

# Getting to the root of tooth sensitivity

**Andrew Eder** considers the interplay between dietary acid intake, toothbrushing, tooth surface loss and patients reporting tooth sensitivity, and how to address these challenges

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It has been suggested that up to a third of the UK population may be affected by dentine hypersensitivity, making it a significant challenge ([bit.ly/2rFbf91](https://bit.ly/2rFbf91)).

Dentine hypersensitivity has been defined as: 'A condition often resulting in pain caused by exposure of dentine to external stimuli. Such stimuli may involve tissue loss and exposure of dentinal tubules (eg loss of enamel and cementum following gingival recession), opening up of dentinal tubules without tissue loss (eg by removal of the smear layer during a restorative procedure, acid in dental plaque, diet gastric reflux agents in dentifrice, or vital bleaching), by an inappropriate toothbrushing technique, or as a result of temperature change' (Ireland, 2010).

Thus, tooth surface loss is a significant contributor when it comes to dentine hypersensitivity, which means it can be prevented to some extent in some patients, as long as dental professionals act fast and effectively to put in place preventive measures, and can motivate patients to do their part.

## Recognising the cause

There are a number of reasons why a patient might present with dentine hypersensitivity and a correct diagnosis is essential in order to be able to help them (Gillam, 2013). When examining patients reporting sensitivity, often there is no obvious reason for their pain. There may be some gingival recession; however, the level of recession witnessed does not adequately explain the extent of the pain the patient is reporting.

If it is being caused by tooth surface loss, indicative signs and symptoms beyond sensitivity include:

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

In addition, patients may report having problems speaking or chewing, as well as jaw and muscle ache.

## Preventing further damage

As already touched on, overzealous toothbrushing may be one contributor to tooth surface loss in the form of abrasion, whereby excessive rubbing wears away enamel and dentine. Other culprits include porcelain crowns rubbing against the natural dentition or the consumption of a rough diet.

Tooth erosion may also be a factor in dentine hypersensitivity, with wear resulting from, for example, 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.

Always bear in mind that tooth surface loss is often multifactorial, with patients suffering from more than one aetiological factor. Therefore, abrasion and erosion – as well as attrition – can all present at the same time and make things worse.

## Patient care

Communicating the problem to patients is key to success. It can come as a shock to patients that their perceived healthy lifestyle (such as drinking smoothies,

**Recommend patients do not brush straight after consuming something acidic, instead rinsing with milk, water or mouthwash**



eating lots of fruit, enthusiastic toothbrushing) is causing oral health problems.

Therefore, the situation needs to be approached with care and understanding. Linking healthier practices with appearance may be key to getting people motivated (El Wazani, 2012), so, initially, it might be best to focus on the idea that preventive care is essential to prevent teeth becoming short and unattractive, as well as addressing the sensitivity.

Plus, they need to know that if left to continue its damaging course, teeth may require extensive restorative treatment further down the line. In addition, it is a good idea to emphasise that preventive steps are simple to incorporate into even the busiest of schedules.

Since types of tooth wear are rarely seen in isolation, the management of patients suffering dentine hypersensitivity will probably also need to be multifactorial. To prevent progression, appropriate measures may include (Morozova et al, 2016):

- Strengthening the enamel via remineralisation, applying fluoride in the form of, for example, toothpaste, mouthwash or in-practice gels
- Making tooth-friendly food and drink choices, reducing the frequency and contact time of acidic beverages and foods. It may also be prudent to use a straw and to rinse with water, milk or a fluoridated mouthwash following consumption
- Adapting patients' at-home oral health regimen, so they use a soft-bristled toothbrush and non-abrasive toothpaste and mouthwash. Their toothbrushing technique should also be adapted to ensure overzealous brushing is not causing problems. In addition, it is important to recommend patients do not brush straight after consuming something acidic, instead rinsing with milk, water or mouthwash, as above
- Addressing hypersensitivity, helping to alleviate the pain using in-practice and/or at-home desensitisers. In addition, direct application of glass ionomer or composite material to sensitive areas may be indicated.

## Looking to the future

Once the patient has acted to prevent further wear, which will hopefully reduce dentine hypersensitivity, any remedial treatment identified as being needed can begin.

For those with minimal loss of enamel and/or dentine, adhesive techniques are normally indicated to protect the worn tooth surfaces and provide the patient with functional and/or aesthetic improvements.

When patients present with rather more complex challenges of tooth wear, requiring comprehensive restorative care, it is essential to determine whether the team feels competent to offer such treatment or whether referral to a specialist is indicated. **D**

## References

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