Dental Anatomy

Lecture -1&2-

د.هبه

Introduction

Nomenclature

Dense = tooth

Dental = anything related to teeth

Man is a **heterodent**, which means that he has different-shaped teeth.

Man is a **diphyodont**, which means that he has two sets of teeth; deciduous teeth (primary teeth) and permanent teeth.

The Deciduous Teeth

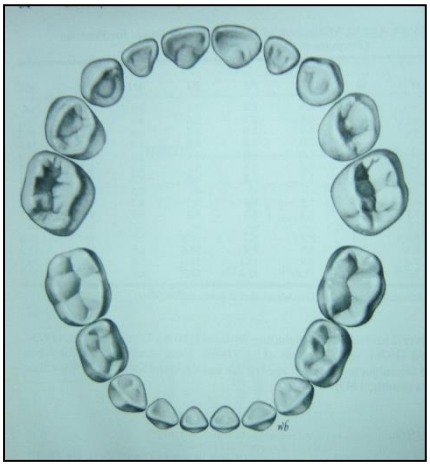
At birth, there are no teeth present in the mouth, but many teeth in various stages of development are found in the jaws.

After birth (post-natal period), the eruption of deciduous teeth starts at six months and lasts until two and a half years.

The deciduous teeth stay until the permanent teeth erupt at about 6 years of age, when the transition to the permanent dentition begins.

The deciduous teeth are 20 in number. They have the following formula:

$$I\frac{2}{2}\ C\frac{1}{1}\ M\frac{2}{2} = 10 \text{ (for each side)}$$



I = Incisors (central and lateral).

C = Canine.

M = Molars (first and second).

The permanent teeth

The transition to permanent dentition begins with the emergence and eruption of the first permanent molars at the age of six years, followed by shedding of the deciduous teeth and emergence and eruption of the remaining permanent teeth. This process requires about 20 years to be completed. The number of permanent teeth, including third molars when present, is 32.

$$I\frac{2}{2}\ C\frac{1}{1}\ P\frac{2}{2}\ M\frac{3}{3} = 16 \text{ (for each side)}$$

I = Incisors (central and lateral).

C = Canine.

P = Premolars (first and second).

M = Molars (first, second and third).

Anterior and Posterior Teeth

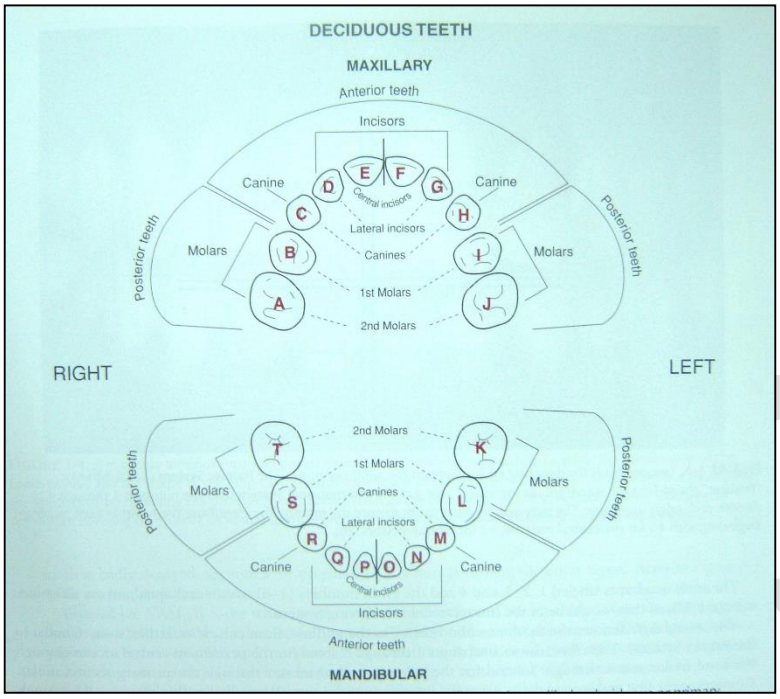
Teeth are grouped into:

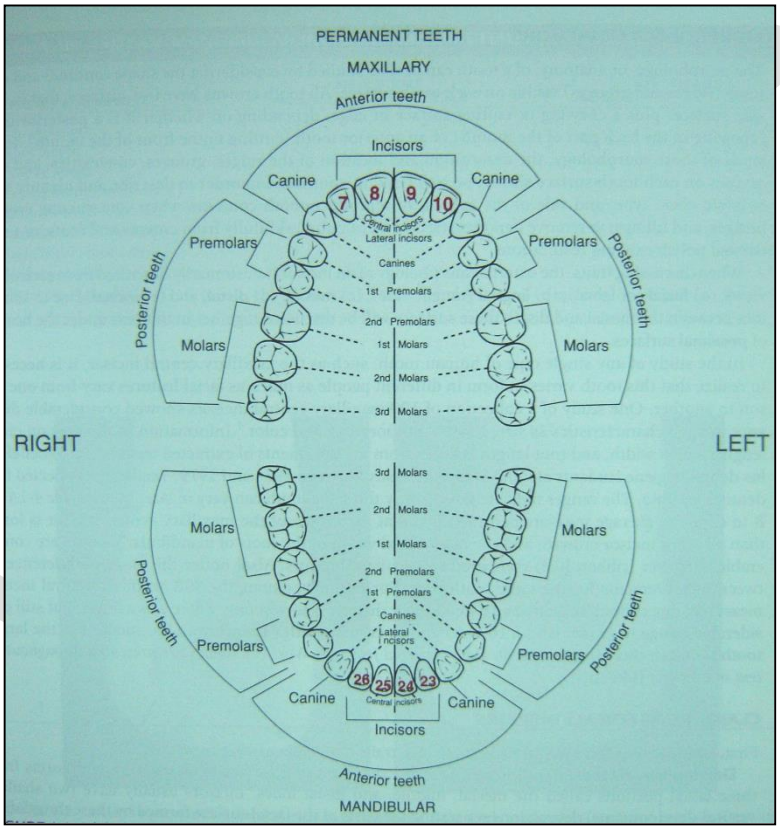
1. Anterior teeth which include the incisors and the canines.
2. Posterior teeth which include the premolars and molars.

The Jaw

The jaw is the bone which carries the teeth. There are two jaws:

1. The upper jaw, which is fixed, and is called “The Maxilla”.
2. The lower jaw, which is movable, and is called “The Mandible”.

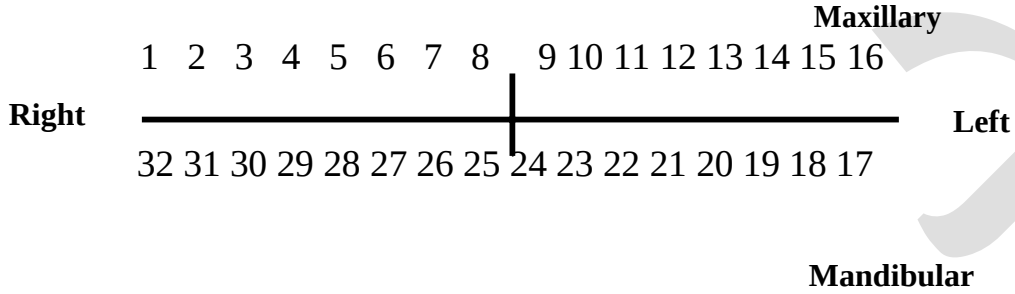

DECIDUOUS TEETH
MAXILLARY
Anterior teeth
Incisors
Canine
Canine
Posterior teeth
Posterior teeth
Molars
Molars
Central incisors
Lateral incisors
Canines
1st Molars
2nd Molars
E
F
D
G
C
H
B
I
A
J
RIGHT
LEFT
2nd Molars
1st Molars
Canines
Lateral incisors
Central incisors
Incisors
Anterior teeth
MANDIBULAR
T
K
S
L
R
M
Q
P
O
N


PERMANENT TEETH
MAXILLARY
Anterior teeth
Incisors
Canine
Canine
Premolars
Premolars
Posterior teeth
Posterior teeth
Molars
Molars
Central incisors
Lateral incisors
Canines
1st Premolars
2nd Premolars
1st Molars
2nd Molars
3rd Molars
7
8
9
10
RIGHT
LEFT
26
25
24
23
Anterior teeth
MANDIBULAR

