



CASE STUDY

Teaching two brothers to have really clean teeth, thanks to some healthy competition

Case history

Two brothers, aged nine and seven, enjoy a healthy diet, but were not at all good at brushing their teeth. Their teeth were beginning to show signs of a build-up of plaque and their dentist wanted to find a way of setting good brushing habits that would become ingrained behaviour as the boys grew older.

Patient's Perspective

Benjamin, what used to happen when your mum asked you to clean your teeth?

I always tried to get out of it whenever I could. I know brushing your teeth is important but it's so boring and it takes ages. I'd much rather be playing.

What happened when you visited the dentist, Felix?

He painted funny blue gel on our teeth and then showed us how it looked in a mirror. We had to try and brush the blue stuff off to make our teeth all white again.



What sort of brush did the dentist give you, Benjamin?

It was a really cool electric toothbrush and it comes with an app that I downloaded onto my phone. The app shows us when we are brushing properly and we can get rewards when we do it well.

What do you like about the electric toothbrush, Felix?

The best thing is it shows when I am doing a better job of brushing than my brother so I get to unlock more rewards than he does – that's brilliant.

Benjamin, what difference do you think using the electric brush has made to your teeth?

They feel really clean and our dentist is very pleased with how much better they look. Our mum can't believe she doesn't have to nag us any more – we actually look forward to cleaning our teeth.



Technical knowledge

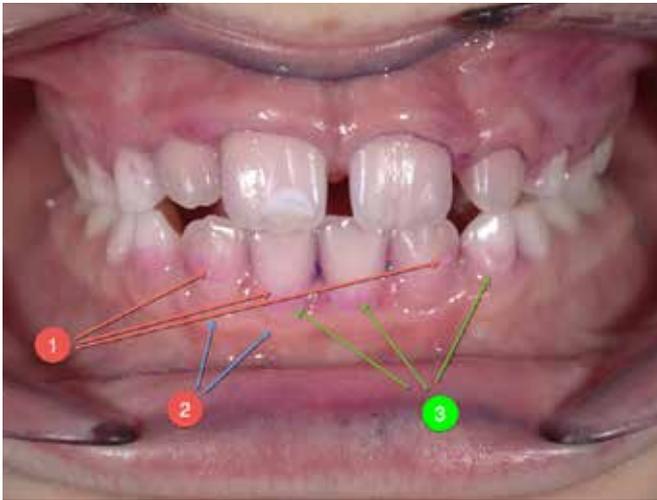
Shockingly, tooth decay is the number one cause of hospital admissions among children in the UK. It can have a significant impact on children's general health and development. As children progress to adulthood, poor oral health can increase the risk of diseases such as stroke, diabetes and heart attack.

Latest NHS guidelines on dentistry emphasise the importance of better prevention leading to less invasive dental treatment. Dr Atkins is a keen advocate of preventative dentistry and his work with a number of high-needs patients has demonstrated that improving oral hygiene is an effective step in radically improving dental health. He hopes that by establishing good oral hygiene habits at an early stage with child patients, they will require minimal or no dental treatment as they get older, which will have a positive impact on their overall health.

Dr Atkins used disclosing gel on Felix and Benjamin's teeth and photographed the results so he could easily track any improvements in the condition of their teeth going forward. The boys enjoyed looking in a mirror to see their 'blue' teeth and then Dr Atkins showed them how to use an electric toothbrush, to remove all the built-up plaque from their teeth and keep their teeth really clean. He also downloaded the associated app onto their iPad, confident that they would be even more engaged with their new teeth cleaning regime if they felt they were playing at the same time as brushing.

This smart toothbrush and app combination is specifically designed to catch and sustain a child's interest in effective brushing in a fun and interactive way. The app on the iPad or phone syncs with the toothbrush via Bluetooth to show proper brushing techniques and tracks performance so the boys can mimic the brushing coach and see how well they are brushing and earn rewards.

The app has a central character, who really likes to have clean teeth. The children each take care of their own special character, while the app's brushing coach challenges them to brush for longer with a better technique. Both boys enjoyed customising their own brush with different coloured stickers.



Benjamin - Before



Benjamin - After

What can parents look for in their children's mouths:

1. Disclose: the blue is plaque, it is often around the gum level, as children can often avoid brushing the gums because they bleed, remove this and the bleeding will stop.
2. Red gums: (blue arrows) redness is inflammation in the gums caused by the bacteria.
3. White patches can be weak areas on the teeth and decay can start in these areas easily, so by improving the oral hygiene we will stop the decay developing.



On the boys' next appointment, their mother told Dr Atkins that there was a notable difference in her sons' attitude towards teeth brushing. Both avid smartphone addicts, they had been very enthusiastic about using the app from the start and had really got to grips with it before their mother had had a chance to have a proper look at it and work it out.

Tips on oral healthcare for parents with younger children.

What to look out for!

Regularly check your children's gums. They should be pink, with an even tone throughout the mouth. If the area above one of the teeth is red and swollen, an infection may be the cause. Keep your eyes open for bleeding gums. Although less common in children than adults, bleeding gums and bad breath can be a sign of early stage gum disease or gingivitis. It is caused by a build-up of plaque on the teeth. Plaque is a sticky substance that contains bacteria.

Some bacteria in plaque are harmless, but some are harmful for the health of your gums. If you don't remove plaque from your teeth by brushing them, it builds up and irritates your gums. This can lead to redness with bleeding, swelling and soreness.

Children are as susceptible to tooth decay as adults. So, look out for signs such as a dull white band on the tooth surface closest to the gum line. This is the first sign and can often remain undetected by parents. Also, a yellow, brown or black band on the tooth surface closest to the gum line will indicate that the decay is getting worse. Finally, teeth that look like brownish-black stumps means that the child has advanced decay.

