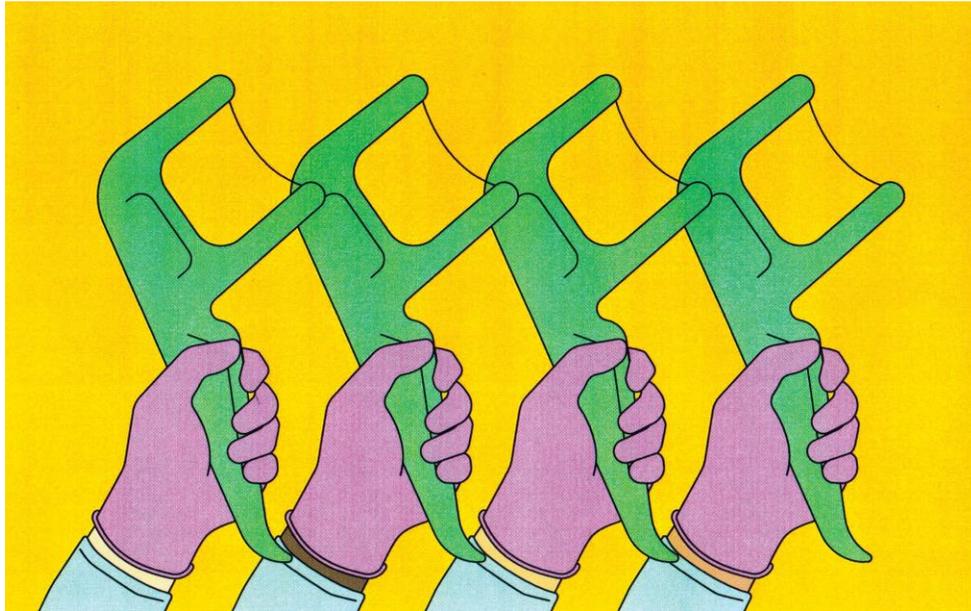


Do You Actually Need to Floss?

The research is weak and misleading, yet dentists are adamant. So where does that leave us?

by David H. Freedman

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Three years ago, the Associated Press published an article that appeared to discredit something most of us are told twice a year by our dentists. The article looked at 25 studies on flossing and determined they pretty much all failed to find solid scientific evidence that flossing provides any benefits over brushing alone. In other words, flossing isn't essential.

It was the shot heard round the dental hygiene world. About two-thirds of Americans claim to floss in general and a bit less than half of them do it daily, according to a U.S. Centers for Disease Control survey. The remaining one-third likely feel guilty that they don't, at least after visiting the dentist.

But do the AP findings, which reverberated widely through the mainstream media, really vindicate non-flossers, and free up several minutes of tedious nighttime habit for the rest of us?

Not according to dentists. "A lot of people hate doing it, but you have to floss," says Timothy Hempton, DDS, an adjunct associate clinical professor at Tuft University's dental school. "It's the most effective way to remove the material between teeth that toothbrushes can't reach." The American Dental Association recommends cleaning between teeth with floss (or another interdental cleaner) once a day.

Nightly flossing — done right — is probably the best way to remove plaque and reduce gingivitis.

Misconceptions and confusion

It's worth trying to get this issue right, because there are significant health risks at stake. Contrary to popular belief, flossing doesn't prevent cavities — they're prevented by brushing with fluoridated toothpaste and drinking fluoridated water. But flossing does help prevent gingivitis, which is a more serious health threat. Gingivitis is inflammation of the gums, caused by bacteria taking hold between the teeth at the gum line, forming a tough, sticky "plaque." That inflammation significantly increases the risk of periodontitis, or loss of the bone that holds the teeth in place. According to research, it's also linked to an increased risk of heart disease, itself largely a disease of inflammation. There's also some recent evidence linking gingivitis to Alzheimer's, a disease in which inflammation seems to play an important role, too.

Given that the root of the problem is the bacterial plaque between teeth, it certainly sounds straightforward that rubbing a string of some sort between the bases of the teeth would clean out at least some of that plaque, along with the food particles that nurture the bacteria there, reducing gingivitis. Dentists have certainly long claimed as much.

But according to flossing studies, something's wrong with that logic. In general, they show no strong link between flossing and improved oral health, versus brushing alone. That was also the finding of an extensive 2018 meta-study that analyzed 22 previous studies of flossing. "We saw very little additional removal of plaque between teeth from flossing," says Georgios Kotsakis, DDS, a researcher at the University of Texas, San Antonio, who was one of the authors of the study.

So does all the evidence mean flossing is a sham? And are dentists ignoring the evidence in continuing to push flossing? Not exactly.

Thin studies

The problem, dentists and researchers say, is that the studies haven't been able to overcome some serious barriers to getting definitive answers. For one, people frequently lie about hewing to healthy habits like flossing, especially when asked by researchers and health care professionals. "They're embarrassed to admit they don't do it," says Angelo Mariotti, PhD and DDS, and chair of periodontology at the Ohio State University, adding that studies show that more than one out of four people lie about flossing.

Another issue with the studies is that researchers can't ethically tell subjects not to floss, because flossing is still considered a standard of care with important health benefits. That means they can't set up a non-flossing "control" group for comparison to the people who are using floss — which in turn means they can't run the sort of randomized controlled study that often returns more reliable results.

Bad technique

The biggest apparent flaw in the studies is that no matter how many times people are taught or shown correct flossing techniques, they don't do it right. You can't just run the floss back and forth a few times and move on to the next two teeth. The floss has to be pulled into a "C" shape around the base of each tooth right at the gum line, and then pulled up against the tooth in a scraping motion — and that stroke should be repeated at least five times for each tooth. Hygienists can do a whole mouth in less than a minute. An amateur with closely spaced teeth and relatively poor dexterity might need 10 minutes or more.