Numbering Systems

1. Universal notation system:

A. Permanent Teeth:



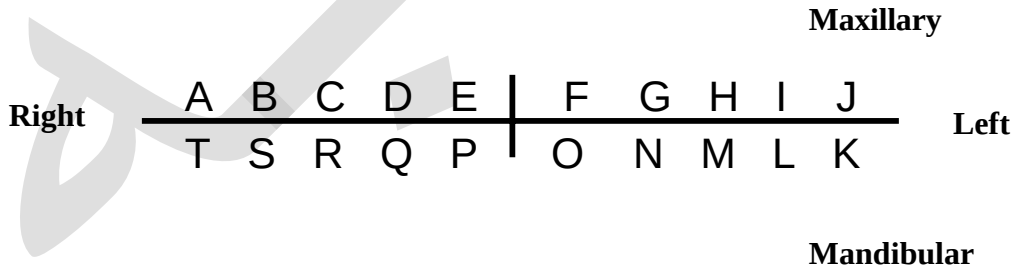
Examples:

#11: Permanent Maxillary Left Canine.

#29: Permanent Mandibular Right Second Premolar. #8:

Permanent Maxillary Right Central Incisor.

B. Deciduous Teeth:



Examples:

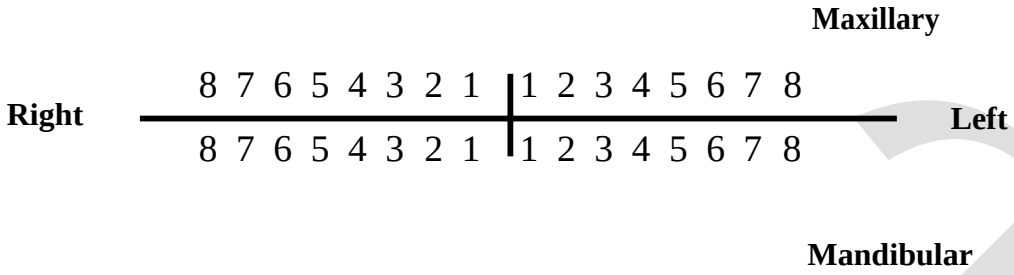
#B: Deciduous Maxillary Right First Molar #O:

Deciduous Mandibular Left Central Incisor #D:

Deciduous Maxillary Right Lateral Incisor

2. Palmer notation system:

A. Permanent Teeth:



Examples:

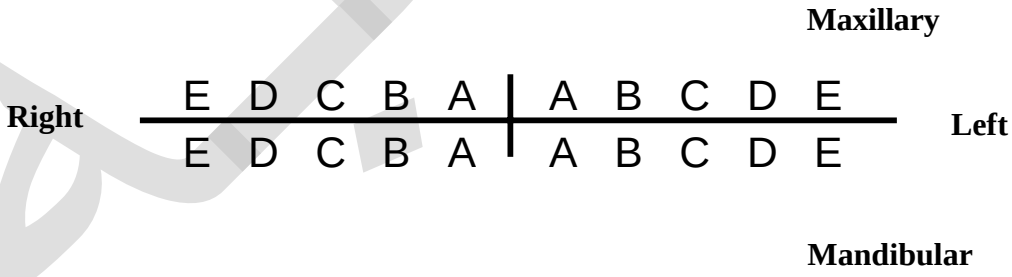
6 Permanent Maxillary Right First Molar

Permanent Mandibular Left Canine

3 Permanent Maxillary Left Third Molar

8

B. Deciduous Teeth:



Examples:

B Deciduous Mandibular Left Lateral Incisor

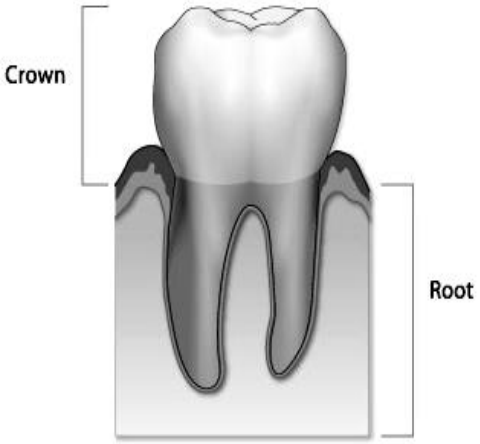
Deciduous Maxillary Right Second Molar

E Deciduous Mandibular Right Canine

C

Crown and Root

Each tooth has a crown and root. The crown is covered with enamel. The root is covered with cementum and they join at the cemento-enamel junction (CEJ) or cervical line.



The enamel, cementum and dentin are the hard tissues of the tooth. The major bulk of the tooth is dentin.

Dental pulp: is the soft tissue of the tooth and present in the pulp chamber and pulp canal.

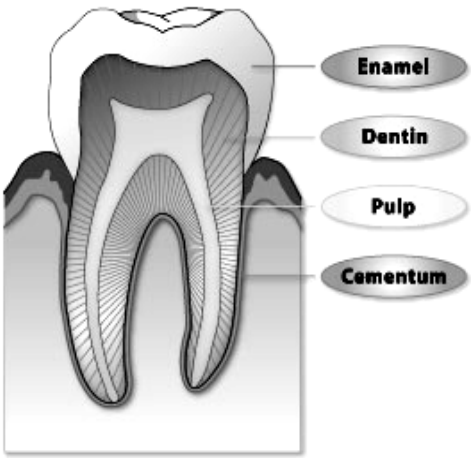
Pulp chamber: is the part of dental pulp in the crown.

Pulp canal: is the part of dental pulp in the root.

Anatomical crown: is the portion of the tooth which is covered by enamel.

Clinical crown: is the portion of the tooth which is visible in the mouth.

In healthy person, the anatomical crown is larger than the clinical crown.



The number of roots:

1. **Single root:** in all anterior teeth, mandibular premolars and maxillary second premolar.
2. **Two roots with bifurcation:** in mandibular molars and maxillary first premolar.
3. **Three roots with trifurcation:** in maxillary molars.

Surfaces and Ridges

The crowns of incisors and canines have 4 surfaces and a ridge and the crowns of the premolars and molars have 5 surfaces.

The surfaces are:

1. **Labial surface:** is the surface which is towards the lip in incisors and canines (= in anterior teeth).
2. **Buccal surface:** is the surface which is towards the cheek in premolars and molars (= in posterior teeth).

The labial and buccal surfaces could be termed as the "**Facial**" surfaces.

3. **Lingual surface:** is the surface which is facing the tongue (all teeth).

4. Occlusal surface: is the surface of the posterior teeth coming in contact with the teeth in the opposite jaw during closing the mouth.

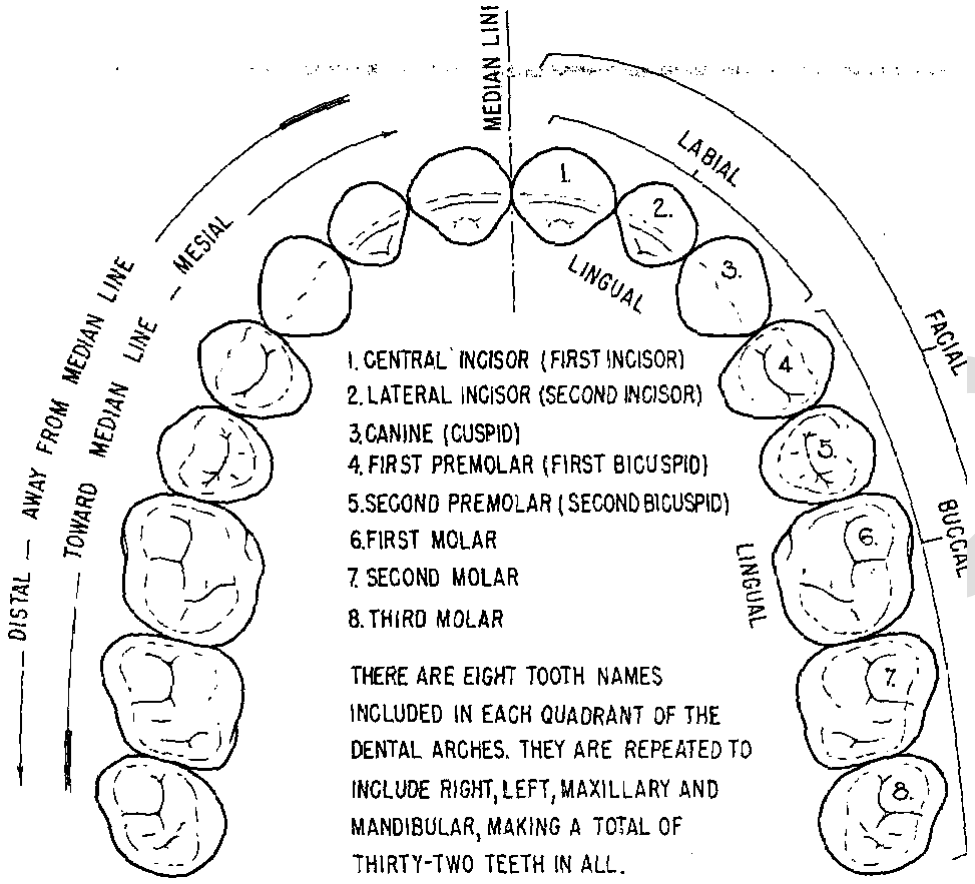
In anterior teeth, this surface is called "**Incisal ridge**".

