

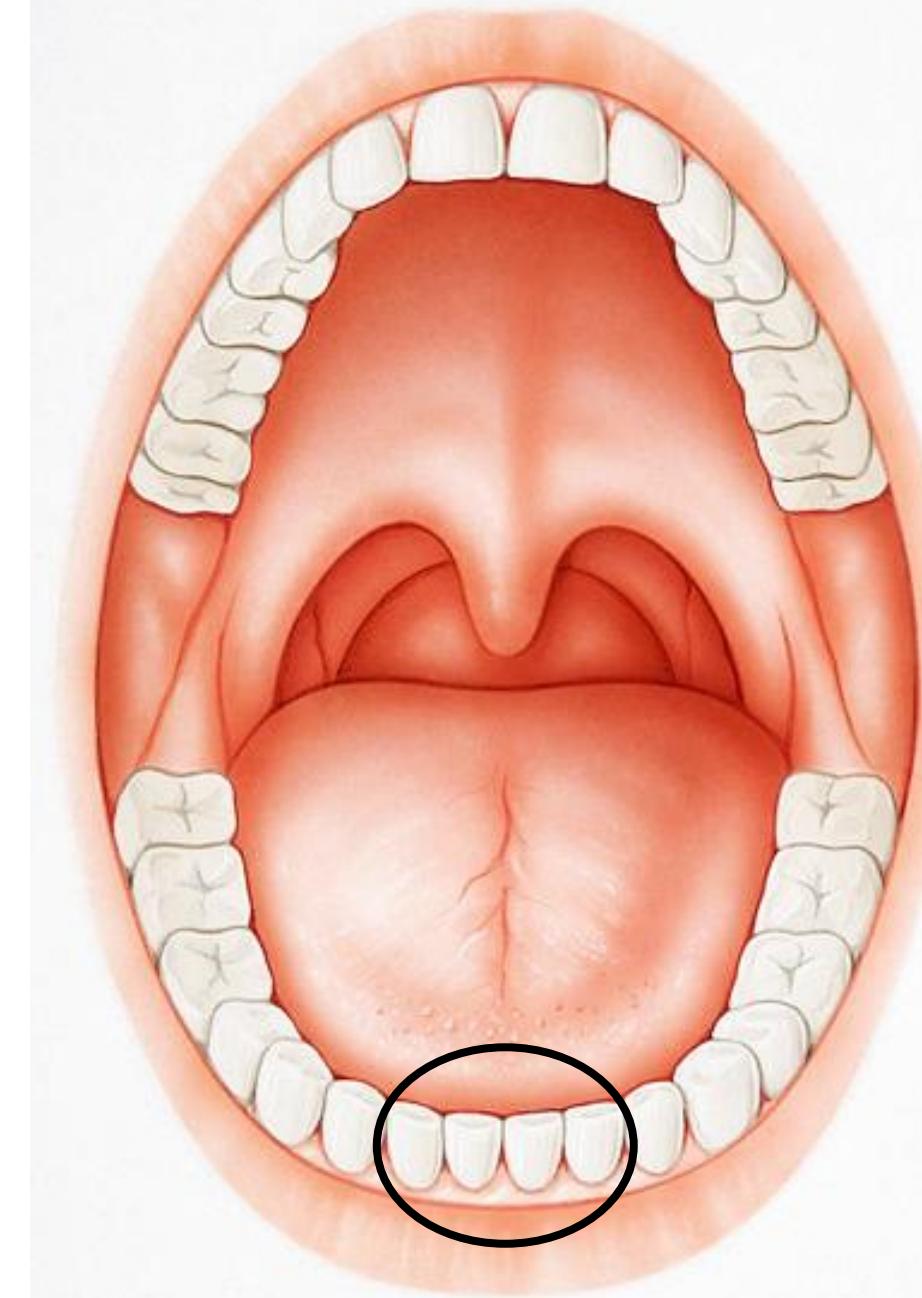
Permanent Mandibular Incisors

By

Dr.

Wafaa Yahia Alghonemy

Ass. Prof. of Oral Biology
Faculty of Dentistry
Zarqa University



Permanent Mandibular Incisors

- They are **4 in number**. The L.central is the 1st mandibular tooth from midline
- They are **smaller** than upper incisors.
- They have **smaller mesio-distal dimension** than any of the other teeth.
- L.Central is **smaller** than I.lateral (reverse situation in upper incisors)



L. incisors width < thickness

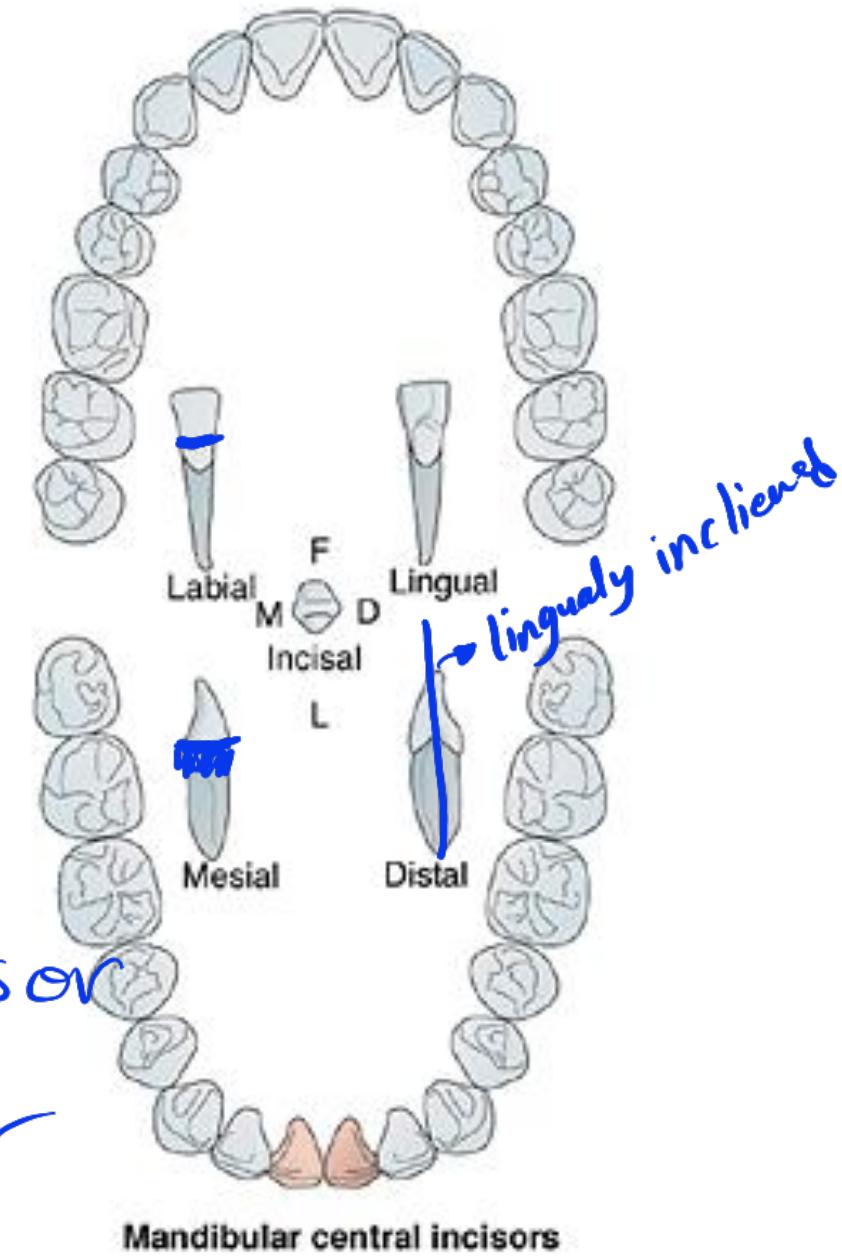
- L. incisors landmarks less developed than upper incisors

- Their crowns have **Lingual inclination** when viewed from the proximal surface



P. Mandibular Central Incisor

لورسیت & سیان صن ایکس ریز
Landmark دریں جائیں
upper lateral > upper incisor
> lower incisor



