300 Dental Anatomy Facts to Ace the Boards

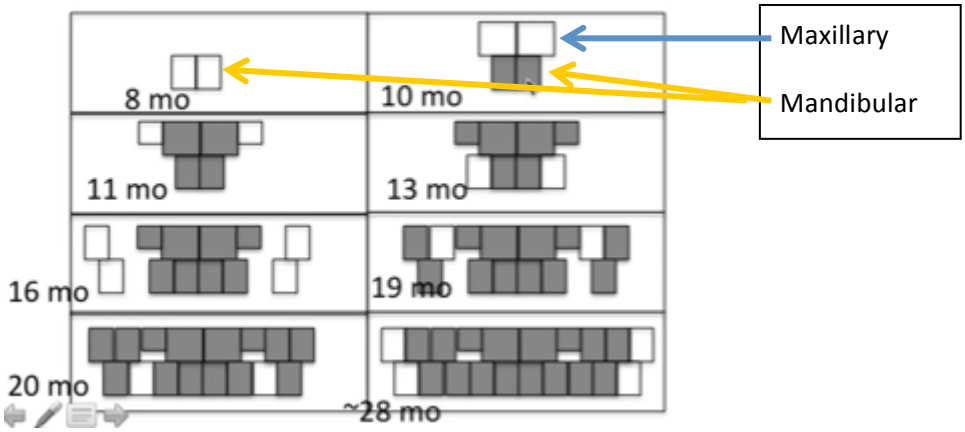
****Facts in GREEN he stated as HIGH YIELD TOPICS/ ALWAYS A QUESTION ON EXAM****

Part 1- Primary Dentition:

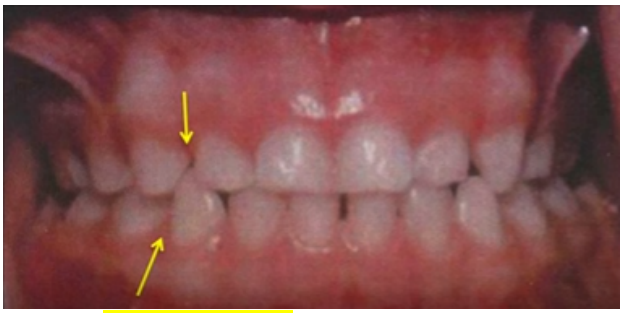
1. *Primary* teeth are less mineralized than permanent teeth and consequently are more worn.
2. The difference in space from the primary to the permanent dentition is 2-4 mm.
3. Mamelons that remain beyond the age of 10 generally indicate an open bite (since teeth are not able to occlude and mamelons don't get worn off).
4. Calcification of the primary roots is normally completed at 3-4 years of age.
5. The usual pattern of eruption for *primary* teeth is: centrals, laterals, 1st molars, canines, 2nd molars.

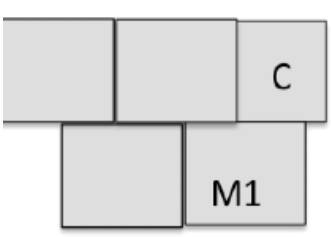
   **** NOTE:**

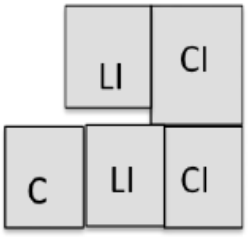
   - Front to Back except canines (meaning the 1st molars are going to erupt before the canines even though the canines are in front of the 1st molars)
   - Lowers before Uppers except laterals (meaning the maxillary lateral teeth will erupt before the mandibular lateral teeth)



6. The primate space develops in the maxillary *primary* dentition between the lateral and canine.
7. The mandibular *primary* primate space is located between canine and first molar.

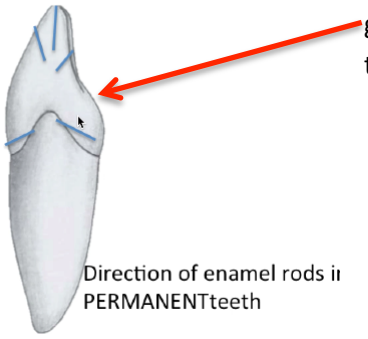




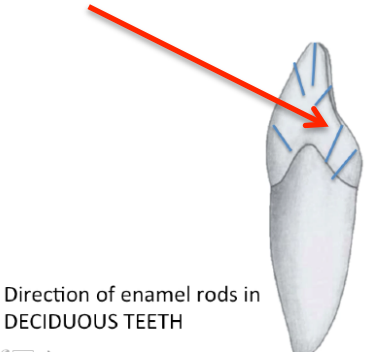


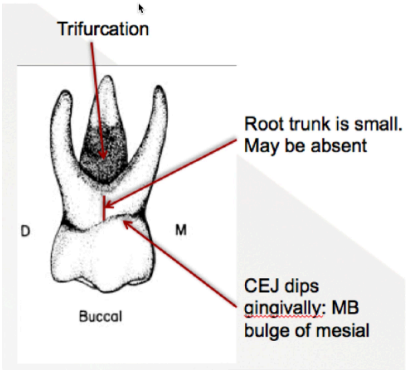
8. The *primary* spacing for the anterior teeth is most frequently caused by the growth of the dental arches.

9. The direction of *primary* enamel rods in the cervical 1/3rd is in an occlusal direction.



Permanent teeth have enamel rods going opposite (gingival) direction in the cervical 1/3rd.



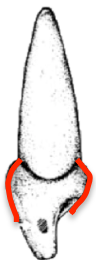


10. *Primary* molars differ from permanent molars in that their roots are more divergent.
11. A primary molar lacks an identifiable root trunk.

- *Primary Central Incisor*

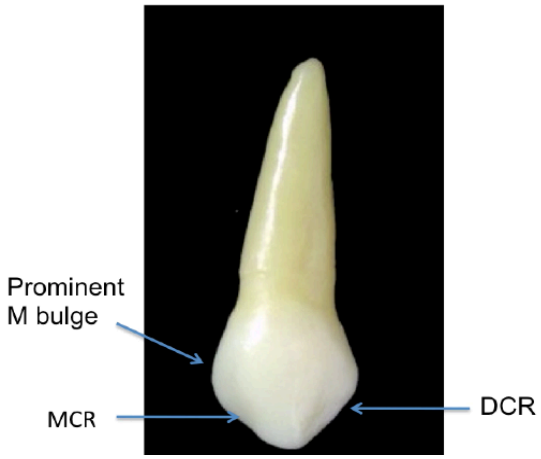
12. The *primary* mandibular central incisor has the smallest faciolingual crown dimension.
13. The primary and permanent mandibular central incisor is the most bilaterally symmetrical tooth.
14. In delayed resorption of primary incisors the permanent incisors usually erupt lingually (shark teeth).

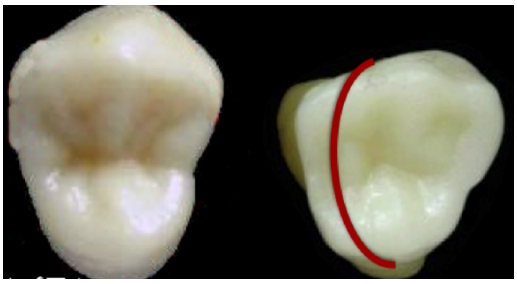
15. The *primary* central incisor exhibits a prominent cervical ridge both on the facial and lingual surfaces.



