

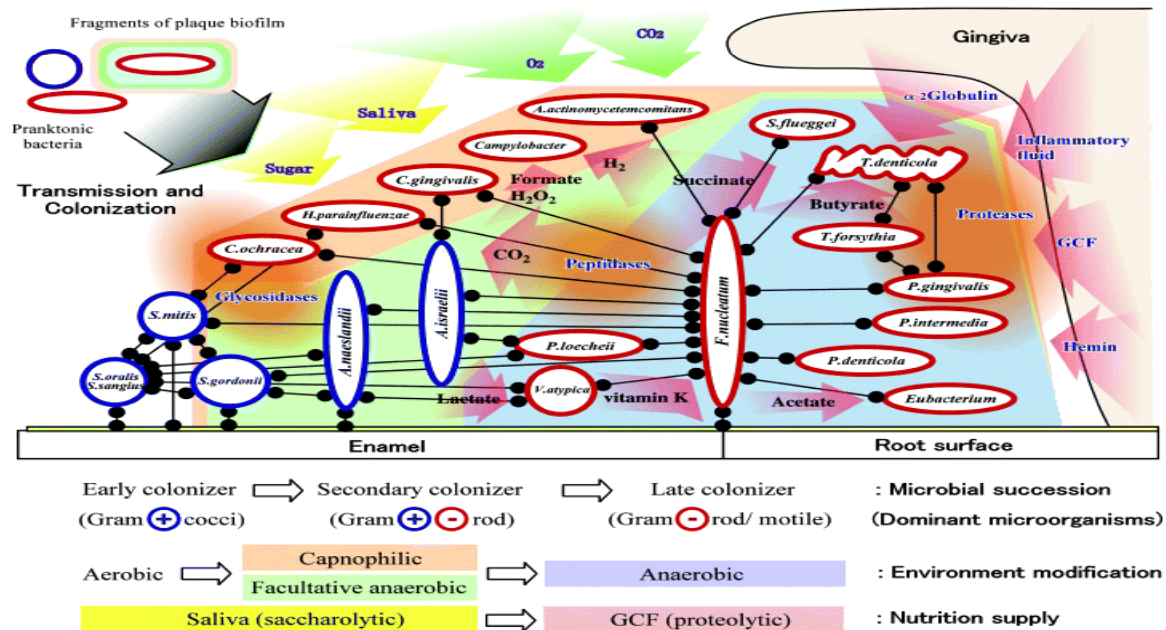
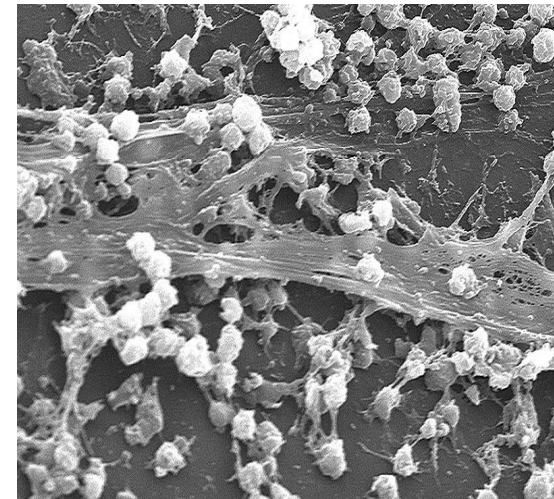


CHANGES OF ROOT SURFACE IN THE PERIODONTAL DISEASE

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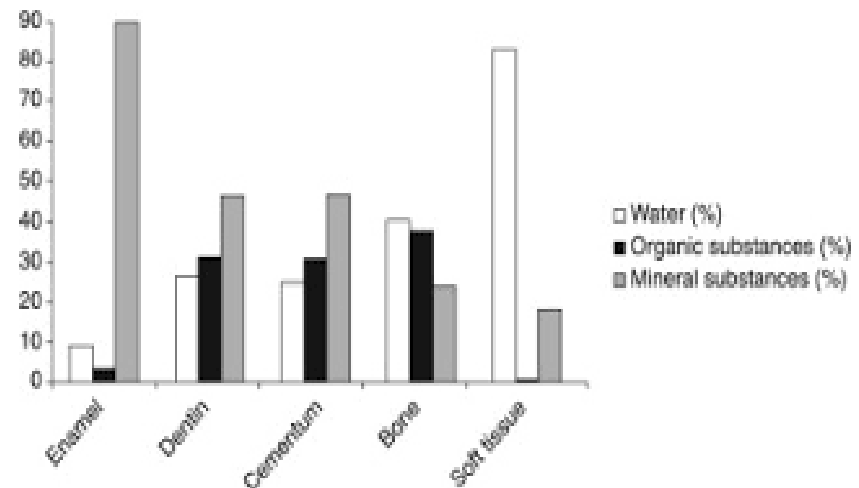
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Dental plaque-biofilm



DENTAL CEMENTUM

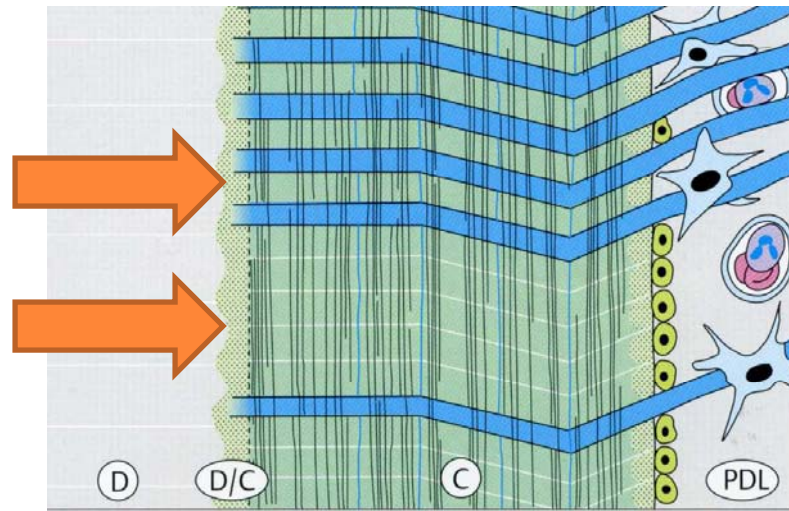
- Cement is a highly mineralized connective tissue that covers the root of the tooth, sometimes a part of the crown of the tooth
- Composition of the cement:
 - Organic compound:
 - collagen fibers
 - Organic matrix
 - Anorganic part:
 - 45-50% hydroxyl apatite