الثنايا الثالثة المolars third indicator ج3

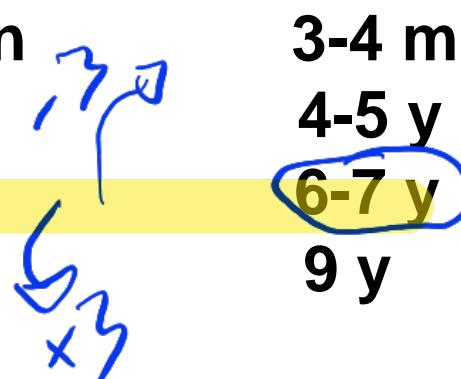
Chronology

First evidence of calcification

Enamel completed

Eruption

Root completed

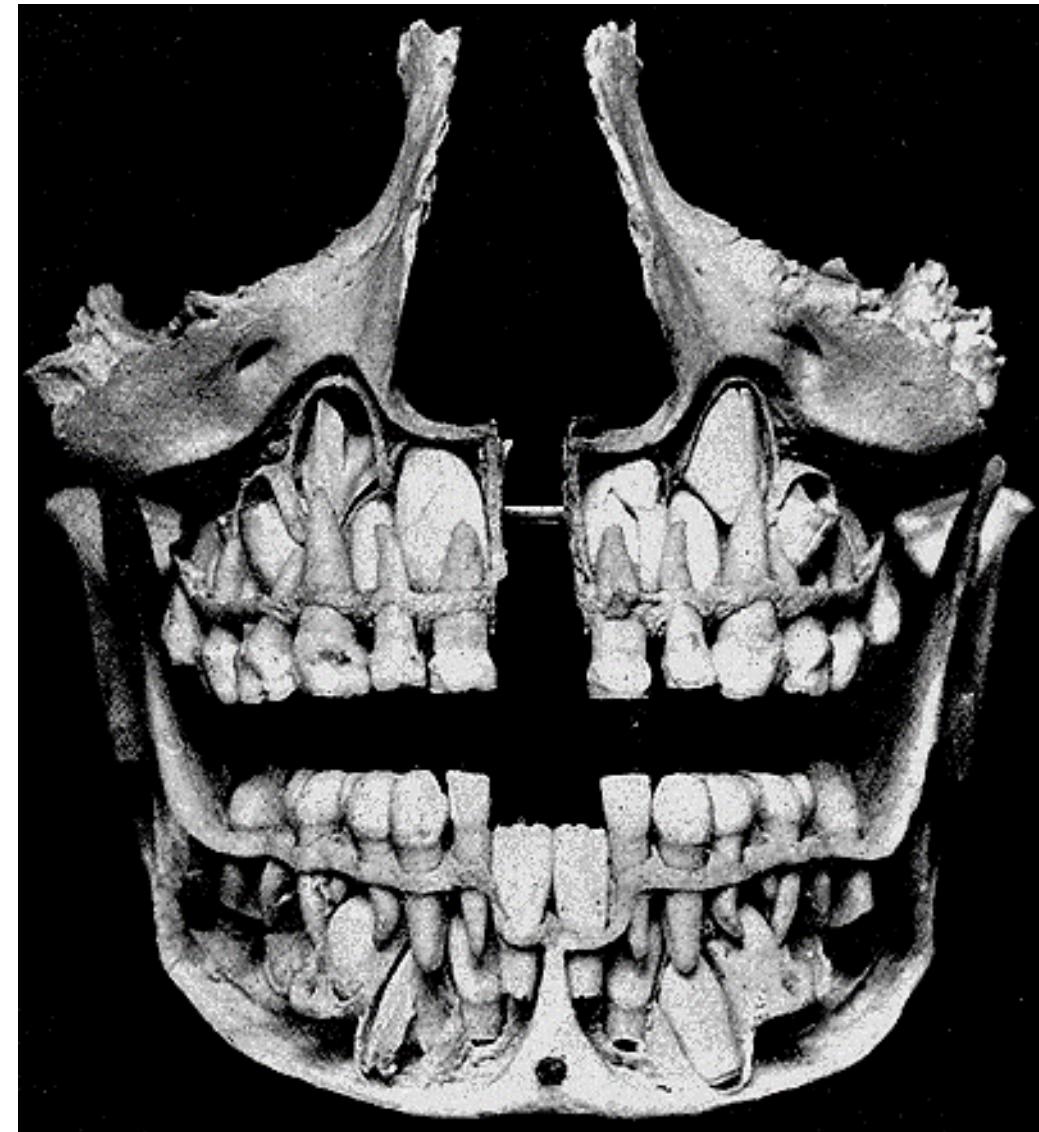


Type and function

incising food as well as esthetic.

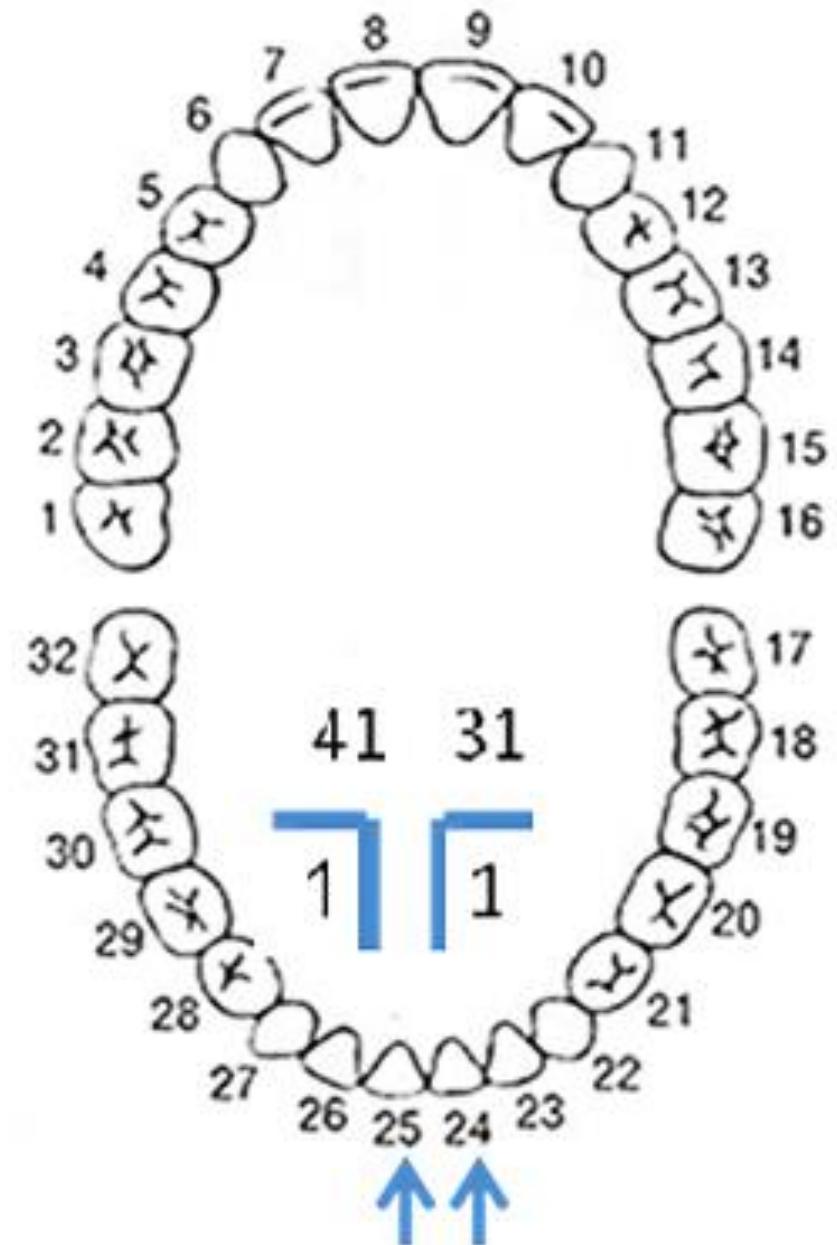
No. of lobes

It has 4 lobes (3 mamelons and 1 cingulum)



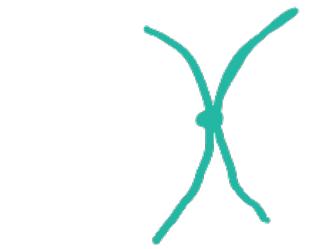
- **Numbering system**

	Mandibular right central incisor	Mandibular left central incisor
universal system	# 25	# 24
two-digit system	41	31
Palmer notation system	1	1

