

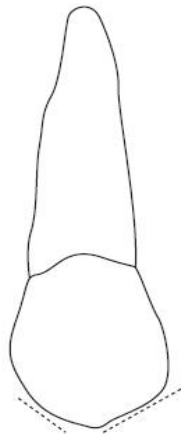
Maxillary second premolar

It is similar to the first premolar but more rounded and has a single longer root, it erupts at 10- 11 years.



Buccal Aspect

1. The crown of the maxillary second premolar is smaller mesiodistally and cervico-occlusally when compared with the maxillary first premolar. It looks more rounded than the crown of the first premolar.
2. The crown is roughly trapezoidal.
3. The buccal surface is convex as a result of the buccal ridge extending from the cusp tip to the cervical line. The buccal ridge is less prominent than in the maxillary first premolar.
4. The occlusal outline is divided into two cuspal slopes, the mesial and distal slopes. Unlike the maxillary first premolar, the mesial slope is shorter than the distal slope.
5. The root is cone-shaped and tapers apically.



The mesial slope is shorter than the distal slope

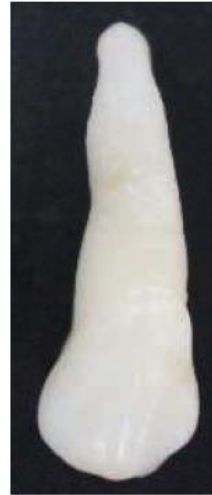


Figure 16.7 Buccal aspect of the maxillary second premolar.

Lingual Aspect

1. The lingual aspect is rounded in all directions. The **lingual cusp is of the same length as the buccal cusp**, unlike the first premolar, where the lingual cusp is smaller than the buccal cusp.
2. The shape of the crown is the same as on the labial side.
3. The lingual surface is slightly more convex and has a lingual ridge extending from the cuspal tip to the cervical line. The height of the contour is located at the middle third of the crown.
4. The root, from this aspect, shows the distal inclination of the apical third.

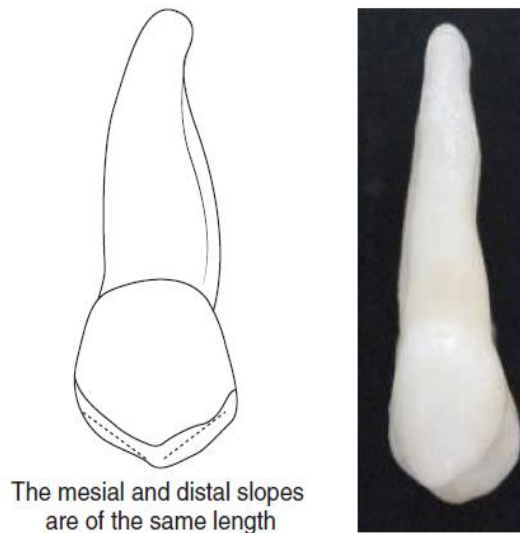


Figure 16.8 Lingual aspect of the maxillary second premolar.

Mesial Aspect

1. The mesial aspect shows the buccal and the lingual cusps. **They are of the same length.**
2. The shape of the crown is trapezoidal from the mesial aspect.
3. The cervical curvature is convex towards the occlusal edge. The curvature is more on the mesial aspect.
4. The occlusal outline shows the mesial aspect of the buccal cusp and lingual cusp. Both the cusps are of the same height. No developmental groove crosses the mesial marginal ridge as in the first premolar.
5. The contact area in the mesial aspect lies close to the junction of the occlusal and middle third of the crown.
6. The outline of the mesial aspect of the root is convex from the cervical third to the middle third and tapers from the middle third to the apex.

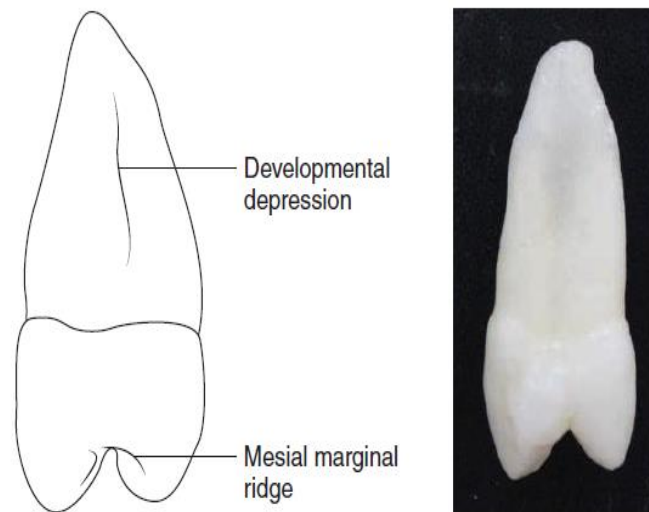


Figure 16.9 Mesial aspect of the maxillary second premolar.