- *Primary Canine*

16. From a facial view, the crown of a *primary* canine has a mesio-incisal(MCR) longer than the distolingual(DCR).
17. The cusp tip of the *primary* canine is generally off set to the distal. (reason why is has a longer mesio-incisal edge as stated in fact #16)



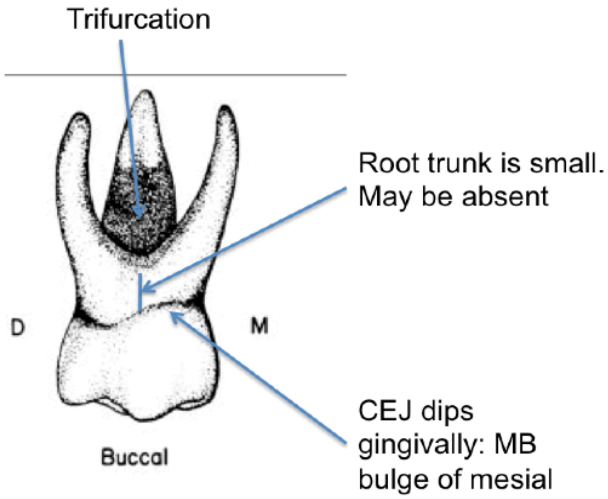


- *Primary Maxillary 1st Molar*

18. The maxillary 1st *primary* molar has a crown that somewhat resembles a permanent premolar.
19. The maxillary 1st *primary* molar has roots that resembles a typical **permanent Maxillary Molar.**
20. The cervical ridge is most prominent for ***primary*** MAXILLARY (pay attention) teeth on the Mesio-Facial (MF) surface of the 1st molar.

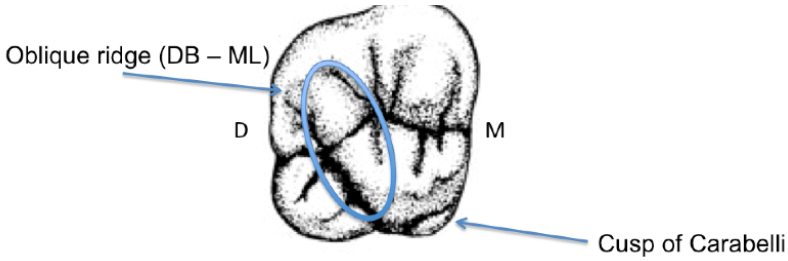
**** Could ask this question in a couple different ways:**

- They like to ask about prominent cervical ridges
  - Which maxillary tooth has the largest cervical ridge?
  - Where is the cervical ridge located on the tooth? (like the distal or mesial surface..)
  - If they ask about the MAXILLARY primary tooth its going to be the FIRST MOLAR on the MF.
  - If they ask **OVERALL** which primary tooth has the most prominent/largest cervical ridge it is NOT THIS TOOTH! (**Mandibular 1st Molar = Answer)**



- *Primary Maxillary 2nd Molar*

21. The *primary* maxillary 2nd molar is the primary tooth that generally has an oblique ridge.
22. *Primary* 2nd molar is the ONLY primary posterior tooth to have oblique & transverse ridges & DL groove.
23. The *primary* 2nd molar generally exhibits cusp of Carabelli.
24. The last *primary* tooth to erupt is the Maxillary 2nd Molars.

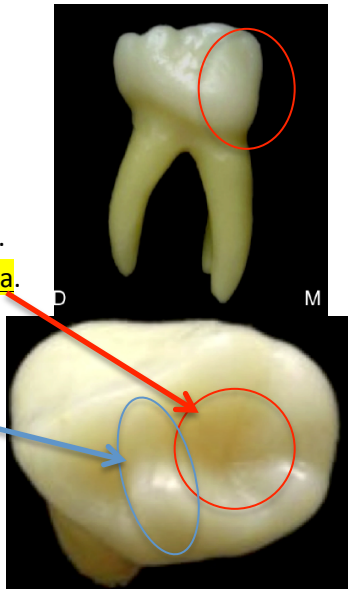


25. The *primary* 2nd molar exhibits more cusps than the primary 1st molar.

- *Primary Mandibular 1st Molar*

26. The *primary* tooth that has the most distinctly prominent facial cervical ridge is **Mandibular 1st Molar**.
27. Facial view of a *primary* mandibular 1st molar the CEJ is most apically positioned on the mesial 1/3rd (because of the prominent cervical ridge).
28. The *primary* mandibular 1st molar usually exhibits a distal triangular fossa.

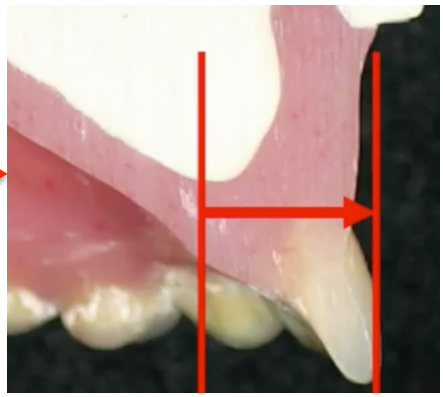
    ** Central Fossa usually displaced to the distal. Some sources call it a distal or a "main" fossa rather than a central.
29. The primary mandibular 1st molar has the most distinct transverse ridge.
30. The *primary* 1st mandibular molar does NOT look like any permanent tooth.
31. The *primary* teeth that differ most from permanent teeth are the Mandibular 1st molars.
32. The highest and sharpest cusp on a primary mandibular first molar is the mesiolingual NOT MB!



Part 2- Permanent Incisors:

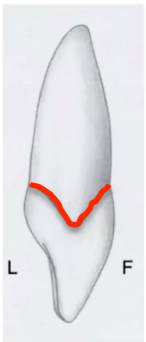
- *Maxillary Central Incisors*

1. The teeth whose function is primarily biting are incisors.
2. The maxillary central has the greatest facio-lingual axial inclination.
3. Maxillary central has GREATEST cervical curvature (on mesial) of any other tooth.

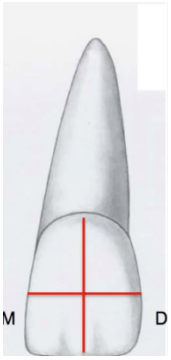


**** REVIEW TIME:****

- **THE CEJ DIPS DEEPER ON (THINK OF MAXILLARY CENTRAL INCISOR WHEN MEMORIZING!!)**
  - Anterior Teeth > Posterior Teeth
  - Maxillary Teeth > Mandibular Teeth
  - Mesial side of a Tooth > Distal side of a Tooth
  - GREATEST ON MESIAL OF THE MAXILLARY CENTRAL INCISOR



4. Maxillary incisors are the only **anterior** teeth that are wider mesio-distally than facio-lingually.
5. Maxillary central incisor has greatest MD crown dimension of any ANTERIOR tooth. Mandibular 1st molars has greatest MD crown dimension of any **POSTERIOR** tooth.
6. Maxillary central has measurement that is nearly identical for inciso-cervical vs. mesio-distal.
7. The contact between a maxillary central and lateral incisor makes the lingual embrasure larger than the facial.

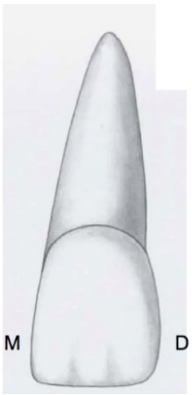


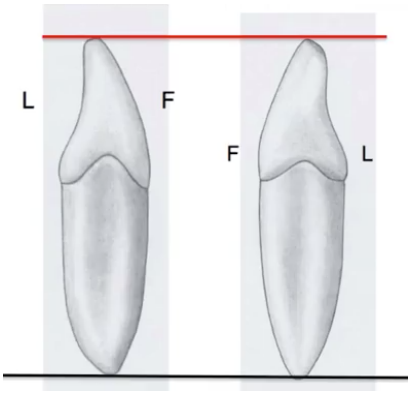
8. The incisal embrasure between the maxillary centrals is smaller than between the central and the lateral.
9. The non-molar tooth that most frequently has a mesial and distal pulp horn is the **maxillary central incisor.**
10. The non-molar tooth that is least likely to have a bifurcated root is the **maxillary central incisor**. (the lateral incisor can possibly have 2 canals but central basically never does).

