaxed.





# Physiologic method of determining vertical relation

## Phonetics as guide:

- ▶ “m” sound
- ▶ “ch”, “s”, “j” sounds - at right vertical height, there should be 1mm space between the upper and lower occlusion rims
- ▶ “thirty-three” – there should be enough space for the tip of the tongue to protrude between the anterior teeth

# Physiologic method of determining vertical relation

## Phonetics as guide:

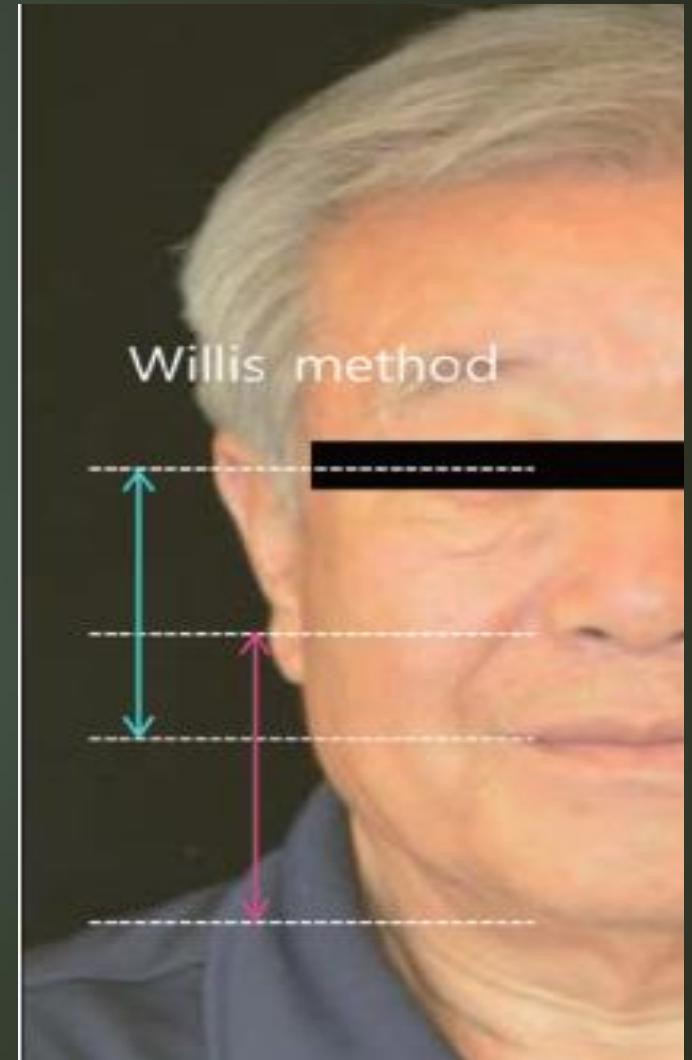
- ▶ **“f” or “v” sounds** – maxillary incisal edge should lightly contact the lower lip. If the patient contacts the lower lip well into the oral portion, maxillary incisal edge may be too short, if contacted with force, maxillary rim may be too long
- ▶ **Silverman’s closest speaking space** – establishes vertical relation when the jaws are in function. “s” or “ch” sounds.

# Physiologic method of determining vertical relation

**Esthetics as guide:**

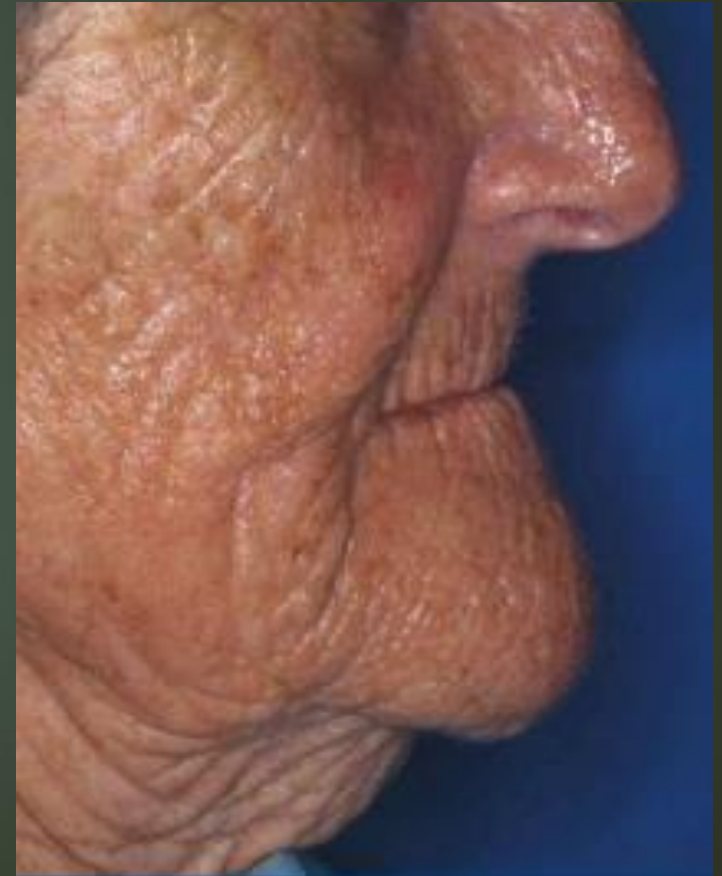
**Willis method (facial proportion)**

- the distance between the outer canthus of the eye and the corner of the mouth should be equal to the distance between the lower border of the septum of the nose and the lower border of the chin.



