



(4) Permanent Maxillary Central Incisor

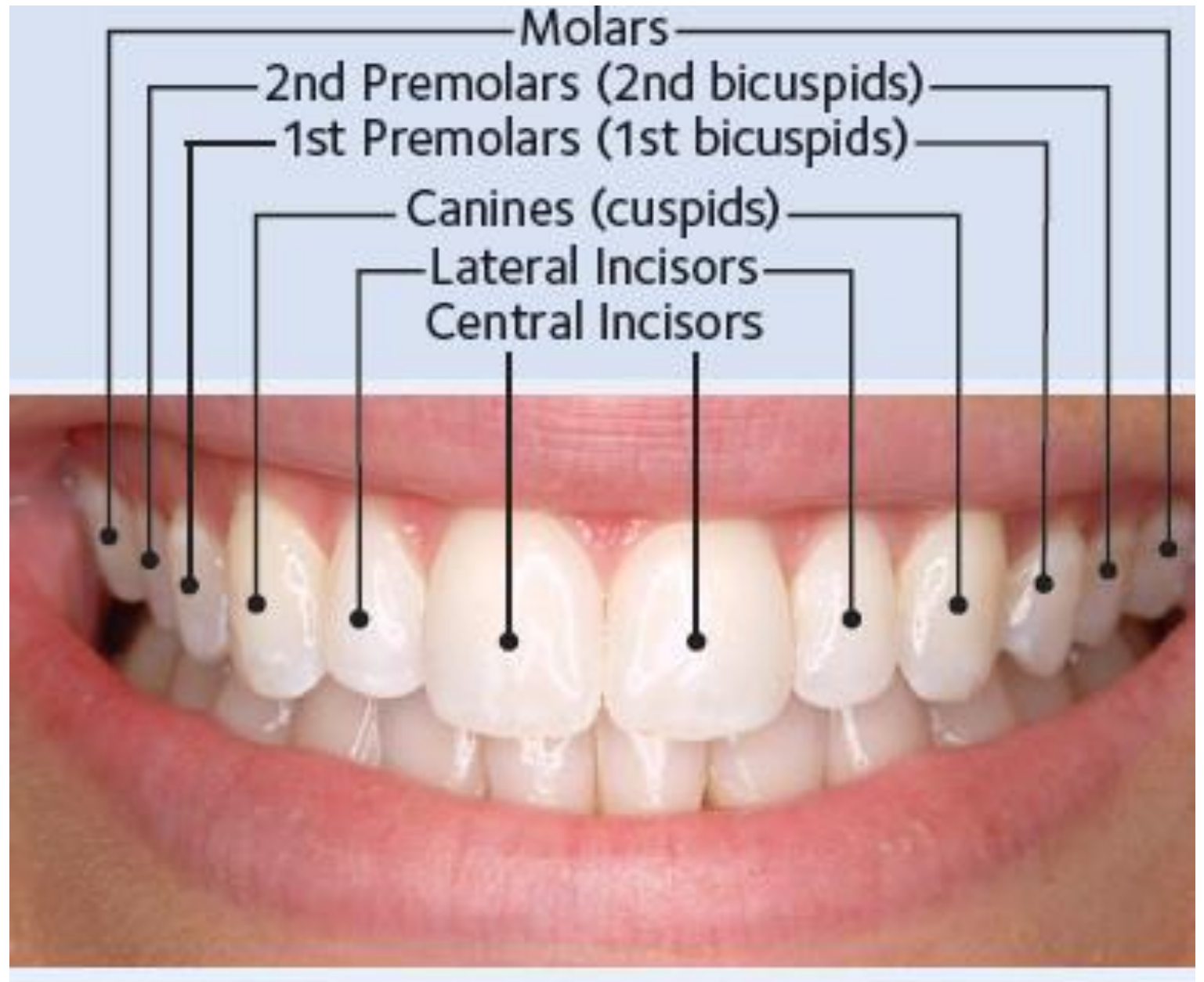
By

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Permanent Teeth



The ideal way to describe a tooth

It is easier to follow these steps:

- **Chronology** (dates) enamel organ appearance, beginning of calcification, enamel or crown completed, eruption and root completed.
- **Type** (anterior or posterior) & **function** (incising, grinding etc)

No. of lobes.

- **Numbering system** (universal, palmar notation, FDI)
- **Relations** (contact with what tooth mesially and distally).
- **No. & name of surfaces.**
- **No. of root (s).**

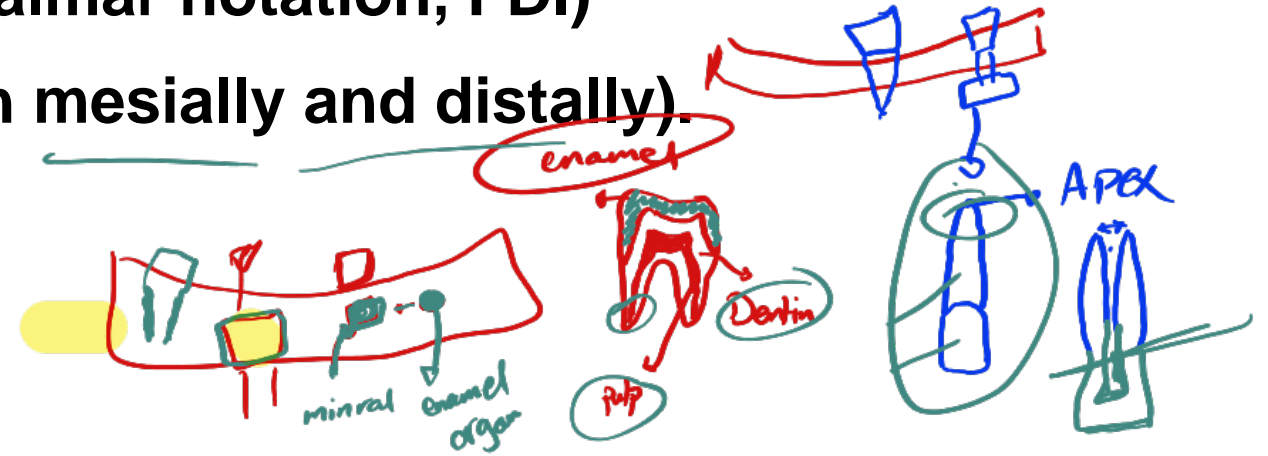
تكون طبقة
المينا

mixed

الشكل

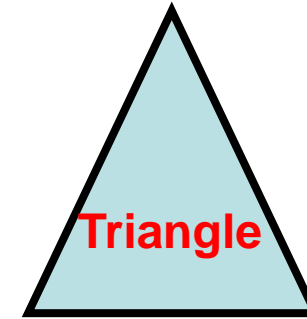
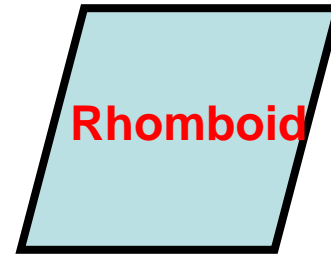
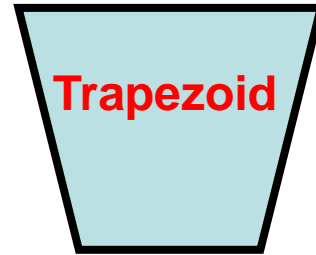
مختلف

ما يفتح
ما لا يفتح
Apex

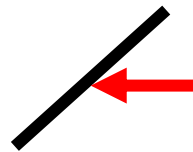


❑ To describe each tooth aspect the student should follow the following:

► Geometric outline.



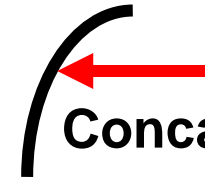
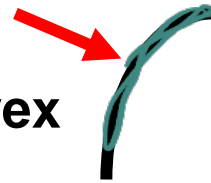
► Outline.



Straight

+ slightly حَفِيف

Convex



Concave



► Surface anatomy.

Elevations and depressions present on the surface.

► Root curvature.

► Pulp cavity.

→ pulp shape mimic external shape

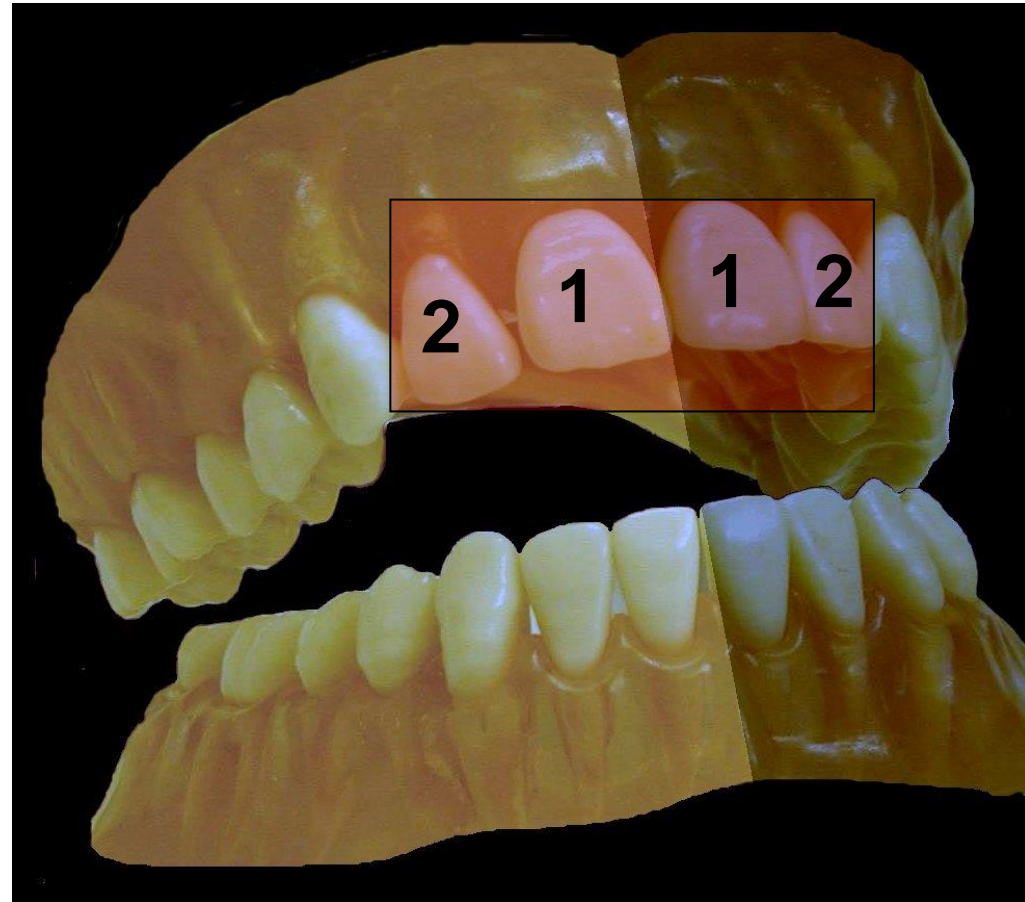
- No. of pulp horns, shape of pulp chamber and no. of root canal(s).

