Primary Dentition

By Anteriors

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Learning Outcomes

- Describe the functions of primary teeth
- Desribe eruption sequence of primary teeth.
- Differentiate between primary and permanent teeth based on crown and root anatomy

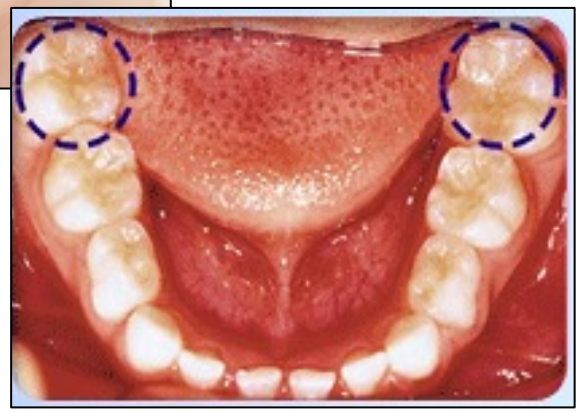
What is primary dentition?

6month → 2.5-3 years → 6yr → 13yr

- 6month: first eruption
- 2.5-3 years: complet set of teeth
- 6yr: first tooth replac by permenant
- 13yr: last replecing

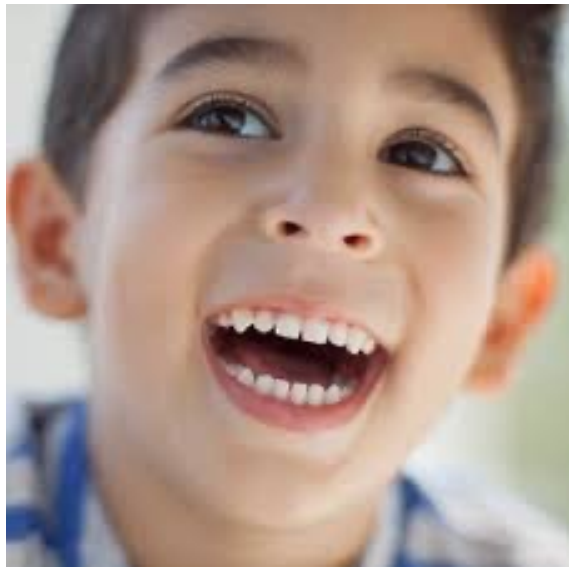
mixed dentition

- The primary dentition is also called Decidious, temporary, milk or baby teeth
- Deciduous is latin word meaning "fall off" these teeth will fall eventully
- Start at the age of 6 months → mandibular central
- Complete at the age of 2.5 – 3 years
- Ends at 6 years when the first permanent molar erupt (mix dentition)
- The last primary tooth fall at the age of 12 (Permanent dentition)



