



HEALTH NEWS

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Whitening Strips Could Be Killing the Collagen in Your Teeth

Written by [Brian Mastroianni](#) on April 10, 2019

Teeth-whitening products could be causing damage to the layer under your enamel.
Getty Images

If you've sought out teeth-whitening products, you might want to keep in mind how they might be impacting your dental health.

New research presented at the annual [American Society for Biochemistry and Molecular Biology](#) meeting in Orlando, Florida, sheds light on how hydrogen peroxide — used in the over-the-counter whitening products you can find at any drugstore — might be damaging your teeth.

Specifically, the protein-rich dentin layer (the area underneath your teeth's

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protein in the teeth. We measured amount of collagen, which is the predominant protein in dentin, two ways and saw a significant loss,” [Kelly Keenan, PhD](#), lead author of the study and associate professor of chemistry at Stockton University in New Jersey, wrote in an email to Healthline.

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How whitening products can damage teeth

The team out of Keenan’s lab presented three separate studies on how this bleaching ingredient in tooth whiteners affects dentin.

Your teeth are made of three separate layers, the outer protective tooth enamel, the dentin layer, which comprises most of the tooth and contains high levels of protein like collagen, and then connective tissue that ties the roots to the gum, [according to a press release](#).

In this new research, Keenan and her team looked at how dentin is chipped away in small fragments by the hydrogen peroxide.

They also looked at what happens when pure collagen is treated with the bleaching agent, to look more closely at how the protein is impacted.

So, what does this mean for people who want to get that shiny, brighter smile?



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avoid hydrogen peroxide when looking to whiten your teeth.

It's pretty much the main ingredient in most whitening approaches.

In fact, he pointed out that when many people use whitening products, they typically experience tooth sensitivity afterward.

He explained this may be related to the high prevalence of hydrogen peroxide that oxidizes the proteins in the dentin layer since this area is most impacted by the products, not so much the enamel.

"It agitates the fibers in dentin, so the teeth becomes more sensitive. Basically, damage to the teeth happens or sensitivity becomes increased when the level of hydrogen peroxide is too high," said Grbic, who was not affiliated with this new research.

Grbic explained that in-office whitening products usually contain 25 percent hydrogen peroxide, and with a UV light it is closer to 30 percent.

He said the highest level whitening strips you might find at the store could contain about 14 percent of the bleaching agent, while the milder versions of product would contain closer to 6 percent.

Sensitivity to these products really depends on the individual. There is no uniform response to teeth whitening.

A lot of people turn to whitening teeth rinses, too, he added. He doesn't recommend long-term use of these rinses because they could affect the helpful flora — or bacteria — in your mouth as well.

"This isn't an issue with a short-term whitening approach, but I would say that you limit this kind of product to a short-term approach to be safe," Grbic said.

As always, consult your dentist about what is best for your dental health, he stressed.



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helps rebuild a tooth's internal structure and can minimize and prevent increased sensitivity.

When asked about safer alternatives beyond hydrogen peroxide products, Keenan echoed Grbic, writing that the industry rationale behind hydrogen peroxide is because of its oxidizing effects on the teeth.

She added that she supposes a weaker oxidizer could be used, instead, but the "efficacy might drop."

Moving forward with her research, Keenan said she would like to investigate how the collagen in dentin could potentially repair itself and exactly what kind of damage hydrogen peroxide inflicts on this necessary protein.

"Collagen in dentin can be replaced by cells that reside in the pulp and people are born with a lifetime supply of these cells. It is a slow process as the pulp does not have a high level of blood supply. Anyone whose pulp is compromised with a root canal or infection or other damage would at least have a diminished ability to make collagen if it is not entirely abolished," she wrote. "For future directions I am curious about how the hydrogen peroxide does this and if it is more pronounced for collagen."

Grbic said that fluoride is key. If you're whitening at home, make sure you use a fluoride-containing toothpaste, for instance.

He also wants to emphasize that hydrogen peroxide isn't a miracle worker.

"It doesn't change the color of your teeth if you have dark fillings, necessarily," he added. "If a filling is dark, if you have crowns, hydrogen peroxide doesn't make them white. Sometimes people have misperceptions of what whitening can do for your teeth."

The bottom line

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products can damage the protein-containing dentin layer, which is underneath your enamel.

The research shows that this chips away at the protein in this layer, particularly collagen. Dentists emphasize that a negative response to hydrogen peroxide varies person to person.

Fluoride-containing rinses or toothpastes, either following a whitening session at home or in the dentist office, are recommended to reduce sensitivity and strengthen the teeth.



FEEDBACK: 😞 😊

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Is Oral-B Dental Floss Really Toxic? What You Need to Know

Written by [Gigen Mammoser](#) on January 18, 2019

A new study claims Oral-B dental floss may be exposing you to toxic PFAS chemicals.



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