

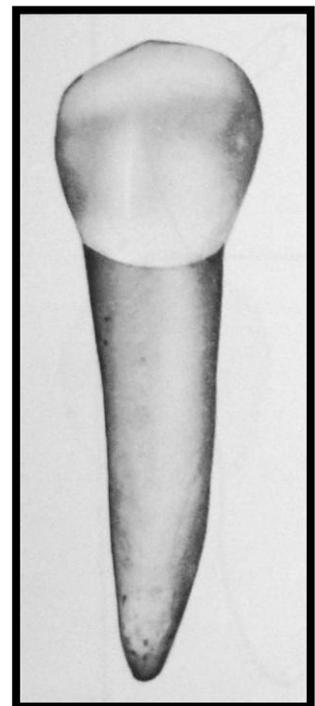
Permanent Mandibular Second Premolar

Principal identifying features:

1. It is larger than the mandibular first premolar.
2. The cusps are more equal in size with less pointed tips. Usually this tooth has three cusps, one buccal and two lingual; or may have only two cusps, one buccal and one lingual.
3. The occlusal outline is almost square in appearance with no mesio-lingual developmental groove.

Buccal Aspect

1. The buccal cusp is shorter and less pointed than that of mandibular first premolar.
2. The contact areas are broad and high (appear to be higher because of the shorter buccal cusp).
3. The root is broader mesio-distally than that of mandibular first premolar ending with a more blunt apex.

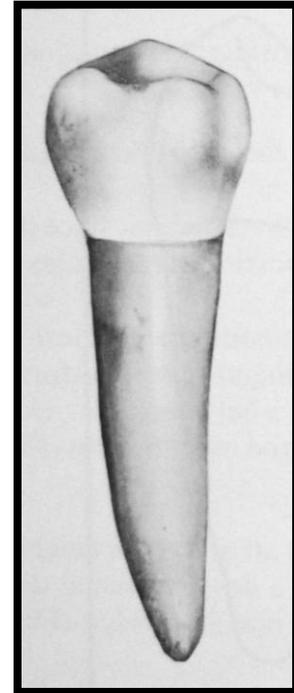


Lingual Aspect

The lingual surface of the crown is smooth and spheroidal.

From this aspect, this tooth differs from the mandibular first premolar in:

1. The lingual cusps are more developed (longer cusps).
2. Less occlusal surface may be seen. However, because the lingual cusps are slightly shorter than the buccal cusp, we can see part of the lingual incline of the buccal cusp from this aspect.
3. **A. In the three cusps type:** there are two lingual cusps, the mesio-lingual is larger than the disto-lingual cusp and are divided by the lingual developmental groove.

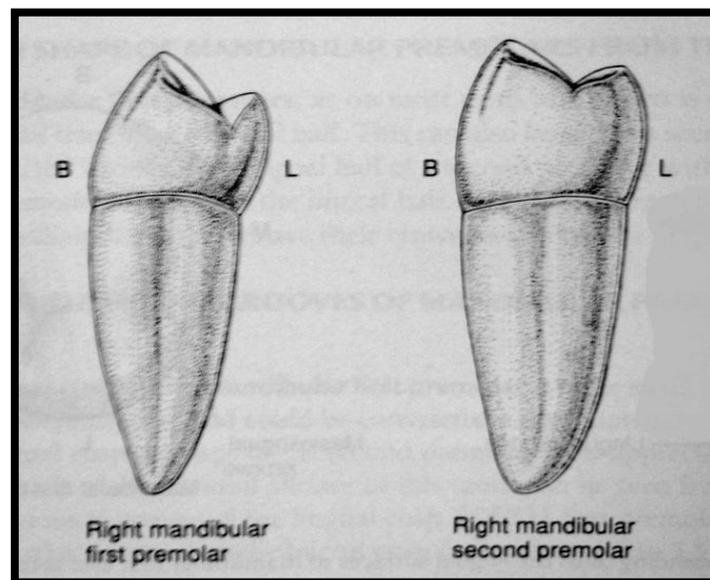
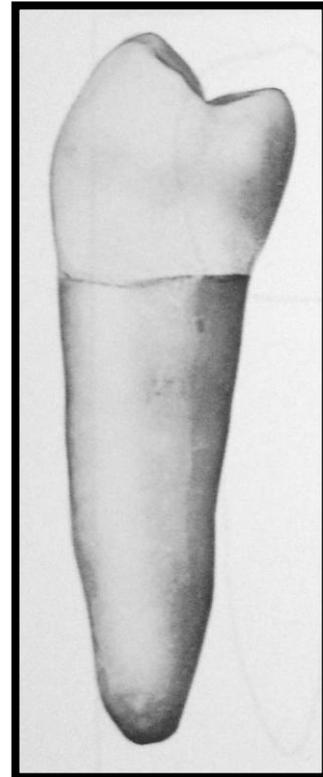


B. In the two cusps type: there is a large cusp of the same height as in the three cusps type. There is a developmental depression disto-lingually where the lingual cusp ridge joins the distal marginal ridge.