- *Maxillary Lateral Incisors*

11. Maxillary lateral has MOST crown shape variations.
12. Except for 3rd molars, the maxillary lateral incisor exhibits the most deviation in crown morphology.
13. The maxillary lateral incisor most often is in abnormal relation and contact with adjacent teeth.
14. Other than 3rd molars, the tooth that is most often congenitally missing is the maxillary lateral incisor.
15. The Anterior tooth that most likely would demonstrate lingual pit caries is maxillary lateral incisor.
16. The DL groove of a MAXILLARY lateral incisor is an anatomical feature that complicates root planning.
17. The distoincisal angle of a maxillary lateral has the greatest convexity of all maxillary anterior teeth.

18. The maxillary lateral incisor generally has the most prominent marginal ridges of all anterior teeth.
19. Maxillary lateral incisors have the most distinct and deepest lingual fossa's of all anterior teeth.
20. Maxillary lateral mesio-distal crown width SMALLEST of any MAXILLARY tooth.
21. Maxillary lateral has mesio-distal measurement that is nearly identical to facio-lingual. (PAY ATTENTION!!) Closest of all ANTERIOR TEETH.
    - ** Don't confuse with the maxillary central incisor which is nearly identical for inciso-cervical vs. Mesio-distal (instead of facio-lingual vs. mesio-distal which applies to the maxillary lateral incisor)**
22. The mesio-distal width of the maxillary lateral incisor is narrower than the maxillary central incisor.
23. Maxillary lateral has distal contact that is farthest cervically of any INCISOR (usually very incisal).
24. Maxillary lateral has distal contract centered both inciso-cervically and facio-lingually.
    - Remember the saying for contacts from central → canine:
      - **I** Just Jacked **M**ichael Jackson's **M**o-ped.





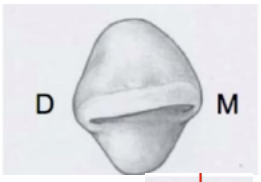
25. The maxillary lateral incisor is usually equal to or larger than the maxillary central in root length.

- *Mandibular Central Incisors*

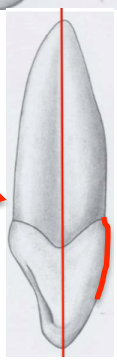
26. Mandibular centrals distinguished by the cervical curvature, which is greater on the mesial than distal.
27. The mandibular centrals and laterals most frequently have concave areas on M & D root surfaces.
28. Mandibular centrals- SMALLEST crown dimensions of ANY tooth.
29. Mandibular central- most symmetrical crown (hard to tell the L & R apart from one another)
30. Mandibular central- has sharpest set of incisal angels (mesial & distal).
31. Mandibular central- proximal contacts at same level (incisal 1/3rd on each)
32. Mandibular central incisors have proximal contacts at approximately the same levels on mesial & distal.
33. The mandibular central incisors have contact points at the same incisocervical level.
34. Mandibular central incisors and Maxillary 3rd molars generally occlude with **only one** opposing tooth. (there is only 1 tooth for each arch that has only 1 contact point: Maxillary = 3rd molar; Mandibular = central incisor)
35. The first **succedaneous** tooth to erupt in the mouth is the permanent mandibular central incisor (remember Permament 1st molar is NOT succedaneous!)
36. B & L embrasures may be the same size.

- *Mandibular Lateral Incisors*

37. The crown of the mandibular lateral incisor tilts distally in relation to the long axis. (can see DMR from mesial) has the DISTAL TWIST!
38. The Mesio-distal width of the mandibular lateral incisor is wider than the mandibular central incisor (opposite of what it is like on the maxillary arch!)

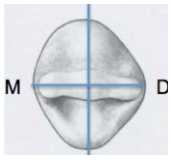


Part 3- Permanent Canines:

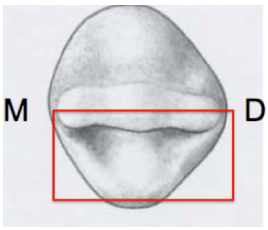


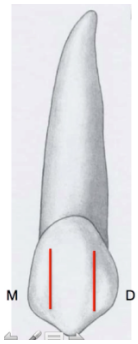
- *Maxillary Canines*

1. Maxillary Canine has the GREATEST cervical prominence of any ANTERIOR tooth.
   (BE CAREFUL! Love to trick you by either asking anterior, posterior, and trip you up hoping that you are thinking of just ALL teeth)
2. The maxillary canine from a proximal view tends to be positioned with the most nearly vertical axis.
3. Maxillary Canine has the GREATEST OVERALL total tooth length.
4. Maxillary canine has the LONGEST ROOT of any other tooth. (BUT not the crown! Only the longest root and tooth)
5. Maxillary canine has GREATEST F-L crown dimension of any ANTERIOR tooth.
6. Maxillary canine distal contact is centered.

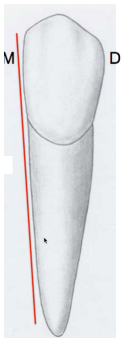


7. The MAXILLARY canine is the only tooth that has potential of contacting BOTH anterior and posterior teeth.
8. Maxillary canine cusp tip is located facial to the lingual axis.
    - Centered or slightly facial, so lingual is more visible from incisal view

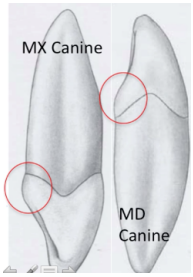




9. The middle facial lobe of the maxillary canine includes the cusp tip (opposite to MD canine)
    - So lingual is more visible from incisal view
10. Maxillary canine has a distal bulge
    - Mesial and Distal are asymmetric (due to the distal bulge)
11. The crown form of canines from a facial view is pentagonal
    - *Mandibular Canines*

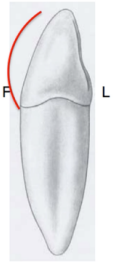


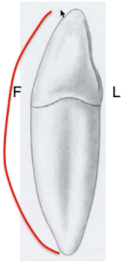
12. Mandibular Canine has straightest mesial alignment of crown to root.
13. The mesial surface of the crown of the mandibular canine is almost parallel to the long axis.
14. Mandibular canine has the longest CROWN dimension of any other tooth.
15. The mandibular canine has a less prominent cingulum than the maxillary canine.
16. The mandibular canine is narrower mesiodistally than the maxillary canine.
    - Think of the MAXILLARY canine distal bulge and the MANDIBULAR canine flat mesial.



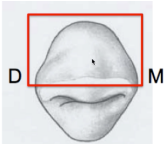
17. The mandibular canine is the anterior tooth that MOST FREQUENTLY exhibits a bifurcated root.

18. The bifurcation for the mandibular canine roots when present creates a facial and lingual root.
19. Mandibular canine has the LONGEST ROOT length of any MANDIBULAR tooth.
    - BE CAREFUL!!
    - LOGEST ROOT OF ANY TOOTH IS MAXILLARY CANINE!!
20. In cross section the root of the mandibular canine is IRREGULARLY OVAL.
21. The cross section of the mandibular canine at the CEJ is OVOID but wider mesiodistally at the labial.
22. In cervical cross section the root of the mandibular canine is flattened in a mesio-distal direction.
23. When compared to a maxillary canine the mandibular canine has contact areas located more incisally (think of MD incisors).
24. The mandibular canine has a continuous convex facial surface from incisal to apical end.



