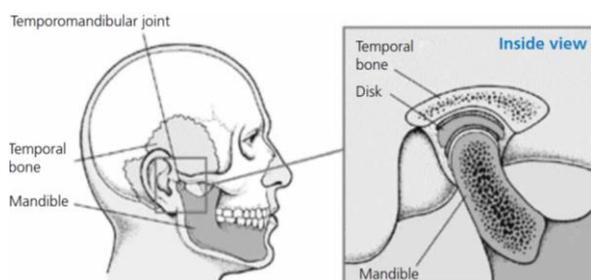


Temporomandibular Joint Disorder (TMJD)

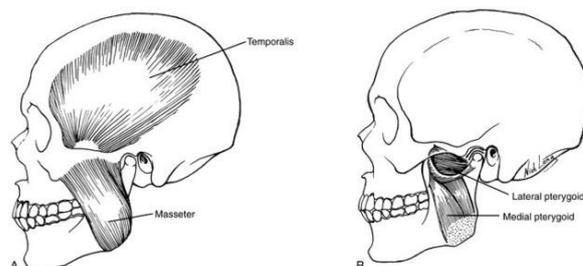
The purpose of this leaflet is to help you understand and manage jaw joint problems.

The Temporomandibular Joints (TMJs) are your jaw joints and are located in front of the ears where the skull and the lower jaw meet. The joints allow the lower jaw to move and function. The joint is made up of two bones that are separated by a disc of cartilage that acts as a barrier. When you open your jaw the disc should move with your lower jaw bone. The TMJs are moved by strong muscles that are attached to the skull and the lower jaw. Your TMJs are involved with eating, talking, breathing and expressing your feelings and facial expression. The TMJs are the most frequently used joints in the body.

Locating the Temporomandibular Joint



Muscles of mastication



What is Temporomandibular Joint Disorder (TMJD)?

Temporomandibular Joint Disorder (TMJD) is the name for several different problems that people can experience with the jaw joints and muscles. They rarely cause any long-term damage. The symptoms often tend to come and go, often feeling worse when you are anxious. Studies show that it does not usually get worse as you get older but is actually one of the few conditions which often seem to get better.

Who gets TMJD?

Around one out of six people in the UK have jaw joint problems and women get them more often than men. You can get problems with your jaw at any age, but most people have them when they're between 20 and 50. It may occur when people are stressed or anxious –for example when studying for exams, moving house or starting a new job. It may also affect those in jobs, where for example it is necessary to talk frequently or hold the jaw in an awkward position – for example musicians. Sometimes more than one member to the family can have TMJD.

Causes of TMJ disorder

TMJD is considered to have 'multifactorial' causes, meaning that there are usually a number of factors contributing to the cause. It is generally caused by imbalances in the muscles, ligaments, teeth and jaw bone. Most common causes include:

- Overuse of the jaw muscles.
- Tooth grinding (bruxism) and/or clenching – really common habits that people often do at night or when they are concentrating and are often unaware of
- Bite problems – for example: missing back teeth which leads to chewing on front teeth, uneven bite or altered chewing pattern to avoid a sore tooth

Contributory factors include:

- Prolonged mouth opening (e.g. dental procedures) or very wide yawn
- Poor neck posture
- High levels of anxiety, stress or depression (work-related, relationship, financial, exam or illness worries). Stress frequently leads to unreleased nervous energy. It is very common for people under stress to release their nervous energy by either consciously or unconsciously grinding or clenching their teeth. Stress does not necessarily cause TMJD, but can increase levels of pain.
- Excessive chewing (eg chewing gum or nail biting)
- Injury to jaw (e.g. blow to the chin) or neck– a heavy blow to the jaw can disrupt the smooth motion of the jaw and causing pain or locking of the jaw.
- Arthritis – causes tear and wear of the jaw joint. This may lead to damage to the cartilage disc.

Other causes of pain in the jaw joint area:

- Cranial arteritis (also known as ‘temporal arteritis’). This usually affects people over age 50, and causes headaches, muscle pains around the shoulders, tiredness or fevers, pain on chewing, and possibly reduced vision. It needs urgent treatment, so if you have this combination of symptoms, and especially with reduced vision, you need to see a doctor immediately.
- Migraines
- ‘Trigeminal neuralgia’ – can also cause a very severe pain on one side of the face
- Problems in the ear can cause pain in the jaw joint area.

