

# Effect of Phytic Acid on the Efficacy of Bioactive Desensitizers

Sindagi Swabhaanu M <sup>a\*</sup>, Paramashivaiah Ashwini <sup>a</sup>, Mehta Deepak <sup>b</sup>

<sup>a\*</sup>Vokkaligara Sangha Dental College and Hospital, Bangalore, India (swabhaanu.sindagi@gmail.com)

<sup>a</sup>Vokkaligara Sangha Dental College and Hospital, Bangalore, India

<sup>b</sup>Tohoku University, Sendai, Japan

## Introduction

Several clinic-based and home-based treatment dentine desensitizing agents are currently available. However, no single agent is a "gold-standard". Bioactive desensitizers are a promising addition to the current armamentarium.

## Objectives

To evaluate dentine tubule occlusion efficacy of Predicta™ Bioactive Desensitizer, a methacrylate-free, nanohydroxyapatite-based desensitizer and the effects of phytic acid pretreatment.

## Methods



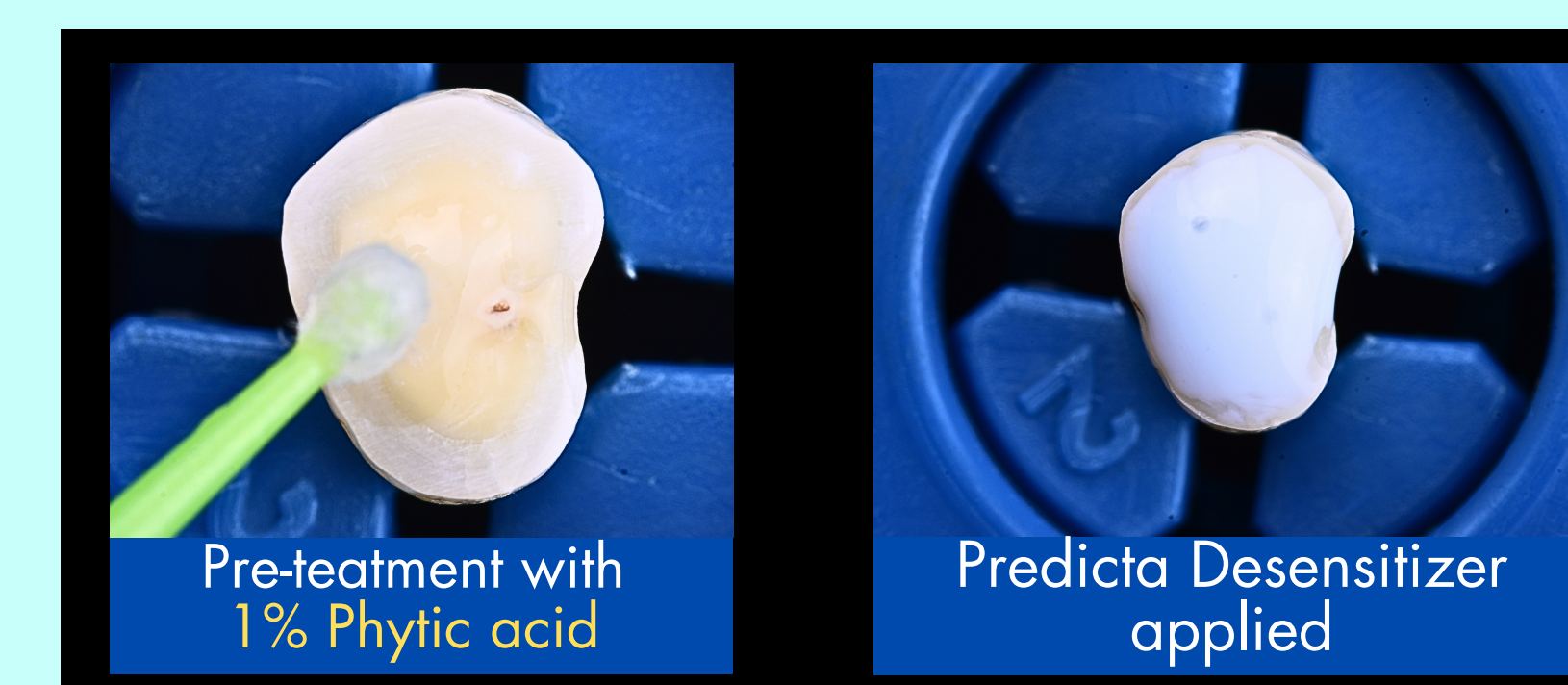
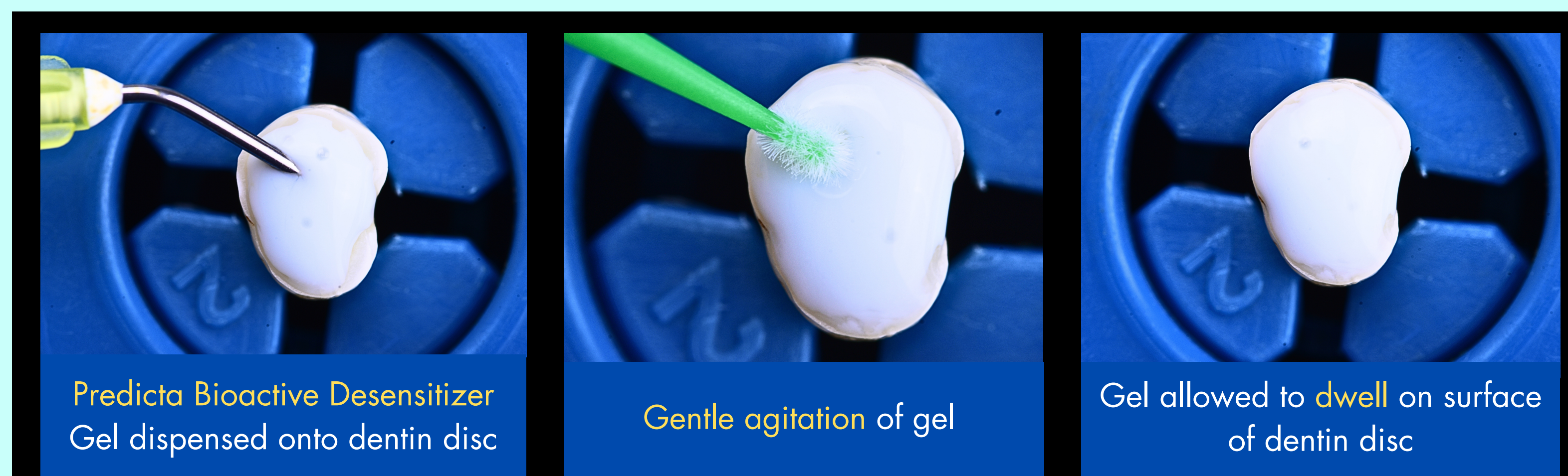
**A**  
n=10 30 seconds application without dwelling time

