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TEMPOROMANDIBULAR JOINT (TMJ) DISORDERS

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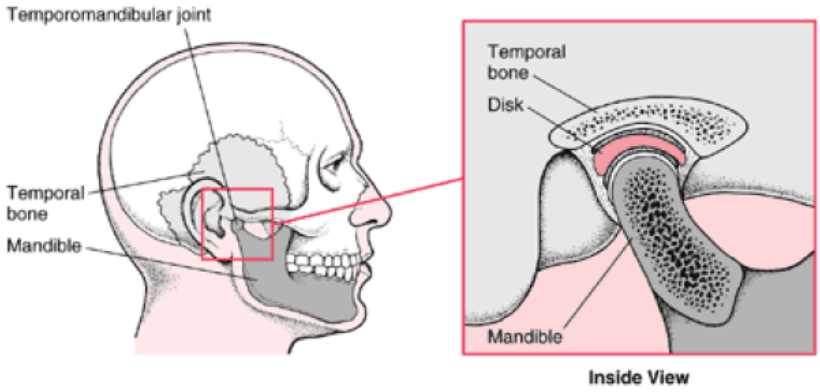
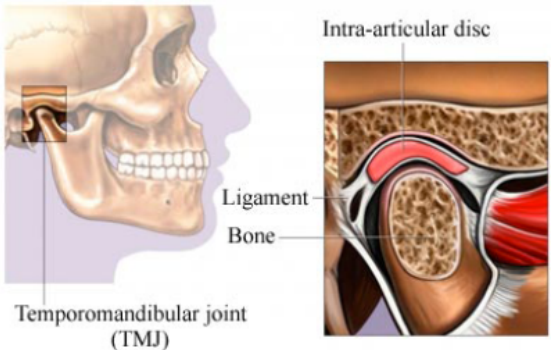
The temporomandibular joint is the connection between the temporal bone of the skull and the lower jawbone (mandible). There are two temporomandibular joints, one on each side of the face just in front of the ears. Ligaments, tendons, and muscles support the joints and are responsible for jaw movement.





The temporomandibular joint is one of the most complicated joints in the body - it opens and closes like a hinge and slides forward, backward, and from side to side. During chewing, it sustains an enormous amount of pressure. The temporomandibular joint contains a piece of special cartilage called a disk that keeps the skull and the lower jawbone from rubbing against each other.

MAIN TYPES

Experts generally agree that temporomandibular disorders fall into three main categories:

1. **Myofascial pain** (most common form of TMD, which is discomfort or pain in the muscles that control jaw function and the neck and shoulder muscles)
2. **Internal derangement of the joint** (meaning a dislocated jaw or displaced disc, or injury to the condyle)
3. **Degenerative joint disease** (such as osteoarthritis or rheumatoid arthritis in the jaw joint)

A person may have one or more of these conditions at the same time.

INCIDENCE

Temporomandibular disorders, often called TMJ disorders (temporomandibular joint disorders), are most common in women in their early 20s and between the ages of 40 and 50 (in rare cases, babies are born with temporomandibular joint abnormalities).

Between 5 percent and 15 percent of people in the United States experience pain associated with TMJ disorders, according to the National Institute of Dental and Craniofacial Research (NIDCR), part of the National Institutes of Health.

Both males and females can get TMJ disorders. However, 90% of those seeking treatment for TMJ are women, most between puberty and menopause. Recent research has focused attention on the relationship between sex hormones and pain. A study conducted by Dr Linda LeResche, University of Washington in Seattle, demonstrated that women on hormone replacement therapy were 77% more likely to seek treatment for jaw pain than those not undergoing such treatment. Also, women on oral contraceptive therapy were 19% more likely to seek treatment. Evidence is emerging in support of a biological explanation for why there are more women suffering from TMJ pain.

