

Permanent Canines: Maxillary and Mandibular

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- Maxillary and mandibular canines bear a close resemblance to each other, and their functions are closely related.
- Four canines are placed at the “corners” of the mouth.They are commonly referred to as cornerstone of dental arches.
- They are the longest teeth in mouth; crowns are usually as long as those of the maxillary central incisors, and the single roots are longer than those of any of other teeth.
- Middle labial lobes have been highly developed incisally into strong, well formed cusps.
- Shape and position of canines contribute to guidance of teeth into intercuspal position by “canine guidance.”
- Shape of the crowns, with their single pointed cusps,their locations in the mouth, and extra anchorage provided by long, strongly developed roots, makes these canines resemble those of the carnivore,that's why the name;**canine**.
- These teeth are perhaps the most stable in the mouth.
- When teeth are lost, canines are usually the last ones to go.
- Canines are important because of their efficiency in function, stability, and aid in maintaining natural facial expression.

DETAILED DESCRIPTION OF THE MAXILLARY CANINE FROM ALL ASPECTS:

Labial Aspect:

- From labial aspect, crown and root are narrower mesiodistally than those of maxillary central incisor, the difference is about 1 mm.
 - Cervical line is convex towards the root
 - Center of contact area mesially is approximately at the junction of middle and incisal thirds of the crown.
 - Distal contact area is usually at the center of the middle third of the crown
 - Unless crown has been worn unevenly, cusp tip is on a line with center of root.
 - Cusp has a mesial slope and a distal slope, mesial slope being shorter of the two.
 - Shallow depressions are seen mesially and distally, dividing the three labial lobes. Middle labial lobe shows much greater development than the other lobes. This produces a ridge on labial surface of the crown.
 - Root of maxillary canine appears slender from labial aspect when compared with the bulk of crown; it is conical in form with a bluntly pointed apex.
- It is common for this root to have a sharp curve in mesial or distal direction



Labial



Incisal



Lingual



Mesial



Distal

Labial surface of root is smooth and convex at all points.

Lingual Aspect:

Crown and root are narrower lingually than labially.

Cingulum is large and, in some instances, is pointed like a small cusp.

Occasionally, a well-developed lingual ridge is seen that is confluent with cusp tip; this extends to a point near the

cingulum. Shallow concavities are evident between this ridge and marginal ridges and are called as mesial and distal lingual fossae.

Lingual portion of root of maxillary canine is narrower than labial portion.

Mesial Aspect:

Mesial aspect of maxillary canine looks like functional form of an anterior tooth. But it has greater bulk and greater labiolingual measurement than any of other anterior teeth.

Outline of crown is wedge-shaped, greatest measurement at the cervical third and wedge point at tip of the cusp.

Entire labial outline from mesial aspect is more convex from cervical line to cusp tip than maxillary central incisor

Lingual outline of crown from mesial aspect may be represented by a convex line describing the cingulum, which straightens out as the middle third is reached, becoming convex again in the incisal third.

Outline of root from this aspect is conical, with a tapered or bluntly pointed apex.

A line bisecting the cusp is labial to a line bisecting the root.

Mesial surface of root appears broad, with a shallow developmental depression for part of root length.

Developmental depressions on heavy roots help anchor teeth in alveoli and help prevent rotation and displacement.

Distal Aspect:

Distal aspect of maxillary canine shows somewhat same form as mesial aspect, with the following variations:

- cervical line exhibits less curvature toward cusp ridge;
- distal marginal ridge is heavier and more irregular in outline;
- surface displays more concavity, usually above contact area; and
- developmental depression on the distal side of root is more pronounced

Incisal Aspect :

In general, labiolingual dimension is greater than mesiodistal. From incisal aspect, tip of the cusp is labial to the center of crown labiolingually and mesial to the center mesiodistally. Cingulum makes up cervical third of the crown lingually.

TABLE 8-1 Maxillary Canine

First evidence of calcification	4–5 mo
Enamel completed	6–7 yr
Eruption	11–12 yr
Root completed	13–15 yr

MEASUREMENT TABLE

	CERVICOINCISAL LENGTH OF CROWN	LENGTH OF ROOT	MESIODISTAL DIAMETER OF CROWN	MESIODISTAL DIAMETER OF CROWN AT CERVIX	LABIO- OR BUCCOLINGUAL DIAMETER OF CROWN	LABIO- OR BUCCOLINGUAL DIAMETER OF CROWN AT CERVIX	CURVATURE OF CERVICAL LINE— MESIAL	CURVATURE OF CERVICAL LINE— DISTAL
Dimensions* suggested for carving technique	10.0	17.0	7.5	5.5	8.0♦	7.0	2.5	1.5

*In millimeters.

Mandibular canine crown is narrower mesiodistally than that of the maxillary canine.

Root may be as long as that of maxillary canine, but usually is somewhat shorter.

Labiolingual diameter of crown and root is usually a fraction of a millimeter less.

Lingual surface of crown is smoother, with less cingulum development and less bulk to the marginal ridges resembling lingual surface of mandibular lateral incisors .

Cusp of mandibular canine is not as well developed as that of maxillary canine, and cusp ridges are thinner labiolingually.

Usually cusp tip is on a line with center of root, from mesial or distal aspect, but sometimes it lies lingual to the line, like mandibular incisors.

