

PLAQUE pH RESPONSE TO SNACK FOODS IN CHILDREN WITH DIFFERENT LEVELS OF MUTANS STREPTOCOCCI

Sroisiri Thaweboon¹, Theeralaksana Suddhasthira², Boonyanit Thaweboon¹,
Surin Soo-Ampon³ and Surachai Dechkunakorn⁴

¹Department of Microbiology, ²Department of Oral Surgery, ³Department of Physiology and Biochemistry, ⁴Department of Orthodontics, Faculty of Dentistry, Mahidol University, Bangkok, Thailand

Abstract. This study aimed to investigate the effects of some snack foods on plaque pH in children with different levels of mutans streptococci (MS). Six children, aged 9-12 years, with low ($<10^4$) and 6 children, aged 10-12 years, with high ($>10^6$) numbers of MS/ml saliva participated in the study. Dental plaque pH changes, after the consumption of milk chocolate, sweet biscuit, instant noodle, sticky rice with banana and a 10% sucrose positive control were measured using pH-electrode. The measurements of plaque pH were made on forty-eight-hour accumulated plaque, at baseline to determine the resting pH of the fasted plaque and at time intervals of 2, 5, 10, 20 and 30 minutes after food consumption. The plaque pH curves, delta pH values and area under curve for pH 6.0 for each test food were determined. Plaque acidogenicity was more pronounced for the high-MS group at almost all test periods compared to the low-MS group with all test foods. The test foods were ranked according to maximum pH drop in about the same order in both groups as follows: 10% sucrose > milk chocolate > sweet biscuit > sticky rice with banana > instant noodle. The plaque pH also stayed below pH 6.00 for a longer period in the high-MS group with sweet biscuit, milk chocolate, and sticky rice with banana. Findings suggest that pH responses were more acidic in high-MS group than low-MS group.

Correspondence: Boonyanit Thaweboon, Department of Microbiology, Faculty of Dentistry, Mahidol University, 6 Yothi Road, Bangkok 10400, Thailand.
Tel: 66 (0) 2203-6555 ext 6411-2; Fax: 66 (0) 2203-6410
E-mail: dtstw@mahidol.ac.th