A possible explanation is structural differences, as in connective tissues, smooth muscle, or cartilage. Several other studies find an equal distribution of TMJ symptoms among men and women yet claim that females out number males eight to one in seeking treatment. There is wide speculation as to why this is true. Some feel women utilize the health care system more than men do; others state that women have a lower tolerance for pain. However, since women most affected by TMJ are between the ages of 18 and 40, it stands to reason that detailed scientific studies should be carried out to assess the influencing effect of female sex hormones on the development of the jaw joints and temporomandibular joint disorders. In studies with baboons, oestrogen receptors were found in the females' TMJs, but none were found in the males. Scientists are unsure whether the presence or absence of hormones makes a difference in pain, the perception of pain, or function.

Temporomandibular disorders include problems with the joints, the muscles surrounding them, or both.

CAUSES

Most often, the cause of a temporomandibular disorder is a combination of muscle tension and anatomic problems within the joints. Sometimes, there is a psychological component as well. Specific causes include muscle pain and tightness, internal joint derangement, arthritis, ankylosis, and hypermobility.

Myofascial Pain:

Muscle pain and tightness around the jaw come mainly from muscle overuse, often brought on by problems of misalignment of the upper and lower sets of teeth, missing teeth, injury to the head or neck, or even toothache.

The following are behaviors or conditions that can lead to TMJ disorders:

- Teeth grinding and teeth clenching (bruxism) increase the wear on the cartilage lining of the TMJ. Patients may be unaware of this behavior unless they are told by someone observing this pattern while sleeping or by a dental professional noticing telltale signs of wear and tear on the teeth. Many patients awaken in the morning with jaw or ear pain. Clenching or grinding the teeth (bruxism) at night is due to psychological or sleep related stress. Clenching and grinding while asleep exert far more force than clenching and grinding while awake.
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- Habitual gum chewing or fingernail biting.
- Dental problems and misalignment of the teeth (malocclusion). Patients may complain that it is difficult to find a comfortable bite, or that the way their teeth fit together has changed. Chewing on only one side of the jaw can lead to or be a result of TMJ problems.
- Trauma to the jaws. Previous history of broken jaw or fractured facial bones.
- Stress frequently leads to unreleased nervous energy. It is very common for people under stress to release this nervous energy by either consciously or unconsciously grinding and clenching their teeth.
- Occupational tasks such as holding the telephone between the head and shoulder.

Internal Joint Derangement:

In internal joint derangement, the disk inside the joint lies in front of its normal position. Internal joint derangement can occur with or without reduction. In internal joint derangement with reduction, which is the more common type (occurring in about one third of the adult population), the disk lies in front of its normal

position only when the mouth is closed. As the mouth opens and the jaw slides forward, the disk slips back into its normal position. As the mouth closes, the disk slips forward again. In internal joint derangement without reduction, the disk never slips back into its normal position, and the degree to which the mouth can be opened is limited.

Arthritis:

Arthritis in a temporomandibular joint may result from osteoarthritis, rheumatoid arthritis, infectious arthritis, or injury, particularly injury that causes bleeding into the joint. Such injuries are fairly common in children who are struck on the side of the chin.

Osteoarthritis, a type of arthritis in which the cartilage of the joints degenerates (*see Osteoarthritis (OA)*), is most common in older people. The cartilage in the temporomandibular joints is not as strong as the cartilage in other joints. Osteoarthritis occurs mainly when the disk is missing or has developed holes.

Rheumatoid arthritis, a disease in which the body attacks its own cells (an autoimmune disease), causing inflammation (*see Rheumatoid Arthritis and Other Types of Inflammatory Arthritis: Rheumatoid Arthritis (RA)*), affects the temporomandibular joint in only about 17% of people with this type of arthritis. The temporomandibular joint generally is the last joint to be affected by rheumatoid arthritis.

Infectious arthritis is caused by an infection that has spread from an adjoining area of the head or neck or that has been carried by the bloodstream from another part of the body (*see Bone and Joint Infections: Infectious Arthritis*).

Ankylosis:

Ankylosis is loss of joint movement resulting from fusion of bones within the joint or calcification (the deposit of calcium into body tissues) of the ligaments around it.

Hypermobility:

Hypermobility (looseness of the jaw) results when the ligaments that hold the joint together become stretched. In hypermobility, dislocation is usually caused by the shape of the joints, ligament looseness (laxity), and muscle tension. It may be caused by trying to open the mouth too wide or by being struck on the jaw.

