

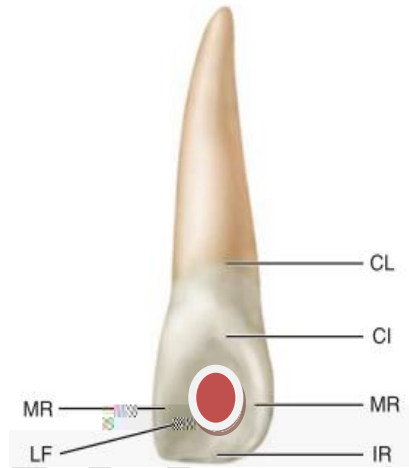
Continuation to Anatomical landmarks

A. Crown Depressions:

1. **Fossa**: is an irregular depression or concavity. it is named according to its location.

- Lingual fossae** large, shallow depression on the lingual (palatal) surface of anterior teeth. As shown in this figure (red area).

Figure (2) Maxillary right lateral incisor (lingual aspect). CL, Cervical line; CI, cingulum ;MR, marginal ridge; IR, incisal ridge; LF, lingual fossa.



- Central fossa**: it is a depression or concavity of varying size located on the occlusal surface of molar teeth. Where there is a junction of grooves.

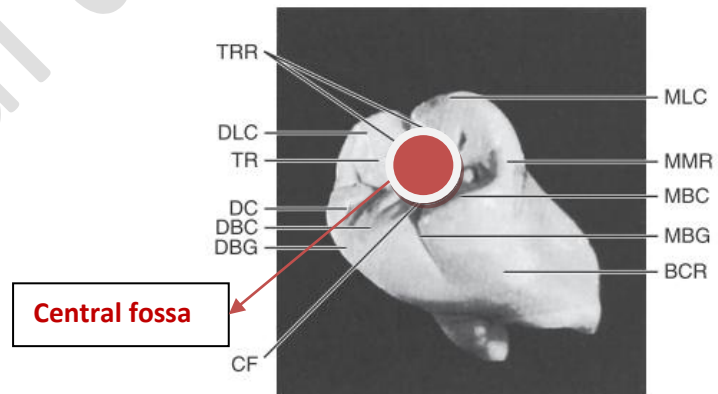


Figure (4) Mandibular right first molar. MLC, Mesiolingual cusp; MMR, mesial marginal ridge; MBC, mesiobuccal cusp; MBG, mesiobuccal groove; BCR, buccocervical ridge; CF, central fossa; DBG, distobuccal groove; DBC, distobuccal cusp; DC, distal cusp; TR, triangular ridge; DLC, distolingual cusp; TRR, transverse ridge.

Den

4. Groove: is a linear depression on the surface of the tooth:

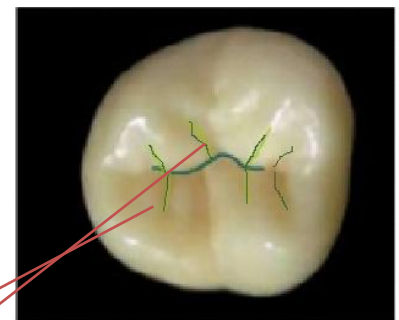
Developmental (primary) groove : well demarcated line separating between the primary parts of the crown .

for example:

Central groove found on the occlusal surface of the post. Teeth for example : mand. 1st molar (as shown in the adjacent fig.) and the buccal and lingual grooves found on the buccal and lingual surfaces of posterior teeth.



B. Supplemental (secondary) groove : shallow & less distinct line which branches from a developmental groove does not mark the junction of primary parts.

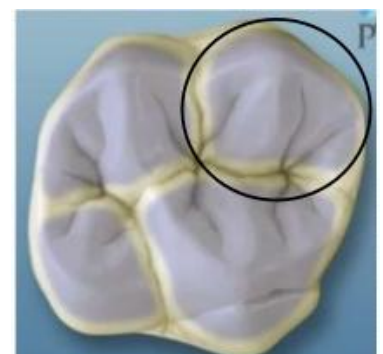


Supplementary groove

B. Crown Elevations:

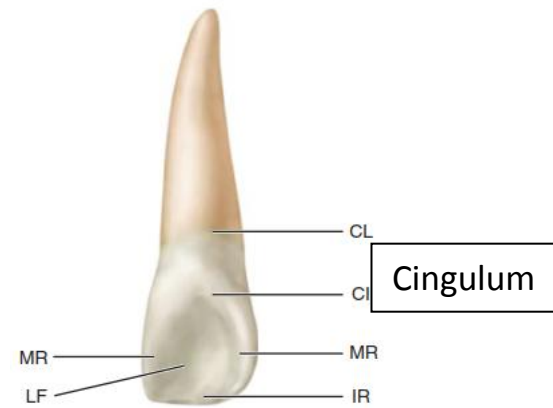
1. **Cusps:** is an elevation or mound on the crown portion of a tooth varies in size and shape.