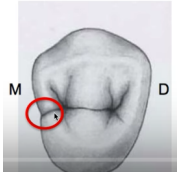


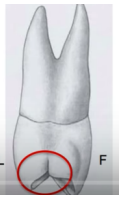
25. Mandibular canine makes a C shape from crown tip to root apex.
26. Mandibular canine has incisal edge that is lingual to the long axis (opposite to MAXILLARY canine!)



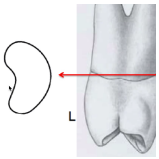
Part 4- Permanent Premolars

- *Maxillary 1st Premolar*

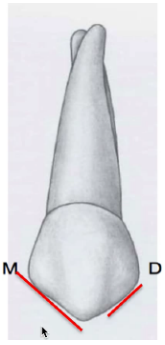




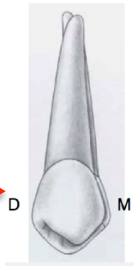
1. The maxillary 1st premolar has the most pronounced developmental marginal groove of any maxillary tooth.
2. The maxillary 1st premolar has a mesial concavity that makes it difficult to adapt a matrix band.
3. The cervical cross section of the maxillary 1st premolar exhibits a kidney shaped root outline.
4. The cervical cross section of the maxillary 1st premolar exhibits a kidney shaped pulp chamber floor.



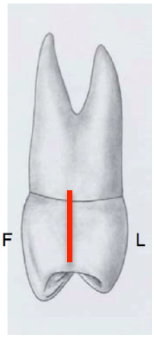
5. The non-molar tooth that most frequently exhibits three roots is the **maxillary 1st premolar**.
    - **Easy to remember, just think of the non-molar tooth that usually has 2 roots.**
6. The facial cusp of the maxillary 1st premolar is offset to the distal.
7. Has a longer mesio-facial cusp ridge than disto-facial cusp ridge.
    - Only premolar with longer mesial cusp ridge (so does primary maxillary canine)
    - Opposite of most of the other teeth so this is a unique fact that they like to test on the maxillary 1st premolar.
    - Remember the uniqueness of the cusps ridges because they like to ask questions about that.



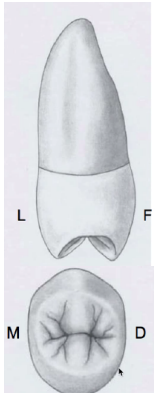
8. The premolar with the steepest cusp inclines. (also unique feature of this tooth)
9. Maxillary 1st and 2nd premolars lingual cusps are off set to the mesial.
    - But the buccal cusp is offset to the distal.



10. The maxillary 1st premolar is the posterior tooth that has the greatest cervico-occlusal crown height. (so going from CEJ to the tip of the crown it's going to be the tallest tooth, when you get a question like this it might be easy to think that one of the molars is the correct answer but actually the maxillary 1st premolar is the tallest of the posterior teeth!)
11. The non-molar tooth having the sharpest demarcation between pulp chamber and canal.
    - *Maxillary 2nd Premolar*
        - *Note: When in doubt between choices for Maxillary Premolars, choose the 1st premolar because there are more unique facts to ask about it compared to the 2nd premolar.*

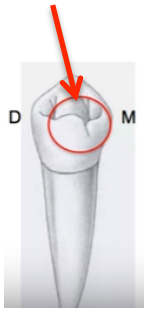


12. The size and position of the cusps are more identical for the 2nd maxillary premolar than the 1st.
13. The maxillary 2nd premolar has 2 cusps that are of equal height.
14. Maxillary 2nd premolar is the most symmetrical POSTERIOR tooth (has to do with cusps).
15. Instead of a long central groove with few supplemental grooves, it has a short central groove with a lot of supplemental grooves that make it look wrinkly. (Big point they like to ask about this tooth- will use the work wrinkly which we should automatically associate with the maxillary 2nd premolar)
16. Maxillary 2nd premolar has fossa that are closest in size compared to any other posterior tooth.

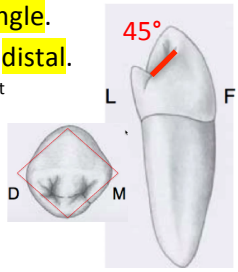


    - *Mandibular 1st Premolar*
        - *They like to ask A LOT of questions about this tooth!*
17. The mandibular 1st premolar has a uniquely prominent triangular ridge. Its so prominent that there's no central groove, just isolated pits.

- **Snake Eyes!**
- No Central Groove

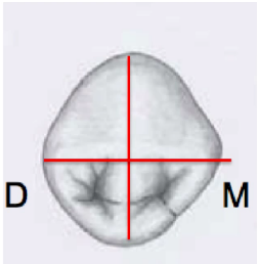


18. The mandibular 1st premolar has frequently both a separate mesial and distal pit (snake eyes).
19. The mesiolingual developmental groove on tooth #21 originates from the occlusal pit.
20. The mesiolingual developmental groove on tooth #21 extends onto the proximal surface. No groove on distal!
21. Mandibular 1st premolar is the only tooth with a mesio-lingual groove.
22. Mesiolingual groove is an identifying characteristic for the **mandibular 1st premolar.**
23. **Mesial lingual developmental groove** makes mesial marginal ridge run at a 45 degree angle.
24. The mandibular 1st premolar the mesial marginal ridge is located more cervical than the distal.
25. More of the occlusal surface can be seen from the mesial than distal for a mandibular 1st premolar (due to 45 degree MMR).
26. The occlusal outline for the mandibular 1st premolar occlusal view is diamond shaped.
27. In the rare event of a second canal for a mandibular 1st premolar, it is likely located to the lingual.



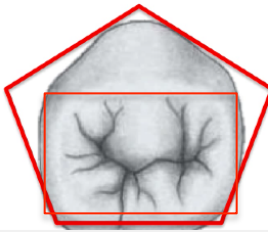
28. The mandibular 1st premolar is the **only** premolar that frequently only has 1 pulp horn.
29. The lingual cusp of the mandibular 1st premolar is approximately 2/3rds the height of the facial cusp.
30. The lingual cusp of a mandibular 1st premolar is similar in development to the cingulum of a canine.
31. The lingual cusp of the mandibular 1st premolar in normal occlusion **does not occlude.**
32. Mandibular 1st premolar has the MOST VARIATION of ALL POSTERIOR teeth in facial vs. lingual cusp height.

    (Remember in the maxillary premolars the maxillary 1st premolar buccal cusp is usually going to be ~ 1mm higher than the lingual cusp whereas in the maxillary 2nd premolar the cusps are about the same height. However in the mandibular 1st premolar we are going to see the greatest difference in cusp height between the buccal and lingual)



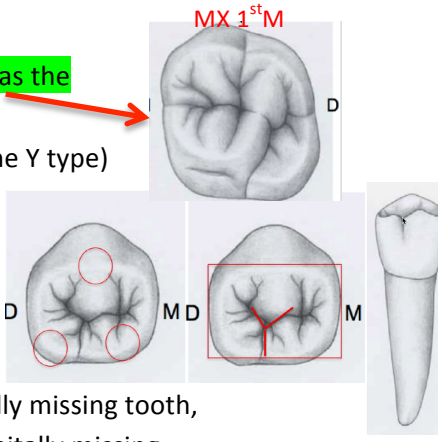
33. The facial masticatory mucosa (attached gingival) is narrowest on the facial aspect of mandibular premolars.
34. Mandibular 1st premolar facio-lingually smallest of any posterior tooth.
    REMINDER: The maxillary 1st premolar is the posterior tooth that has the greatest cervico-occlusal crown height.
35. Mandibular 1st premolar is closest of all MANDIBULAR TEETH in FL vs. MD diameter.

