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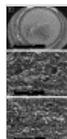
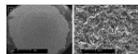
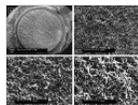
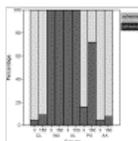
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## Dental Materials

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## Influence of saliva contamination on zirconia ceramic bonding

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## Abstract

## Objectives

The purpose of this study was to investigate the influence of saliva contamination and cleaning methods on adhesive bonding to dental zirconia ceramic with a phosphate-monomer-containing luting resin.

## Methods

After saliva immersion, airborne-particle abraded ceramic specimens were cleaned with water rinsing, with isopropanol, with phosphoric acid gel, or with additional airborne-particle abrasion. Airborne-particle abraded specimens without contamination were used as the control group. Chemical analysis of the ceramic surfaces of all groups was done using X-ray photoelectron spectroscopy (XPS). The influence of contamination and cleaning methods on ceramic bond durability was examined by tensile bond strength (TBS) testing after 3 days or 150 days water storage with 37,500 thermal cycles.

## Results

After saliva contamination XPS revealed an organic coating which was not removed completely with water rinsing, with isopropanol, or with phosphoric acid. Using TBS testing a strong influence of contamination and cleaning methods on resin bond strength and its durability was found.

## Significance

Saliva contamination significantly affected resin bonds to zirconia ceramic and its durability. Airborne-particle abrasion was the most effective cleaning method.

## Keywords

Zirconia ceramic bonding; Saliva contamination; Cleaning

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