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| **Name:** |
| India Martin |
| **Group:** |
| 10A-2 |
| **Pathology Question:** |
| How do caries progress and how does xerostomia affect this process? |
| **Report:** |
| Cause:   * *Streptococcus mutans* (Initiation), *Lactobacilli* (Progression)   What happens:   * Acid production and biofilm aggregation   + Biofilm composed of bacteria   + Biofilm enhances carogenicity by protecting from host defenses * Bacteria breakdown carbohydrates producing acid biproduct * Greater biofilm leads to greater acid production * Enamel demineralizes at pH 5.5 and less * Repeated cycles of acid production without removal aids in caries progression   Protecting factors:   * Mechanical removal (brushing, flossing, etc.), Diet (clean crunchy foods (carrots), water), Fluoride, Salivary flow   Saliva:   * Fluoride content in saliva * Rate of flow   + Increased rate = increased bacterial clearance * Contains agents that help neutralize the acid produced by bacteria   + Sodium bicarbonate, Phosphates, Sialin * Re-mineralizing agents   + Hydroxyapatite, Fluorapatite, Calcium ions, Phosphate ions, Proline, Statherins * Antimicrobial properties   Xerostomia (Reduction in saliva):   * Increased bacterial adherence * Less protective factors   + Reduction of mineralizing agents   + Reduction of buffer 🡪 Increased acidity of oral environment * Reduction of bacterial and carbohydrate clearance via salivary flow rate |
| **References:** |
| Rathee M, Sapra A. Dental Caries. [Updated 2020 Jun 3]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2020 Jan-. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK551699/>  Su N, Marek CL, Ching V, Grushka M. Caries prevention for patients with dry mouth. J Can Dent Assoc. 2011;77:b85. PMID: 21774875.  Lagerlöf F, Oliveby A. Caries-protective factors in saliva. Adv Dent Res. 1994 Jul;8(2):229-38. doi: 10.1177/08959374940080021601. PMID: 7865081. |