



Both what we eat and drink can affect our dental health. **Around one in three adults have some degree of tooth decay, and one in four children in England have some degree of tooth decay by the time they are aged five.**<sup>1</sup>

This fact sheet focuses on tooth decay and dental erosion, some of the main causes of poor dental health. Daily tips to help support dental well-being are also provided.

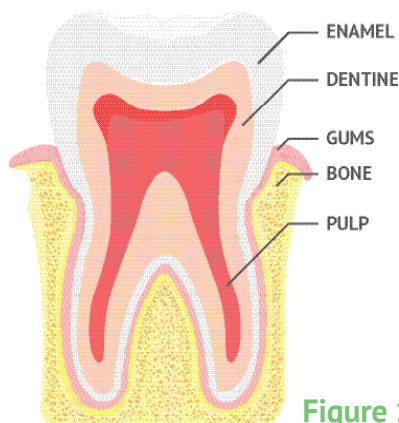


Figure 1

## DENTAL EROSION

Dental erosion is the loss of tooth enamel caused by acid attack. Enamel is the hard, protective coating of the tooth, which protects the sensitive dentine underneath. When the enamel is worn away, the dentine underneath is exposed, which may lead to pain and sensitivity.<sup>2</sup>

## TOOTH DECAY

The term 'tooth decay' is also sometimes referred to as dental caries. Dental caries are caused by exposure to sugars over time. Bacteria forms a layer called plaque on the surface of teeth which uses sugars as an energy source, leading to the production of mouth acids. In turn, the acidic environment this creates can lead to the softening of the enamel and dentine of teeth (Figure 1), eventually after many thousands of such attacks leading to the formation of a cavity (hole) in the teeth.<sup>3,4</sup>

Natural salts in your saliva cause the enamel to 'remineralise' and harden again.<sup>3</sup> Saliva is around 99 percent water<sup>5</sup>, so drinking water is important for its production. In fact, when we become dehydrated this can affect the concentration of saliva (osmolarity).



## DENTAL HEALTH IN THE UK

While data from the latest Child Dental Health Survey found some improvements in dental health between 2003 and 2013, several concerns were also highlighted, including that nearly half (46 percent) of 15 year olds and a third (34 percent) of 12 year olds had signs of 'obvious decay' in their permanent teeth.<sup>6</sup>

Survey findings also showed that more than a third (35 percent) of 12 year olds and more than a quarter (28 percent) of 15 year olds were embarrassed to smile or laugh due to the condition of their teeth.<sup>6</sup>

Only ten percent of adults have 'excellent' oral health. This is defined as having 21 or more natural teeth, 18 or more sound and untreated teeth/roots and no decay or calculus (a form of hardened plaque or bleeding). Certain behaviours such as regular brushing are associated with better dental health.<sup>7</sup>

Also, as we get older, it may become more difficult to clean our teeth properly, especially for people who have problems with their hands, arms or vision. Certain medications can also make the mouth dry, reducing saliva production which is a risk factor for tooth decay.<sup>8</sup>



### DENTAL HEALTH IN THE UK FACT:

Around one-third of five year olds in England have tooth decay, with an average of at least three teeth being affected (Public Health England, 2013).<sup>9</sup>

## WHAT TO DRINK?

When looking at our dental health, plain water (tap, still or sparkling) is an excellent drink of choice as it is sugar-free.

Fluoride is a naturally occurring mineral found in water (bottled and tap) that can help to reduce the risk of tooth decay by making tooth enamel more resistant to acid attack. Fluoride is also thought to help reduce plaque bacteria's ability to produce acid. In areas where the natural fluoride content of water is low, fluoride can be added to the water supply through a process known as 'fluoridation'.<sup>10</sup>

Drinks with high sugar or acidic content should be limited as they could increase the chance of dental decay and enamel erosion.

Drinks with lower pH values tend to have higher erosive potential than those with a neutral or alkaline pH.



## IN CONCLUSION...

Our smiles are the window to our wider state of health and wellbeing. The drinks we choose can impact our dental health.

Children, in particular, should be encouraged to drink water to help embed healthy hydration habits from an early age, as well as older people who have a tendency to have reduced saliva production.

