



DENTAL ANATOMY

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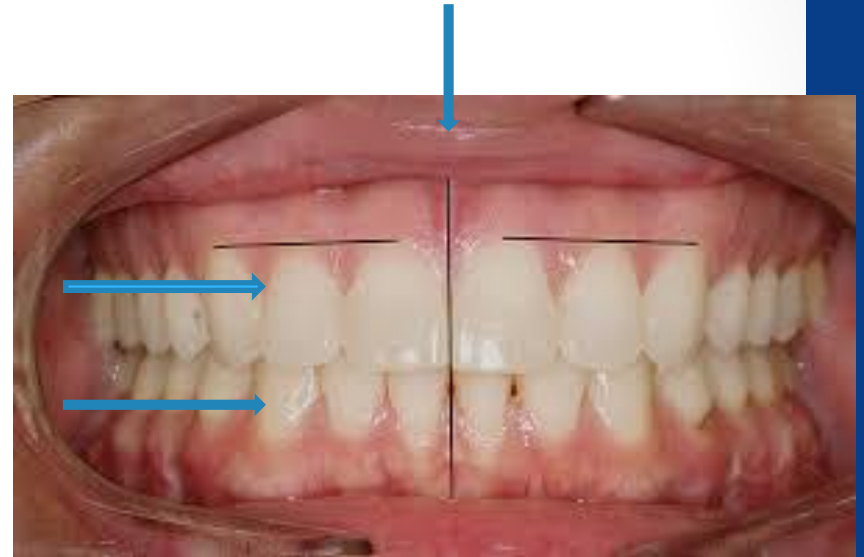
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- Depressions on tooth surface
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INTRODUCTION



Introduction

- **Midline:** imaginary vertical line which divides each arch into equal halves
- **Maxillary teeth:** teeth arranged in upper arch
- **Mandibular teeth:** teeth arranged in lower arch

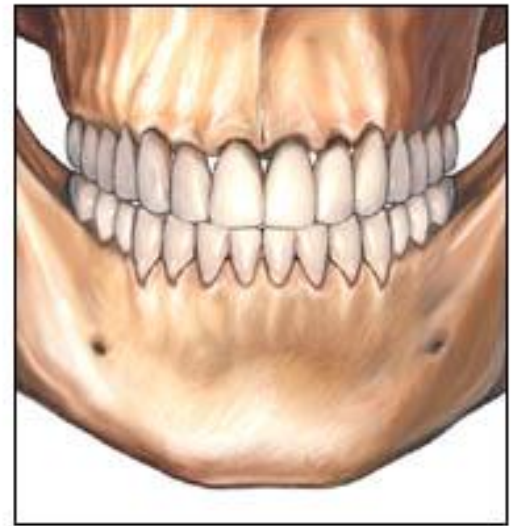


- **Quadrants:** two app. equal portions of each arch divided by midline

1. Maxillary (upper) R
2. Maxillary (upper) L
3. Mandibular (lower) L
4. Mandibular (lower) R



- **Occlusion:** manner in which mandibular teeth contact maxillary teeth



DENTITION

- **Primary dentition period:**
 - 6 months to 6 years of age
 - Only primary teeth
- **Mixed dentition period:**
 - 6 years to 12 years of age
 - Both primary and permanent teeth
- **Permanent dentition period:**
 - 12 years of age to rest of life
 - Only permanent teeth