SYMPTOMS

Common symptoms include:

- **Headache:** 80% of patients with a TMJ disorder complain of headache, and 40% report facial pain. Pain is often made worse while opening and closing the jaw. Exposure to cold weather or air-conditioned air may increase muscle contraction and facial pain.
- **Ear pain:** 50% of patients with a TMJ disorder notice ear pain but do not have signs of infection. The ear pain is usually described as being in front of or below the ear. Often, patients are treated multiple times for a presumed ear infection, which can often be distinguished from TMJ by an associated hearing loss or ear drainage (which would be expected if there really was an ear infection). Because ear pain occurs so commonly, ear specialists are frequently called on to make the diagnosis of a TMJ disorder.
- **Sounds:** Grinding, crunching, or popping sounds, medically termed crepitus, are common for patients with a TMJ disorder. These sounds may or may not be accompanied by increased pain.
- **Dizziness:** 40% of patients with a TMJ disorder report a vague dizziness or imbalance (usually not a spinning type vertigo). The cause of this type of dizziness is not well understood.
- **Fullness of the Ear:** 33% of patients with a TMJ disorder 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 TMJ disorders have hyperactivity (spasms) of the muscles responsible for regulating the opening and closing of the Eustachian tube.
- **Ringing in the Ear - Tinnitus:** Because of a complex neurological interaction between the TMJ joint and the facial and vagus nerve, 33% of patients with a TMJ disorder experience noise or ringing (tinnitus). Of those patients, half will have resolution of their tinnitus after successful treatment of their TMJ.

Other symptoms include:

- facial pain, jaw joint pain, often in combination with neck, shoulder, back pain and/or headaches
- popping, grating or clicking sounds with movement of the jaw joint
- pain in the joints of the face when opening or closing the mouth, yawning, or chewing
- swelling on the side of the face and/or mouth
- a bite that feels uncomfortable, "off," or as if it is continually changing

- limited opening or inability to open the mouth comfortably. People with temporomandibular disorders have difficulty opening their mouth wide. For example, most people without temporomandibular disorders can place the tips of their index, middle, and ring fingers held vertically in the space between the upper and lower front teeth without forcing. For people with temporomandibular disorders (with the exception of hypermobility), this space usually is markedly smaller.
- deviation of the jaw to one side
- the jaw locking open or closed
- disrupted sleep

Myofascial pain

People with muscle pain usually have very little pain in the joint itself. Rather, they feel pain and tightness on the sides of the face upon awakening or after stressful periods during the day. Night-time clenching and grinding of the teeth may cause a person to wake up with a headache, which may slowly diminish over the day. As the jaw opens, it may move slightly (deviate) to one side or the other. The chewing muscles are typically tender to the touch.

Internal joint derangement

Internal joint derangement with reduction usually causes a clicking or popping sound in the joint when the mouth opens wide or the jaw shifts from side to side. In many people, these joint sounds are the only symptoms. However, some people experience pain, particularly when chewing hard foods. In a small percentage of people who have missing teeth and who grind their teeth, these sounds progress to locking of the joints.

Internal joint derangement without reduction usually produces symptoms of pain and makes it difficult for people to open their mouth wide, as is typical of most temporomandibular disorders. After 6 to 12 months, the pain may decrease, but the limited degree to which the mouth can be opened generally persists.

Arthritis

With osteoarthritis, because it occurs mainly when the disk is missing or has developed holes, the person feels a grating sensation in the temporomandibular joints when opening and closing the mouth. When osteoarthritis is severe, the top of the jawbone flattens out, and the person cannot open the mouth wide. The jaw may also shift toward the affected side, and the person may be unable to move it back.

Rheumatoid arthritis usually affects both temporomandibular joints equally, which is rarely the case in other types of temporomandibular disorders. When rheumatoid arthritis is severe, especially in young people, the top of the jawbone may degenerate and shorten. This damage can lead to sudden misalignment of many or all of the upper and lower teeth. If the damage is severe, the jawbone may eventually fuse to the skull (ankylosis).