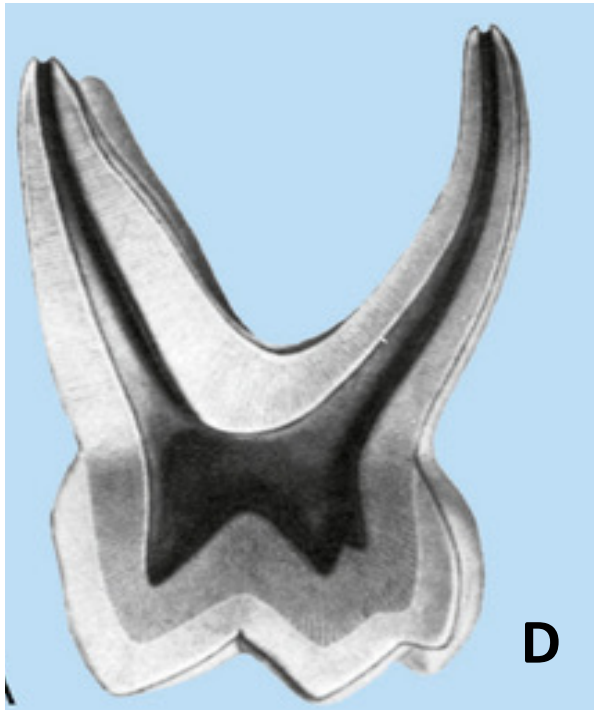
Functions of deciduous/primary teeth

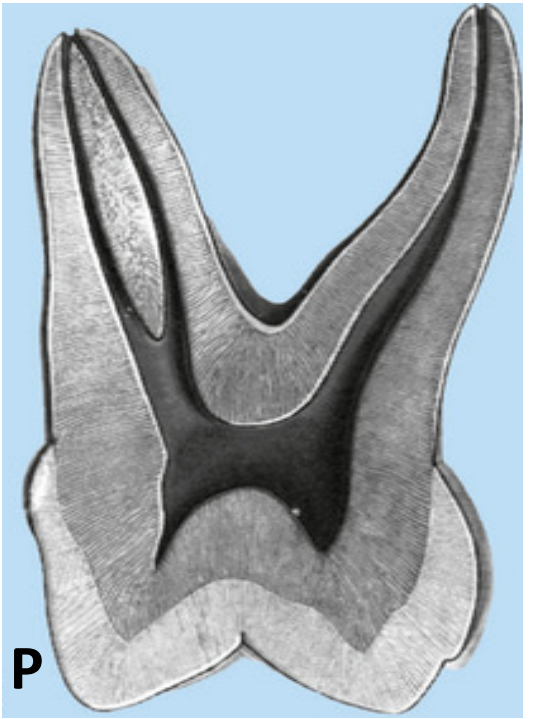
1. Eating and nutrition → Baby eats solid food
2. Speech and language development
3. Social development and confidence
4. Development of jaw muscles and bones
5. Eruption and root resorption help guide permanat teeth
6. Keep space of the permanent counterparts (place holders/space maintainers)



Essential differences between deciduos and permanent teeth

1. 20 ← Number → 32
2. Small ← Size → Large
3. White ← Colour → Yellowish
4. Small & thin ← Roots →Large & thick
5. Large← Pulp chamber → Small
6. Thin← Enamel → Thick
7. Thin← Dentin → Thick





What is Chronology?

- Literal meaning of the word is “study of the sequence”.

- In dentistry, it is the study which deals with the timings and sequence of different stages of tooth development.

- It start with the initiation of the first dental tissue laid down till the emergence of tooth in the oral cavity and its completion of calcification.

start from 4 month intrauterine life

- Why chronology is important?

- Assess the age, growth and avoid damage to the teeth during clinical procedures

Chronology of deciduous anterior teeth

	First evidence of calcification (months I.U) داخل الرحم	Enamel completed (months)	Eruption (months)	Root completed (years)
A upper central	4	4	7.5	1.5
A lower central		3.5	6	
B upper lateral	4.5	5	9	2
B lower lateral		4	7	1.5
C upper canine	5	9	18	3
C lower canine			16	

Quiz

The FDI number for Deciduous Mandibular left lateral incisor is _____.

A. 32 B. 42 C. 82 D. 72

What is the sequence of eruption of Mandibular left lateral incisor ?