- *Mandibular 2nd Premolar*



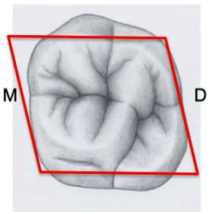
36. Viewed from the occlusal the basic coronal outline of a mandibular 2nd premolar is **pentagonal**.
    - **BE CAREFUL! Occlusal Table (biting surface) is Rectangular!**
37. The premolar that is most likely to have a crescent-shaped central developmental groove is **mandibular 2nd premolar.**
38. The shortest interdental papilla is between the mandibular 2nd premolar and the 1st molar.

39. The Y type mandibular premolar has 1 facial and 2 lingual cusps.
40. The Y type mandibular 2nd premolar has the same number of occlusal pits as the MAXILLARY 1st molar.
41. Mandibular 2nd premolar **ONLY** premolar with multiple lingual cusps. (in the Y type)
42. Mandibular 2nd premolar **ONLY** premolar with a lingual groove. (in the Y type)
43. Mandibular 2nd premolar **ONLY** premolar with a central fossa.
44. The premolar that most frequently has a single central pit is the mandibular 2nd premolar.
45. Most congenitally missing **premolar**. (can ask which is the most congenitally missing tooth, which is the most congenitally missing premolar, which is the most congenitally missing maxillary tooth, etc.)



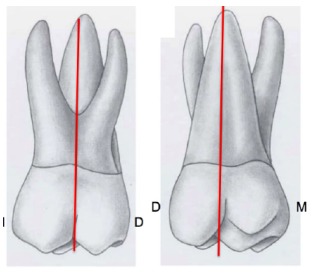
Part 5- Permanent Molar

- *Maxillary 1st Molars*
  - *Occlusal Points to Know*

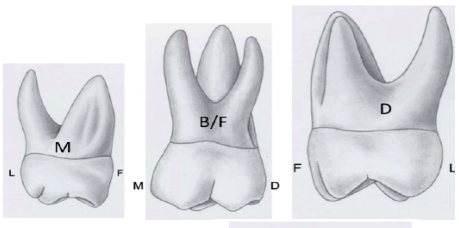


ML DF = Fat

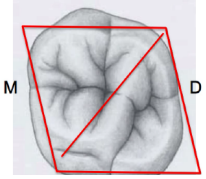
1. The occlusal outline form of an occlusal view for the maxillary 1st molar is **rhomboidal.**
2. The mesiofacial and distolingual angles from the occlusal outline tend to be acute angles.
3. The mesiolingual and distofacial angles from the occlusal outline tend to be obtuse angles. (this is the one they tend to test more on because these two angles make up the oblique ridge).
4. The maxillary 1st molar tends to taper toward the facial rather than toward the lingual so the buccal embrasure is larger than lingual.
5. The most prone facial and lingual surfaces of molars are the lingual of maxillary and the facial of mandibular.
   - *Root Points to Know*
6. The largest root of the maxillary molar is the palatal.
7. The smallest root of the maxillary molar is the distobuccal.
   - **Remember** MB root needs room for MB2 so it will be BIGGER than DB.
8. Facial view the apex of the lingual root is in line with the **facial groove** of the tooth.
9. Viewed from the lingual, the palatal root is in line with the midpoint of MD diameter.
10. When a 4th pulp canal is present in a maxillary 1st molar it is located in the mesiobuccal canal.
11. Of the 3 furcations of a maxillary 1st molar the mesial is the closest to the cervical line.
12. Of the 3 furcations of a maxillary 1st molar the distal is the furthest from the cervical line.



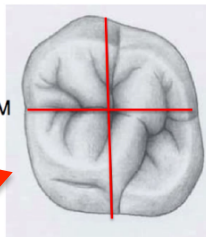
- Distance of furcations from cervical line:
  - M < B < D
  - You get further away the more distal you go



- *Oblique Ridge Facts to Know (A lot of Questions on this Concept!)*



13. The oblique ridge of maxillary 1st molar forms the distal boundary of the central fossa.
14. The obtuse corers coincide with the direction of the oblique ridge.
15. The center of the oblique ridge on a maxillary 1st molar is at the same level with the marginal ridge. (the heights are the same)
16. The oblique ridge connects the mesiolingual and distofacial cusps
17. The mesiolingual cusp of the maxillary 1st molar occludes in the central fossa of the mandibular molars.

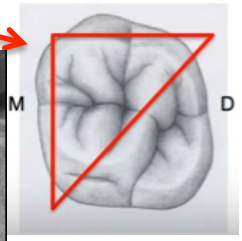


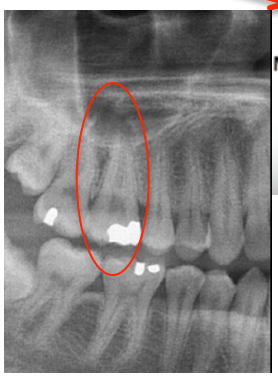
- *Dimensions Facts to Know*

18. The maxillary 1st molar has the greatest faciolingual diameter of the crown for **ALL TEETH**. (think of the cusp of carabelli)
19. Maxillary 1st molar closest in size FL vs. MD of any MAXILLARY POSTERIOR TOOTH. (have to be very careful of what they are asking.)
    REMEMBER: Mandibular 1st premolar is closest of all MANDIBULAR TEETH in FL vs. MD diameter.
20. The maxillary 1st molar has a wider MD width toward the LINGUAL than toward the FACIAL.

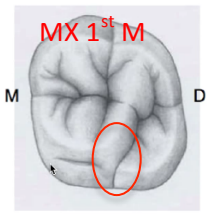
- *Cusps Facts to Know*

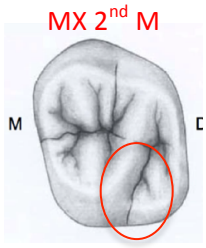
21. The distolingual cusp of the maxillary 1st molar is the only one that is not part of the molar cusp triangle.



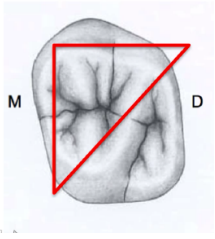


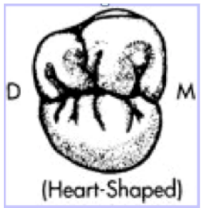
22. The mesiolingual cusp of the maxillary 1st molar is the largest and longest cusp.
23. The tooth that is most likely to be forced into the maxillary sinus during an extraction is the **maxillary 1st molar.**
24. The maxillary 1st molar has a distal concavity that can pose special problems in matrix placement.
25. The crown of the maxillary 1st molar has a shorter distolingual groove than the maxillary 2nd molar.



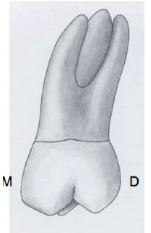


- *Maxillary 2nd Molars*



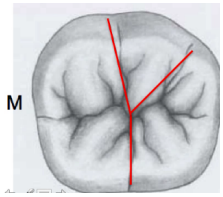


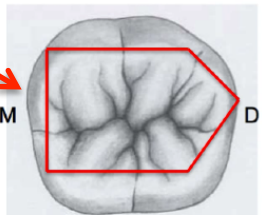
26. The distolingual cusp of maxillary molar is the only one that is not part of the molar cusp triangle.
27. If DL cups is not present = 3 cusp type heart shape (see this a lot with the 3rd molars too)
28. The roots of the maxillary 2nd molar tend to be less divergent and have greater distal inclinations.
29. The cross sectional outline at the cervical is roughly triangular for the permanent maxillary 2nd molar.



- *Mandibular 1st Molars*
  - *Occlusal Facts to Know*

30. The groove pattern for the mandibular 1st molar is considered a Y or Dryopethicus pattern.
31. The occlusal outline of a mandibular 1st molar is a pentagon.

