Physiology of teeth

FUNCTION OF TEETH

- **The primary function of teeth is mastication, which involves**
  1. **the cutting**
  2. **mixing**
  3. **grinding of food to allow the tongue and oropharynx to shape it into a bolus that can be swallowed.**

TOOTH FORM

Each tooth has three sections, (1) the crown, (2) the neck, and (3) the root.

-The crown is the section of the tooth visible in the oral cavity, following its eruption from the underlying alveolar bone.

-The neck is the section where the tooth and the gingival tissues are in contact with each other.

- The root is the (usually) non-visible section that holds the tooth in its bony socket.

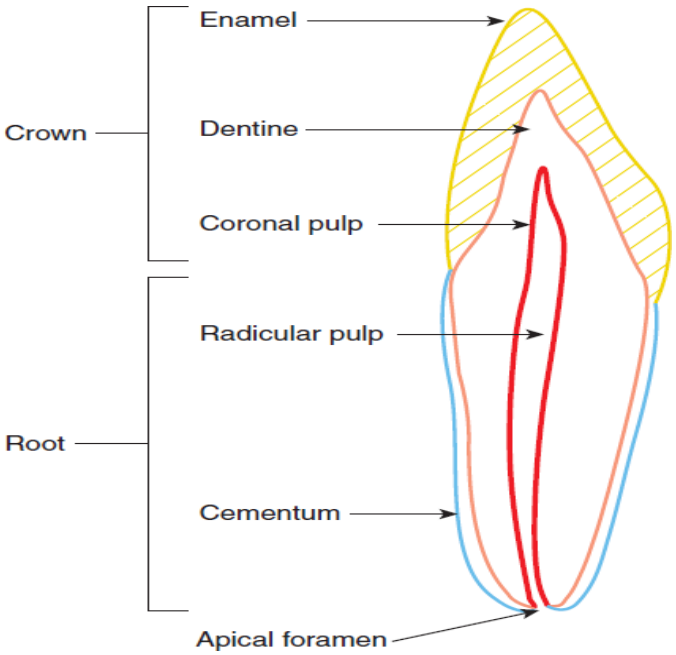
All teeth are composed of the same four tissues:

• Enamel – covering the whole crown of the tooth

• Dentine – forming the inner bulk of the crown and root

• Cementum – a thin covering of the root dentine only

• Pulp – the inner neurovascular tissue of the tooth, within the central pulp chamber


Enamel
Crown
Dentine
Coronal pulp
Radicular pulp
Root
Cementum
Apical foramen

Crown

Two types of crown terminologies are used:

1. **Anatomical crown: It refers to the crown (entire) which is covered by enamel,**
2. **Clinical crown: It refers to the crown that is visible clinically,. The height of the clinical crown is determined by the position of the gingival margin.**

Root

The portion of the tooth covered by cementum is known as the root. The tooth may have either a single root or multiple roots.

Single roots are seen in - anterior teeth

mandibular premolars

maxillary second premolars.

Multiple roots have been seen in – maxillary first premolars

mandibular molars } **Two roots**

maxillary molars} three roots

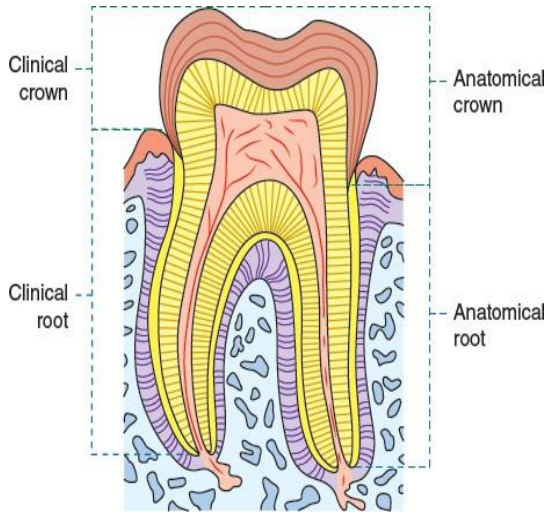
Bifurcation or trifurcation: is the term used for the division of the root into two or three segments, i.e., bifurcation is seen in- maxillary first premolars

mandibular molars

trifurcation is seen in- maxillary molars.