Ankylosis

Typically, calcification (the deposit of calcium into body tissues) of the ligaments around the joint (extra-articular ankylosis) is not painful, but the mouth can open only about 1 inch or less. Fusion of bones within the joint (intra-articular ankylosis) causes pain and more severely limits jaw movement.

Hypermobility

In a person with hypermobility, the jaw may slip forward completely out of its socket (dislocate), causing pain and an inability to close the mouth. Dislocation may occur suddenly and repeatedly.

DIAGNOSIS

A surgeon almost always diagnoses a temporomandibular disorder based solely on a person's medical history and on a physical examination. Part of the examination involves gently pressing on the side of the face or placing the little finger in the person's ear and gently pressing forward while the person opens and closes the jaw. Also, the doctor gently presses on the chewing muscles to detect pain or tenderness and notes whether the jaw slides when the person bites.

When a doctor suspects internal joint derangement, further tests can be done. Magnetic resonance imaging (MRI) is now the gold standard with which doctors assess whether internal joint derangement has occurred or to find out why a person is not responding to treatment. Doctors occasionally use electromyography (*see Diagnosis of Brain, Spinal Cord, and Nerve Disorders: Electromyography*), which analyses muscle activity, to monitor treatment and, less commonly, to make a diagnosis. Laboratory tests are rarely useful.

A doctor suspects osteoarthritis when a creaking sound is heard when the person opens his mouth (crepitus). X-rays and a computed tomography (CT) scan can confirm the diagnosis. Infectious arthritis may be suspected when the area over and around the temporomandibular joint is inflamed and when movement of the joint is

painful and limited. Infection in another part of the body serves as a clue as well. To confirm the diagnosis of infectious arthritis, the doctor may insert a needle into the temporomandibular joint and withdraw fluid (aspiration), which is then analysed for bacteria.

If hypermobility is the cause, the person generally can open the mouth wider than the breadth of three fingers; the jaw may be chronically dislocated. If ankylosis is the cause, the jaw's range of motion tends to be markedly reduced.

TREATMENT

Treatment varies considerably according to the cause.

Myofascial pain

Basic treatments

- **Apply moist heat or cold packs.** Apply an ice pack to the side of your face and temple area for about 10 minutes. Do a few simple stretching exercises for your jaw (as instructed by your dentist or physical therapist). After exercising, apply a warm towel or washcloth to the side of your face for about 5 minutes. Perform this routine a few times each day.
- **Avoid extreme jaw movements**. Keep yawning and chewing (especially gum or ice) to a minimum and avoid extreme jaw movements such as yelling or singing.
- Don't rest your chin on your hand or hold the telephone between your shoulder and ear.
- Practice good posture to reduce neck and facial pain.
- Keep your teeth slightly apart as often as you can to relieve pressure on the jaw. To control clenching or grinding during the day, place your tongue between your teeth.

Eat soft foods

Eat soft foods such as yogurt, mashed potatoes, cottage cheese, soup, scrambled eggs, fish, cooked fruits and vegetables, beans and grains. In addition, cut foods into small pieces to decrease the amount of chewing required. Avoid hard and crunchy foods (like hard rolls, pretzels, raw carrots), chewy foods (like caramels and taffy) and thick and large foods that require your mouth to open wide to fit.

Wear a splint or night guard

Splint therapy is usually the main treatment for jaw muscle pain and tightness. For people who realize that they clench or grind their teeth, splint therapy can help them break the habit. A thin plastic splint is made to fit over either the upper or the lower set of teeth and is adjusted to give the person an even bite. The splint, usually worn at night (a nightguard), reduces grinding, allowing the jaw muscles to rest and recover. For pain during the day, a splint allows the jaw muscles to remain relaxed and the bite to be stable, thereby reducing discomfort. The splint can also prevent damage to teeth that are under exceptional stress from the grinding. Day splints are worn only until symptoms subside, usually fewer than 8 weeks. Longer use may be warranted depending on the severity of symptoms.

