

# Effects of saliva contamination and decontamination procedures on shear bond strength of self-etch dentine bonding systems - An in vitro study

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## Bibliography

1. Neelagiri K, Kundabala M, Shashi RA, Thomas MS, Parolia A. Effects of saliva contamination and decontamination procedures on shear bond strength of self-etch dentine bonding systems: An in vitro study. *J Conserv Dent*. 2010;13(2):71-75. doi:[10.4103/0972-0707.66714](https://doi.org/10.4103/0972-0707.66714).

## Information

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Author	Krishna Neelagiri, M. Kundabala, Rashmi A. Shashi, Manuel S. Thomas, Abhishek Parolia
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## Abstract

### Abstract

**OBJECTIVE:** This study aims to evaluate the effect of saliva contamination on the shear bond strength of two self-etch dentine bonding systems and also investigate the effect of decontamination procedure on the recovery of bond strength.

**MATERIALS AND METHODS:** Sixty premolars extracted for orthodontic reason were

obtained and the buccal surfaces of teeth were reduced to create a flat dentine surface. The samples were randomly divided into three sub-groups for AdheSE (ASE) (Ivoclar - Vivadent, Schaan, Liechtenstein) and three sub-groups for Adper Prompt Self-Etch Adhesive (ADP) (3M ESPE, St Paul, MN, USA) of 10 each. For AdheSE (ASE); ASE-I was the control group (primer applied to fresh dentine surface), ASE-II was the contamination group (primer applied, followed by saliva contamination and then air dried) and ASE-III was the decontamination group (primer applied, followed by saliva contamination, air dried and then primer reapplied). For Adper Prompt (ADP); ADP-I was the control group (self-etch adhesive applied to fresh dentine surface), ADP-II was the contamination group (self-etch adhesive applied, followed by saliva contamination and then air dried) and ADP-III was the decontamination group (self-etch adhesive applied, followed by saliva contamination, air dried and then self-etch adhesive reapplied). Followed by the bonding procedure, a 5 mm composite resin block with Filtek P-60 (3M ESPE, St Paul, MN, USA) was built on the substrate. Shear bond strength (SBS) was tested with Instron Universal testing machine (Instron Corporation, Canton, MA, USA) with a cross head speed of 1 mm per minute. Data obtained was subjected to one way ANOVA test, while the inter group comparison was made using Tukey's multiple comparison and Unpaired t-test.

**RESULTS:** In AdhSE group (ASE), the sub-group ASE-II (contamination group) [ $5.4 \pm 2.2$  MPa] showed lower SBS than ASE-I [ $11.8 \pm 2.6$  MPa] and ASE-III [ $8.9 \pm 3.3$  MPa], which was statistically significant. There was no significant difference in the bond strength between the ASE-I (control group) and ASE-III (decontamination group). In Adper Prompt group (ADP), there was a severe decrease of bond strength in ADP-II (contamination group) [ $4.6 \pm 1.1$  MPa] when compared to ADP-I (control group) [ $7.4 \pm 1.4$  MPa] and ADP-III (decontamination subgroup) [ $14.1 \pm 2.2$  MPa] which was statistically significant. The bond strength of ADP-III wherein Adper Prompt bonding agent was reapplied after salivary contamination was found to be statistically significant than ADP-I and ADP-II.

**CONCLUSION:** Saliva contamination reduces the dentine bond strength of both the self-etch systems; AdheSE and Adper Prompt. Re-application of the primer for the AdheSE and re-application of the adhesive for the Adper Prompt after air drying the saliva off can recover the dentine bond strength. In the Adper Prompt group, the added application of adhesives to decontaminate saliva not only recovered the bond strength but also improved it significantly.

## Annotations

### Warning

ANYTHING OUT OF %begin%...%end% BLOCK WILL BE CLEARED WHEN UPDATE

# Zotero-Notes

唾液污染会降低两种自蚀刻系统的牙本质粘结强度; AdheSE和Adper Prompt. 在空气干燥唾液后,重新涂抹AdheSE的底漆和重新涂抹Adper Prompt的粘合剂可以恢复牙本质粘结强度。在Adper Prompt组中,添加粘合剂来净化唾液不仅恢复了粘合强度,而且还显着提高了粘合强度。

## Notes

⚡ Danger

NEVER MODIFY ANYTHING BELOW