

## Oral & Maxillofacial Surgery- Temporomandibular Joint Replacement Surgery

### Information for patients

#### Introduction

This information is about what a Temporomandibular Joint Replacement (TMJR) is, why you need it, what will happen before, during and after the surgery, including the potential side effects and risks. It will also cover what to expect with your new joint. There are some useful websites for you to look at prior to deciding to have a TMJR. These are listed at the bottom of this leaflet.

#### What is Jaw Joint Replacement surgery?

The Temporomandibular Joint (TMJ) is the jaw joint. A TMJR is similar to a joint replacement elsewhere in the body, such as a knee. It aims to improve the function of a degenerated or damaged joint by replacing the bony components with a prosthetic joint. It involves a short hospital stay and a recovery period afterwards.

There are different types of TMJR; some are custom made, while others are stock joints. A custom made TMJR is tailored to fit the patient based on a pre-operative scan, whereas a stock TMJR is a prosthesis available in various prefabricated sizes and shapes derived from average TMJ measurements. In the UK, the most commonly used types of TMJR are Zimmer Biomet, TMJ Concepts (Stryker), OrthoTin, KLS Martin and Materialise.

The lower jaw component is made from metal like Cobalt-Chromium-Molybdenum and Titanium alloy, although 'all-Titanium' implants are also available. The upper jaw component is made from ultra-high-molecular-weight polyethylene with or without titanium. All the screws are made from titanium alloy.

#### Why do I need a TMJR?

There are many indications for a TMJR, the exact reason will have been diagnosed by your specialist Oral and Maxillofacial surgeon. A common reason would be wear and tear of the joint causing degeneration and failing to respond to conservative treatment.

Other causes include ankylosis (fused jaw joint), failed previous joint replacement, post-traumatic jaw joint injury, reconstruction after tumour surgery, genetic abnormalities affecting the TMJ, and severe inflammatory (e.g. rheumatoid) conditions.

Often, there would be pain and significant reduction in the function of your jaw not involving any muscular problems. Occasionally, deformity of the jaw and abnormal bite may feature.

#### What happens during the surgery?

TMJR is done while you are fully asleep using General Anaesthetic. The surgery is likely to take several hours. Where possible, all cuts to the skin will be in a skin crease to make them less visible. You will have an incision in front of your ear, which can extend into the hairline, to expose the top part of the joint. Some surgeons may shave a small amount of your hair to gain access to this area.

An incision is also made below your jaw to access the joint. The damaged parts of the joint and disc are removed, and the new components are secured in place to form your new jaw joint.

Sometimes, a small drain is inserted to collect excess fluid like blood, or a bandage is wrapped around your head. Both are usually removed the day after surgery.

### **What happens after the surgery?**

You will probably stay in hospital for several days. Discharge occurs when you can eat a soft diet and your pain is managed, often after a postoperative X-ray.

In some cases, the joints may be at risk of dislocation for a few days after surgery. Your surgeon will discuss this with you and take some measures to avoid its occurrence.

Some surgeons would recommend their patients to use a device called a Therabite or Orastretch to help with post operative mouth opening and joint function. Your surgeon will discuss this with you, if this is the case.

**After discharge:** Eating and drinking instructions will be given to you.

**Time off work:** No driving, signing legal documents or operating heavy machinery for 48 hours after a general anaesthetic. A sick note can be given to you upon discharge. Length of time away from work would be discussed based on expected time for recovery.

**Exercising the new joint:** You will not be able to move your jaw from side to side. Opening your mouth widely will be difficult for the first few weeks. It is important to practice opening and closing the mouth regularly. Exercises will be given to you to help improve your mouth opening.

**Sport:** It is advisable to avoid contact sports and very hard or sticky foods so that the life of the joint is prolonged. Protect the head and site of joint if trauma to the face is expected. Swimming should be avoided for the first four weeks. Discuss other forms of sport with your surgical team beforehand.

**Follow up:** You will be seen on the ward after surgery. An outpatient clinic appointment will be arranged for you with your surgeon after discharge. It is advisable to have regular reviews for up to five years after surgery.