Based on whether the root is visible in the oral cavity, two types of root terminologies are used:

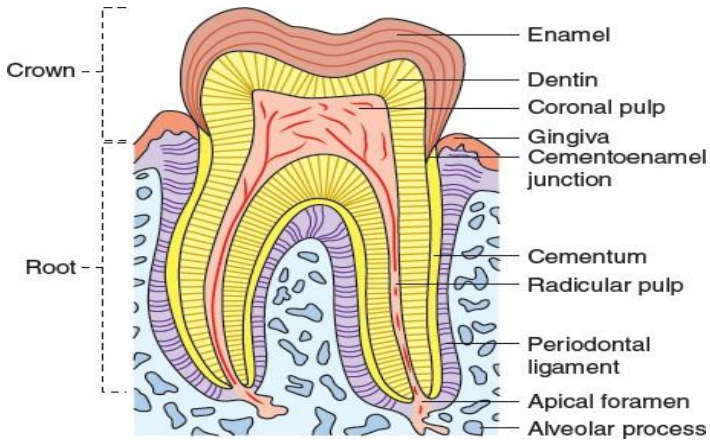
1. **Anatomical root: It refers to the root that is below the CEJ and is covered with cementum,**



2. **Clinical root: It refers to the part of the tooth that is under the gingiva and not exposed to the oral cavity.**

Cervical Line(neck)

The cervical line separates *the anatomical crown from the anatomical root.* It is the junction between two tissues of the tooth, enamel, and cementum, and hence is known as the cementoenamel junction or simply the CEJ.



SURFACES OF THE TEETH

The surfaces are named according to their position in the oral cavity and also their uses.

-Anterior teeth have 4 surfaces—labial, palatal/lingual, mesial, and distal—and one incisal ridge.

-Posterior teeth have 5 surfaces: buccal, palatal/lingual, mesial, distal, and occlusal.

Facial Surface:

The facial surface can be subdivided into two parts:

1. Labial surface: ⇒ lips ⇒ anterior teeth

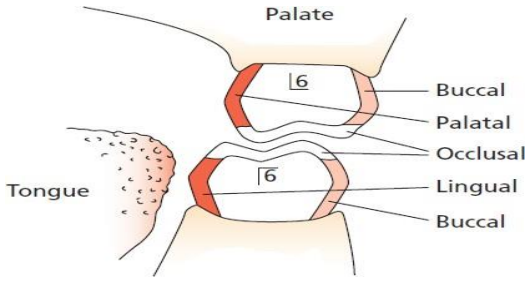
2. Buccal surface: ⇒ cheek ⇒ posterior teeth

Palatal Surface

In the maxillary arch, the surface of the tooth closest to the palate is termed the palatal surface.

Lingual Surface

In the mandibular arch, the surface of the tooth closest to the tongue is termed the lingual surface.



Proximal Surface

The surface of a tooth that is towards another tooth in the dental arch is termed the proximal surface.

The proximal surface can be subdivided into two surfaces based on a position about the median line of the face.

1. Mesial surface: The surface ⟶ closer to the median line of the face.

2. Distal surface: The surface ⟶ away from the median line of the face.

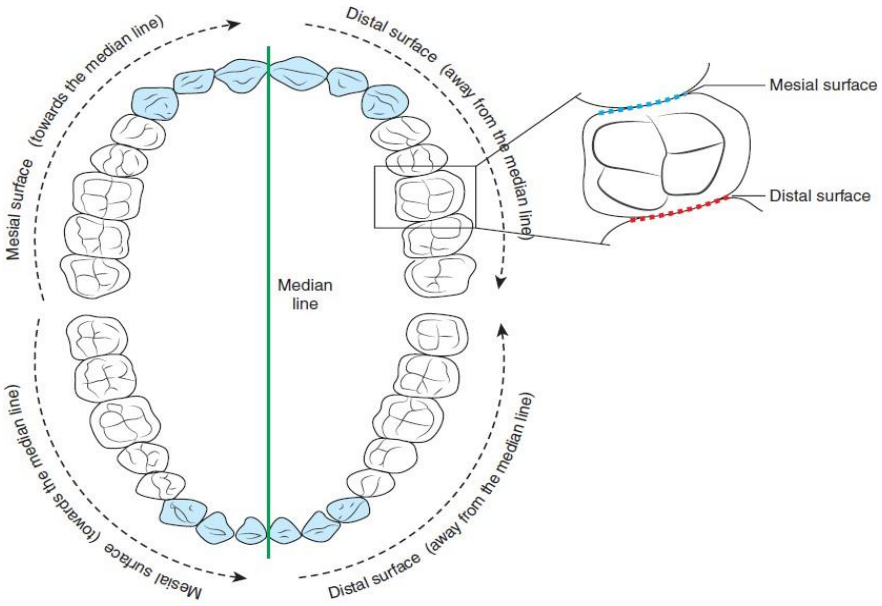


Figure 9.4 Proximal (mesial and distal) surface of the teeth.