Permanent Maxillary Incisors

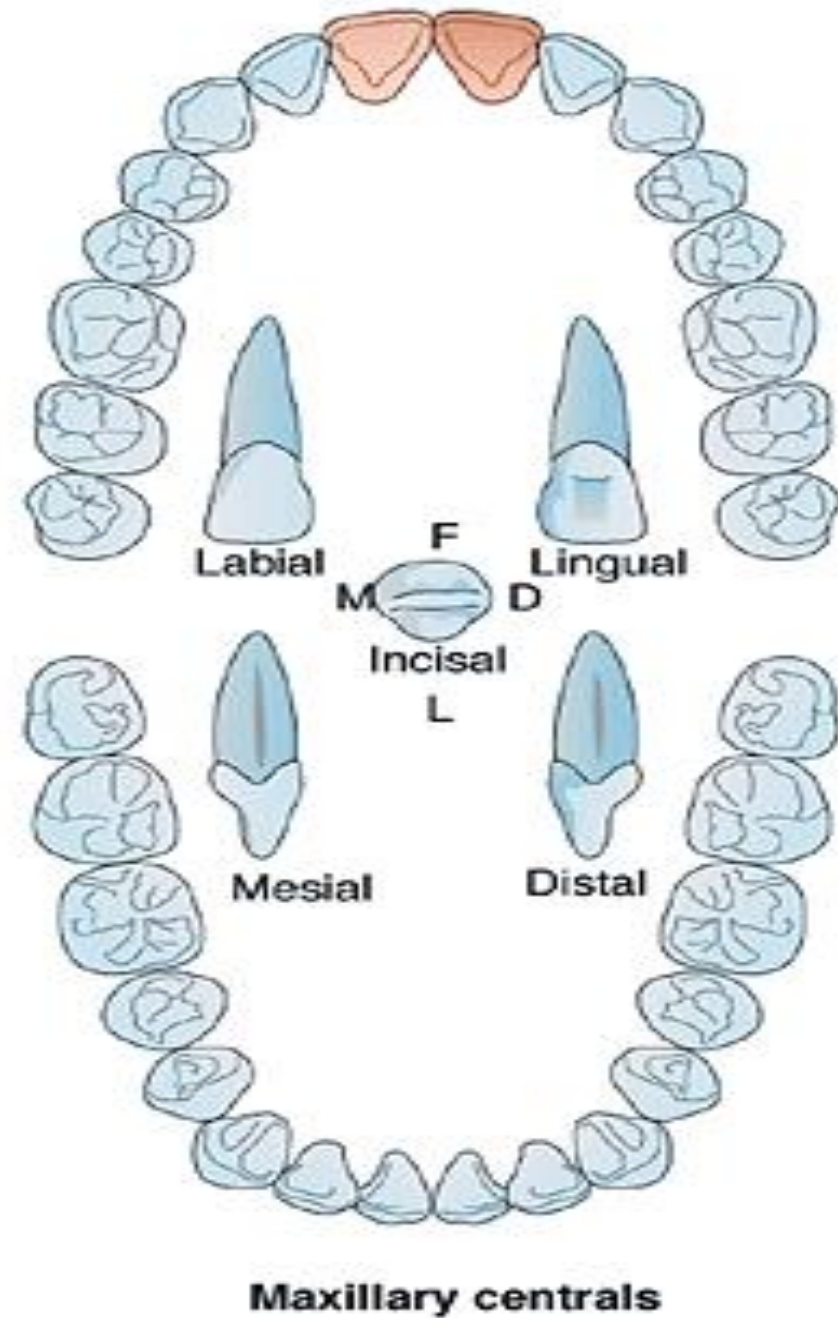
☺ There are 4 maxillary incisors.
2 per each quadrant.

☺ 2 central incisors
~~✗~~ contact each other at the midline.

☺ 2 lateral incisors distal to the central incisor.



Permanent Maxillary Central Incisor

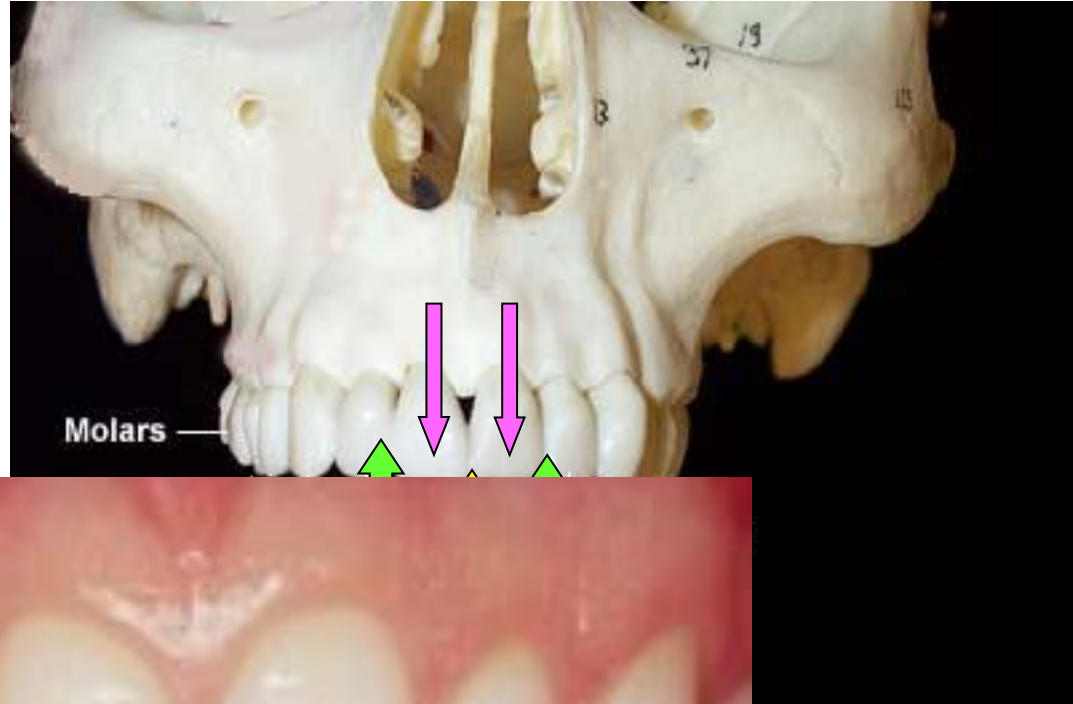


Permanent Maxillary Central Incisor

☺ There are 2 central incisors in upper jaw.

☺ The upper central incisor is the **broadest** tooth of the anterior teeth.

العرض



❑ To describe the general characteristics of the permanent maxillary central incisor we should follow the previous steps:

- **Chronology**

First evidence of calcification

Enamel completed

Eruption

Root completed

3-4 months

4-5 years

7-8 years

10 years

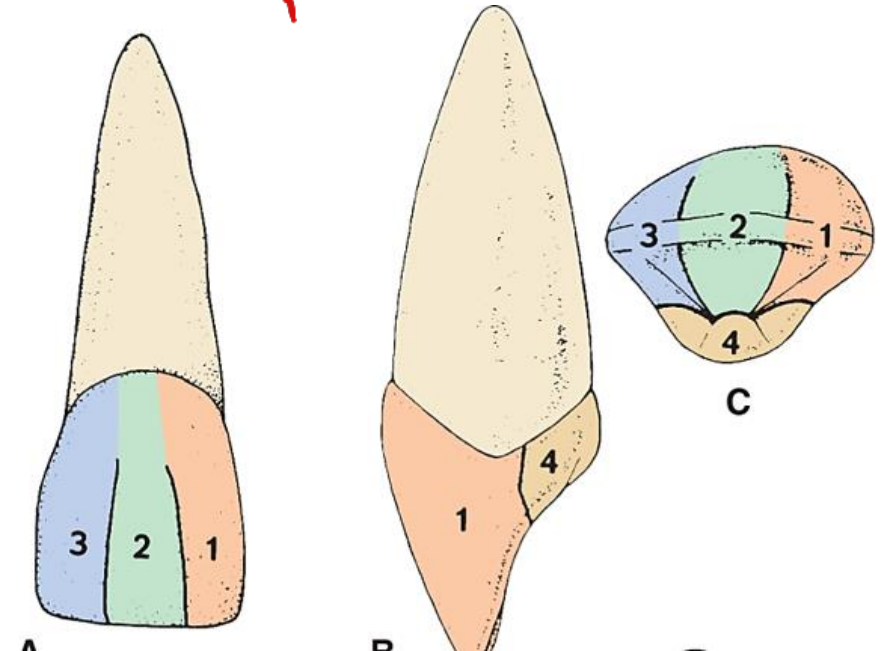
في وقت الظهور variation
على حسب gender
Thickness of bone
calcification of teeth
physiologic state
البيئة