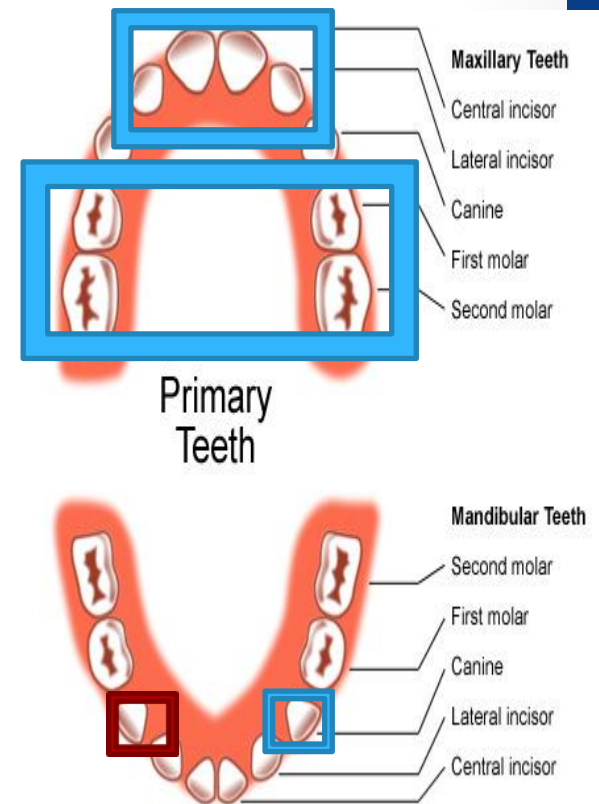
Deciduous teeth

- Primary teeth; also called as «milk» teeth, «baby» teeth, or «temporary» teeth



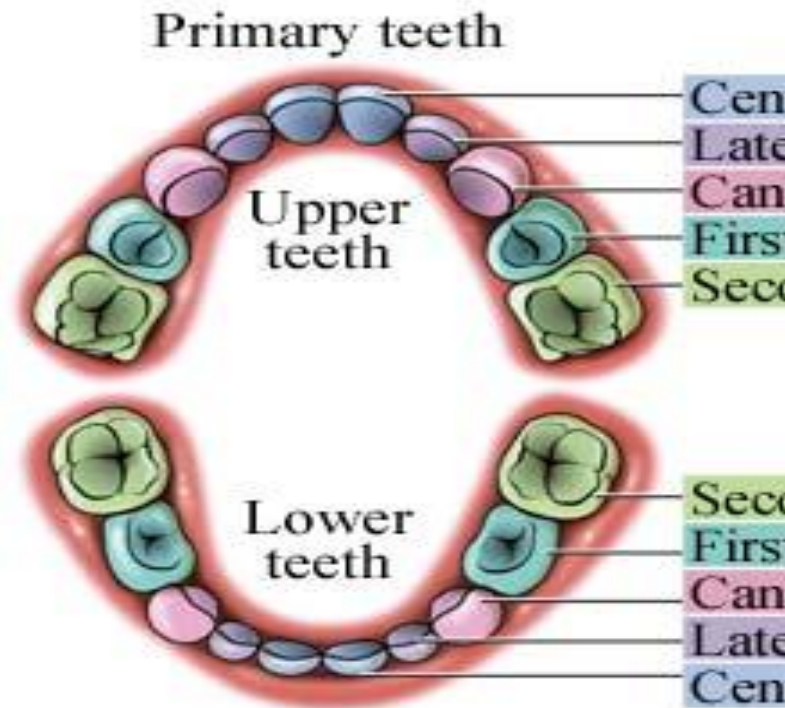
Deciduous teeth

- 20 total deciduous teeth
 - **Incisors:**
 - Named as central and lateral incisors
 - 2 teeth of each quadrant that closet to midline
 - Biting, cutting, incising and shearing
 - Total number 8
 - **Canine**
 - Named as canine
 - 3rd tooth from midline at each quadrant
 - Cutting, tearing, piercing and holding
 - Total number 4
 - **Molars**
 - Named as 1st and 2nd molar
 - 4th tooth from midline
 - Grinding
 - Total number 8



Deciduous teeth

- Eruption pattern



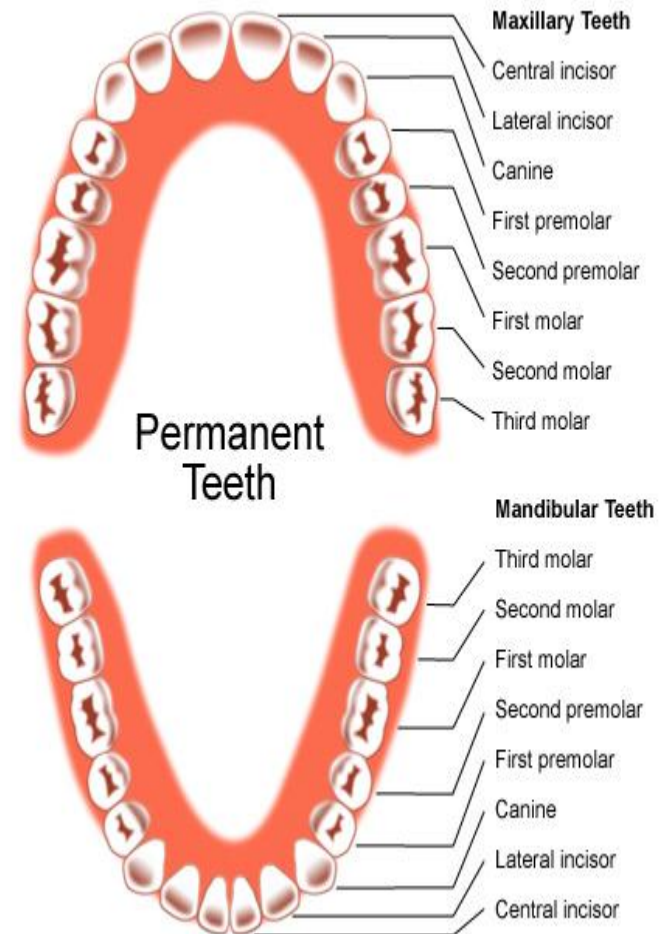
Succedaneous teeth

- «Succeeding» deciduous teeth
- 20 deciduous teeth replaced by 20 permanent teeth
 - Incisors and canines replace their counter parts
 - Premolars replace the deciduous molars.