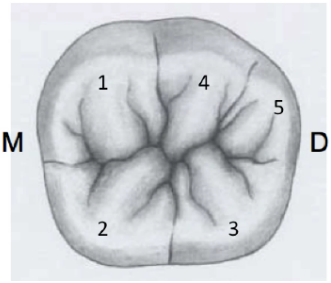




  - *Cusp Facts to Know*

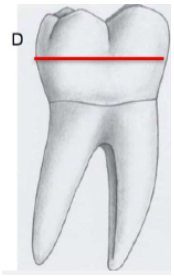
32. The smallest cusp of the mandibular 1st molar is the distal cusp.
33. The largest cusp of the mandibular 1st molar is the **mesio-facial.**

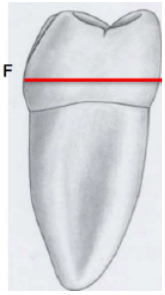
- **MB > ML > DL > DB > D**



  - *Dimension MD Facts to Know (Same question asked in different ways)*

34. Mandibular 1st molar LARGEST MD crown dimension of **ANY other tooth** (think of 3 buccal cusps)
35. Mandibular 1st molars are the only **MANDIBULAR** teeth that are wider Mesio-distally than facio-lingually. (Central incisors are only maxillary teeth wider Mesio-distally than Facial-lingually)
36. Mandibular 1st molars are the only **POSTERIOR** teeth that are wider mesio-distally than facio-lingually.
37. The mandibular 1st molars has the greatest MD diameter of all **MOLARS.**
    - **MD is greatest = any tooth, mandibular, posterior, molars**



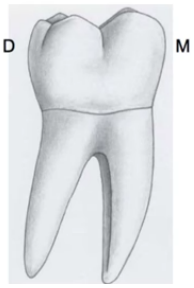


  - *Dimension FL Facts to Know*

38. Mandibular 1st molar LARGEST FL crown dimension of ANY other MANDIBULAR tooth.
    - **NOTE:** The maxillary 1st molar has the greatest faciolingual diameter of the crown for ALL teeth (think of cusp of carabelli)

  - *Dimension OG Facts to Know*

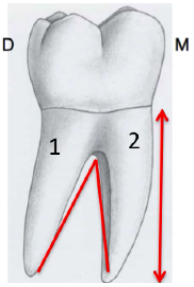
39. Mandibular 1st molar LARGEST Occluso-cervical crown dimension of any MANDIBULAR molar.
    REMINDER: The maxillary 1st premolar is the posterior tooth that has the greatest cervico-occlusal crown height.



- *Facial Facts to Know*

40. The facial surfaces of the mandibular molars are located medial to the border of the ascending ramus.
41. A key feature that differentiates a mandibular 1st and 2nd molar is the number of developmental grooves (M2 has 1 buccal).
42. Mandibular 1st molar has 3 facial cusps. (whereas the 2nd molar doesn't)
43. The developmental groove between the DF cusp and the D cusp of the mandibular 1st molar is **distofacial. (NOT DISTAL! DON'T GET TRICKED!!)**

- *Root Facts to Know*

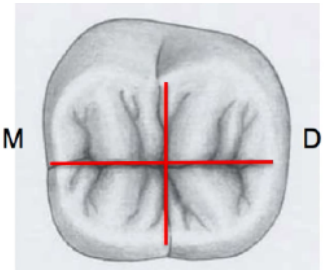


44. Mandibular 1st molar usually has 2 roots and 3 canals.
45. Mandibular 1st molars usually have 2 mesial canals. (and 1 distal canal)
46. Mandibular 1st molar has the LONGEST root of any other MOLAR.
47. Mandibular 1st molar has GREATEST root separation of ANY OTHER tooth. (maxillary 1st molar has greater/wider separation compared to the maxillary 2nd molar but the mandibular 1st molar has the GREATEST separation of all molars.)
48. At mid root cross section of the 1st molars the largest is the mesial of the mandibular (think about it, need room for MB2).
49. Mandibular 1st molar MESIAL root has GREATEST FL dimension of any other root (think about it, need room for MB2).

- *Occlusion and Working Movement*

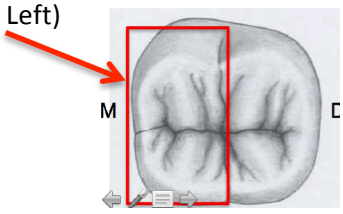
50. The distobuccal cusp of the mandibular molars occludes in the central fossa of the maxillary molars.
51. The ideal position and height of lingual cusps of MANDIBULAR 1st molar accommodates working movement.
52. The shortest interdental papilla is between the mandibular 2nd premolar and 1st molar.

- *Mandibular 2nd Molars*



- *Cusp Facts to Know*

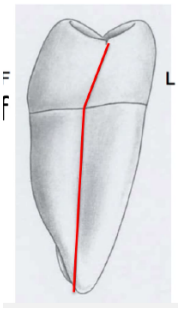
53. The groove pattern for the mandibular 2nd molar is considered a cross (+) pattern.
54. Mandibular 2nd molar- cruciform occlusal pattern.
55. Occlusal view the greatest faciolingual diameter of a mandibular 2nd molar is in the mesial 1/3 (that's how you tell Right from Left)



- *Dimensions Facts to Know*

56. Mandibular molars are the only **POSTERIOR TEETH** that are wider mesio-distally than facio-lingually.

57. Mandibular molars are the only **MANDIBULAR TEETH** that are wider mesio-distally than facio-lingually.
58. The crown of the mandibular 2nd molar inclines to the mesial and lingual (think of the larger mesial cusps weighing it down).
59. Mandibular molars have long axis of their root apices facial and their crowns lingual.
60. The facial surfaces of mandibular molars are located medial to the border of the ascending ramus.



- *Maxillary 3rd Molars*
    - *RARELY ASKS QUESTIONS; IF THEY DO THEY ARE STRAIGHT FORWARD!*

61. Has a single antagonist in ICP (NOTE: Mandibular centrals also occlude with only 1 tooth)
62. The maxillary 3rd molar is the molar that most frequently has only 3 cusps.
63. The maxillary 3rd molars from an occlusal view are frequently heart shaped because they are missing the DL cusp.

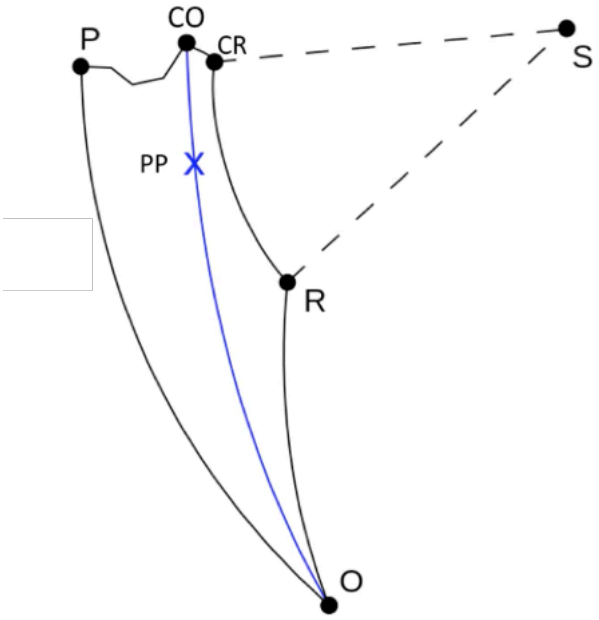
- *Mandibular 3rd Molars*

64. 3rd molars have most variation in crown morphology of any tooth.
65. The 3rd mandibular molar has the GREATEST distal root inclination of any other tooth. (2nd mand molar has greater root inclination that 1st molar.)
66. The 3rd mandibular molar has SHORTEST root of any mandibular tooth.
67. 3rd molars have the greatest morphological variation. Maxillary laterals are after that.

