

Brazilian Oral Research

Print version ISSN 1806-8324

Abstract

[RIOS, Daniela](#) et al. Scanning electron microscopic study of the *in situ* effect of salivary stimulation on erosion and abrasion in human and bovine enamel. *Braz. oral res.* [online]. 2008, vol.22, n.2, pp. 132-138. ISSN 1806-8324. doi: 10.1590/S1806-83242008000200007.

This *in situ* study investigated, using scanning electron microscopy, the effect of stimulated saliva on the enamel surface of bovine and human substrates submitted to erosion followed by brushing abrasion immediately or after one hour. During 2 experimental 7-day crossover phases, 9 previously selected volunteers wore intraoral palatal devices, with 12 enamel specimens (6 human and 6 bovine). In the first phase, the volunteers immersed the device for 5 minutes in 150 ml of a cola drink, 4 times a day (8h00, 12h00, 16h00 and 20h00). Immediately after the immersions, no treatment was performed in 4 specimens (ERO), 4 other specimens were immediately brushed (0 min) using a fluoride dentifrice and the device was replaced into the mouth. After 60 min, the other 4 specimens were brushed. In the second phase, the procedures were repeated but, after the immersions, the volunteers stimulated the salivary flow rate by chewing a sugar-free gum for 30 min. Enamel superficial alterations of all specimens were then evaluated using a scanning electron microscope. Enamel prism core dissolution was seen on the surfaces submitted to erosion, while on those submitted to erosion and to abrasion (both at 0 and 60 min) a more homogeneous enamel surface was observed, probably due to the removal of the altered superficial prism layer. For all the other variables - enamel substrate and salivary stimulation -, the microscopic pattern of the enamel specimens was similar.

Keywords : Tooth abrasion; Tooth erosion; Dental enamel; Scanning electron microscopy.

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