The risks of heavy-handed brushing

Professor **Andrew Eder**¹ considers the damage that can be caused to the teeth if patients are too heavy-handed with their toothbrushing, as well as exploring other potential causes of abrasion and offering preventive advice to be passed on to patients.

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The London Tooth Wear Centre offers an evidence-based and comprehensive approach to managing tooth wear, using the latest clinical techniques and a holistic approach in a professional and friendly environment.
www.toothwear.co.uk

The Oxford Dictionary of Dentistry defines 'abrasion' as: 'The non-bacterial loss of tooth tissue due to frictional tooth wear by extrinsic agents. Common causes are toothbrushing, particularly with abrasive pastes, pipe smoking, and pencil chewing. The lesions produced by toothbrush abrasion are typically wedge-shaped and are most commonly associated with the labial and buccal surfaces of the premolars, canines, and incisors of the permanent dentition.'

These are not the only cause of abrasion – you can add to the list a diet rough in texture or using the teeth for a purpose other than nature intended, such as biting tags off new

purchases, or cleaning between the teeth with tools not created for that purpose, for instance earring posts, keys and credit cards!

A patient suffering from tooth wear may report sensitivity, as well as problems chewing. Their teeth may also look shorter on smiling or when speaking. In addition:

- Teeth may become less white as some of the outer surface is lost
- Front teeth may become sharp or chipped
- Chewing surfaces may wear flat and take on a shiny, pitted appearance
- Restorations such as crowns and bridges may stand proud of the natural teeth.

Patient awareness and education

Raising awareness and educating our patients

about the potential for abrasive tooth wear is essential if we are to prevent further damage. Thus, for example, an important message to share is the importance of gentle but effective brushing – in my experience, many people mistake brushing hard for brushing well! It may be appropriate for the dental professional to demonstrate the best technique for the patient, and to recommend the use of a soft toothbrush and non-abrasive toothpaste.

The reality of wear

As Wiegand and Schlueter wrote: 'Although toothbrushing is considered a prerequisite for maintaining good oral health, it also has the potential to have an impact on tooth wear, particularly with regard to dental erosion. Experimental studies have demonstrated that tooth abrasion can be influenced by a number of factors, including not only the physical properties of the toothpaste and toothbrush used but also patient-related factors such as toothbrushing frequency and force of brushing. While abrasion resulting from routine oral hygiene can be considered as physiological wear over time, intensive brushing might further harm eroded surfaces by removing the demineralised enamel surface layer.'¹

Added to this, there is no doubt that tooth wear is on the increase: over three-quarters of adults show signs of tooth wear. Comparing the most recent Adult Dental Health Survey (ADHS) with its predecessor, figures suggest that in just 11 years the incidence of tooth wear in England has increased by 10%.²

Our awareness of these issues – combined with proactive patient care – is key to helping the UK population achieve dental longevity, as well as keeping them pain-free. In addition, while this article has focused on abrasion, it

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Meanwhile, as already mentioned, foods with a rough texture will make matters worse, so it is worth having a discussion with patients about their diet. As a rule of thumb to share with them, if it's tough to chew and/or fibrous, it may well be abrasive. Some of the more commonly consumed foods that can contribute to abrasion include celery, carrots, broccoli, apples, seeds and nuts.

It is also very important to make sure patients understand their teeth are not a handy tool, for example to tear labels off newly bought items or to rip open packets of sweets when their hands fail them! In addition, many people chew foreign objects such as pens and pencils, very often without realising. If a discussion with your patient brings such an issue to the fore, it might be worth suggesting they coat their chew-item of choice with a bitter-tasting solution designed for nail biters.

is important to note that tooth wear is multifactorial and should not be considered in isolation – abrasion, erosion, attrition and abfraction are rarely seen in isolation (if ever), and may affect people from all walks of life at any age.

The stark truth is that if patients remain unaware and uneducated about the potential for tooth damage through tooth wear, patients will continue with their destructive habits, which will have serious implications for their oral health in years to come.

1. Wiegand A, Schlueter N. The role of oral hygiene: does toothbrushing harm? *Monogr Oral Sci* 2014; **25**: 215-219.
2. Adult Dental Health Survey 2009. Report 2: Disease and related disorders. Health and Social Care Information Centre, 2011.

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