Mesial Aspect

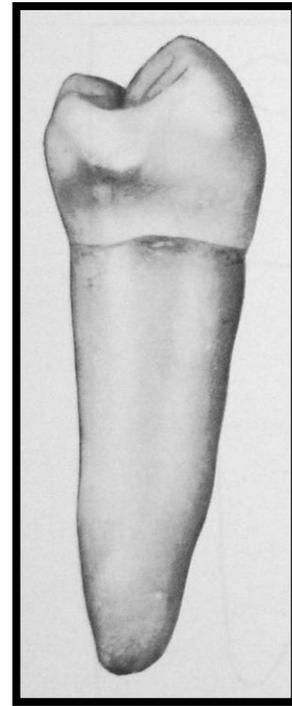
From this aspect, this tooth differs from the mandibular first premolar in:

1. The crown and the root are wider bucco-lingually.
2. The buccal cusp is not nearly centered over the root trunk, and it is shorter.
3. The marginal ridge is at a right angle to the long axis of the tooth with less occlusal surface may be seen.
4. There is no mesio-lingual developmental groove on the crown.
5. The root is with more blunt apex.



Distal Aspect

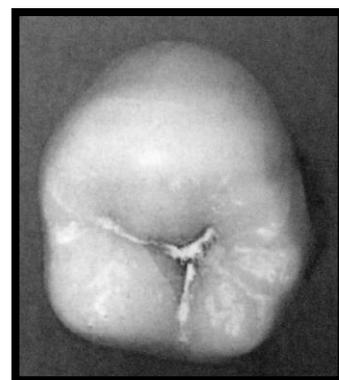
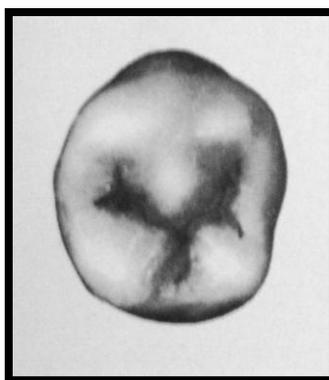
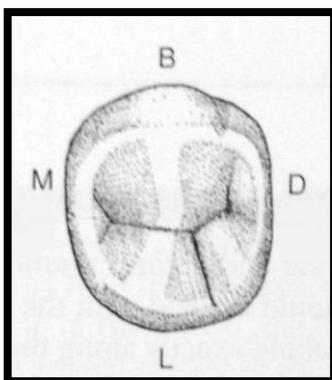
1. All the three cusps may be seen.
2. The distal marginal ridge is lower than that mesially, revealing more of the occlusal surface.



Occlusal Aspect

A. Three cusps type:

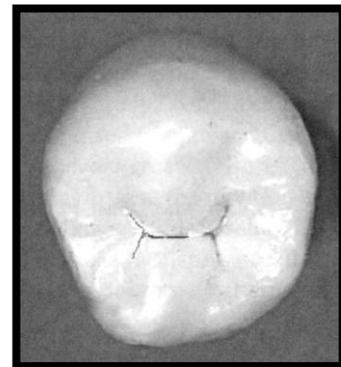
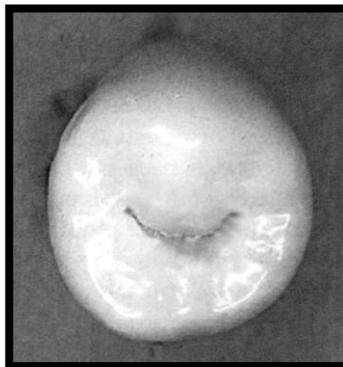
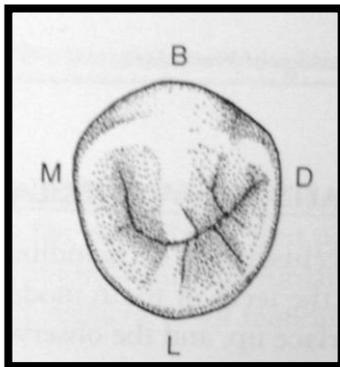
1. The occlusal aspect is square in shape.
2. Three cusps: the buccal is the largest, followed by the mesiolingual cusp, and then the distolingual cusp.
3. Each cusp has a well-formed triangular ridge separated by deep developmental grooves which form a Y-shape on the occlusal surface.