A variation in the form of the mandibular canine is bifurcated roots.

DETAILED DESCRIPTION OF THE MANDIBULAR CANINE FROM ALL ASPECTS:

Labial Aspect:

From labial aspect, mesiodistal dimensions of mandibular canine are less than those of maxillary canine by about 1 mm.

Differences between mandibular and maxillary canines viewed from labial aspect are as follows:

- Crowns of mandibular canines appear longer. Because of -
-narrowness of the crown mesiodistally and
-height of contact areas above the cervix.
- Mesial outline of crown of mandibular canine is almost straight with mesial outline of the root, with mesial contact area near mesioincisal angle.
- Mesial cusp ridge is shorter.
- Distal contact area of mandibular canine is more toward incisal aspect than that of maxillary canine but is not up to the level of mesial area.
- Cervical line labially has a semicircular curvature apically.
- Many mandibular canines give impression from this aspect of being bent distally on the root base. Maxillary canine crowns are more likely to be in line with root.

- Mandibular canine root is shorter by 1 or 2 mm on average than that of maxillary canine, and its apical end is more sharply pointed.

- Root curvatures are infrequent.

Lingual Aspect:

- Lingual surface of crown of mandibular canine is flatter, simulating lingual surfaces of mandibular incisors .

- Cingulum is smooth and poorly developed.

- Marginal ridges are less distinct.

- Lingual portion of root is relatively narrower than that of maxillary canine.

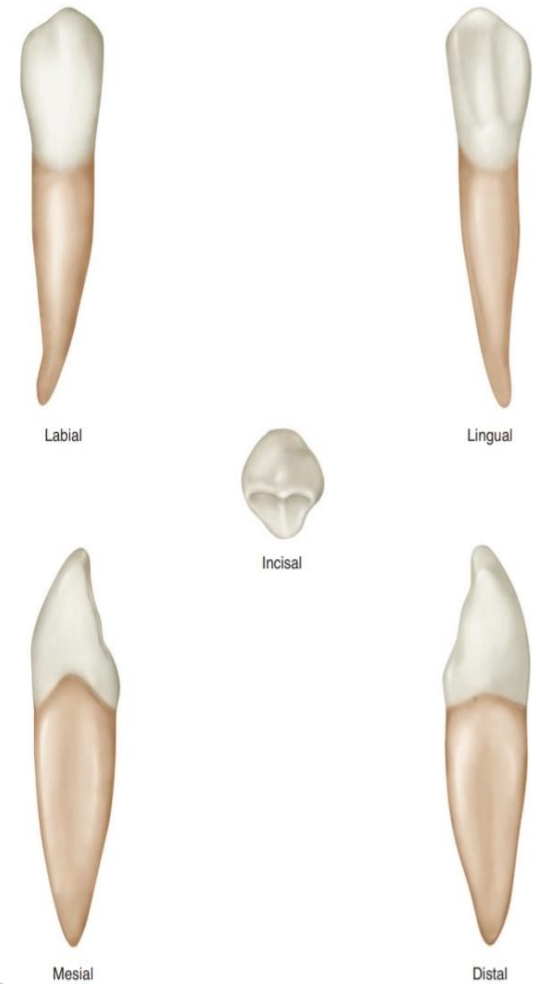


FIGURE 8-20 Mandibular right canine.

Mesial Aspect:

Mandibular canine has less curvature labially on the crown, with very little curvature directly above the cervical line.

Lingual outline of crown is curved in same manner as that of maxillary canine, but its less in degrees.

Cingulum is not as pronounced, and incisal portion of crown is thinner labiolingually.

Tip of the cusp is more nearly centered over the root.

Cervical line has more curve than that on the maxillary canine.

Developmental depression mesially on root of mandibular canine is more pronounced and sometimes quite deep.

Distal Aspect :

There is little difference from distal aspect between mandibular and maxillary canines except for those features mentioned under Mesial Aspect that are common to both.

Incisal Aspect:

Outlines of crowns of mandibular and maxillary canines from incisal aspect are often similar with few differences as noted below :

- Mesiodistal dimension of mandibular canine is less than labiolingual dimension. A similarity is evident in this, but outlines of mesial surface are less curved.
- Cusp tip and mesial cusp ridge are more likely to be inclined in a lingual direction in the mandibular canine. Cusp ridges of maxillary canine with contact area extensions are more nearly in a straight line mesiodistally from incisal aspect.

TABLE 8-2 Mandibular Canine

First evidence of calcification	4–5 mo
Enamel completed	6–7 yr
Eruption	9–10 yr
Root completed	12–14 yr

MEASUREMENT TABLE

	CERVICOINCISAL LENGTH OF CROWN	LENGTH OF ROOT	MESIODISTAL DIAMETER OF CROWN	MESIODISTAL DIAMETER OF CROWN AT CERVIX	LABIO- OR BUCCOLINGUAL DIAMETER OF CROWN	LABIO- OR BUCCOLINGUAL DIAMETER OF CROWN AT CERVIX	CURVATURE OF CERVICAL LINE— MESIAL	CURVATURE OF CERVICAL LINE— DISTAL
Dimensions* suggested for carving technique	11.0	16.0	7.0	5.5	7.5	7.0	2.5	1.0

