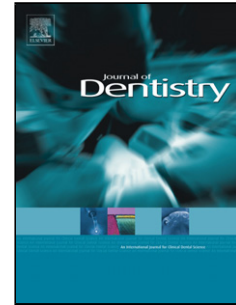


Accepted Manuscript

Title: Buffering or non-buffering; an action of pit-and-fissure sealants

Author: Shinichi Kakuda Sharanbir K. Sidhu Hidehiko Sano



PII: S0300-5712(15)30007-5

DOI: <http://dx.doi.org/doi:10.1016/j.jdent.2015.06.013>

Reference: JJOD 2487

To appear in: *Journal of Dentistry*

Received date: 28-12-2014

Revised date: 29-6-2015

Accepted date: 30-6-2015

Please cite this article as: Kakuda Shinichi, Sidhu Sharanbir K, Sano Hidehiko. Buffering or non-buffering; an action of pit-and-fissure sealants. *Journal of Dentistry* <http://dx.doi.org/10.1016/j.jdent.2015.06.013>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Buffering or non-buffering: an action of pit-and-fissure sealants

Authors

Shinichi Kakuda ^{a*}, Sharanbir K Sidhu ^b and Hidehiko Sano ^a

Department

^a Department of Restorative Dentistry, Division of Oral Health Science, Graduate School of Dental Medicine, Hokkaido University, Sapporo, Japan

^b Institute of Dentistry, Barts & The London School of Medicine and Dentistry, Queen Mary University of London, London, United Kingdom

* **Corresponding author:** Shinichi Kakuda:

Department of Restorative Dentistry, Division of Oral Health Science, Graduate School of Dental Medicine, Hokkaido University, Sapporo, 060-8586, JAPAN.

Tel: +81 11 706 4261

Fax: +81 11 706 4878

E-mail address: s.kakuda@den.hokudai.ac.jp

Abstract

Objectives

The aim of this study was to evaluate the buffering capacity of glass-ionomer material in vitro. The null hypothesis tested was that there is no effect of cured glass-ionomer pit-and-fissure sealant (PFS) pastes on the environmental acidity as well as the tooth substrate.

Method

For each material, a cured PFS disk and a section of human enamel were simultaneously soaked in lactic acid solution in a conical tube, and the pH of the solution was measured daily for one week. Subsequently, the total amount of calcium leached out in solution was also measured with ICP-AES.

Results

The results showed that the acidity of the solutions changed over time. Significant differences of calcium ion concentration in solution were observed as a result of decalcification. As the PFS products tested did not include calcium, the concentration of calcium ion released indicated acidic erosion of the tooth enamel.

Conclusions

The glass-ionomer countered the acid of the solution rapidly and preserved the structure of human tooth enamel.

1. Introduction

Dental caries is initiated by demineralization of the outer surface of the tooth due to organic acids produced locally by bacteria that ferment deposits of dietary carbohydrates.^{1,2} Acid of aged plaque

Download English Version:

<https://daneshyari.com/en/article/6053008>

Download Persian Version:

<https://daneshyari.com/article/6053008>

[Daneshyari.com](https://daneshyari.com)