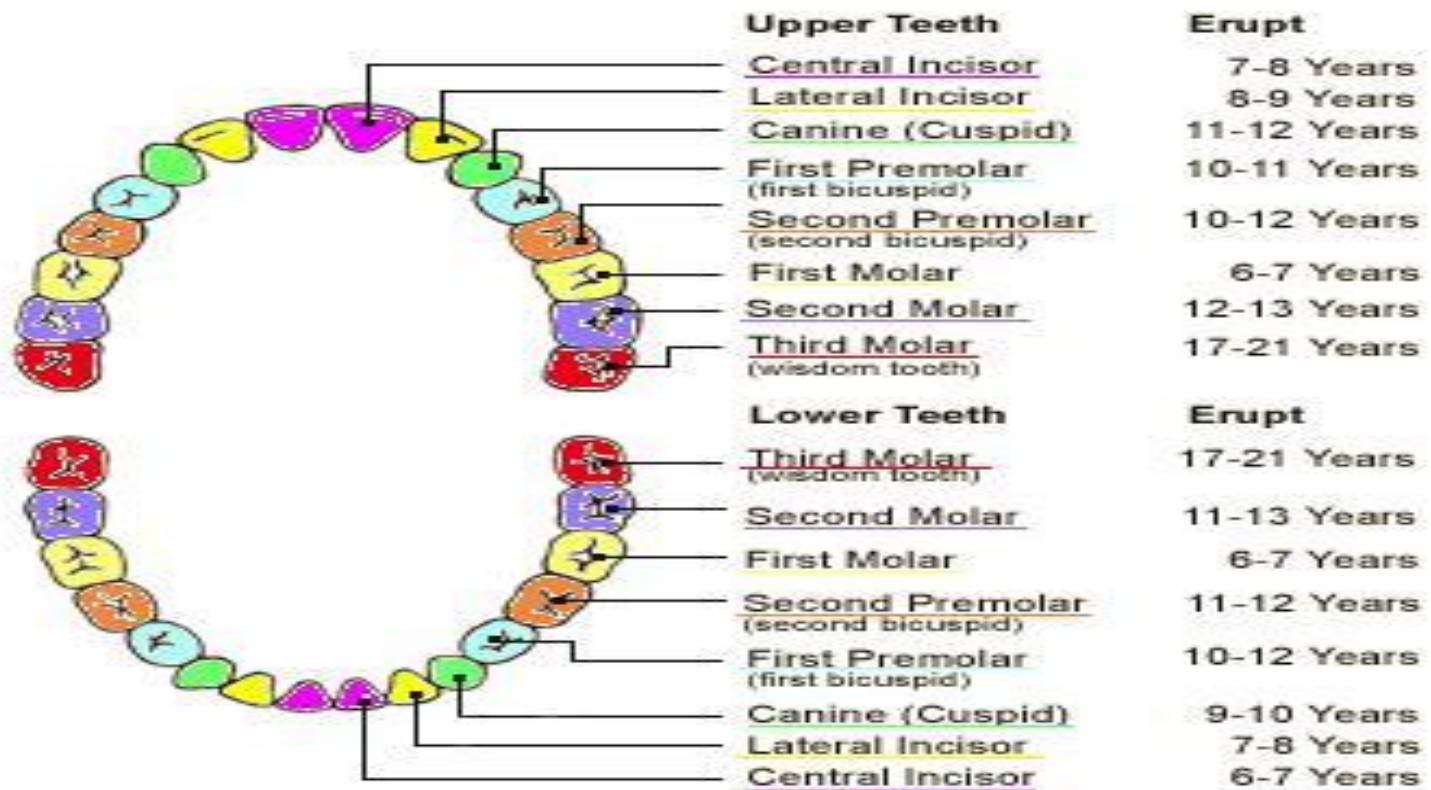
Permanent teeth

- 32 total permanent teeth
 - **Incisors:**
 - Named as central and lateral incisors
 - 2 teeth of each quadrant closest to midline
 - Biting, cutting, incising and shearing
 - Total number 8
 - **Canine**
 - Named as canine
 - 3rd tooth from midline at each quadrant
 - Cutting, tearing, piercing and holding
 - Total number 4
 - **Premolars (bicuspid):**
 - Named as 1st and 2nd premolars
 - 4th and 5th teeth from midline
 - Tearing, holding and grinding
 - Total number 8
 - **Molars**
 - Named as 1st, 2nd and 3rd molar
 - 6th, 7th and 8th tooth from midline
 - Grinding
 - Total number 12



