

# FACING THE FUTURE OF TOOTH WEAR

PROFESSOR ANDREW EDER BDS, MSC (CONSERVATIVE DENTISTRY),  
LDS RCS, MFGDP, MRD RCS RCPS, FDS RCS, FHEA



Professor Andrew Eder Specialist in Restorative Dentistry and Prosthodontics and Clinical Director of the London Tooth Wear Centre®, a specialist referral practice in central London. He is also Professor/Honorary Consultant at the UCL Eastman Dental Institute and Pro-Vice-Provost and Director of Life Learning at UCL.

**P**revention is better than cure. How many times have we dental professionals read that now? The same adage reflects the needs of patients suffering with tooth wear beyond that which we would consider normal for their age as we look to the future.

The Oxford Dictionary of Dentistry defines tooth wear as: 'The non-bacterial loss of tooth substance by abrasion, attrition or erosion.' In clinical terms, what does this terminology mean for the practising dentist?

- Abrasion is tooth wear caused by excessive rubbing away of enamel and dentine as a result of, for example, vigorous tooth brushing, porcelain crowns rubbing against the natural dentition, or the consumption of a roughly textured diet.
- Attrition occurs when there is contact between the teeth over and above what we would consider 'normal' use. Such patients generally suffer from bruxism or parafunctional activity – grinding their teeth and clenching the jaw at night – which is often linked to a stressful lifestyle.
- Erosion is tooth wear resulting, for example, from the consumption of acidic food and drinks or stomach acid regurgitation, which is often found to be a result of conditions such as bulimia, pregnancy sickness or hiatus hernia.

## THE SITUATION AMONG ADULTS

There is no doubt that tooth wear is on the increase; over three-quarters of adults show signs of abrasion, attrition and/or erosion. 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%.<sup>1</sup>

The growth of moderate wear in young adults over the last few years, also highlighted by the latest ADHS, is particularly worrying because it is indicative of destruction beyond that which we would expect for our patients at that stage of life.

The ADHS states: 'The greatest increase was in the youngest three age groups; 15 percentage points, 10 percentage points and 13 percentage points for those aged 16 to 24, 25 to 34 and 35 to 44 years respectively... While the increase in moderate tooth wear is small, moderate tooth wear in 16 to 34 year olds is of clinical relevance as it is suggestive of rapid tooth wear.'<sup>1</sup>

## TOOTH SURFACE LOSS IN CHILDREN

As for our children, a third (33%) of 5-year-olds have evidence of tooth surface loss (TSL) on one or more of the buccal surfaces of the primary upper incisors, according to the Children's Dental Health Survey.<sup>2</sup>

In addition, a quarter of 12-year-olds were reported to have TSL on molars and the buccal surfaces of incisors, while the proportion of children with any TSL at age 15 on the occlusal surface of molars was higher than that at age 12 (31% compared to 25%).<sup>2</sup>

The authors of the report state: 'The proportions of children affected by tooth surface loss into dentine and pulp are low and consistent over time, although any such damage is a significant burden to have at the age of 15.'<sup>2</sup>

## A STARK REALITY

It would seem fair to state that the majority of the UK population is better educated about their oral health than ever before, so why is this increase in tooth wear occurring? The truth is, while modern-day medicine and preventive dentistry help many people to live extended lives and keep their dentition for longer, the latter through an improved understanding of the management of dental caries and periodontal diseases, this longevity can result in some health issues becoming more widespread, including that of tooth wear.

Tooth wear is multi-factorial, affecting people from all walks of life and at all ages, but there is a particularly worrying trend

among the younger generations, as the Adult and Children's Surveys indicate.

As Poyser and colleagues (2005) so succinctly stated: 'The prevalence of tooth wear is likely to escalate as life expectancy continues to increase. As people expect to retain their teeth throughout life this has important implications on the type of preventative and restorative care that the profession will need to provide in the future. This also has an implication for training and funding for dental services. The management of TSL and the eventual failure of restorations placed to manage this problem are likely to be a significant issue in future years.'<sup>3</sup>

## SIGNS AND SYMPTOMS

For dentists, the signs and symptoms that indicate a patient may be suffering from tooth wear and that action is needed include:

- Sensitive teeth
- Discolouration, including yellowing and loss of shine (where some of the outer enamel layer has been lost)
- Sharp or chipped anterior teeth
- Occlusal surfaces wearing flat and taking on a shiny, pitted appearance
- Altered occlusion as vertical height changes

## REFERENCES

1. Adult Dental Health Survey 2009. Report 2: Disease and related disorders. Health and Social Care Information Centre 2011
2. Children's Dental Health Survey 2013. Report 2: Dental disease and damage in children: England, Wales and Northern Ireland. Health and Social Care Information Centre 2015
3. Poyser NJ et al. The Dahl Concept: past, present and future. *BDJ* 2005; 198: 669-676
4. Carvalho TS et al (2015) Consensus report of the European Federation of Conservative Dentistry: erosive tooth wear—diagnosis and management. *Clin Oral Invest*. DOI 10.1007/s00784-015-1511-7

- Restorations standing proud of the teeth
- Abfraction lesions developing cervically
- V-shaped notches or shallower cupping present cervically.

When you do witness such damage, it is important to monitor the rate of wear objectively by taking clinical photographs and study casts for future reference.

Then, once the type of tooth wear has been diagnosed – always bearing in mind it is more common for patients to be suffering from more than one form – it is imperative that action is taken to prevent further damage, starting with patient education.

## MEETING FUTURE CHALLENGES

It is true that tooth wear is a natural part of life and it gets worse as we get older, and so it is fair to suggest that suffering some tooth wear is unavoidable. However, a number of causes of tooth wear are preventable – at least to some extent. Because of this, all dental professionals can make a difference to their patients' susceptibility to tooth wear.

Indeed, the European Federation of Conservative Dentistry (EFCO) has called for the dental community to increase its focus on erosive tooth wear and declared

it a challenge requiring co-operation with other healthcare professionals.<sup>4</sup>

Irrespective of age, patients need to be made aware that imprudent food and drink choices, medical conditions that may cause varying degrees of stomach acid regurgitation, stress-related bruxism, and over-zealous tooth brushing can all cause damage to the enamel and dentine.

Early diagnosis of tooth wear is essential so that simple treatment, including monitoring and prevention, may be provided to help patients achieve dentinal longevity. Left unaware and uneducated, patients will continue with their destructive habits, which will have serious implications on their oral health in years to come.

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

## FOR FURTHER INFORMATION

Please visit [www.toothwear.co.uk](http://www.toothwear.co.uk), email [info@toothwear.co.uk](mailto:info@toothwear.co.uk) or call 020 7486 7180.