# TOP TIPS TO SUPPORT DENTAL HEALTH

- 1 Drinking water is a good way to hydrate without exposing teeth to sugars.
- 2 Children should be encouraged to drink water from an early age, to develop a taste for water. Milk is also a good choice for children as it is a useful source of nutrients, especially B vitamins and calcium.
- 3 Older people who have a tendency to have reduced saliva production should be encouraged to drink water regularly.
- 4 Teeth should be brushed regularly last thing at night and at least one other occasion in the day, with a fluoride toothpaste.
- 5 Night time tooth brushing is especially important as saliva production slows down through the night.
- 6 Rinsing the mouth with water in between meals may help to remove food debris which could otherwise contribute to dental decay.

# THREE FACTS

1 Fluoride helps teeth resist decay. Your dental team will recommend the right level of fluoride for use in your toothpaste.<sup>11</sup>

2 Eating and drinking foods containing sugar and acids naturally weakens the enamel on your teeth. Brushing straight afterwards can cause tiny particles of enamel to be brushed away. It is best not to brush your teeth until at least one hour after eating.<sup>12</sup>

3 Chewing gum makes your mouth produce more saliva, which helps to cancel out the acid in your mouth after eating or drinking. It has been proven that using sugar-free chewing gum after meals can prevent tooth decay.<sup>12</sup>



## Useful websites:

British Dental Health Foundation: [www.dentalhealth.org](http://www.dentalhealth.org)

National Smile Month: [www.nationalsmilemonth.org](http://www.nationalsmilemonth.org)

## Please note:

This information sheet has been based on scientific evidence available. The information contained in this fact sheet is not a substitute for medical advice or treatment, and we recommend consultation with your dentist, doctor or health care professional if you have any health concerns.

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## References

1. NHS Choices (2014) Tooth Decay. Available at: <http://www.nhs.uk/Conditions/Dental-decay/Pages/Introduction.aspx> (accessed March 21st 2015)
2. British Dental Health Foundation (2015b) Children's Teeth: Dental Erosion. Available at: <http://www.dentalhealth.org/tell-me-about/topic/childrens-teeth/dental-erosion> (accessed July 13th 2015)
3. British Dental Health Foundation (2015a) Dental Decay. Available at: <https://www.dentalhealth.org/tell-me-about/topic/mouth-conditions/dental-decay> (accessed March 19th 2015).
4. Sanders TAB (2004) Diet and General Health: Dietary Counselling. Caries Res 38(suppl 1):3-8
5. de Almeida PDV et al. (2008) Saliva Composition and Functions: A Comprehensive Review. J Contemp Dent Pract 9(3):072-080.
6. HSCIC [Health and Social Care Information Centre] (2015) Child Dental Health Survey 2013, England, Wales and Northern Ireland. Available at: <http://www.hscic.gov.uk/catalogue/PUB17137> (accessed March 19th 2015).
7. Steele J & O' Sullivan I (2011) Executive Summary: Adult Dental Health Survey 2009. Available at: <http://www.hscic.gov.uk/catalogue/PUB01086/adul-dent-heal-surv-summ-them-exec-2009-rep2.pdf> (accessed March 20th 2015).
8. British Dental Health Foundation (2015c) Dental care for older people. Available at: <http://www.dentalhealth.org/tell-me-about/topic/older-people/dental-care-for-older-people> (accessed March 19th 2015).
9. Public Health England (2013) National Dental Epidemiology Programme for England: oral health survey of five-year-old children 2012. A report on the prevalence and severity of dental decay. London: PHE.
10. NHS Choices (2014) Fluoride. Available at: [www.nhs.uk/conditions/fluoride/pages/introduction.aspx](http://www.nhs.uk/conditions/fluoride/pages/introduction.aspx) (accessed April 13th 2015).
11. British Dental Health Foundation (2015d) Routine treatments: Dental Decay. Available at: <http://www.dentalhealth.org/tell-me-about/topic/routine-treatment/dental-decay> (accessed July 13th 2015)
12. British Dental Health Foundation (2015e) Sundry: Diet. Available at: <https://www.dentalhealth.org/tell-me-about/topic/sundry/diet> (accessed July 13th 2015)

