

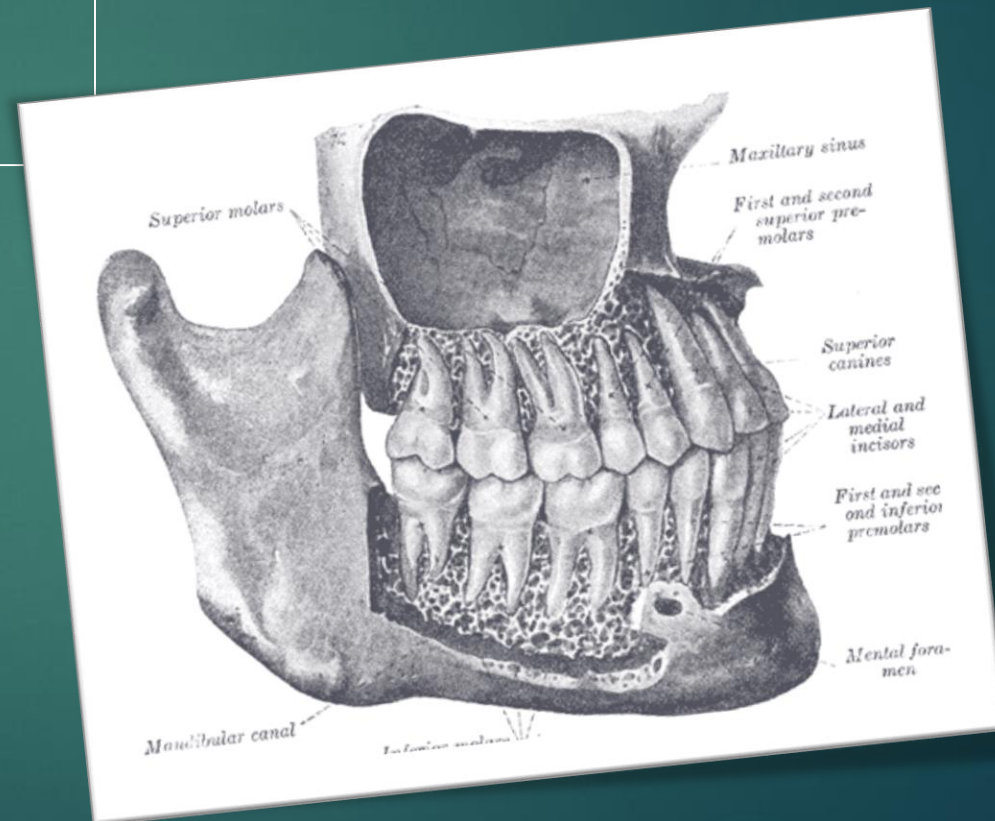
The surgical morphology of the teeth



SE, Arc- Állcsont- Szájsebészeti és Fogászati Klinika
BUDAPEST

The function of teeth

- ▶ eating
- ▶ phonation
- ▶ aesthetics
- ▶ legal medicine



1. Crown

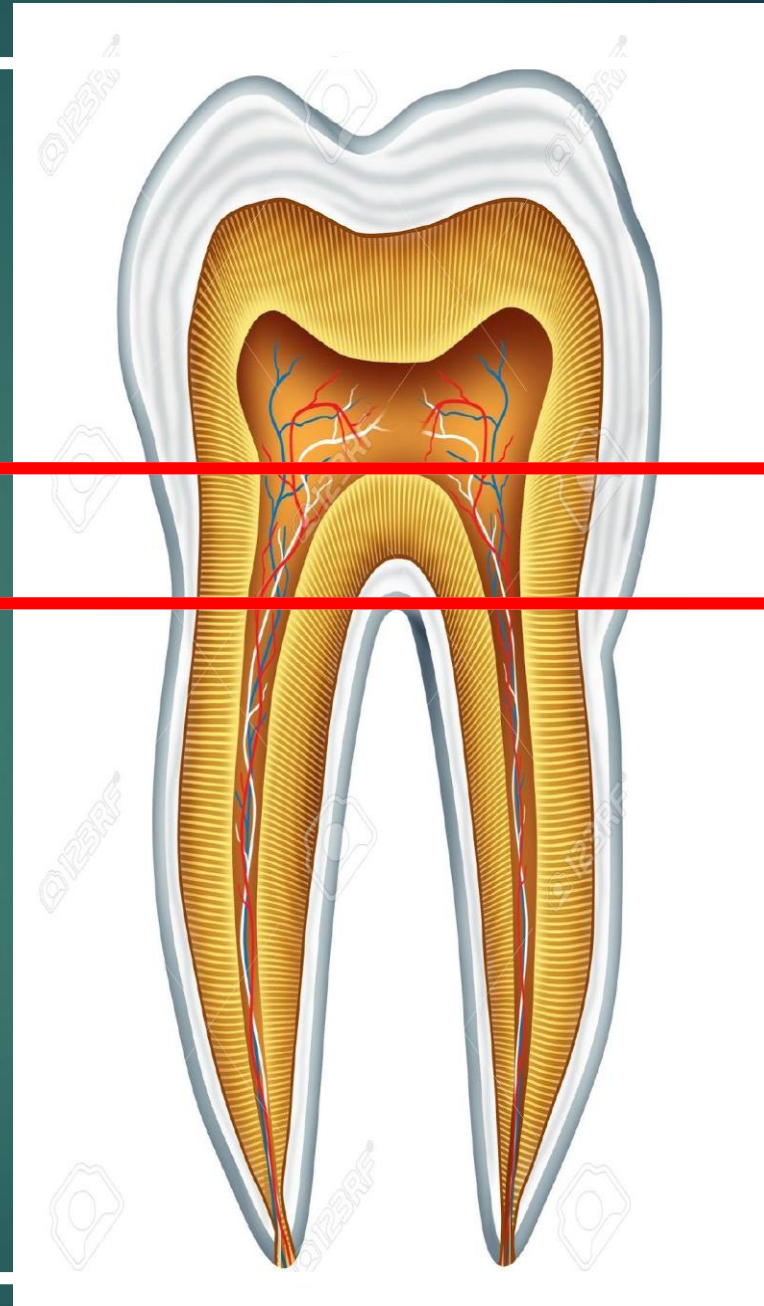
- shape
- size

2. Neck

- cross-section

3. Root

- number
- shape
- size
- cross-section
- canal(s)
- variations



VARIATIONS

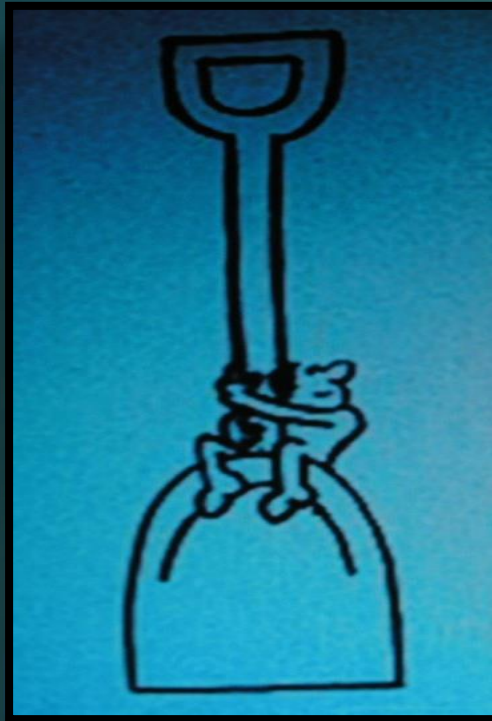
- retention / impaction
- aplasia
- out of line growing / get
- torsion
- the bent of the roots
- the convergation or divergation of the roots
- the concretion of the roots
- the variations of bifurcation



RETENTION / IMPACT







Shape of the crown:

- shovel shaped
- big

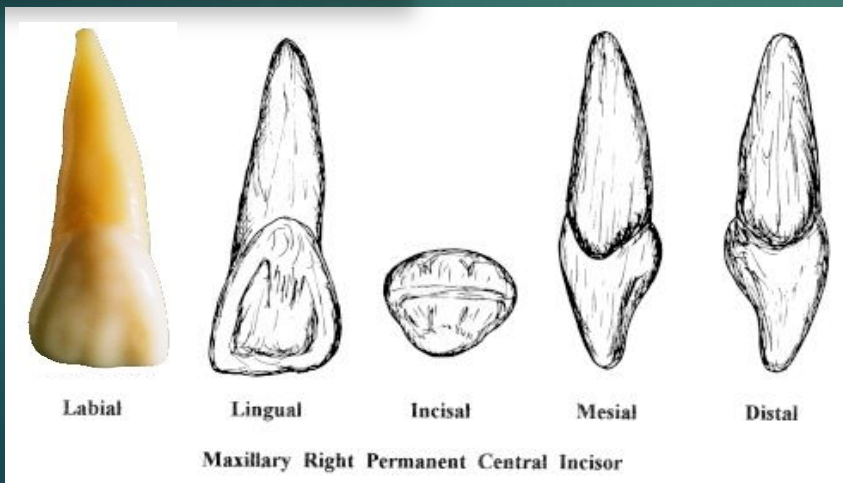
Crossection of the neck:

- almost circle shaped

Root:

- not curved
- one rootcanal
- the circle crossection of the neck is held untill the apex

The root and the tooth are not variable



Maxillary lateral incisor

Shape of the crown:

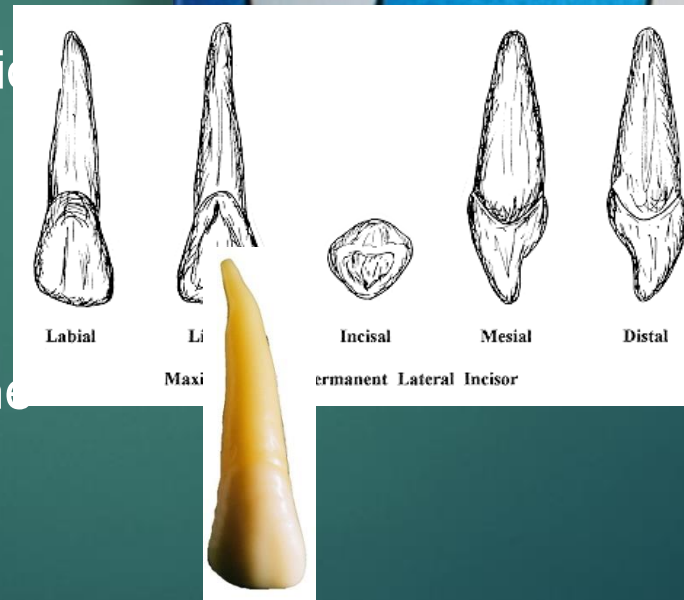
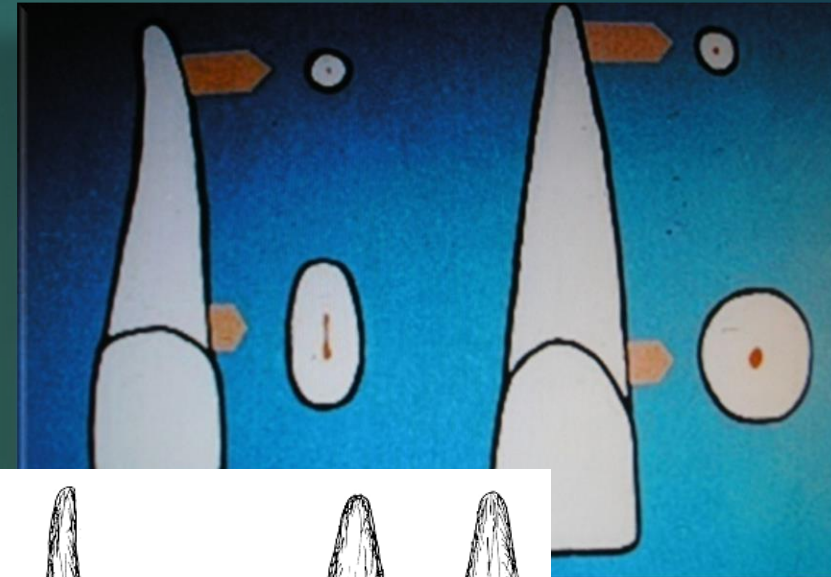
- similar shovel shaped but smaller than the first incisor, and more gracile

Crosssection of the neck:

- oval
- flattened in mesiodistal direction

Root:

- 1
- one oval canal
- at the quarter of the apex the crosssection of the root becomes circular



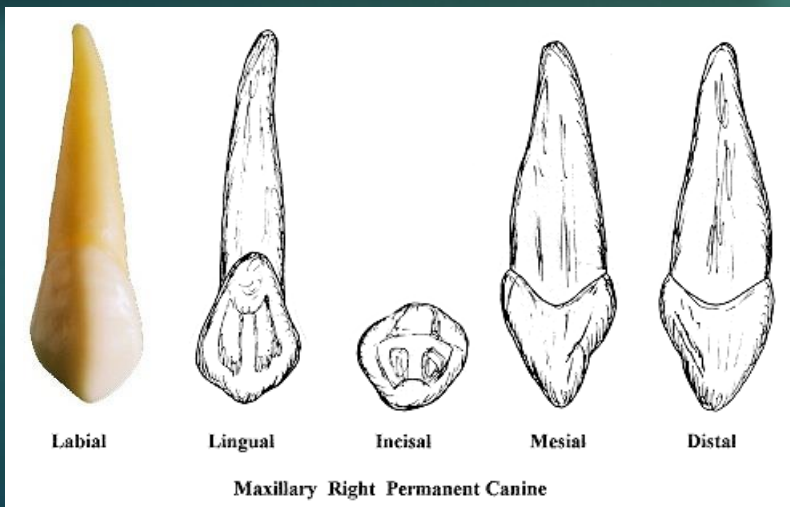
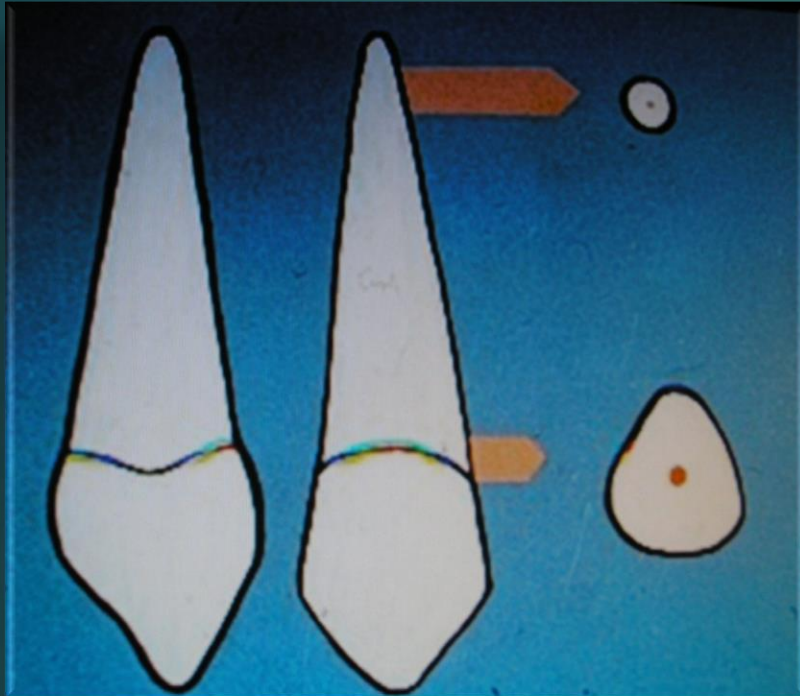
Maxillary lateral incisor

Variations:

- the part where the crosssection becomes circular almost always bent palatinaly
→ extactional difficulties
- palatinal
- vestibular
- retention
- aplasia (**Bolk's theory of terminal reduction**)
- torsion



Maxillary canine



Shape of the crown:

- big
- massive
- wedge shaped

Crosssection of the neck:

- rounded equilateral triangle
- one edge looks in vestibular direction

Root:

- 1
- strong
- biggest in the oral cavity
- 20-22mm
- one canal

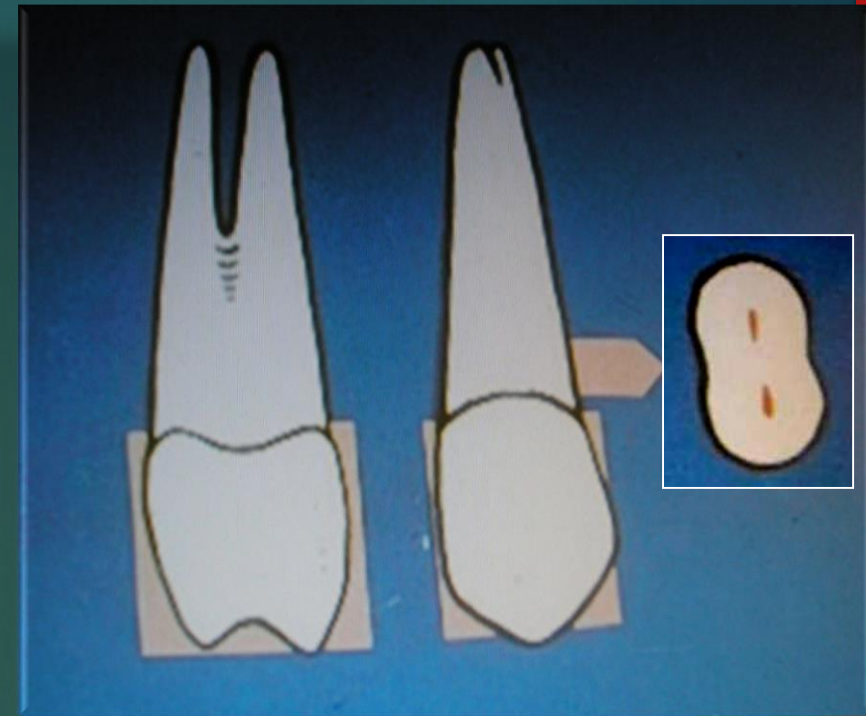
Variation- RETENTION



Maxillary first premolar

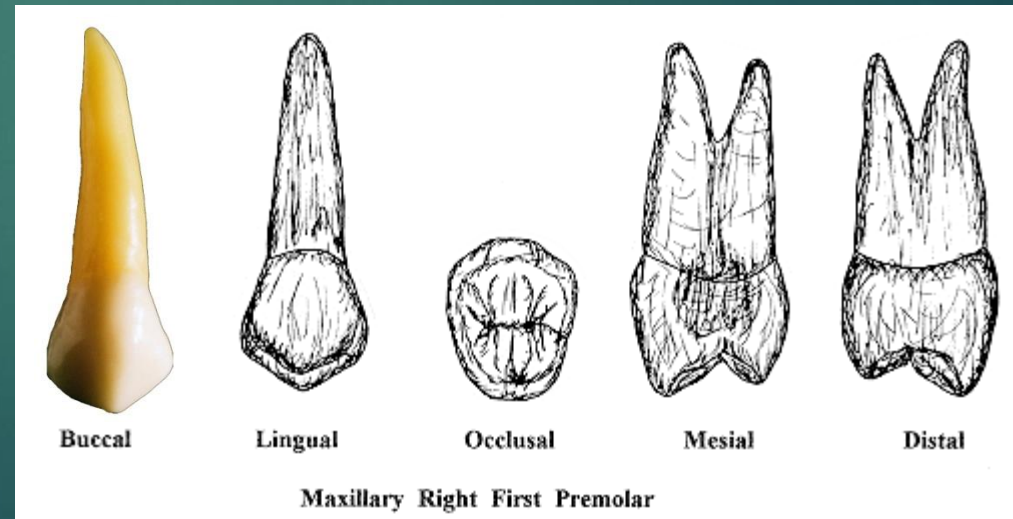
Shape of the crown:

- flat
- looks like a rounded rectangular
- not big
- **gracile**

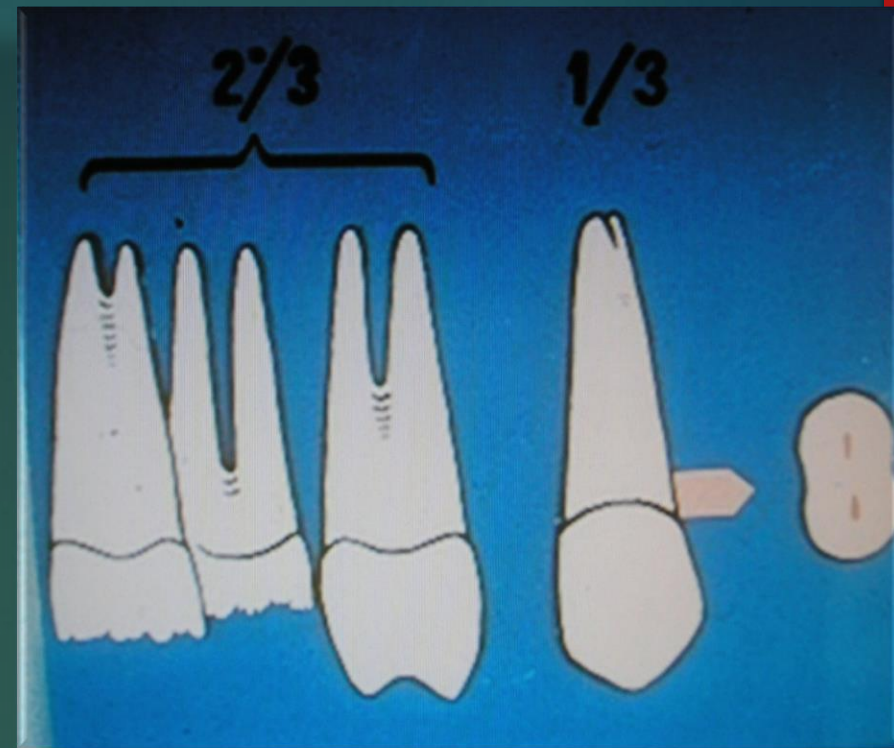


Crosssection at the neck:

- Fingerbiscuit shaped

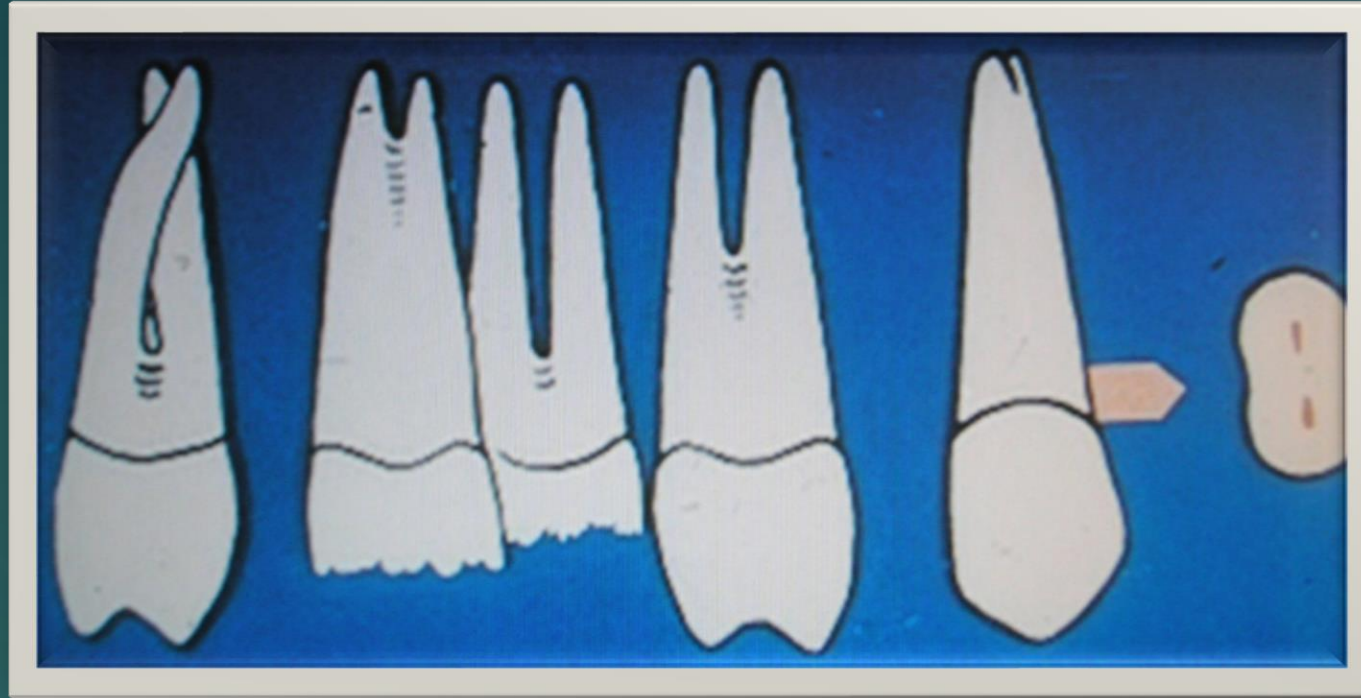


Maxillary first premolar



Root:

- Of the population:
 - 1/3 has 1 root
 - 2/3 have 2 roots
- Bifurcation can be anywhere between the neck and the apex
- After bifurcation the roots are thin and fragile
- **After the bifurcation the crosssection of the root is rounded**



Variations:

- in number of cases the roots are bent
- sometimes the two roots bent in opposite directions, like a double corkscrew
 - great danger of fracture
- standing in or out of the line
 - rotated (torsion)

Maxillary second premolar

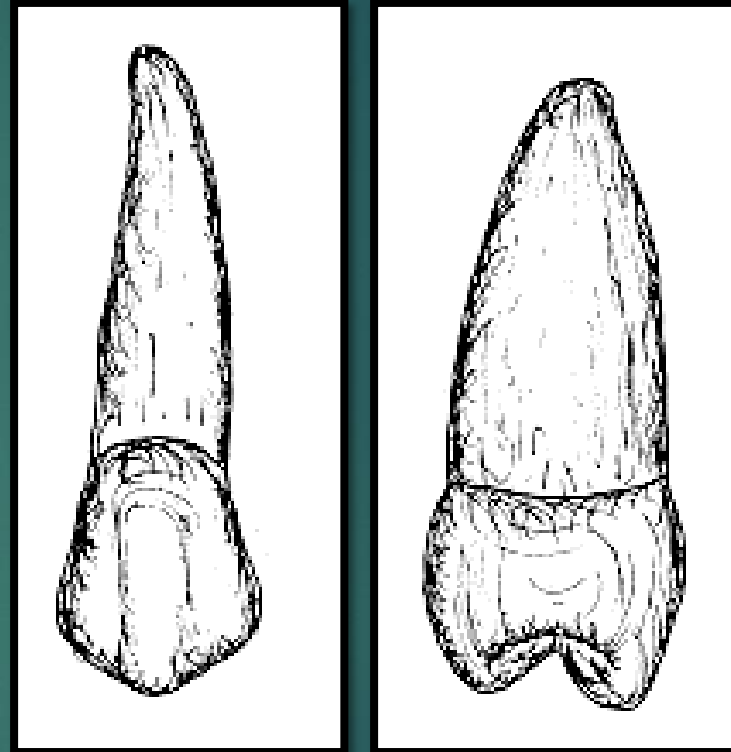
Shape of the crown:

- Similar to the 1st premolar, but more massive and bigger



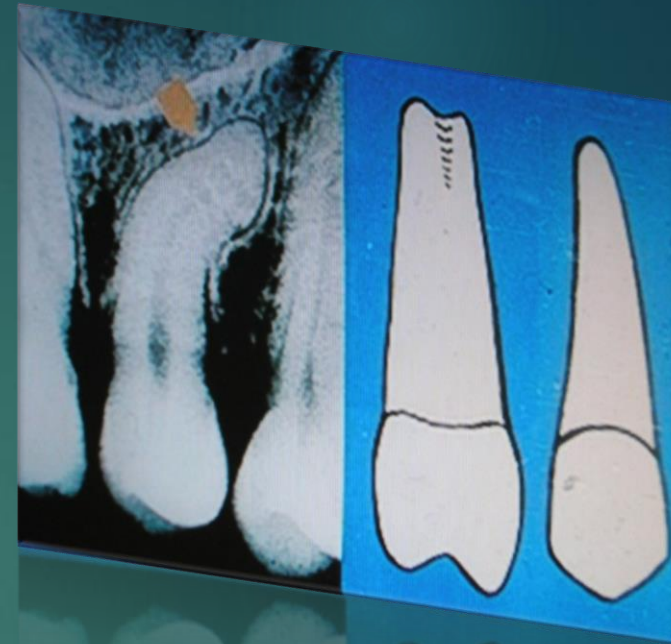
Crosssection of the neck:

- not so significantly fingerbisquit shaped
- depression at the mesial side



Root:

- 1
- more massive and bigger than the 1st premolar
- cross-section is irregularly flatend along the whole radix
- 1 or 2 canals



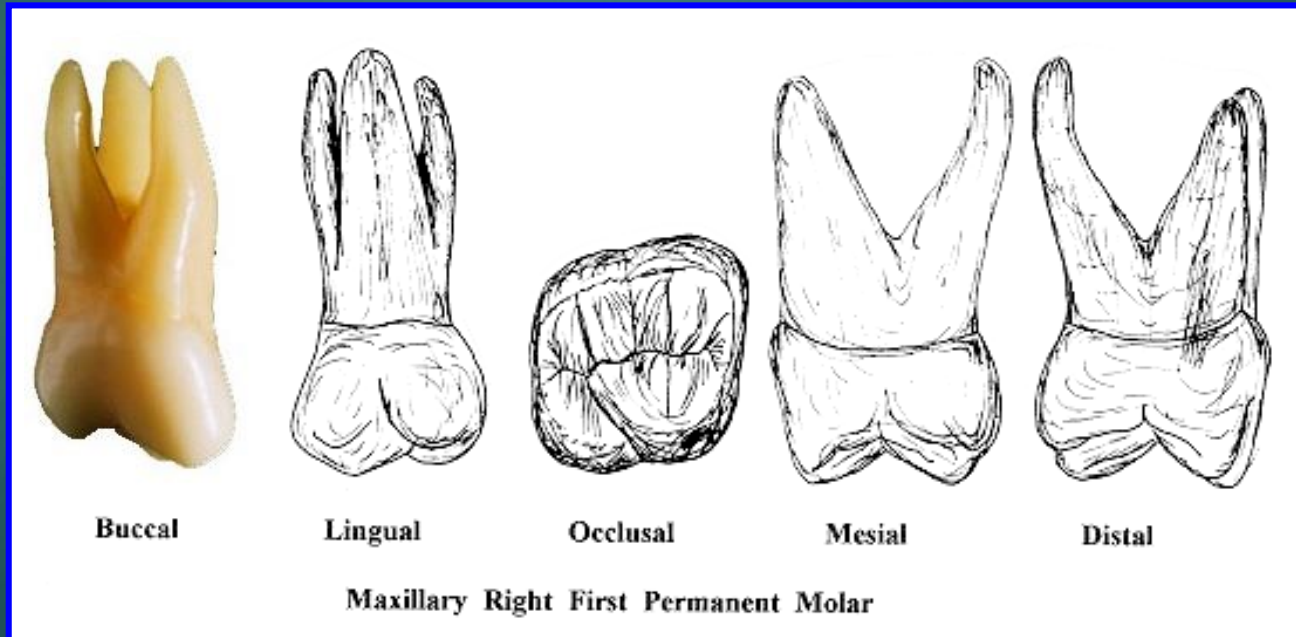
Variations:

- Not much, but one is important: **bayonet shaped root** – means that the root has two deflection following the shape of the base of the sinus



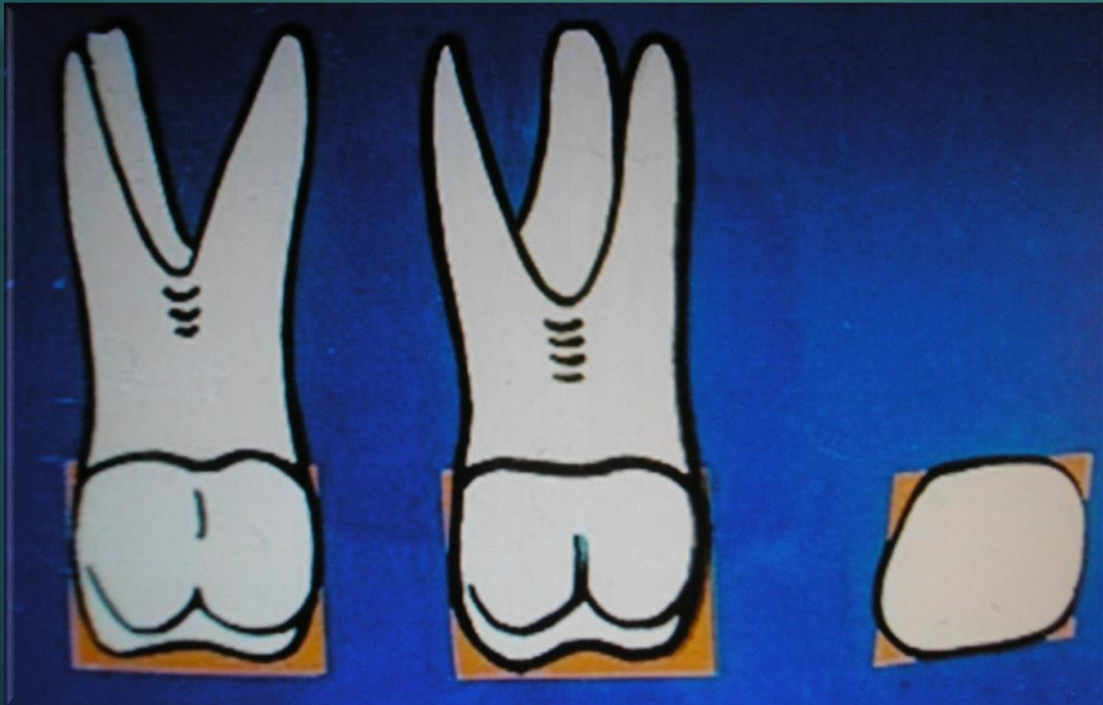


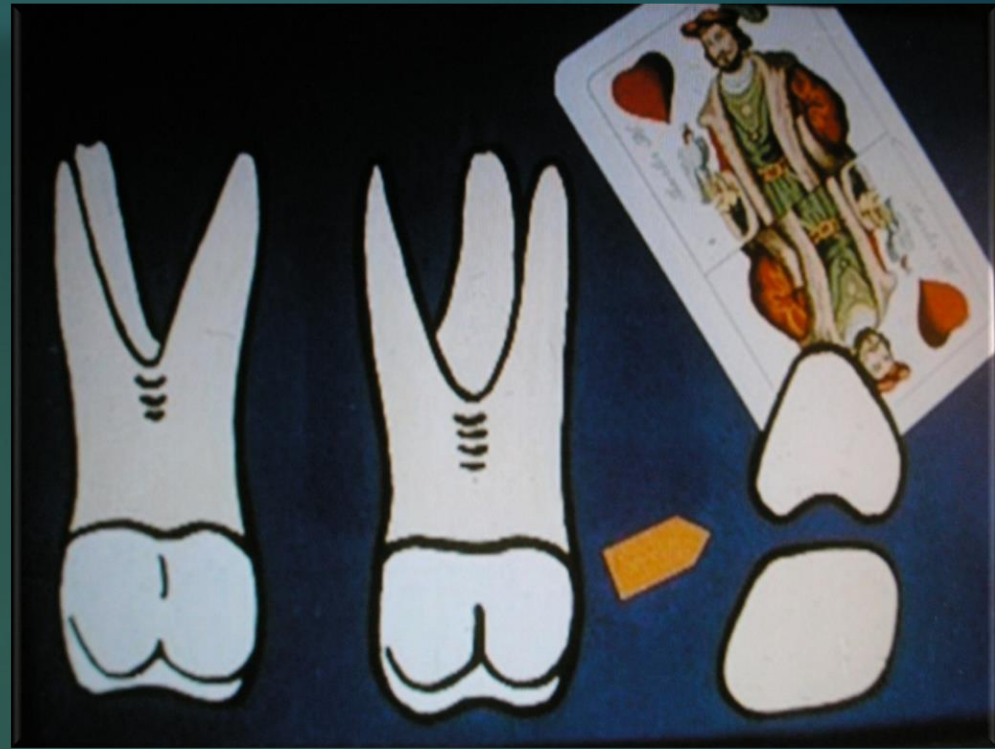
Maxillary molars



Shape of the crown:

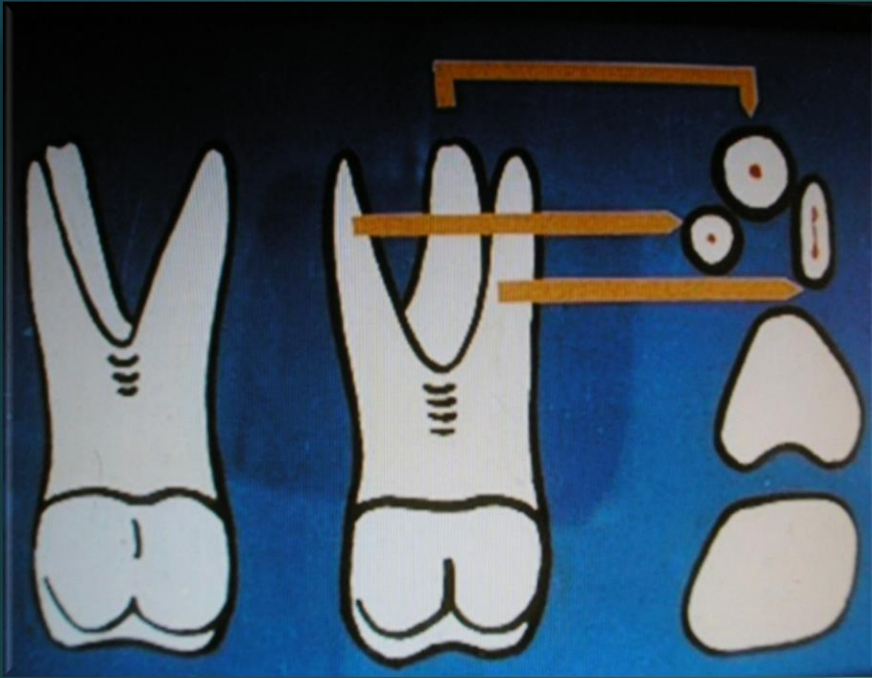
- the **biggest crown in the oral cavity**
- rounded rhomb





Croosectin of the neck:

Like a heart on the cards
the depression is in the vestibular side



Root:

2 buccal, 1 palatinal

1. Palatinal

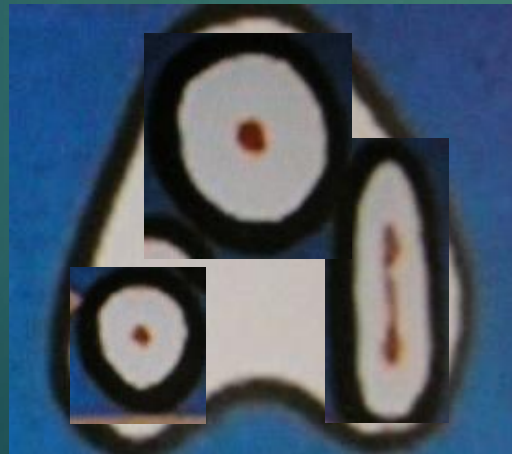
- The biggest and the most massive
- 1 canal
- circular crosssection

2. Mesiobuccal

- also strong
- crossection: fingerbisquit
- sometimes bent to distal direction

3. Distobuccal

- weakest
- most likely to fracture



Variations:

Confusio radicum:
(the three roots can lean on each other forming a cone)

Divergentio radicum

Convergentio radicum

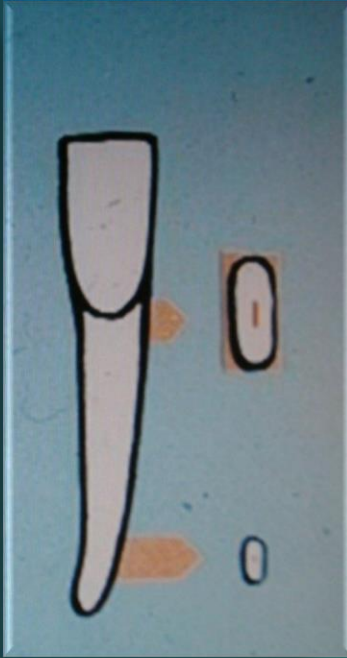


Maxillary wisdom



- unbelievable variety of forms
- **impaction**

Mandibular central incisor



Shape of the crown:

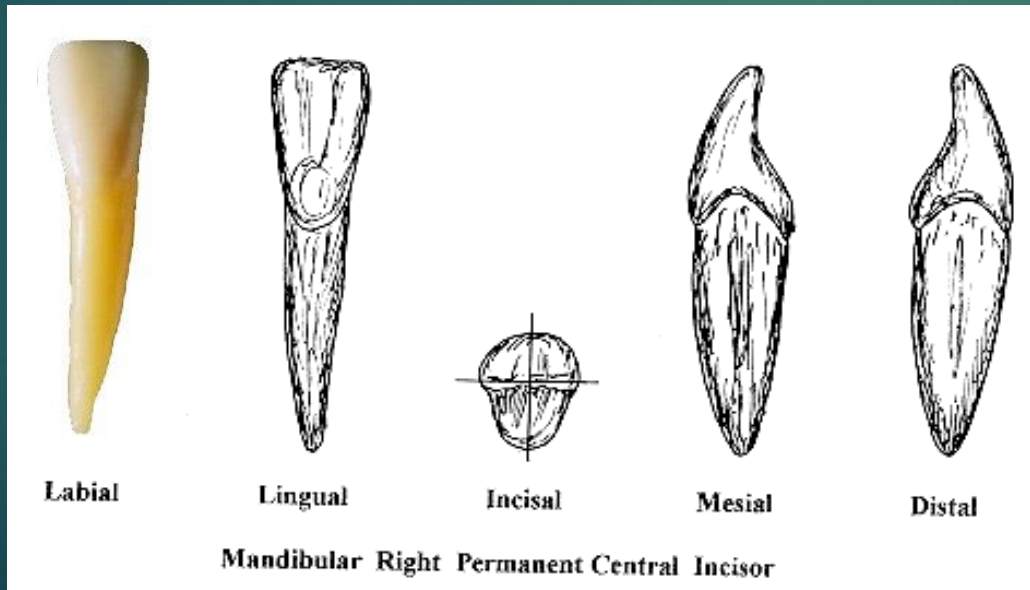
- Smallest tooth in the oral cavity
- Chisel shaped

Crosssection of the neck:

- hardly rounded rectangular shape

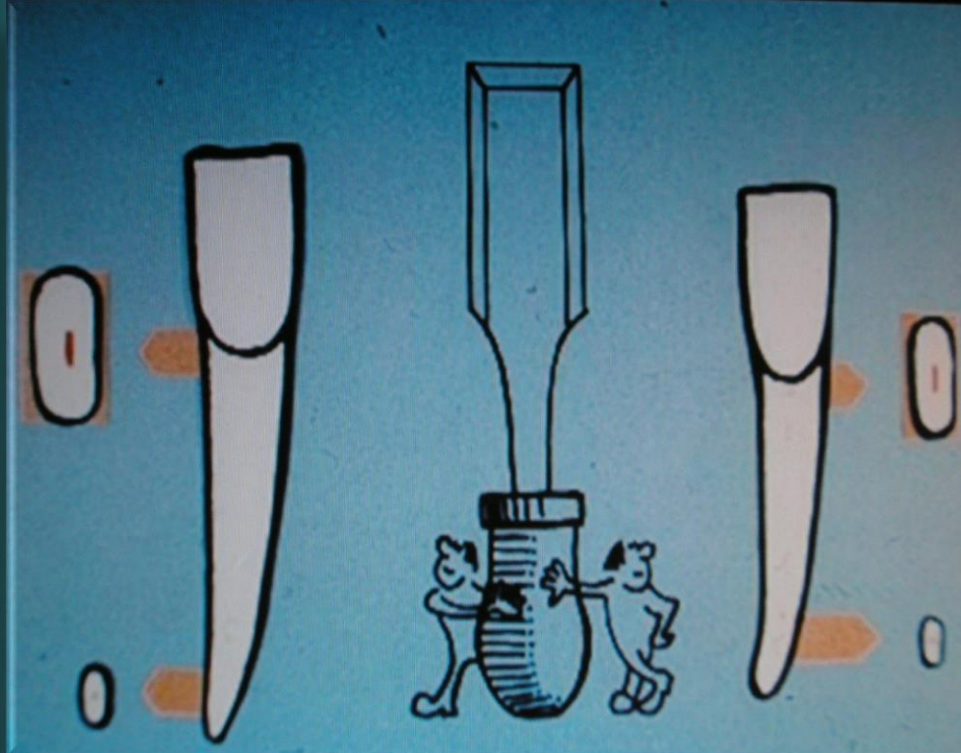
Root:

- 1
- flatend shape



**No variations,
neither the root nor the tooth**

Mandibular lateral incisor



Shape of the crown:

- a bit bigger and less gracile

Cross-section of the neck:

- hardly rounded rectangular shape

Root:

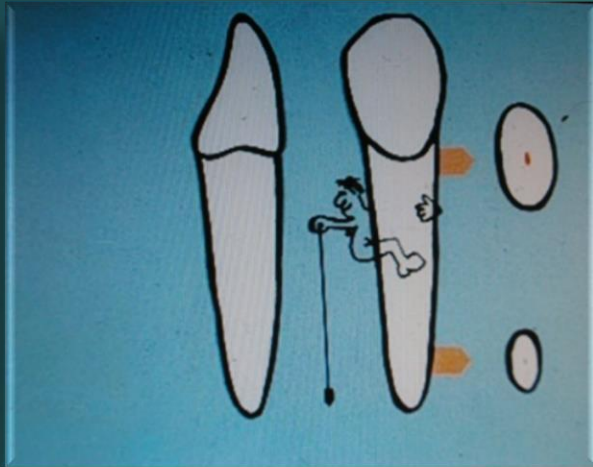
- 1
- flat end shape
- 2nd incisor has a bit longer root
- 1 flat end canal

**No variations,
neither the root nor the tooth**

Mandibular canine

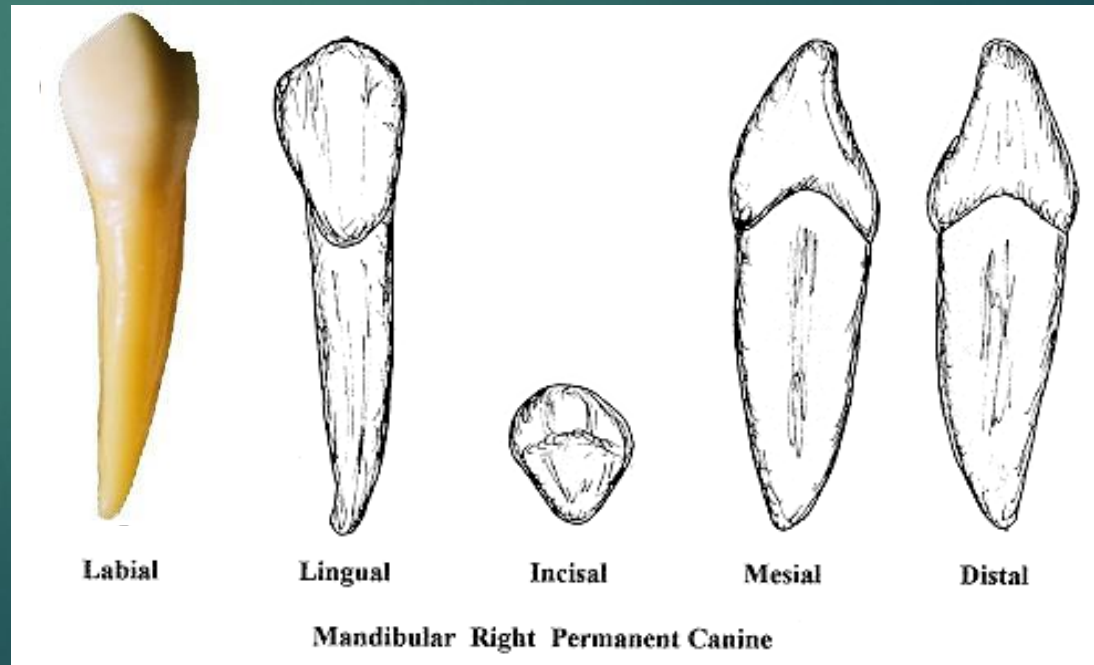
Shape of the crown:

- smaller rounded shape than the upper one



Crosssection of the neck:

- almost a regular ellipse





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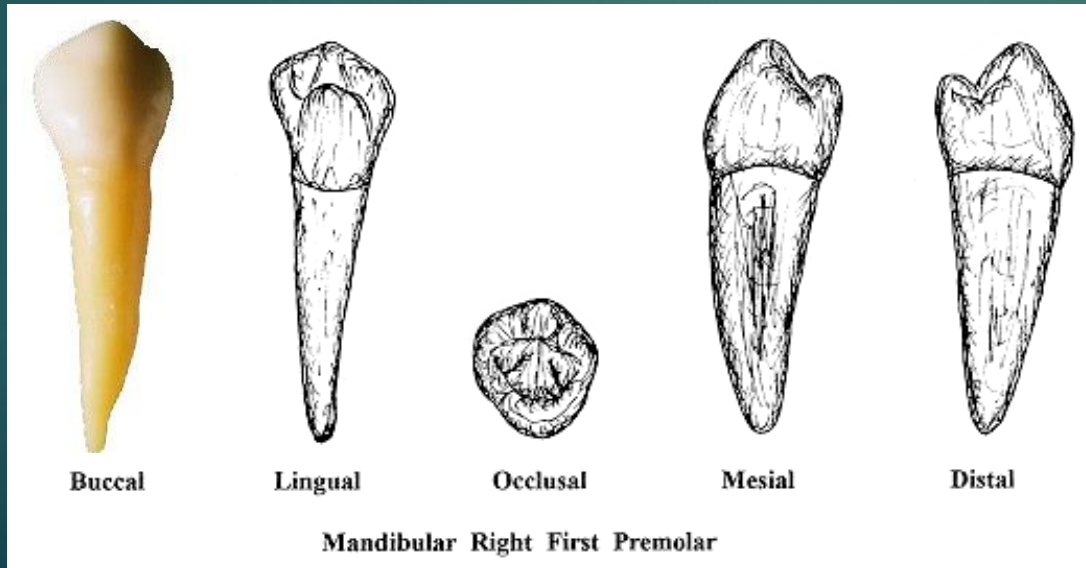
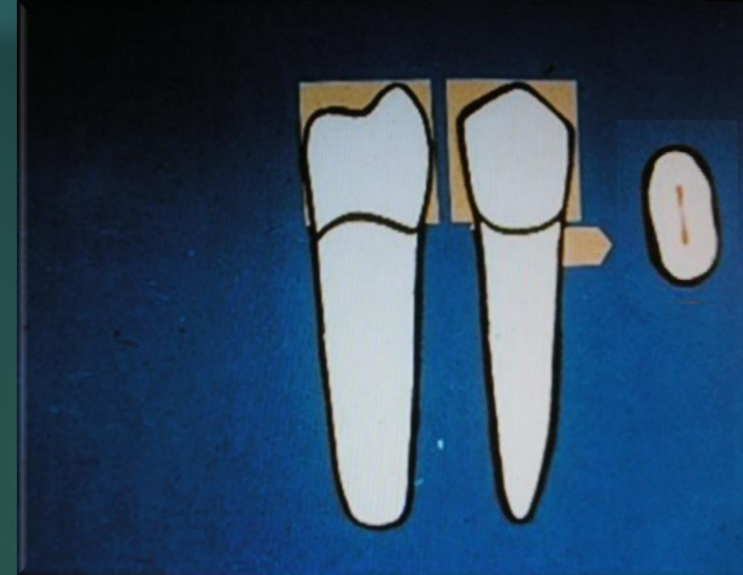
Mandibular premolars

Shape of the crown:

- smaller flatend rectangular crowns
- bit more rounded than the upper premolars

Crosssection of the neck:

- irregular flatend shape
- flatend in mesiodistal direction
- keep this form along their length



Root:

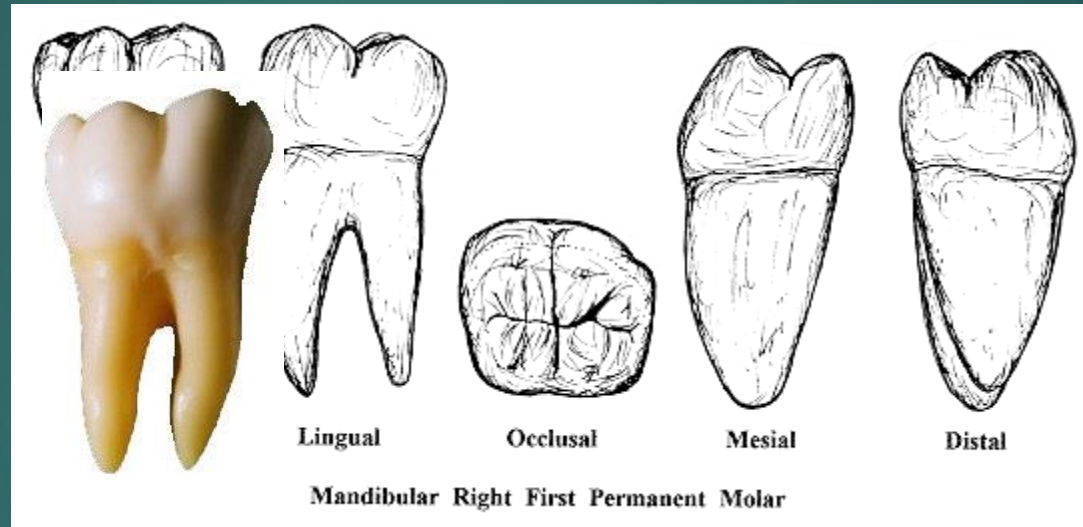
- 1 connected or 2 separated canals

Variations:

- second lower premolar stands out or in of the line

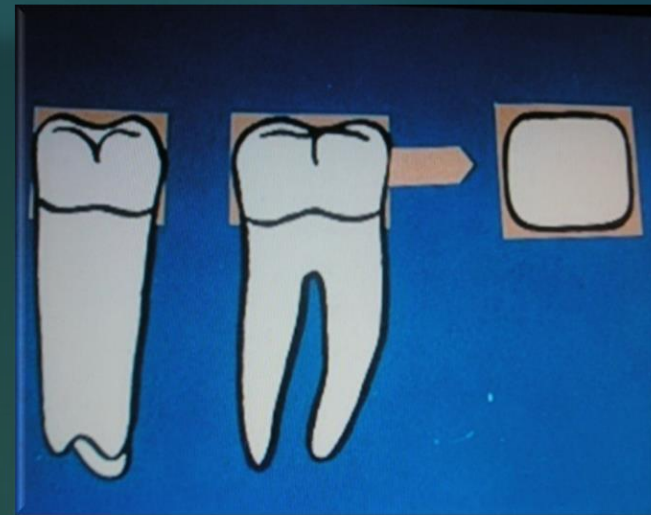


Mandibular molars



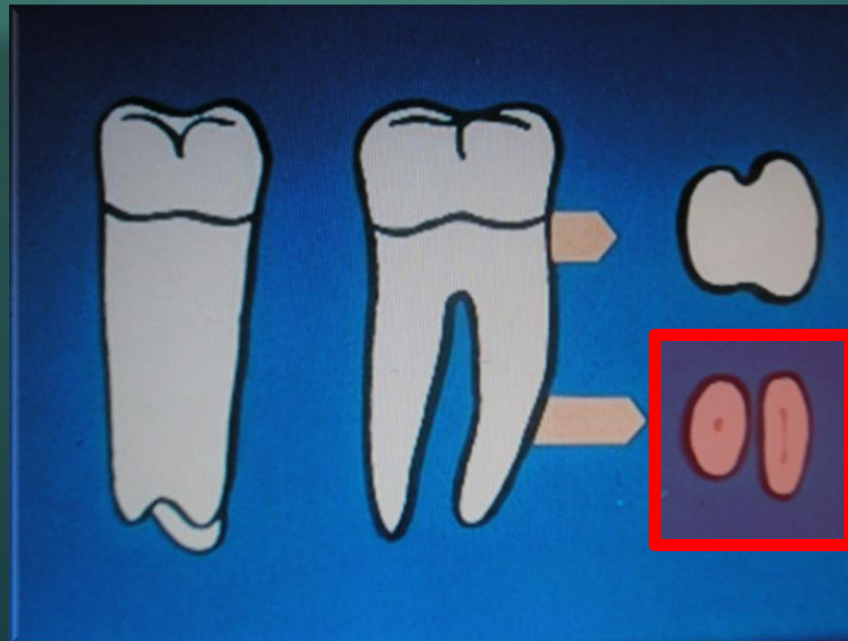
Shape of the crown:

- smaller than the upper ones
- not rhomb, but square rectangular, the corners are rounded



Crosssection of the neck:

- depression in the middle from oral and vestibular direction



Root:

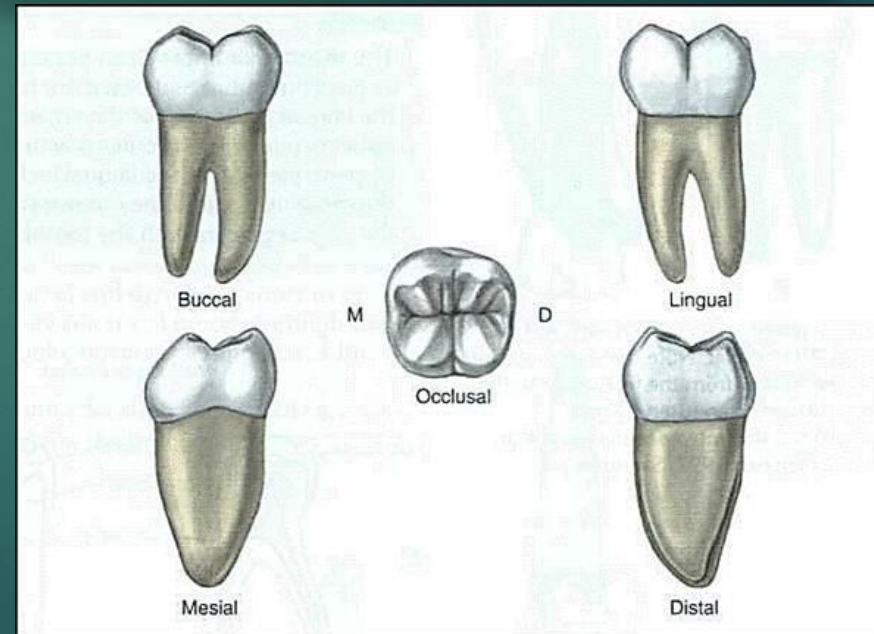
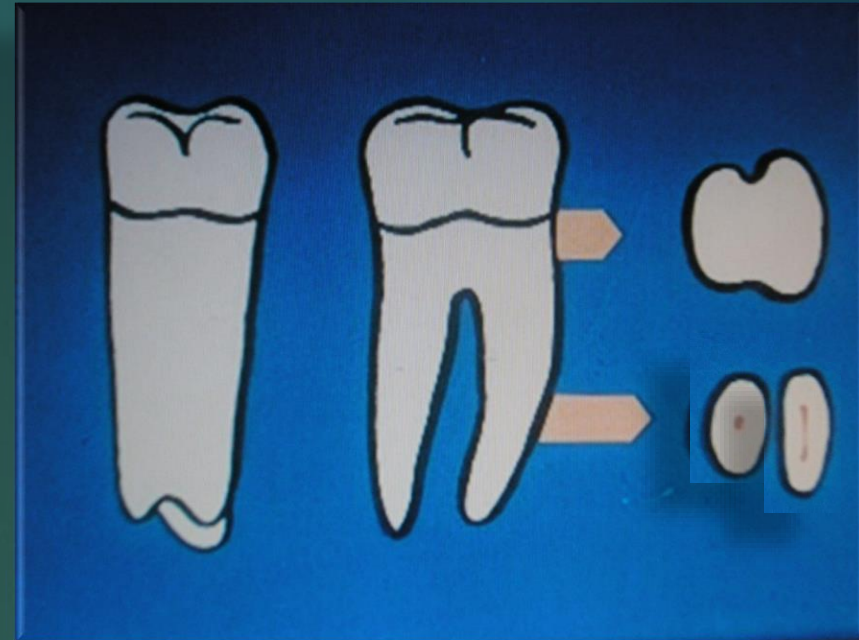
- normally 2 roots, one mesial and one distal

Mesial:

- crosssection: fingerbisquit shaped
- flattened
- regularly 2 canals
- distally bended

Distal:

- less flattened
- stronger, more massive
- more straight



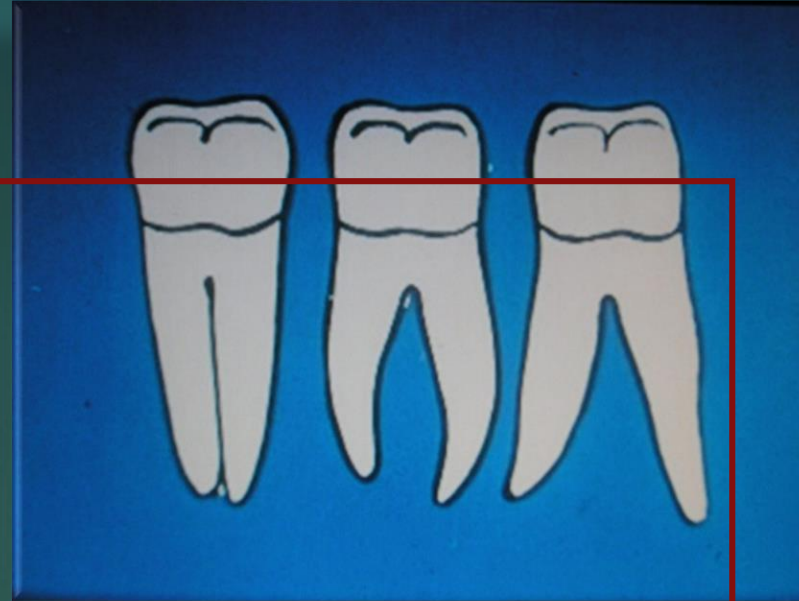
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Convergentio radicum

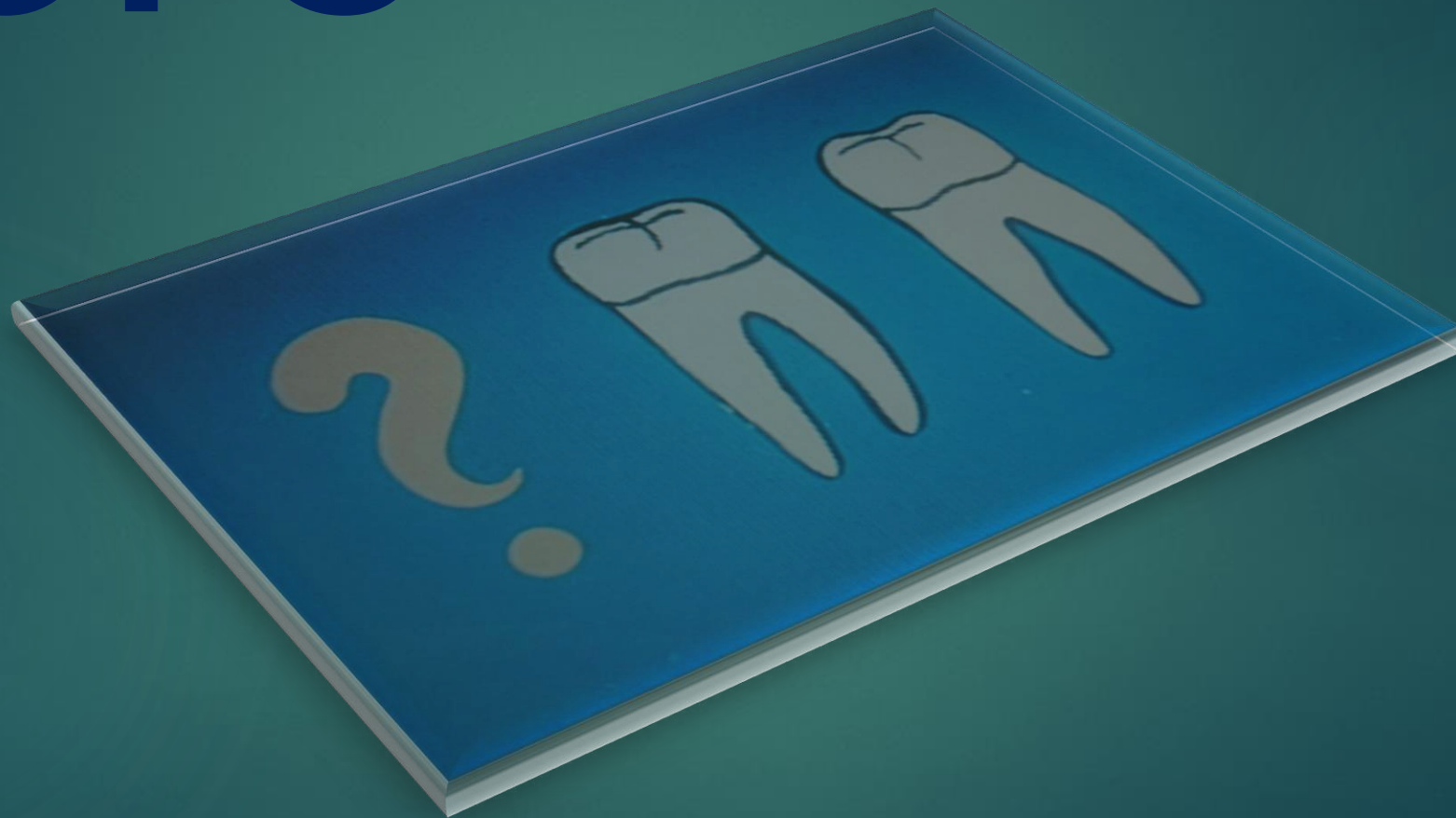


Lower wisdom

- variable
- aplasia
- impaction

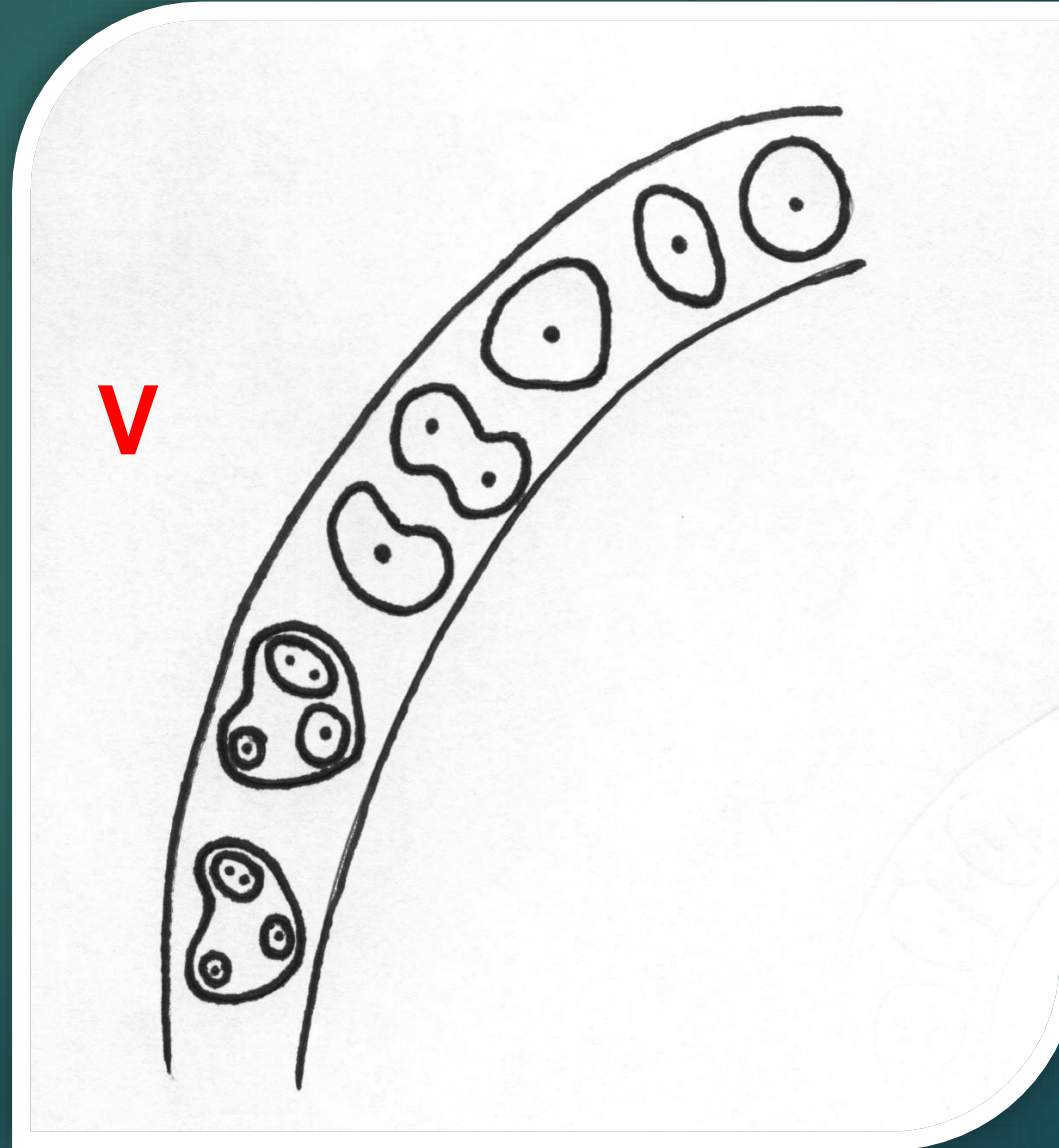


OPG



Upper jaw

Crosssection of the neck:



Lower jaw

Crosssection of the neck:

