ANATOMICAL LANDMARKS IN THE MANDIBLE

They can be broadly grouped into:

Limiting Structures

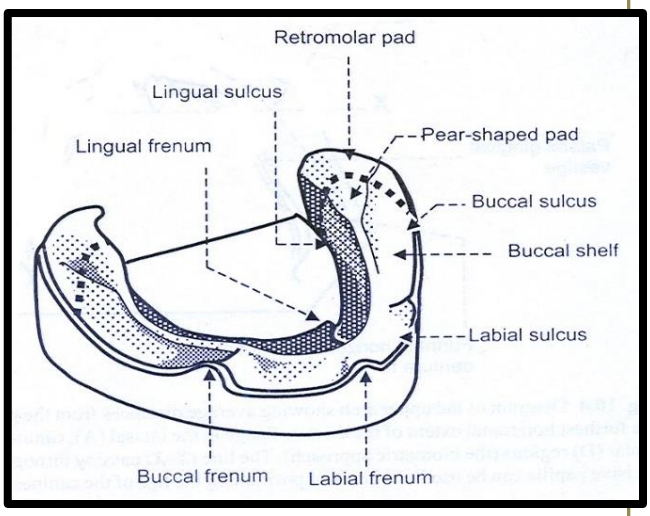
- Labial frenum.
- Labial vestibule.
- Buccal frenum.
- Buccal vestibule.
- Lingual frenum.
- Alveololingual sulcus.
- Retromolar pads.
- Mylohyoid ridge.
- External oblique line.

Supporting Structures

- Buccal shelf area
- Residual alveolar ridge

Relief Areas

- Crest of the residual alveolar ridge.
- Mental foramen.
- Genial tubercles
- Torus mandibularis.



Labial Frenum

It is a fibrous band similar to that found in the maxilla. Unlike the maxillary labial frenum, it is active. The mandibular labial frenum receives attachment from the orbicularis oris muscle. Hence, it is quite sensitive and active. On opening wide, the sulcus gets narrowed.

Labial frenum

Labial Vestibule

This is the space between the residual alveolar ridge and the lips. The length and thickness of the labial flange of the denture occupying this space is Important in influencing lip support and retention.

Buccal Frenum

The fibers of the buccinator are attached to the frenum. It should be relieved to prevent displacement of the denture during function.

Buccal Vestibule

It extends posteriorly from the buccal frenum till the retromolar region. It is bound by the residual alveolar ridge on one side and buccinator on the other side.

Lingual Frenum

It is a fold of mucous membrane can be observed when the tongue is elevated, 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.

The height and width of the frenum varies considerably. Relief should be provided in the anterior portion of the lingual flange. This anterior portion of the lingual flange is called *sub-lingual crescent area*

Alveololingual Sulcus

It extends from the lingual frenum to the retromylohyoid curtain. It is considered in three regions namely:

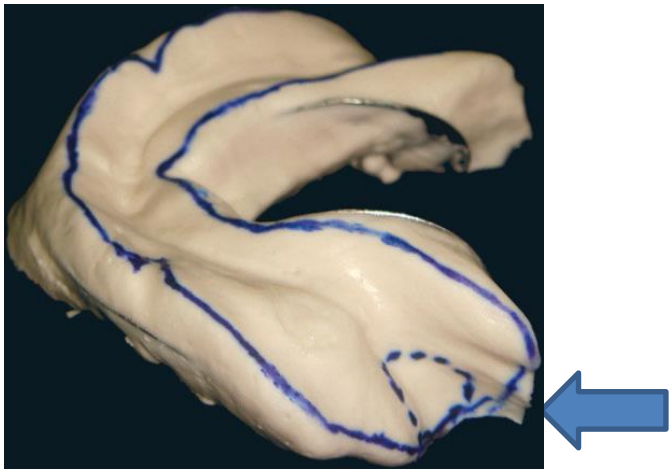
Anterior region It extends from the lingual frenum to the premylohyoid fossa, where the mylohyoid curves below the sulcus. The flange will be shorter anteriorly and it should touch the mucosa of the floor of the mouth when tip of the tongue touches the upper incisors.

