

# Salivary Contamination and Decontamination: Bond Strength to Dentin of Primary and Permanent Teeth

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## Aim

To evaluate the effects of salivary contamination and decontamination on bond strength of two one-step adhesives to primary and permanent dentin.

## Methods

Dentin specimens were prepared from extracted primary and permanent molars (210 of each) and were distributed to seven groups (n=15/group/molar type) for each adhesive (Xeno V<sup>+</sup> and Scotchbond Universal): no saliva contamination (control); saliva contamination before or after light-curing of the adhesives followed either by air-drying, by rinsing with water and air-drying, or by rinsing with water, air-drying and reapplication of the adhesives. Resin composite was applied and the specimens were stored for 24h (37°C, 100% humidity). Then, shear bond strength (SBS) was measured and data analyzed with nonparametric ANOVA and Wilcoxon rank sum tests.

## Results

Saliva contamination reduced SBS of Xeno V<sup>+</sup>, the reduction being more pronounced when contamination occurred before light-curing than after. In both situations, decontamination involving reapplication of the adhesive restored SBS. Saliva contamination had no significant effect on Scotchbond Universal. There were no differences in SBS between primary and permanent teeth.

## Conclusion

Saliva contamination reduced SBS of Xeno V<sup>+</sup>, but not of Scotchbond Universal. SBS was restored when contaminated dentin was rinsed with water and air-dried followed by reapplication of the adhesive.

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### Xeno V<sup>+</sup> (X) or Scotchbond Universal (S)

