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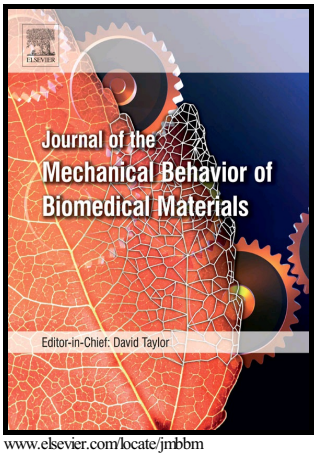


www.elsevier.com/locate/jmbbm

PII: S1751-6161(17)30226-6
DOI: http://dx.doi.org/10.1016/j.jmbbm.2017.05.029
Reference: JMBBM2348

To appear in: *Journal of the Mechanical Behavior of Biomedical Materials*

Received date: 6 February 2017
Revised date: 16 May 2017
Accepted date: 20 May 2017

Cite this article as: Qihang Zeng, Liang Zheng, Jun Zhou, Heng Xiao, Jing Zheng and Zhongrong Zhou, Effect of alcohol stimulation on salivary pellicle formation on human tooth enamel surface and its lubricating performance, *Journal of the Mechanical Behavior of Biomedical Materials* http://dx.doi.org/10.1016/j.jmbbm.2017.05.029

# Effect of alcohol stimulation on salivary pellicle formation on human tooth enamel surface and its lubricating performance

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## Abstract

This study was to investigate the salivary pellicle formation on the surface of human tooth enamel and its lubricating behavior under alcohol stimulation. Normal saliva and alcohol-stimulated saliva were collected from a young male volunteer after rinsing mouth with deionized water and different-concentration alcohol aqueous solution, respectively. Saliva-adsorption treatment was conducted in vitro on enamel surface to obtain salivary pellicle. Microscopic examinations and lubrication testing of salivary pellicle were performed by nanoscratch technology. Given that the pellicle lubricating properties are closely associated with its adhesion strength to substrates, the adhesion force between salivary pellicle and enamel was measured using an Atomic Force Microscopy. Compared with normal salivary pellicle, the salivary pellicle obtained from alcohol-stimulated saliva was not uniform anymore and even without any orderly multi-layer structure. Although alcohol stimulation improved the pellicle bonding to enamel surface, it caused the pellicle lubrication worse. In sum, the lubricating



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