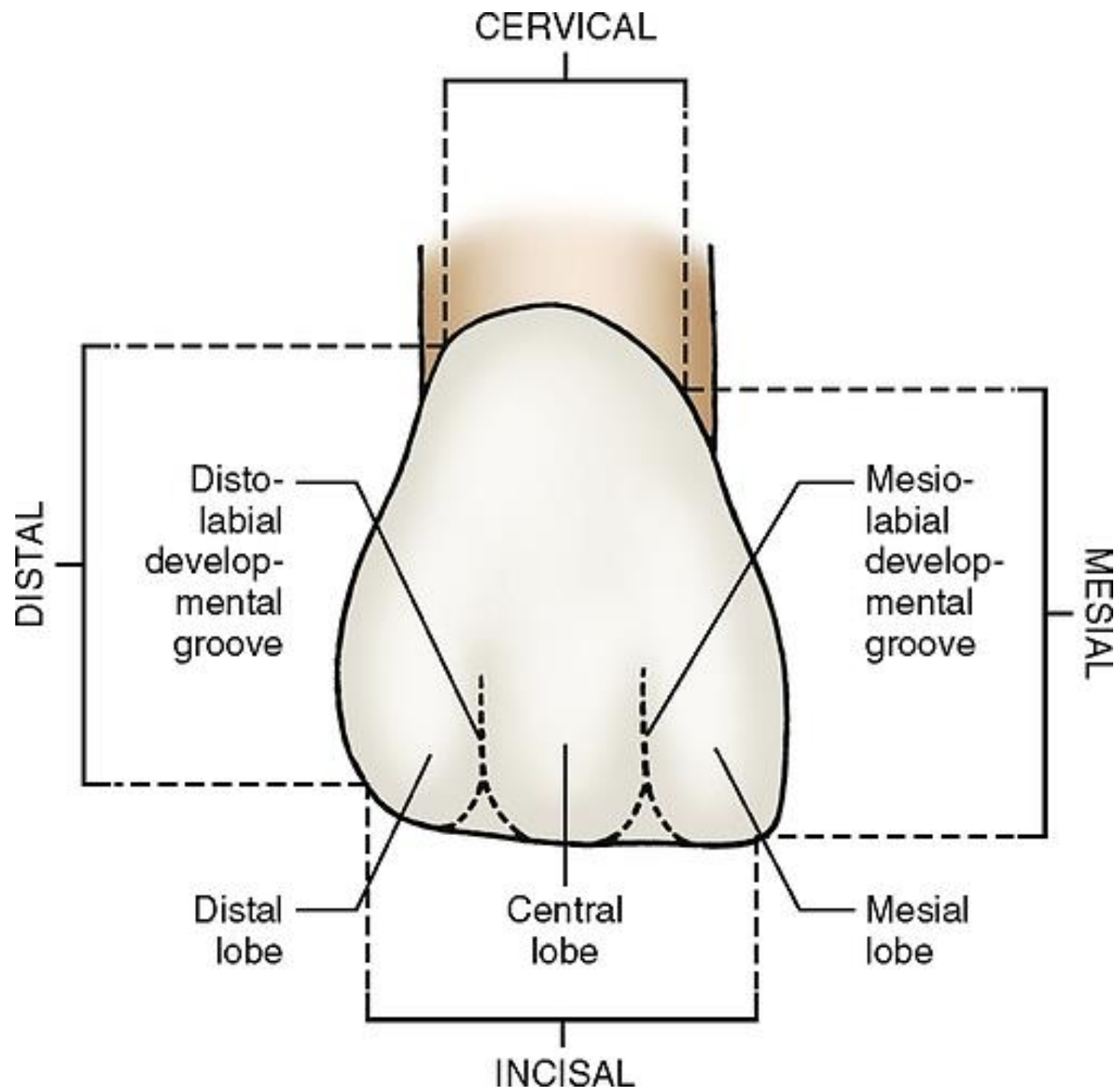
- **Type and function**

incising food as well as esthetic.

- **No. of lobes**

four lobes (three mamelons and cingulum)





- Numbering system**

	Right	Left
Universal Numbering System	#8	#9
Palmer System (Palmer/Zsigmondy System)	└1┘	└1┘
International System (F.D.I. or Fédération Dentaire Internationale)	1.1	2.1

- **Relation**

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



- **No. of surfaces**

It has four surfaces and incisal aspect.



Labial



Lingual



Mesial



Distal

Incisal



- **No. of roots**

It has **one root.**

Labial aspect

□ Geometric outline of the

crown: Trapezoid

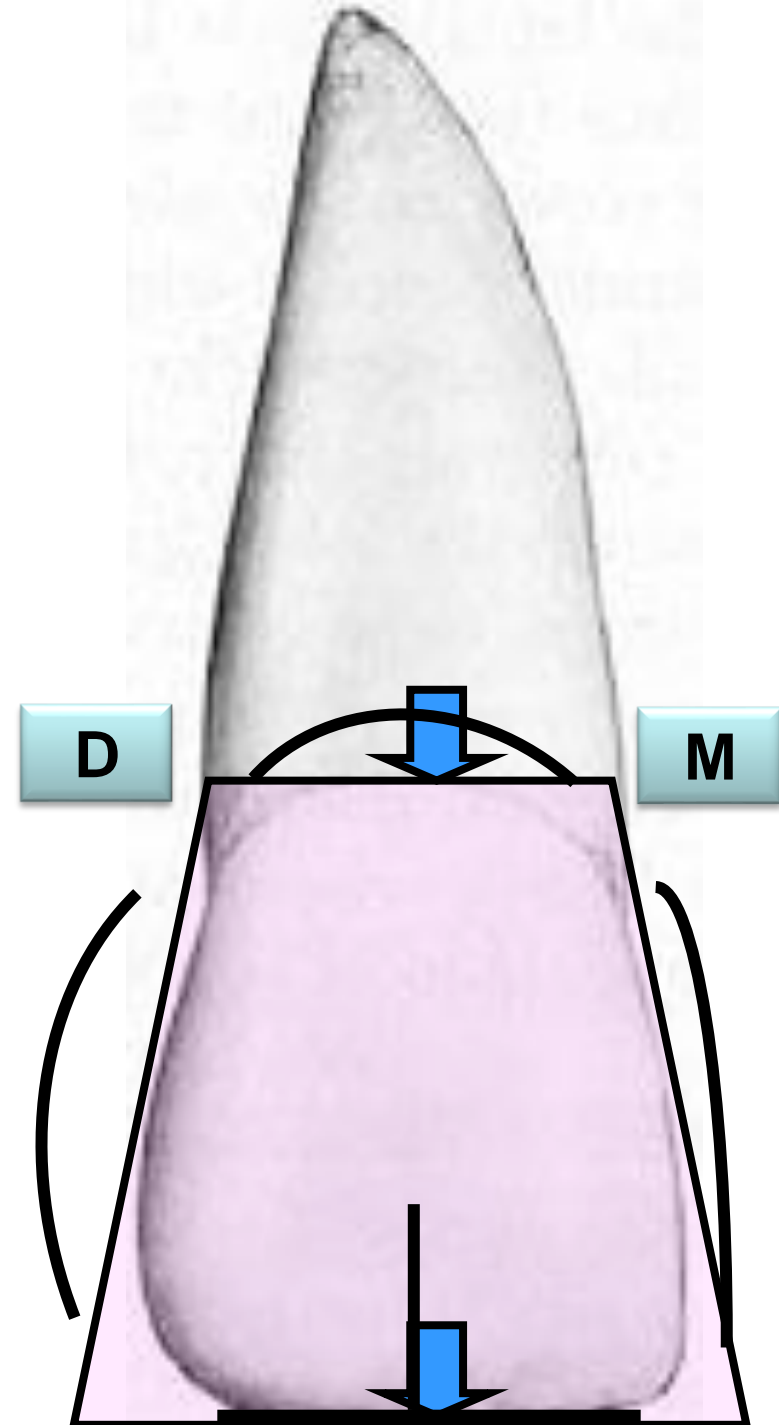
- The short side cervically
- The long side incisally

□ The outline:

- Mesial outline is slightly convex.
- Distal outline is more convex.
- Incisal outline is straight and perpendicular to the long axis of the tooth.

- The cervical line is convex root-wards.

or concave crown wards
Line bisecting the Root Apex



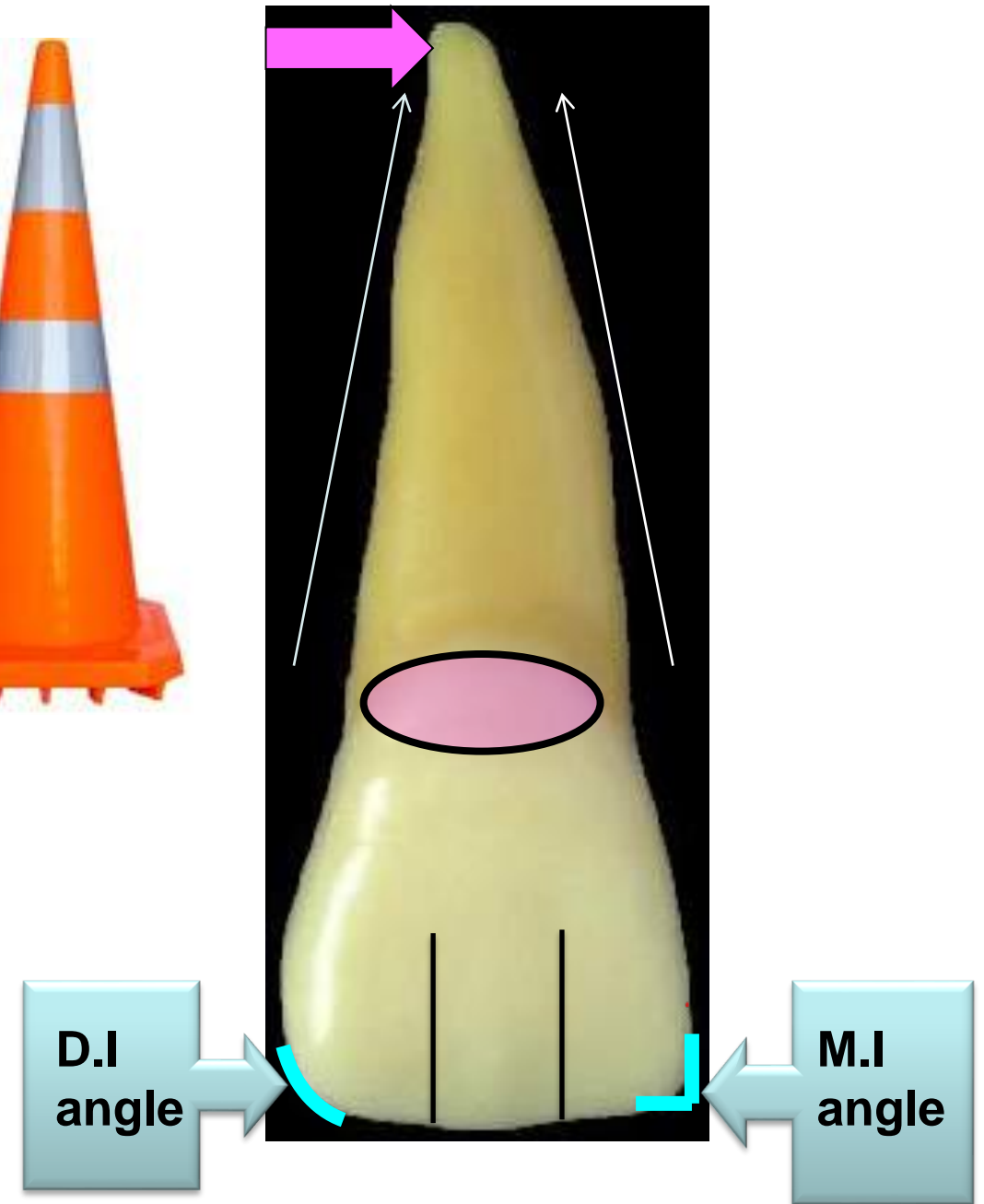
- The mesio-incisal angle is sharp.
- The disto-incisal angle is rounded.