A. 1st B. 2nd C. 3rd D. 4th

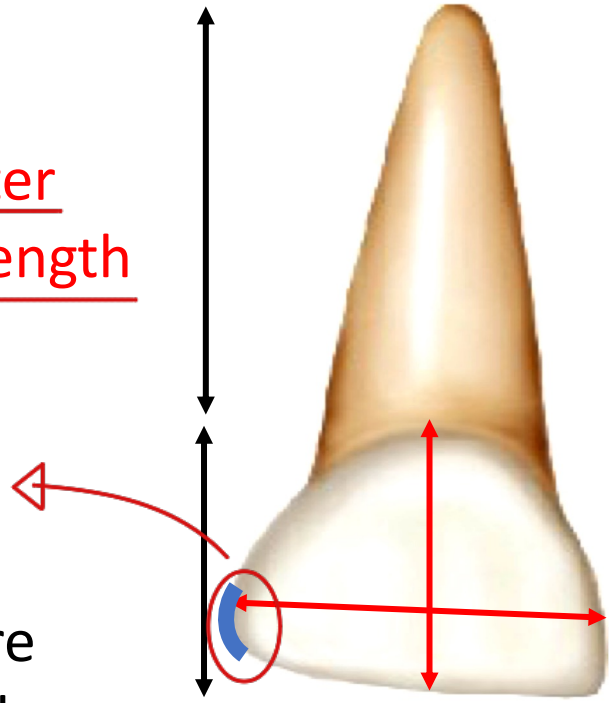
sequence of eruption

1st (Mandibular incisor) 6 month → 2nd (lateral incisor) 7 month → 3rd (central incisor) 7.5 month → 4th (Lateral incisor) 9 month

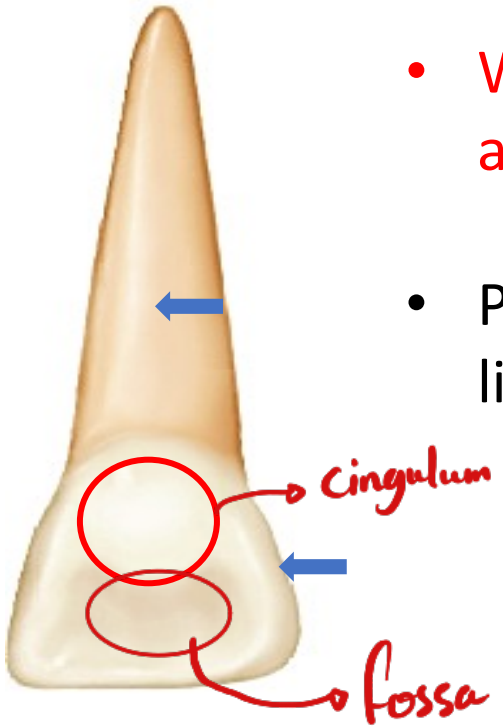
Maxillary Central Incisors (Labial and lingual surface)

Labial Surface

- Smooth
- MD diameter is greater than cervico-incisal length
- Distal-incisal angle is round
- Root is 1.5 times more than the crown length

