Patient information

Molar Incisor Hypomineralisation (MIH)

Liverpool University Dental Hospital

Introduction

Your child has been referred to the Liverpool University Dental Hospital because your dentist has suggested that they may be best managed here.

At today's dental consultation your child may have been diagnosed with a number of dental conditions. This leaflet is to help you understand more about Molar Incisor Hypomineralisation (MIH).

What is MIH?

MIH became commonly recognised in 2001, although it was reported by researchers many years before then. MIH is low mineral content (hypomineralisation) of the enamel (outer layer) of teeth affecting one to four first permanent molar teeth (molars that erupt into the mouth at 6 years old) and sometimes also permanent incisor teeth (adult front teeth).

This means the enamel covering the tooth may have marks that range in colour from white, yellow or brown. These marks may be small or may cover most of the tooth, making it look "moth eaten". Sometimes on the molar teeth the marked areas can break down because these teeth are used for chewing, and they may become decayed quickly. Teeth may be sensitive to temperature and toothbrushing.

When the front teeth are involved it can affect their appearance. Because of the way that the front teeth bite together the enamel on these teeth is less likely to break up or become decayed, but it can still happen if the mark is on the biting edge of the front tooth.

MIH can vary in its severity. Some children will not experience any symptoms and will only have little or no concerns about the appearance of their teeth. Some children will experience a lot of problems with sensitivity and pain, dental decay, and worry about the appearance. This can cause children to be anxious at the dentist.

How common is MIH and what causes it?

It is a very common condition affecting children across the world. A recent study found that 16% of children were affected. This means approximately 1 in 6 children have MIH. The teeth affected by this condition begin forming around birth and in the first few years of life. Researchers believe that MIH is caused when a disruption in the formation of tooth occurs at this time.

Possible causes for disruption of tooth development include:

- Asthma
- Pneumonia
- Upper respiratory tract infections
- Ear infections
- Fevers of childhood
- Prolonged labour.

There is no known clear cause of MIH at this time, and nothing can currently be done to prevent it. Parents should not feel guilty as there is nothing that they could have done to prevent the condition.

Treatment Issues and Options for MIH

1. What can we do with the "six year molars"?

It is important to diagnose the condition as soon as possible after the six year molars have come into the mouth because the enamel may break off these teeth when they are being used to chew. Early treatment can minimise damage. Planning for the future is important for all child patients but becomes even more so for children with MIH.

Treating the six year molars affected by MIH depends on how badly they are affected. The more mildly affected ones may never be affected by enamel break down, decay or sensitivity. They might be treated with high fluoride toothpastes, fluoride varnishes and plastic sealants to attempt to reduce the risk of decay. It may also be that the dentist would want to see your child on a more regular basis to make sure that the things they are doing to prevent decay are working.

For children whose six year molars have had enamel breakdown, decay or sensitivity it may be that the teeth require fillings or removing.

The decision to fill or remove a tooth will depend upon a number of issues including:

- How badly the teeth are affected by decay, enamel breakdown, and/or sensitivity.
- Whether your child has any missing permanent teeth (either that did not develop or have been lost).
- Your child's developing "bite".
- Your child's age and their ability to be able to cope with the treatment required.

Fillings

Some six year molars have small holes that will be best filled with white plastic fillings. If the six year molars have bigger holes or are more severely affected they may require metal crowns which cover and protect the whole tooth.

For most children these options will require them to be able to co-operate for care while they are awake.

Extractions

The six year molars are permanent teeth, and for many people, they last a lifetime. However, when these teeth are severely affected by MIH it is sometimes best to have them removed to prevent sensitivity/pain and to reduce the future financial costs for your child as lots of dental work on these teeth may be required throughout their life.

In some cases, if the six year molars are removed at nine years of age this will mean that the twelve year old molars will erupt into the position of the six year molars without leaving any spaces. This cannot be guaranteed as it depends on the growth of the individual child.

If the six year molars in the lower part of the mouth are removed, the dentist may consider removing the top ones too (even if they are not affected by MIH) as this may help the teeth to be straight in the future. This is not always necessary

Fillings Followed by Extractions

Sometimes, when a child is diagnosed with MIH at an early age (just after the six year molars have come into the mouth) a dentist can see that the molars are severely affected and will cause future problems.

In this case, a dentist may suggest that the affected molars are removed at the age of 8-9 years, if they can be maintained in the meantime. Removal of the six year molars at age 8-9 years may help the remaining back adult teeth to line up without the need for braces, although this cannot be guaranteed.

A dentist might suggest a longer term management plan for your child to maintain the six year molars with fillings (plastic or metal crowns) until the “ideal” time at which to remove them.

2. What can we do with the front teeth?

The marks on front teeth may affect your child’s self-confidence and we understand that some children may be teased at school. This may be upsetting for them, however treatment can be done to improve the appearance of these teeth.

Microabrasion

Microabrasion uses a commonly used dental acid and an abrasive substance to remove a microscopic layer on the surface of the tooth. This may remove some superficial marks but not deeper marks

Tooth Whitening

For white marks, lightening the whole surface of the tooth may help to disguise marks on the surface.

This procedure can be carried out in patients under the age of 18 years where there is a condition affecting the appearance of the teeth. A second information leaflet is available for you if this is suggested.

White Plastic Fillings

These can be applied to the whole front surface of the tooth as a ‘veneer’ or can be placed in the area of the mark after it has been reduced with a drill.

If your child is not concerned by these marks then it may be appropriate to “leave well alone”. No dental treatments last forever, and each will need to be repeated several times in your child’s lifetime. These types of treatment will also require co-operation from your child whilst they are awake.

In the rare cases in which there is enamel breakdown of the front teeth, a white plastic filling is used to remove the mark and replace the lost enamel.

The Shared Role of Your Child’s Dentist and the Hospital Dentist

It is important that your child continues to see their own family dentist whilst they are being looked after at the hospital. The family dentist will be able to continue preventive care and it may be suggested that your child attend checkups on a more regular basis.

The dentist you have seen today will write to your child’s family dentist to explain the plan (you will receive a copy of this letter).

Once treatment has been completed at the hospital your child is likely to be discharged back to their family dentist for continuing care. If there are further problems in the future, your family dentist can re-refer and we would happily see your child again.

Any Questions?

If you have any further questions, please call the Paediatric Dentistry department, or ask the dentist at your next visit.

Feedback

Your feedback is important to us and helps us influence care in the future.

Following your discharge from hospital or attendance at your outpatient appointment you will receive a text asking if you would recommend our service to others. Please take the time to text back, you will not be charged for the text and can opt out at any point. Your co-operation is greatly appreciated.

Further information

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