Permanent teeth

- Eruption pattern



Eruption Chart for Permanent Teeth

Wisdom teeth



Wisdom Teeth Symptoms

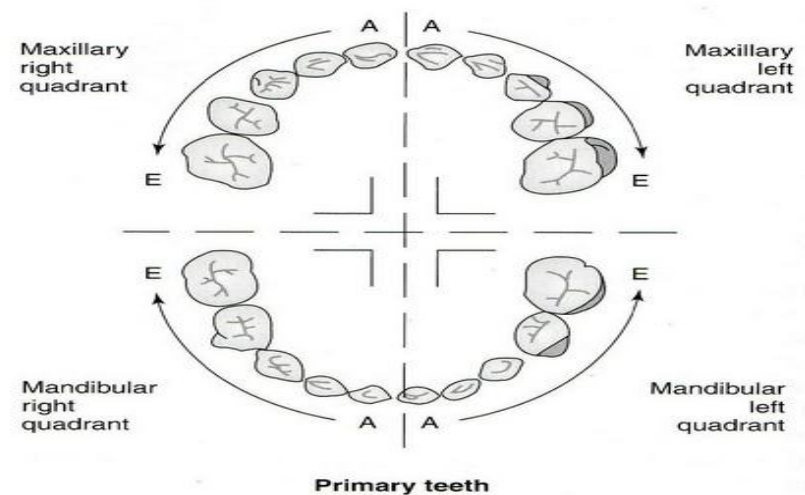
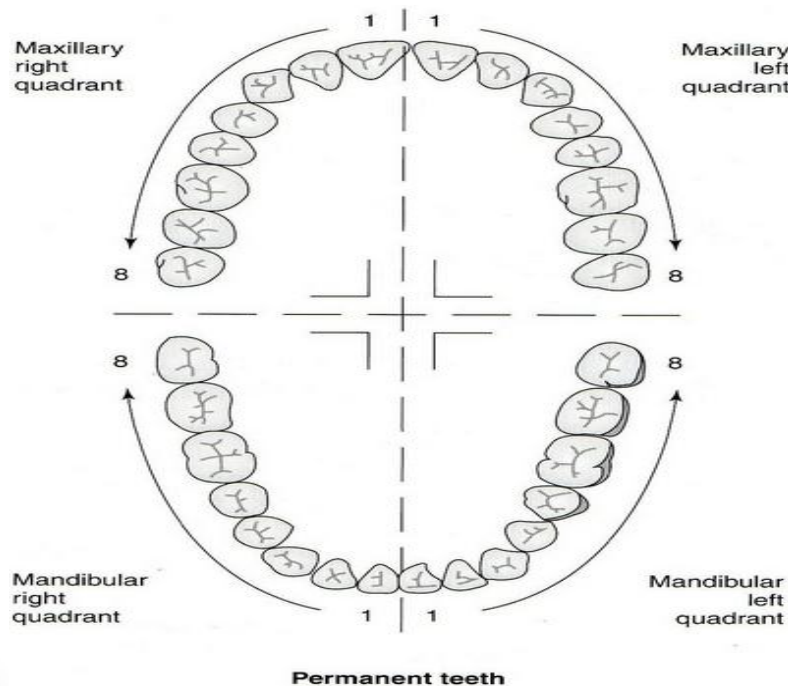
Possible symptoms with impacted/erupting wisdom teeth



Tooth numbering systems

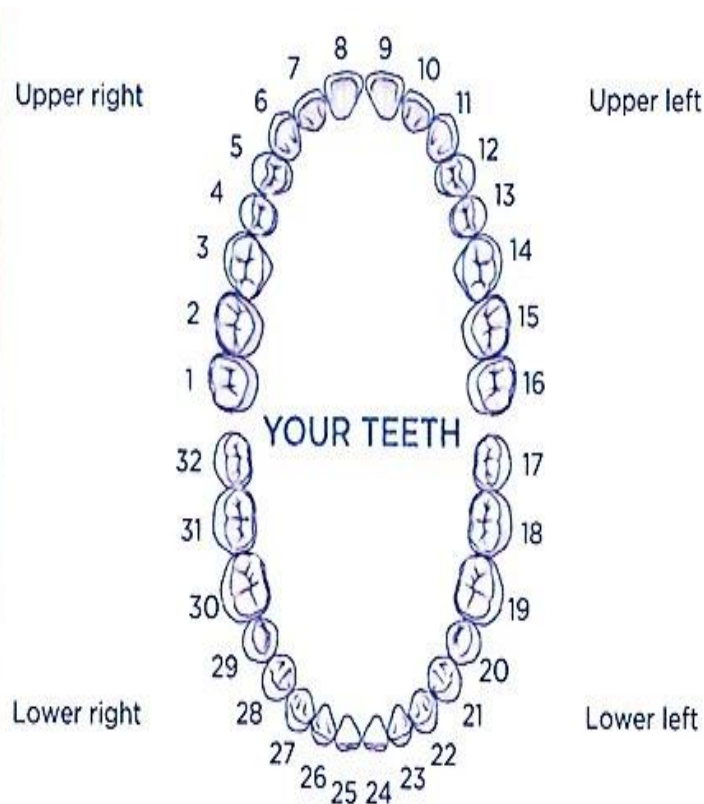
- Tooth numbering is necessary in clinical practice for recording data and communication.

