

## Health



Picture: ALAMY

# THE DARK SIDE OF WHITE TEETH

Desperate for a perfect smile? DIY whiteners can be dangerously addictive, cause painful chemical burns – and leave your teeth even yellower than before

By ANNA MAXTED

**W**HEN my five-year-old son suddenly exclaimed: 'Why are your teeth so dirty, Mummy?', I knew it was time to do something.

Years of drinking coffee and red wine had left my teeth stained and grey. It had bothered me — I'd started wearing only dark tops (white made my teeth look lemon-yellow) and grimacing at friends through closed lips.

But the 'dirty teeth' comment was the final straw. That day, I made an appointment at a smart dental practice to have my teeth professionally whitened.

It set me off on a five-year habit that was not only bad for my teeth, but possibly for my health. Initially, I was hoping for a smile to rival Tom Cruise's — and for close on £1,000 for professional dental whitening, I think I had a right to optimism.



The dentist showed me a chart of 26 tooth shades; from frightful beige to brilliant white. Ninety per cent of the population's gnashers are classed as A3 — a rather dirty yellow — but mine were several shades darker, B3. I learnt

that teeth darken and discolour for a number of reasons, including age (as the collagen in our teeth degrades), or taking antibiotics such as tetracycline in childhood.

First, the dentist applied a peroxide gel to custom-moulded gum shields and placed them over my teeth. Then my teeth were bathed in blue light using a high-tech 'torch' for 45 minutes. It stung and I felt vain and foolish. Yet I returned two weeks later to have the process repeated.

Still, when I assessed the results, my teeth had brightened by only a couple of shades. I'd wasted my time and money.

So it was a thrill to discover you can buy do-it-yourself teeth-whitening kits over the counter or online for £10.99. And the kits worked.

Forget the Spandex pants — if you want to look better instantly, whiten your teeth, you look younger and healthier, even if you aren't!

I became obsessive, building up a stash of products. One of the first I bought required you to squeeze whitening gel into a gum shield and wear it for 20 minutes; this seemed inconveniently messy.

Then a friend who lives in Los Angeles introduced me to a product which promised whiter teeth in five minutes.

You peeled a gel-infused strip out of its packet and stuck it on your teeth. Moments later, your smile would practically glow fluorescent. The faster the effects, the better, as far as I was concerned. I was hooked.

If I was invited to dinner, I'd sneak upstairs minutes before we left our house. There I'd sit quietly for five minutes bleaching my teeth with a gel-infused strip. 'What have you got there?' my husband would call. 'Nothing!' I'd reply.

If I was collecting the kids from school and felt rather flat at the prospect of meeting hordes of elegant young mummies, I'd think: 'Ooh, I'll just do a quick whiten!'

Days after whitening, my teeth would look dull and I'd open another strip.

Certain products irritated my gums, but I chose not to investigate. If I acknowledged the

suspicion I might be damaging my teeth or gums, I'd have to stop. I couldn't. In fact, the reason these products were so effective was because they were damaging my teeth.

As dentist Martin Fallowfield, a spokesman from the British Dental Association, says: 'Some DIY teeth kits, especially those available on the internet or from salons, contain the same acid that is used to disinfect

swimming pools — chlorine dioxide.

'This won't necessarily be listed on the label, but it's a horrible ingredient; these kits are terribly dangerous to teeth — they get the whitening effect by etching the surface of the tooth.'

This effectively destroys the protective enamel, making teeth very sensitive. 'And in many cases they changes are permanent — in extreme cases they can lead to the loss of the teeth,' he says.

The acid can cause chemical burns on the gums, further increasing the risk of losing teeth.

Ironically, after all this, your teeth will also become even more discoloured — that's because once the protective enamel has been damaged, the teeth are left exposed to the elements. They become stained easily by food and drink and turn brown.

'People have no idea what ingredients are in these home kits — and what they could be doing to their teeth,' says Mr Fallowfield.

Unfortunately, I'm far from the only teeth-whitening addict out there. Last year, Britons spent £76 million on whitening toothpastes alone.