TMJ Disorder Symptoms

Jaw joint problems usually occur because of unbalanced activity, spasm, or overuse of the jaw muscles. Symptoms tend to be chronic, and treatment is aimed at eliminating the precipitating factors. Many symptoms may not appear related to the joint itself. Symptoms are often unilateral (one sided), but can be bilateral (both sides). The most common symptoms include:

- Joint noises - clicking/cracking/popping/grinding – most commonly occur when the cartilage disc slips forwards inside your joint and then makes a noise when it returns to its normal position. Sometimes the click or pop can be heard. Usually a second ‘click’ occurs during closing. These noises can be quite normal; they do not indicate damage of the TM joints. They are only relevant if you have other symptoms in the joint such as pain or reduced movement.
- Jaw pain or soreness – usually a dull ache in and around the ear. The pain may radiate, i.e. move forwards along the cheekbone or downwards into the neck and shoulders. Pain is caused by the muscles in and around the jaw joint tightening up. Sometimes the joint itself can be inflamed and painful.
- Earache – approximately 50% of patients with jaw joint problems notice ear pain and do not have signs of ear problems.
- Fullness of the ear – approximately 33% of patients with jaw joint problems describe muffled, clogged or full ears. They may notice ear fullness and pain during airplane takeoffs and landings. These symptoms are

usually caused by Eustachian-tube dysfunction, the structure responsible for the regulation of pressure in the middle ear. It is thought that patients with jaw joint problems have hyperactivity (spasms) of the muscles responsible for regulating the opening and closing of the Eustachian tube.

- Ringling in the ear (tinnitus) – for unknown reasons, 33% of patients with jaw joint problems experience noise or ringing in the ears. Of those patients, half will have a resolution of their tinnitus after successful treatment of their jaw joint problem.
- Reduced jaw movements. This may be a general tight feeling or a sensation of the jaw getting stuck (locking of the jaw). Very rarely, the jaw may get ‘locked’, causing difficulty in opening or closing the mouth. This is usually caused by the spasm of the muscles surrounding the joint. A simple way to see if your mouth opening is limited is by seeing if you are able to comfortably fit the width of three fingers in your mouth.
- Crooked mouth opening – if you watch yourself in the mirror and open you jaw and you find either a deviation or deflection, this is a sign that the TMJ is not functioning properly since the disc is getting stuck during opening.
- Inability to fully clench your jaw, difficulty chewing, talking, yawning
- Headaches, sometimes stiff neck/neck pain, shoulder and/or back pain. Approximately 80% of patients with jaw joint problems complain of headache (often at the temples) and 40% report facial pain.
- Tender jaw muscles – if you have clenching habits (usually at night) – the constant working of these muscles can pull and tug on the joint and displace the disc further.
- Dizziness – 40% of patients with a jaw joint problem report a vague sense of dizziness or imbalance (usually not a spinning type vertigo). The cause of this type of dizziness is not well understood.
- Aching/sensitive teeth.

Jaw joint sufferers are often teeth grinders or clenchers. TMJD symptoms can vary and change over time. Some people experience times of increased symptoms. This does not necessarily mean that the symptoms will remain at this level, or that there is a new problem. It is normal for this to occur in TMJD.

Treatment

Most jaw joint problems will improve spontaneously over a few months. In most people TMJD symptoms improve when the individual learns how best to manage the symptoms. Treatments vary depending on whether you are suffering from muscle pain, derangement of the joint itself or a combination of both. Generally treatment is aimed at relaxing the jaw muscles allowing the cartilage disc to return to a normal position. Studies have shown that up to 90% of all patients will get better with some self-help, exercises and using a customised bite guard (splint) may reduce the tension in their jaw muscles. It is very rare that you need to specialist care in hospital.

Reassurance

Once it has been explained that the condition usually resolves after a period of time, many patients do not need further treatment.

Self-care- you are the key - the more you help yourself, the more effective your treatment.