# Effects of decreased vertical dimension

1. Decreased chewing efficiency
2. Cheek biting – flabby cheek tissues get trapped
3. Appearance – deep wrinkles, lips loose their fullness, face appears flabby.
4. Angular cheilitis – constant wetness on deep creases at the corner of the mouth due to saliva leads to infection and soreness



# Effects of decreased vertical dimension

- 5. TMJ pain, clicking sounds, headaches
- 6. Consten's syndrome (mandibular joint neuralgia) due to prolonged overclosure - A complex of symptoms that includes loss of hearing, tinnitus, dizziness, headache, and a burning sensation of the throat, tongue, and side of the nose.
- 7. Limited tongue space





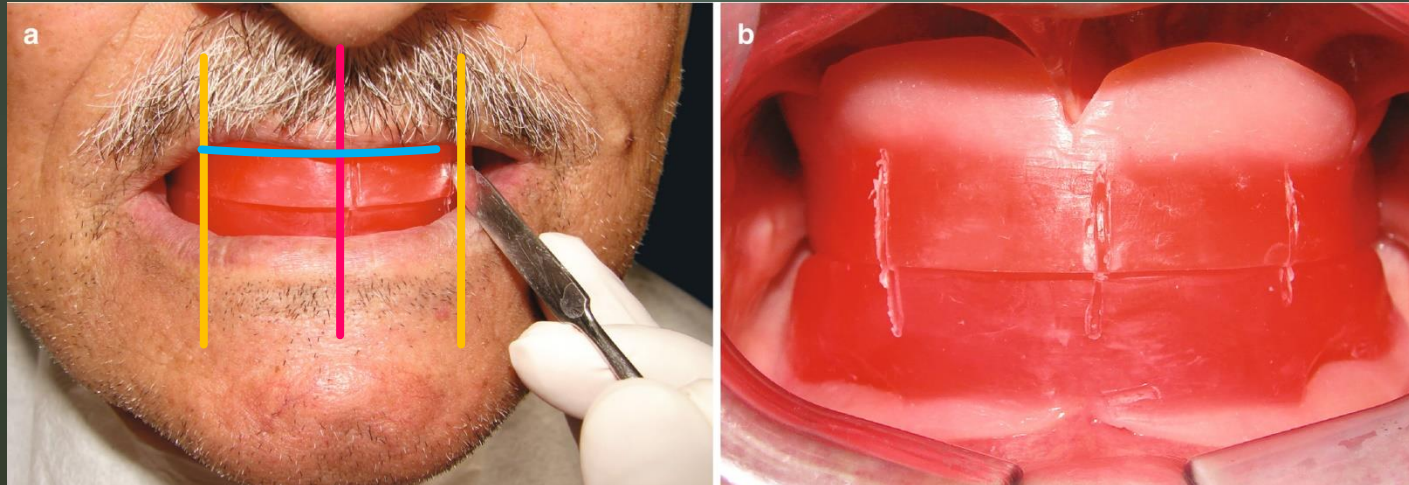
# Effects of increased vertical dimension

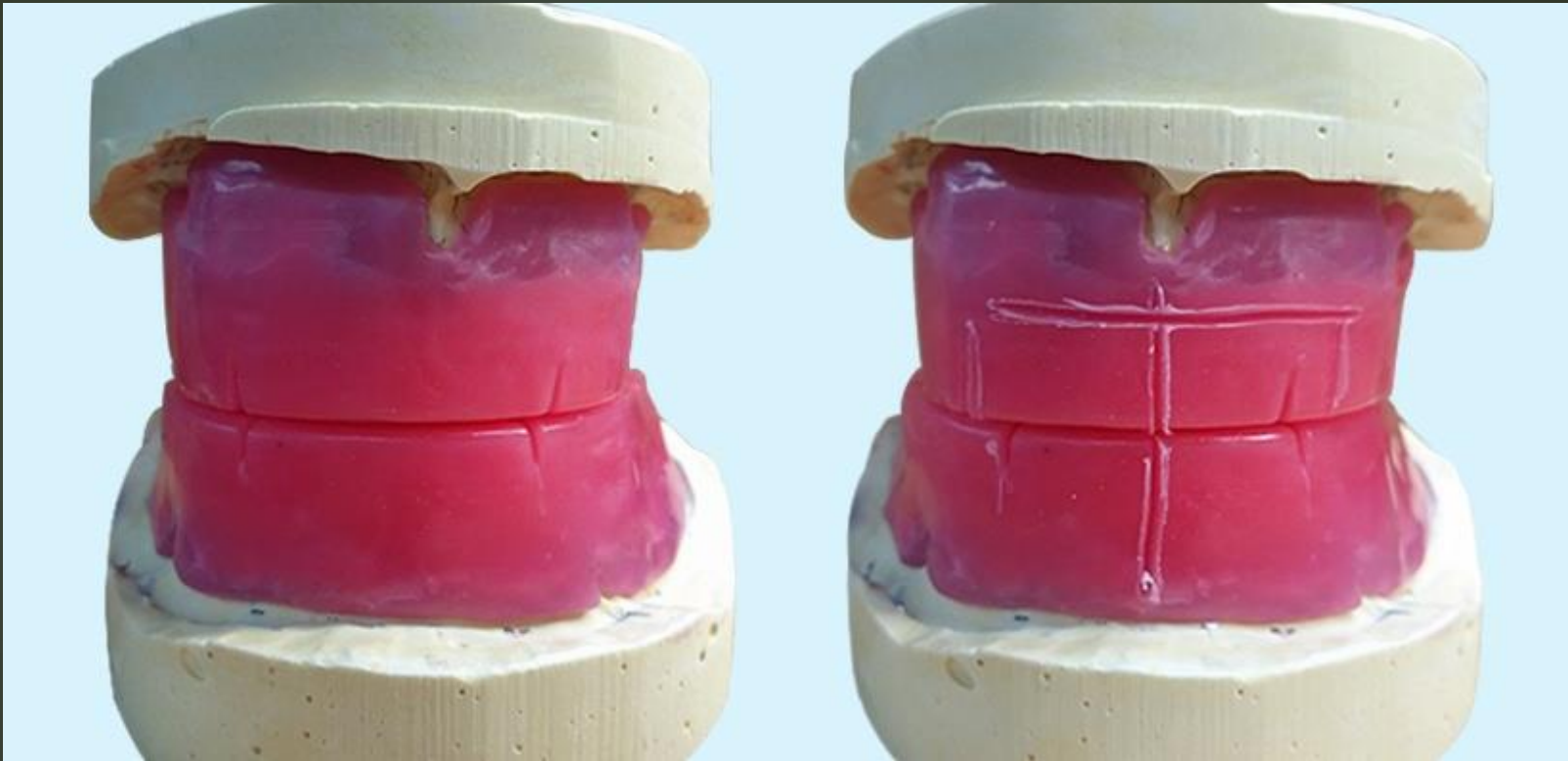
- Discomfort and annoyance to the patient
- Trauma to underlying mucosa
- Rapid resorption of alveolar bone
- Clicking of teeth
- Rapid wear of acrylic teeth
- Strained appearance (elongated face)
- Difficulty closing lips
- Difficulty swallowing



**Scribing guide lines on the wax  
occlusion rims**

- ▶ **Midline** – coincides with the midline of the face
- ▶ **Canine line** – ala of the nose coincides with canine cusp tip. It helps in selection of the width of anterior teeth and positioning of canine.
- ▶ **corner of the mouth** – distal surface of the upper canine
- ▶ **High lip line** – level of exposure of occlusion rims during smiling.
- ▶ If exposure is high, longer teeth can be selected to reduce display of denture base.