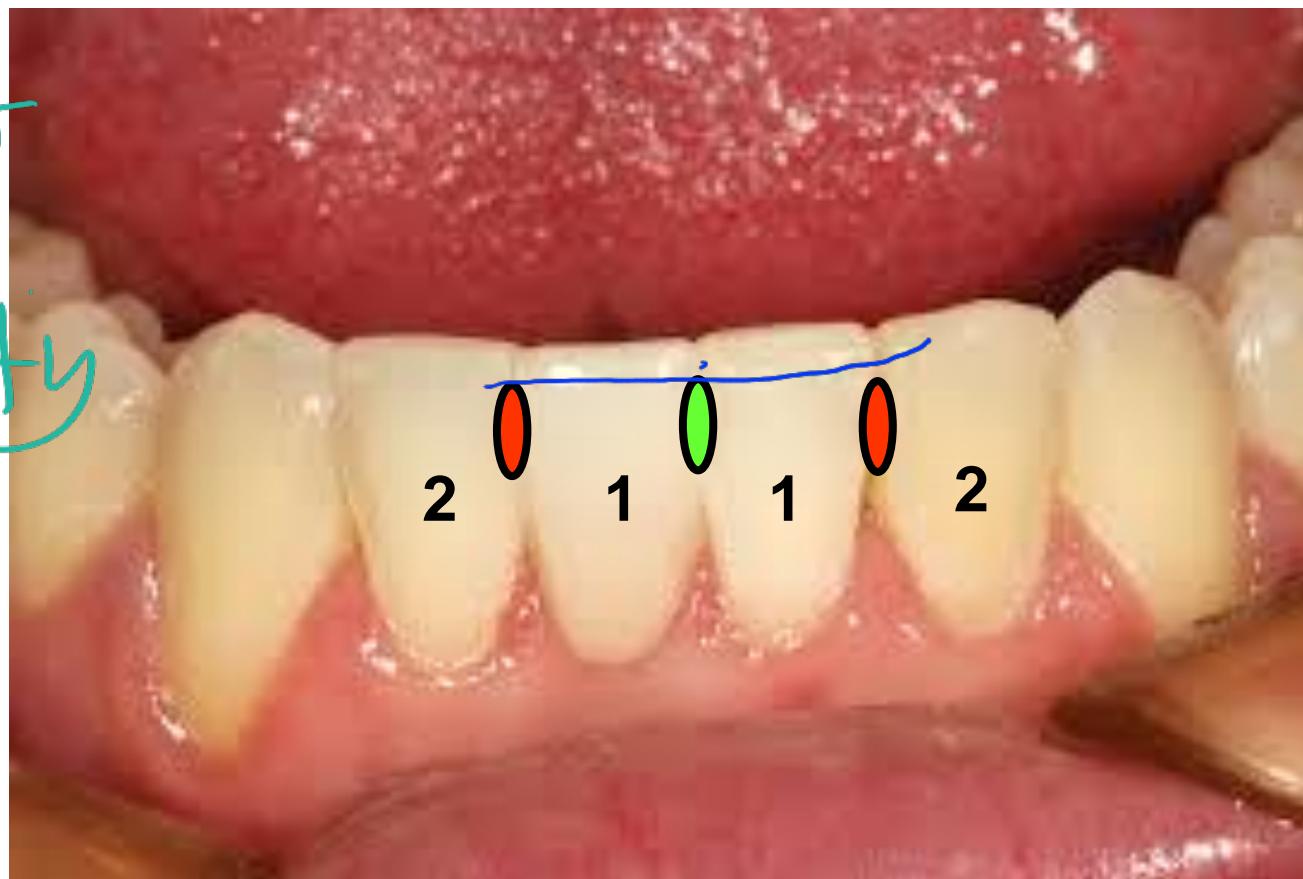


Relation

The two central incisors make contact **mesially** with each other and **distally** with the mesial surface of the lateral incisor.



contact point
at
max convexity



No. of surfaces

4 surfaces & incisal aspect.



Labial



Lingual



Mesial



Distal

No. of roots

one root.

Incisal



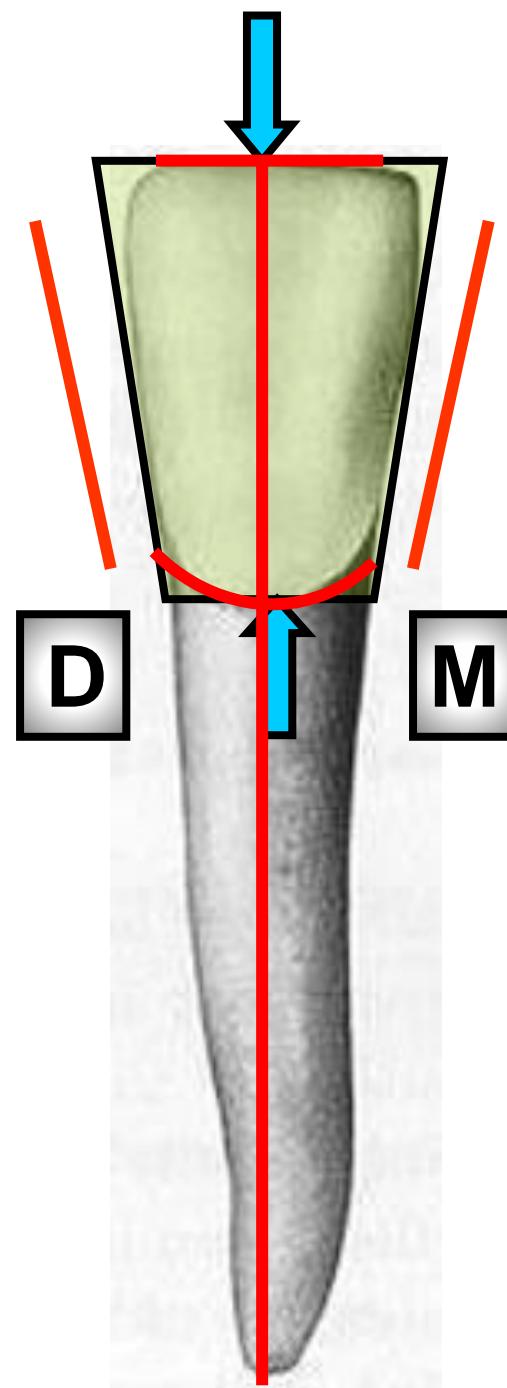
Labial aspect

Geometrical outline of the crown:
Trapezoid.

- The short side cervically.
- The long side incisally.

The outline:

- Mesial and distal outlines are **straight**.
- Incisal outline is **straight** and perpendicular to the long axis of the tooth.
- The cervical line is **convex root-wards**.



-The **mesio and disto-incisal angles** are sharp .

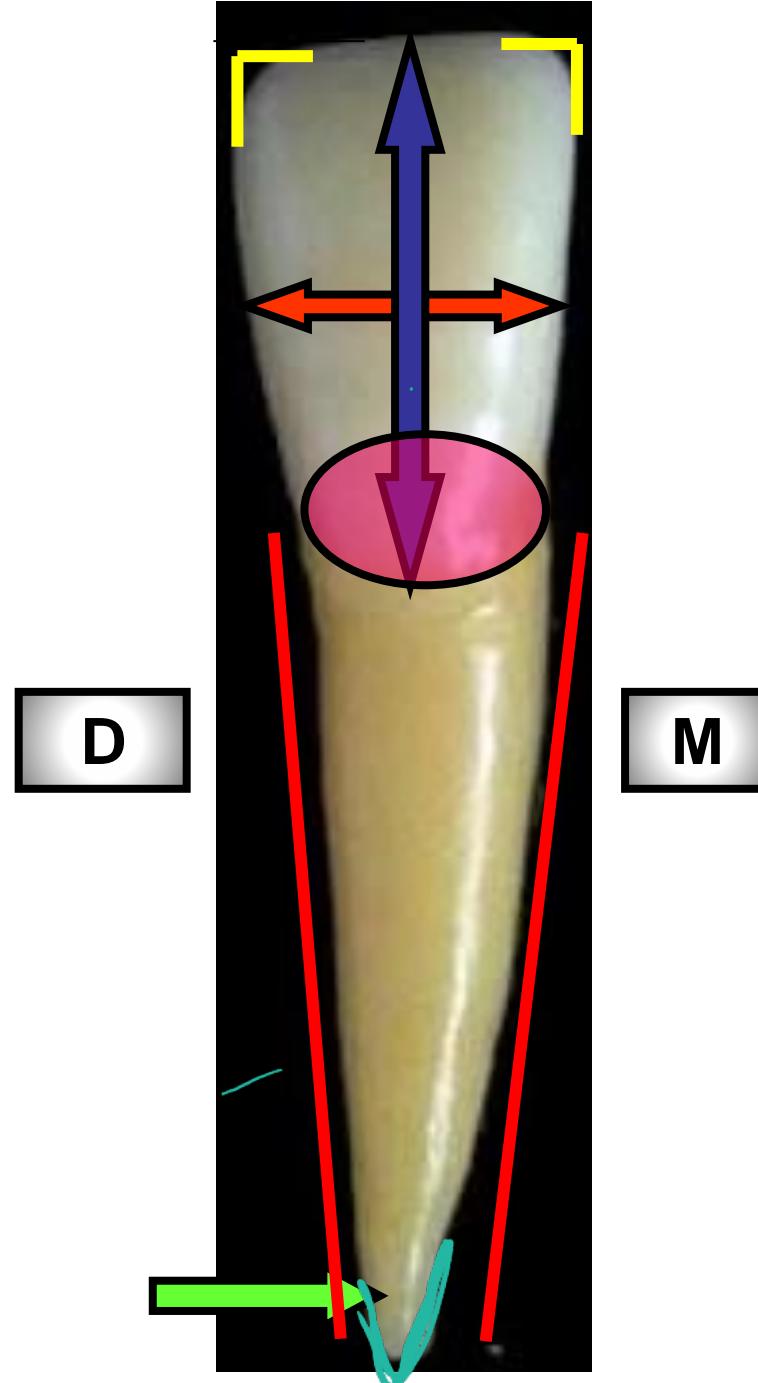
Surface anatomy:

-The surface is **convex** both **mesiodistally** and **inciso-cervically**.

