

Adhesives developed to prevent bracket stains on teeth

January 19 2018



Researchers Salvatore Sauro and Santiago Arias Luxan. Credit: Asociación RUVID

Researchers from Valencia, London and Sul, Brazil, have performed research to develop adhesive materials that will prevent white stains

from appearing on the teeth of people who use brackets.

The white stains that orthodontic brackets often leave on [teeth](#) is a result of enamel demineralization caused by bacterial proliferation in the [adhesive](#) area, especially when accompanied by inadequate oral hygiene. The researchers have compared the efficacy of three new types of experimental adhesives with bactericidal and enamel remineralisation properties that could prevent the appearance of these white stains around the brackets.

The research has been published in the *Journal of Dentistry*.

Bactericidal and remineralisation properties

The study compares three experimental dental adhesives containing a bioactive nano-mineral called halloysite and nanotubes loaded with triclosan, a strong antibacterial and fungicidal agent in different concentrations: 5, 10 and 20 percent. The research compares the three biomaterials' polymerisation properties, their antibacterial strength and bioactive properties, which not only prevent demineralization of the teeth, but also promote remineralisation.

The three experimental [materials](#) tested in the laboratory demonstrated an ability to stop bacterial proliferation in the 24 hours following their use, but only the one with the highest concentration of triclosan, at 20 per cent, maintained this property after 72 hours. As far as the remineralising effect, all three materials were proven to be effective two weeks after their use in dental enamel samples submerged in experimental saliva.

These results are a promising step forward in the development of new adhesives that are capable of preventing the appearance of the bacteria that demineralise the [enamel](#) surrounding the brackets and remineralise

the area, thus preventing the [appearance](#) of white stains on the teeth.

More information: Felipe Weidenbach Degrazia et al. Polymerisation, antibacterial and bioactivity properties of experimental orthodontic adhesives containing triclosan-loaded halloysite nanotubes, *Journal of Dentistry* (2017). [DOI: 10.1016/j.jdent.2017.11.002](https://doi.org/10.1016/j.jdent.2017.11.002)

Provided by Asociacion RUVID

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