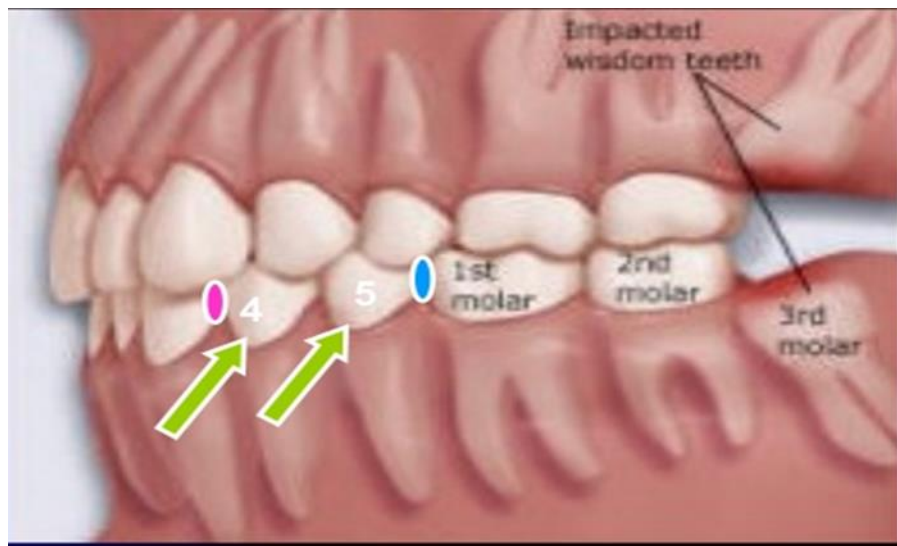


The Permanent Mandibular Premolars

It is the smallest premolar in the human dentition, it resembles both mandibular canine and mandibular second premolar in function.

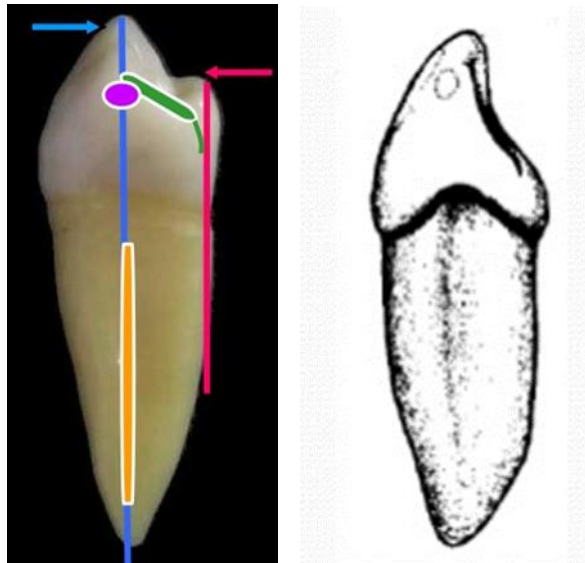
They are 4 in number; 2 on each side They are present distal to the lower canine and mesial to the lower molars.



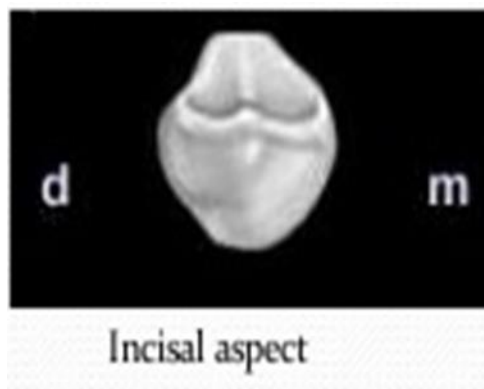
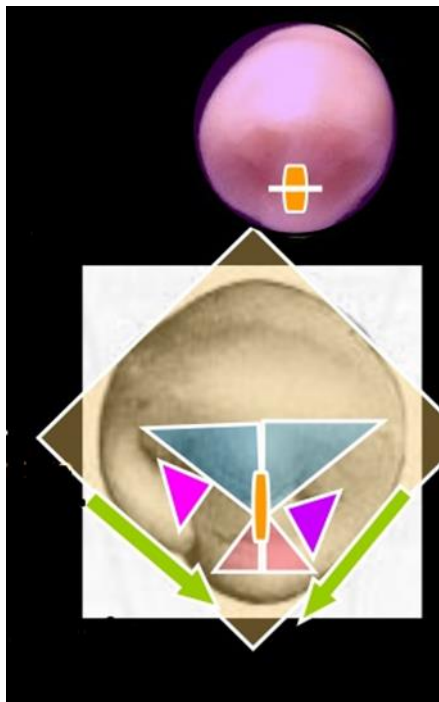
Mandibular first premolar

The characteristics that are similar to those of mandibular canine:

1. Bucco –lingual measurement is similar to that of mandibular canine.
2. Buccal cusp is long and sharp only occluding the cusp.
3. The occlusal aspect slopes sharply lingually in the cervical direction.
4. Mesio – buccal cusp ridge is shorter than disto – buccal cusp ridge (the same as the mandibular canine).