They form the bulk of the occlusal surfaces of posterior teeth, and the incisal portion of canine crowns. Incisors do not possess



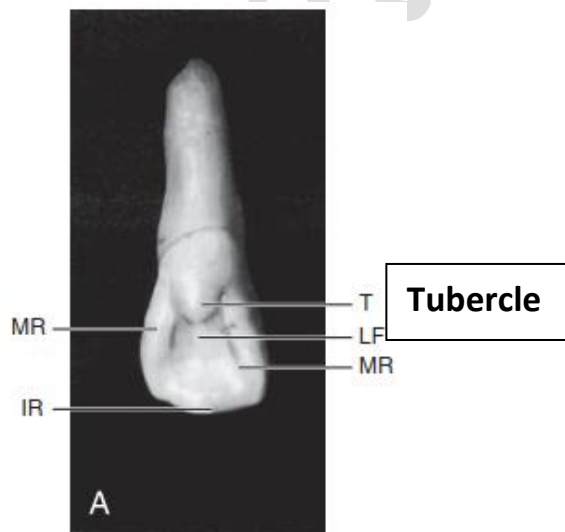
cusps, while canines normally exhibit one cusp, premolars two or three cusps, and molars usually four or more.

3. Cingulum : A large rounded eminence on the cervical third of lingual and palatal surface of all permanent and deciduous **anterior** teeth. as shown in the figure :

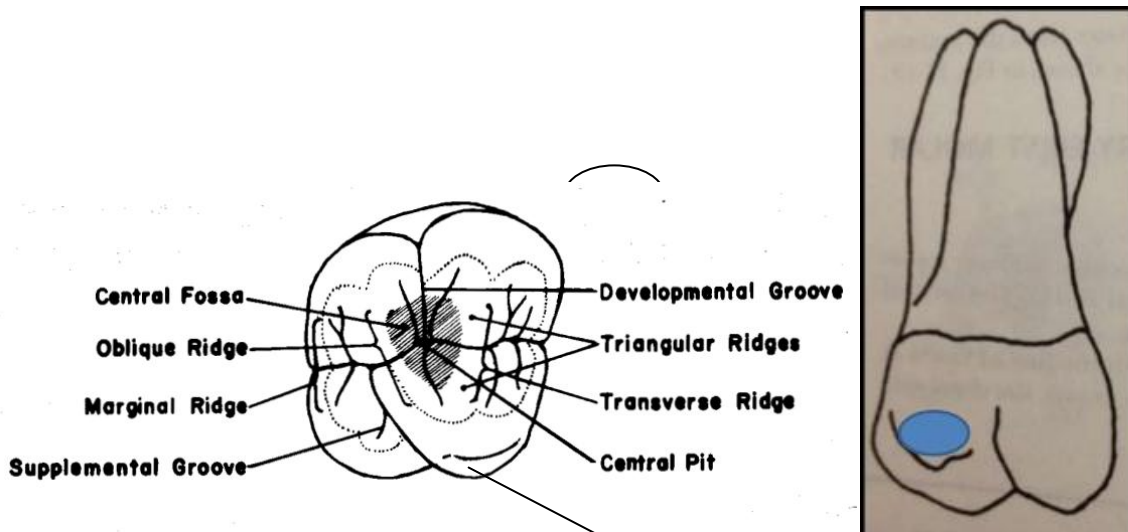


CL, Cervical line; CI, cingulum (also called the linguocervical ridge); MR, marginal ridge; IR, incisal ridge ;LF, lingual fossa.

2. Tubercle: is a small elevation produced by an extra formation of enamel (deviation from normal) located at the position of cingulum the cervical third of the lingual surface of maxillary Lateral incisor.



b) Cusp of Carabelli: a *tubercle* is a normal finding on the mesial part of the palatal surface of permanent maxillary first molars.



4. **Ridges** : any linear elevation on the surface of a tooth and is named according to its location (e.g., buccal ridge, incisal ridge, marginal ridge).

