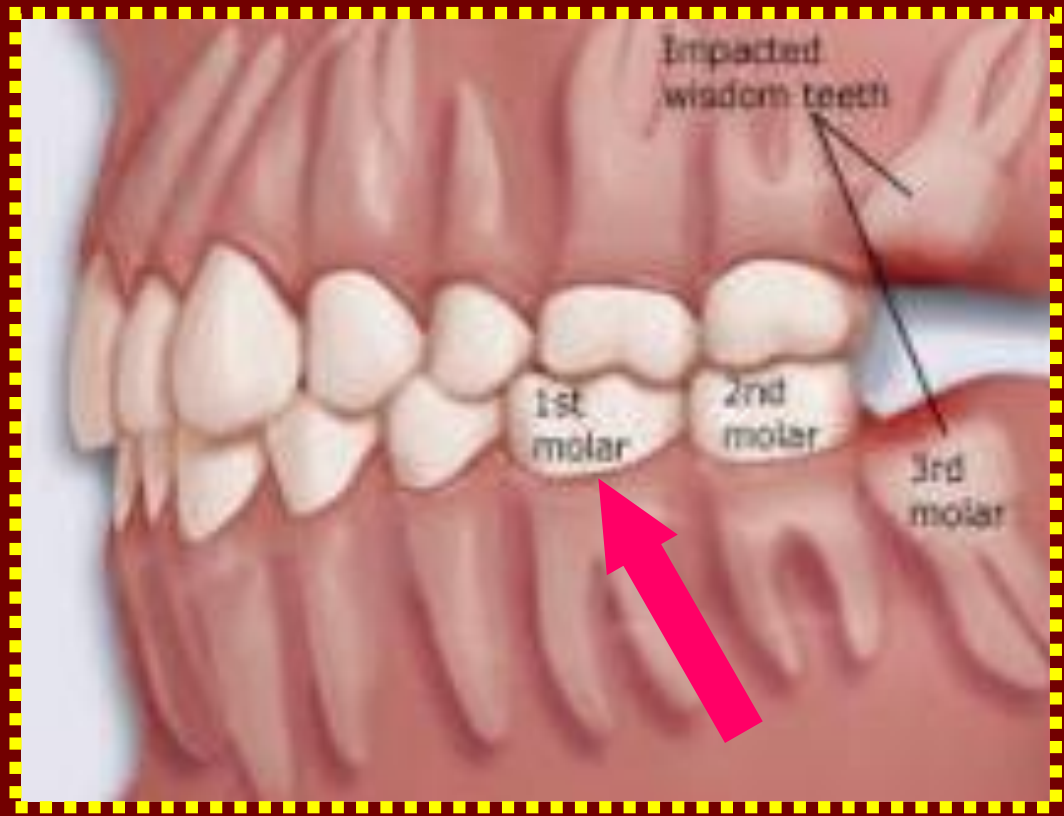


بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

IN THE NAME OF ALLAH THE MOST
GRACIOUS THE MOST MERCIFUL

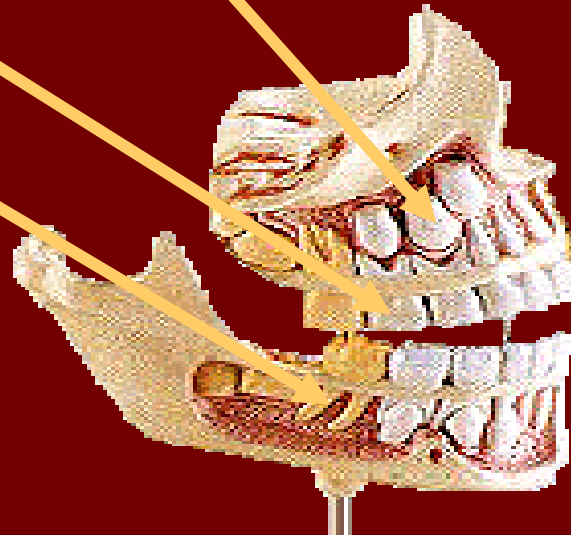
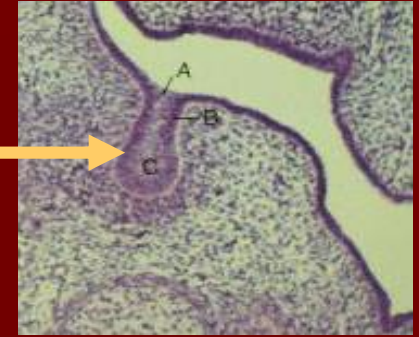
Mandibular Permanent 1ST Molar

Dr Magdy alabasiry, BDS, MS(Egypt), Ph. D.(Egypt)



Chronology:

- Enamel organ appearance.
- Beginning of calcification.
- Crown completed.
- Eruption.
- Root completed.



Chronology

Appearance of dental organ	4 m.I.U.
First evidence of calcification	at birth
Enamel completed	2.5-3 years
Eruption	6-7 years
Root completed	9-10 years

It is known as *six molar* tooth.

WHY?

Its *number* in the lower arch is # 6.

&

Its *eruption date* is six years.

Functionally, it is considered as the *key of occlusion.*

Is the largest tooth in the mandibular arch.

Has 5 well developed cusps (2B, 2L, 1D).

So, it is formed of 5 lobes.

No. of surfaces:

It has five surfaces



BUCCAL



LINGUAL



MESIAL



DISTAL

No. of roots:

It has 2 roots

OCCLUSAL

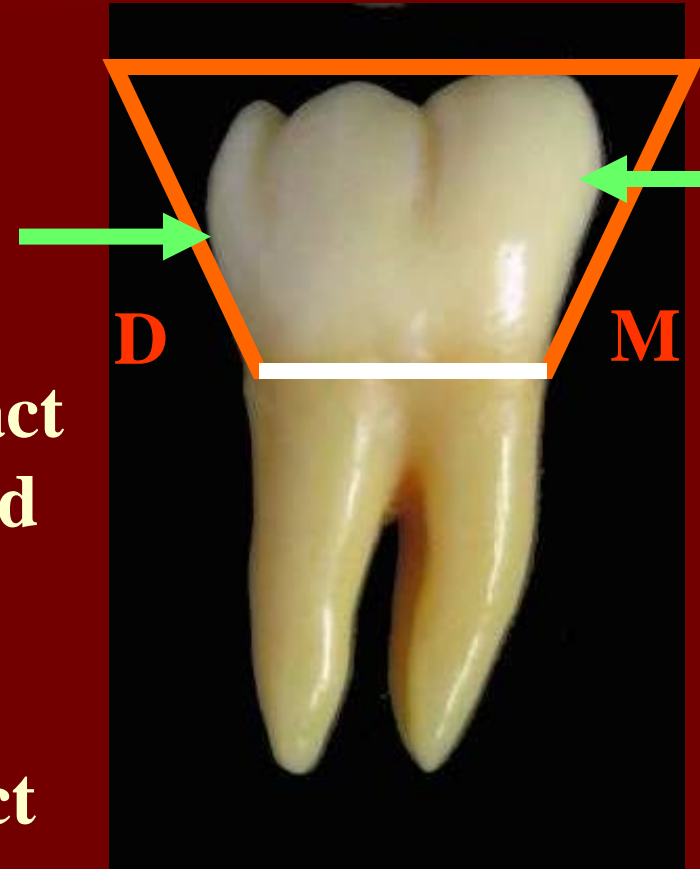


BUCCAL ASPECT

The geometric outline: Trapezoidal with small uneven side present cervically.