Part 6- Miscellaneous 1: Excursive, Enamel, Dentin, Posselts Envelope

- *Excursive Movements*

1. When the mandible moves from CO to edge to edge the condyles move forward and downward.
2. The non-working condyle moves downward, forward and medial.
3. Anterior guidance plays the greatest role in discluding the posterior teeth in latero-protrusive.
4. Teeth are in contact in intercuspal position during NON masticatory swallowing.
5. Tooth contact almost exclusively determines intercuspal position (a.k.a. centric occlusion).
6. Centric relation is a ligament guided position.
    - Centric occlusion is a tooth guided position.



- *Posselt's Envelope*

7. In Posselt's envelope of motion maximum intercuspal position is the most superior point.
8. Centric occlusion = CO = intercuspal position

9. When the mandible moves from CO to edge to edge the condyles move forward and downward.
   - *Excursive Movement Terms*
     - *Bennet Movement:*
10. The side shift of the mandible is also known as the Bennett Movement.
11. Bennett movement occurs during the earliest stage of lateral movement.
12. The Bennett movement is the bodily shift of the mandible toward the working condyle.
     - *Postral Position (PP)*
13. Physiological rest position is also known as Postural Position.
   - 2-4mm below ICP/CO
   - **NOT a border position (Not on Envelope)**
   - Mandibular postural position is determined almost exclusively by the behavior of the mandibular musculature (it's a muscle guided position)
   - **If you move from PP to CO you will be using anterior fibers of temporalis.**
     - **Elevate mandible (aka close the mouth)**

     - *Curve of Spee (think weeeee as you slide down)*
14. The curve of Spee is the anterior-posterior curvature of the occlusal surfaces as seen in a facial/buccal view.

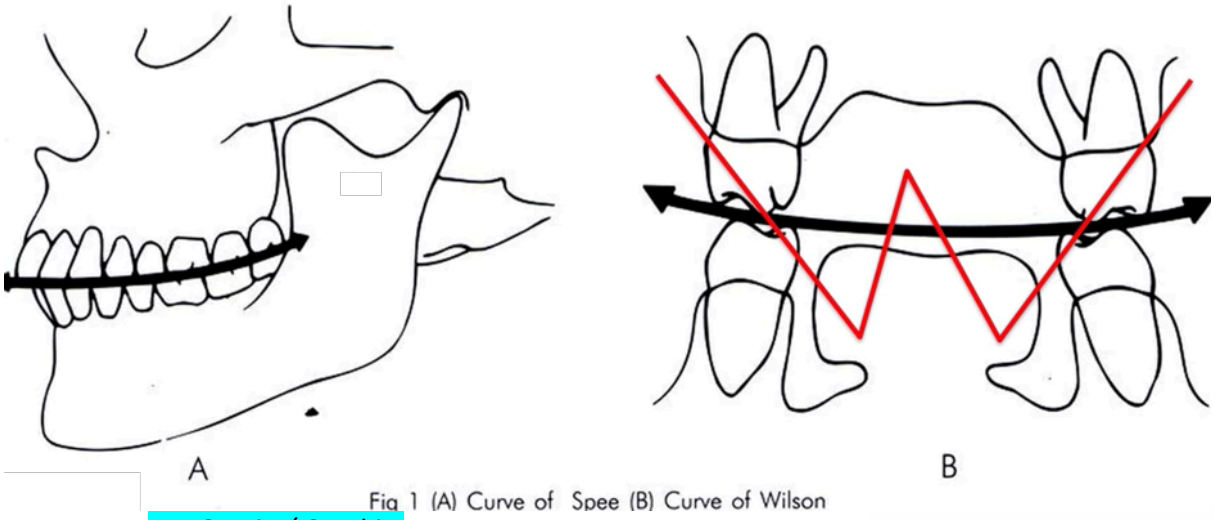
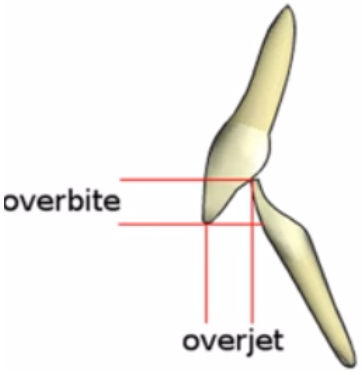


Fig 1 (A) Curve of Spee (B) Curve of Wilson

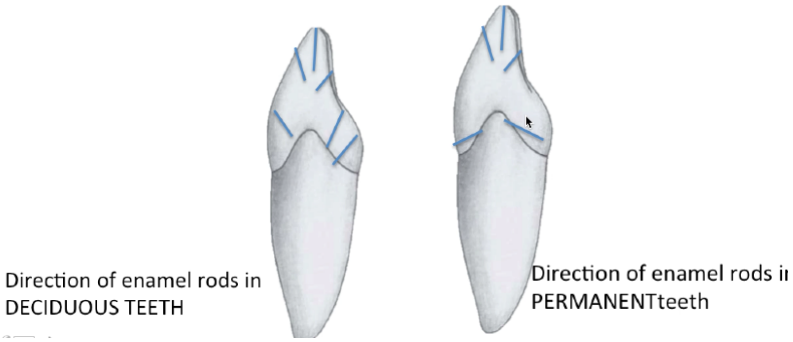
   - *Overjet/ Overbite*
15. The usual overjet is 2-4mm
16. Overjet = horizontal overlap
   - Think of a jet flying on the horizon
17. Overbite = vertical overlap
   - You bite up and down (vertical)



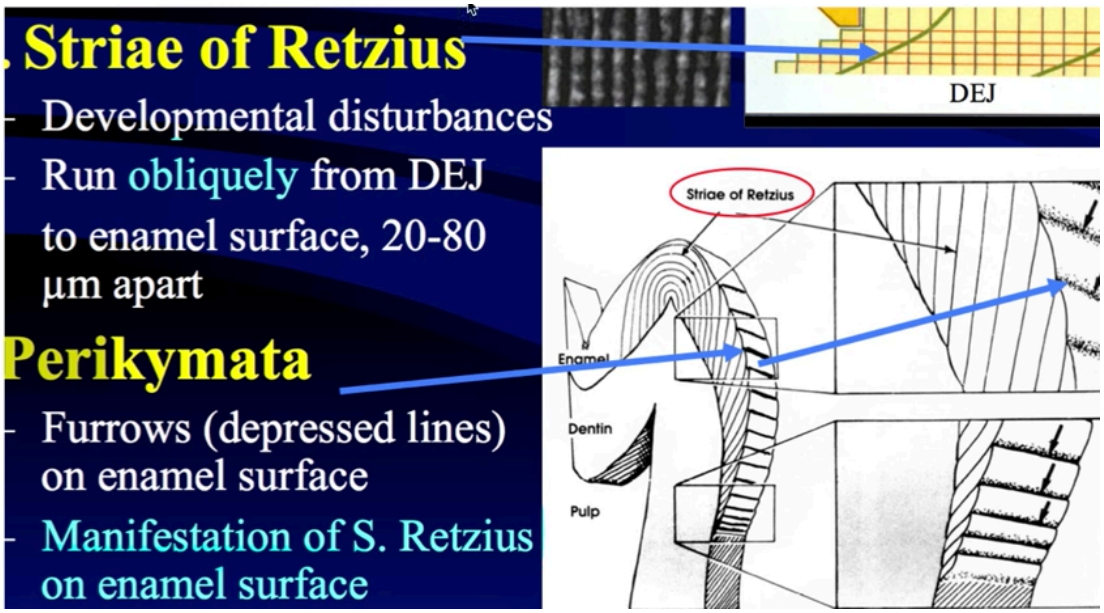
   - *Dental Tissues*
     - *Enamel:*
18. The hardest dental tissue is enamel.

