

CLINICAL STUDIES

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Effect of different chocolate and candy in enamel surface loss of human permanent and primary teeth, an in vitro study

ABSTRACT

Background. Excessive eating of sweets and chocolate causes enamel surface degradation in both children and adults.

Purpose. The purpose of this study was to investigate the influence of various chocolates and confectionery on enamel surface erosion of human permanent and primary teeth.

Methods. This study included six different types of candies and chocolates. 78 sound human teeth were used in this study. 39 healthy permanent premolars and 39 primary incisor teeth were chosen. We randomly divided the teeth into 36 fluoridated and non-fluoridated groups, keeping 6 as controls. The fluoridated group's enamel surface was swabbed with toothpaste containing fluoride for five minutes twice daily. Each group was separated into 12 clusters of 6 teeth based on the type of chocolate and sweets utilized, such as jelly beans, chocolate beans, milk chocolate, white chocolate, gumballs, and dark chocolate. Enamel microhardness was then measured. The data were analyzed using independent t-tests, paired t-tests, Tukey tests, and ANOVA.

Results. The following chocolates and candy types had the highest impact on the enamel microhardness of permanent and primary teeth in all groups; however, the increase was smaller in the fluoridated group. Jelly beans showed the most enamel surface degradation, while dark chocolate showed the least (224.16 ± 9.17 and 234.16 ± 4.91 , respectively) with a significant difference.

Conclusion. According to this study, chocolate and sweets reduce the microhardness of enamel. Parents are encouraged to have greater influence over what their children and teenagers eat. After eating candy and chocolate, kids should brush their teeth with fluoride toothpaste.