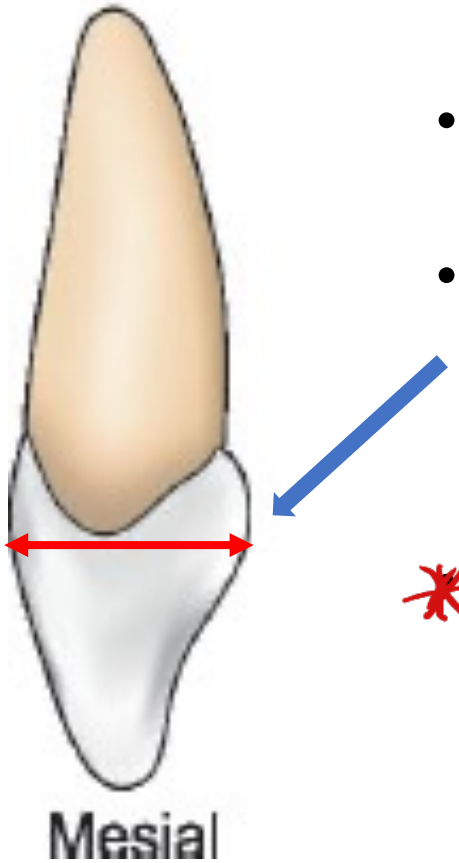


Lingual surfac

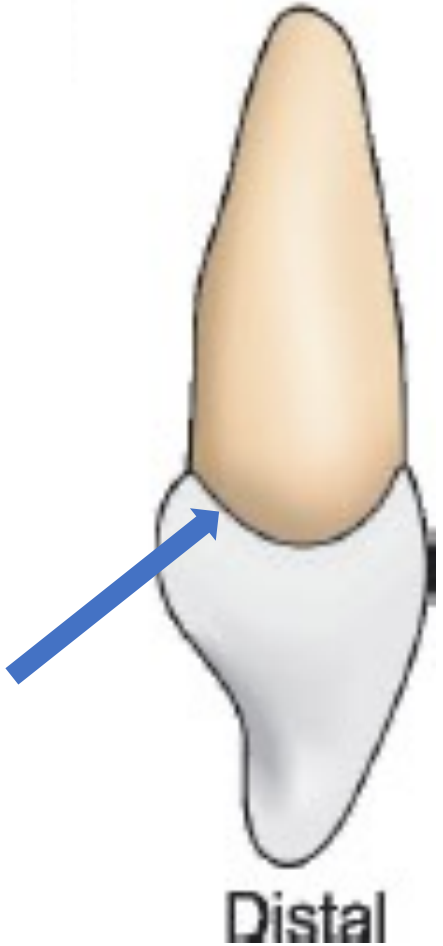


- Well developed cingulum and lingual fossa
- Prominent marginal and lingual ridges

Maxillary Central Incisors (Mesial and Distal surface)



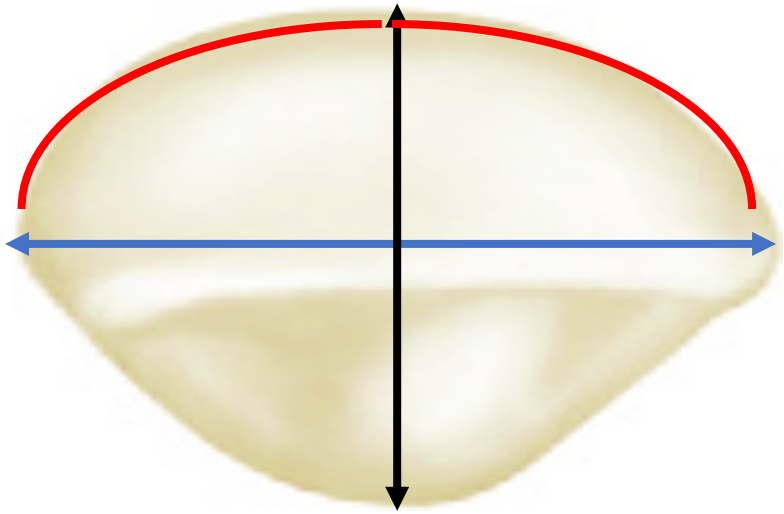
- Similar triangular shape
- Crown wider at the cervical 3rd due to large cingulum.
- Curvature of the cervial line is prominent



Maxillary Central Incisors (Incisal surface)

- Greater mesiodistal width in relation to the labiolingual width (thickness).

*width is broader than the thickness



- The labial surface is much broader than the lingual surface.

- The lingual surface tapers toward the cingulum (lingual tapering)

→ to accomdate arch shape

Maxillary Lateral Incisors

Labial Surface

- Crown smaller in all dimensions
- Round incisal angles

Lingual Surface

- Prominent marginal ridges
- Deeper lingual fossa

Incisal Surface

- More convex labially

Mandibular Central Incisors

Labial Surface

- Smooth
- The crown width is greater in proportion to its length in comparison to that of the permanent successor
- Root is twice than the crown length