- elevation: cervical ridge

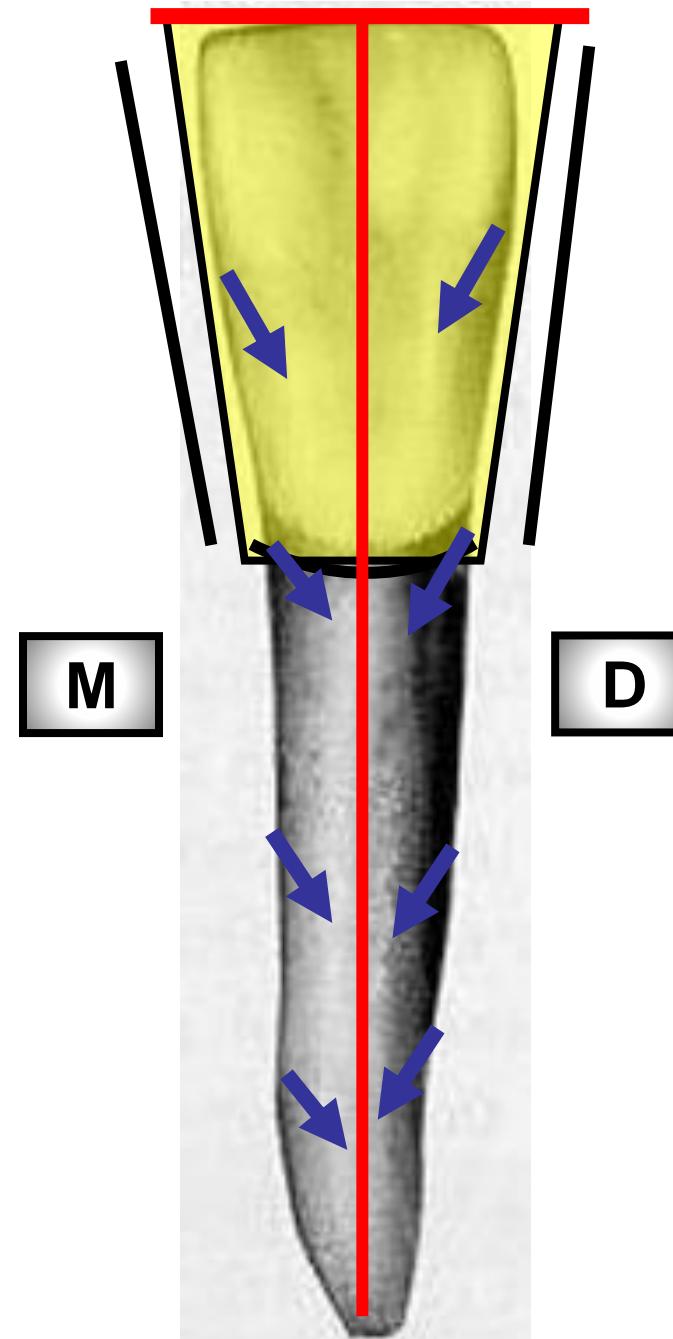
The root:

- It has a **single root**.
- It tapers evenly to apical 1/3 , then curve distally (or straight) with a pointed apex.



Lingual aspect

- It has the same geometrical outline and outline as the labial surface.
- The mesial and distal sides of the crown and root converge lingually (the lingual surface is narrower than the labial surface).
- This convergence to accommodate with the horseshoe shaped of the alveolar process.



Surface anatomy:

The elevations:

1- The cingulum (present at cervical 1/3).

2- ridges.

- Mesial marginal ridge.
- Distal marginal ridge.
- Incisal ridge.

The depressions:

- The lingual fossa (it lies between the previous elevations).

N.B All elevations and depression are poorly developed than the upper incisors.



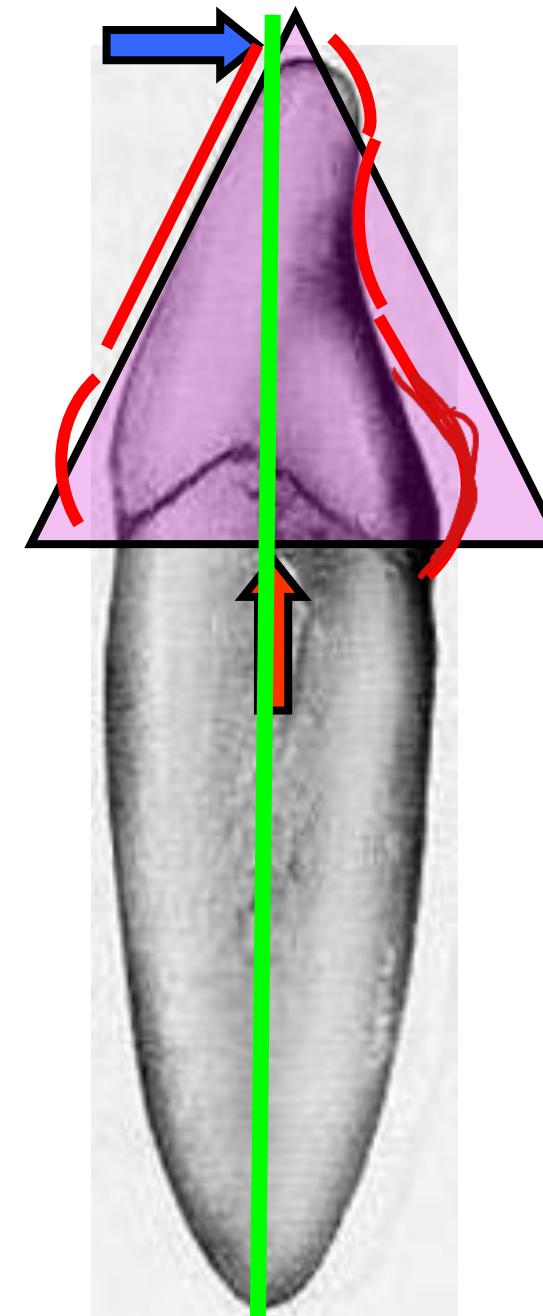
Mesial aspect

Geometrical outline of the crown:

- Triangular; the base **cervically** and the apex **incisally**.
- The incisal ridge is lingual to a line that bisects the center of the root.

The outline:

- The labial outline is convex at cervical 1/3 (cervical ridge). Then become straight to the incisal ridge.
- The lingual outline is convex at cervical 1/3 (cingulum). Then straight to concave at the lingual fossa. Then slightly convex for the incisal ridge.



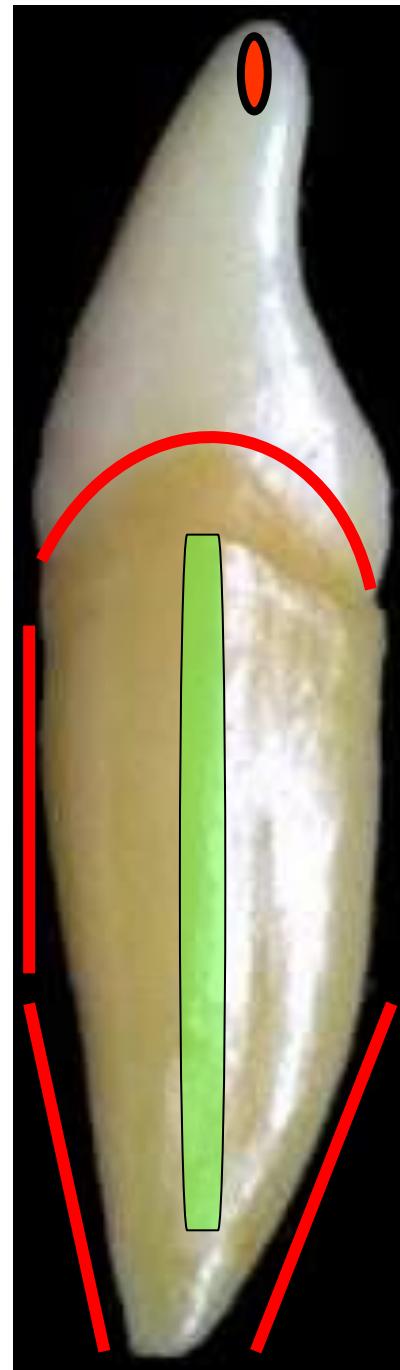
- The mesial cervical line is convex incisally.

Surface anatomy:

- The mesial surface is convex with the maximum convexity near the incisal ridge (the contact area).

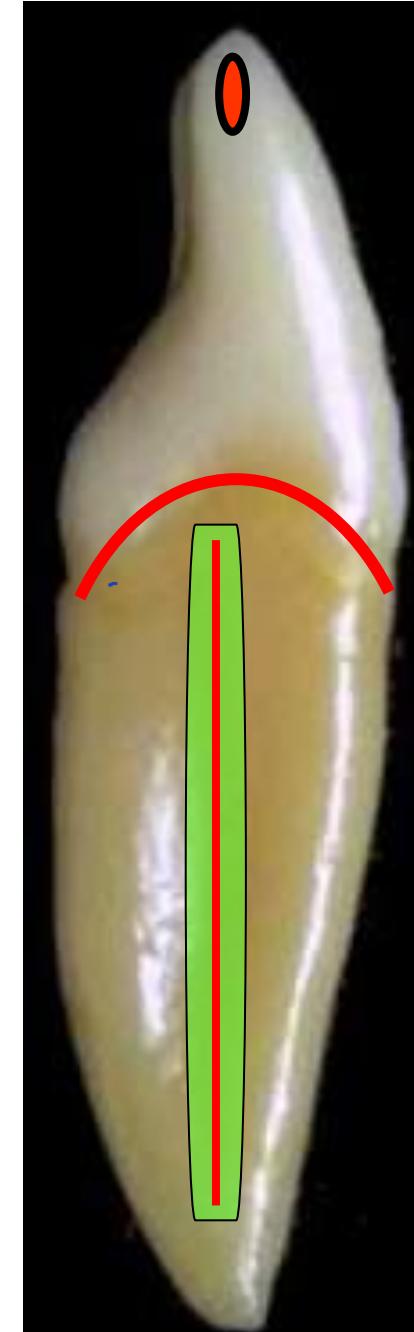
The root:

- The root outline is straight labially and lingually.
- It tapers in the middle third to a blunted or rounded apex.
- The root has a broad developmental depression.



