

ANATOMICAL LANDMARKS

2. Mandibular arch anatomical landmarks:

This is divided into:

- a. Supporting structures
- b. Limiting structures
- c. Relief areas

a. Supporting structures:

1. Residual alveolar ridge.
2. Buccal shelf area.

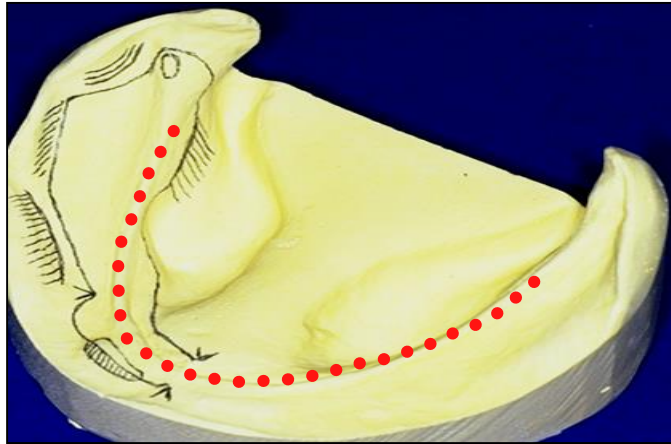
Support is the resistance to the displacement towards the basal tissue or underlying structures, the primary stress bearing area represented by the **Buccal Shelf Area** while the secondary stress bearing areas represented by the **Residual Alveolar Ridge**.

1. Residual alveolar ridge:

The bony process that remains after loss of teeth is known as residual alveolar ridge bone. The size and shape of the ridge varies from one patient to another. The bone of crest of lower residual ridge being made of spongy bone therefore may not be

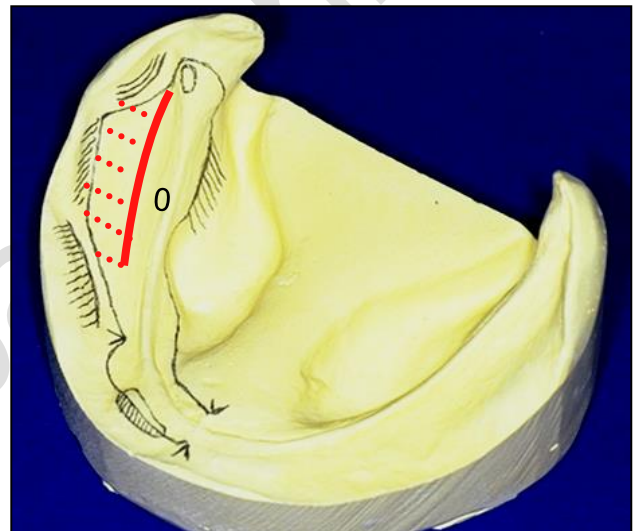


favorable as a primary stress bearing area for the lower denture. It won't provide stability or support to the denture.



2. Buccal Shelf Area:

It is bounded medially by the crest of residual ridge, laterally by the external oblique line, anteriorly by the buccal frenum and distally by the retromolar pad. It is covered by compact bone therefore it serves as a primary stress bearing area for the lower denture.



Because it is perpendicular to the vertical masticatory force it provides support to the denture.