Masticatory Surface

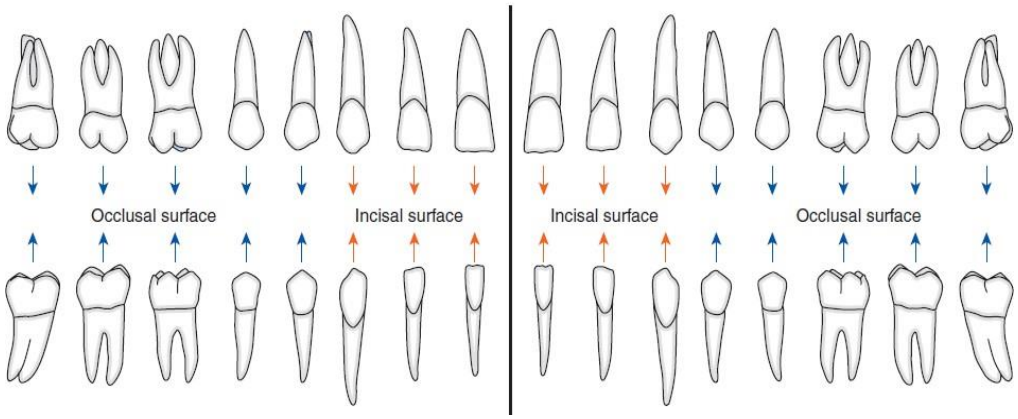
The surface that aids in chewing is known as the masticatory surface and is divided into two parts.

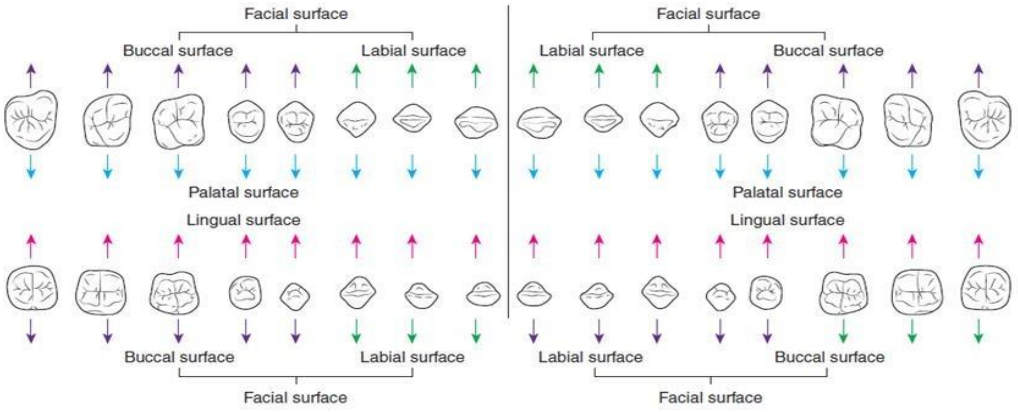
1. **Occlusal surface: The chewing surface of the posterior teeth articulates with an antagonist's tooth in the opposing arch.**

2. **Incisal surface: It is the cutting surface of the anterior teeth.**

incisal ridge- In newly erupted teeth, the incisal surface appears rounded and narrow.

incisal edge- When the incisal ridge becomes flat due to wear and tear.





DIVISION OF THE SURFACES OF THE TEETH

the crowns and roots are arbitrarily divided into thirds and are named according to their location.

Division of the Crown into Thirds

1. Cervico-occlusal/cervico-incisally:

(a) Occlusal/incisal third

(b) Middle third

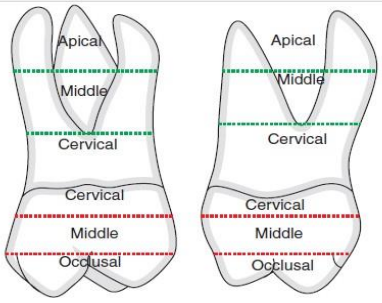
(c) Cervical third

2. Facio-lingually:

(a) Facial (labial/buccal) third

(b) Middle third

(c) Palatal/lingual third



jure 9.6 Division of the crown cervico-occlusally d root cervicoapically.

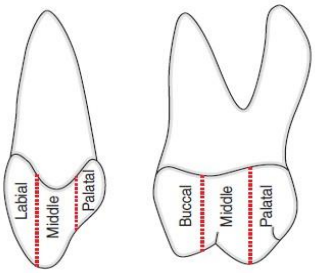


Figure 9.7 Division of the crown faciolingually.

THANK YOU