☺ Surface anatomy:

- The surface is smoothly convex, it is flattened incisally.
- Cervical ridge located at cervical third.
- 2 developmental grooves.

☺ The root:

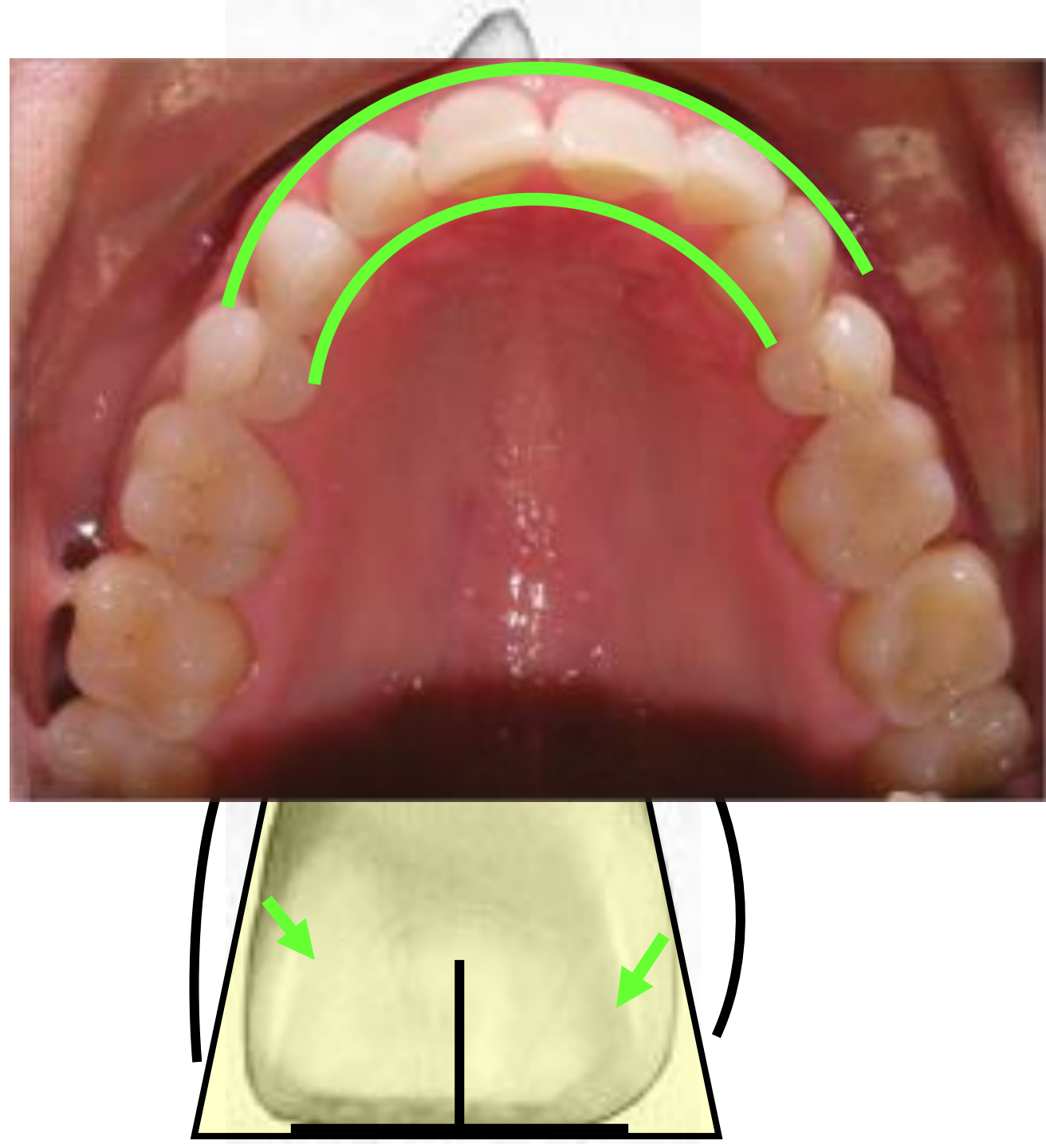
- It has a single root.
- It is cone shape with blunt apex.



Lingual aspect

- It has the same geometric 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.

The facial surface is larger than the lingual surface.



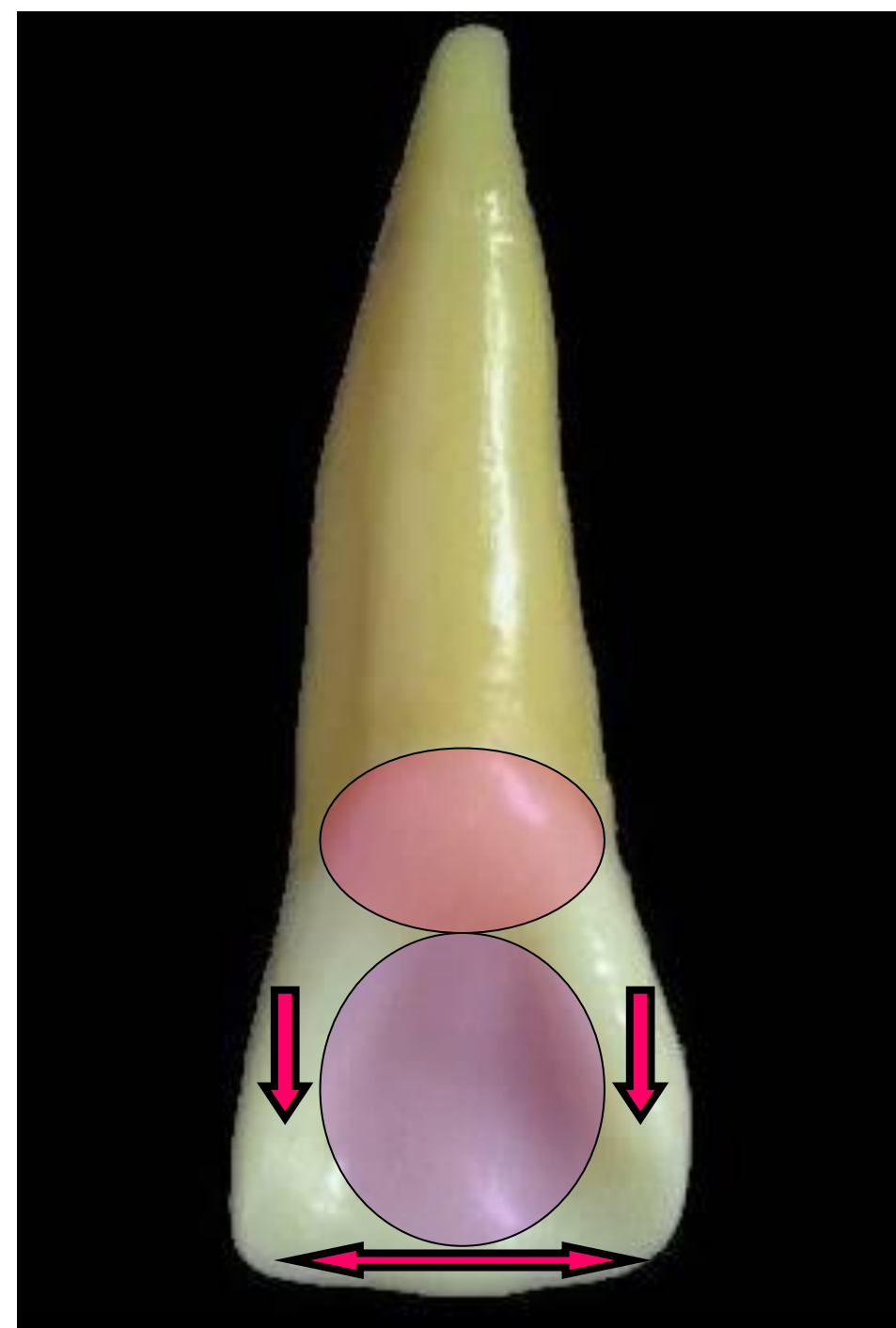
Surface anatomy

The elevations:

- 1- The cingulum (present at cervical 1/3.
- 2- Marginal ridges.
 - Mesial marginal ridge.
 - Distal marginal ridge.
 - Incisal ridge.

The depressions:

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



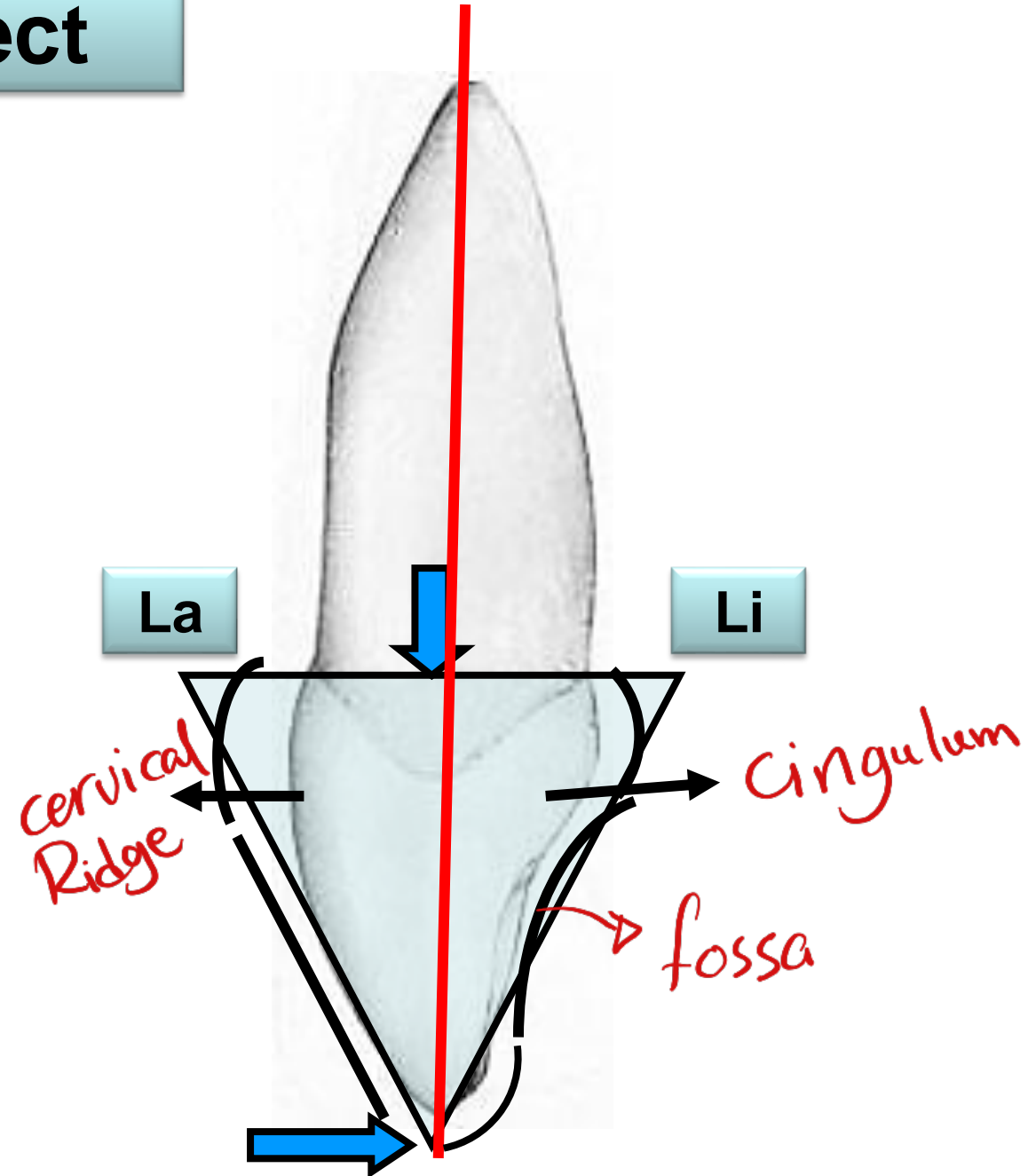
Mesial aspect

Geometric outline of the crown:

- Triangular: base... cervically & apex... incisally.
- The incisal ridge is on a line that bisects the center of the root.

The outline:

- **labial**: **convex** at cervical 1/3 (cervical ridge).
- Then become **flat** to the incisal ridge.
- **Lingual**: **convex** at cervical 1/3 (cingulum).
- Then **concave** at the lingual fossa.
- Then **slightly convex** for the incisal ridge.



- شازله دوقه دای
- The mesial cervical curvature is convex incisally. It is greater than any other teeth in the mouth.

Surface anatomy:

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

The root:

- It is cone shape with blunt apex.

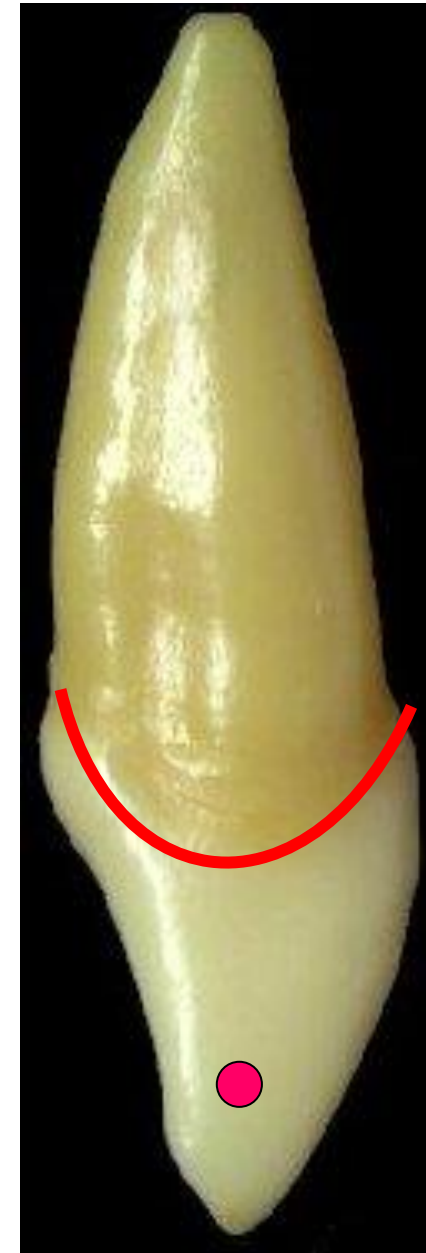


distal aspect

Similar to the mesial aspect but differ in.

2.5mm
- The cervical line curvature is less than mesial (by 1 mm).

-The contact area located at the junction between incisal & middle 1/3 s.

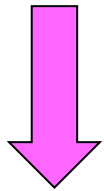




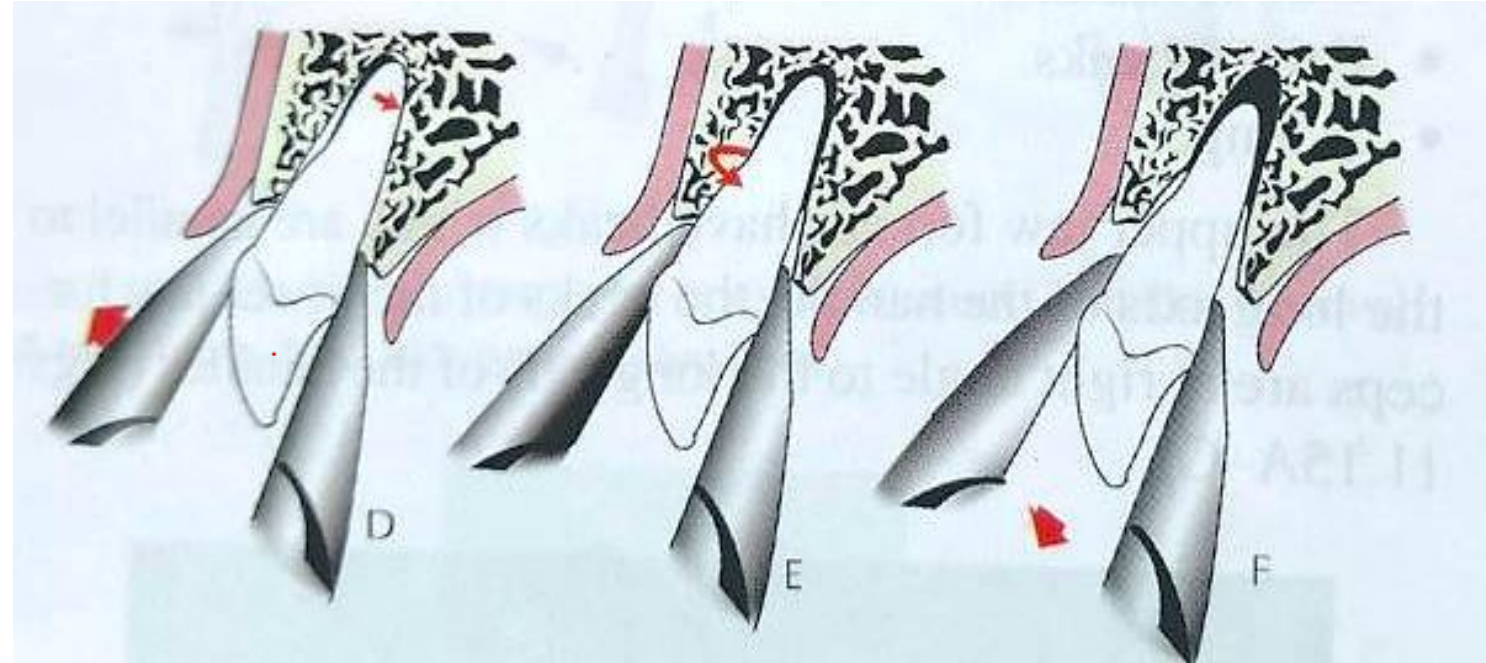
Clinical significance

- **Upper central incisor root:**

**cone shape with blunt apex
& centralized on the long
axis of the tooth.**



**Rotation movement for
extraction**



Incisal aspect

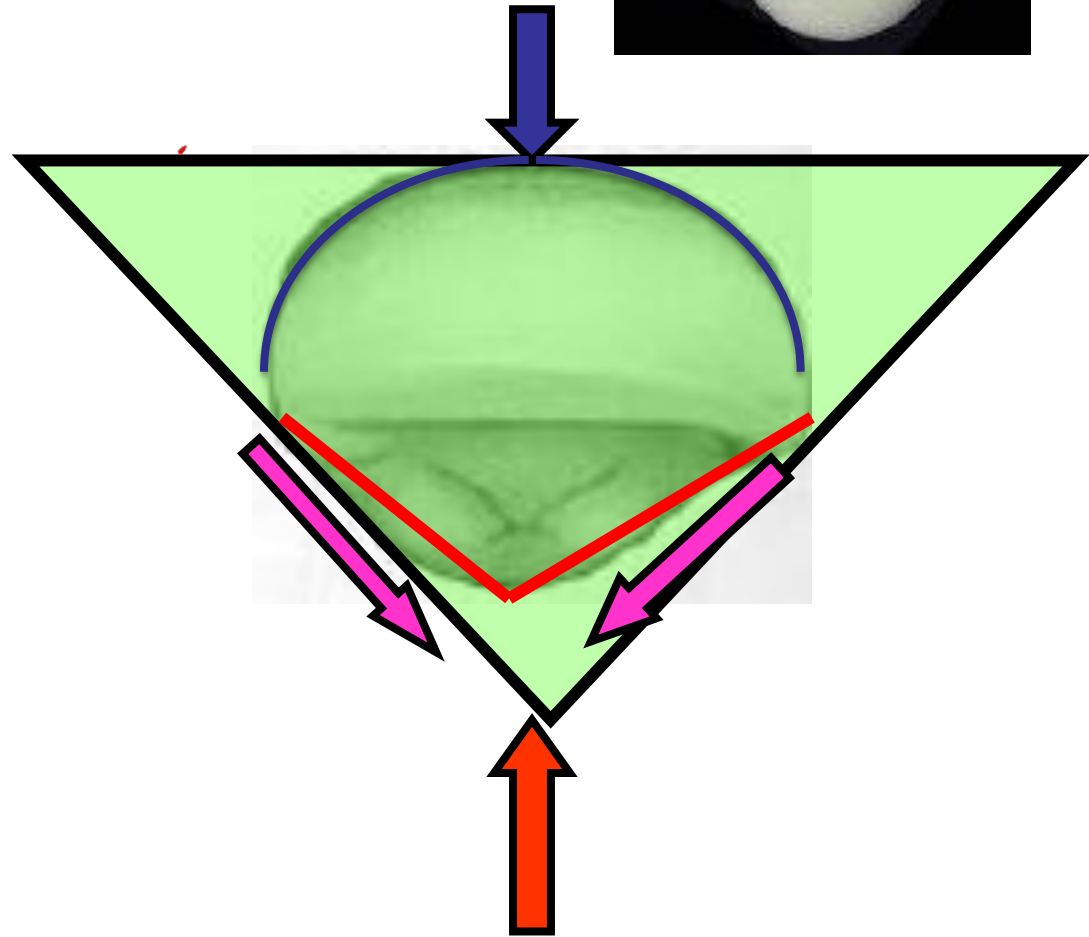
Geometric outline of the crown:

Triangular in shape.