### Reevaluating previous procedures:

1. Lip support and facial esthetics
2. Anterior teeth positions (through esthetics and phonetic tests)
3. Occlusal plane level, inclination and symmetry
4. Vertical dimension and adequacy of freeway space (using esthetic and phonetic tests)

# QUESTIONS?



**PRINCESS FROZZY**

**THANK YOU**



# DATES TO REMEMBER :

| DATE                                                                                           | ACTIVITY                                                                                                                                                                                                               | STATUS                                                              |
|------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| <b>JANUARY 06 (pm) DEN213</b><br><b>JANUARY 07 (am) DEN216</b><br><b>JANUARY 07(pm) DEN211</b> | <b>QUIZ 01 – Lesson 01 &amp; Lesson 02</b><br><b>QUIZ 02 – Lesson 03 &amp; Lesson 04</b><br><b>LABORATORY WORKS</b> <ul style="list-style-type: none"> <li>Preliminary Impression</li> <li>Boxing Method</li> </ul>    | <b>FACE 2 FACE</b><br><b>SESSION</b>                                |
| <b>JANUARY 08 (pm) DEN213</b><br><b>JANUARY 09 (am) DEN216</b><br><b>JANUARY 09(pm) DEN211</b> | <b>QUIZ 03 – Lesson 05 &amp; Lesson 06</b><br><b>QUIZ 04 – Lesson 07 &amp; Lesson 08</b><br><b>LABORATORY WORKS</b> <ul style="list-style-type: none"> <li>Cast Construction</li> <li>Individual Tray (VLC)</li> </ul> | <b>FACE 2 FACE</b><br><b>SESSION</b>                                |
| <b>JANUARY 13 (pm) DEN213</b><br><b>JANUARY 14 (am) DEN216</b><br><b>JANUARY 14(pm) DEN211</b> | <b>MIDTERM EXAM LECTURE</b><br><b>(Lesson 01 – 08)</b><br><b>LABORATORY WORKS</b> <ul style="list-style-type: none"> <li>Completion of Lab Works</li> </ul>                                                            | <b>WRITTEN EXAM</b><br><b>F2F SESSION</b>                           |
| <b>JANUARY 15 (pm) DEN213</b><br><b>JANUARY 16 (am) DEN216</b><br><b>JANUARY 16(pm) DEN211</b> | <b>MIDTERM EXAM LABORATORY</b><br><b>Preliminary Impression</b>                                                                                                                                                        | <b>WRITTEN &amp; PRACTICAL</b><br><b>EXAM</b><br><b>F2F SESSION</b> |



LESSON 08

# POSTERIOR PALATAL SEAL

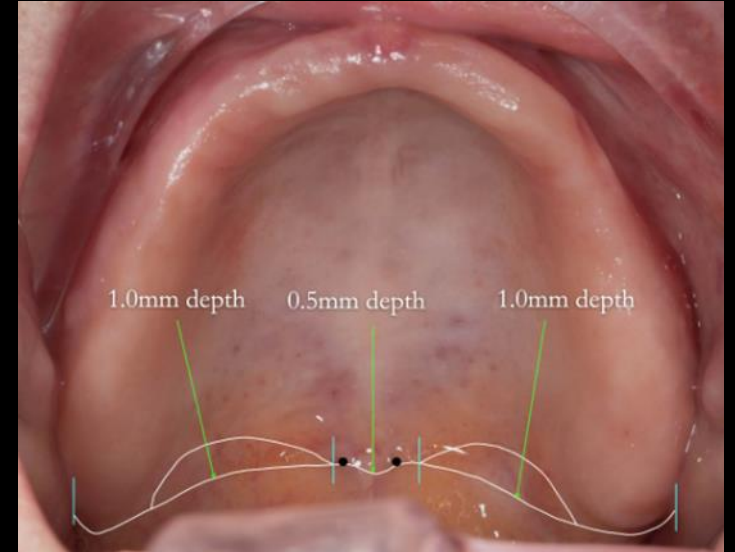
Prepared By:  
DR. PETER PASCUAL FLORES, DMD, MS

# POSTERIOR PALATAL SEAL

- *Post-palatal seal*
- *Post-dam*

## Definition:

The SEAL area at the posterior border of a maxillary removable complete denture



# POSTERIOR PALATAL SEAL

## Functions:

- Retention (primary function)
- Acts as a barrier and prevents food accumulation beneath the denture
- Maintains contact with the moving soft palate, thereby, reducing the gag reflex by reducing the patient's awareness of the denture
- Compensates for curing shrinkage
- Reduces tongue irritation as posterior border merges better with palate