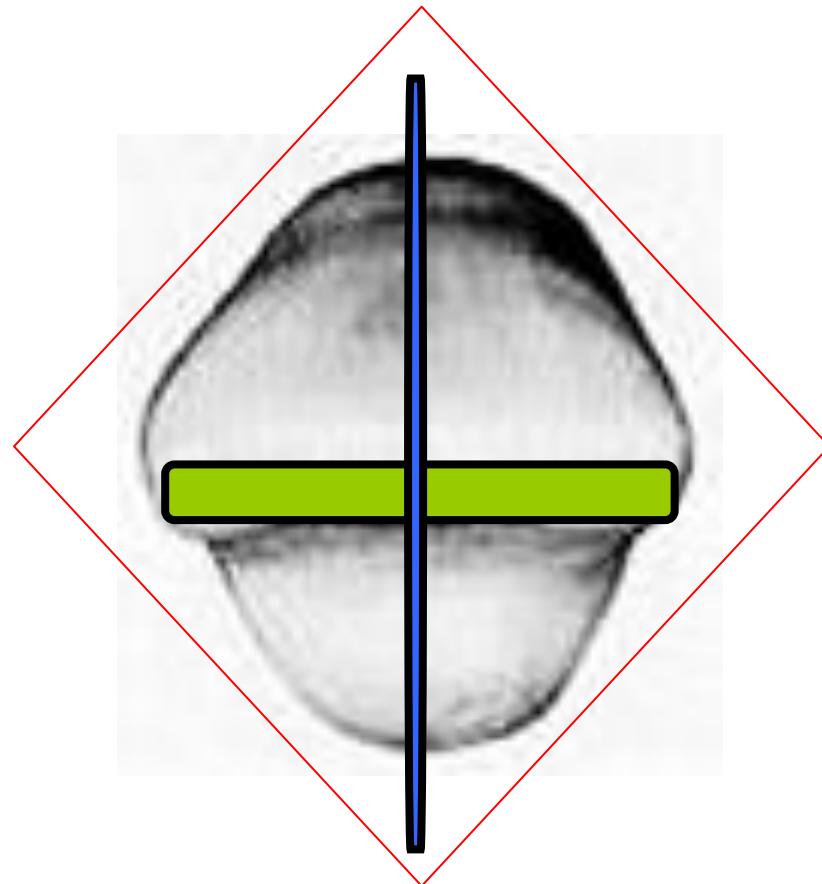
Distal aspect

- Similar to the mesial aspect but differ in.
 - The cervical line curvature is less than mesial (by 1 mm).
 - The distal contact area at the same level as the mesial surface.
 - The distal developmental depression on the root is **deeper** than mesial and may have **developmental groove**.



Incisal aspect

- Diamond in shape.
- The incisal edge is straight.
- The mesial and distal halves are identical.
- The incisal edge is perpendicular to a line bisecting the crown labiolingually.



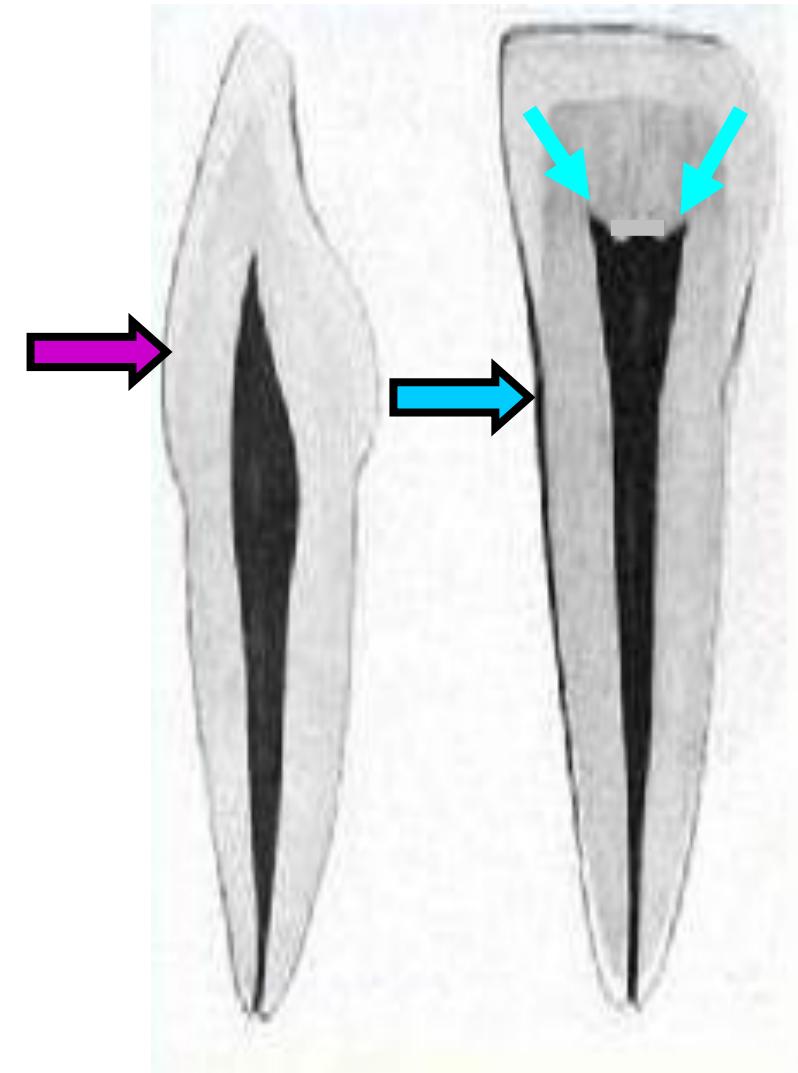
Pulp cavity

► Labio-lingual section

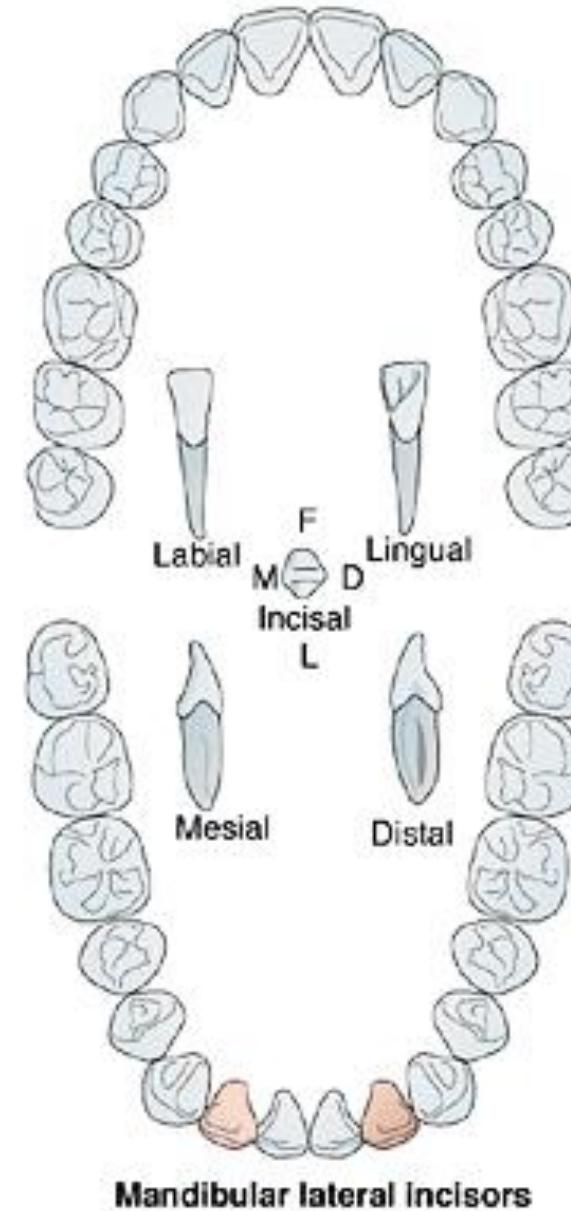
- The outline of the pulp cavity conform to the crown and root outline.

► Mesio-distal section

- The pulp chamber has 2 or 3 pulp horns.
- The root canal tapers to the apical foramen.



P. Mandibular lateral Incisor



Chronology

First evidence of calcification	3-4 m
Enamel completed	4-5 y
Eruption	7-8 y
Root completed	10 y

Type and function

incising food as well as esthetic.