- The base is placed **labially** and the apex **lingually**.

- ☉ The labial surface is broad and flat. The cervical portion of the crown is convex (cervical ridge).

- ☉ The lingual outline tapers lingually to the cingulum (lingual convergence).



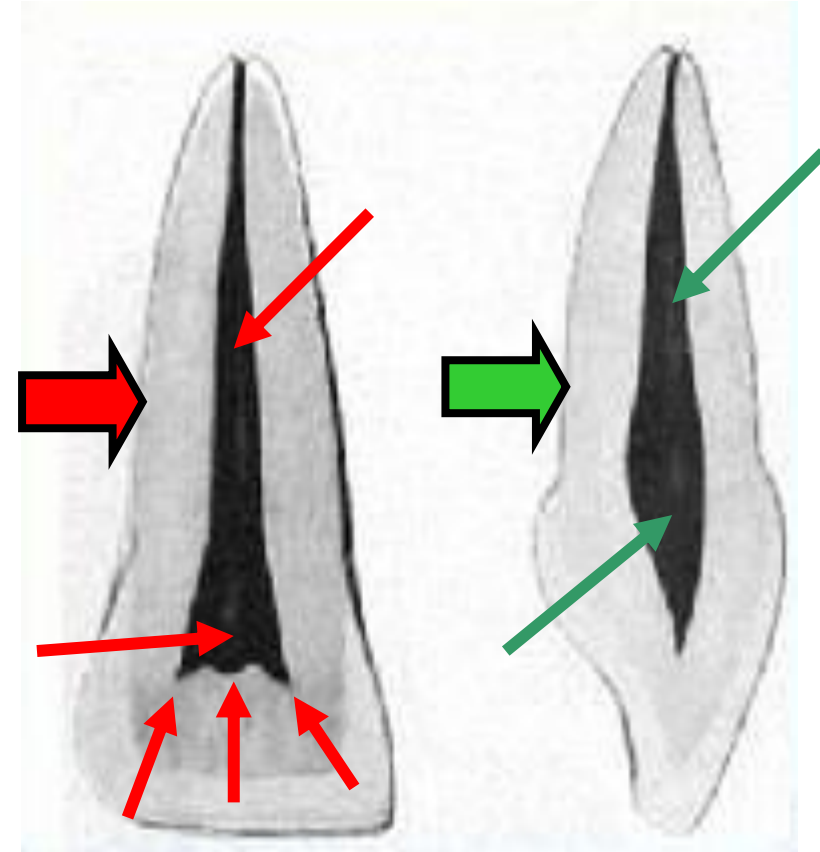
Pulp cavity

► Mesio-distal section

- The pulp chamber is wide conforming the shape of the crown.
- It presents three pulp horns corresponding to the three mamelons.
- The root canal tapers towards the apex.

► Labio-lingual section

- The pulp chamber pointed incisally, then follows the increase in the crown dimension cervically.



- The root canal tapers gradually as it traverse the root ending in a constriction at the apex (the apical foramen).





Permanent Maxillary lateral Incisor

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Chronology

First evidence of calcification

Enamel completed

Eruption

Root completed

1 year

4-5 years

8-9 years

11 years

Type and function

incising food & esthetic.

No. of lobes

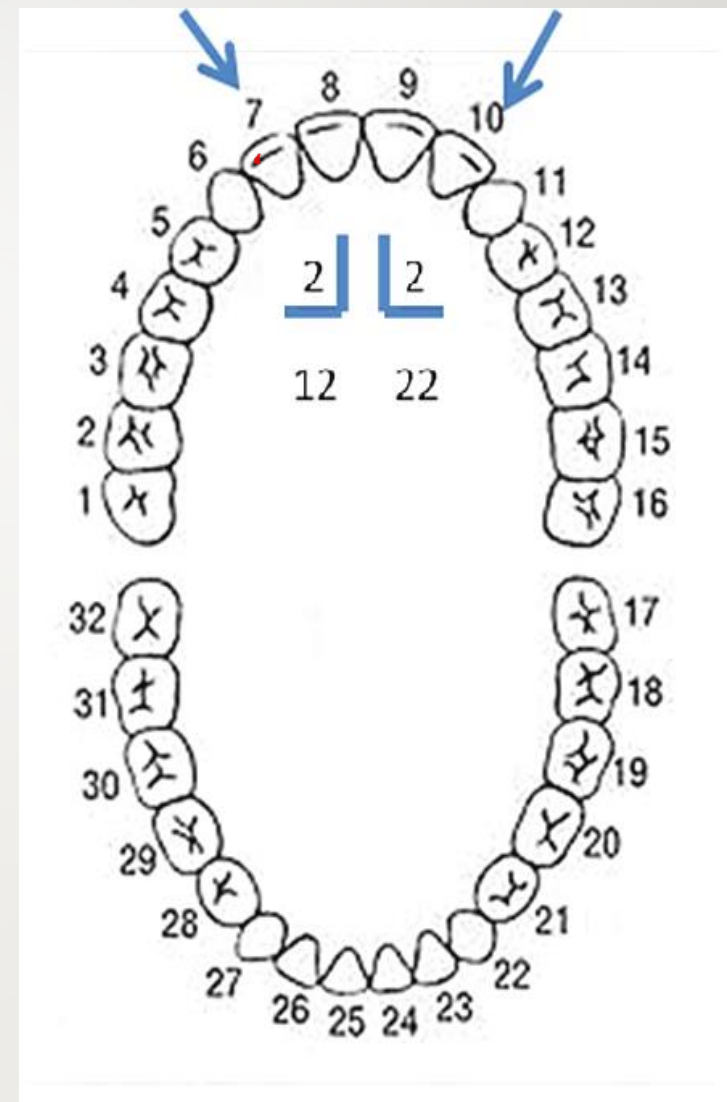
4 lobes (3 mamelons & 1 cingulum)

Development of the teeth Age 8



Numbering system

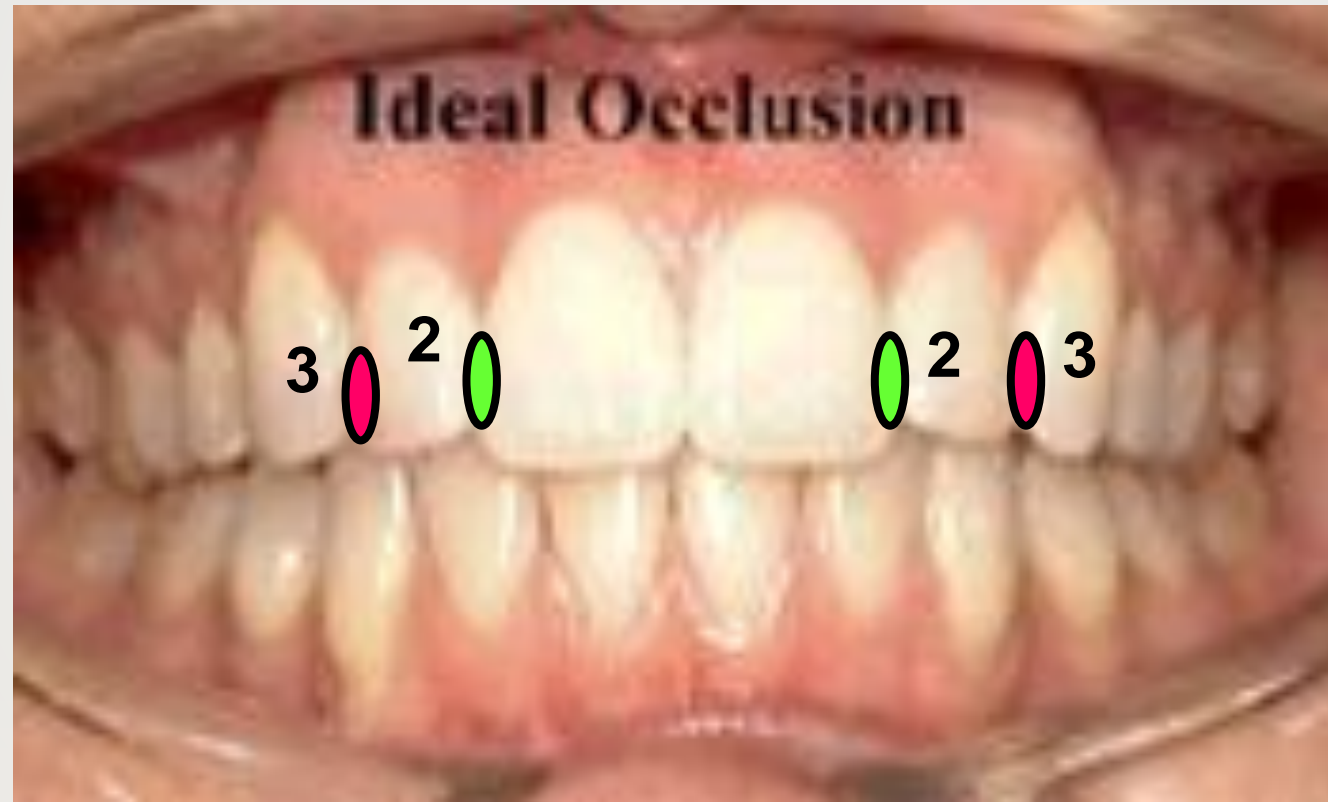
	Maxillary right lateral incisor	Maxillary left lateral incisor
Universal system	# 7	# 10
2 digit system	12	22
Palmer notation system	<u>2</u>	<u>2</u>



Relation

mesially with the central incisor

distally with the mesial surface of the canine.



No. of surfaces

It has four surfaces and incisal aspect.

the same of central



Labial



Lingual



Mesial



Distal

No. of roots

It has one root.

