

## Brazilian Oral Research

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### Abstract

[CARVALHO, Fabiola Galbiatti](#) et al. Influence of sterilization method on the bond strength of caries-affected dentin. *Braz. oral res.* [online]. 2009, vol.23, n.1, pp. 11-16. ISSN . doi: 10.1590/S1806-83242009000100003.

This study evaluated the effect of sterilization method on the bond strength of caries-affected dentin before artificial caries development and after restoration. Twelve bovine incisors were sectioned perpendicularly to their long axes at 7 mm from the amelodentinal junction. They were painted with acid-resistant nail varnish, except on an exposed coronal dentin area. Four groups were formed (n = 3) in accordance with the sterilization method used, before artificial caries development and after complete restoration: NE - no sterilization (control group); G - gamma-rays before and after; A - steam autoclave before and after; AG - steam autoclave before and gamma-rays after. For artificial caries development, dentin sections were immersed in BHI broth with *S. mutans*. After the soft carious tissue was removed, dentin was restored with Scotchbond Multi-Purpose and Filtek Z250. Next, the samples were sterilized in accordance with the methods described above and microtensile testing was performed. The data were analyzed by the Mann-Whitney test ( $p < 0.05$ ). The G (22.7 MPa) and AG groups (16.3 MPa) were not statistically different from the NE group (17.5 MPa). Nevertheless, there were statistical differences between groups A (6.3 MPa) and NE, A and G, A and AG, G and AG. The bond strength of caries-affected dentin was not influenced by gamma-ray sterilization irrespective of whether the sterilization was performed before or after restoration.

Keywords : Gamma rays; *Streptococcus mutans*; Dentin-bonding agents.

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