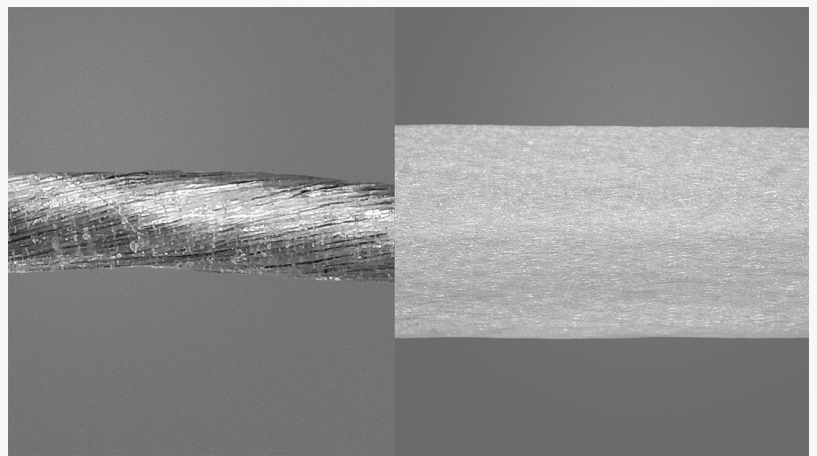


Research Suggests Dental Floss Material Properties May Influence Whether Patients Keep Flossing

Studies examining floss stiffness, friction, and fiber structure point to a possible link between material comfort and long-term compliance.

SAN FRANCISCO, CA, UNITED STATES, April 14, 2026 /EINPresswire.com/ --

Dental professionals have recommended flossing for over a century, yet only about 30% of adults do it daily. Pain and discomfort rank among the most commonly reported reasons for quitting. While public health messaging has long focused on motivating people to floss more, a growing body of materials science research is asking a different question: could the floss itself be part of the problem?



Microscope comparison of round multi-filament floss (left) and flat PTFE tape floss (right).

“

When floss is stiff or rough, people don't just dislike it. They stop flossing. Comfort is not a luxury. It determines whether a product gets used once or becomes part of a daily routine.”

Rachel Zhang

A [2023 study published in *Biomaterial Investigations in Dentistry*](#) by researchers at the University of Otago compared the mechanical properties of four dental flosses made from different materials: PTFE, nylon, silk, and ultra-high-molecular-weight polyethylene. After measuring tensile strength, surface roughness, and abrasiveness, the researchers asked users to rate each floss over an eight-day trial. PTFE floss, which has a flat, tape-like structure, measured the lowest surface roughness of all types tested. The study noted that very few prior investigations had examined how mechanical properties relate to patient

preference, and called for more research into the role material characteristics play in flossing adherence.

A [2022 study in the journal *Materials*](#) used scanning electron microscopy to examine how

different flosses degrade during a single use. Some types showed severe fiber breakage, with individual strands separating and fraying in ways that could create a rough sensation against gum tissue. The researchers noted that user-reported discomfort from certain floss materials has limited broader adoption, and urged clinicians to understand specific material properties before making product recommendations.

Research published in [Dental Materials](#) has also measured the frictional forces involved in flossing, finding that friction varies significantly depending on material and surface texture. Higher friction can cause floss to snap forcefully through contact points, a common source of gum pain that leads many people to stop flossing.

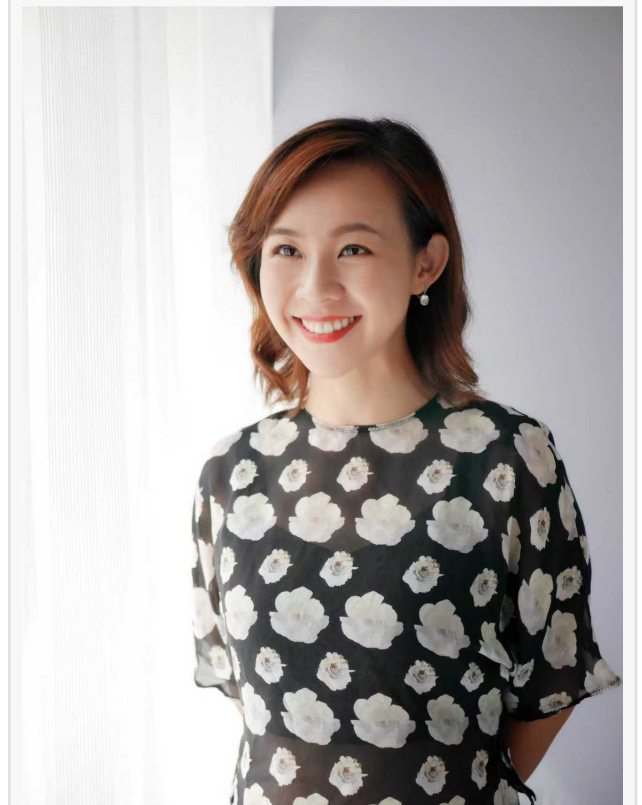
The findings also carry implications for consumers whose familiar floss may have changed in feel or performance. Even a single change in base material can significantly alter comfort, friction, and the overall user experience.

Oral care firm Tonochi has built its SlimWeave Floss around these principles. The floss uses a flat PTFE tape profile designed to pass smoothly through tight contact points without snapping, reducing friction against both the tooth surface and the gumline. For dental professionals, the broader takeaway from this body of research is practical: recommending a floss based on its material characteristics, rather than simply telling patients to floss more, may be a more effective path to sustained interdental hygiene.

About Tonochi: Based in San Francisco, Tonochi is an oral care firm dedicated to improving interdental health, focusing on the spaces between teeth where most oral problems begin. The company combines functional engineering and human-centered design to develop tools that address the root causes of cavities and periodontal disease. Products are available at tonochi.com and on Amazon.



Research suggests floss material properties may influence whether people maintain daily flossing habits.



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