Incisal



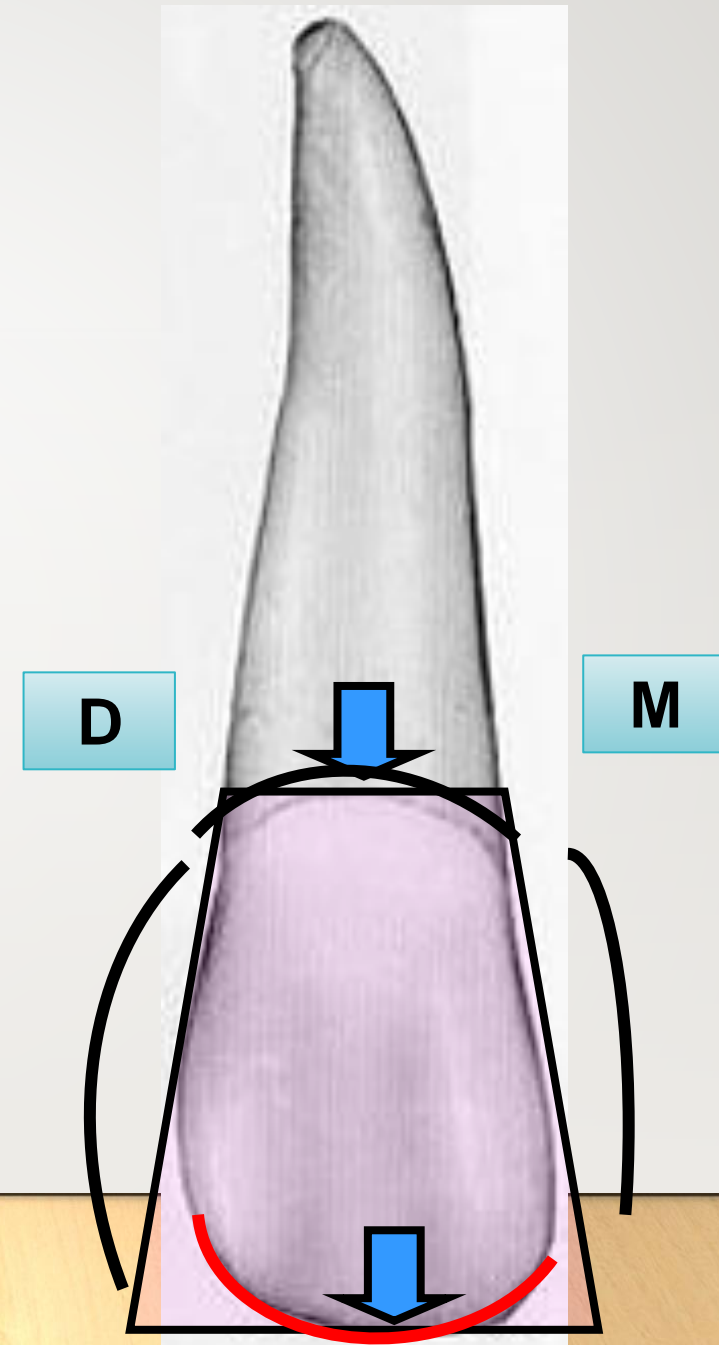
Labial aspect

Geometrical outline of the crown: Trapezoid

- The short side cervically
- The long side incisally

The outline:

- Mesial outline is slightly convex The crest at junction of incisal and middle thirds .
- Distal outline is more convex.
- **Incisal outline** is more curved than the central incisor.
- The cervical line is convex root-wards.



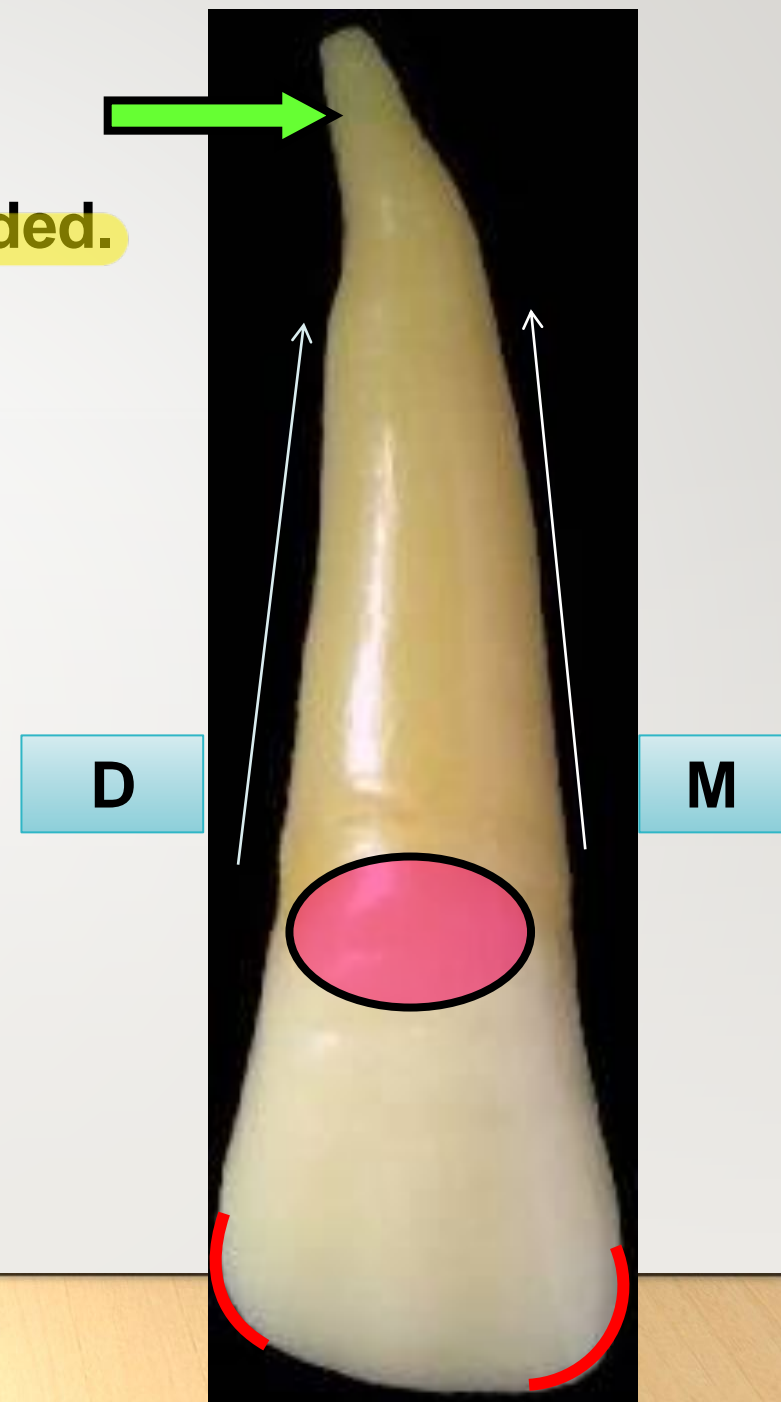
- The **mesio-incisal angle** is rounded.
- The **disto-incisal angle** is more rounded.

Surface anatomy:

- The surface is more convex than the central incisor.
- Elevation: Cervical ridge
- Depression: no

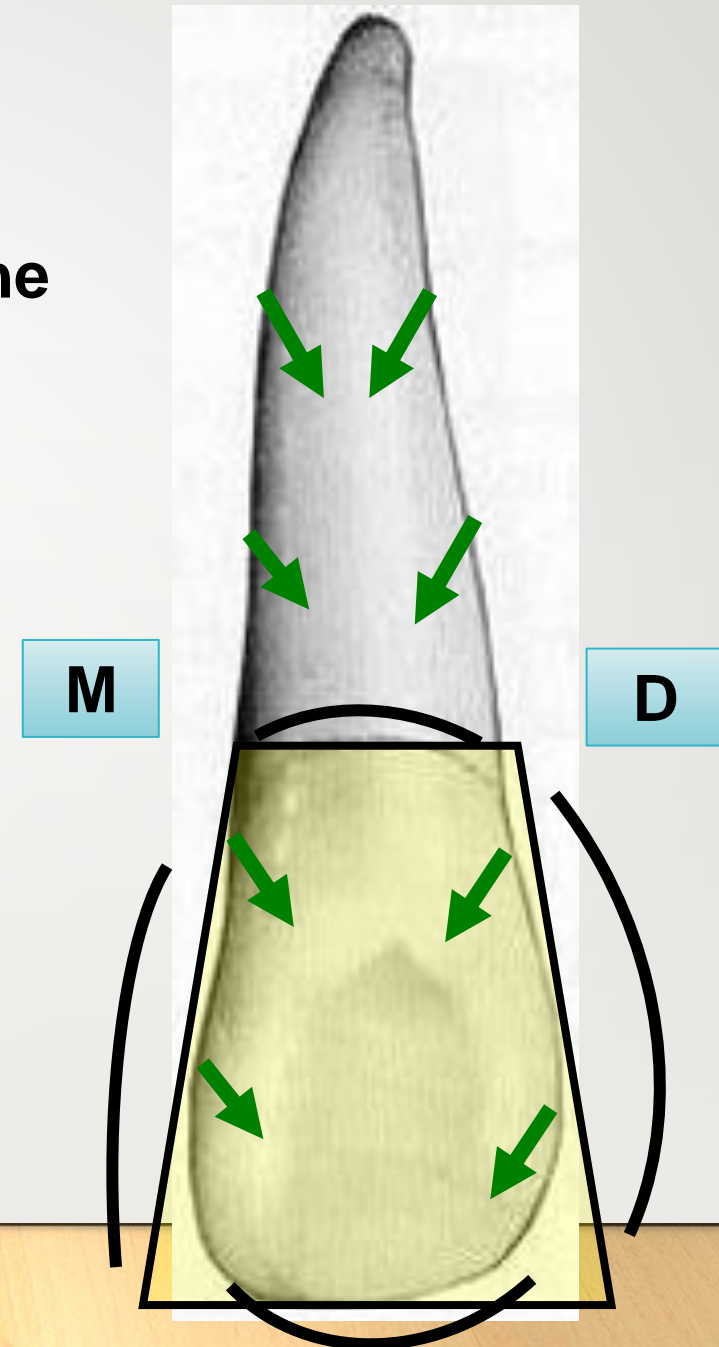
The root:

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



Lingual aspect

- geometrical outline and outline as the labial surface.
- The mesial and distal sides of the crown and root **converge** lingually



Surface anatomy:

The elevations:

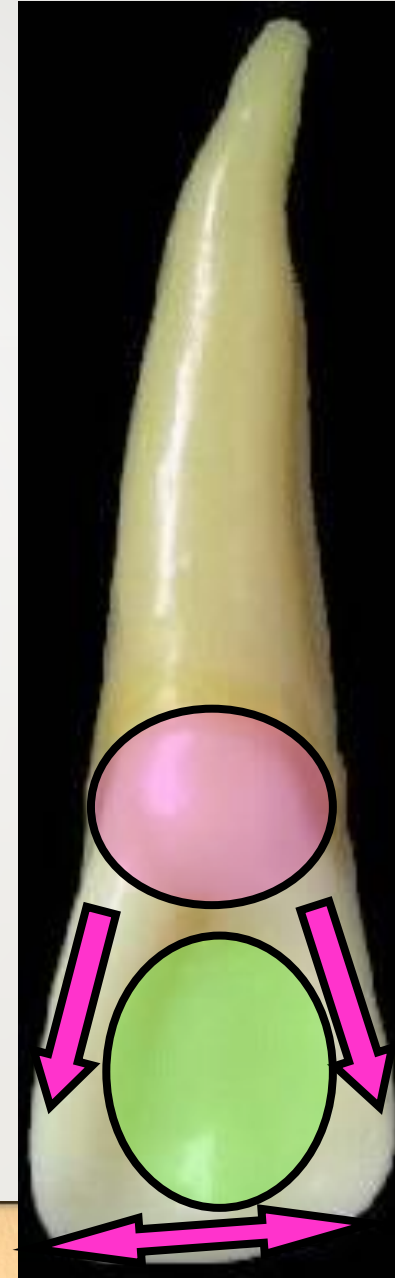
- 1- The cingulum
- 2- Marginal ridges.
 - Mesial marginal ridge.
 - Distal marginal ridge.
 - Incisal ridge.