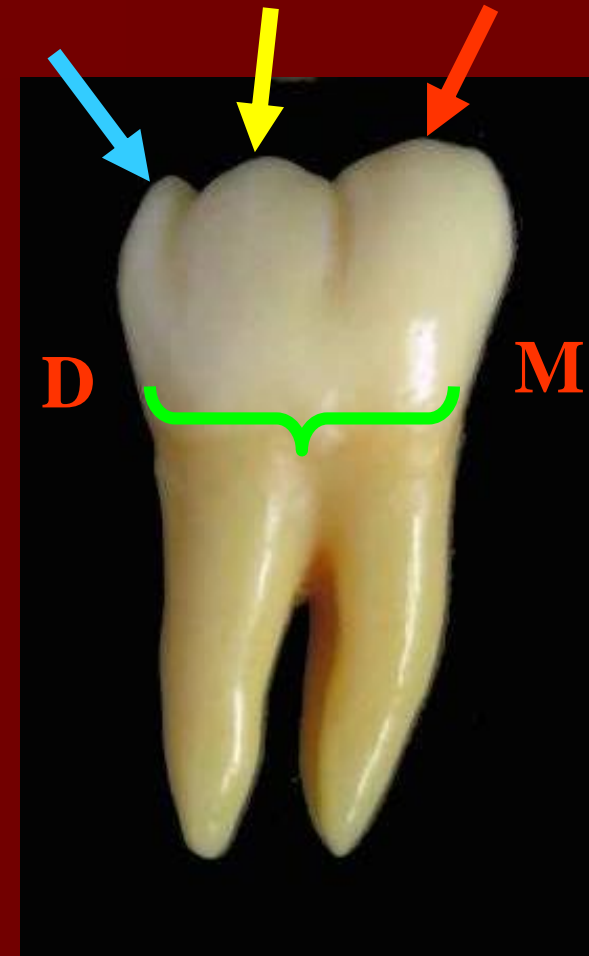
Mesial outline: concave till the contact area at the junction of the occlusal and middle 1/3.

Distal outline: straight till the contact area (in the middle third) beneath the distal cusp ridge.



Occlusal outline: formed by 3 cusps,
MB, DB, D

Cervical outline: straight with dipping
into the root bifurcation

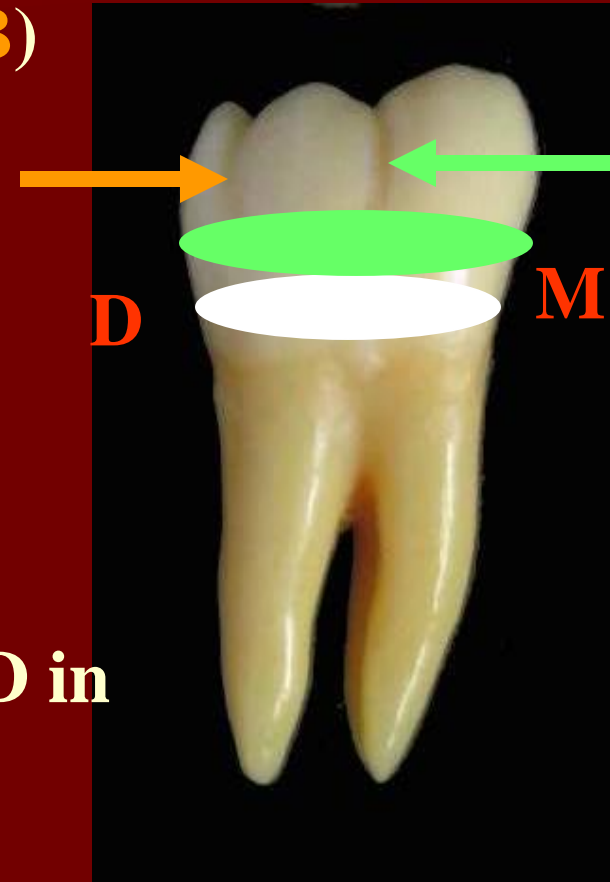


Anatomical landmarks:

* 2 Developmental grooves (**MB**, **DB**)

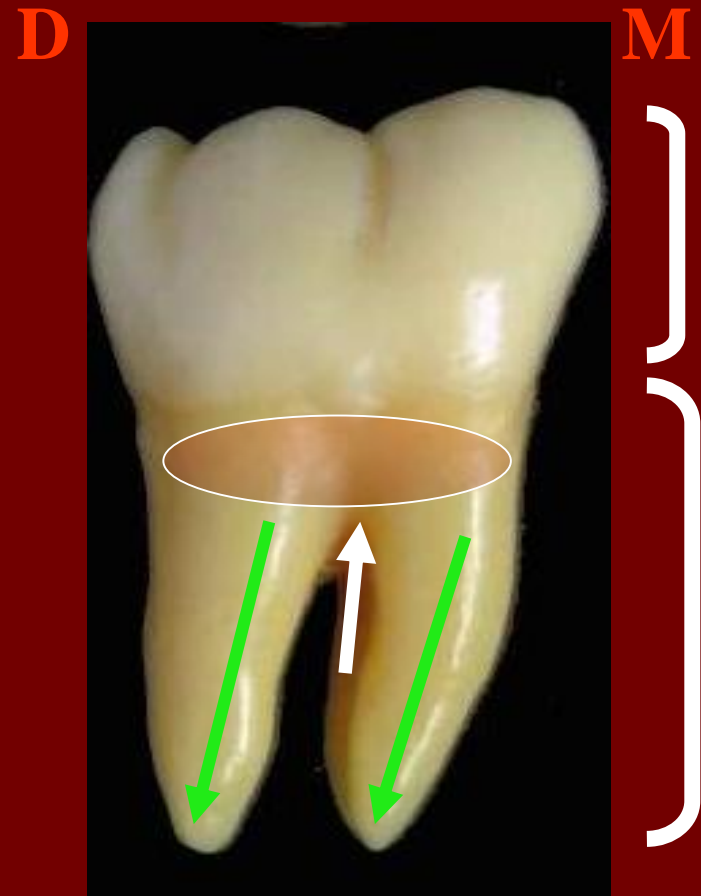
* Cervical ridge at the cervical 1/3

* Developmental depression run M-D in the middle 1/3



The Roots:

- * The roots twice the length of the crown.
- * The axis of the roots are inclined **distally**
- * Root trunk : **3 mm.**
- * Deep developmental groove extends on the root trunk.



LINGUAL ASPECT

* Lingual convergence

Mesial outline: Straight till the contact area at the junction of the occlusal and middle 1/3

Distal outline: Convex till the contact area beneath the distal cusp ridge

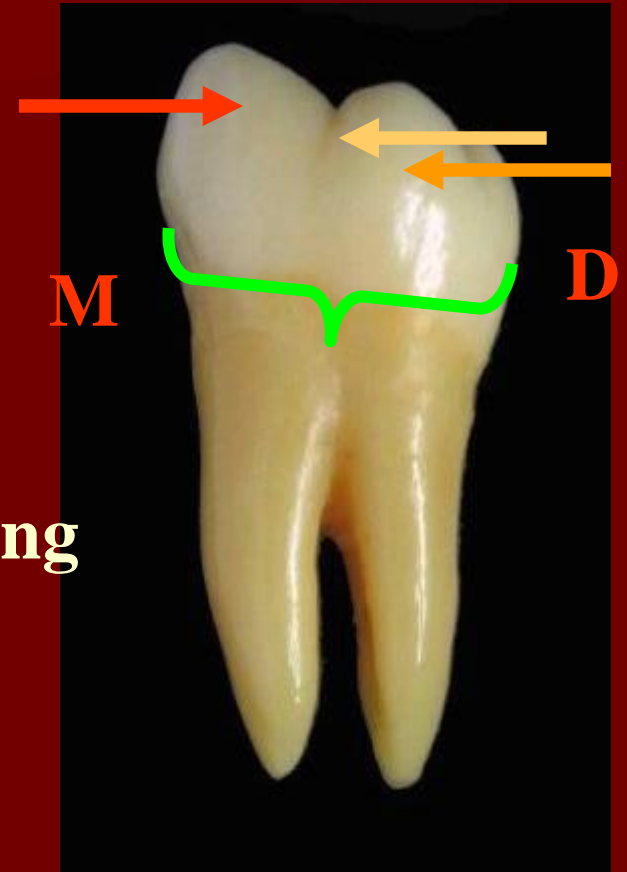


Occlusal outline: formed by 2 lingual cusps, **ML**, **DL** of nearly equal width