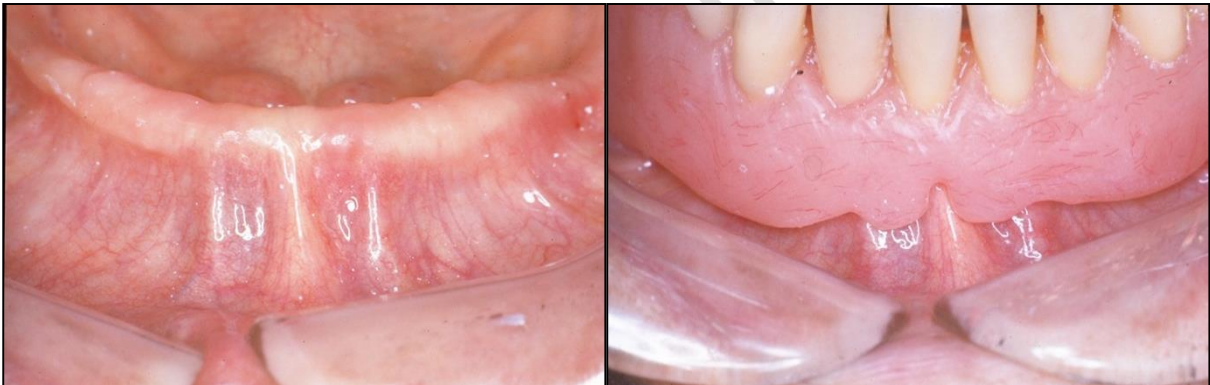
b. Limiting structures:

1. Labial Frenum
2. Labial vestibule
3. Buccal frenum
4. Buccal vestibule
5. Retromolar pad
6. Lingual frenum

7. Alveololingual sulcus
8. Mental foramen
9. Genial tubercles
10. Torus Mandibularis
11. External oblique line
12. Mylohyoid ridge

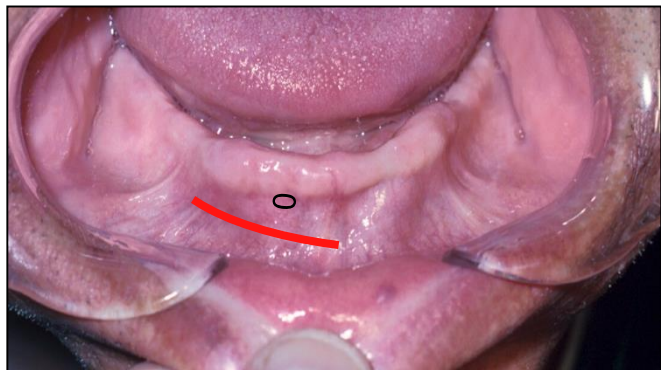
1. Labial Frenum:

It is a fold of mucous membrane not so pronounced as the maxillary labial frenum. It may be single or multiple, fine or broad but it may contain fibrous band attached to the orbicularis oris muscle and therefore it may be active in mastication. Proper fit around it maintains seal without soreness.



2. Labial vestibule:

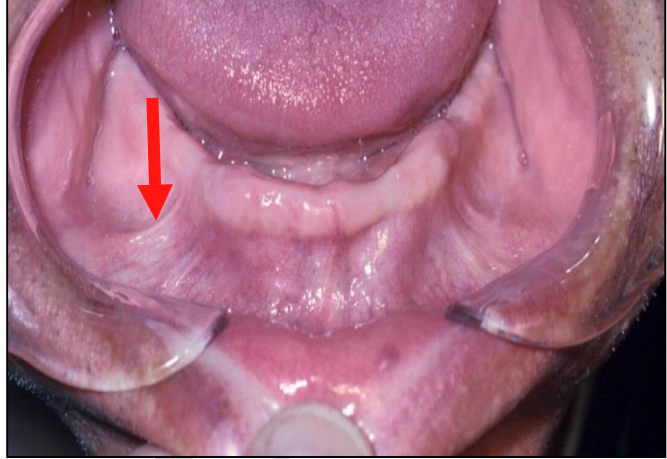
it extends from the labial frenum to the buccal frenum, limited inferiorly by the mucous membrane reflection internally by the residual ridge and labially by the lower lip.



Overextension causes instability and soreness. Muscles attachment close to the crest of the ridge limits the denture flange extension.