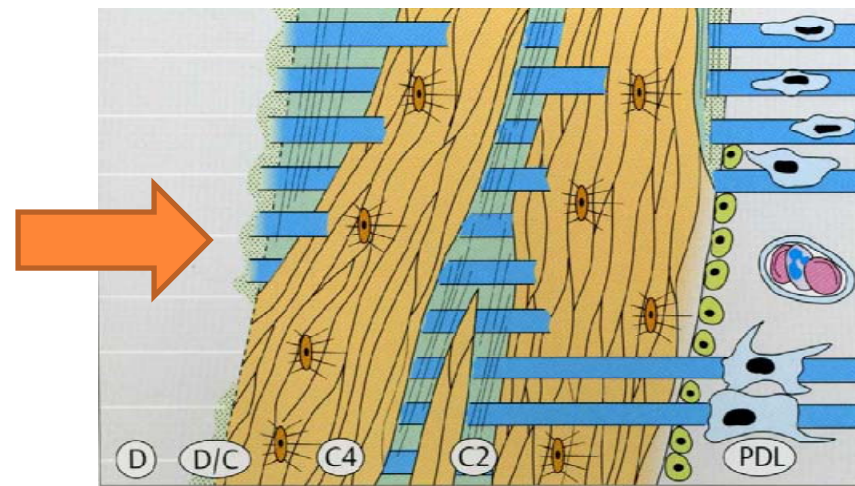
Acellular extrinsic fiber cementum

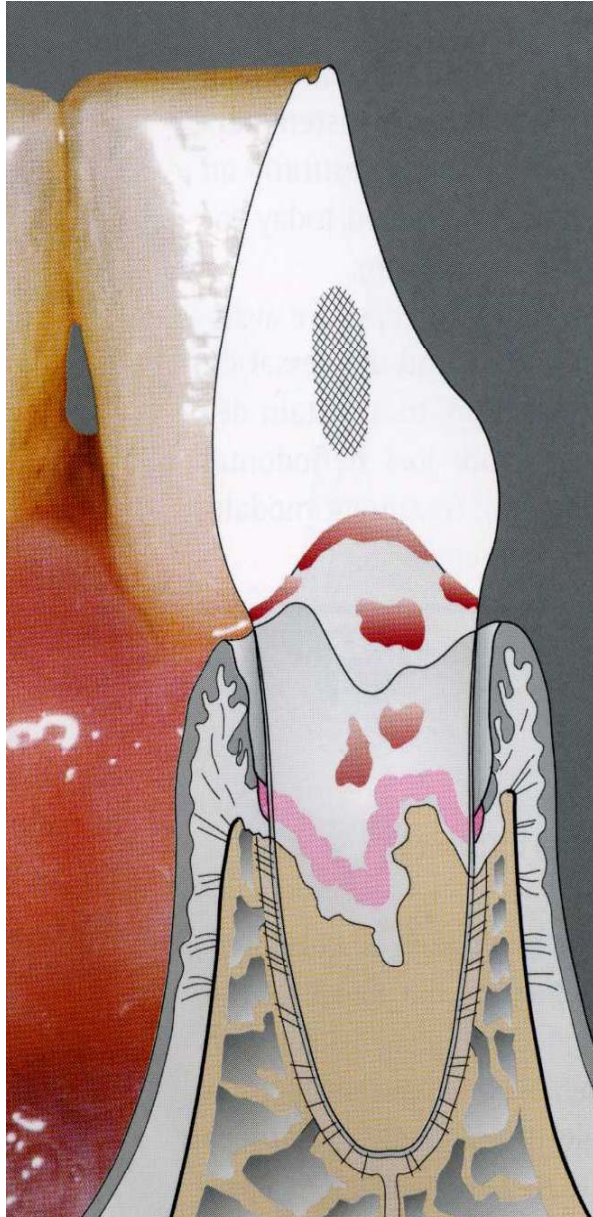
Acellular afibrillar cementum

Sharpey's fibers



Cellular and acellular intrinsic fiber cementum





- During pathogenic events in periodontal disease, the root surface of the tooth undergoes on a series of changes in its physical and chemical nature, but it also becomes cytotoxic due to the release of bacterial toxins that are imbibed in the cement of the root.
 - loss of attachment of collagen fibers to the surface of the cement
 - increasing the content of minerals in the exposed cement (chemical changes)
 - demineralization of the root surface formation of craters / caries of the root (structural changes)
 - the presence of lipopolysaccharides on the surface of the cement (cytotoxic changes)



Factors that affect on the success of the periodontal therapeutic outcomes (reparation / regeneration) include:

- an ideal root surface that should provide stability to the blood coagulum

- enabling cell migration to the surface of the root

- cellular connectivity

- their proliferation and differentiation



- The biologically acceptable smooth and hard root surface is considered a desired endpoint in the mechanical root planning and scaling. The presence of root surface without dental plaque and concretions is a prerequisite for long-term maintenance of periodontal health.