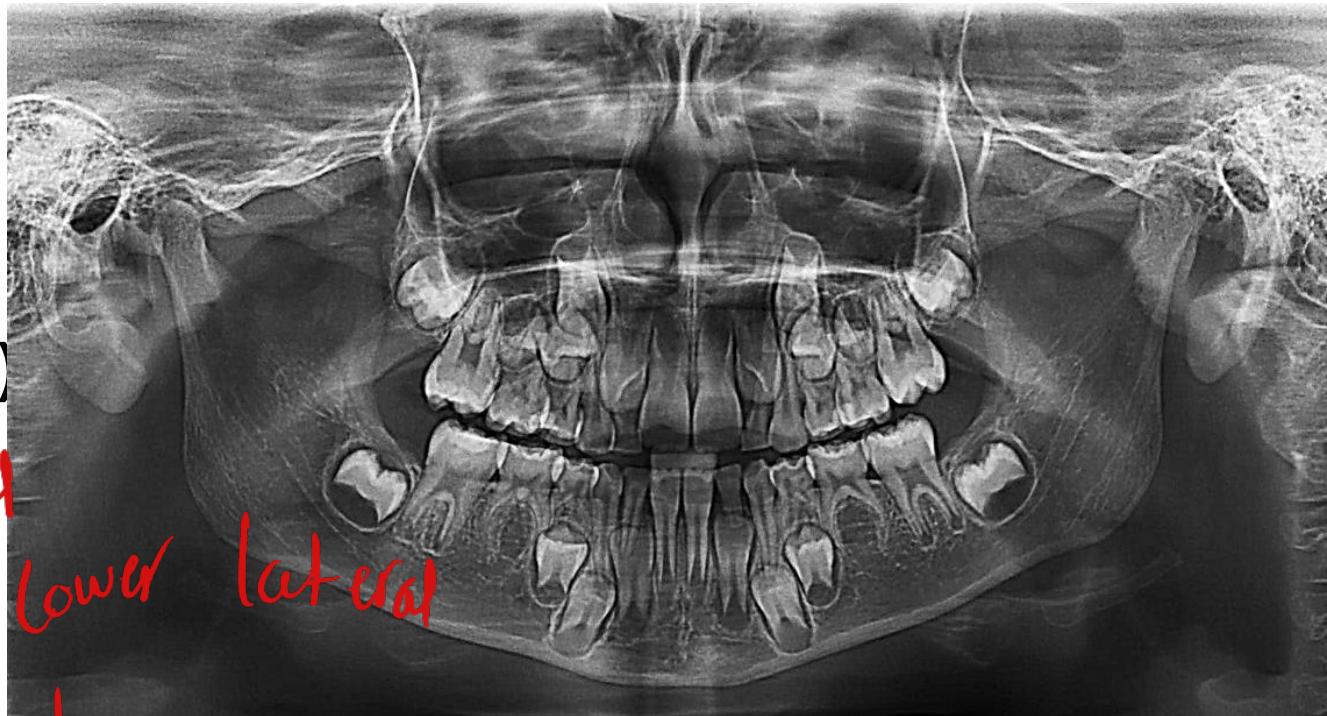
No. of lobes

It has 4 lobes (3 mamelons & cingulum)

6-7 ↗ Lower central

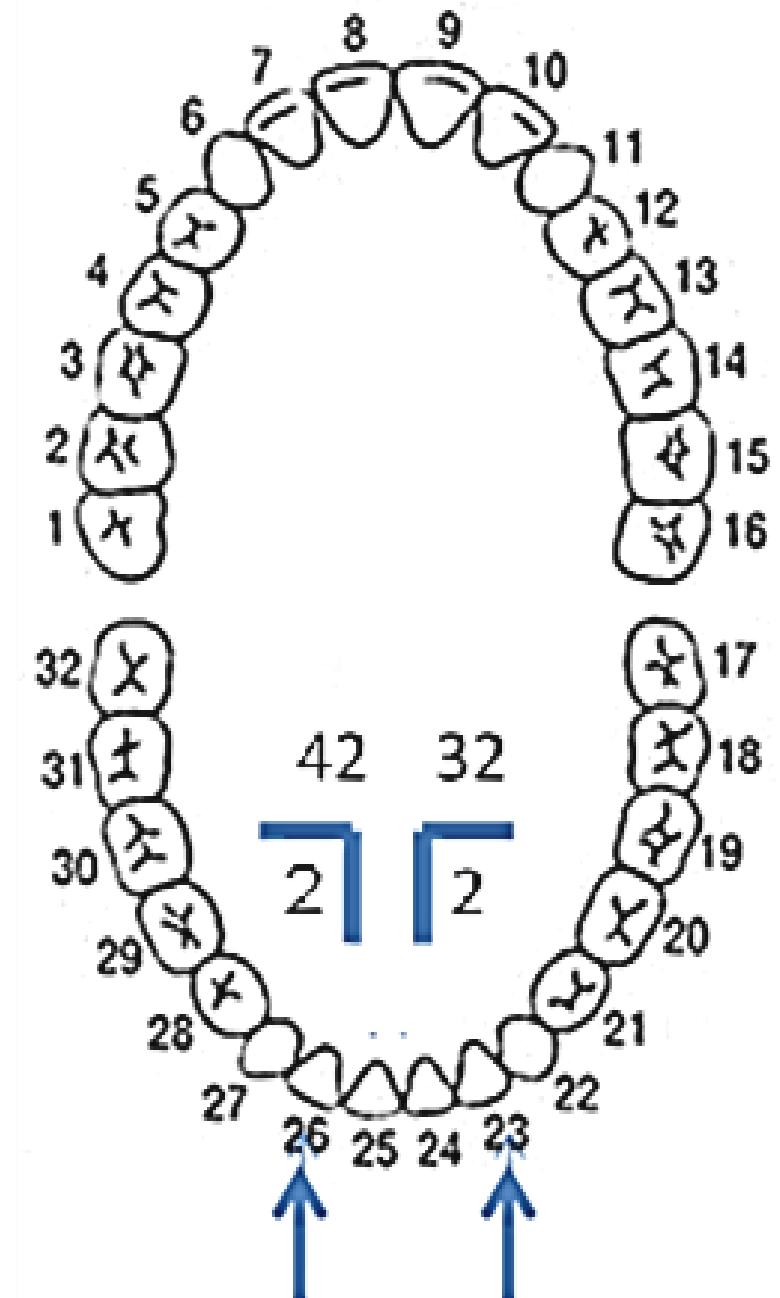
7-8 ↙ upper central & lower lateral

8-9 ↙ upper lateral



- **Numbering system**

	Mandibular right lateral incisor	Mandibular left lateral incisor
universal system	# 26	# 23
Two-digit system	42	32
Palmer notation system	2	2



Relation

The lateral incisors make contact **mesially** with the distal surface of the central incisors and **distally** with the mesial surface of the canines.



No. of surfaces

4 surfaces and incisal aspect.



Labial



Lingual



Mesial



Distal

No. of roots
one root.

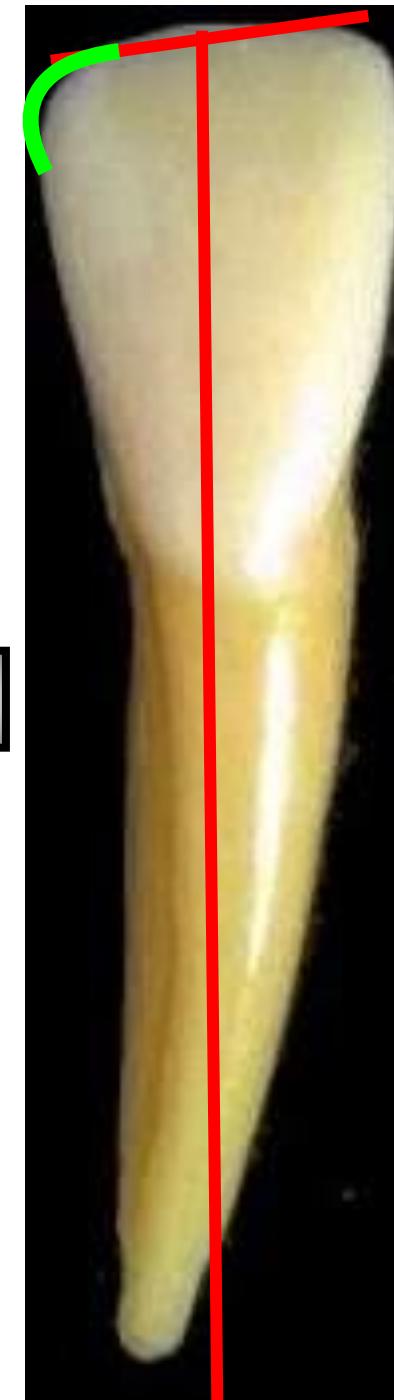
Incisal



- It appears to have nearly the same form as the mandibular central incisor, **SO** direct comparison will be discussed.