3. Buccal Frenum:

A fold of mucous membrane extended from the buccal mucous membrane reflection area toward the slopes of residual ridge. It may be single or multiple broad U-shaped or narrow V-shaped, it must have enough space in the



denture as it may be activated in function by the muscles. Adequate relief for muscle activity to get a proper denture seal

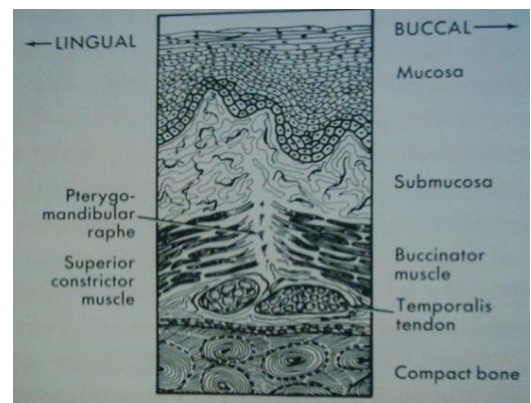
4. Buccal vestibule:

It extends from the buccal frenum to the distal end of the arch, it is bounded externally by the cheek and internally by the residual ridge.

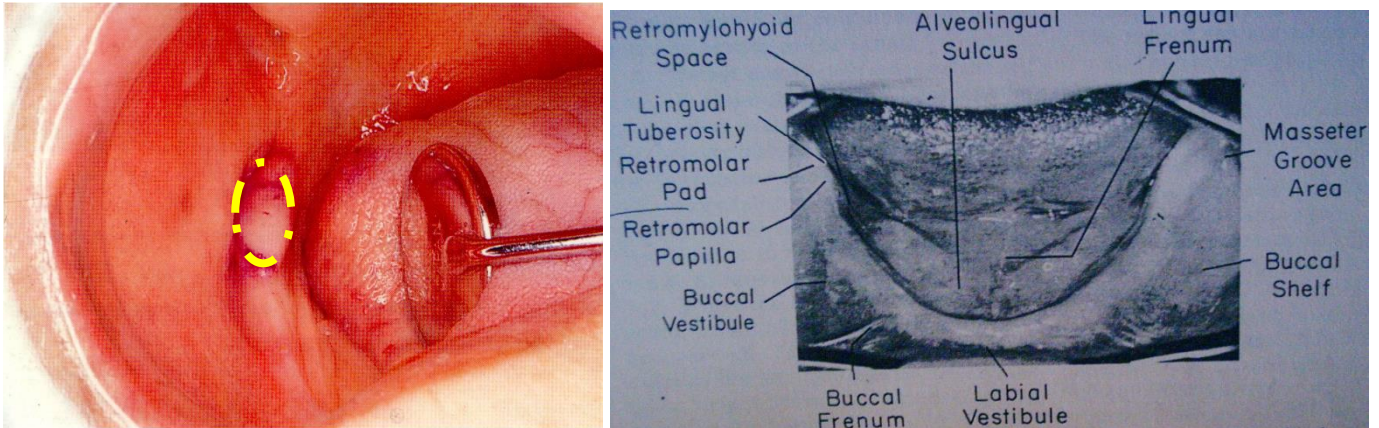


5. Retromolar Pad:

It is pear shaped area at the distal end of residual ridge. Histologically; it contains thin non keratinized epithelium, loose areolar connective tissue, glandular tissue, fibers of buccinator, superior constrictor muscles,



pterygomandibular raphe and temporalis tendon. This pad must be covered by the denture to perfect the seal of the denture. The retromolar papilla is small pear shaped papilla just anterior to the retromolar pad, it is dense fibrous connective tissue.



6. Lingual Frenum:

It is a fold of mucous membrane can be observed when the tongue is elevated, overlies the genioglossus muscle, extending along the floor of the mouth to the under surface of the tongue. It will produce the lingual



notch in the denture. This frenum is activated when the tongue is moved therefore it must be molded well in the impression to prevent displacement of the denture or ulceration of the tissue.