The depressions:

- The lingual fossa (V- shape)

X NB: All elevations and depression are **less** than the upper central incisor.

lingual



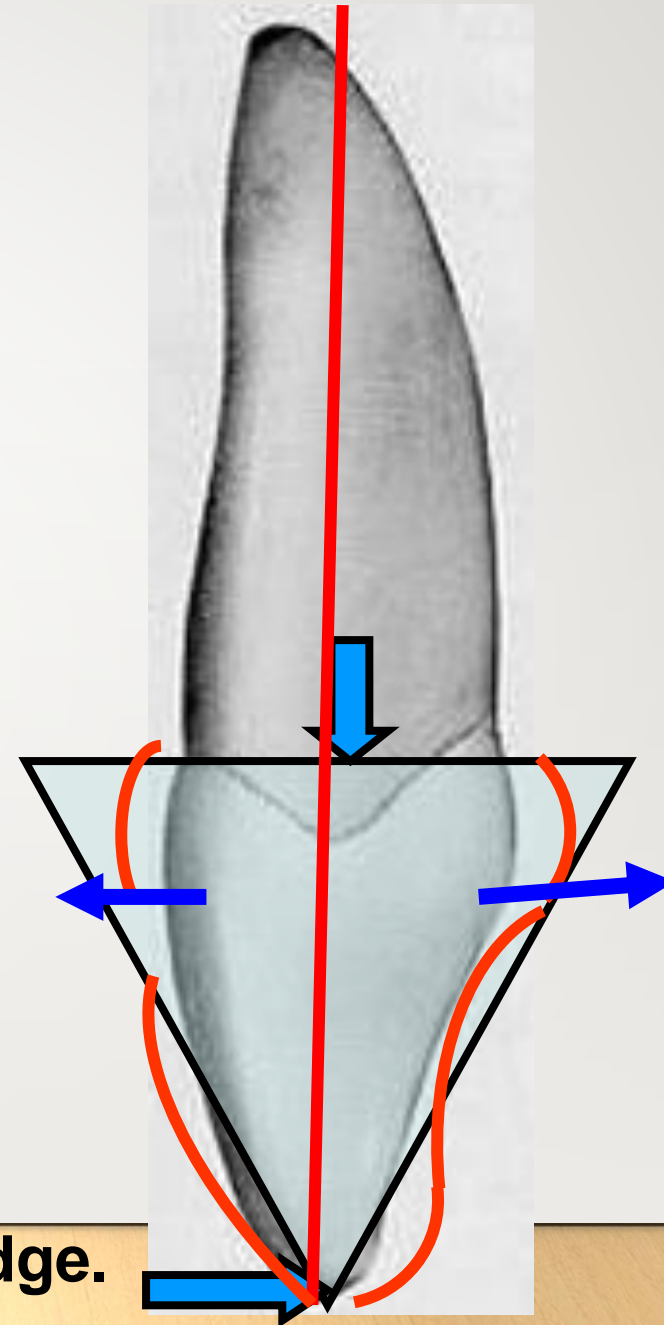
Mesial aspect

Geometrical outline of the crown:

- Triangular; the base cervically & the apex incisally.
- The incisal ridge is on a line that bisects the centre of the root.

The outline:

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



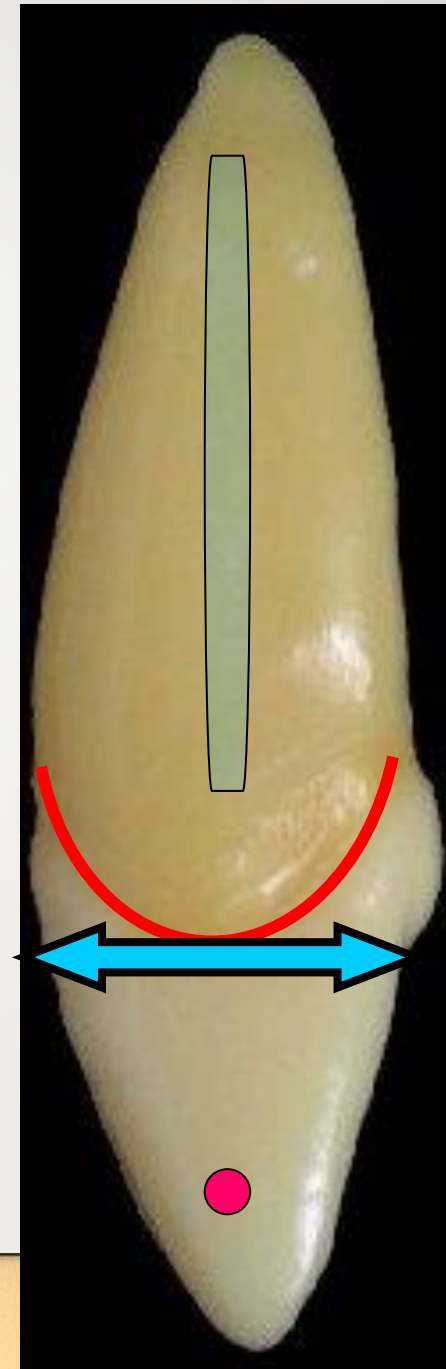
- The mesial cervical line is convex incisally.

Surface anatomy:

- The labio-lingual measurement is less than the central incisor by about 1mm.
- The mesial surface is convex with the maximum convexity at the junction of the incisal and middle 1/3s (the contact area)

The root:

- The root appears longer than the central incisor
- It is cone shape with blunt apex. It has developmental depression.



The distal aspect

Similar to the mesial aspect but differ in:

- The cervical line curvature is less than mesial (by 1 mm).
- The contact area located at the middle 1/3 (more cervially).
- It is smaller and more convex than the mesial.



Incisal aspect

- It may resemble the central incisor
- except the cingulum and the incisal ridge are more prominent..



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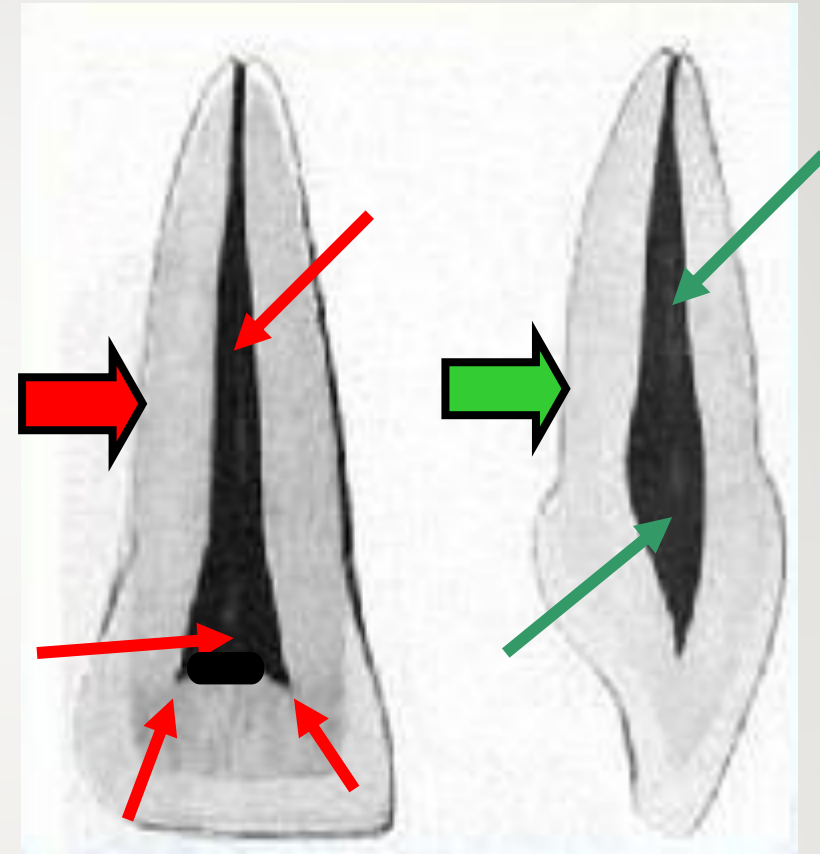
Pulp cavity

► Mesio-distal section

- The pulp chamber is wide conforming the shape of the crown.
- It does not have three sharp pulp horns.
- The root canal tapers towards the apex.

► Labio-lingual section

- **The pulp chamber** pointed incisally, then follows the increase in the crown dimension cervically.



- **The root canal** tapers gradually as it traverses the root ending in a constriction at the apex (the apical foramen).



Clinical significance



- **Peg-shaped upper lateral incisor :**

Only 3 lobes.... Middle one is missed

- **upper lateral incisor may be absent :**

Congenitally missed

- **Deep & prominent developmental pit:**

At the top of cingulum & I.fossa



Identify the tooth, the aspects and tell FOUR differences between the lateral and central incisor.

Answer

A- P. Upper central incisor.

B- P. Upper lateral incisor

Lingual aspect

- 1- Size.**
- 2- The elevations and depressions**
- 3- The incisal angles.**
- 4- The root.**



Thank You
So Much