Human Oral Bacteria Strains vs. Xylitol (C5H7(OH)5) and Other Common Health Care Products

Mackley, Joshua (School: Weber High School)

Sucrose in combination with Streptococcus mutans result in acids which break down enamel and contribute to dental caries. Alternatives with potential oral health benefits were explored in this study. Xylitol is a plant extracted alcohol-based sugar with a large molecular structure which cannot be absorbed in the human intestines. This project was designed to test the effectiveness of xylitol compared with other common oral health care products known to inhibit bacterial growth. A biofilm was created from different individuals on Mueller Hinton agar and xylitol, mouthwash, and toothpaste were applied. The growth pattern and zone of inhibition were then observed after five days. Mouthwash had an average zone of 8.85 mm and xylitol was 7.5 mm. Xylitol had an inhibiting effect on oral bacteria. The similar zones of inhibition of xylitol and mouthwash indicate a comparable impact on bacterial growth This demonstrates it can increase overall oral health when combined with regular dental hygiene practices. Potential exists for xylitol to also be used as a sweetener in a variety of foods in place of sugar with similar effects.

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