1. Palmar notation system (European tooth numbering system)



Tooth numbering systems

2. Universal notation system



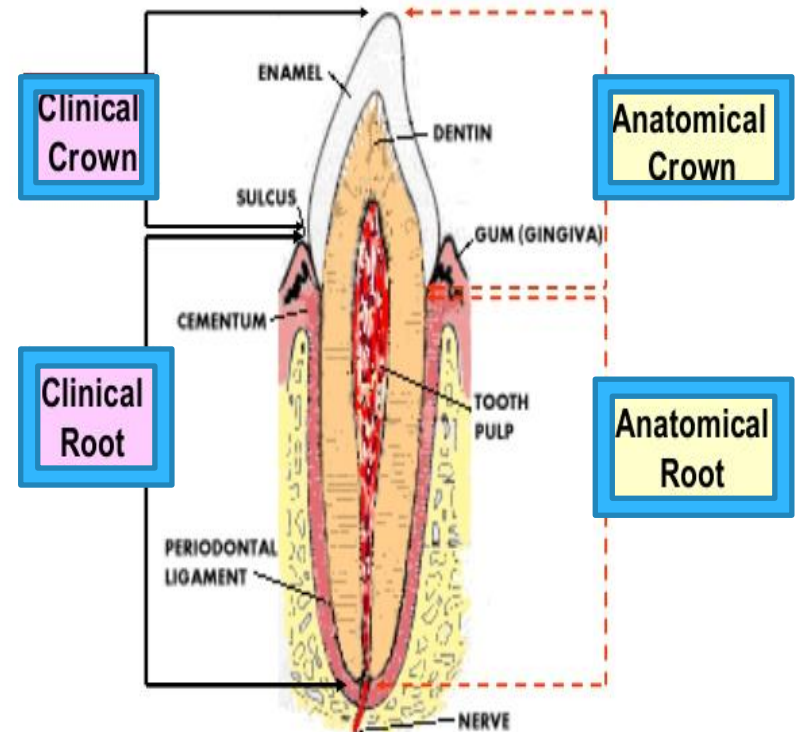
3. FDI notation system

FDI Two-Digit Notation	
Permanent teeth	
upper right	upper left
18 17 16 15 14 13 12 11	21 22 23 24 25 26 27 28
48 47 46 45 44 43 42 41	31 32 33 34 35 36 37 38
lower right	lower left
Deciduous teeth (baby teeth)	
upper right	upper left
55 54 53 52 51	61 62 63 64 65
85 84 83 82 81	71 72 73 74 75
lower right	lower left

General oral and dental anatomy

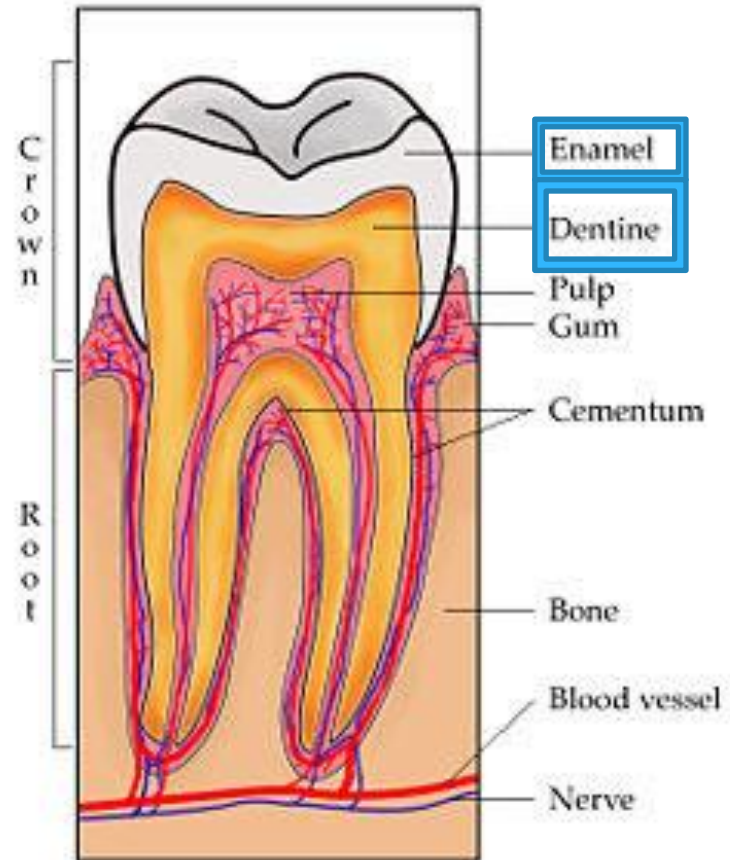
- **Anatomical crown:** portion of tooth that is covered with enamel
- **Clinical crown:** portion of tooth which is visible in mouth
- **Anatomical root:** portion of tooth that is covered with cementum
- **Clinical root:** portion of tooth which is not visible in mouth

Anatomical And Clinical Crown And Root



General oral and dental anatomy

- **Enamel:**
 - Hard, mineralized tissue that covers dentin of anatomical crown of a tooth
 - Hardest living body tissue
 - Consists CaPO_4 and CaHCO_3
 - Protects tooth from mechanical and chemical attack
- **Dentin:**
 - Hard tissue which forms main body of tooth and surrounds pulp cavity
 - Covered by enamel in anatomical crown and by cementum in anatomical root
 - Gives tooth its overall shape and rigidity