If your children suddenly complain about hot or cold food being painful, or it starts to hurt when they chew or bite; these can also be signs that a trip to the dentist is necessary.



Facts and Figures (supplied by BDA)

- Tooth decay – an almost completely preventable disease – is the number one cause of hospital admissions among children in the UK. It can have a significant impact on children's general health, development, school readiness, confidence, ability to sleep, eat and socialise.
- Tooth extractions under general anaesthetics in hospitals cost the NHS over £35 million/ year.
- A recent NHS survey revealed that more than a fifth of 12-year-olds (22%) experienced difficulty eating as a result of poor dental health in the past three months. More than a third (35%) reported being embarrassed to smile or laugh due to the condition of their teeth.
- In adulthood, poor oral health may increase the risk of serious diseases such as stroke, diabetes and heart attacks, and can significantly impair people's ability to find a job.
- In Scotland and Wales, the ChildSmile and Smile4Life campaigns have been brought in to tackle tooth decay but there is currently no national programme in England.
- Polling by YouGov for the BDA shows that one in four parents are unaware that dental treatment for their children is free of charge.

The basics are easy – and here are a dozen tips for parents.

1. **Don't let them brush alone** – Although it's important to encourage children to brush their own teeth, you should supervise your child's brushing until they are about seven years old. This ensures they are brushing their teeth correctly and for the correct amount of time.
2. **Don't get the wrong toothbrush** – The wrong size brush may mean that a child cannot handle it properly and therefore is not able to clean all of their teeth properly. Also, if the bristles are too hard they can damage the gums. Children should be using a soft to medium, small sized toothbrush. Having one with their favourite character on can also help them to become actively involved in brushing their own teeth.
3. **Spit don't rinse** – Make sure children do not rinse their mouths out with water after brushing, as this washes away the protective fluoride left behind by brushing.
4. **Use the toothpaste with the correct amount of fluoride** – Up until the age of three a child should be using a toothpaste with 1100ppm (parts per million) of fluoride as it protects the teeth long after brushing. After the age of three, they can use the same toothpaste as you. Children's toothpaste can be confusing. The challenge is the 'super tasting'; this is what children's toothpaste is for (getting your children to want to brush their teeth and not being put off with the really strong mint taste of adult toothpaste). There are many flavours and getting one they like can be helpful as long as it has the right level of fluoride.
5. **Don't wet the toothbrush before you use it** – A little known fact but wetting the toothbrush before using it softens the bristles and can make it less effective.
6. **Don't brush within an hour of eating** – After eating or drinking, especially sugary things, the enamel on teeth softens. It takes about an hour for the mouth to return to normal so brushing within this time can brush away bits of enamel and lead to tooth erosion.
7. **Make sure they visit the dentist regularly** – Every child is different and therefore should visit the dentist as regularly as their dentist recommends. You should even take them along with you, so they get used to the sights, sounds and smells of the dental practice.
8. **Don't let them disregard baby teeth** – Baby teeth deserve care while they are there. Far too many people have a perverse idea that as baby teeth fall out, they don't have to care for them as much as they do adult teeth. This is a very wrong and dangerous way of thinking. If a child picks up poor oral health habits when they have baby teeth, they are much more likely to take these into later life, causing permanent damage to their adult teeth.
9. **Make sure you get the timings right** – Good habits are very important, so establishing a routine with your child means they are more likely to continue in later life. Brushing twice a day – before breakfast and as part of the bedtime routine – makes sense.
10. **The two-minute rule** – It is hard to accurately estimate two minutes, but using a timer or a favourite song will help ensure a child is brushing for the right amount of time. Reward charts are a great way to encourage them too.
11. **Keep fizzy/sugary drinks and snack to mealtimes** – Snacking or sipping on sugary foods and drinks during the day means the teeth come under constant attack from acid and sugar. Keeping these to mealtimes gives teeth time to recover. Try fresh fruit, cheese and milk; rather than dried fruit, fizzy drinks and sugar based foods. Sugar free gum can help with children's oral hygiene.
12. **Don't give sugary rewards** – Pretty self-explanatory – stickers, TV time or even extra playtime are great rewards – and won't lead to tooth decay.

Remember - The basics are easy.

- Brush your teeth twice a day with an adult toothpaste
- Make cleaning fun - pick a favourite tune that lasts two minutes as your cleaning song!
- Don't rinse with water after brushing, this will cause the fluoride to be rinsed away
- Keep your sugar intake low and look out for the hidden sugars in things like dried fruit and smoothies
- Try fresh fruit, cheese and milk; rather than dried fruit, fizzy drinks and sugar based foods
- Keep anything sweet to meal times, reducing the frequency of sugar intake makes a massive difference

There are also plenty of resources to help you.

Several recent models of electric toothbrushes combine with a Smartphone App, which acts as an aid to better teeth cleaning and oral healthcare.

But if these are too expensive, then Free Apps like **Brush DJ** are also designed to help young and old enjoy 'brush-time' and clean more effectively.

Another helpful App, which advises on the Sugar, Fat and Salt content of most groceries is **Food Smart**. It works by scanning the bar code on food packaging and quickly gives you a red / amber / green score to help you choose healthier options in the weekly shop.

Also, we have diet sheets on our website which you can use to track your food intake over three days. If you show it to your dentist, they can advise if there are particular items that are very bad for your teeth. For example, foods like dried fruit and smoothies are often promoted as being a healthy option, but they contain very high concentrations of sugars.