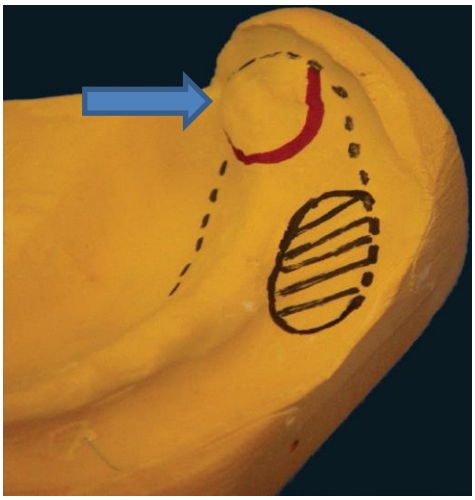
Middle region It extends from the pre-mylohyoid fossa to the distal end of the mylohyoid ridge. This region is shallower than other parts of the sulcus. This is due to the prominence of the mylohyoid ridge and action of the mylohyoid muscle.

Posterior region The retro-mylohyoid fossa is present here. The denture flange in this region should turn laterally towards the ramus of the mandible to fill up the fossa and complete the typical S-form of the lingual flange of the lower denture.

Retromolar Pad (Pear-Shaped Pad):

The retromolar pad, is soft elevation of mucosa that lies distal to the third molar. It contains loose connective tissue with an aggregation of mucous glands and is bounded posteriorly by the temporalis tendon, laterally by the buccinators and medially by the pterygomandibular raphe and the superior constrictor muscle. The retromolar pad is quite important for the support and the peripheral seal.



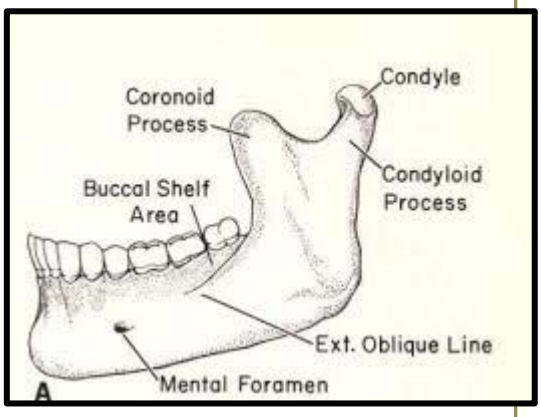


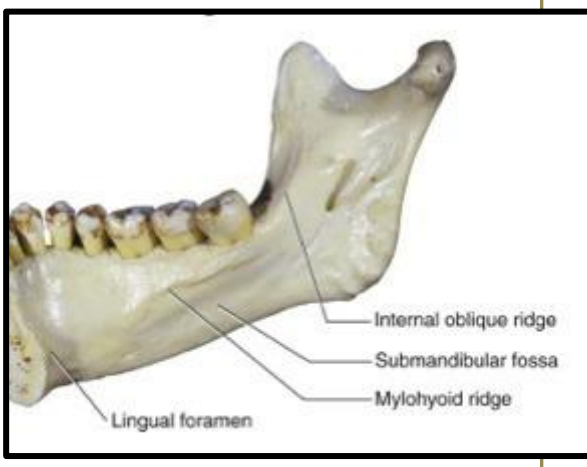
(a) (b)

The arrows showes the retromlar pad area on(a) impression and(b) cast.

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.





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.

Relief area:

1. Mental Foramen:

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

2. Genial tubercle:

These are a pair of bony tubercles found anteriorly on the lingual side of the body of the mandible. Due to resorption, it may become increasingly prominent making denture usage difficult.

3. Torus Mandibularis:

It is an abnormal bony prominence found bilaterally on the lingual side, near the premolar region. It is covered by a thin mucosa. It has to be relieved or surgically removed as decided by its size and extent.

Supporting Structures:

The mandibular denture poses a great technical challenge. The support for a mandibular denture comes from the body of the mandible. The available denture-bearing area for an edentulous mandible is 14 cm_2 but for maxilla it is 24 cm_2.

Buccal Shelf Area:

It is the area between the buccal frenum and anterior border of the masseter. Its boundaries are:

- Medially the crest of the ridge
- Distally the retro-molar pad
- Laterally the external oblique ridge.

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.

Crest of mandibular residual ridge