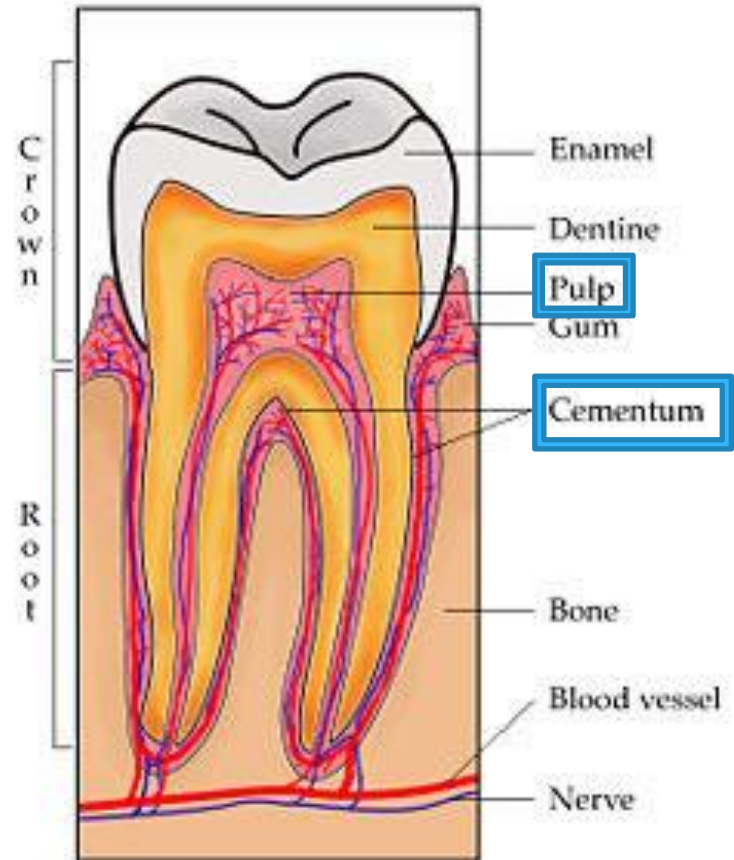
General oral and dental anatomy

- **Cementum:**

- Layer of hard, bonelike tissue that covers dentin of anatomical root of a tooth
- Light yellow in collar, paler than dentin
- Has highest fluoride content of all mineralised tissue
- Avascular

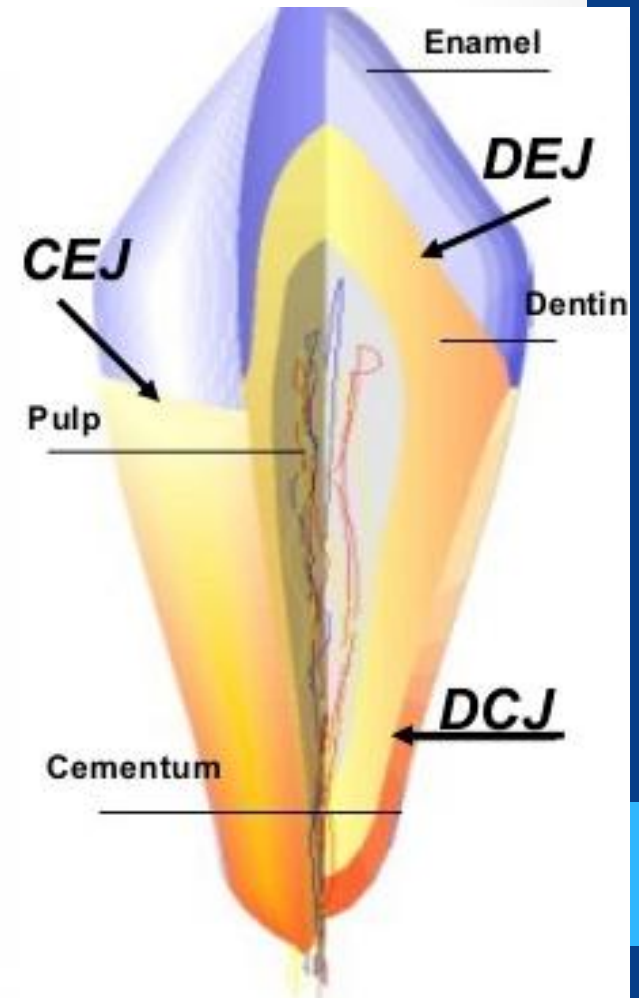
- **Pulp:**

- Living soft tissue which occupies pulp cavity of a vital tooth, contains blood vessels and nerve supply



General oral and dental anatomy

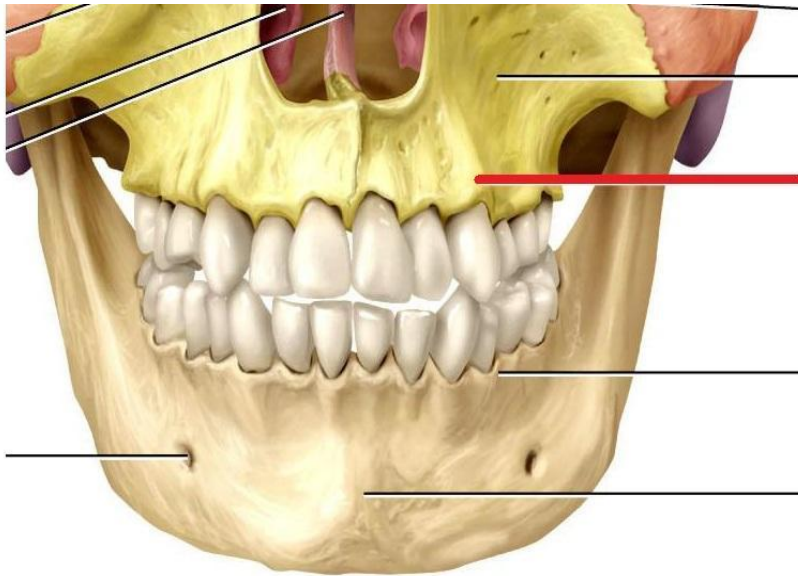
- **Cervical line:**
 - Identifiable line around external surface of a root where enamel and cementum meet
 - Also called cemento-enamel junction **CEJ**
 - separates anatomical crown and root
- **Dentino-enamel junction- DEJ:**
 - Internal line of meeting of dentin and enamel in anatomical crown of a tooth.
- **Dentino-cemental junction- DCJ:**
 - Internal line of a meeting of dentin and cementum in anatomical root of a tooth.



