



CASE STUDY

Child demonstrates dramatic behaviour change after tooth decay caused pain

Case history

A typical outgoing, lively nine-year-old, Dennien was referred to dentist Dr Ben Atkins after complaining of toothache at school. It soon became clear that, never having been in a regular routine of visiting the dentist, she now had a great fear of dentists and had not actually seen one for several years.

During consultations with Dr Atkins, it became apparent that her mum was also quite ill at ease and was clearly nervous during dental appointments, which added to Dennien's worries. With poor all-round oral healthcare, Dennien was classified as a Red Patient. As such, before a detailed course of remedial treatment could commence, she was required to show improvement in her overall oral healthcare by improved, regular day-to-day teeth cleaning activities.

What is a Red Patient?

A patient is classified as 'red' when there is a high risk of dental disease. Oral health problems have been identified by a dental professional, and they need urgent attention. A red classification will mean that it is necessary that the patient is seen again quickly – ideally within seven days – because there are important oral healthcare issues that need to be addressed. Initially the patient spends time with the Oral Health Education Team. The team discusses the patient's oral hygiene regime in detail and makes sure the patient understands what constitutes 'best practice'. This includes simple things like how to use the toothbrush and areas of the mouth that may be missed when cleaning.

The team provides advice and support, so the patient can take control of improving their oral hygiene to a point where a course of treatment can take place. The team will also provide ongoing support and advice to reduce the likelihood of the patient ever needing invasive treatment, like fillings and extractions, in the future.

This is a new and better focus for dentists, because prevention is better than cure. So, spending time and resources improving oral healthcare and preventing patients needing expensive clinical treatments is a far better use of NHS budgets.

Patient's Perspective

How did you feel about visiting the dentist when your teeth started hurting?

I was so scared about what was going to happen to me. I don't remember visiting a dentist before but I thought any sort of treatment was going to be really painful and I was very worried that some of my teeth might have to be taken out.

What happened when you visited Dr Atkins?

He sat next to me on another chair and chatted to me for ages about my teeth and how they were going to get better if I worked really hard at keeping them clean. He was so nice. He made me feel very confident about visiting him again. He also talked to me about what I should be eating and drinking and how that could help my teeth too.

How did the dentist show you your problems with your teeth?

He painted some blue liquid called disclosing gel on my teeth and then had me hold a mirror so I could see where the blue stains were. He explained that the blue bits were where I had to make sure I cleaned extra carefully.

Did the dentist provide you with anything special to help you keep your teeth clean?

Yes. He got out an electric toothbrush. I hadn't used an electric toothbrush before so he spent a long time showing me how to use it. It's actually really easy. He also showed me a free phone app called Brush DJ, which plays my favourite music while I clean my teeth.

How do you feel when you go to the dentist now?

I actually look forward to seeing Dr Atkins now and showing him how much better my teeth are getting, because of the things I'm doing. I'm not worried about what will happen to my teeth any more and Dr Atkins says I won't have to have any taken out.

Technical knowledge

Dr Atkins adopted an innovative approach with Dennien, combining new technology to improve her dental health with a relaxed 'chair side' approach to build her confidence.

In line with the latest NHS Guidelines, which aim at better prevention leading to less invasive treatment, Dr Atkins is a keen advocate of preventative dentistry and studies of some of his high needs patients in his Greater Manchester practice are proof that improving oral hygiene is an effective first step in transforming oral health. He believes that regular teeth cleaning, above all the correct brushing technique, can make a colossal difference to clinical outcomes. Dr Atkins frequently turns to technological innovation to help high-needs patients like Dennien.

It took a number of visits for Dennien to build up confidence and trust in Dr Atkins. On examination of this young patient, Dr Atkins found that she had the beginnings of decay in several of her adult teeth, which, if left neglected, would have led to multiple extractions under general anaesthetic. With over 40,000 children having at least one tooth extracted under general anaesthetic in hospital in this country every year, Dr Atkins is passionate in his desire to avoid this potential trauma for as many of his young patients as possible. Tooth decay is almost entirely preventable and he believes that dentists can play a vital role in keeping children's teeth healthy by providing preventative treatment as well as advice and support to children and their carers.