**B**  
n=10 30 seconds application with 15 seconds dwelling time

**C**  
n=10 1 minute application with 15 seconds dwelling time

**D**  
n=10 1% Phytic Acid with wash

**E**  
n=10 1% Phytic Acid without wash



**F**  
n=5 Control (Artificial Saliva)



## Results

### Scoring Criteria Dentine Tubule Occlusion

Type	Amount of Occlusion	Score
Type 0	No occlusion	0
Type 1	Partial occlusion; ≤25%	1
Type 2	Partial occlusion; 25-75%	2
Type 3	Complete occlusion; >75%	3

Neha M, Vandana LK. Effects of citric Acid and desensitizing agent application on nonfluorosed and fluorosed dentin: an in vitro sem study. *Open Dent J.* 2015 Mar 31;9:98-102.

### Tubule Occlusion

Group E > Group D > Group C = Group D > Group A > Group F

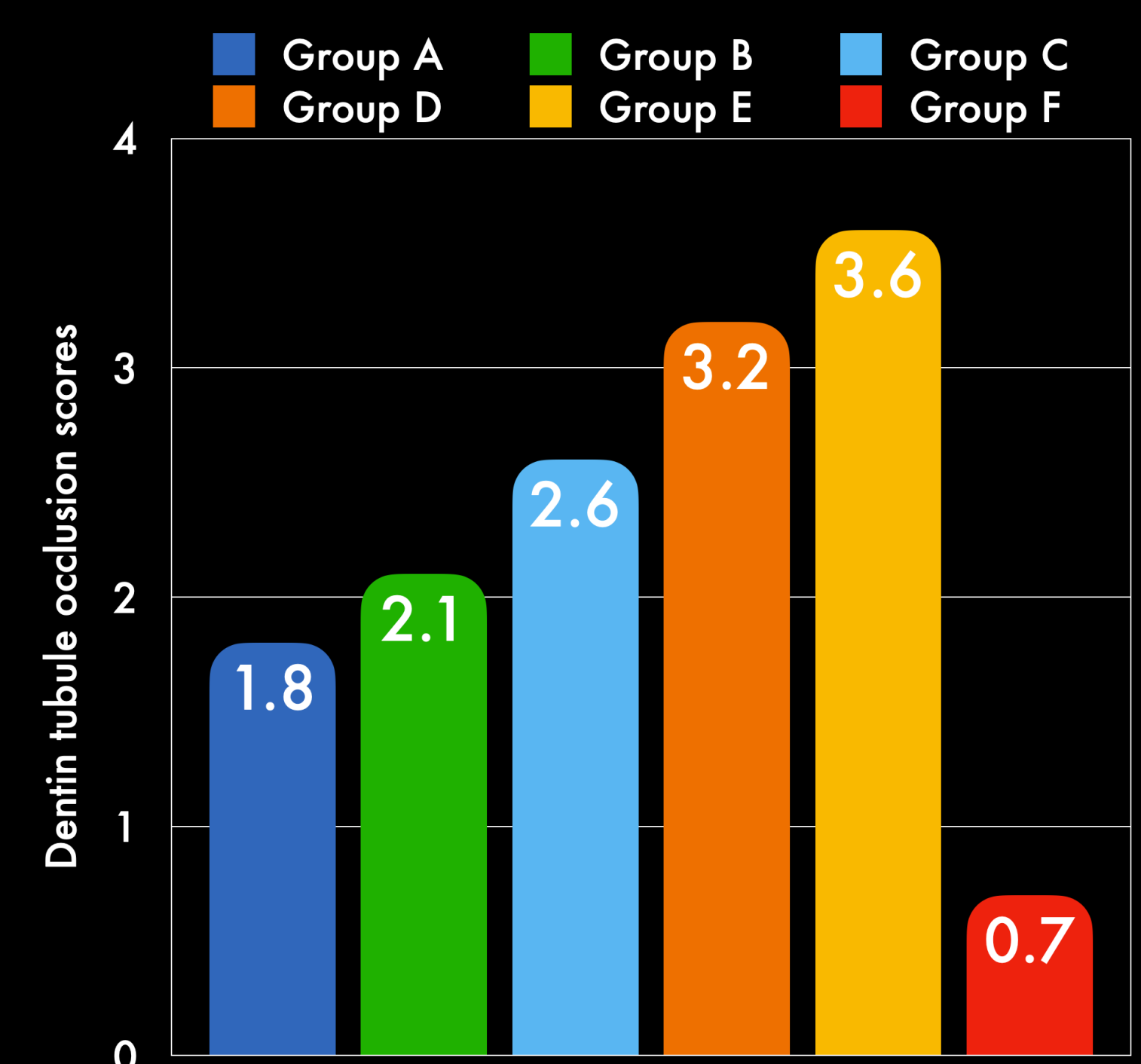
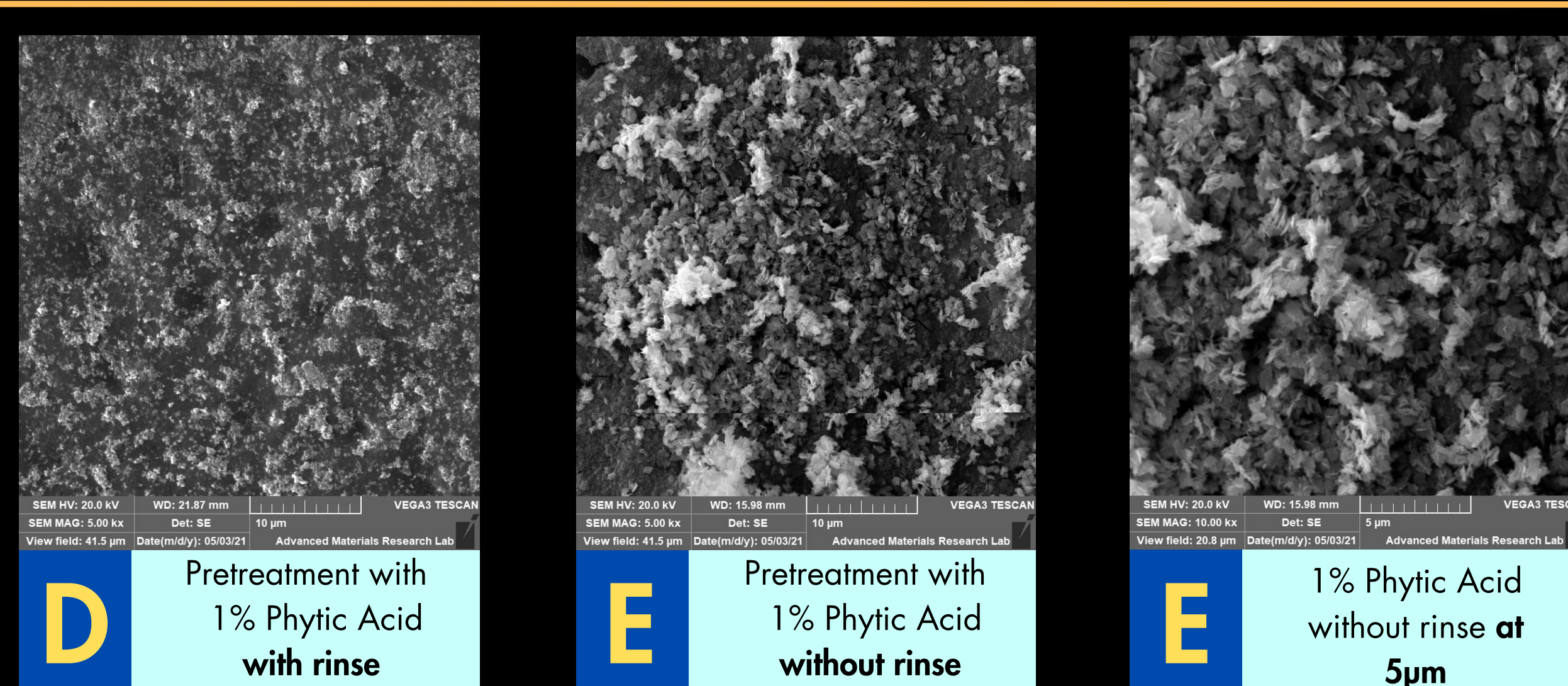
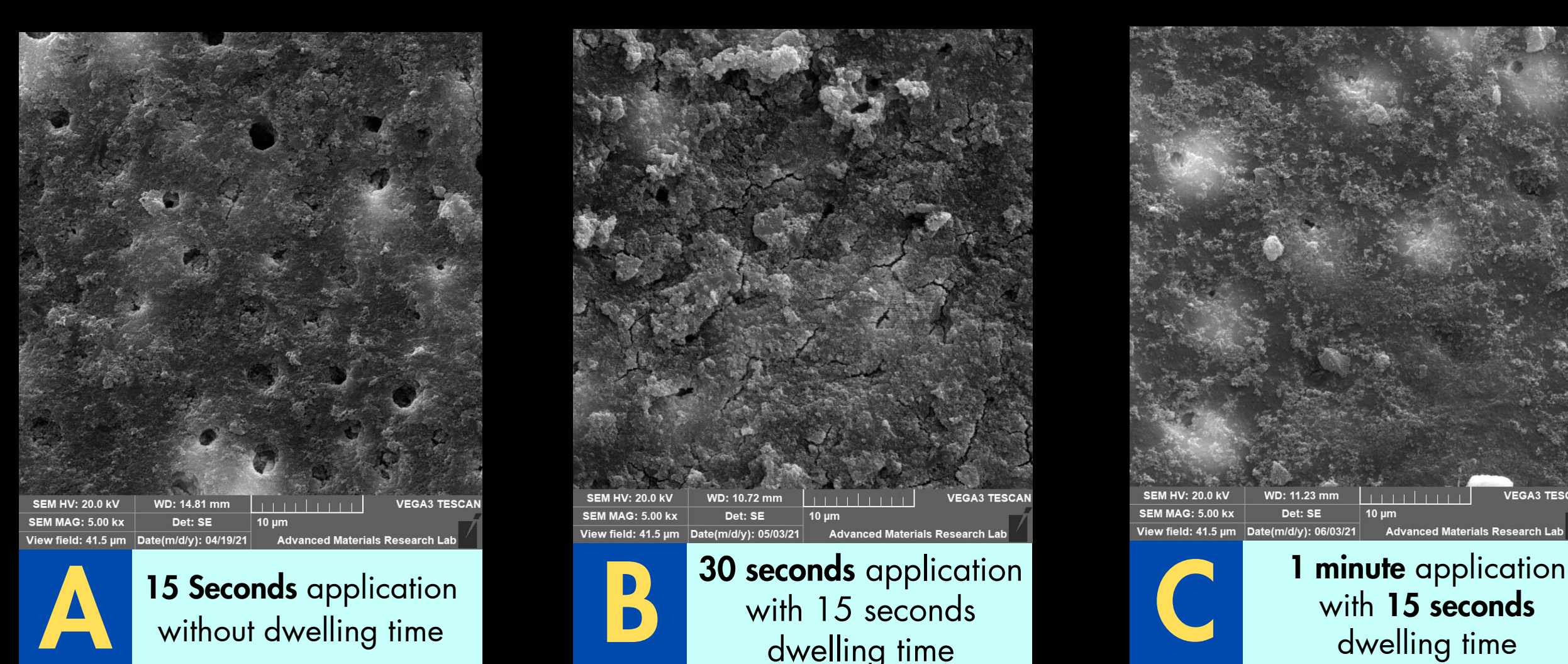
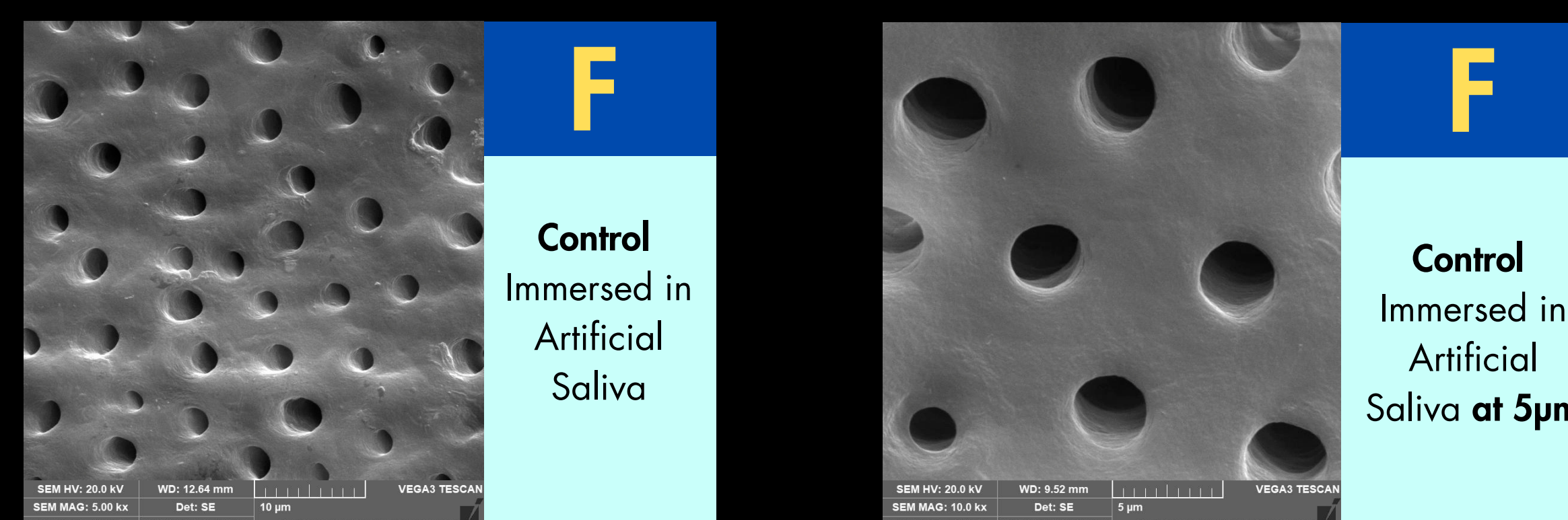


Table 1: Mean difference of post treatment tubule occlusion score between groups

Group	Mean Difference	p-value*
Group A	1.8	<0.001
Group B	2.1	<0.001
Group C	2.6	<0.001
Group D	3.2	<0.001
Group E	3.6	<0.001
Group F	0.7	0.18

\*Computed using ANOVA and TUKEY adjustment

## Conclusions

The tubule occlusion efficacy of Predicta Bioactive Desensitizer seems to be more effective with:

- Increased dwelling time on the exposed dentinal surface;
- 1% phytic acid pretreatment without rinse.