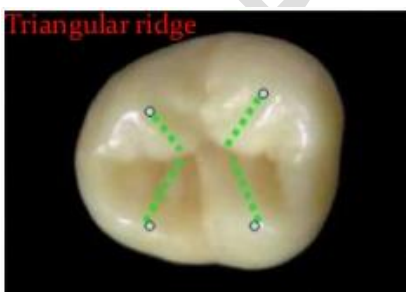
A. **Marginal ridges** : rounded borders of the enamel that form the mesial and distal margins of the occlusal surfaces of premolars and molars.

and in the anterior teeth form the mesial and distal margins of the lingual (palatal) surfaces but in anterior less prominent .as shown in the figures.



B. **Triangular ridges** : Linear ridges which descend from the tips of cusps of posterior teeth toward the central area of the occlusal surface.

They are named after the cusps to which they belong, for example, the triangular ridge of the buccal cusp of the mandibular first premolar.



C. **Transverse ridge**: a union of two triangular ridges crossing the occlusal surface of a posterior tooth transversely.

D. Oblique ridge: it is the ridge that crossing obliquely the occlusal surfaces of maxillary molars and formed by the union of the triangular ridge of the distobuccal cusp and the mesiolingual cusp.

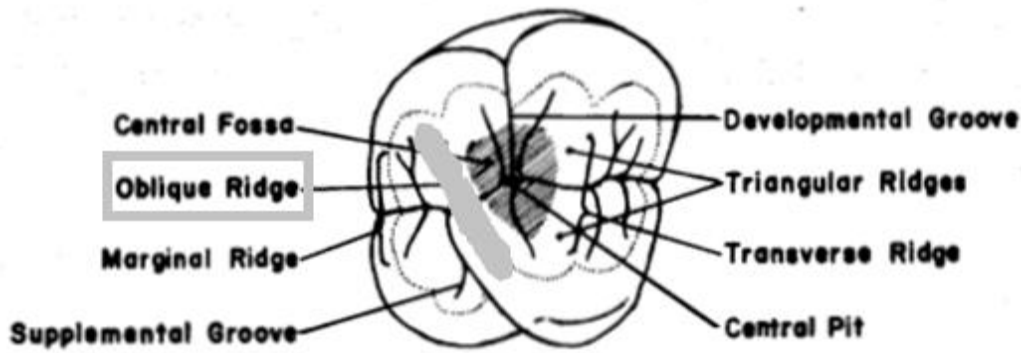


Figure (1) occlusal surface of upper first molar.

E. cusp ridge: each cusp has four cusp ridges extending into different directions (mesial, distal, facial, lingual) from each cusp tip. it named by the direction they extend from the cusp tip.

Normally, the cusp ridge which extends toward central portion of occlusal surface is called a *triangular ridge*.



F. Inclined planes: the sloping area found between two cusp ridges. Each cusp exhibits four inclined planes. it can be named by the same manner combining names of two cusp ridge between which they lie.

F. Mamelons - Small, rounded projections of enamel which are found in varying sizes and numbers on the incisal ridges of recently erupted incisors. They are normally worn away rather soon after eruption.

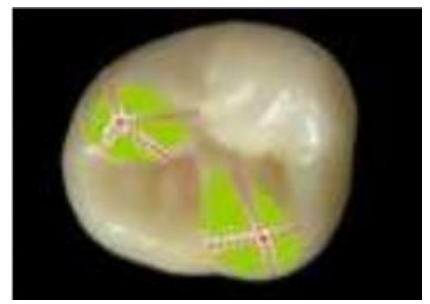
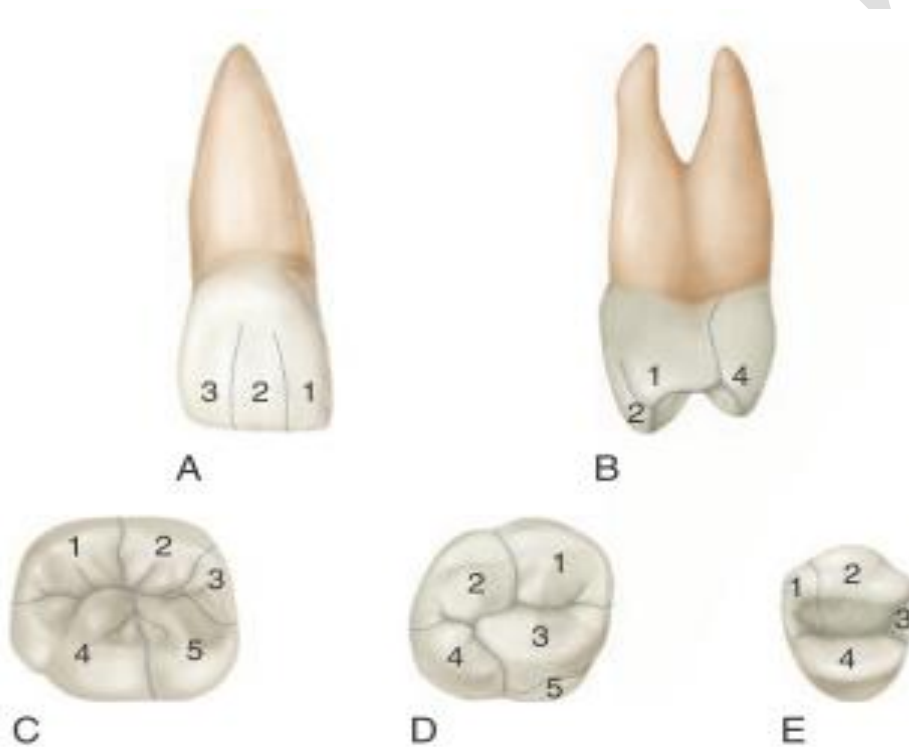