Lingual surface

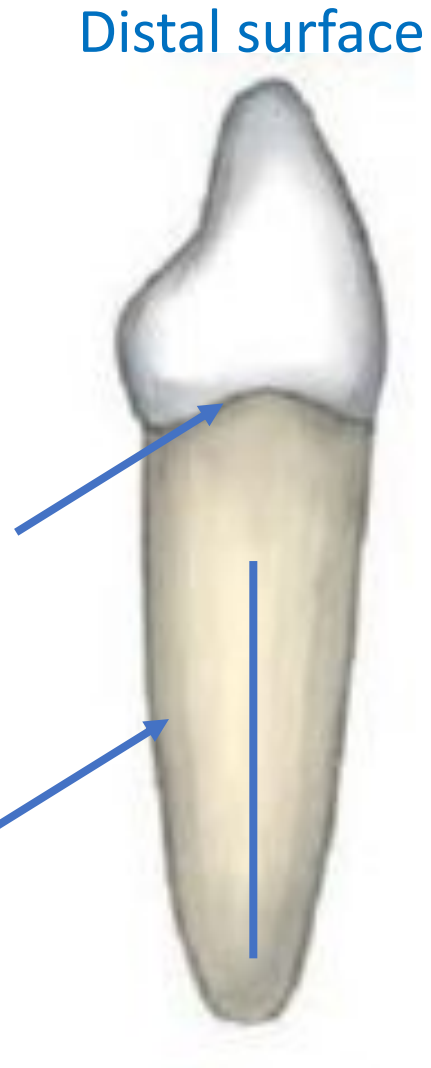
- The crown and root converge toward the lingual surface
- The cingulum & marginal ridges are easily located.
- The lingual fossa is quite shallow.

Mandibular Central Incisors (Mesial and Distal surface)

- Triangular shape
- The incisal edge is Centered on the root, but in permanent incisors, the incisal edge is inclined lingually.
- The root is Flat, tapered and its apex is more blunt than from the labial or lingual aspects.

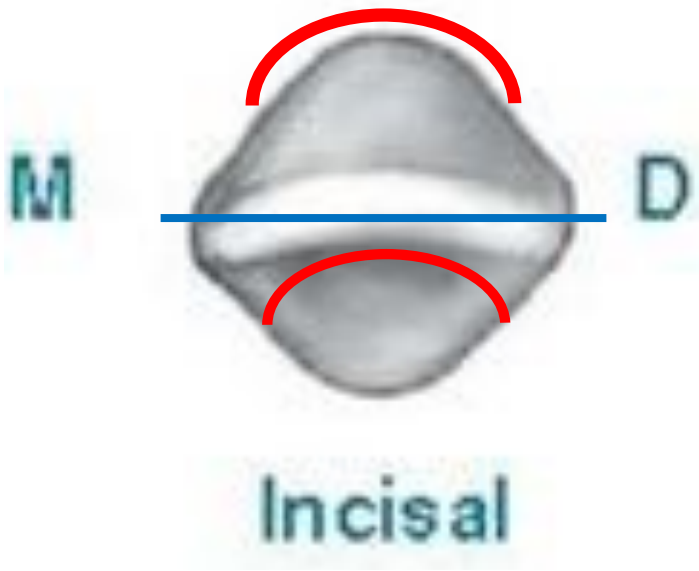
It is similar to the mesial aspect except

- The cervical line exhibits less depth of curvature.
- Developmental Depression on the surface of the root.



Mandibular Central Incisors (Incisal surface)

- **The incisal ridge** is straight and it divides the labial and lingual portions of the crown into nearly equal halves (**Centered**).
- The **labial** surface appears **slightly convex**.
- The **lingual** surface appears **slightly concave**.



