

# Temporo-mandibular joint (TMJ)



The temporo-mandibular joint (TMJ) is the joint where the mandible (the lower jaw) joins the temporal bone of the skull, immediately in front of the ear on each side of the head. Each time you chew, talk or swallow (every minute or so) you move the joint. It is one of the most frequently used joints in the body.

You can locate that joint by putting your finger on the triangular structure in front of your ear. Then move your finger just slightly forward and press firmly while you open your jaw all the way open and shut. The motion you feel is in the temporo-mandibular joint. You can also feel the joint portion if you put your little finger down into your ear canal with the fingernail backwards. Then press forward as you open and close your jaw again.

These manoeuvres can cause considerable discomfort to a patient who has temporo-mandibular joint dysfunction. Physicians perform these to diagnose dysfunction.

## How does the temporo-mandibular joint work?

When you bite down forcefully, you not only put force on the object between your teeth, but also on the joint. But more force is applied to the joint surface than to whatever is in your teeth. To accommodate for such forces and prevent too much wear and tear occurring in one spot within the joint space, the joint was designed to be a sliding joint, rather than the usual ball and socket joint (such as the hip and shoulder). The forces of chewing can be distributed over a wider surface in the joint space, which reduces the wear and tear and allows healing to rapidly occur in between chewing times. Joints are lined with cartilage, which is a rubbery, slippery material that allows for smooth motion.

## How can things go wrong with the temporo-mandibular joint?

If you habitually grit, grind your teeth, chew gum all day or chew on one side of your mouth, you increase the wear on the cartilage lining of the joint. If you chew habitually on one side of your mouth, you concentrate all the pressure on one side rather than equally on both sides. And too much wear occurs on the joint of that side. This often occurs if you have a tooth problem on one side, or recent dental work, which causes you to favour one side over the other.

Teeth that do not fit together properly are often at fault. This is called an improper 'bite'. Imagine how much extra pressure the TMJ must endure during each chew when teeth on one side come together before those on the opposite side do. In each of the above circumstances, a faulty chewing pattern takes place that creates one focus of wear in the cartilage lining of the joint space. When that spot wears down to the nerve endings, pain arises. A form of arthritis occurs (traumatic type) which is called TMJ dysfunction (dysfunction means faulty or painful function).



## What does temporo-mandibular joint dysfunction feel like?

The pain may be sharp and occur each time you swallow, yawn, talk or chew, or it may be dull and constant. The usual focus of pain is over the joint, immediately in front of the ear, but pain can also radiate elsewhere. The pain often causes spasm in the adjacent muscles, which are attached to the bones of the skull, face and jaws, so the pain can be felt at the side of the head (the temple), the cheek, the lower jaw and the teeth.

Many patients come to the ear specialist quite convinced their pain is from an ear infection. When the doctor cannot find any abnormality in the ear to account for a person's earache, he/she will consider whether the pain is related to TMJ dysfunction. There are a few other symptoms besides the pain that TMJ dysfunction can cause. In some patients the TMJs make popping, clicking or grinding sounds when the jaws are opened widely. Or they can lock wide open (dislocate), or, at the extreme, they can prevent the jaws from fully opening up. Some people get ringing in their ears from TMJ. This is an exaggeration of the ear ringing that most people can normally produce by clenching their teeth together hard.

## What can be done for temporo-mandibular joint dysfunction?

If a mild case is detected fairly early, it will probably respond to these remedies:

1. Chew evenly, left vs right.
2. Stop clenching, gritting or grinding your teeth.
3. Stop chewing gum.
4. Avoid hard, chewy foods.

**Items one to four** are intended to reduce the amount of wear and injury that the joint suffers.

5. Apply a heating pad for half an hour at least twice daily.
6. Take aspirin (or buffered aspirin) or other anti-inflammatory medicines in a dose your doctor recommends.

**Items five to six** encourage the healing process. Aspirin and other anti-inflammatory medicines are very effective for reducing the inflammation in joints, which is why patients use them for arthritis as well as relieving temporo-mandibular joint dysfunction.

Checking for dental problems and readjusting your bite can help. Stubborn cases of temporo-mandibular joint dysfunction may require further consultation with an oral surgeon or dentist. Your dentist can fit you with a splint to open your bite and decrease bruxism (grinding your teeth while sleeping).

**Disclaimer** This document describes the generally accepted practice at the time of publication only. It is only a summary of clinical knowledge regarding this area. The Royal Victorian Eye and Ear Hospital makes no warranty, express or implied, that the information contained in this document is comprehensive. They accept no responsibility for any consequence arising from inappropriate application of this information. Temporomandibular joint #118 | Owner: ENT | Last published: 23/07/15 | Next review: 23/07/17