To help you may like to try

- **Painkillers** – anti-inflammatory medication (Ibuprofen) is good (providing there is no medical reason why these cannot be taken) or use Ibuprofen or Voltarol gel on the outside of the joint and the side of the head. This reduces pain and inflammation when you have a flare-up.
- **Massage** – use a gentle circular motion with your fingers over tender muscles to relieve pain and tension twice daily.
- **Cold packs** for 10 minutes every 3 hours for 72 hours after episodes of severe pain.
- **Heat pad**, such as a hot water bottle (filled with warm, not boiling water) wrapped in a towel for 10-20 minutes every 3 hours. This is helpful to relax tense muscles or topical deep heat cream applied to the painful area.
- **Keep your upper and lower teeth apart when at rest.** Your teeth should only touch when you are chewing, swallowing and sometimes speaking. The correct resting position for your jaw is to have your teeth slightly apart and your tongue resting on the floor of your mouth. This allows your jaw and muscles to rest and relax.
- A **soft diet** (i.e. nothing needing a lot of chewing) is particularly useful when symptoms are more intense – this allows overworked muscles to rest; eat small bites. Once the severe episode has settled it is important to return to normal jaw activity. Jaw muscles need to be used to keep them strong and flexible. It is important not to stay on a soft diet for a long time. Gradually reintroduce harder foods to allow the muscles to adjust.
- **Chew equally on both sides** of the mouth on your back teeth, not the front ones (do not avoid eating on the back teeth of the affected joint); replace missing teeth to balance the bite (if this is appropriate it will be discussed with you).
- **Good posture** – reduces the stresses on the jaw. Shoulders should be relaxed down but not rounded. The neck should be upright and not in a forward position. There is a close link between pain in the neck, head and jaw. Poor posture, particularly head forward posture, can increase the activity in the muscles of the face and neck. It can also affect how the jaw moves and the rest position of the jaw.
- Consider **learning relaxation techniques** to control stress and tension. Try to give yourself 10-15 minutes each day to relax.
- **Identify the events that trigger the pain.** Use a 'pain diary' to review daily activities that aggravate the pain and modify your behaviour accordingly. If you feel your jaw problems are worse when stressed, accept that stress is a problem for you. Try to reduce your exposure to stress or find ways to help relax such as exercise, aromatherapy, massage etc – different things work for and appeal to different people – do what feels right for you.
- Ensure you get a **good night's sleep.** Reduce stimulating activities in the late evening.

To avoid

- Chewing gum.
- Opening your mouth really wide, support your jaw when yawning.
- Prolonged dental work – ask for regular breaks to rest the muscles and joint.
- If your jaw clicks don't keep making it click on purpose just to see if it is better yet.
- Habits such as biting: finger nails, pens and pencils, lips/cheeks/tongue.
- Biting into large items of food (e.g. apples). These should be cut up into small pieces.
- Difficult foods – e.g. crusty bread, toffees.

- Clenching and grinding the teeth when concentrating – remember these habits may be ‘subconscious’ (you may not be aware of them).
- Straining your neck and back with prolonged poor posture, for example, working at a computer or desk, resting your jaw on your hand, holding musical instruments (e.g. violin), cradling the telephone between head and shoulder.
- Prolonged talking, singing.
- Sleeping on your stomach – this may put abnormal forces on your jaw.
- Caffeine –as this can disturb sleep and increase muscle tension.

Jaw Exercises to reprogramme the chewing muscles

- Always do the following exercises slowly and gently, relaxing the muscles as much as possible.
 - If the jaw joints are particularly tender, these exercises can be assisted by giving preliminary warmth. Place a protected hot water bottle first on one joint, then the other, for five minutes on each side before commencing the exercise.
 - Excessive effort must be avoided during the acute phase to prevent further damage to the joint .
 - To be effective, these exercises must be performed regularly.
 - If the exercises seem to be improving your jaw problem they can be carried out more often.
 - Most patients benefit by doing jaw exercises but if they appear to make your jaw problem worse, stop doing them.
1. **Exercise to prevent clicking of the jaw joint** – should be carried out sitting upright in a chair in front of the mirror. The exercise should be performed 3 times a day (at a time when you are relaxed and have nothing on your mind). Once you are used to the exercise you can stop using the mirror and carry out the exercise as often as possible.
 - With your mouth closed and the teeth lightly touching, place the tip of your tongue on the roof of your mouth as far back as possible. Keep the tongue in this position (with the teeth lightly touching) for 10 seconds.
 - A sensation of tension will be noted in the muscles at the base of the tongue, below the chin and in front of your ears (i.e. in your jaw joints).
 - Slowly open your jaw keeping your tongue touching the roof of your mouth as far back as is comfortable. Open the jaw to a comfortable distance until you feel your tongue just being pulled away from the roof of the mouth. Keep it in this position for 10 seconds and then close your mouth. Relax for five seconds.
 - You will notice in the mirror that the lower teeth move vertically downwards – there is no slight movement from side to side as you open your mouth. If the exercise is being carried out correctly, there will be no clicks or noise from the joint. Keep practising, it does get easier.
 - Repeat this manoeuvre slowly over the next 5 minutes in a firm but relaxed fashion.
 - Initially, it may seem to make your pain worse but this will be as a result of unaccustomed exercise.
 - Gradually increase the extent to which the mouth opens until it can be moved to a normal extent without producing a click.
 - Do not be tempted to make the jaw click by doing any ‘funny movements’.
 - During this initial training time be careful with your diet, eat soft foods that require little chewing, cut up apples, etc.