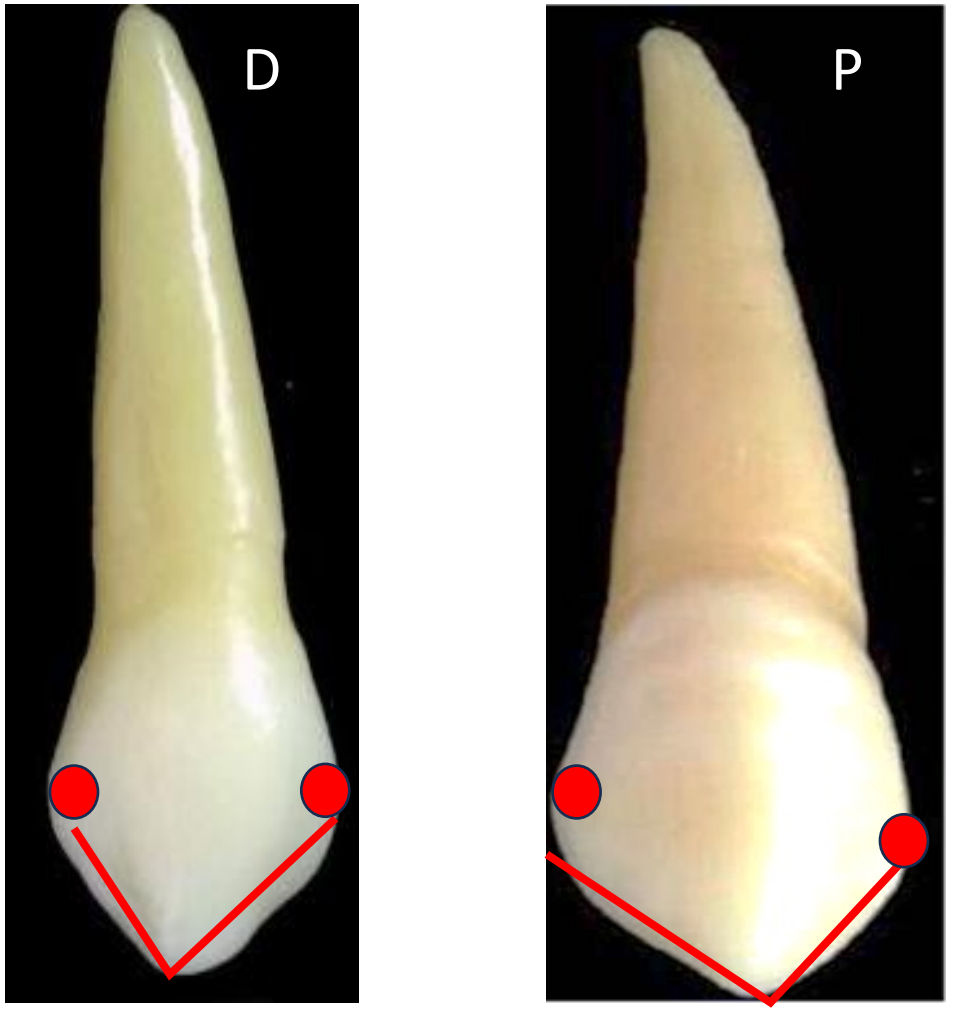
Mandibular Lateral Incisors

Similar to mandibular central incisor except;

- Size: It is wider and longer than the central incisor
- More rounded disto-incisal angle .
- The cingulum is more prominent and lingual fossa is more concave.
- The root has a distal curvature in its apical third, and it normally has a distal longitudinal groove.

