Management of enamel defects

Information for patients
Paediatric Dentistry Team, Charles Clifford Dental Hospital
What are enamel defects and why has my child got them?

Enamel defects affect the outer layer of the tooth. The enamel may be thinner, softer than normal or discoloured. This can lead to tooth sensitivity, dental decay and concerns about the appearance of teeth. This can make children feel frustrated or self-conscious and it can affect their self-esteem.

Enamel defects include amelogenesis imperfecta, molar incisor hypomineralisation (MIH), fluorosis, chronological hypoplasia or damage following trauma or infection in the baby teeth. These defects can be inherited or can be acquired during tooth development.

The image below shows enamel defects affecting the front teeth:

![Image of enamel defects]

Your dentist will be able to provide further details about the defects affecting your child’s teeth.

What treatments are available for my child?

Different treatments work better for different types of defects. These treatments can sometimes be used in combination. Treatment options are described in this leaflet; your child’s dentist will talk to you about the treatment options relevant to your child’s specific defect(s).
Microabrasion

What is microabrasion?

Microabrasion involves the removal of the very top layer of discoloured enamel using a combination of acid and abrasive particles.

What are the benefits of microabrasion?

It can provide long lasting results that greatly improve appearance.

Are there any side effects?

Microabrasion can sometimes cause increased tooth sensitivity. Rarely, localised loss of enamel can result following treatment. This can be restored with a white filling.

To prevent tooth staining following treatment, your child will be advised to avoid consuming heavily coloured food and drink for the first two days after treatment.

The image below shows staining of the teeth from consuming heavily coloured drink following microabrasion:
What will happen at the appointment?

Photographs of the teeth will be taken before treatment. A rubber sheet will be placed around the teeth being treated to protect the rest of the mouth. A sandy like material is then rubbed onto the surface of the teeth for one minute, it is then washed off. This may need to be repeated several times. The treatment usually takes around 45 minutes to complete.

The image below shows the rubber sheet placed around the teeth that are being treated:

![Image of rubber sheet]

The image below shows the microabrasion material on the teeth being treated:

![Image of microabrasion material]

Does it work for everyone?

Microabrasion is not always successful at removing the discolouration from the teeth.
Resin infiltration

What is resin infiltration?

This treatment involves applying a resin material to the outer surface of the tooth. This blends the appearance of enamel defects with the rest of the tooth, by changing the way light reflects off the tooth.

What are the benefits of resin infiltration?

This treatment produces immediate results.

Are there any side effects?

This is a relatively new material which we have used with success in our department. However, the long-term stability of the product is unknown, and it is unclear whether tooth whitening will be possible in the future if this product is used.

What will happen at the appointment?

Resin infiltration usually takes around an hour to complete. At the appointment a rubber sheet will be placed around the teeth being treated to protect the rest of the mouth. The material is applied to the tooth and set with a special light. The dentist may decide to complete microabrasion treatment before resin infiltration, either at a separate appointment or at the same visit. This will vary on a case-by-case basis.

Does it work for everyone?

Resin infiltration often produces very good results, but sometimes it does not work, the dentist will discuss this in more detail with you.

These images show dramatic improvement for a patient who underwent microabrasion and resin infiltration (ICON) at a single visit:
Tooth whitening

What is tooth whitening?

Tooth whitening is a process where the natural colour of your child’s teeth can be lightened.

What are the benefits?

It is a safe procedure which can make areas of darker tooth lighter.

Are there any side effects?

This is a very safe treatment, although it can cause tooth sensitivity.

What will happen at my appointment?

A mould of the teeth will need to be taken by the dentist. From this, a thin clear tray will be made that fits the teeth. This tray holds the whitening gel next to the teeth.

Does it work for everyone?

For the majority of young people, tooth whitening works well. If a tooth is very dark, however, the colour may not improve at all.

Tooth whitening is currently not routinely available for under 18s under the EU directive. As of May 2014, the General Dental Council (GDC) permits the use of whitening products in patients under 18 years of age, but only for the purpose of treating dental disease such as discolouration caused by problems with enamel formation, or as a result of dental trauma.

If this is something that your dentist recommends, you will be given a separate information leaflet explaining this treatment.
Composite veneers (direct and indirect)

What is a composite veneer?

A composite veneer is a white filling material that is placed over the surface of the tooth. A direct composite veneer is layered directly onto the front of the tooth. Indirect composite veneers are thin shells of material that fit over the front of a tooth. They are made in the dental lab and are fitted at a later date.

What are the benefits?

Composite resin material can reproduce the appearance of a natural tooth and can reduce sensitivity.

Are there any side effects?

The composite veneer can chip over time, requiring repair or replacement. Indirect composite veneers can be more destructive to the tooth surface and will require replacement in the future. Both types of veneer need life-long maintenance which may incur costs in the future.

What will happen at the appointment?

The main difference between direct and indirect veneers is the application process, not the material used.

Direct composite veneer: A white filling material is applied to the surface of the tooth and is set with a special light. The treatment usually takes around one hour to complete.

Indirect composite veneer: More than one appointment is required for this treatment. At the first appointment, a small amount of enamel is removed. A mould of the tooth is then taken and sent to a dental laboratory, where the veneer will be made. At the next appointment the veneer is cemented to the tooth if it fits correctly.
Does it work for everyone?

If a tooth is very discoloured the material may not be able to fully disguise the discolouration.

The images below show how composite veneers can help disguise tooth discolouration:

Dos and don’ts for parents / carers

The treatments described above should always be used alongside excellent brushing, a healthy diet, avoiding regular sugary food and drink, and having regular dental check-ups. Your child may also need to use a gum shield when playing contact sports.

Before the appointment:

- Read through this leaflet with your son or daughter
- Ensure your child has brushed their teeth

If you have any questions, please raise them with your dentist before they start treatment.

Alternative formats can be available on request. Please email: sth.alternativeformats@nhs.net

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