Cervical outline: Irregular with dipping into the root bifurcation

Anatomical landmarks:

Lingual Developmental groove



BUCCAL



LINGUAL



The root trunk appears longer on the ling. surface due to:

- * the occlusal position of cervical line**
- * Lingual conversion**

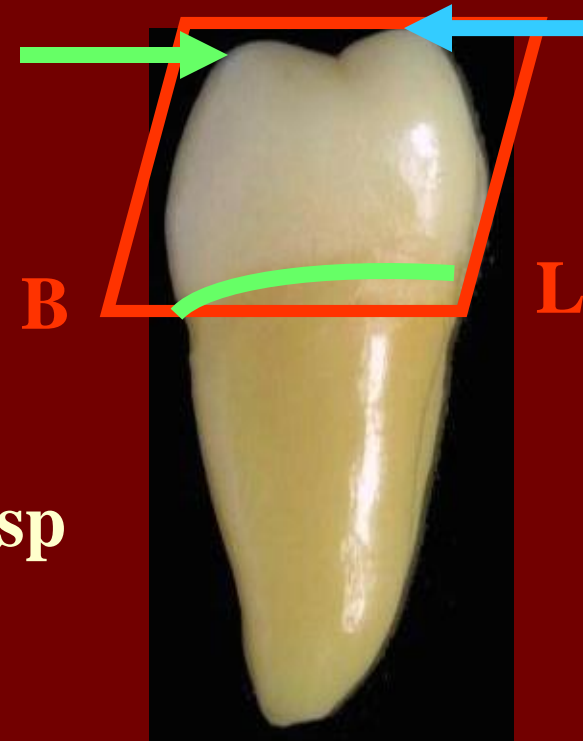
MESIAL ASPECT

The geometric outline: Rhomboid and inclined lingually.

Notes:

1- **ML** cusp is more pointed than **MB** cusp (because it is out of occlusion)

2- The cervical line slants occlusally from the buccal to the lingual side.

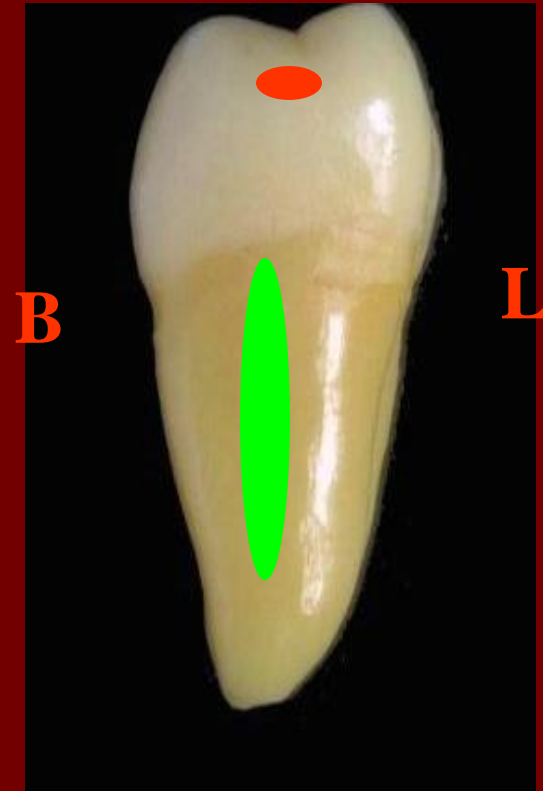


MESIAL ASPECT

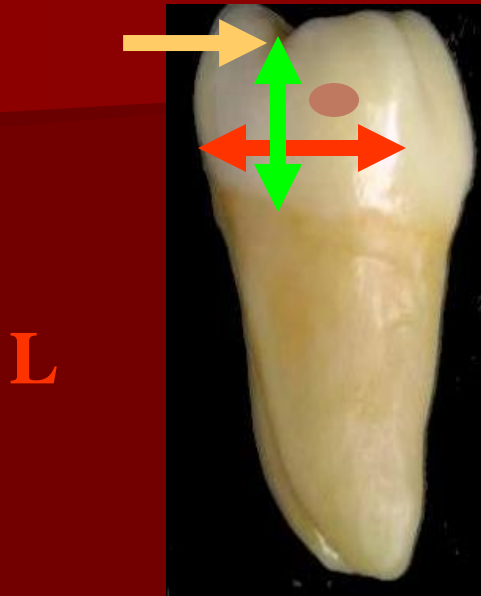
Anatomical landmarks:

*Contact area centered B-L below the crest of marginal ridge

*Deep developmental depression on the mesial surface of the root.

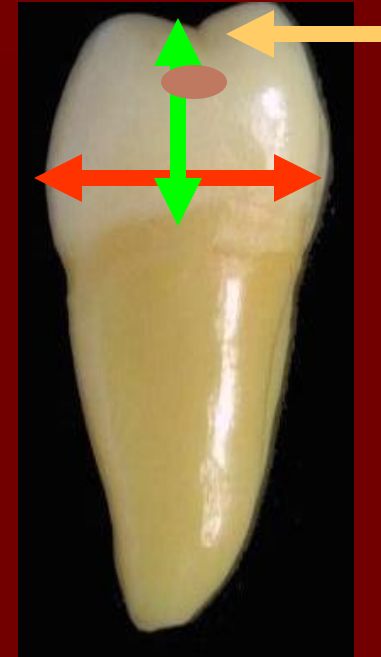


DISTAL ASPECT



B

MESIAL ASPECT



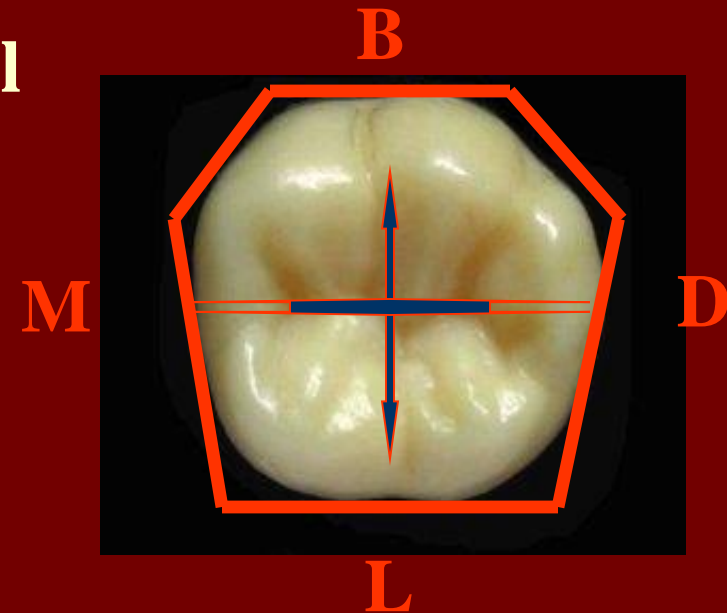
L

- *The crown is shorter distally
- *There is a distal conversion
- *DMR is U- shape, shorter and more cervically than MMR
- *Distal contact area located below the distal cusp