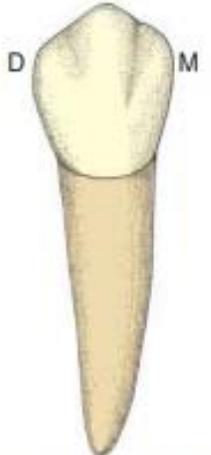


4. There are three developmental grooves:
 - A. Mesial developmental groove ending in the mesial triangular fossa.
 - B. Distal developmental groove ending in the distal triangular fossa.
 - C. Lingual developmental groove separating the two lingual cusps.
5. These grooves converge in a central pit in central fossa, which is placed slightly towards the distal side.
6. Supplemental grooves are often seen.

B. Two cusps type:

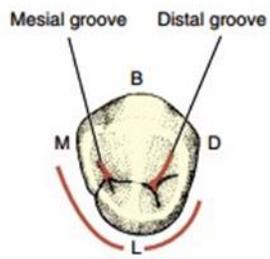
1. Appear more rounded than the more angular three cusps type.
2. There is one well-developed lingual cusp which is large and opposite the buccal cusp.
3. A central developmental groove travels in a mesio-distal direction with its terminals centered in the mesial and distal triangular fossae. Sometimes mesial and distal developmental pits in the centers of these fossae may be seen.



	MANDIBULAR FIRST PREMOLAR	MANDIBULAR SECOND PREMOLAR
Buccal Aspect	<ol style="list-style-type: none"> 1. Longer crown. 2. More crown taper from contact to cervix. 3. More pointed cusp. 4. More prominent buccal ridge.  <p>Mandibular right first premolar</p>	<ol style="list-style-type: none"> 1. Shorter wider crown. 2. Crown wider at cervix. 3. Less pointed cusp. 4. Less prominent buccal ridge  <p>Mandibular right second premolar</p>
Lingual Aspect	<ol style="list-style-type: none"> 5. One lingual cusp. 6. Crown much narrower on lingual. 7. Lingual cusp very short, nonfunctional. 8. Mesiolingual groove. 9. Mesial marginal ridge lower than distal marginal ridge. 	<ol style="list-style-type: none"> 5. Most have two lingual cusps. 6. Crown wide on lingual. 7. Lingual cusp not as short as on firsts. 8. Lingual groove between two lingual cusps. 9. Distal marginal ridge lower than mesial marginal ridge.

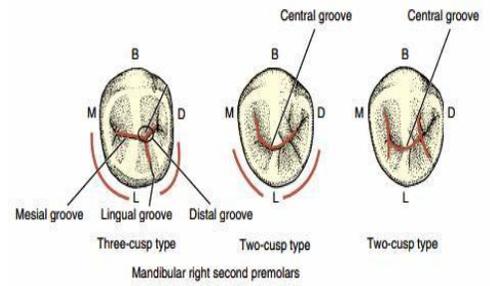
<p>Mesial Aspect</p>	<p>10. Severe lingual crown tilt.</p> <p>11. Lingual cusp much shorter than buccal cusp.</p> <p>12. Can see much of occlusal from mesial</p> <p>13. Mesiolingual groove on most seen from mesial.</p> <div data-bbox="516 514 662 844" data-label="Image"> <p>Mandibular right first premolar</p> </div>	<p>10. Less lingual crown tilt.</p> <p>11. Lingual cusp slightly shorter than buccal cusp.</p> <p>12. Cannot see much of occlusal from mesial.</p> <p>13. No Mesiolingual groove.</p> <div data-bbox="1117 493 1263 823" data-label="Image"> <p>Mandibular right second premolar</p> </div>
<p>Occlusal Aspect</p>	<p>14. Outline diamond or circular shaped.</p> <p>15. Smaller occlusal table.</p> <p>16. Mesiolingual groove common.</p> <p>17. Two fossae (mesial and distal).</p> <p>18. Definite transverse ridge, developmental grooves (mesial distal).</p>	<p>14. Outline nearly square or round.</p> <p>15. Larger occlusal table.</p> <p>16. Lingual groove on three-cusp type.</p> <p>17. Two fossae (mesial and distal) on two-cusp type but three fossae on three-cusp type (mesial, distal and central).</p> <p>18. Three-cusp type has no transverse ridge “Y” groove pattern on three-cusp type (mesial, distal and lingual), on two-cusp type: “U” groove pattern there is central groove or “H” groove pattern there are (mesio-buccal, distobuccal and central grooves).</p>

19. Lingual cusp smaller than buccal.



Mandibular right first premolar

19. Lingual half larger than buccal if two lingual cusps.



Mandibular right second premolars