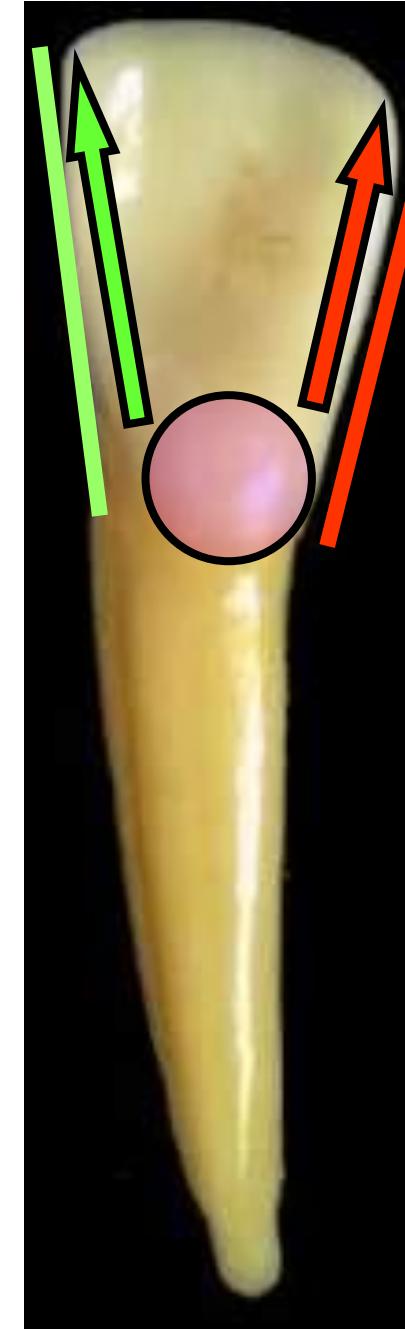
Labial aspect

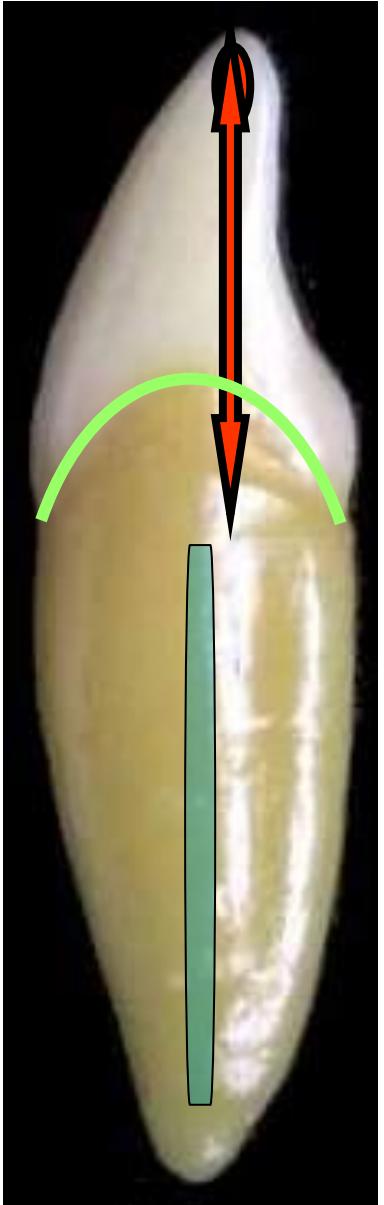
- It is **larger** than the central by about 0.5 mm in all dimensions.
- The **incisal edge** is straight and slopes downward in a distal direction.
- The **distal angle** is rounded.
- The root is longer than the central incisor.



Lingual aspect

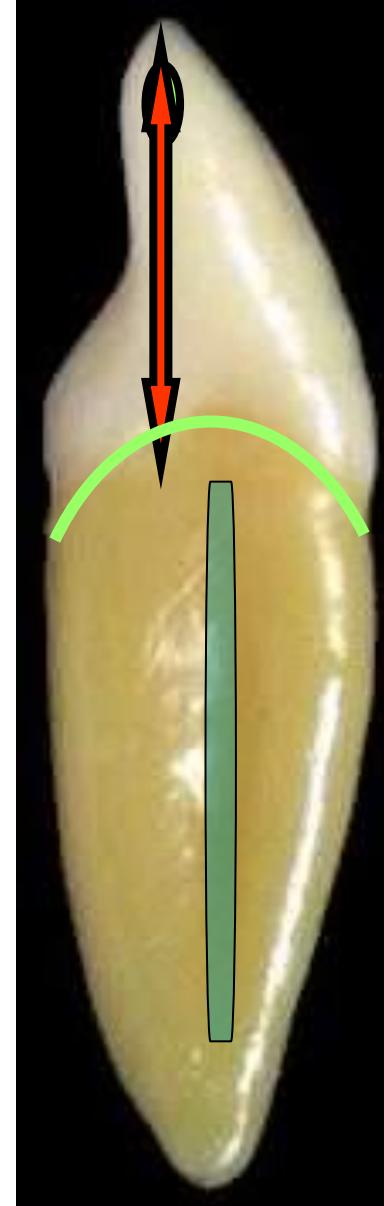
- The **mesial outline** is longer than the **distal outline**.
- The **mesial marginal ridge** is longer than the **distal marginal ridge**.
- The **cingulum** is deviated distal to the center of the lingual surface.





Mesial aspect

- The distal surface is shorter inciso-cervically.
- Both cervical lines are less than those of the central incisor.
- The **distal** contact area is more cervical than the **mesial** one.
- Root depressions are seen on both the mesial and distal surfaces.



Distal aspect

Incisal aspect

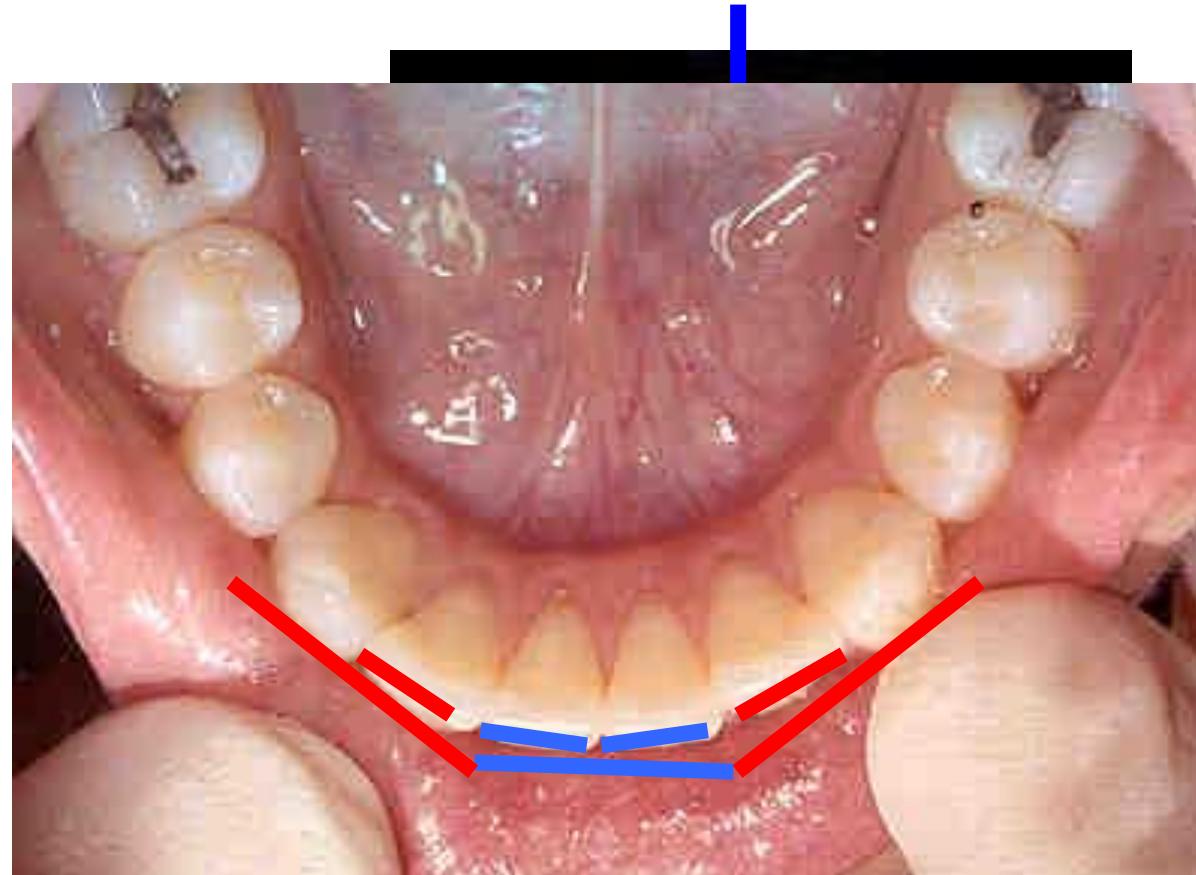
- The crown appear to be twisted on root.

- The distal lobe is larger than the mesial lobe.

- The **incisal edge incline** lingually.

- The cingulum deviated distally.

- This form to fit the mandibular arch.