7. Alveololingual Sulcus:

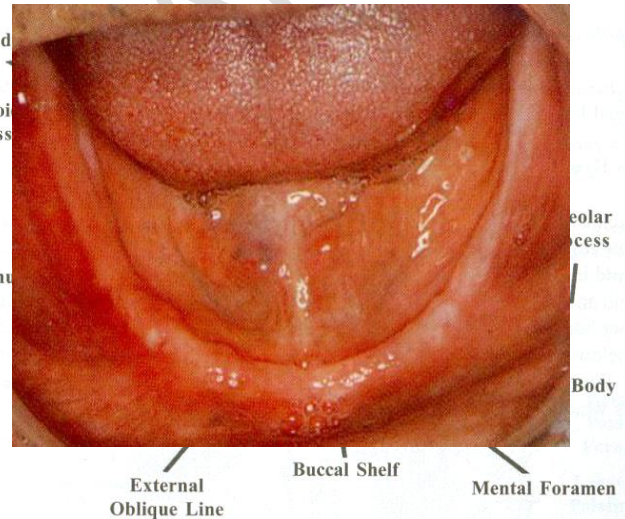
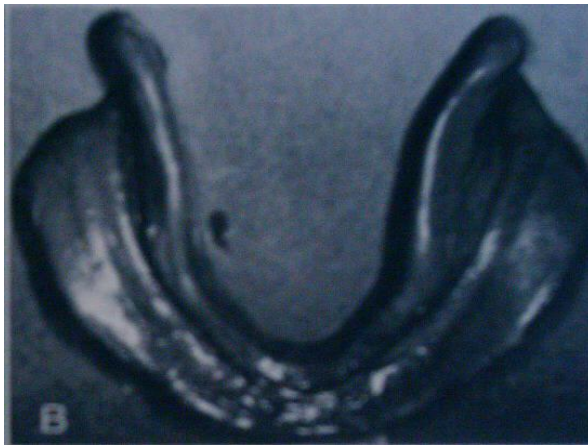
It is extended from the lingual frenum to the retromylohyoid curtain and bounded externally by the residual ridge and internally by the tongue. This space is filled by the lingual flange of the denture and can be divided into:

A. **Anterior portion:** It is extended from the lingual frenum to the premylohyoid fossa.

B. **Middle region:** It is extended from the premylohyoid fossa to the distal end of the mylohyoid ridge, here the mylohyoid muscle is important in determining the contour of the lingual flange.

C. **Most posterior region:** Is the retromylohyoid space or fossa, it extends from the end of mylohyoid ridge to retromylohyoid curtain, the lingual flange of the denture should extend laterally and fill the retromylohyoid fossa

The flange passes into the retromylohyoid fossa and proper recording of impression gives typical S -form of the lingual flange



8. Mental Foramen:

It is located on the external surface of the mandible between the 1st and 2nd premolar area. In case of severe resorption of residual ridge, the denture should be relieved over the foramen to prevent pressure being applied on the mental nerves and blood vessels.

