

Implanting small screws in the jaw for tooth realignment

NICE 'interventional procedures guidance' advises the NHS on when and how new surgical procedures can be used in clinical practice.

This leaflet is about when and how small screw implants can be used in the NHS in the treatment of poorly aligned teeth. It explains guidance (advice) from NICE (the National Institute for Health and Clinical Excellence).

Interventional procedures guidance makes recommendations on the safety of a procedure and how well it works. The word 'procedure' means any surgery, test or treatment that involves entering the body through skin, muscle, a vein or artery, or body cavity. The guidance does not cover whether or not the NHS should fund a procedure. Decisions about funding are taken by local NHS bodies (primary care trusts and hospital trusts) after considering how well the procedure works and whether it represents value for money for the NHS.

NICE has produced this guidance because there is not a lot of information about how well this procedure works, how safe it is and which patients will benefit most from it.

This leaflet is written to help people who have been offered this procedure to decide whether to agree (consent) to it or not. It does not describe poorly aligned teeth or the procedure in detail – a member of your healthcare team should also give you full information and advice about these. The leaflet includes some questions you may want to ask your orthodontist to help you reach a decision. Some sources of further information and support are on page 6.



What has NICE said?

Although there is not very much evidence about how well small screws work, there are no major safety worries about using them. If an orthodontist wants to use small screw implants for poorly aligned teeth, he or she should ensure that the patient understands that the procedure might fail and that using these implants does not mean that alignment of teeth will always be successful. This should happen before the patient agrees (or doesn't agree) to the procedure. The patient should be given this leaflet and other written information as part of the discussion. There should also be processes in place for monitoring what happens after the procedure.

NICE has said that there is not very much information about the best size of screw to use or the best place to position the screws in the jaw, and that further information would be useful.

This procedure may not be the only possible treatment to support tooth realignment. Your healthcare team should talk to you about whether it is suitable for you and about any other treatment options available.

Mini or micro screw implantation

The procedure is not described in detail here – please talk to your orthodontist for a full description.

Teeth that are poorly positioned, out of line or are not able to fully emerge (impacted) may sometimes need to be moved. A certain amount of force may be needed to move the teeth, and a stable, fixed point is needed to provide an ‘anchor’ to which a brace can be fitted to apply this force. Usually the surrounding teeth are used to provide support, but it is not always possible to use these teeth and the force can sometimes cause the wrong teeth to move.

Small screws, which some people call mini screws and others call micro screws, can be inserted into the jaw bone to create anchors that support tooth realignment. A brace can then be attached to the screw that applies force to reposition the teeth.

The screws are inserted under a local anaesthetic. A hole may be drilled into the jaw to insert the screw or it may be inserted into the bone directly. Realignment can start straight away or at a later visit.

After the teeth are realigned, the screws are taken out, often without an anaesthetic, and the gum and the bone underneath heal up completely.

What does this mean for me?

If your orthodontist has offered you small screw implants to help in the realignment of your teeth, he or she should tell you that NICE has said that there is not very much evidence about how well they work, but there are no major safety worries. This does not mean that the procedure should not be done, but that your orthodontist should fully explain what is involved in having the procedure and discuss the possible benefits and risks with you. Your orthodontist should tell you that the procedure might fail and that using these implants does not mean that realignment of your teeth will be successful. You should only be asked if you want to agree to this procedure after this discussion has taken place. You should be given written information, including this leaflet, and have the opportunity to discuss it with your doctor before making your decision.

You may want to ask the questions below

- What does the procedure involve?
- What are the benefits I might get?
- How good are my chances of getting those benefits? Could having the procedure make my teeth worse?
- Are there alternative procedures?
- What are the risks of the procedure?
- What happens if something goes wrong?
- How long will the implants be in place?
- What may happen if I don't have the procedure?

You might decide to have this procedure, to have a different procedure, or not to have a procedure at all.

Summary of possible benefits and risks

Some of the benefits and risks seen in the studies considered by NICE are briefly described below. NICE looked at nine studies on this procedure.

How well does the procedure work?

In one study of 98 patients, a total of 118 out of 140 screws worked well. In a further four studies, small screws were found to work well in most patients, although some types of screw worked better than others. One of these studies looked at four different types of screw and found that the screws worked as well as each other, but that those in the upper jaw worked better than those in the lower jaw. In this study, 208 out of 227 screws were implanted successfully and remained firm; 119 out of 124 screws in the upper jaw worked and 89 out of 103 screws in the lower jaw worked.

Another study found that more screws worked after improvements were made to the way that the size of screw and site of the implant were chosen. Before these improvements 31 screws didn't work out of 133, whereas afterwards only 5 screws out of 106 didn't work.

As well as looking at these studies, NICE also asked expert advisers for their views. These advisers are clinical specialists in this field of medicine. There is debate among the advisers about how well this procedure works; two advisers said that the procedure is new and that there is uncertainty about how well it works and how safe it is, whereas one adviser said that it is an established procedure. They also said that further studies are underway.

Risks and possible problems

The number of screws that break is low; in seven studies the number of broken screws ranged from 2 broken screws out of 59 screws to 8 out of 227.

In a study of 85 patients, none had bleeding, abscess formation or tooth injury.

As well as looking at these studies, NICE also asked expert advisers for their views. These advisers are clinical specialists in this field of medicine. The advisers said that problems can include discomfort and screw failure or loosening. Other potential problems are pain, infection, damage to nerves and damage to the roots of teeth next to the implant.

More information about poorly aligned teeth

NHS Direct online (www.nhsdirect.nhs.uk) may be a good starting point for finding out more. Your local Patient Advice and Liaison Service (PALS) may also be able to give you further advice and support.

About NICE

NICE produces guidance (advice) for the NHS about preventing, diagnosing and treating different medical conditions. The guidance is written by independent experts including healthcare professionals and people representing patients and carers. They consider how well an interventional procedure works and how safe it is, and ask the opinions of expert advisers. Interventional procedures guidance applies to the whole of the NHS in England, Wales, Scotland and Northern Ireland. Staff working in the NHS are expected to follow this guidance.

To find out more about NICE, its work and how it reaches decisions, see www.nice.org.uk/aboutguidance

This leaflet is about 'Mini/micro screw implantation for orthodontic anchorage'. This leaflet and the full guidance aimed at healthcare professionals are also available at www.nice.org.uk/IPG238

You can order printed copies of this leaflet from the NHS Response Line (phone 0870 1555 455 and quote reference N1411).

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