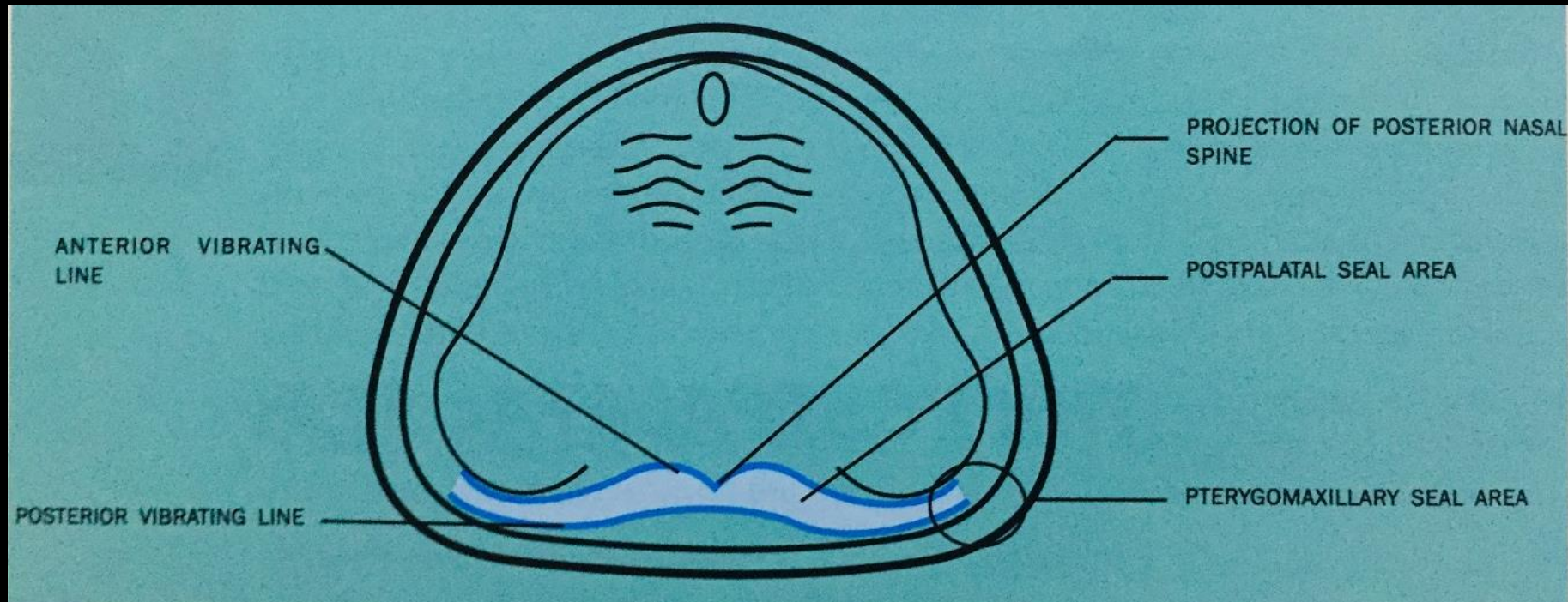


# POSTERIOR PALATAL SEAL

## Components:

A. Posterior palatal seal

B. Pterygomaxillary seal – located immediately behind the maxillary tuberosity





# BOUNDARIES OF POSTERIOR PALATAL SEAL

## Anteriorly

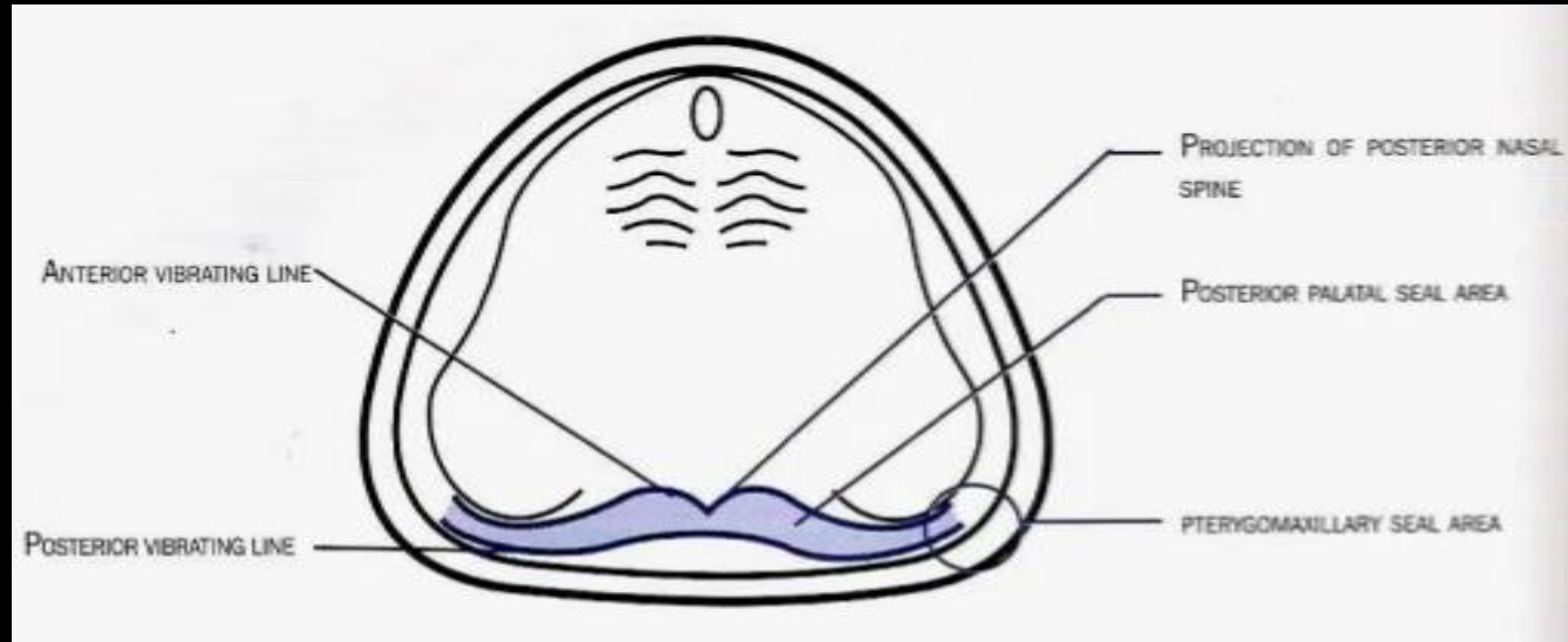
Anterior vibrating line