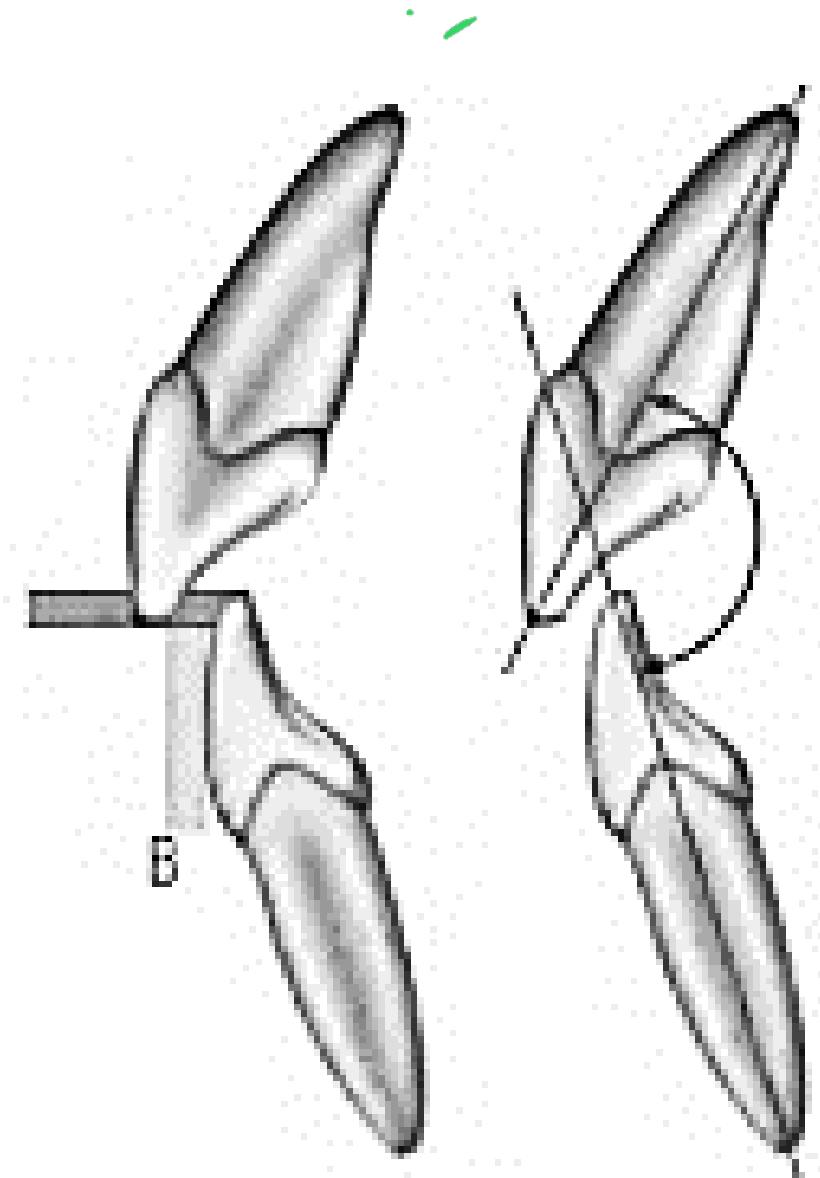
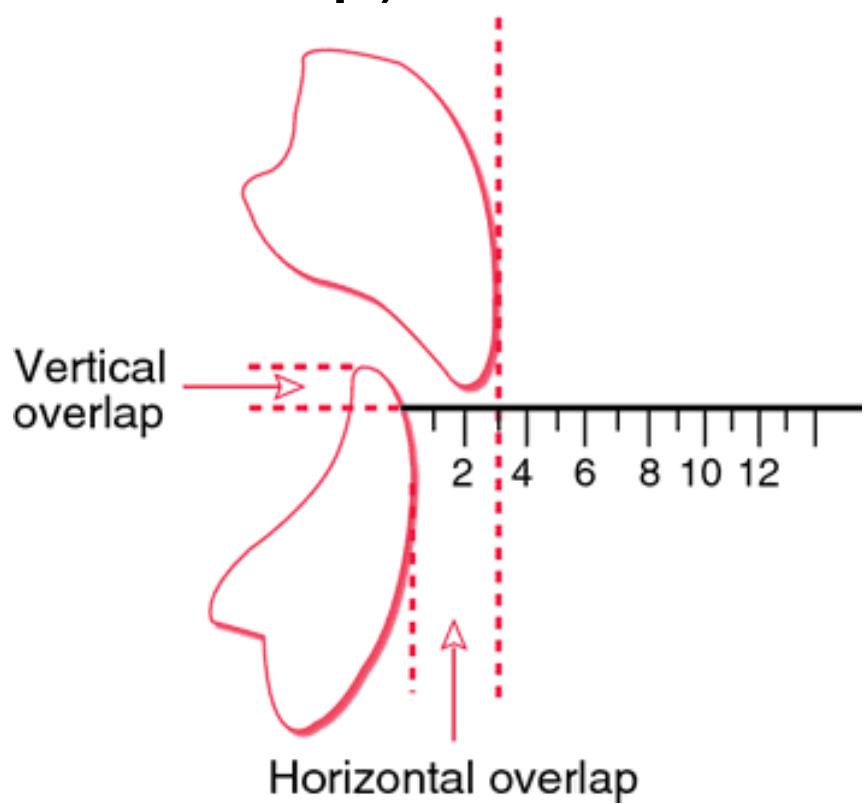
Clinical significance

Lingual inclination

- **Overjet** (horizontal overlap) &
- **Overbite** (vertical overlap).....

Prevent lip biting

Bite
order



Identify the aspect and tell THREE differences between the lateral and central incisor.

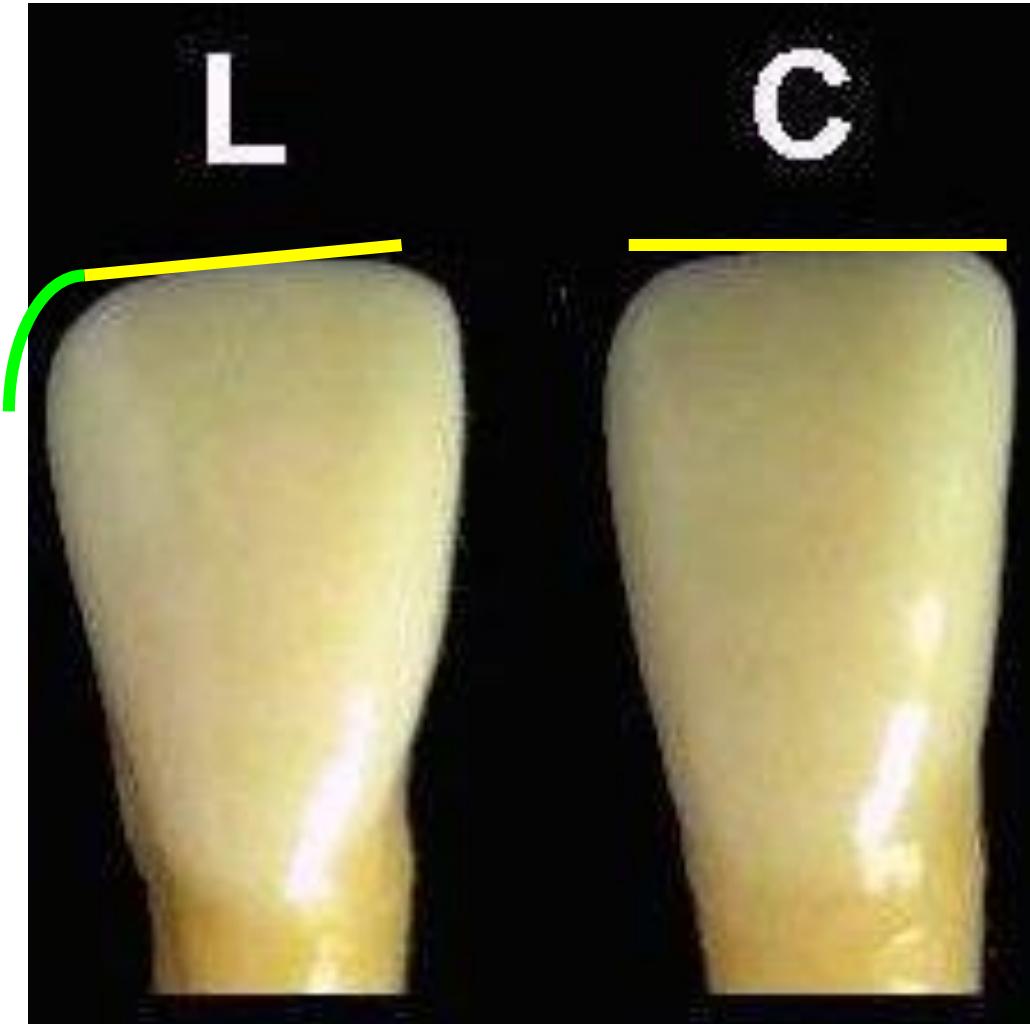
Answer

Labial aspect.

1- The size.

2- Incisal edge.

3- The incisal angles.



<u>Mandibular central Incisor</u>	<u>Mandibular lateral Incisor</u>
1- smaller with short root	Slightly larger with longer root
2- MCA and DCA are nearly at the same level in the incisal third	The DCA more cervical than MCA The MCA in the incisal third The DCA at the junction of middle and incisal third
3- Sharp mesioincisal and distoincisal angles	More rounded mesioincisal and distoincisal angles
4-The M and D outlines are in the same length	The D outline is shorter than the M outline
5- The incisal edge is straight	The incisal edge is sloped distally
6- The Cingulum is centered	The Cingulum is deviated distally



Thank you