Figure (5) Mamelons on erupting, non contacting central incisors.

E - Lobe: One of the primary anatomical divisions of the tooth crown, often separated by developmental grooves. Cusps and mamelons are representative of lobes.



Fig(7) General outlines of some of the lobes. **A**, Labial aspect of maxillary central incisor, 1, Mesial lobe; 2, labial lobe; 3, distal lobe. **B** and **E**, Mesial and occlusal aspects of maxillary first premolar. 1, Mesial lobe; 2, buccal lobe; 3, distal lobe; 4, lingual lobe. **C**, Occlusal aspect of mandibular first molar. 1, Mesiobuccal lobe; 2, distobuccal lobe; 3, distal lobe; 4,mesiolingual lobe; 5, distolingual lobe. Lobes on molars are named the same as cusps. **D**, Occlusal aspects of maxillary first molar. 1, Mesiobuccal lobe; 2, distobuccal lobe; 3, mesiolingual lobe; 4, distolingual lobe; 5,fifth lobe (fifth cusp).

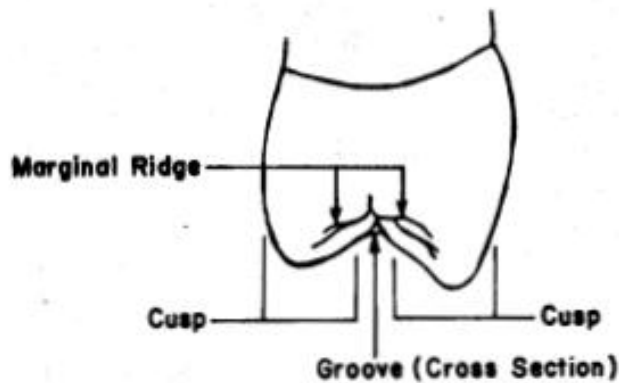
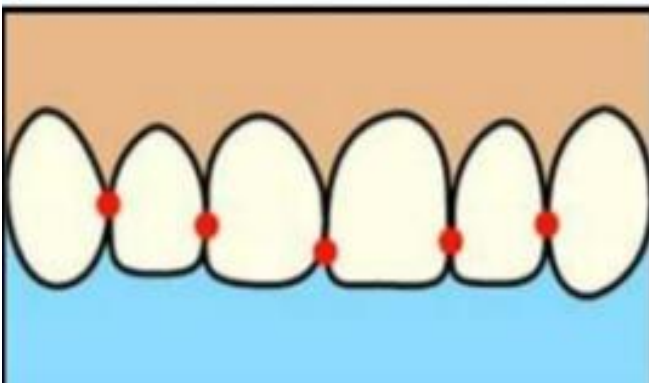


Figure (2) Mesial surface of upper first premolar.

Contact area: area on a proximal surface of the crown of the tooth that contacts the adjacent tooth in the same arch, and is thus named mesial or distal by location.

All teeth in each quadrant normally have two contact areas. Except the most posterior tooth which, of course, has no distal contact area.