General oral and dental anatomy

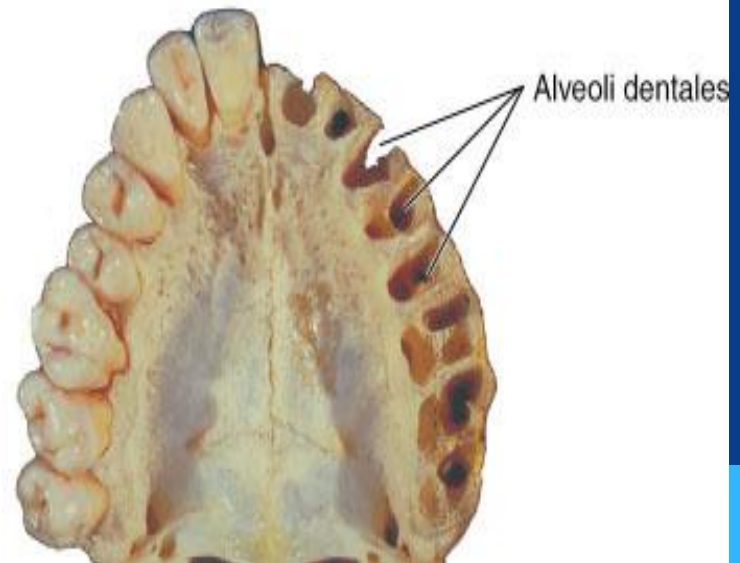
- **Alveolar process:**

- Entire bony entity that surrounds and supports all teeth in each jaw member



- **Alveolus:**

- Bony socket, or portion of alveolar process into which an individual tooth is set



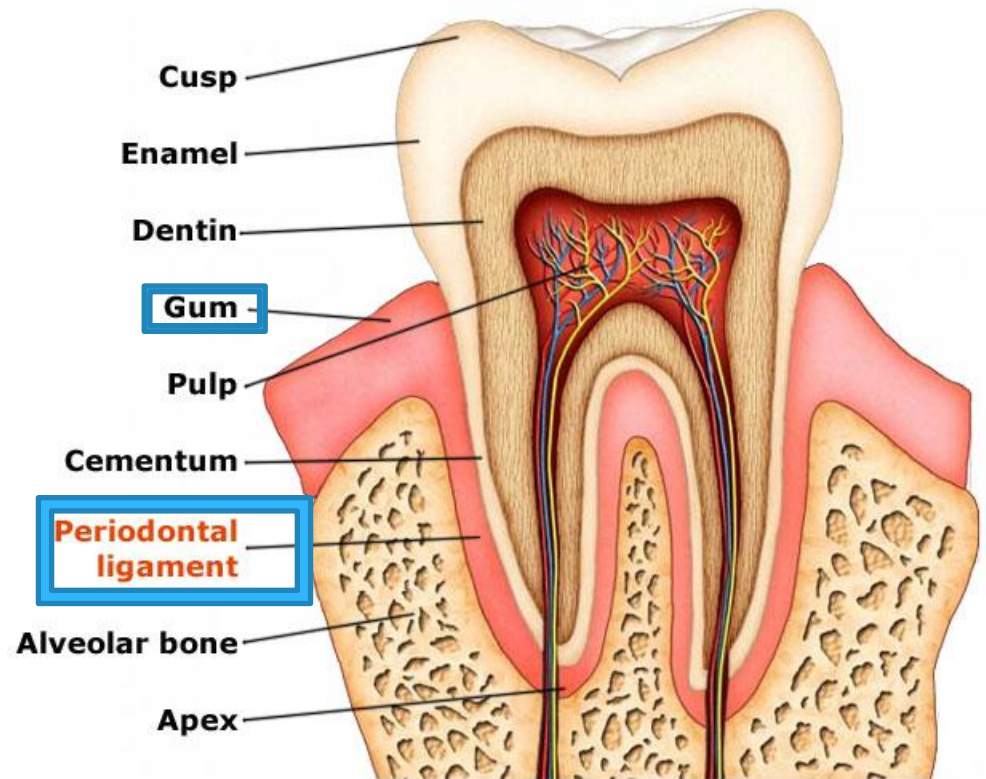
General oral and dental anatomy

- **Periodontal ligament:**

- Fibrous attachment of tooth cementum to the alveolar bone

- **Gingiva:**

- «gum», fibrous tissue enclosed by mucous membrane that covers alveolar processes and surrounds necks of teeth