19. The main component of enamel is inorganic matter (NOT collagen).
20. The direction of the enamel rods in permanent teeth in the cervical 1/3rd is in a gingival direction.

The direction of *primary* deciduous enamel rods in the cervical 1/3rd is in an occlusal direction.



21. Perikymata are a result of normal enamel apposition. Found outside the tooth.
    - Striae of Retzius = inside tooth

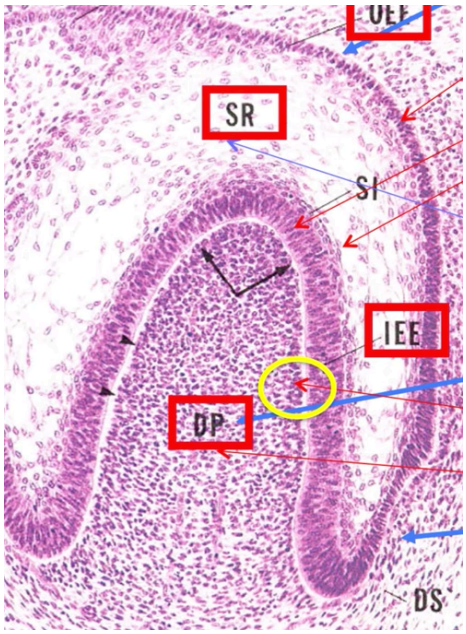


    - *Dentin:*

22. For multirooted teeth dentin continues to form MOST rapidly at the floor and roof of the pulp chamber.
23. Caries stimulates the production of **tertiary dentin**.
24. The percentage of dentin that is organic is 20-30%.
25. The primary function of the dental pulp is to… form dentin.
    - DON'T GET TRICKED! The primary function of the dentin is NOT to nourish the tooth or provide sensation. (these ARE FUNCTIONS of the dentin… just NOT THE PRIMARY FUNCTION!) If they are asking a function in general the answer will probably be all

of the above; if the question is asking for the primary function then the answer will just be **form dentin.**

26. Formed by Dental papilla (along with pulp) – Think D.P. for Dentin Pulp.
27. The dentin that is most highly mineralized is **intra or peritubular dentin.**
28. The dentinoenamel junction occurs at the junction of the dental papilla(DP) and the inner enamel epithelium(IEE).
    - DP cells in contact with IEE = odontoblasts
    - NOTE: DP = dentin pulp



    - *Cementum:*
29. The softest dental tissue is cementum.
30. There are 2 types of cementum:
    - Acellular:
        - Coronal 2/3rds
    - Cellular:
        - Apical 1/3rd
        - Think that the cells are down where the blood supply is coming from.

Part 7- Miscellaneous 2: PDL & Gingival Fibers, Pulp/Roots, HOC, CEJ

- *Dental Anatomy*

1. When viewed from the occlusal the arrangement of the teeth are parabolic.
2. Viewed from the occlusal the 4 posterior teeth in the mandibular arch are aligned in a straight line.

- *Lobes*

3. The number of lobes that form the posterior teeth coincides with the number of cusps.
    - All teeth develop from 4 lobes **EXCEPT permanent first molars** and the **mandibular 2nd premolar 3-cusp type** (which develop from 5 lobes).
    - 3rd molars may develop from 4 or 5 lobes.

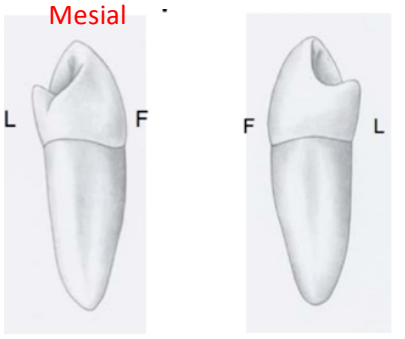
- *Marginal Ridge*

4. The **mandibular 1st premolar** has its mesial marginal ridge more cervical than the distal marginal ridge.
5. All teeth have distal and mesial marginal ridges.
6. Developmental grooves separates cusp ridges from marginal ridges.

- *Transverse Ridge*

7. A transverse ridge results from the union of the facial and lingual triangular ridges.

- *Cingulum*



Which of these is mesial view?

8. There are a total of 12 teeth in the permanent dentition that normally have cingula
    - 6 upper anteriors + 6 lower anteriors

9. All anterior teeth (12) generally have cingula.
    - *Occlusal Table*
10. The occlusal table of a posterior tooth makes up 55-65% of the total facio-lingual dimension.
    - *Periodontium*
11. Gingiva + PDL + Cementum + Alveolar Bone
12. The epithelial attachment (junctional epithelium) is often considered part of a tooth's periodontium.
13. PDL is 0.2mm wide and in old age thickness decreases 0.1mm due to deposition of cementum and bone.
    - *Fibers (PDL & Gingival Fibers)*
14. Periodontal ligament (PDL) fibers attach tooth (cementum) to dental alveolar bone.
15. Gingival fibers attach tooth (cementum) to gingiva.
16. TYPE 1 collagen is the predominant connective tissue for periodontal ligament fibers.
17. The oblique fibers of the periodontal ligament provide the major support for a tooth during function.
    - If you are ever in doubt choose Oblique Fibers.. they LOVE asking about these fibers!
18. The oblique periodontal fibers reduces the likelihood of forceful impaction into the alveolus.
19. Group of fibers most likely to be found in the middle 1/3rd of the root. (the most prevalent type of periodontal ligament also!)
20. Transseptal fibers are **NOT** periodontal fibers they are gingival fibers.
21. The transseptal fibers extend from tooth to tooth.
    - *Pulp/Roots*
22. The pulp chamber of a mature tooth contains *blood vessels and nerves*.
23. Approximately 50% of permanent root formation is completed at the time the tooth erupts.
24. The apex of a tooth is fully formed about 2-3 years after it erupts in the mouth.
    - **NOTE**: this is a good rule of thumb, you HAVE TO KNOW ERUPTION TIMES but don't kill yourself trying to memorize all of the calcifications and when the apexes are formed. Just know when they erupt and then ballpark it 2-3 years for being when the apex is formed.
25. The function of the pulp is to form and supply nutrients to dentin and transmit sensory stimuli.
    - Don't get tricked if they ask PRIMARY function!

    - *HOC/ Contact Area*
26. FACIAL HOC = All teeth have facial heights of contour in the cervical 1/3rd, **except** for mandibular molars.
27. LINGUAL HOC
    - Anterior teeth = cervical 1/3rd
    - Posterior teeth = middle 1/3rd **EXCEPT MANDIBULAR 2nd PREMOLAR** which is in the occlusal 1/3rd.

- *Cervical Line*

28. The cervical line of a permanent tooth has the greatest depth of curvature on the mesial aspect.
    - The CEJ dips deeper on:
        - Anterior teeth > Posterior teeth
        - Maxillary > Mandibular
        - Mesial side of tooth > Distal side of tooth
        - Greatest on mesial of the Maxillary Central Incisor
    - Think of the Maxillary central and it tells you all you need to know (Anterior, Maxillary, Mesial)

- *Pathology*

29. Hypercementosis is an excess of calcified tissue (aka cementum) formation at the root apex.
30. Supernumerary teeth when seen in the maxilla are usually found between the centrals or rarely sometimes see them as 4th molars.
31. Concrescence when cementum of 2 teeth join together.
32. Oligodontia is a developmental abnormality characterized by the presence of fewer teeth than usual.
    - Anodontia is the condition of missing all teeth.