

## Today' Vocabulary:

- **Dentin** - bone (calcified tissue) surrounding the pulp cavity of a tooth
- **Regenerate** – to restore or revive
- **Drilling** – boring a hole into a tooth with a rotary cutting instrument
- **Amalgam** – an alloy of mercury and silver used in dental fillings
- **Cariogenic** – food producing dental caries

## Dental caries

Dentin is protected by a hard layer of enamel but if this is broken then caries follows. This can result from trauma or inadequacy of the enamel; the most common cause of breakdown of enamel is by lactic acid that is formed by bacteria when sugars are left in contact with the teeth. Risk factors are therefore a diet high in sugars and poor dental hygiene. Dental caries (or decay) is a common problem in all industrialized and in many developing countries.

Destroyed structures of the tooth do not regenerate so treatment is aimed at preventing further decay. Decayed material is removed by drilling and a substance is used to fill the tooth. Many different materials are now available, including silver amalgam, gold and high-strength composite resin. Crowns are used if decay is extensive and there is limited tooth structure which may cause weakened teeth. The decayed or weakened area is removed and repaired and a covering jacket or crown is fitted over the remainder of the tooth. Crowns are often made of gold, porcelain or porcelain fused to metal. If the nerve root dies a root canal filling may be required.

Attention to diet and regular tooth brushing are the main preventative strategies. There is a wealth of material concerning dietary factors, particularly in young children. Human breast milk and unmodified cow's milk are not cariogenic, unlike infant formula milk (theoretically, soya infant formula milk is the worst offender). Drinks containing free sugars (including natural fruit juices) are cariogenic and shouldn't be given in a bottle. Foods and confectionary containing free sugars should be minimized and restricted to meal times. Cheese may actively protect against caries and is a good high-energy source for toddlers. Sugar substitutes are better for teeth than free sugars although beware of salt content and additives used to make the food as appealing. Brushing (supervised in young children) removes both sugar and organisms, and antiseptic mouthwashes may be beneficial too. Numerous other areas of research are being explored for the prevention of dental caries, including the development of various fillings, antibacterial agents and fissure sealants.

## Express Your Ideas:

1. **What is the function of tooth enamel?**
2. **What is the common cause of enamel breakdown?**
3. **Can tooth decay be treated? What are some procedures done to treat dental caries?**
4. **How can tooth decay be prevented?**
5. **As a dentist, what advice can you give to parents of small children to prevent tooth decay?**