## Posteriorly

Posterior vibrating line

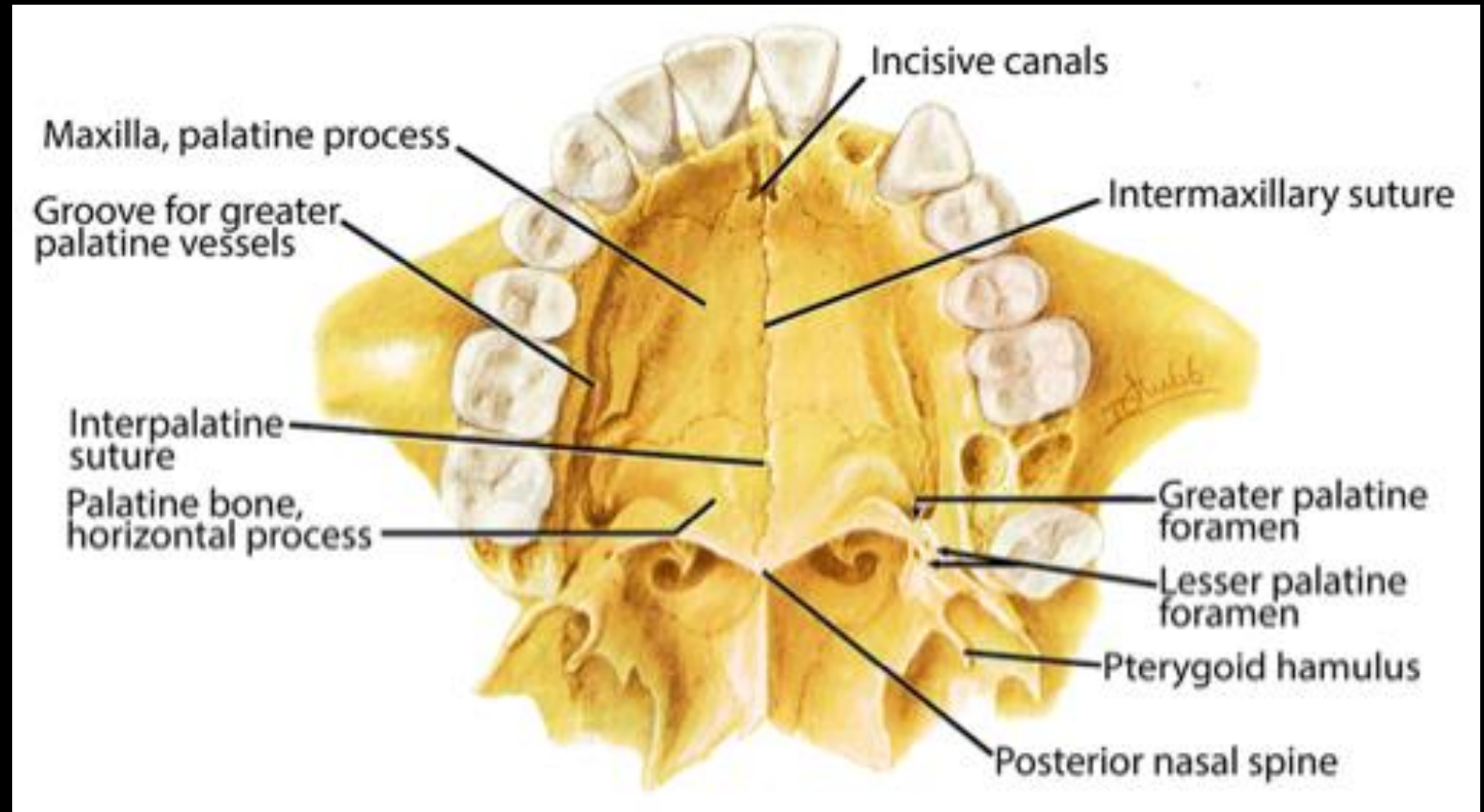
## Laterally

Pterygomaxillary notch

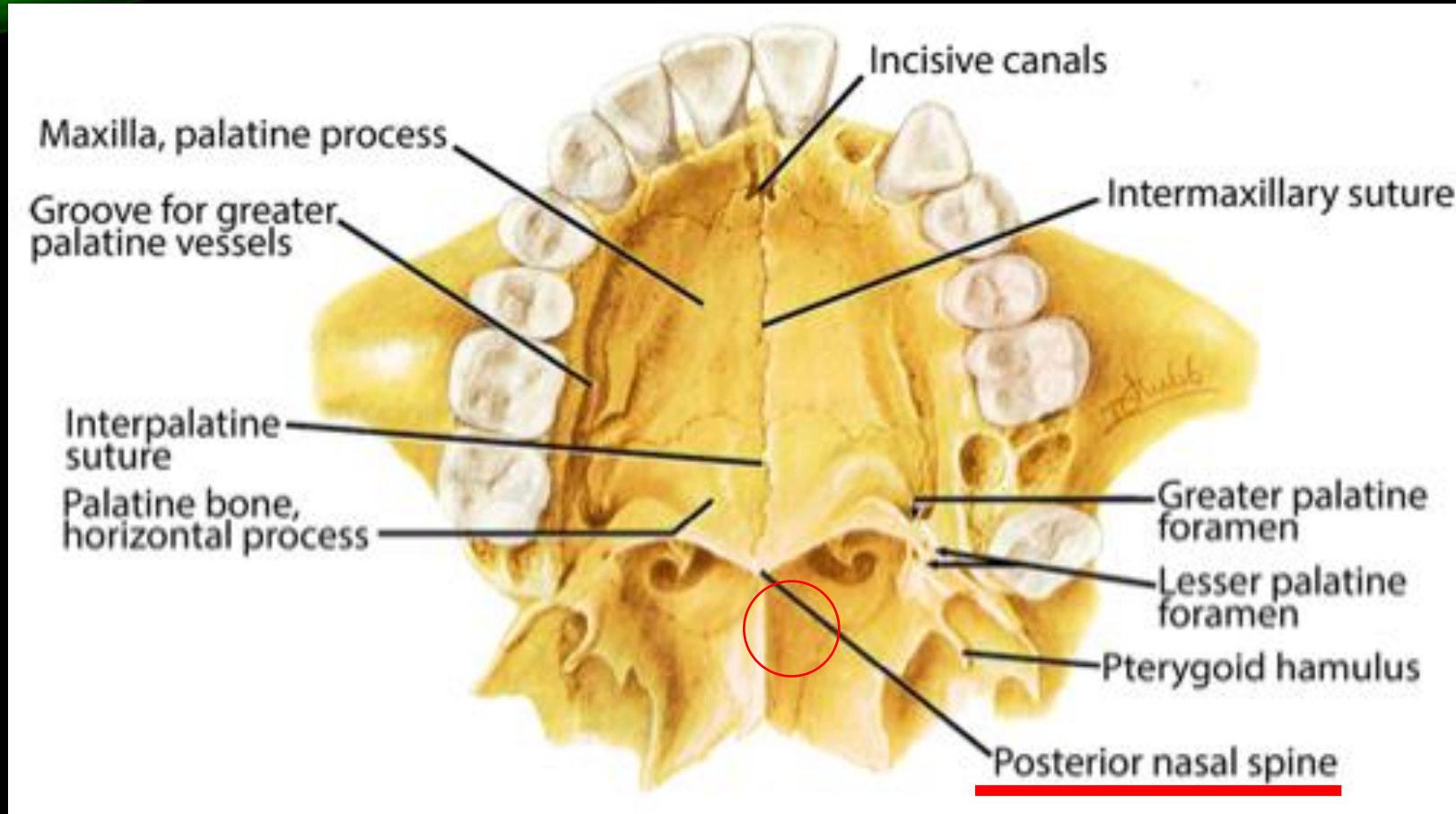


# ANTERIOR VIBRATING LINE

- An imaginary line located at the junction of the attached tissues of the hard palate and the moveable tissues of the immediately adjacent soft palate