OCCLUSAL ASPECT

The geometric outline: Hexagonal

- * **The crown measurements is larger MD than BL .**
- * **The crown converge lingually and distally**

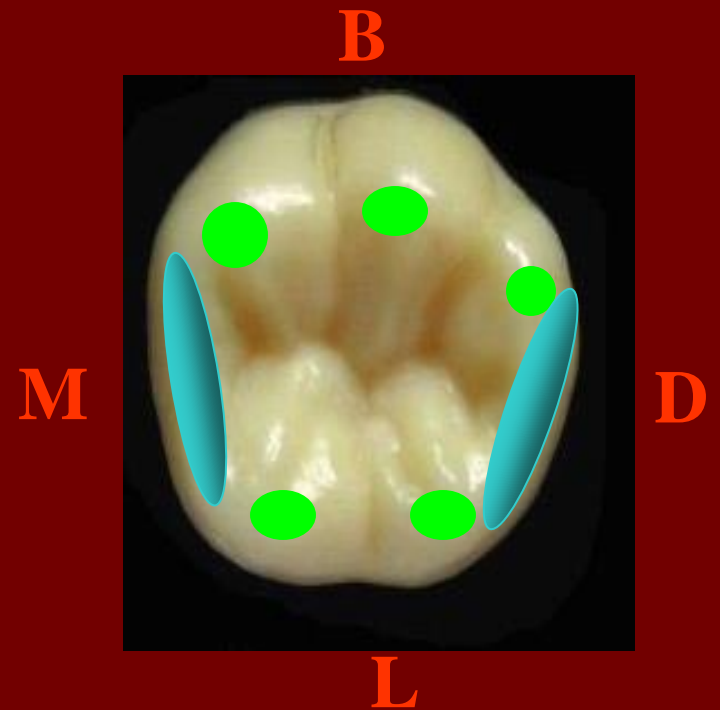


Anatomical landmarks:

Elevations:

***5 cusps with 5 triangular ridges**

*** MMR and DMR**



Anatomical landmarks:

Depressions:

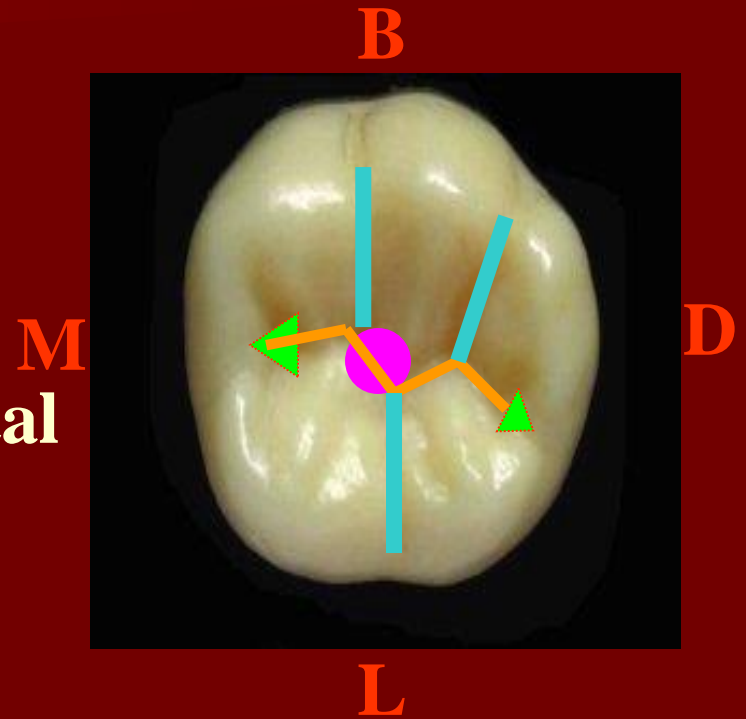
*1 major central fossae + pit

*2 Minor fossae (mesial and distal triangular fossae)

*Developmental grooves :

Central groove is **zigzag** in its MD coarse.

MB groove , DB and L groove

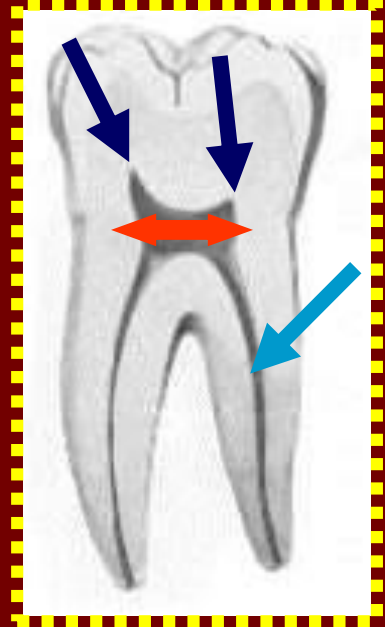


☺ Pulp cavity

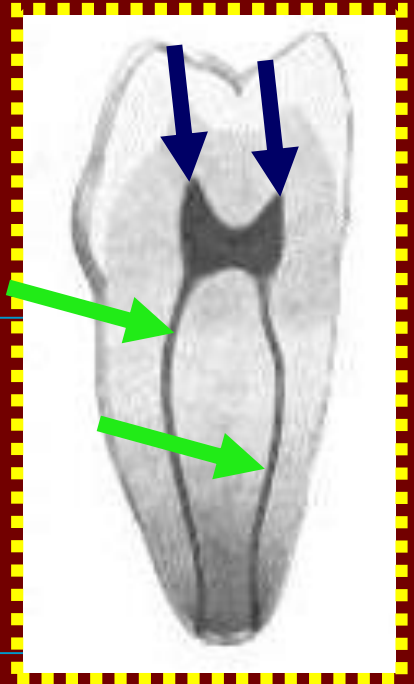
▶ Pulp Chamber:

- The pulp chamber is broad MD.
- It is almost rectangular in shape.
- There is a **pulp horn** beneath each cusp

Buccal view



Mesial view



▶ Root Canals:

- 3 main root canals.
- M** root has **2 root canals** while **D** root has **1** root canal.



Note:

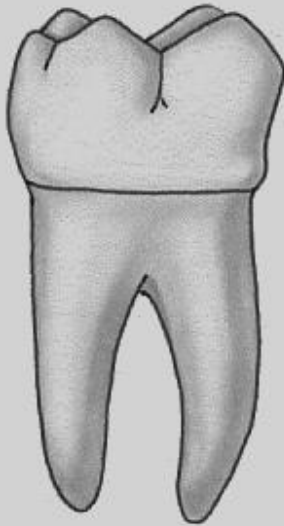
The two mesial root canals appear in x – ray overlapping each other.



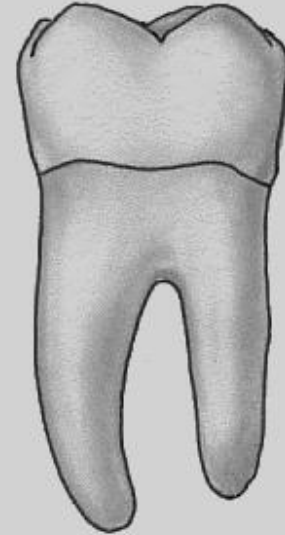
Abnormalities you may find:

1- Three or four roots.

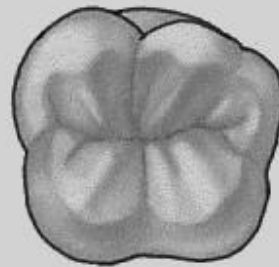
2- Four root canals.