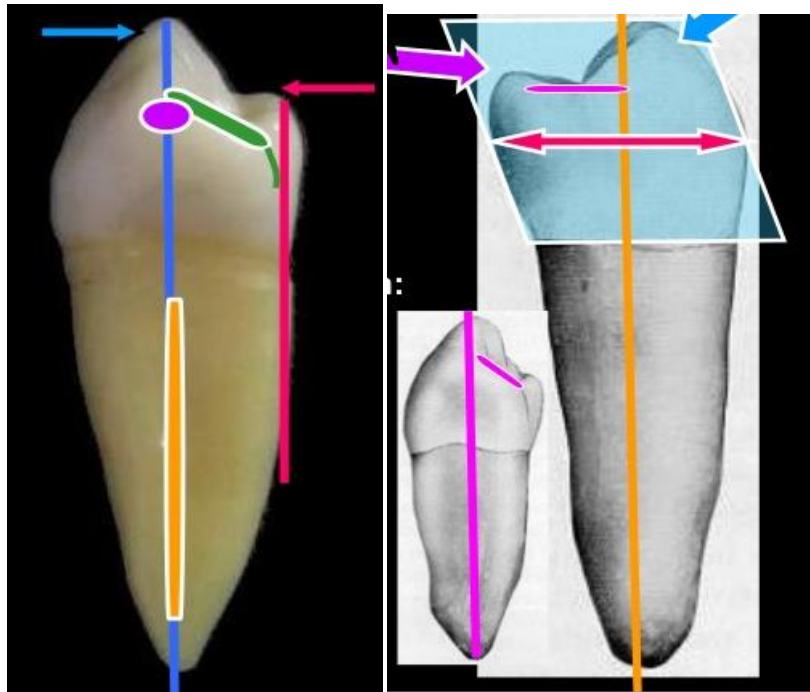
5. The outline of the occlusal aspect resembles the outline of the incisal aspect the of mandibular canine.



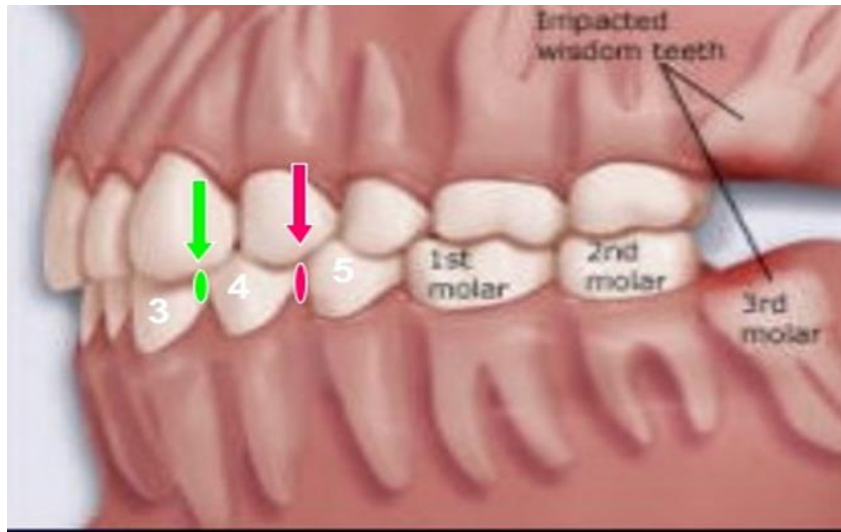
The characteristics that are similar to those of mandibular second premolar:

The mesial and distal contact areas are nearly at the same level.

2. The curvature of the cervical line is mesially and distally similar.
3. The tooth has more than one cusp.
4. The root length of the mandibular first premolar is closer to that of the mandibular second premolar root.

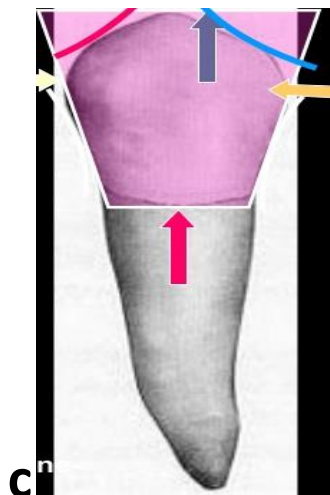


Relation The lower 1st premolar makes contact mesially with the distal surface of the lower canine and distally with the mesial surface of the 2nd premolar.



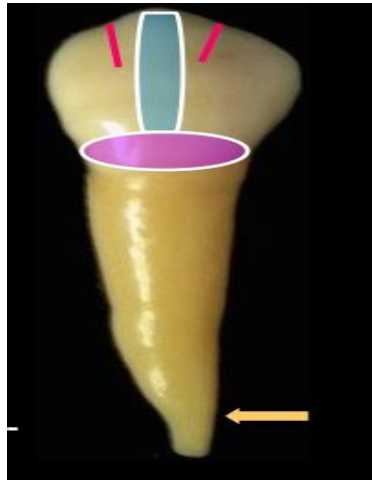
buccal aspect: -

- 1-Trapezoid in shape the short side cervically. The long side occlusally.
- 2- Mesial outline is slightly concave till the mesial contact area.
- 3-The distal outline is slightly concave till the distal contact area
- 4- The mesial slope is shorter than the distal slope.



- 5-There are two ridges; the cervical ridge and the buccal ridge.
- 6-Two developmental grooves mesial and distal to the buccal ridge

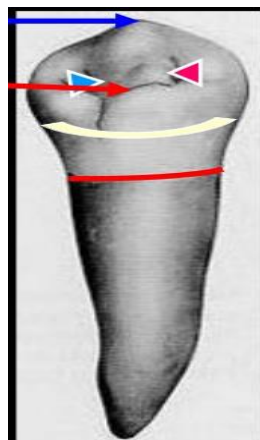
7-The root is cone-shaped with distal –inclination of the apical 3rd. The root is shorter than that of the canine.



Lingual aspect

Similar to the buccal aspect but in a reverse manner and with more lingual

- 1- the convergence of the lingual cusp is $\frac{2}{3}$ the buccal cusp
- 2- The short lingual cusp can be called a well-developed cingulum
- 3- The mesial and the distal triangular fossa can be seen



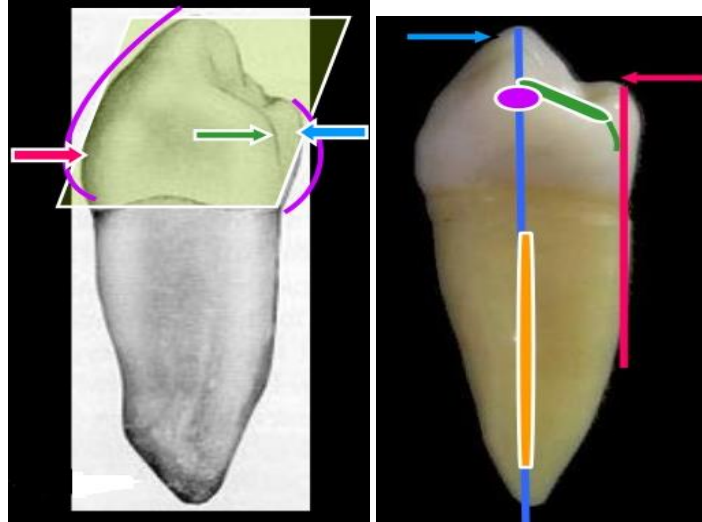
- 4- The lingual surface is spheroid.
- 5- Cervical line is slightly convex or even straight.

A characteristic feature of the lingual surface is the Mesio lingual developmental groove.



The mesial aspect

- 1-It is rhomboid in shape due to the lingual inclination
- 2-The buccal outline is convex from the cervical line to the cusp tip (the maximum convexity at cervical 3rd the cervical ridge).
- 3- The lingual outline is convex - (the maximum convexity at the middle 3rd See the mesio-lingual developmental groove
- 4-The lingual cusp is $\frac{2}{3}$ of the - buccal cusp
- 5- The buccal cusp tip is in line with the - root apex; where the lingual cusp tip is in line with the lingual border of the root lingual inclination
- 6-The mesial marginal ridge is sloping linguallly
- 7-The contact area is in line with the buccal cusp tip
- 8-It has a deep developmental groove.



The distal aspect

Similar to the mesial aspect but differs in the distal marginal ridge is straight and:

- 1- perpendicular to the long axis of the tooth
- 2- No developmental groove
- 3- The contact area is broader and more
- 4- cervically, the distal cervical line is less curved



The occlusal aspect

- 1-It is a diamond or round shape.
- 2-The buccal cusp has a large triangular ridge.
- 3-The small lingual cusp has a small triangular ridge.
- 4-The occlusal surface tapers lingually.
- 5-The buccal and lingual triangular ridges are connected by a transverse ridge.
- 6-Mesial and distal triangular fossa.
- 7- Central developmental groove may cross the transverse ridge.