5. Proximal surface: is the surface of the tooth facing towards adjacent teeth in the same dental arch.

a. Mesial surface: is the surface which is facing towards the median line.

b. Distal surface: is the surface which is facing away from the median line.

All teeth have their mesial surfaces touching the distal surfaces of the adjacent tooth except the maxillary and mandibular central incisors (both permanent and deciduous).



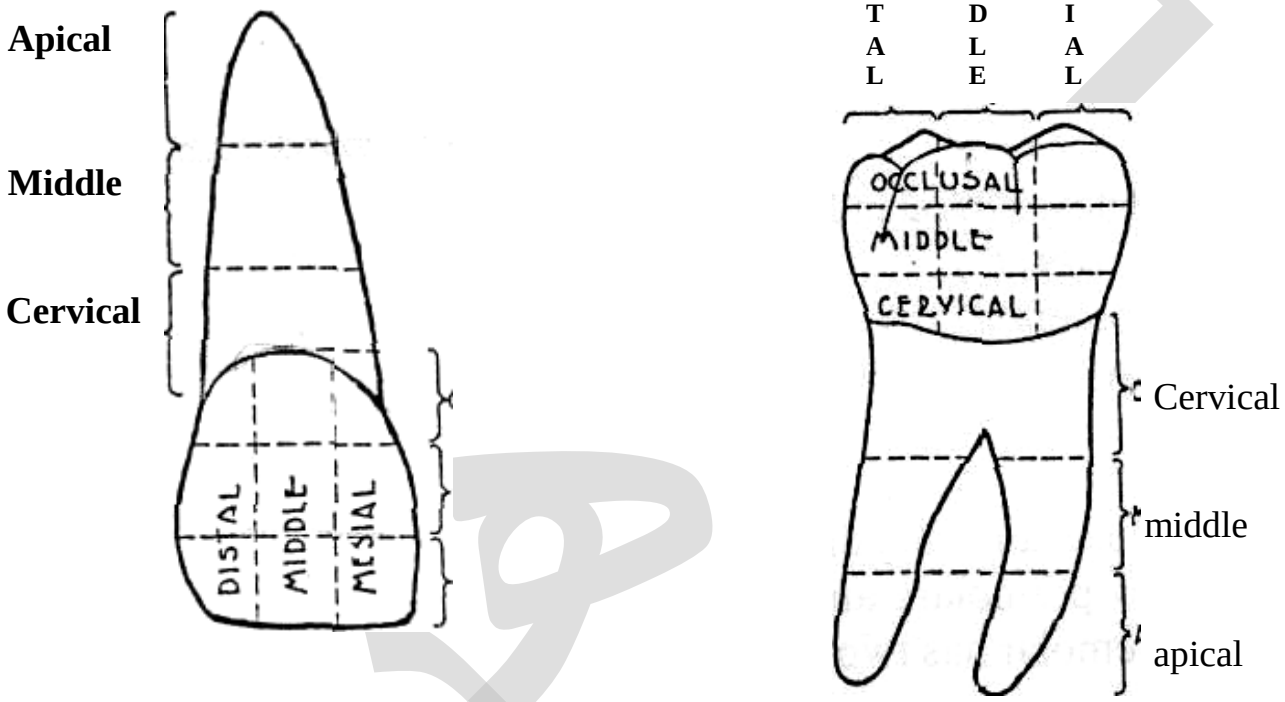
Contact area: the area of the mesial or distal surface of the tooth which touches its neighbor in the arch.

Line angle: it is formed by the junction of two surfaces and gets its name from these surfaces. Example: mesio-labial line angle.

Point angle: it is formed by the junction of 3 surfaces and gets its name from these surfaces. Example: mesio-linguo-incisal point angle.

Division of the crown into thirds:

For description, the crown and the root are divided into thirds according to the position of the surface.



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