9. Genial tubercles:

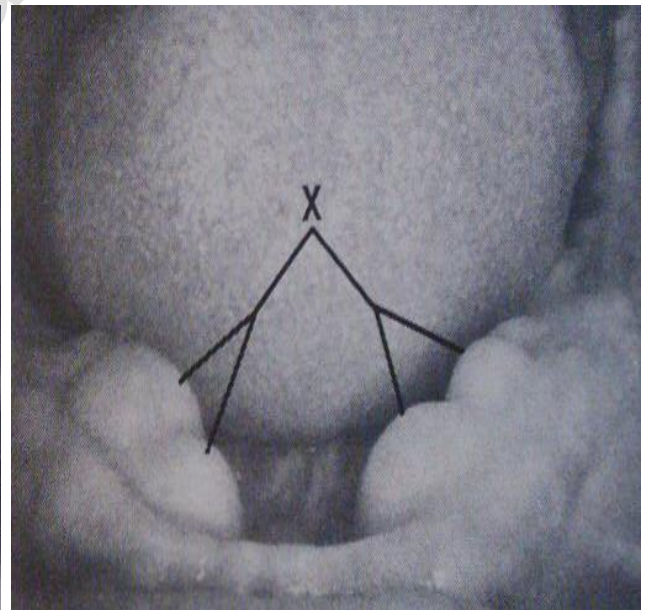
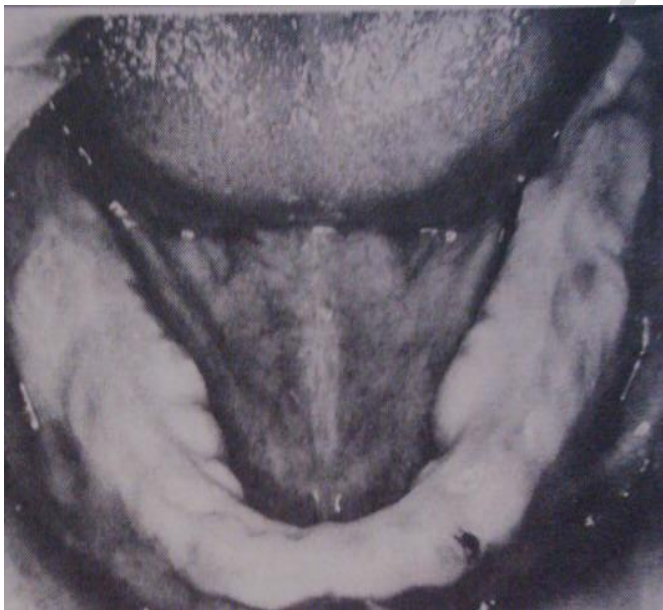
These are a pair of bony structures found anteriorly on the lingual side of the mandible. Prominent in resorbed ridge and adequate relief should be provided or surgical correction may be needed.



Genial tubercles

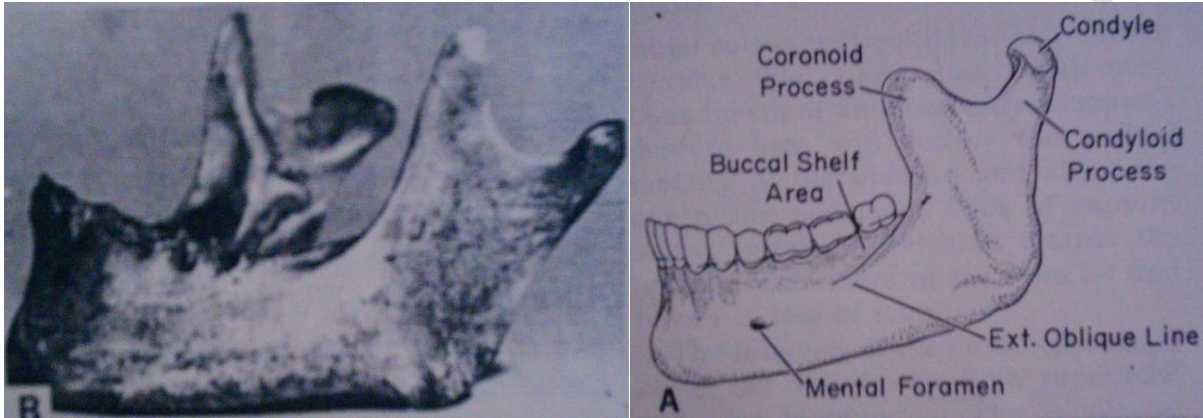
10. Torus Mandibularis:

These are bony exostosis composed of dense cortical bone covered by this mucous membrane found on the lingual surface of the mandible at premolar area and about 80% are bilateral. It has to be relieved or surgically corrected.