#### Application of Adhesive, Air-Dry

Saliva Contamination

Air-Dry

Water Spray,  
Air-Dry

Water Spray,  
Air-Dry

Reapplication of  
Adhesive

#### Light-Cure

Saliva Contamination

Air-Dry

Water Spray,  
Air-Dry

Water Spray,  
Air-Dry

Reapplication of  
Adhesive, Light-Cure

#### Resin Composite, Light-Cure

Group 1X/1S

Group 2X/2S

Group 3X/3S

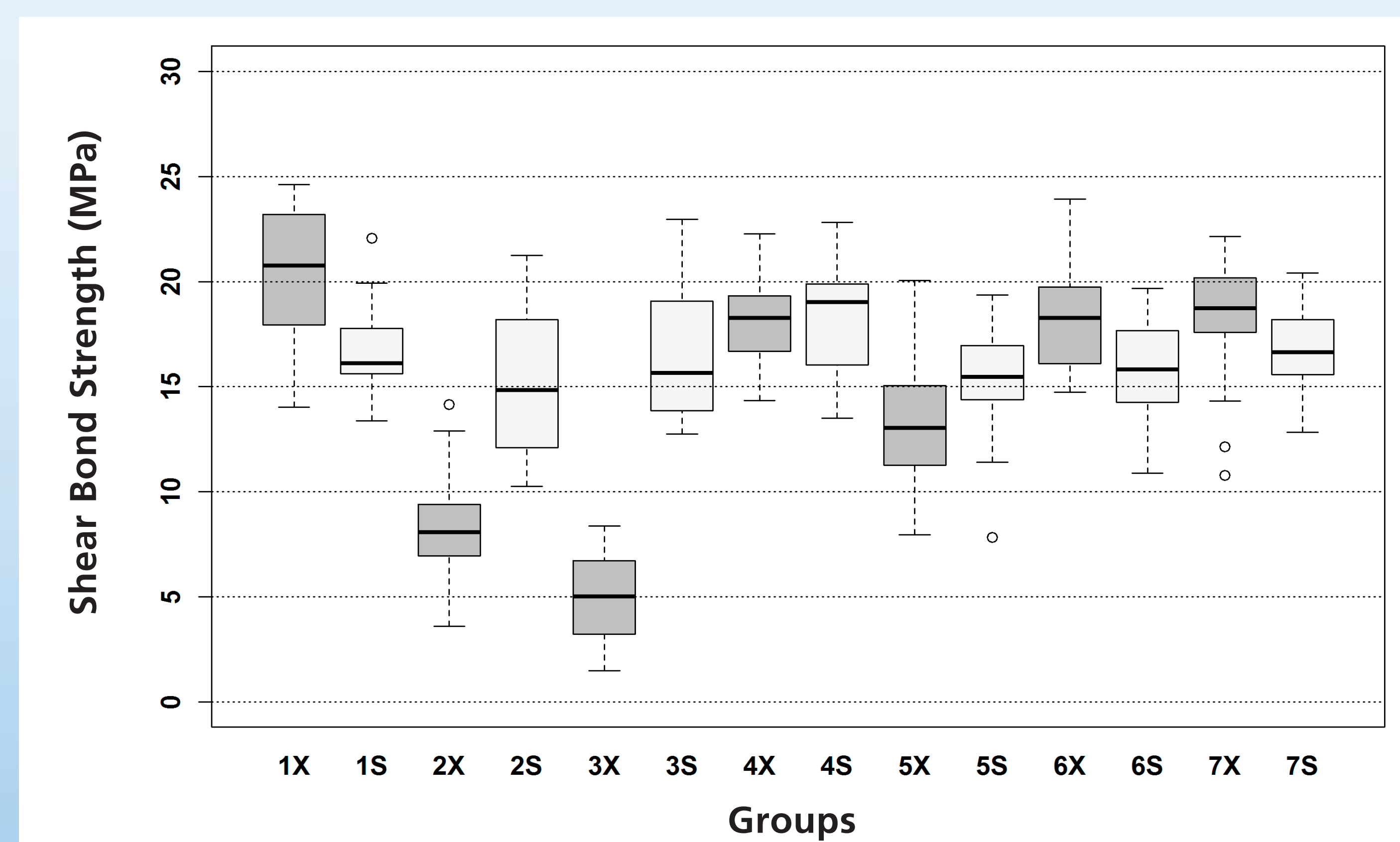
Group 4X/4S

Group 5X/5S

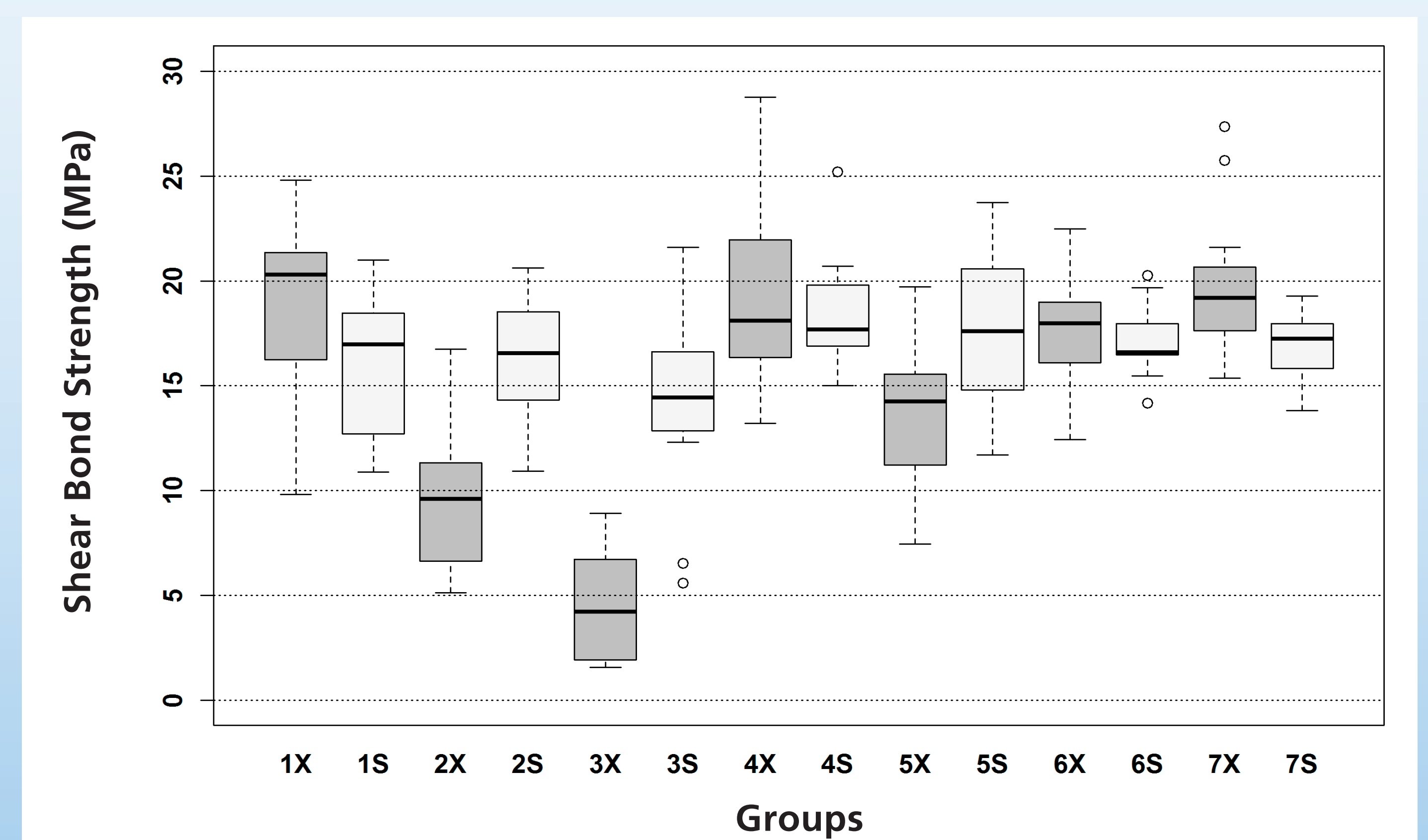
Group 6X/6S

Group 7X/7S

Flowchart of the adhesive treatments resulting in seven groups for each adhesive.



Shear Bond Strength (MPa) of Primary Molars (n = 15) for Groups 1X/1S to 7X/7S (X = Xeno V<sup>+</sup>, S = Scotchbond Universal).



Shear Bond Strength (MPa) of Permanent Molars (n = 15) for Groups 1X/1S to 7X/7S (X = Xeno V<sup>+</sup>, S = Scotchbond Universal).