In common with so many children, Dennien had not been cleaning her teeth properly or effectively and her diet contained too much sugar and fizzy drinks, consumed throughout the day. Her mum was doing her best to ensure her diet was balanced but was largely unaware of the danger of hidden sugars in many foods. Like many people, she had wrongly assumed that 'healthy' food, labelled as 'one of your five a day' or 'no added sugar', would not be harmful to teeth.

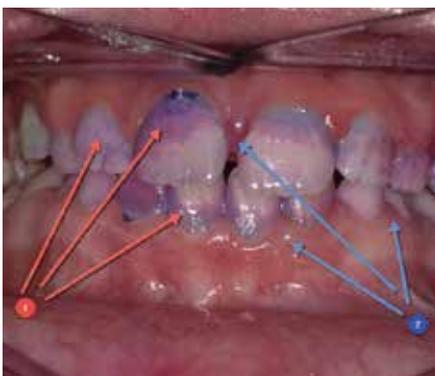
She is now also using another free phone app to support Dennien's oral healthcare. This second app is Food Smart, which scans food packaging barcodes and immediately gives you a sugar, fat and salt reading, using a simple 'traffic lights' system.

Nowadays there are many dental aids available to encourage patients to take ownership of their own oral health care needs and fulfil their part of their 'contract' with the NHS in order to access a treatment plan. After assessing Dennien's level of oral hygiene, Dr Atkins suggested she try using an electric toothbrush. It's not essential to use one, but there are many efficiencies in using an electric brush over a manual one – not least the ability to get better, greater coverage. Nowadays, electric toothbrushes can cost as little as £7.00, although obviously the latest ones with associated app technology are more expensive.

To track her progress Dr Atkins has regularly been using disclosing gel on Dennien's teeth and photographing the results so improvements in her brushing technique can be measured. Dr Atkins has also had discussions with her and her family about dietary changes to help maintain healthy eating habits that will benefit her teeth going forward.

You can get disclosing tablets from your dentist or your local chemist, and they are a really good way of monitoring your child's teeth.

Here are Dennien's teeth on first examination, using disclosing liquid.



1) Disclose: - the blue is plaque (this is special disclosing liquid that makes older plaque go red, so we can tell if the plaque has been missed this morning or has been there for a long time). It is often around the gum level, as children may avoid brushing the gums, because they bleed. Remove this plaque, however, and the bleeding will stop.

2) Red gums: - (blue arrows). The redness is inflammation in the gums, caused by the bacteria. It is a bit of a vicious circle. Plaque causes bleeding gums; child does not brush; plaque builds up; gums bleed more! Often when adult teeth come through this can be a difficult time for children to brush because they can miss areas. Disclosing will help them understand where they are missing.

First examination

Usually we see improvement, but sometimes it just takes a little longer. When first discussing oral hygiene with Dennien, she did not understand that she could brush her gums. She thought it was only her teeth. Oral hygiene improvement takes time. But you can see in certain areas the plaque has already reduced, though in others it has not.

Here is the difference in week three of Dennien's new regime.



Week three

Six weeks later, there is a massive improvement. Still some plaque present but you can see gums are really improving. We expect to see continuous improvement, over time, as Dennien keeps up her new routines.

The aim of Dr Atkins' intervention was to avoid extracting any of Dennien's teeth by bringing about behavioural change and all the evidence shows that this has been achieved. The regular use of disclosing gel has demonstrated how successful, in her case, the use of the electric toothbrush has been, with less plaque revealed at every visit. She has cut down her consumption of sweets and fizzy drinks, now selecting reduced sugar squash and just drinking that at proper mealtimes. She is now happy to visit Dr Atkins and has no issues with him inspecting her teeth at her regular check-ups.



Week six

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.

