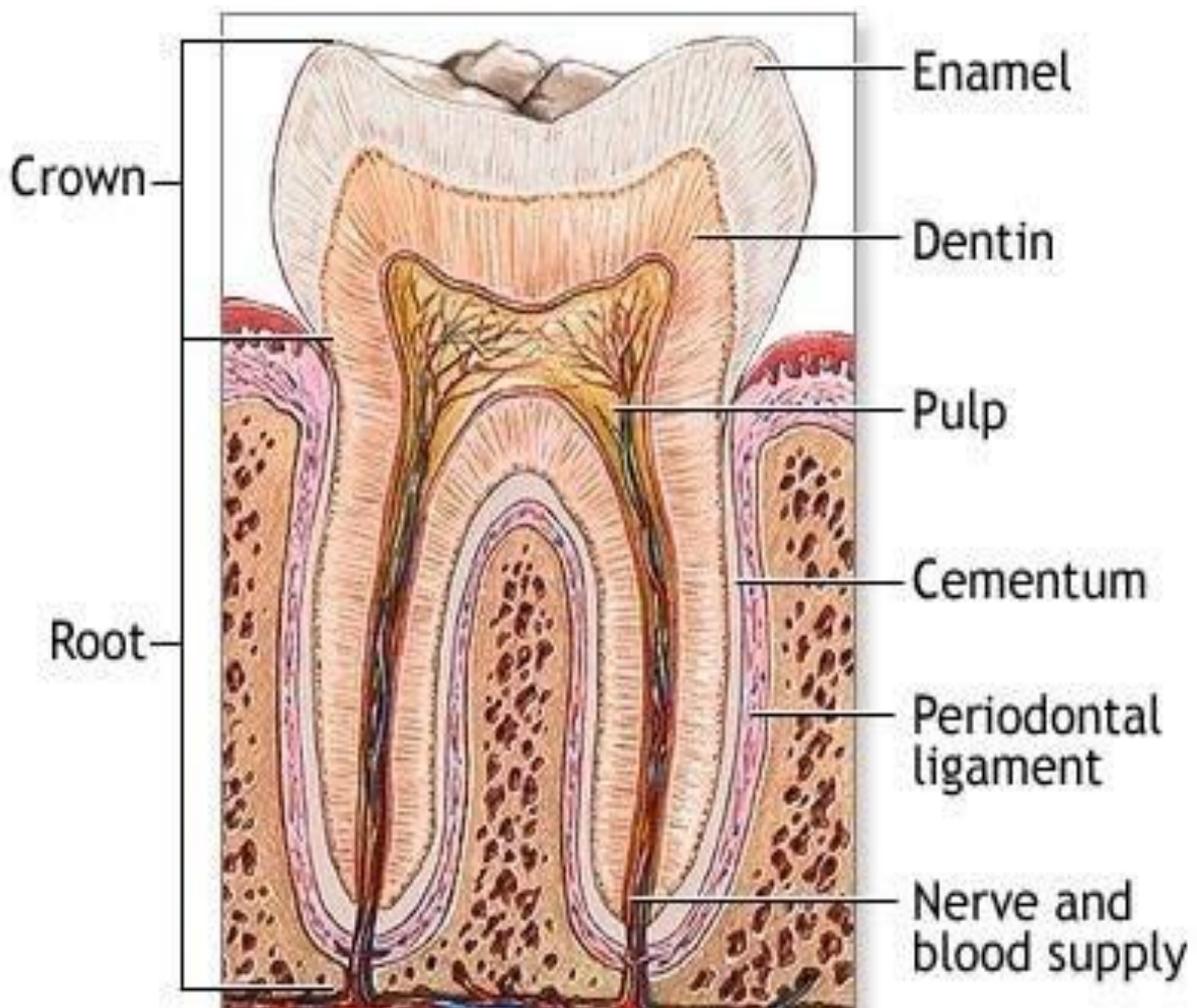


Lec. 7

Cementum

- Cementum is a mineralized dental tissue **covering the anatomical part of the root.**
- It is less hard than both the enamel and dentin.
- It begins at the cemento-enamel junction and continues to the apex.
- It serves as a medium for attachment of collagen fibers of periodontal ligament.
- It is a hard non-vascular connective tissue that covers the roots of teeth.
- The cementum is thinnest at its junction with the enamel and thickest at the apex.
- Thickness: in cervical area 20-50 μm and is gradually increases in thickness till it reaches its maximum thickness (150-200 μm) in the apical third and at bifurcation of the root.