- If this exercise is carried out correctly and regularly over a two to three week period, you will retrain your muscles so that your jaw opens and closes smoothly without clicks or jerks, and any pain that you were experiencing will subside.

2. Re-educate the jaw opening – open your mouth with a hinge movement, ensuring the jaw opens vertically downwards without deviating sideways, this may require you to apply gentle guiding pressure with your hand against your jaw. Repeat this sequence 10 times, 2-3 times daily.

3. Learn the resting position of the jaw – have the lips together and the teeth slightly apart.

After the jaw has become free of pain and you can open smoothly and widely without deviation you can start reducing the frequency of the exercises until you gradually stop doing them.

Splints/mouthguards

Splints are bite guards which you wear at night and they reduce the pressure on the joints and help relax your chewing muscles. These are made from soft or hard plastic and are usually worn over your lower teeth at night. The splint can help reduce clenching or grinding, which eases muscle tension. The appliance must be worn every night for a number of months in order to have the desired effects:

- Cushioning and redirecting the force of the bite, reducing the load on the joint
- Keeping the joint in a slightly open position, which avoids crushing the sensitive tissue behind the cartilage disc
- Increasing the gap between the teeth, allowing the muscles to stretch (reducing spasm)
- Possibly lessening the clenching habit.



Soft bite raising appliance



Hard acrylic bite raising appliance

The splint may make your jaw feel slightly uncomfortable at first and you may spit it out during the night but this should pass as you get used to it. If the splint causes or increases pain, then you should stop using it and see your dentist. The splint also assists the dentist to judge (in broad terms) the extent and pattern of tooth grinding through examination of the wear and tear of the splint.

Dentures – if you have lost teeth, than you may benefit from wearing a denture to improve your bite. If your dentures are old and the chewing teeth are worn, you may need to have them replaced.

Physiotherapy

This can take the form of exercises (see above), manipulation, ultrasound or heat treatment to the joint and/or muscles. It is often effective when the jaw opening pattern needs correcting or if there is painful muscle spasm (with limited mouth opening). It is also very effective if the cause of the problem was an injury.

Medication

This can be divided into pain relievers and muscle relaxants.

- **Pain relievers** (simple medication such as Ibuprofen, Paracetamol) are used to treat acutely painful joints with signs of inflammation. 400 mg Ibuprofen can be taken 4-6 hourly (with food) and is most effective (maximise their anti-inflammatory effect) when taken regularly (every 6 hours) for up to 2 weeks. It can take up to 3-5 days for the anti-inflammatory effect to be realised. Discontinue Ibuprofen if this causes indigestion, you have stomach problems or have been told to avoid it or if it aggravates your asthma. Paracetamol can be taken as a painkiller instead or as well as Ibuprofen (do not exceed 8 Paracetamol tablets in 24 hours). Topical anti-inflammatory gels (Ibuprofen or Voltarol gel) have been shown to be as beneficial for superficial joints as tablets (with fewer side effects). The gel should be used over the painful area/s regularly four times a day for a 4-week period in the first instance.
- **Muscle relaxants** (diazepam) are used to treat stiff and painful muscles. Most of them tend to relax patients generally and some can cause drowsiness. You will usually be prescribed this if you are in a lot of pain, and you can only take it for a short time (usually 2 weeks). This is because it can be addictive if you take it for longer periods. However, because many patients are under stress of some kind, they may benefit from this kind of medication.
- Medicines to help treat depression (**antidepressants**) may also help to relieve pain. They can also relax the muscles of your jaw joint. You will normally be prescribed a lower dose than the usual dose needed to treat depression.

Counselling

As already stated, stress is a very important component in many patients. One of the most effective means of help is to understand that you may be under stress and to try and come to terms with it. Many patients feel better as a result of knowing this.

Complementary therapies

Some people try acupuncture to help relieve the symptoms of jaw joint problems. This may be useful in relieving jaw joint pain.

Surgery

Surgery is only carried out in a small number of cases. Failure to respond to conservative treatments, for example, does not automatically mean that surgery is necessary. This can involve manipulation of the joint whilst you are asleep or a washing out of the joint.

Summary

The overall aim of treatment is to allow you to understand the nature of the condition, so that you are able to manage your own symptoms and prevent them from recurring. It is important to remember that jaw joint problems, although a nuisance, are not sinister and the vast majority settle with the use of simple management techniques, over a period of months, as described above. Occasionally jaw joint problems can return in which case completing the methods in this leaflet should ease them again. Please do not hesitate to speak with your dentist if you have any questions, they will be happy to answer them for you.