

By JINAN HARB

THE importance of flossing is something drummed into us as an essential step in getting rid of harmful plaque, the bacteria that can lead to tooth decay and gum disease.

However, despite the warnings, many of us don't get round to flossing — either we forget or find it too fiddly, so don't bother.

But what if flossing wasn't so important after all — what if it made no real difference to dental health?

That's the suggestion emerging from a new body of research which could — if proved to be true — end a lot of dental guilt.

Flossing is aimed at helping rid our mouths of bacteria. There are certainly a lot of them: just 1ml of saliva is thought to contain about 100 million microbes. The mouth is a warm, acidic environment that's perfect for them to flourish.

While some of these bacteria are bad, turning the sugar in food into tooth-eroding acid, others actually *prevent* tooth decay by releasing chemicals that counteract harmful acid.

Together, these bacteria, good and bad, form colonies known as biofilms that tenaciously stick to every surface of every tooth. That 'furry' feeling on your teeth if you haven't brushed occurs when the biofilm layer has built up, explains Professor Andrew Eder, a consultant in restorative dentistry at the UCL Eastman Dental Institute in London.

Biofilms are not unique to the mouth — they are also found inside showers and sewer pipes, and form when colonies of bacteria collect in watery environments.

They excrete a slimy substance that helps them stick to surfaces — the bacteria often become enclosed in the sticky layer and can only be removed with scrubbing, such as with toothbrushing.

The problem is that when the bad bacteria in the biofilm override the good it causes tooth decay. Sometimes this is severe enough to be seen and identified by symptoms such as black spots, or sensitivity.

But because we cannot easily distinguish between good and bad bacteria in any biofilm, everything must be removed.

'Simple brushing with a toothbrush will remove the biofilm and plaque from teeth,' says Professor Eder. 'But it is more difficult to be effective near the gums, and pretty much impossible to remove the biofilm layer in between teeth with conventional toothbrushing alone.'

HE ADDS: 'Tooth decay is most common in these areas. So using dental floss or interdental brushes (tiny brushes designed to get in between teeth) is essential to remove the biofilm layer where tooth brushing cannot reach.'

The general recommendation is to brush with a fluoride toothpaste (which acts as an antibacterial) twice daily and use something such as floss daily before brushing to dislodge food and biofilms from

between teeth to prevent the formation of harmful plaque, says Dr Ben Atkins, a dentist at Revive Dental Care in Manchester.

Flossing is generally recommended for tight gaps between teeth and interdental brushes for larger gaps.

But there are now question marks over whether flossing — rather than interdental brushes — makes much difference, with the latest evidence suggesting it has little impact on reducing tooth decay or preventing gum disease.

Researchers looked at the long-term effect in people who brush and floss and others who only brush, and found no difference in terms of reducing plaque, bleeding or subsequent gum disease,

explains Professor Damien Walmsley, a dentist and scientific adviser to British Dental Association.

A recent review in the *Journal of Clinical Periodontology* concluded that 'despite being widely advocated, it is noteworthy that the majority of available studies fail to demonstrate that flossing is generally effective in plaque removal and in reducing gingival (gum) inflammation'.

An earlier review published in 2008 in the *International Journal of Dental Hygiene* concluded that dental professionals need to decide

whether proper flossing is achievable because evidence suggests it 'provides no benefit above and beyond toothbrushing'.

Flossing may be good for removing food from between teeth, but it is not successful in removing the biofilms, says Professor Walmsley.

The data supporting the use of interdental brushes is slightly stronger — these brushes physically disrupt biofilms and break up the bacteria's homes, says Professor Walmsley.

A 2013 review carried out by the



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respected Cochrane Collaboration concluded that after one month interdental brushes reduced gum inflammation by 52 per cent more than floss, although the researchers did not say which technique had superior long-term benefits.

Another review by the University of British Columbia in Canada, published in 2012, concluded that patients who used the brushes had a significant reduction in bleeding and plaque compared with the dental floss groups, after using them for four to 12 weeks.

However, the recent *Journal of Clinical Periodontology* study also concluded that there is no evidence to support daily use of any interdental cleaning aids in preventing or reducing gum disease in healthy teeth.

YET despite this emerging evidence, advice from UK dental specialists has not changed.

'We still recommend using something to clean between your teeth daily to all adults to help prevent gum disease and tooth decay,' says Michaela O'Neill, president of the British Society of Dental Hygiene and Therapy.

She says biofilm that's left between teeth can cause gum disease or chronic tooth decay over time.

Furthermore, dentists see in their daily practice how effective interdental brushing and flossing prevents gum disease and the misery of loose teeth, adds Dr Ewa Rozwadowska, a trustee for the British Dental Health Foundation.

'Experiments done so far are not good enough to prove the theory — but that doesn't mean that what we see is invalid, it just means that we don't know exactly why,' she adds.

Yet Professor Walmsley says the research is clear. He believes the best way to overcome biofilms and prevent tooth decay is not to start flossing and using interdental brushes, but to master your brushing technique first.

To do this, angle your brushes (with small to medium length bristles) with the bristles at right angles to where the teeth come away from the gums, and systematically spend ten seconds on each tooth cleaning all sides (a side-to-side scrub) with small circular motions, he says.

You should also use 'disclosing tablets', available from chemists, before and after brushing, he suggests. These highlight the areas where you have missed plaque build up.

'Most people with normal teeth and normal gaps do not need to floss at all,' he says.