### **General risks and side effects**

Like other surgical procedures, there are some risks involved with joint replacement.

- Pain – recommended pain relief will be given to you. It is advisable you take it regularly for the first few days.
- Bruising – this can affect eyes as well as the surgical sites and can last for several weeks.
- Swelling – Ice packs can be applied and sleeping with your head slightly raised can help reduce it. Swelling can last several weeks.
- Infection – Antibiotics are used during surgery, and several other measures are taken to prevent wound infection. If there is any concern about infection (sudden increase in swelling, redness, pain or discharge) at any time after surgery, you should report immediately to your surgeon.
- Bleeding – usually controlled during surgery. If it happens afterwards, it will be managed by the surgical team.

- Blood clots – measures will be taken during surgery and post-operatively to reduce the risk of blood clots forming.

### **Specific risks and side effects**

You may experience:

- Numbness to your face on the side of the surgery. This usually wears off without any intervention. It can take several months to recover. There is a very small chance it can be permanent. The nerve that supplies feeling to your earlobe can also be affected, resulting in numbness and tingling in that area.
- Weakness to the face. There is a risk that you can have weakness on the side of surgery. This can be temporary (20-30%) or permanent (3%). This can affect the entire side of the face or parts of it. Permanent weakness is defined as no recovery after 12 months.
- Infection of the prosthesis is an uncommon (2%), but serious complication, as it usually results in the joint being removed (and later replaced) and a period of antibiotic treatment,
- It is usual for your bite to feel slightly altered and for you to hear new noises from your new joint. This should not cause you worry.
- Continued pain or no change to pain levels, as TMJ pain is multifactorial and some pain may still come from the muscles around the joint.
- You may experience dysaesthesia, which includes an abnormal and sometimes unpleasant sensation (burning/stinging/itching) in the face.
- Inability to move your jaw from side to side. This is a mechanical property of a TMJR. Currently the design of a TMJR will not allow this movement.
- It is uncommon, but possible for an allergic reaction to components of the joint. Some surgeons may allergy test you prior to surgery.
- Ear problems can occur, including infection, perforation of the drum and inflammation of the ear canal.

### **Taking care of your new joint**

Continue to see your surgeon for follow up appointments and inform of any problems.

It is important to follow post-operative instructions so that your joint functions well.

If you feel like you are clenching or grinding your teeth, this problem needs to be addressed to protect your joint.

### **Dental treatment**

If an inferior alveolar nerve (ID) block or invasive dental procedure (including scaling) is to be provided in the first year after a TMJR, antibiotic prophylaxis should be considered to reduce the risk of infection in the prosthesis. The choice of antibiotics depends on the patient's allergy status and local guidelines. A single pre-procedure dose of co-amoxiclav 625 mg (or clindamycin 600 mg for penicillin-allergic patients) will suffice in most cases.

## **Results**

It is important to note that, while prosthetic joints are designed for durability, there remains a possibility that revision surgery might be required in the future. Revision procedures may be necessary due to factors such as implant wear, loosening, infection, or mechanical failure. The need for revision varies between individuals and can be influenced by activity level, underlying health conditions, and the presence of complications. Early recognition of symptoms that suggest joint problems—such as persistent pain, swelling, or reduced movement—is essential to ensure timely assessment and management.

The life of the prosthetic joint varies from person to person, depending on factors such as use and wear. In general, it is expected not to last a lifetime but on average over 10–20 years. Success rates for TMJR procedures are generally high, with most studies reporting that over 85–90% of patients experience significant improvement in pain and jaw function following surgery.

## **How to contact us / Further information**

Please contact the Oral and Maxillofacial department if you have any questions or need further advice.

## **Useful websites**

Prior to having your TMJ replacement, in order to be fully informed, the following website may be looked at as it may help you make your decision about surgery and help you understand the potential outcomes and evidence around TMJR.

<https://www.nice.org.uk/Guidance/IPG500>

<http://www.zimmerbiomet.co.uk/>

<https://tmjconcepts.com/>

<https://orthotin.com/en/>

<https://www.materialise.com/en>

<https://www.klsmartin.com/de/>

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