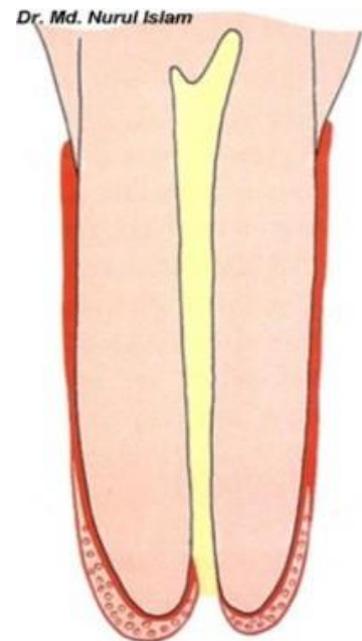


Cementum

Cementum covers the anatomic roots of human teeth.

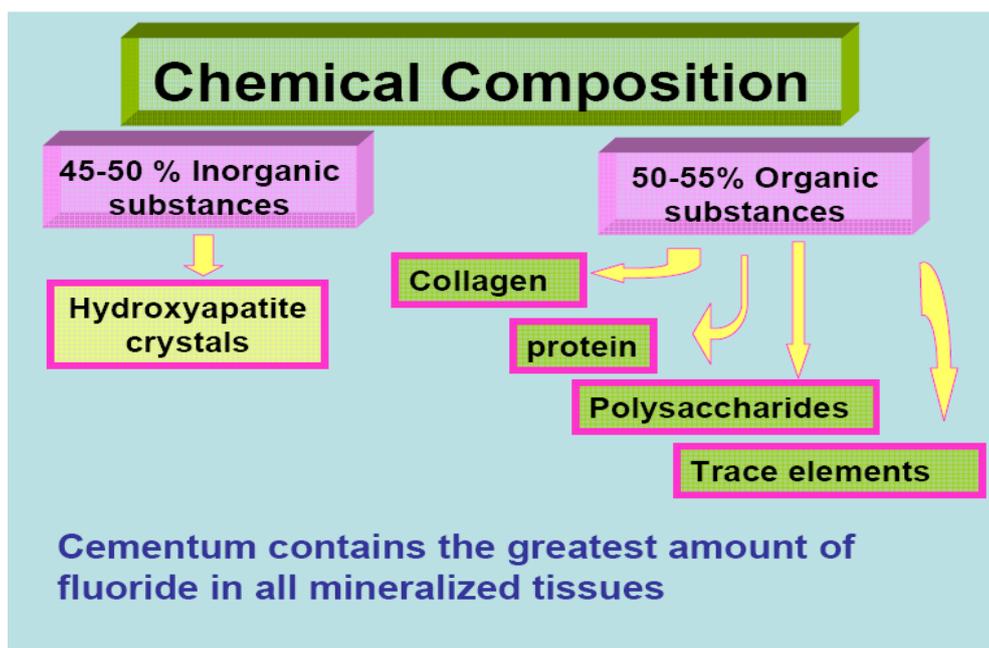
It begins at the cervical portion of the tooth at the cemento-enamel junction and continues to the apex.

Cementum furnishes a medium for the attachment of collagen fibers that bind the tooth to surrounding structures.



Chemical properties:

Organic substance: water (50-55%), and inorganic substance (45- 50%). The inorganic portion consists mainly of Calcium and phosphate in the form of Hydroxyapatite.



STRUCTURE

Light microscopic observations reveal two basic types of cementum, hence they are

1. Cellular cementum due to presence of cementocytes.

This type is seen in the apical one third of the root.

2. Acellular cementum: Due absence of cementocytes.

It found in the coronal two third of the root.

It is the main site of insertion of the fibers of periodontal ligament.

Functions of the cementum:

Acts as a medium for attachment of collagen fibers of PDL to bind the tooth to the alveolar bone.

Cementogenesis (Development of Cementum):

Cementogenesis is a continuous process throughout the life of the tooth.

This comprises

1. Matrix formation

2. Mineralization.

1. Matrix formation :

- i. The development of the root begins after the crown is formed.
- ii. The cementoblasts is the cell responsible for the development of the cementum.
- iii. The cementoblasts first lay down the **cementum matrix which is called cementoid.**
- iv. The main constituent of the matrix is collagen, which makes up the major part of organic matrix of cementum, also the cementoblasts produce the ground substance.
- v. Growth of the cementum is a rhythmic process and as a new layer of cementoid is formed, the old one calcifies.

2. Mineralization:

Occurs after some matrix production has taken place