To Floss, or Not to Floss: An Oral Microbiome Investigation

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Recent scientific and journalistic publications have called into question the validity and efficacy of flossing. This project aims to determine whether flossing benefits dental health by analyzing its impact on the oral microbiome. For this study, 22 age-matched, high school juniors and seniors were blocked into three different groups: flossers, non-flossers, and a transitional group. Oral microbiome samples were collected from them 4 times over a period of 2 months. Sequencing data and bioinformatics analysis revealed that flossers and non-flossers do have statistically different oral microbiome and that with habitual flossing, the oral microbiome of a non-flosser can change given time. Lastly, the study also found that non-flossers have significantly more disease-causing microbes present in their oral microbiome. Taken together, these results lend confidence that flossing is beneficial to dental health.

Awards Won:

Second Award of $2,000

Fondazione Bruno Kessler: Award to participate in summer school "Web Valley" in Trento, Italy

American Statistical Association: Certificate of Honorable Mention