Buccal



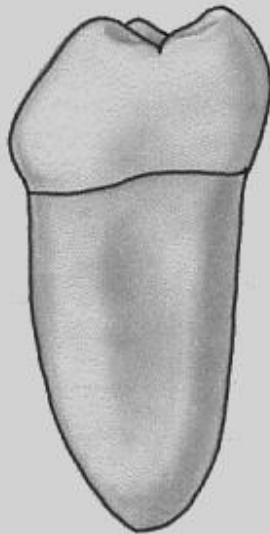
Lingual



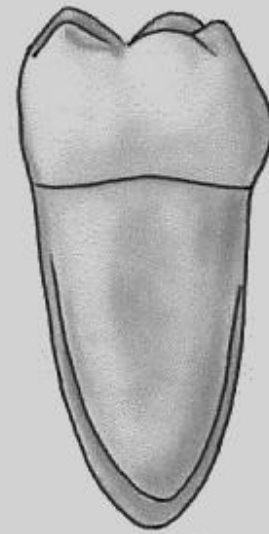
M

D

Occlusal



Mesial



Distal

Enumerate the names of the following elevations and depression?

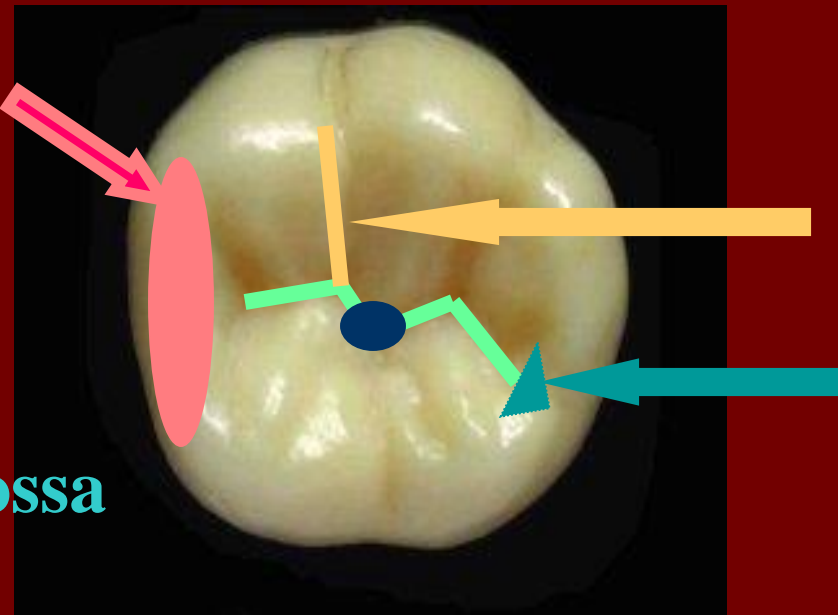
1-Central groove

2-MMR

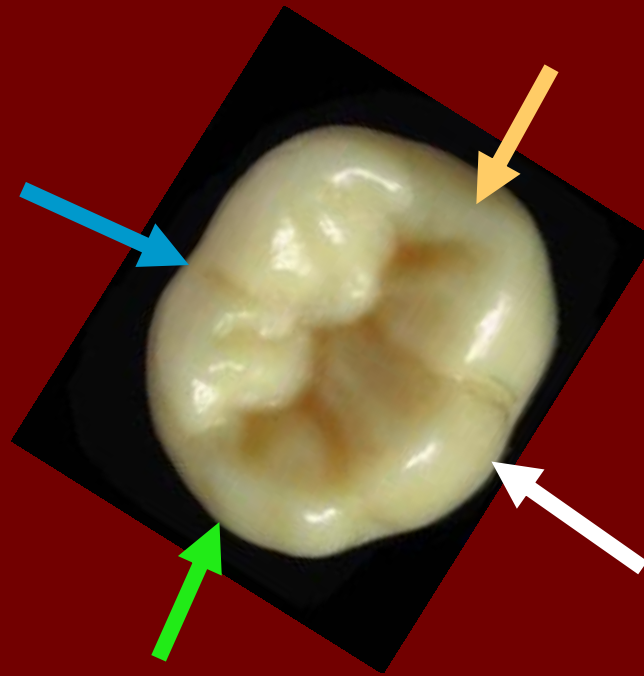
3-Central fossa

4-Distal triangular fossa

5-Mesio-buccal groove



Label the different surfaces:



Buccal surface

Lingual surface

Mesial surface

Distal surface

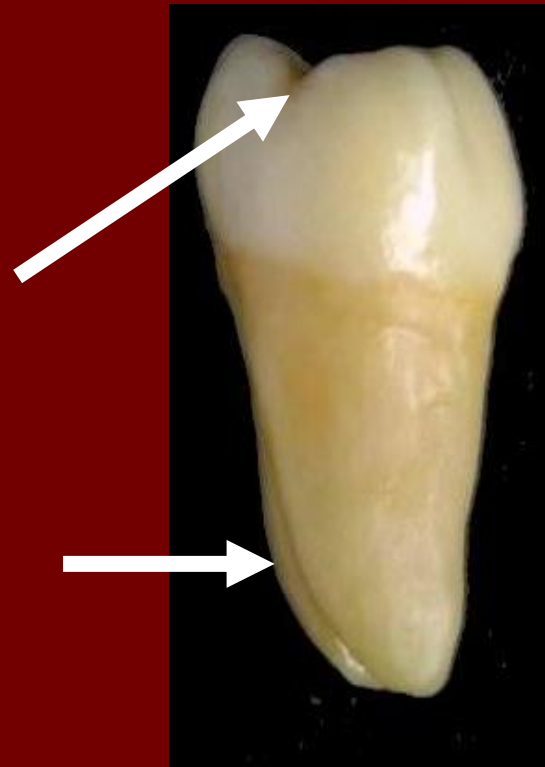
What is this?



What is this?



What is this?

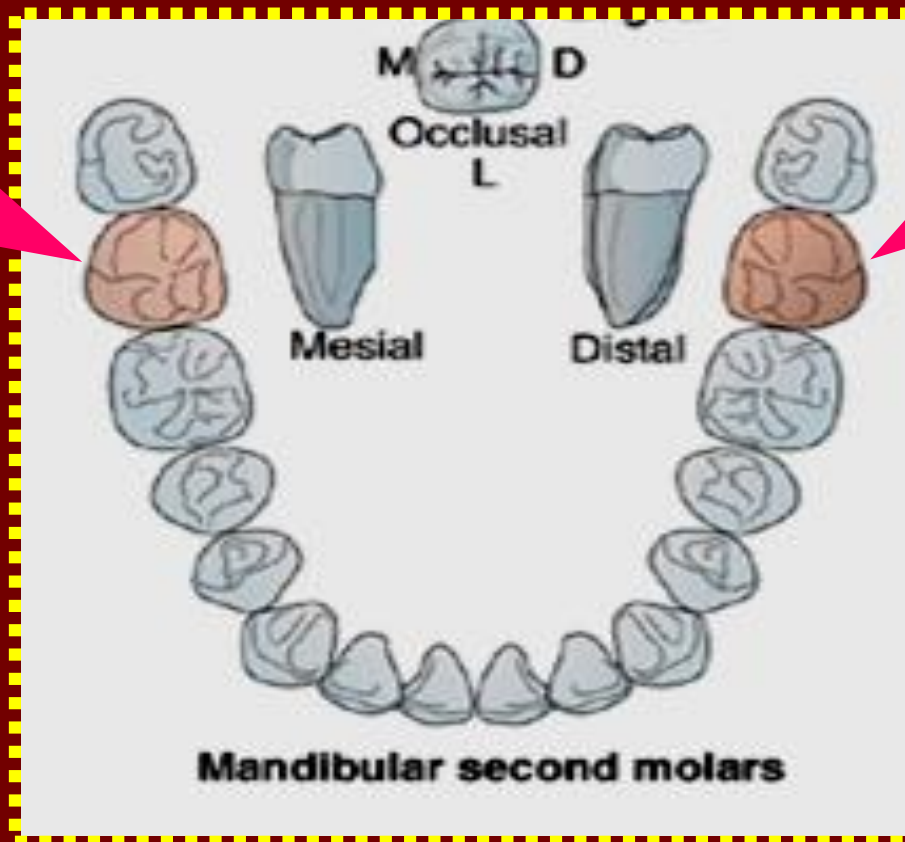


What is this?