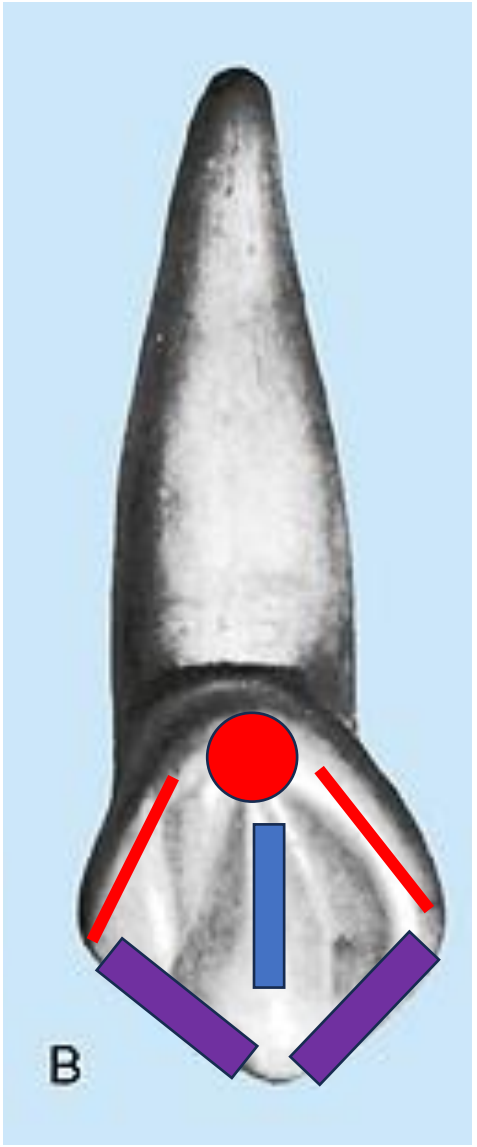
Maxillary Canine (Labial surface)

- The cusp is relatively longer and sharper
- The mesial slope is longer than that of the distal slope so the cusp tip is shifted distally
- The contact areas are located nearly at the same level (nearly at the center of the middle third) Contact areas of permanent canine at different levels.
- The root is about twice as long as the crown and more slender than that of its permanent successor



Maxillary Canine (Lingual surface)

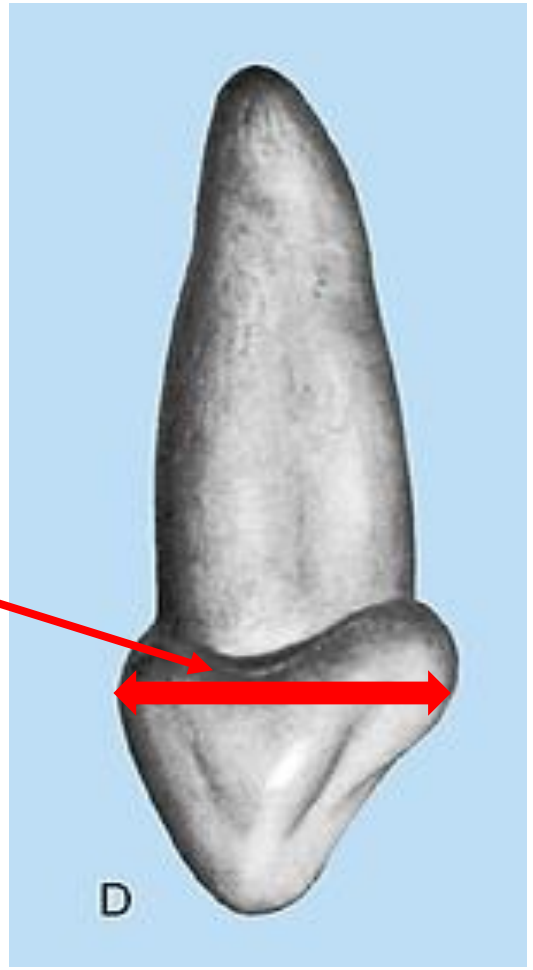
- The lingual surface shows pronounced landmarks.
- There are cingulum , marginal ridges , lingual ridge and incisal cusp ridges.
- The lingual ridge divides the lingual surface into shallow mesial and distal fossae.
- Unlike the permanent canine, there is often a tubercle extends from the cingulum towards the lingual ridge



Maxillary Canine (Mesial and distal surface)

- The outline is similar to the deciduous maxillary incisors, except
- that the canine is much wider at the cervical third .
- The depth of the cervical line is less than in deciduous incisors.