# ANTERIOR VIBRATING LINE



- Bow shape – “Cupid's Bow” due to the projection of the posterior nasal spine

# ANTERIOR VIBRATING LINE

## Located by:

- Valsalva maneuver – both the nostrils are held firmly while the patient blows gently through the nose.
- Patient is asked to say “Ah” with short vigorous bursts



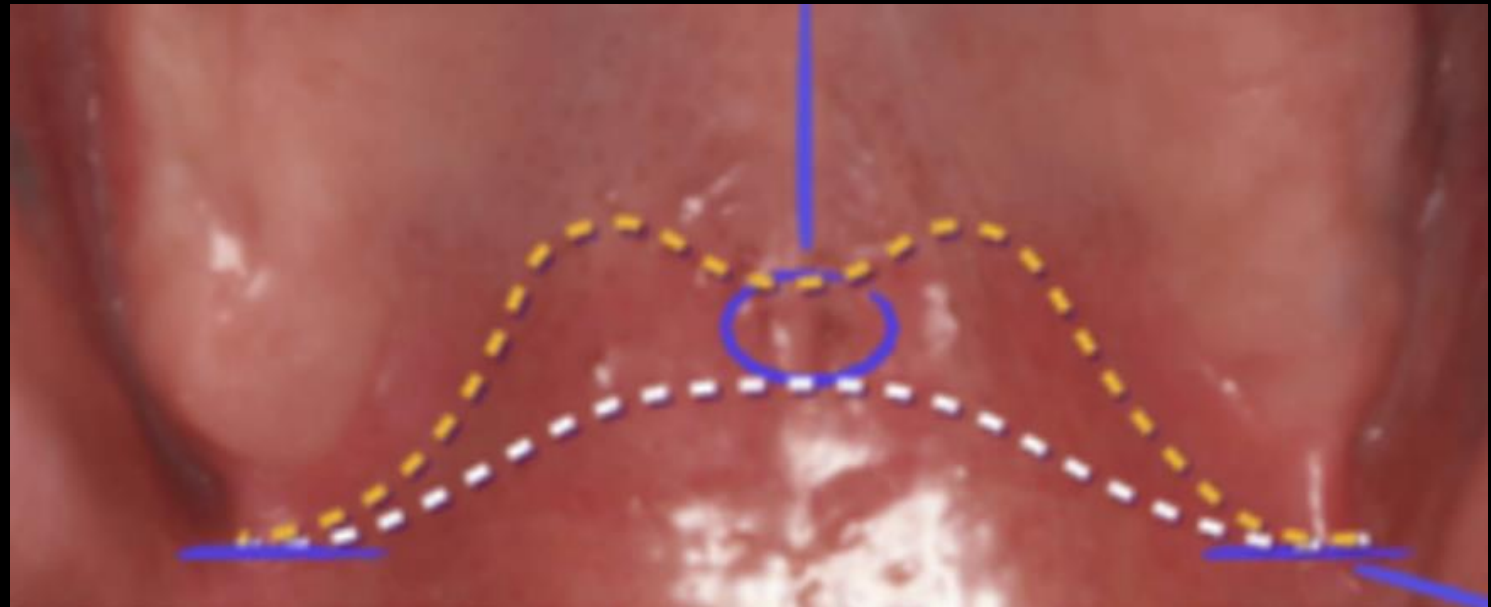


# POSTERIOR VIBRATING LINE

- An imaginary line at the junction of the aponeurosis of the tensor veli palatini and the muscular portion of the soft palate.
- It represents the demarcation between that part of the soft palate that has shallow movement (quivers) during function and the remainder that is markedly displaced.

## Located by:

It can be visualized when the patient says “Ah” in a normal, unexaggerated fashion.





# TECHNIQUES OF RECORDING THE POSTERIOR PALATAL SEAL



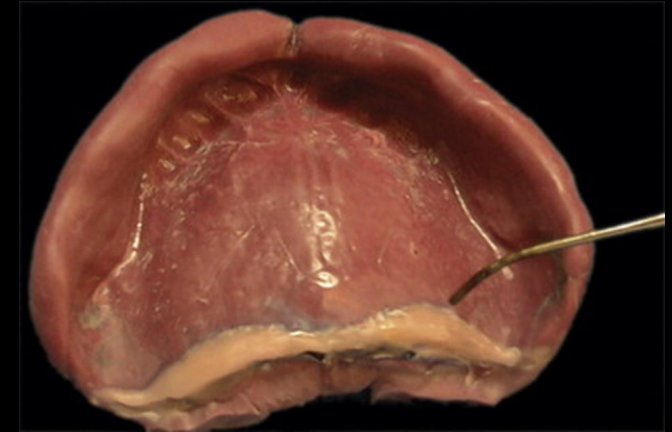
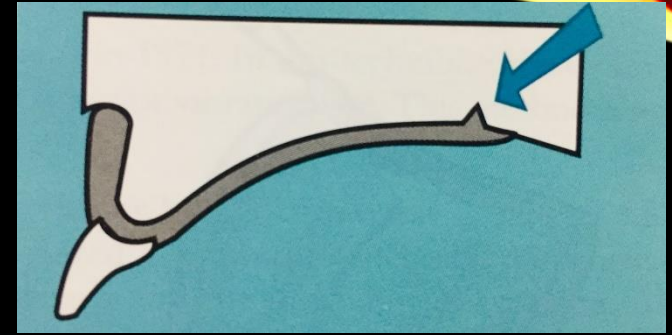
# TECHNIQUES OF RECORDING THE POSTERIOR PALATAL SEAL

## A. Arbitrary techniques

- Conventional technique
- Boucher's technique

## B. Physiologic techniques

- Fluid wax technique
- Stick compound technique
- Extended palatal technique



# CONVENTIONAL TECHNIQUE

## *Stage of recording:*

At the start of jaw relations

## *Method:*

1. Locate the hamular notch using a T burnisher or mouth mirror and marked with an indelible pencil
2. Posterior vibrating line – located with a short burst of “ah” and marked
3. Anterior vibrating line – tissues anterior to the posterior vibrating line are palpated with a ball burnisher to determine its compressibility then marked
4. The shellac or resin temporary denture base is pressed into place in the mouth and then on the cast to transfer the markings



