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## Effects of Oral pH Changes on Smoking Desire

Gökçen Ömeroğlu Şimşek<sup>1</sup>, Gülser Kılınc<sup>2</sup>, Begüm Ergan<sup>1</sup>, Oğuz Kılınc<sup>1</sup>

<sup>1</sup>Department of Chest Diseases, Dokuz Eylül University School of Medicine, İzmir, Turkey

<sup>2</sup>Dokuz Eylül University, Vocational School of Health Services, İzmir, Turkey

**Objectives:** Factors that trigger nicotine use include stress and especially caffeine use. Chronic use of caffeine causes a lot of tolerance, and the use of nicotine reduces the effects of tolerance and enhances stimulating effects through the dopaminergic pathway. In order to increase the absorption of nicotine, nicotine products are buffered to alkaline pH. In our study, the relationship between saliva pH and smoking desire was investigated in order to evaluate the intra-oral acid-base status after caffeine use.

**Methods:** 43 smoking cases and 39 patients who were not were included in the study. A standard questionnaire was applied to the cases and oral examinations were performed with the help of mirror sonds. In order to avoid circadian rhythm changes, untreated saliva samples were taken at least 1 hour after breakfast. 3 cases of saliva samples were collected from all subjects for 5 minutes. Saliva flow rate and pH values were measured from the initial saliva sample. Then, standard sugar free instant coffee was offered to the subjects and saliva pH was measured. Finally, after drinking water, salivary pH was reevaluated. Cigarette smoking was evaluated with visual analog scale (VAS).

**Results:** It was found that smoking cases had worse oral hygiene, their debris and calculus were higher, but gingival bleeding was less than the other group ( $p<0.005$ ). Although salivary flow rates were lower in smokers but it was not statistically significant ( $p=0.06$ ). The saliva pH values of the subjects who smoked were found to be lower than the patients who did not use, but not statistically significant. In both groups, pH values were increased after drinking coffee ( $p<0.005$ ) and decreased after drinking water ( $p<0.005$ ). In the correlation analysis performed with the pH values of the VAS measurements, a statistically significant result was not obtained, however, desire to smoke was increased with coffee and was decreased with water drinking.

**Conclusion:** Alkaline value of the saliva increases the absorption of nicotine. After an acidic product (pH 5.5), with the buffering effect of saliva, saliva pH increases. A decrease in saliva pH is observed after water drinking with a pH value (6.34) and suppresses the desire to smoke. The results suggest that in behavioral and cognitive therapies that we think are as important as pharmacological therapies in the process of smoking cessation, it contributes to treatment with simple behavior such as water drinking.

**Keywords:** Caffeine, nicotine, pH