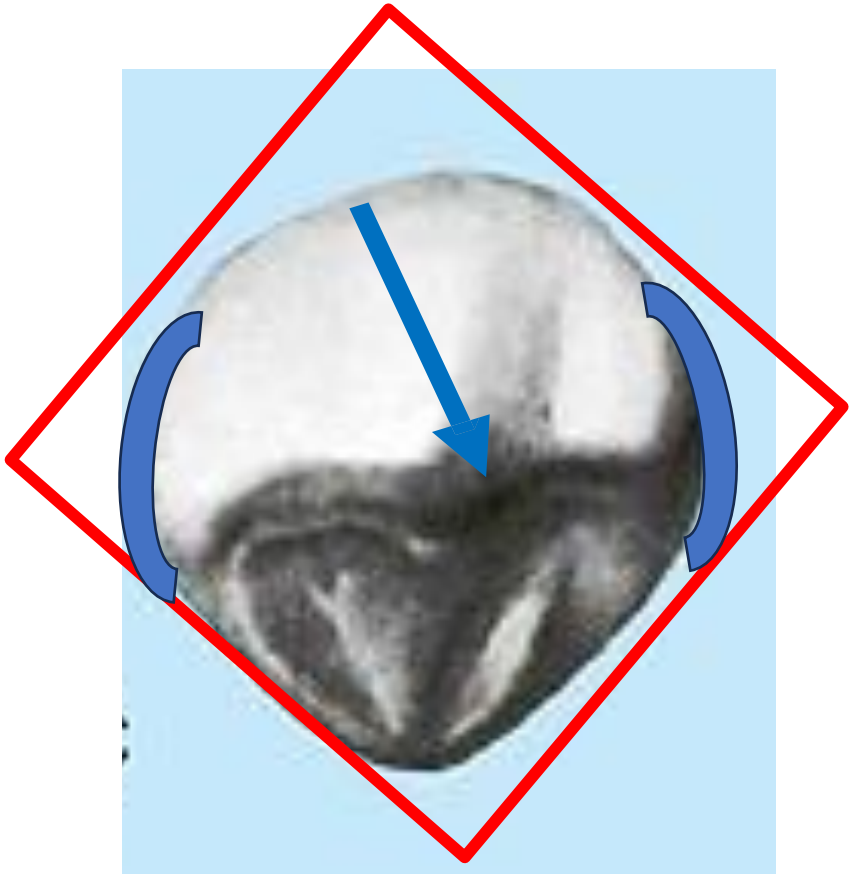
Maxillary canine



Maxillary central incisor

Maxillary Canine (Incisal surface)

- The outline of the crown from this aspect is essentially diamond-shape.
- The curvature describing the mesial and distal contact areas is more prominent .
- The cusp tip is distal to the center of the crown.

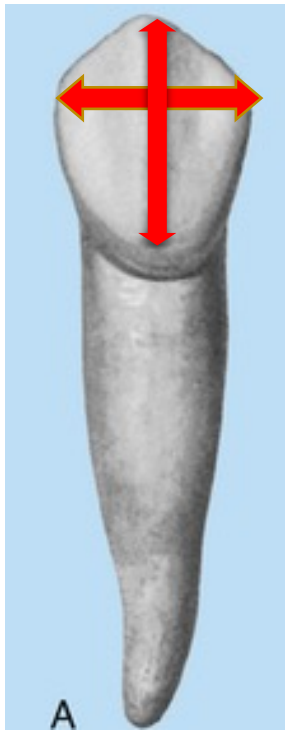


Mandibular Canine

Mandibular canine is similar in form to the deciduous maxillary canine except that

- Mand. canine has a considerably less mesio-distal width and greater inciso-cervical height
- Mand. Canine is narrower labio-lingually than max. Canine.
- The cingulum & marginal ridges are less pronounced in the mandibular canine.

Labial



Proximal

Further Reading

- Wheeler’s Dental Anatomy, Physioolgy, and Occlusion; 10th Edition

Thank You