Mandibular Permanent 2nd Molars

Dr Magdy alabasiry



Chronology

Appearance of dental organ	one year
First evidence of calcification	2.5-3 years
Enamel completed	7-8 years
Eruption	11-13 years
Root completed	14-15 years

No. of surfaces:

It has five surfaces



BUCCAL



LINGUAL



MESIAL



DISTAL

No. of roots:

It has 2 roots

OCCLUSAL



BUCCAL ASPECT

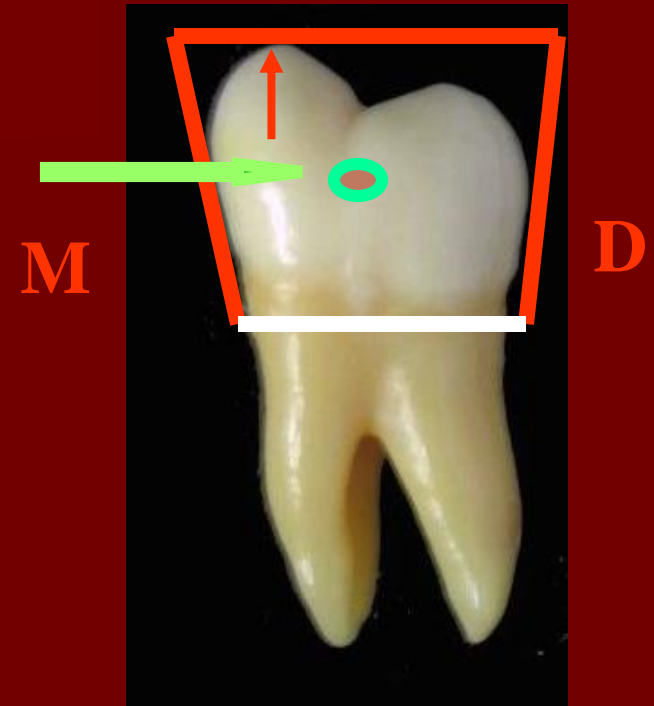
Geometric outline: Trapezoid with small uneven side located cervically

Anatomical Landmark:

Buccal developmental groove may end in a buccal pit.

MB cusp is longer than the DB cusp.

The roots are closer and nearly parallel with more pointed apex than the 1st molar.



LINGUAL ASPECT

The Crown

The lingual cusps are more pointed than buccal cusps.

Anatomical Landmark: Lingual developmental groove never pitted.

The Root

Short root trunk with a developmental depression.

D



M

MESIAL ASPECT

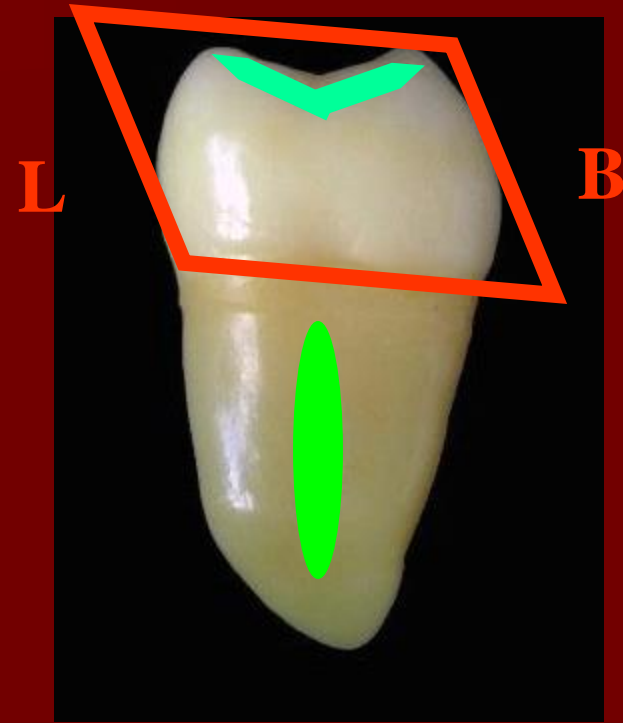
The geometric outline:

Rhomboidal with lingual inclination

***MMR is concave**

***The mesial root is only visible**

***Longitudinal depression on the mesial surface of mesial root**



DISTAL ASPECT

*DMR is concave but less angular than MMR

*Distal root is narrower than mesial root, so both roots are seen

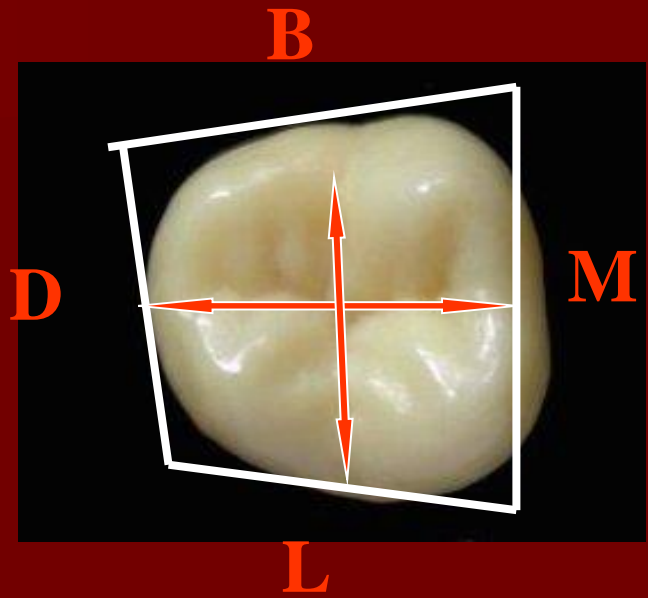


OCCLUSAL ASPECT

The geometric outline: Rectangular. **D**

Note:

- * Disto-Lingual convergence.
- * Mesio-Distally is larger than bucco - lingually.



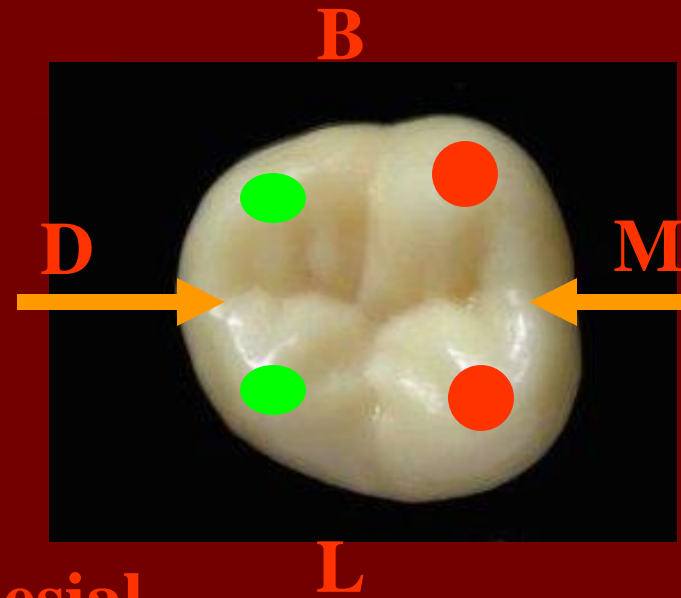
OCCLUSAL ASPECT

Anatomical landmarks:

Elevations:

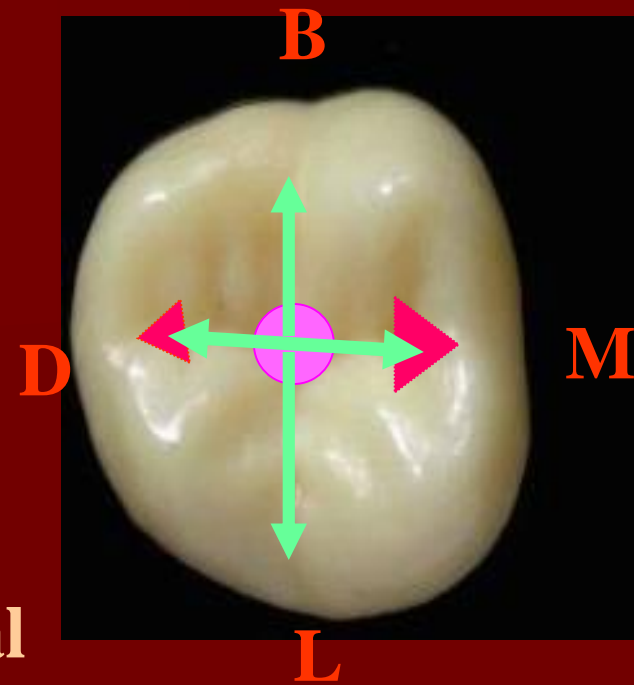
*4 cusps with 4 triangular ridges (**mesial cusps** are larger than **distal cusps**).

* Mesial and distal marginal ridge.



Depression:

- *1 major central fossae with central pit
- *2 Minor fossae (mesial and distal triangular fossae)
- *Developmental grooves: form a typical cross pattern
- * supplemental grooves radiate from developmental grooves

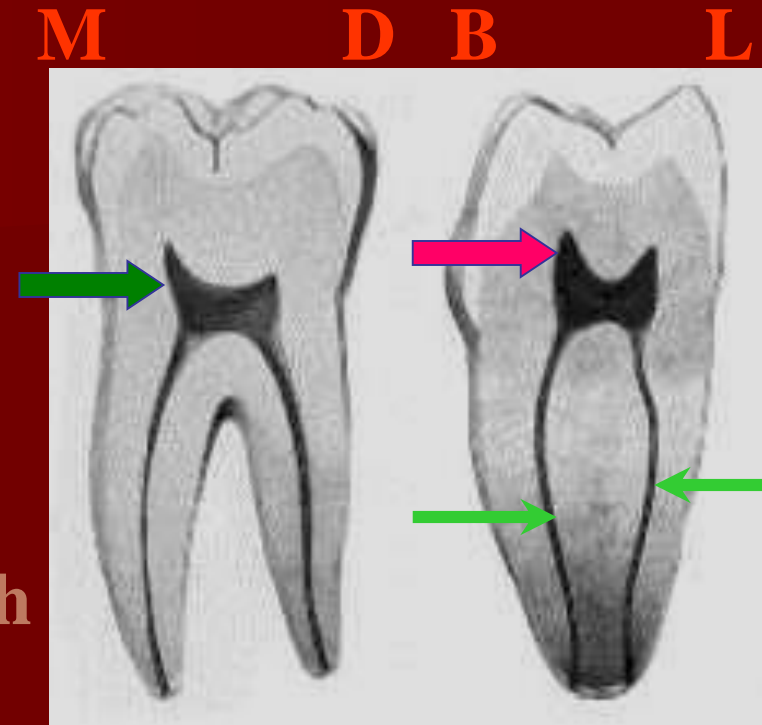


Note : All grooves provide important escape ways for food during mastication

☺ Pulp cavity

Pulp Chamber:

- ▶ Bucco-Lingually, the pulp chamber is square
- ▶ Mesio-Distally, the pulp chamber is rectangular
- There is pulp horn beneath each cusp



Root Canals:

- 3 main root canals.
- M** root usually has 2 root canals while **D** root has 1 root canal

☺ Pulp cavity

Note:

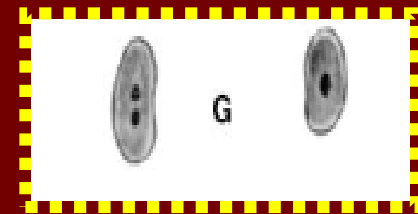
Cervical cross section:

Triangular due to small dimension distally

Mid root section:

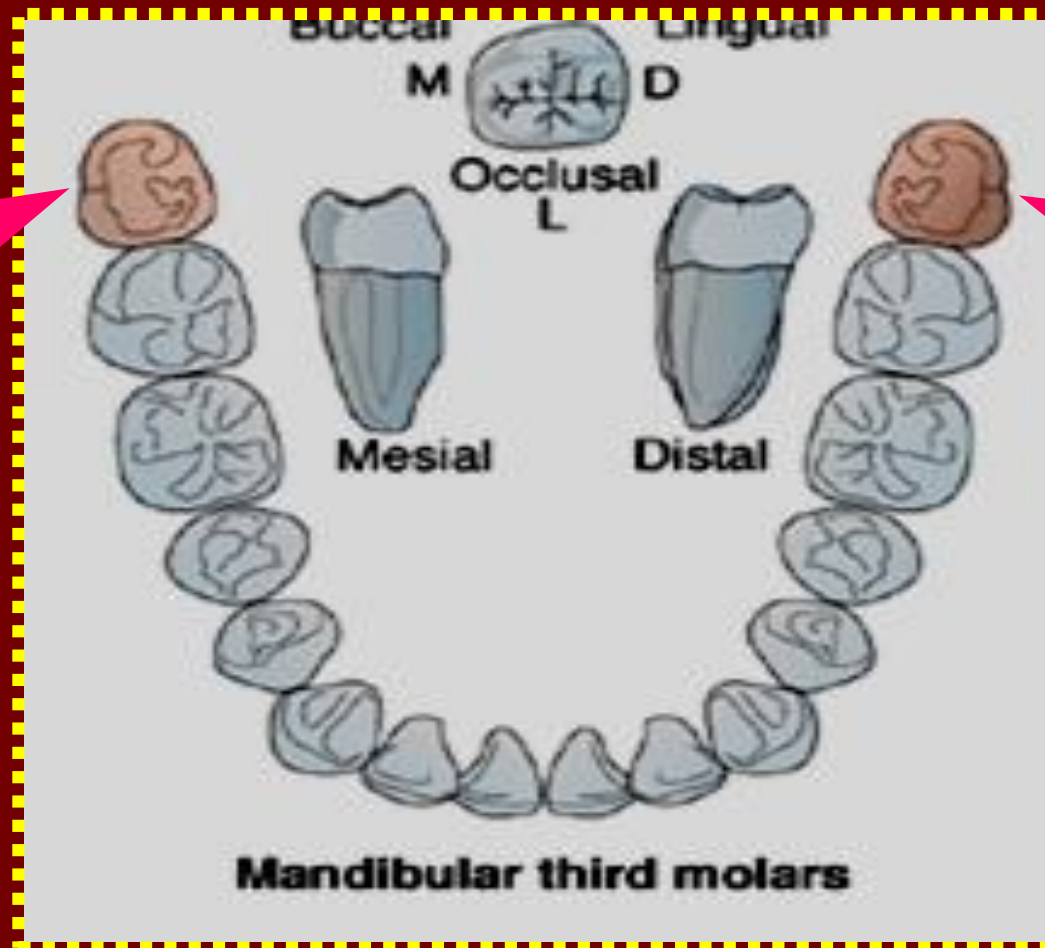
***M root is kidney shape with 2 small canals**