Surfaces of teeth

- Crown of all teeth have 5 surfaces

1. **Facial surface**

- a) Labial surface
- b) Buccal surface

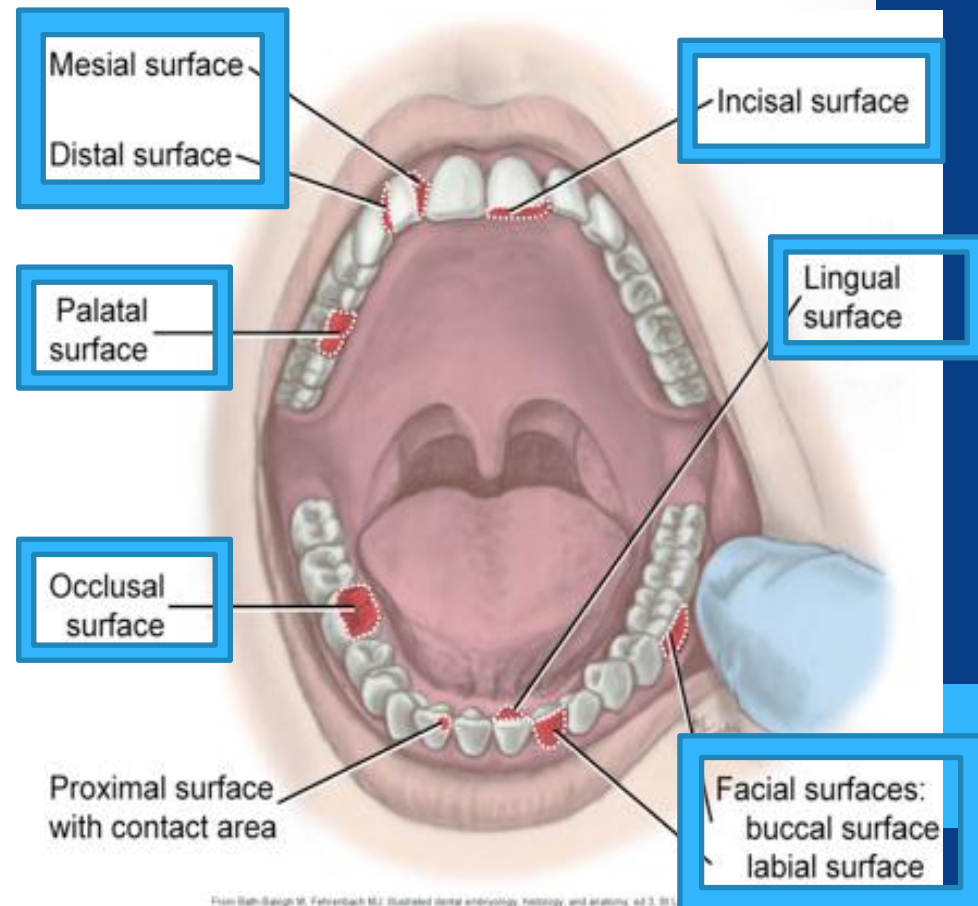
2. **Lingual (palatal) surface**

3. **Proximal surfaces**

- a) Mesial surface
- b) Distal surface

4. **Incisal surface**

5. **Occlusal surface**



Thirds of tooth

- **Occluso-lingually (crown)**

1. Cervical third
2. Middle third
3. Incisal/occlusal third

- **Mesio-distally (crown)**

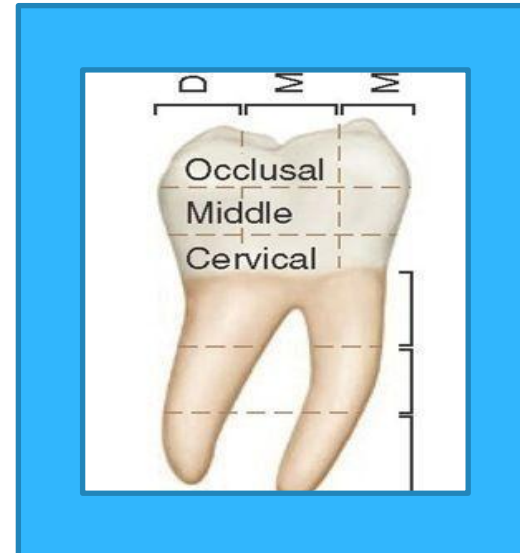
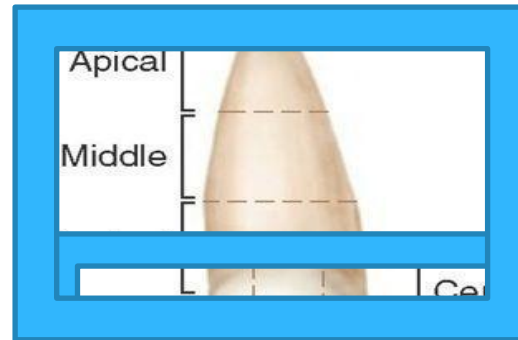
1. Mesial third
2. Middle third
3. Distal third

- **Facio-lingually (crown)**

1. Facial third
2. Middle third
3. Lingual third

- **Thirds (root)**

1. Cervical third
2. Middle third
3. Apical third



References

- Introduction and nomenclature of dental anatomy; Dr Abhishek Solanki, Dr Parvind Gumb
- Tintinalli's Emergency Medicine- A Comprehensive Study Guide
- Dental anatomy of humans- vivo pathophysiology
- Wheeler's dental anatomy, physiology and occlusion

Thank you

- ...*wish all you a big smile*