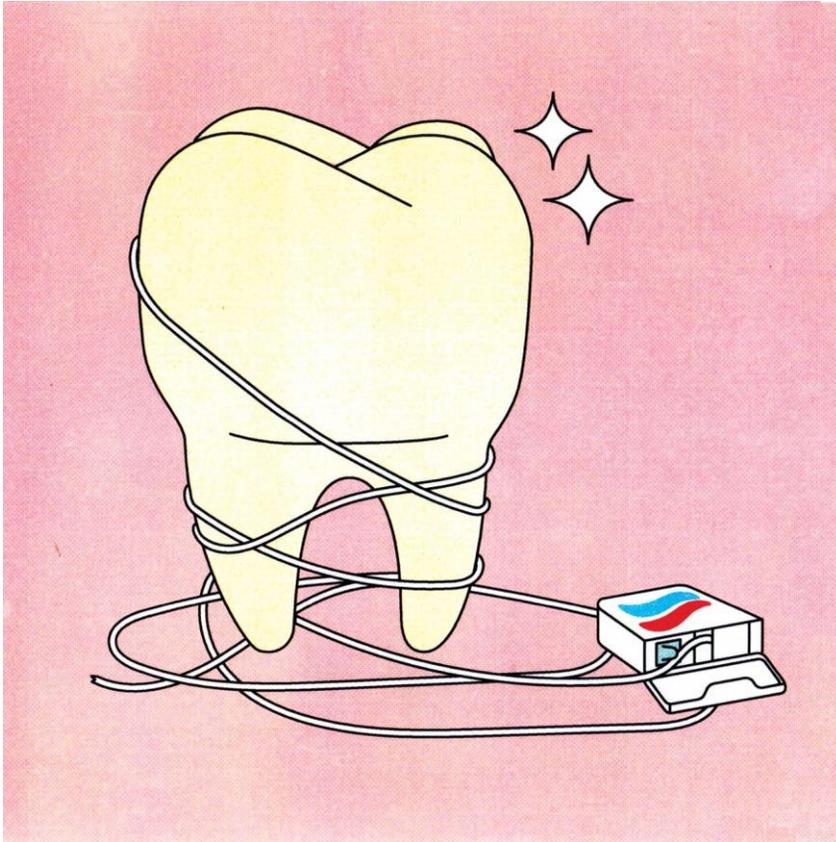
Hardly anyone goes through all that with all their teeth, night after night. "Ninety percent of the patients I see who say they floss don't know how to floss correctly," says Diane Melrose, MA, a professor of clinical dentistry and chair of dental hygiene at the University of Southern California dental school.

(By the way, adds Melrose: that slippery, thin floss that makes flossing a bit easier? It also makes the floss slip right over plaque, requiring at least twice as many scraping strokes as thicker, rougher floss to do the job.)

If much of the problem is that people in the studies say they floss when they don't, or that they floss inadequately, then the results should be more encouraging when hygienists or dentists are the ones doing the flossing for the patient. And that's exactly what's been observed in multiple studies going back to the 1970s: Flossing in the hands of a pro reduces gingivitis. "When you do it in the lab, flossing consistently works well," says Kotsakis.

Dental care providers do, of course, pay attention to the science, and they've known for at least a decade that the evidence doesn't firmly support flossing. But they're also aware of the weaknesses of the research. And equally important, they have the evidence of their own observations with patients. "I can absolutely see the improvement [less bleeding, plaque, and inflammation] when someone starts flossing, especially if I show them how," says Melrose.

The right question is which between-teeth cleaning tool can become a nightly habit?



What does it all mean?

So is the advice to keep on flossing, full stop? If only the world were so simple.

Nightly flossing — done right — is probably the best way to remove plaque and reduce gingivitis. But, as already discussed, it’s challenging and onerous. Fortunately, there are alternatives that aren’t as technique-sensitive and that many people find less burdensome. Water flossers, better known by the brand name “Waterpik,” come with a small wand (much like a tiny electric toothbrush) that squirts a fine, powerful jet of water between teeth. Interdental brushes, which resemble tiny cylindrical hairbrushes, can be inserted between teeth and pulled back and forth a few times.

Can they work as well as flossing? That’s a tricky question, depending on the person’s technique and their dental anatomy: People with larger gaps between the bases of their teeth are more likely to do well with interdental brushes, for example.

But that’s really the wrong question, insists Mariotti. The right question is which between-teeth cleaning tool can become a nightly habit? “I start patients off with flossing, and if it doesn’t seem to be going well, I encourage them to try one of the other ways,” he says. “The way I look at it is we need to personalize the approach to find the method that the patient will keep at.”

That view leads to some bottom-line advice when it comes to flossing: If you can get yourself to floss nightly, do it, and do the best job you can with it. Even if your technique falls short, you'll get some benefit over not doing anything between your teeth. (The only possible downside: If you're too heavy-handed about it, you can cut your gums, which can increase inflammation and the risk of infection for as long as a few weeks.) If nightly flossing isn't working out for you, try water flossers or interdental brushes. "By using either of those other approaches, you can get a several-fold improvement in plaque removal over brushing alone," says Kotsakis.

Studies be damned, the collective wisdom of dentistry is clear: Keep up the flossing, or something that can stand in for it.

Written by David H. Freedman, a Boston-based science writer. The most recent of his five books is *WRONG*, about the problems with medical research and other expertise.



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