

# BDJ study on dangers of teeth whitening products prompts large response

A study<sup>1</sup> published in the *BDJ* about the dangers of using over the counter (OTC) teeth whitening products has prompted a large response in the media and dental world.

The study found that sodium chlorite, the active ingredient found in three over-the-counter products, could, in the presence of acid, 'significantly reduce the hardness of the teeth and increase the likelihood for future surface abrasions of the teeth.'

In Altmetrics – the system that measures the online attention an article receives and citations – the story had received a very high score of 921 by 13 March 2019, made up of coverage in 119 news outlets including the *ITV news*, *Sky News*, *BBC World Service*, *Radio 5 live*, and the *Daily Mail* and *Independent* newspapers.

The study set out to determine whether non-hydrogen peroxide OTC whitening products available in the UK were safe and to determine the lightening effect of those products.

The researchers, led by the University of Manchester Dental School, tested five non-hydrogen peroxide whitening products from Boots and Superdrug on extracted teeth and found that three of the products had the active ingredient sodium chlorite that could reduce the hardness of teeth when acid was present while also raising the likelihood of future surface abrasions.

The BDA advised caution in using these products saying they could be either ineffective or damage teeth. In addition, use of products that contained other chemicals that claimed to whiten teeth often failed to declare the exact chemicals used.

The trade union said it was aware that trading standards had seized DIY tooth whitening kits containing dangerous levels of hydrogen peroxide - more than 33% - highlighting the dangers that high level bleaching gels could cause, such as mouth infections, blistering and burns to gums, damage to nerves and tooth enamel, and gum-shrinking.



BDA Scientific Adviser, Professor Damien Walmsley said: 'At best, people may be wasting their money buying over the counter and online products to whiten teeth. Home whitening kits are likely to take longer and be less effective than treatment from the dentist.'

'While hydrogen peroxide, as used in dental practices, is the gold standard for whitening teeth, the lack of clarity over chemicals used in over the counter and online products means you could be gambling with your teeth.'

'Some online products have been found to contain dangerous chemicals, including toxic or banned substances that can severely burn gums, or irreparably damage teeth.'

'Dentists are trained to consider a patient's wider health and detect problems, such as gum disease, that impact on the suitability of an individual to have their teeth whitened. They also know what whitening products are effective to use, and safe for teeth and gums.'

## References

1. Greenwall-Cohen J, Francois P, Silikas N, Greenwall L, Le Goff S, Attal J P. The safety and efficacy of 'over the counter' bleaching products in the UK. *Br Dent J* 2019; **226**: 271–276.

## Box: Teeth whitening: key facts

### Who is allowed to do teeth whitening?

Teeth whitening is the practice of dentistry and should only be done by regulated dental professionals. Anyone who practises dentistry illegally risks being prosecuted by the GDC in the criminal courts. Dental hygienists and therapists can carry out teeth whitening on the prescription of a dentist if they have the necessary additional skills.

### What is the legal position on teeth whitening?

Historically, the legal position in Europe relating to teeth whitening has been confusing, with different interpretations of the EU Directive being applied in different European countries. In the UK, a House of Lords Judgement in June 2001 confirmed teeth whitening products were covered by the EU Cosmetics Directive and not the Medical Devices Directive. Through the Council of European Dentists, the BDA lobbied the European Commission to remove all legal restrictions on dentists so they can carry out whitening procedures in line with accepted clinical practice. The EU Cosmetics Directive was finally amended in 2011, and the UK Cosmetic Product (Safety) (Amendment) 2012 came into force on 31 October 2012.

### What whitening agents can I use?

Products between 0.1% and 6% hydrogen peroxide can only be supplied by a dentist and a clinical examination must be undertaken before use. The UK regulations make no distinction between in-surgery whitening and the provision of home whitening kits. Due to serious concerns regarding the safety of sodium perborate and chlorine dioxide-based whitening products, these whitening agents should not be used.

### Can I treat under-18-year-olds?

In May 2014, the GDC updated its position on teeth whitening to state that products containing or releasing between 0.1% and 6% hydrogen peroxide cannot be used on any person under the age of 18 years except where such use is intended wholly for the purpose of treating or preventing disease. The BDA recommends consulting a defence organisation before providing any treatment to under-18-year-olds.

Source: BDA