Distal Aspect

The distal aspect of the crown is similar to the mesial aspect, The distal root depression is deeper than the mesial depression on the maxillary second premolar.

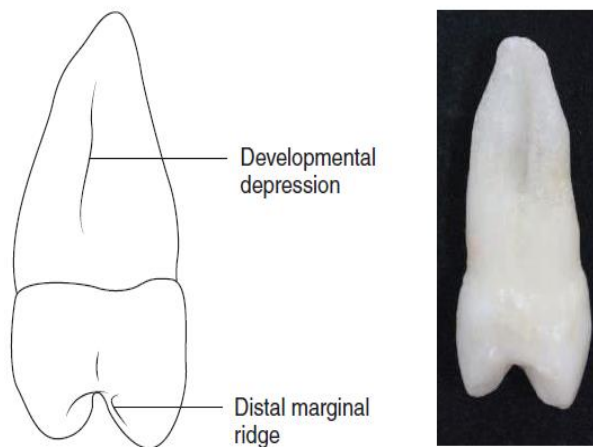


Figure 16.10 Distal aspect of the maxillary second premolar.

Occlusal Aspect

1. The shape of the crown is ovoid and more rounded when compared with the maxillary first premolar.
2. The mesial and distal outlines of the crown are parallel because of lesser lingual convergence, unlike in the maxillary first premolar.
3. The occlusal surface shows two well-developed cusps which are of the same height.

(a) Grooves

- The occlusal surface is divided by a central developmental groove that is shorter and more irregular.
- More supplementary grooves are present in the second premolar than in the first premolar and make its surface appear irregular and wrinkled.

(b) Fossae

- Mesial triangular fossa is a triangular depression near the mesial marginal ridge.
- Distal triangular fossa is a triangular depression near the distal marginal

(c) Ridges

- **Buccal triangular ridge:** The mesial and distal cuspal inclines of the buccal cusp join to form a buccal triangular ridge.
- **Lingual triangular ridge:** The mesial and distal cuspal inclines of the lingual cusp join to form a lingual triangular ridge.
- **Transverse ridge:** The union of the buccal and lingual triangular ridges near the central groove forms this ridge.
- **Distal marginal ridge:** It is the ridge that borders the distal triangular fossa.

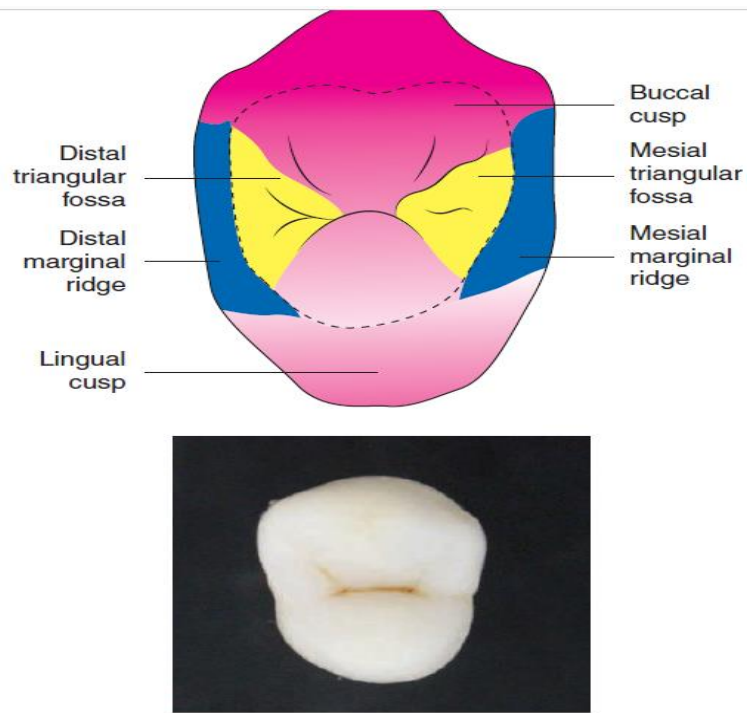


Figure 16.11 Occlusal aspect of the maxillary second premolar.

| Table 16.1 Differences Between the Maxillary First and Second Premolars | | |
|--|--|---|
| | Maxillary First Premolar | Maxillary Second Premolar |
| Occlusal aspect | Hexagonal | Ovoid or rectangular |
| | Supplemental grooves are less in number | Supplementary grooves are more in number making the surface more wrinkled |
| | Mesial marginal groove is present on the mesial marginal ridge | Mesial marginal groove is absent |
| | Mesial and distal outlines converge lingually | Mesial and distal outlines are parallel |
| Buccal aspect | Buccal ridge is prominent | Buccal ridge is less prominent |
| Cusps | Buccal cusp is larger than the lingual cusp | Both the buccal and lingual cusps are nearly equal in size |
| Roots | Two roots—buccal and lingual | Single root |