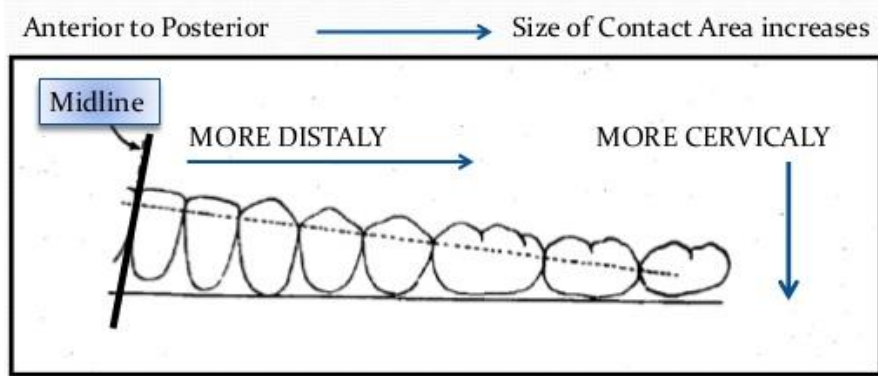
Fig(1) The red dots are the contact areas.

Importance of proper location of contact area:

1. Stabilizing the dental arch.
2. Prevention of food impaction between teeth.

In dental restorations the contact area must be retained as much as possible to the normal contour of the tooth.

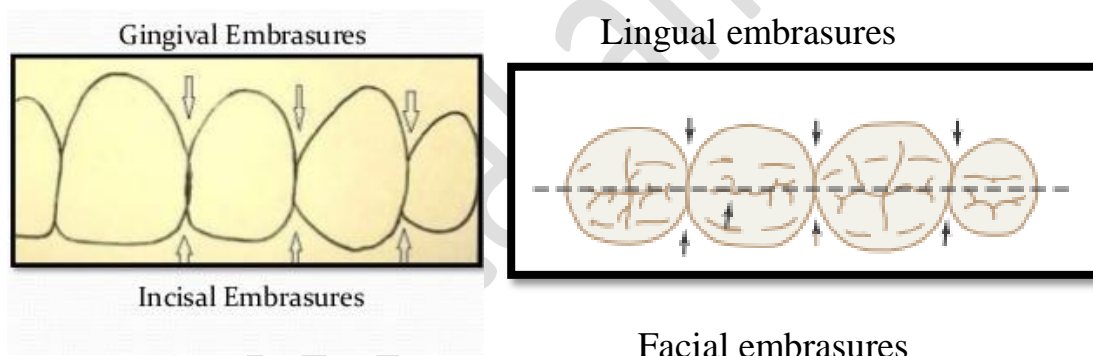
Note: contact areas **increase in size** from anterior to posterior. & become **more cervically** located.



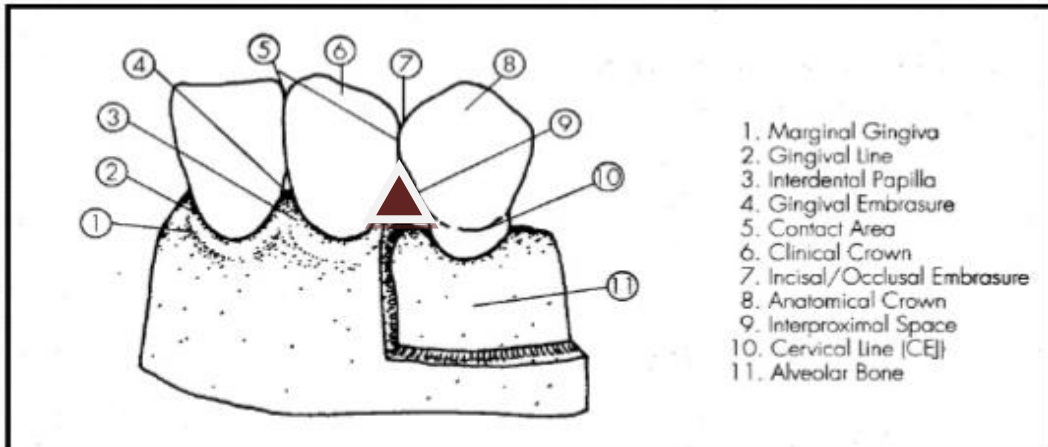
Embrasures

Open space between proximal surfaces two adjacent teeth in same arch, where teeth curved *above or below* the contact area.

Embrasures are named according to their location, which depends on aspect from which teeth are being viewed either facial or lingual when seen from the occlusal view, and either cervical also named gingival or occlusal (incisal) from the facial or lingual view.



Interproximal spaces: another term of cervical or gingival embrasure are the triangular shaped areas between adjacent teeth in the same arch cervically (*below*) to contact area, the triangle is formed by alveolar bone at the base, proximal surfaces of adjacent teeth on its sides & contact area of the adjacent teeth at its apex. It is covered with gingival tissue called (inter dental papilla).



Dental anatomy