***D root is oval with 1 large rounded canal**



Mandibular Permanent 3rd Molar

Dr Magdy Alabasiry, BDS, MS(Egypt), Ph. D.(Egypt)



Chronology

Appearance of dental organ	4 years
First evidence of calcification	8-10 years
Enamel completed	12-16 years
Eruption	17-21 years
Root completed	18-25 years

No. of surfaces:

It has five surfaces

BUCCAL



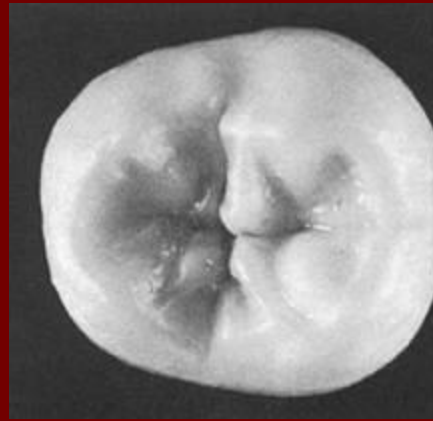
LINGUAL



MESIAL



OCCLUSAL



DISTAL



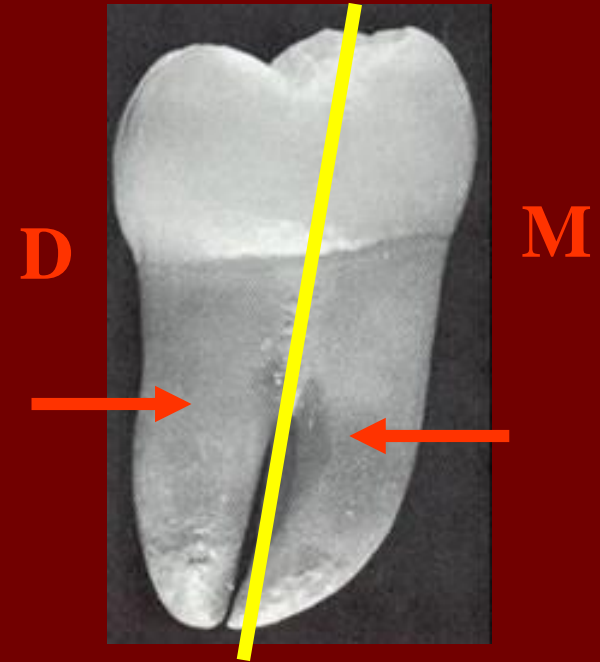
BUCCAL ASPECT

*The 3rd molar is either 4 (50%) or 5 (40%) cusp type . In 10% it has more than 5 or less than 4 cusps

*The buccal surface is very convex

* 2 Short roots (M and D) may be fused in all or part of their length

*The roots are more inclined distally than 1st and 2nd molars



LINGUAL ASPECT

The lingual cusps are longer than the buccal cusps. The mesiolingual is larger than the distolingual.



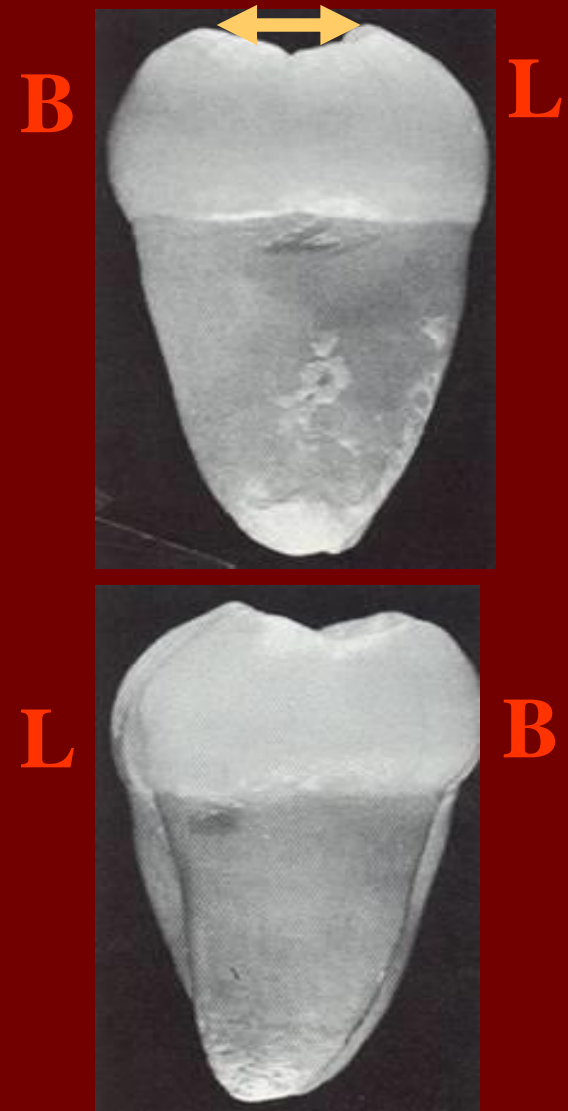
MESIAL ASPECT

The buccal cusp tips are closer to the lingual cusp tips giving a small occlusal table

DISTAL ASPECT

There is a distal conversion

Distal root is narrower than mesial root, so both roots are seen

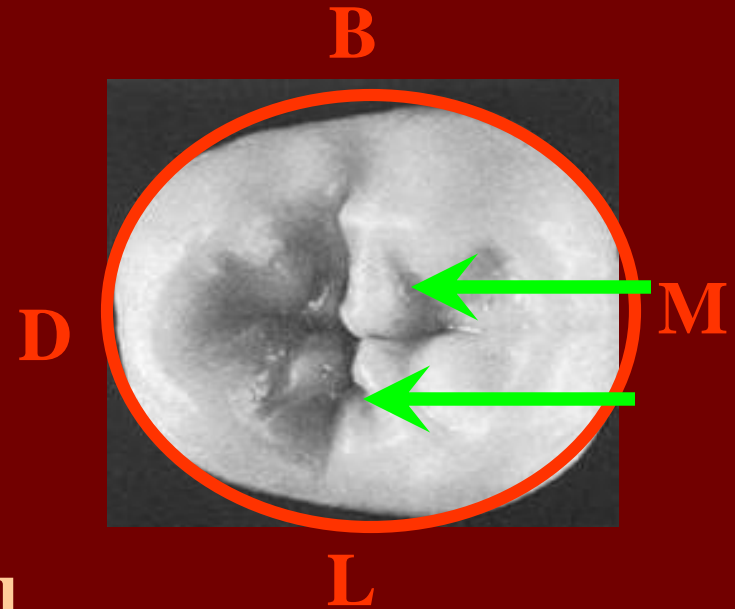


OCCLUSAL ASPECT

The geometric outline:

Rectangular or oval

There are numerous supplemental grooves and pits give a wrinkled appearance



Pulp cavity

Note:

1-The 3rd molar is showed multiple variation in the size and shape.

2- The pulp cavity also showed great variation in the size and shape

3- The pulp chamber of 8 is larger than other molars because it is younger than other molars by 9-11 years

In general :

The pulp cavity is usually similar to that of the 2nd or 1st molars, with 4 or 5 pulp horns and 2 or 3 root canals, if the tooth is normally developed .

What is this?



L. surface $\overline{7}$

What is this?



D. Surf. $\overline{7}$



Occ. Surf. $\overline{7}$



MMR $\overline{7}$



DL cusp $\overline{7}$



CDG 7



BDG 7



$M\Delta F\bar{7}$



OHHHHHH

THANK YOU

Any Question?

