Effect of Miswak Versus Fluoridated and Non-Fluoridated Tooth Pastes on Enamel subjected to Cola Beverage

(Study Using Scanning Electron Microscope Attached With Energy Dispersive X-Ray Analysis).

Thesis Submitted to

Faculty of Dentistry - Ain Shams University

In Partial Fulfillment of the Requirements of Master Degree

In Oral Biology

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2014

بسم الله الرحمن الرحيم

قَالُوا سُبْحَانَكَ لَا عِلْمَ لَنَا إِلَّا مَا عَلَّمْتَنَا

إِنَّكَ أَنتَ الْعَلِيمُ الْحَكِيمُ

صدق الله العظيم

سورة البقرة (٣٢)

Acknowledgement

Many thanks to ***Allah****, who granted me the ability to perform this work.*

First and foremost, I would like to express my sincere gratitude and thanks to ***Dr.Reham Magdy Mohamed Ameen****, Assistant Professor of Oral Biology, Faculty of Dentistry, Ain Shams University for his guidance, helpful advise and constructive supervision of this work.*

Words could not express the feeling of gratitude and respect I carry to ***Dr.Khaled El-Sayed Nour El Haddad****, Lecturer of Oral Biology, Faculty of Dentistry, Ain Shams University for his true concern, continuous advice, and encouragement which allowed completion of this study.*

I am thankful to all members of the Oral Biology Department, Faculty of Dentistry, Ain Shams University for their sincere effort and support as well

Muataz Abd Elfatah Zawaghi

Dedication

I dedicate this work to

My parents

My Lovely Sisters

My Dear brother

Fo giving me all the support, love, patience

and support that I needed

You are my all

Muataz Abd Elfatah Zawaghi

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LIST OF ABBREVIATIONS

Abbreviation	***Meaning***
EDAX	Energy dispersive x-ray analysis
SEM	Scanning electron microscope
DEJ	Dentino- enamel junction
HA	Hydroxy apatite
PH	Power of Hydrogen
PPM	Part per million
SNF2	Stannous fluoride
RPM	Revolution per minute
CA	Calcium
P	Phosphate
C	Carbon
FE	Ferrous
MG	Magnesium
NI	Nickel
CR	Cranium
CO	Cobalt
TI	Titanium
WHO	World Health Organization
NAF	Sodium fluoride
UK	United kingdum

CEJ	Cemento-enamel junction
S	strontium
KV	Kilo-volt
SD	Standard deviatio
Wt%	Weight percent

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INTRODUCTION

Human enamel is directly affected (positively or negatively) by food and beverage intake and normally cycle through processes of demineralization and remineralization. To remain in a state of dental health, the tooth needs to spend more time in a state of remineralization versus demineralization **(Timothy and Wright, 2010).**

Beverages can affect natural teeth, and chronic exposure often leads to the development of dental frangible especially dental erosion **(Touys and Mehio, 2006).**

The clinical term dental erosion is used to describe the physical results of a pathologic, chronic, and localized loss of dental hard tissue that is chemically etched away from the tooth surface by acid and chelation without bacterial involvement. The acids responsible for erosion are not the products of the oral flora, but dietary, occupational, or intrinsic sources **(Imfeld, 1996; Ten cate and Imfeld, 1996).**

Demineralization of tooth by erosions caused by frequent contact between the tooth surface and acids. Extrinsic factors are related to frequent consumption of acidic foodstuffs or beverages and exposure to acidic contaminants in the working environment (**Meurman and Frank, 1991).** In modern societies the extrinsic factor is becoming more important, due to the increased

consumption of acid drinks as soft drinks, sport drinks and fruit juices **(Lussi et al., 2004).**

The World Health Organization has recommended and encouraged the use of chewing sticks as an effective tool for oral hygiene in areas where such use is customary **(WHO, 1987).** Salva-dorapersica or Arak is the major source of material for chewing sticks in Saudi Arabia and much of the Middle East **(Eid et al., 1990).** The use of the chewing stick (miswak) for cleaning teeth is an ancient custom which remains widespread in many parts of the world **(Hyson, 2003).**

The daily fluoride exposure via tooth pastes also provides at least a basic protection against erosive demineralization from everyday exposure to acidic food and drink **(Bartlett et al., 1994; Hooper et al., 2007).**