# CONVENTIONAL TECHNIQUE

Scrape the cast with the following measurements:

- Median raphe region = **0.5 – 1.0** mm deep
- Side of the midline = **1.0 – 1.5** mm deep
- The scraping tapers to a feather edge as it approaches the anterior vibrating line





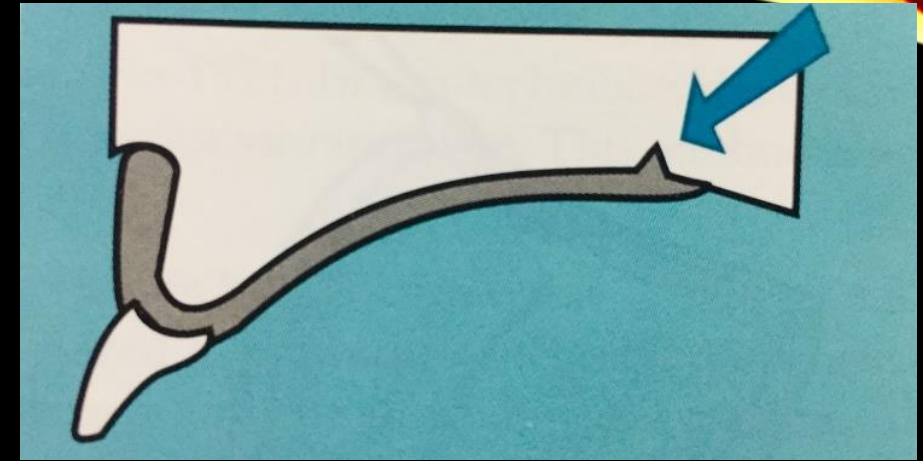
# BOUCHERS TECHNIQUE

*Stage of recording:*

During jaw relation

*Method:*

1. Posterior vibrating line – located and transferred to the master cast as previously described.
2. A groove is scraped slightly anterior to this line  
V – shaped – **1 – 1.5 mm deep and 1.5 mm wide**





# BOUCHERS TECHNIQUE

*Stage of recording:*

During jaw relation

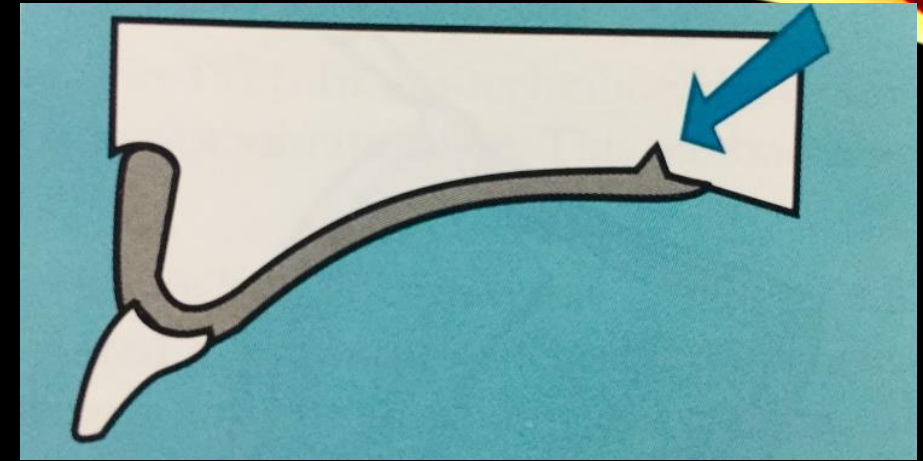
*Method:*

1. Posterior vibrating line – located and transferred to the master cast as previously described.

2. A groove is scraped slightly anterior to this line

V – shaped – 1 – 1.5 mm deep and 1.5 mm wide

**Advantage:** According to Boucher a broad seal causes greater tissue displacement and tends to push the denture down and a narrow bead like seal is more effective.



# FLUID WAX TECHNIQUE

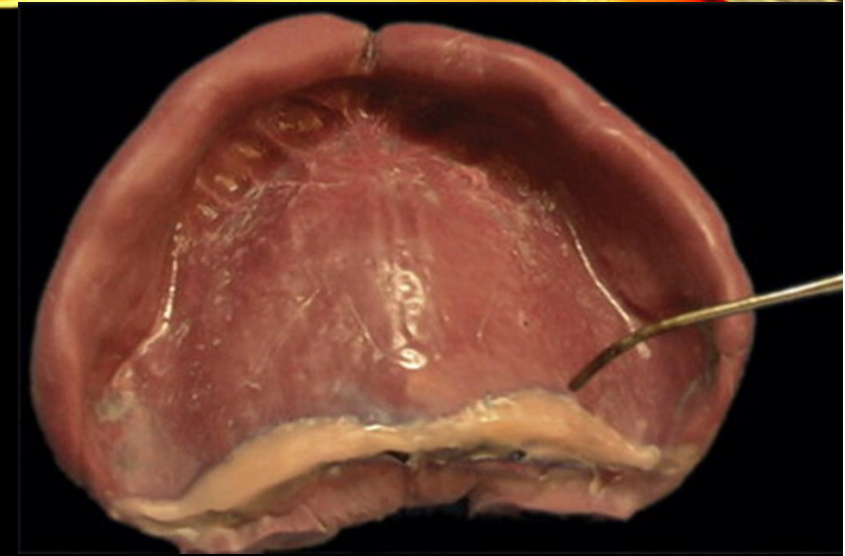
## *Stage of recording:*

*After making final impression.*

## *Method:*

Zinc oxide eugenol or plaster impression is preferred.