11.External Oblique Ridge:

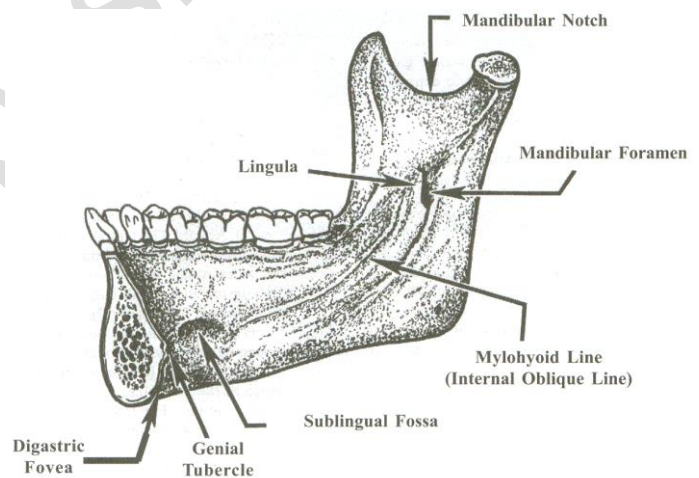
It is a ridge of dense bone extended from just above the mental foramen superiorly and distally to be continuous with the anterior border of the ramus. In some patient this ridge becomes a guide for the termination of the buccal flange of the denture.



12.Mylohyoid Ridge:

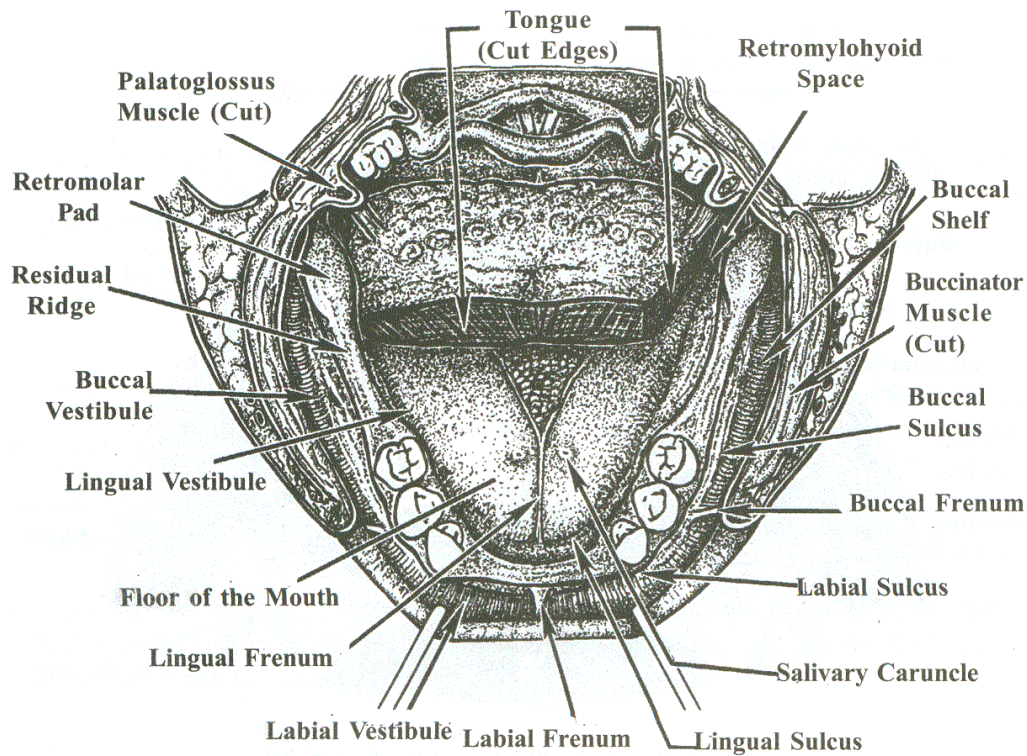
It is an irregular bony crest on the lingual surface of the mandible. This ridge is near the inferior border of the mandible in the incisor region but becomes higher posteriorly until it terminates near the 3rd molar area; it is the area

where the mylohyoid muscle arises to the floor of the mouth. The border of the lingual flange may extend below the mylohyoid line if it slopes toward the tongue.



C. Relief Areas:

1. Mental Foramen.
2. Torus mandibularis.
3. Genial tubercles.
4. Mylohyoid ridge.

**Anatomical Landmarks of the Mandibular arch**