



# Maxillary Premolars




# Introduction

Premolars are so named because they are placed between the anterior teeth and the molars

Premolars assist the canines and the molars in tearing and chewing food

Maxillary premolars have two cusps and sometimes one or two roots

Maxillary 1<sup>st</sup> premolar erupts between 10-11 years and maxillary 2<sup>nd</sup> premolar erupts between 10-12 years of age






Maxillary 1<sup>st</sup> Premolar



Maxillary 2<sup>nd</sup> Premolar

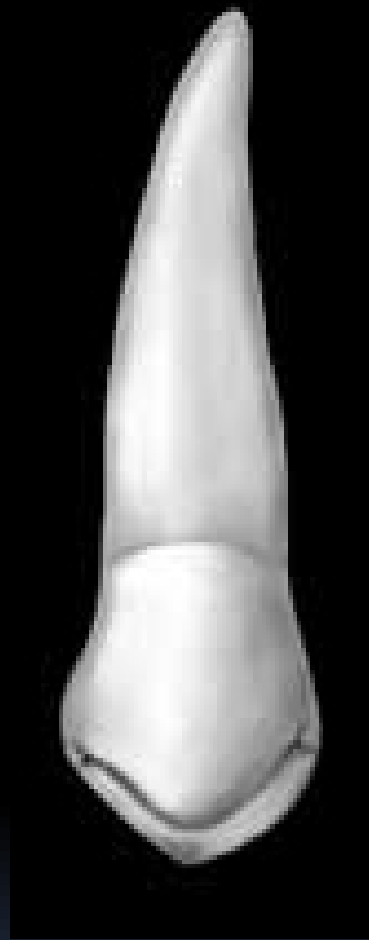
- 
- This tooth has two cusps, buccal and lingual cusps. The buccal cusp is long with a pointed tip resembling the cusp of a canine
  - The mesial slope of the buccal cusp is longer than the distal slope, which is the opposite of canine
  - The buccal surface is convex, showing strong a strong buccal ridge
  - The crown exhibits little cervical line curvature



Buccal aspect

# Lingual aspect

- The crown tapers towards the lingual aspect
- The lingual cusp is shorter than the buccal cusp
- The lingual cusp is smooth from the cervical portion to the area near the cusp tip
- The cusp tip is pointed with mesial and distal slopes meeting at an angle of about 90 degrees
- Small portion of the buccal cusp can be seen from this aspect



Lingual aspect

# Mesial aspect

- From the mesial and distal aspect both the buccal and lingual cusps are visible
- A well developed mesial marginal ridge and a mesial marginal developmental groove is present
- In the middle of the mesial surface is the mesial developmental depression which continues beyond the cervical line
- The contact area is near the halfway point ( $JOM_3$ )



Mesial aspect

## Distal aspect

- There is no developmental depression or groove on this aspect, instead it is convex at almost all points
- The curvature of the cervical is less on this aspect
- The contact area is near the junction of occlusal and middle third



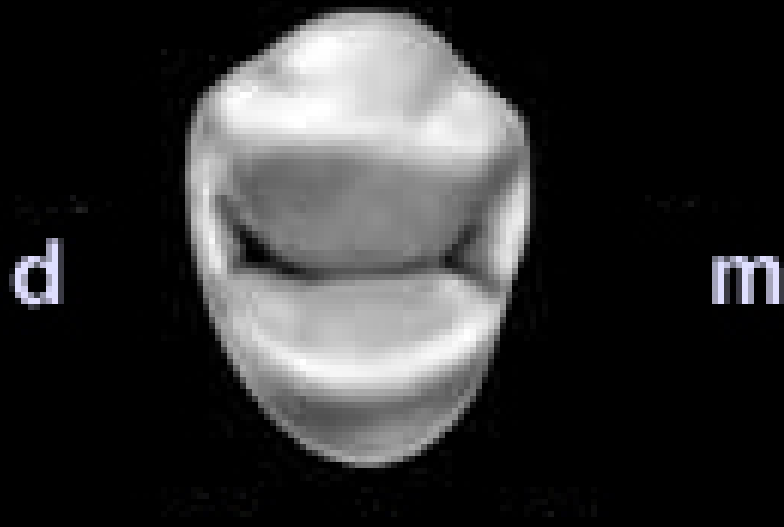
Distal aspect



## Occlusal aspect

- The occlusal aspect is roughly hexagonal in shape
- The buccolingual dimension of the crown is much greater than the mesiodistal dimension
- The occlusal surface is circumscribed by the cusp ridges and marginal ridges

- Within the cusp ridges and marginal ridges the following are present
  1. Central developmental groove
  2. Mesio Buccal and disto Buccal developmental groove
  3. Mesial marginal developmental groove
  4. Mesial and distal developmental pit
  5. Mesial and distal triangular fossa
  6. Buccal and lingual triangular ridge



Occlusal aspect

# Root

- Most Maxillary first premolars have 2 roots, but one and three roots can also be seen. Two roots; buccal and lingual
- The buccal portion of the root resembles canine
- The root when viewed from the proximal side shows a big trunk and bifurcation area from where the buccal and lingual root separate
- A developmental depression is seen on the mesial aspect of the trunk.

# Average Dimensions in millimeters

Crown Length	Root Length	Mesiodistal Diameter at Contact Area	Mesiodistal Diameter at Cervical Line	Labiolingual Diameter at Crest of Curvature	Labiolingual Diameter at Cervical Line	Curvature of Cervical Line M      D
8.5	14.0	7.0	5.0	9.0	8.0	1.0    0

# Maxillary 2<sup>nd</sup> Premolar

## Buccal aspect

- The maxillary second premolar resembles the maxillary first premolar in form and function
- The buccal cusp is not as long as that of maxillary 1<sup>st</sup> premolar
- It is less pointed.
- The mesial slope of the buccal cusp ridge is shorter than the distal cusp ridge

## Lingual aspect

- The lingual cusp is more or less the same size as the buccal cusp

## Mesial and Distal aspects

- There is greater distance between the cusps
- No developmental depression is present nor any developmental groove crossing the marginal ridge on the mesial aspect
- On the distal aspect there is a developmental depression which is deeper than the depression on the mesial surface of maxillary 1<sup>st</sup> premolar

## Occlusal aspect

- The occlusal aspect is more rounded
- The central developmental groove is shorter
- There are multiple supplementary grooves radiating from the central groove

## Root

- Maxillary 2<sup>nd</sup> premolar has one root, which is usually as long or a millimeter longer than the root of maxillary 1<sup>st</sup> premolar



Buccal aspect



Lingual aspect



Occlusal aspect



Mesial aspect



Distal aspect

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