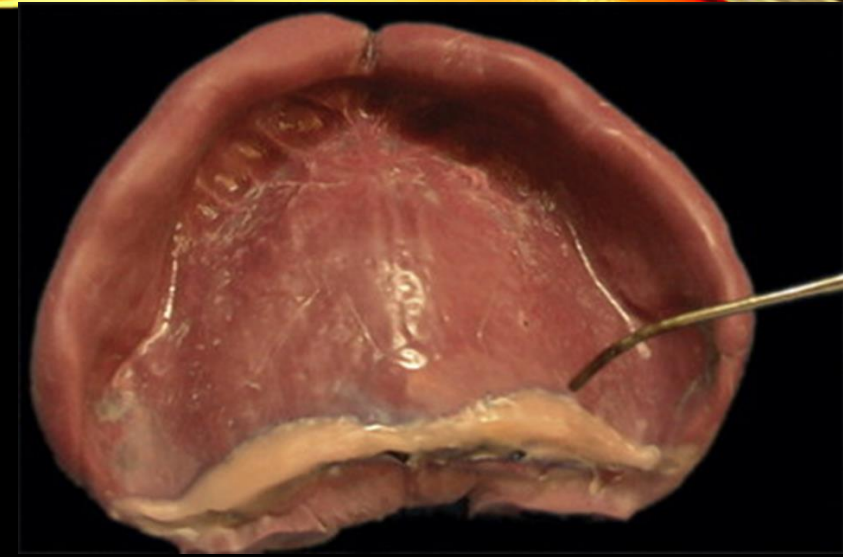
1. Both vibrating line is marked in the mouth and transferred on to the impression surface with indelible pencil
2. The molten wax (Korrektax no. 4, Iowa wax, Adaptol) is painted between two lines, allowed to cool and pressed gently into place for 4-6 minutes.
3. Head is flexed downward by 30°
4. The areas where the wax has not contacted, more wax is added and the procedure is repeated.



# FLUID WAX TECHNIQUE

## *Method:*

5. Good tissue contact is indicated by a glossy appearance and poor contact by a dull appearance.
6. The wax should terminate in a feather edge near the anterior vibrating line.
7. Excess wax is trimmed off with scalpel



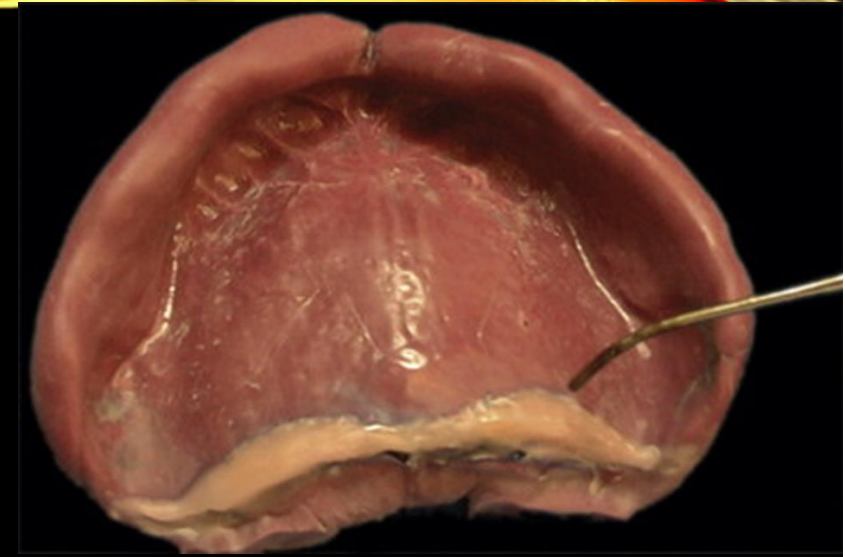
# FLUID WAX TECHNIQUE

## Advantages:

1. Tissues are compressed within their physiologic limit
2. More retentive trial base
3. Overcompression is avoided

## Disadvantages:

1. Time consuming
2. Difficulty in handling the material



# STICK COMPOUND TECHNIQUE

## *Stage of recording:*

During border moulding of the special tray, before the final impression is made.

## *Method:*

1. The stick compound is softened and applied on the tray between the anterior and posterior vibrating line and pressed gently into place in the mouth
2. After 10 seconds, patient is asked to swallow
3. Excess material is trimmed off





# EXTENDED PALATAL TECHNIQUE (SILVERMAN)

- Denture border is extended 8.2 mm beyond the anterior vibrating line.

## *Method:*

1. After border molding the posterior border of the tray is extended by adding black compound.
2. The head is flexed downward 30°
3. Greenstick compound is then applied to the seal area and the procedure is repeated.

# EXTENDED PALATAL TECHNIQUE (SILVERMAN)

**Advantages of placing the palatal seal on the temporary record base:**

1. The trial base will be more retentive which can produce a more accurate jaw relation
2. The patient will get a physiologic security of knowing that retention will not be a problem with the final denture.
3. The dentist can assess the retentive qualities of the denture at an early stage.



DALHOUSIE  
UNIVERSITY

1818  
2018

Robert Loney DMD, MS  
Faculty of Dentistry  
Halifax, NS CANADA

<http://removpros.dentistry.dal.ca>

# **TROUBLE SHOOTING THE RECORDING OF THE POSTERIOR PALATAL SEAL**



# TROUBLESHOOTING

**The distal border of the denture may be:**

- Overextended
- Under extended
- Under post-dammed
- Over post-dammed



# TROUBLESHOOTING: OVER EXTENDED

Occurs when the distal border of the denture extends onto the active portion of the soft palate.

## Symptoms:

- Patient complains that swallowing is difficult or painful
- Areas of redness or ulcerations maybe seen
- Patient may experience sharp pain specially during function

**Correction:** the exact area of redness is marked with an indelible pencil and transferred to the denture. The denture is then shortened with a bur and repolished.

# **TROUBLESHOOTING: UNDER EXTENDED**

**Common cause of failure of the posterior palatal seal.  
Results in the loss of retention**

## **Reason:**

- 1. Failure of the dentist to identify the posterior vibrating line**
- 2. In the gagging patient, the dentist might have kept the impression tray underextended to reduce the gagging sensation**

# TROUBLESHOOTING: UNDER POST-DAMMED

Failure to effectively place the tissues of the posterior palatal seal area results in poor seal and reduced retention.

**Diagnosed by:** The trial denture base is wet and placed in the mouth. Using a finger in the palatal region, it is slowly pressed into position. With a mirror, the distal border is examined for escaping air bubbles. Escaping air bubbles indicate an underpostdammed area.

**Correction:** Further scrape the cast and readapt the trial base

# TROUBLESHOOTING: OVER POST-DAMMED

Over scraping of the cast can result in overpostdamming

**Moderate post-damming:** can result in pressure symptoms on the tissues. An area of redness or tissue irritation may be seen

**Severe post-damming:** causes downward displacement of the denture

**Prevention:** Reduction of the denture with carbide bur, followed by lightly pumicing the area while maintaining its convexity

ANY QUESTIONS ?

THANK  
YOU