**A**ND while many people have their teeth professionally whitened by a dentist, others can't afford it and instead opt for treatment in a beauty salon, or resort to DIY treatments.

Most DIY products use hydrogen peroxide — this works by penetrating the porous enamel and oxidising stains (the oxygen produced by the process reacts with the discoloured material on the teeth and chemically changes it).

If the bleach-containing mouth guards don't fit properly, the gel may come into extended contact with your gums.

So, if the concentration of hydrogen peroxide is too strong, it can burn the soft tissue or even cause irreversible gum recession, exposing the root of the tooth and causing sensitivity.

If you ingest a significant amount of the hydrogen peroxide gel, it can also

burn the throat, stomach and gut.

While many products contain hydrogen peroxide, others, such as toothpastes, use abrasive ingredients such as sand to polish off the stains.

In some ways, these seem less risky — the 'only' problem is that if a product is too abrasive, enamel may be removed. So no chemical burns or gum recession then. Just damaged teeth.

Learning all this, I decided to re-check the ingredients on my kits, most of them sensibly purchased from Tesco and Boots. Hydrogen peroxide was common, but all the chemicals were, allegedly, 'enamel safe'. How could that be?

**T**HE legal percentage of hydrogen peroxide permitted in these kits is 0.1 per cent. The problem for consumers is that such a weak percentage won't whiten properly, says Dr Linda Greenwall, author of *Bleaching Techniques In Restorative Dentistry*, and a lecturer worldwide in restorative dentistry.

In other words, many of the products we are buying will not make our teeth permanently whiter, and are abrasive enough to cause harm if we use them year after year.

Meanwhile, in one of my kits (bought in the U.S. but available here online), the hydrogen peroxide concentration is just over five per cent — and yes, it was the gel-infused strips I so loved.

Not only was I using a lot, but hydrogen peroxide penetrates the teeth swiftly, can be tough on your teeth, and the bleaching doesn't last that long. So you use it again, and again.

But what about products that say they don't contain any hydrogen peroxide? Don't be fooled, says [Andrew Eder](#), professor of restorative dentistry and dental education at UCL Eastman Dental Institute.

In at least one kit the ingredients contain chemicals such as carbamide peroxide that react with saliva to produce hydrogen peroxide.

But if DIY is a worry, what about High Street salons offering teeth whitening as a cosmetic treatment performed by a beautician?

In the past three years alone, the General Dental Council (GDC) has received more than 600 complaints about whitening procedures performed in salons and clinics by beauty therapists.

The organisation classifies tooth whitening as dentistry, and so says it is illegal for anyone not registered with the GDC to perform the procedure.

The organisation launches criminal

proceedings in the High Court tomorrow against three individuals and two companies offering teeth whitening.

There are other concerns about tooth whitening — discoloured teeth can be a sign of a dental problem, says Professor Eder. Before teeth whitening, 'one needs to be assessed as being dentally fit'.

'While teeth may be stained on the

surface, tooth discolouration may also be caused by more significant problems such as decay, or even an abscess,' he adds.

And just as worrying, 'Unfortunately, no one knows the long-term effects of many of the currently available bleaching products, whether designed for in-surgery or home bleaching, particularly on the tissues deep

inside the teeth,' says Professor Eder. 'Teeth are porous, so whatever you put on the enamel, and especially on the deeper dentine, may have an effect deep inside the tooth over many years.'

The good news is occasional use of a home-kit should do no lasting hurt — if used for 'short periods, as advised, with safe

percentages of products', says Professor Eder. However, avoid 'repeated long-term use of anything acidic or abrasive, because over ten to 20 years this will cause enamel damage', and possibly much worse.

Somehow, I am no longer so keen on teeth whitening, as my regular dentist, who had always been so pleasingly complimentary

about my teeth, was now lamenting my thin enamel and receding gums. It could be that my bleaching habit has been the cause, although other possible culprits include an acid diet or too many fizzy drinks.

But for the big occasions? I suspect I'll still crack open a whitening strip — though probably not for the school run.