Snyder Agar Test for Dental Caries

A dental carie is a cavity. Cavities are caused by bacteria fermenting sugars to produce acid. Acid slowly degrades tooth enamel. The most common bacteria found in the mouth that contribute to cavity formation are *Streptococcus* and *Lactobacillus*. Both genera ferment sugars (glucose and sucrose in particular) and feed on milk protein (casein). The more *Streptococcus* and *Lactobacillus* present in a person's mouth, the greater the risk of developing cavities. Foods rich in simple sugars increase the risk for cavity development. Good oral hygiene is important. Everyone should brush, floss, and use antiseptic mouthwash **twice per day**!

Each student swabs their teeth and gums. The swab is used to inoculate a Snyder agar deep tube. The tubes are incubated for at least 48 hours. Snyder agar contains glucose, casein, and a pH indicator (bromcresol green). The agar already has a pH of ~4.8. Snyder agar is both selective and differential. The acidic pH makes the agar selective. Glucose fermentation makes the agar differential.

The rate at which the agar turns yellow correlates to the number of *Streptococcus* and *Lactobacillus*. The more of these bacteria that are present, the faster the agar turns yellow.

Yellow in 24 hours = high risk for cavities

Yellow in 48 hours = moderate risk for cavities

Yellow in 72 hours or still green = low risk for cavities