

# Chemical composition and microhardness of human enamel treated with fluoridated whitening agents

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Aesthetic treatments are always widely sought by dental patients, especially dental whitening, in order to get whiter smiles. The big demand for this type of procedure raises the concern in the dental research community that this type of treatment has the potential to make dental alterations that cause damage to the dental structure and if there are suitable components that can be added to dental bleaching agents to reduce such effects.

Fluorine is one of these components and is known for its action in the remineralization process of the dental structure. In a recent in situ study to evaluate the effects that bleaching agents based on hydrogen peroxide, with or without the addition of [fluorine](#) on the composition, could affect in the chemical structure and microhardness of the dental [enamel](#). According to the results of this study, it was concluded that fluorine bleaching agents promoted an increase in the concentration of fluorine, calcium and phosphorus ions in the [dental enamel](#) when compared to bleaching agents that do not contain fluorine, however, the presence of fluorine does not cause alterations microhardness.

In this study, it was important to observe that both groups: treated without fluoride bleaching agents and with fluoride bleaching agents did not present loss of enamel microhardness or loss of ions in the enamel mineral structure. This can be attributed to the in situ methodology used, where there is saliva action that has a buffer capacity and is crucial in the remineralization process. In summary the study explains that the results obtained agree with results of other in situ studies, and demonstrate that dental bleaching, when done correctly, would not have the capacity to cause changes in the dental structure that causes harm to patients.

**More information:** Thais de Mendonça Petta et al. Chemical Composition and Microhardness of

Human Enamel Treated with Fluoridated Whitening Agents. A Study, *The Open Dentistry Journal* (2017). DOI: [10.2174/1874210601711010034](https://doi.org/10.2174/1874210601711010034)

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