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PhD in Dentistry

Research Area: Biomaterials

Title: The effect of beverages and medicines on human enamel surface and the evaluation of different remineralizing strategies.

Nowadays it is possible to observe an increase of dental erosion, due to the consumption of several drinks and medicines. Some chronic conditions, as asthma or allergies lead to a constant intake of medicines to prevent and treat these conditions, specially in children. The young population are known by their consumption of beverages and energy drinks. These solutions are acidic and have sugar which is a concern to the global oral health, specially to dental erosion, a chemical process of enamel demineralization.

This *ex vivo* study has as global objectives to evaluate the effect of 4 drinks (Guaraná Antártica®, Redbull®, Somersby® and water - control), 2 medicines (Ventilan®, Vickers®) and HCl solution. And also to study the remineralizing effect of artificial saliva; mouthwash with tin fluoride/amine fluoride/sodium fluoride; a CPP-ACP paste; fluoride varnish with tricalcium phosphate, after the demineralization with the solutions previously presented.

The sample will be 700 specimens of human enamel.

The specimens will be tested with Raman spectroscopy, Vickers Micro hardness test, Scanning Electron Microscopy and Energy dispersive spectroscopy.

Relating to statistical analyses the Kolmogorov-Smirnow and Shapiro-Wilk tests; the Friedman and Wilcoxon tests will be used. To accept or reject the null hypothesis a significance level of 5% will be accepted.

Keywords: enamel, dental erosion, remineralization, raman.

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