Physical therapy

Physical therapy may also be prescribed. Physical therapy may involve ultrasound treatment, electromyographic biofeedback (in which the person learns to relax the muscles), spray and stretch exercises (in which the jaw is stretched open with a passive jaw motion device after the skin over the painful area has been sprayed with a skin refrigerant or numbed with ice), or friction massage. Transcutaneous electrical nerve stimulation (TENS) may also help. Stress management, sometimes along with electromyographic biofeedback, often brings dramatic improvement.

Physical therapy for jaw muscles

- **Ultrasound** is a method of delivering deep heat to painful areas. When warmed by the ultrasound, the blood vessels dilate, and the blood can more quickly carry away the accumulated lactic acid, a muscle waste product that may cause pain.
- **Electromyographic biofeedback** monitors muscle activity with a gauge. The person attempts to relax the entire body or a specific muscle while watching the gauge. In this way, the person learns to control or relax particular muscles.
- **Spray and stretch exercises** involve spraying a skin refrigerant over the cheek and temple, so the jaw muscles can be stretched.
- **Friction massage** consists of rubbing a rough towel over the cheek and temple to increase circulation and speed-up the removal of lactic acid.

Other treatment options

When the basic treatments listed above prove unsuccessful, your surgeon may suggest one or more of the following:

- **Transcutaneous electrical nerve stimulation (TENS)** - Transcutaneous electrical nerve stimulation (TENS) involves using a device that stimulates the nerve fibres that do not transmit pain. The resulting impulses are thought to block the painful impulses that the person has been feeling. This treatment can be done at the surgeon's office or at home.
- **Trigger-point injections** - Pain medication or anaesthesia is injected into tender facial muscles called "trigger points" to relieve pain.
- **Radio wave therapy** - Radio waves create a low-level electrical stimulation to the joint, which increases blood flow. The patient experiences relief of pain in the joint.
- **Relaxation techniques** - Learn relaxation techniques to help control muscle tension in the jaw. Ask your dentist about the need for physical therapy or massage. Consider stress reduction therapy including biofeedback.

Undergo corrective dental treatments

Replace missing teeth, use crowns, bridges or braces to balance the biting surfaces of your teeth or to correct a bite problem.

Take medication

To relieve muscle pain and swelling, try non-steroidal anti-inflammatory drugs (NSAIDs), such as aspirin or ibuprofen, which can be bought over-the-counter. Your surgeon can prescribe higher doses of these or other NSAIDs or other drugs for pain such as narcotic pain relievers. Muscle relaxants, especially for people who grind or clench their teeth, can help relax tight jaw muscles. Anti-anxiety medications can help relieve stress that is sometimes thought to aggravate TMJ disorders. Antidepressants, when used in low doses, can also help reduce or control pain. Muscle relaxants, anti-anxiety drugs and antidepressants are available by prescription only.

Regardless of the type of treatment, most people experience significant relief within about 3 months. If the symptoms are not severe, many people recover without treatment within 2 to 3 years.

INTERNAL JOINT DERANGEMENT

In internal joint derangement with or without reduction, treatment is needed only if a person has jaw pain or trouble moving the jaw. If a person seeks treatment right after symptoms develop, a dentist or doctor may be able to manually move the disk back into its normal position. If a person has had the disorder for fewer than 3 months, a splint may be applied to hold the lower jaw forward. This splint keeps the disk in position permitting the supporting ligaments to tighten. Over 2 to 4 months, the splint is adjusted to allow the jaw to return back to its normal position, with the expectation that the disk will remain in place.

A person with internal joint derangement with or without reduction should avoid opening the mouth wide - for instance, when yawning or biting into a thick sandwich because injured joints are not as protected in these activities as would be a normal jaw. People with this disorder are advised to cut food into small pieces and to eat food that is easy to chew.

Sometimes the slipped disk becomes stuck in front of the temporomandibular joint, preventing the jaw from opening fully. The disk must then be manually moved out of position to allow the joint to move fully. Passive jaw motion devices, which stretch the jaw, have been used to slowly increase jaw motion. These devices are used several times a day. One such device is a threaded screw-type instrument that is placed between the front teeth and turned, much like a car jack, to gradually create a wider opening. If such a device is not available, then a doctor may use a stack of tongue depressors placed between the front teeth, with an additional tongue depressor being added to the middle of the stack.

If internal joint derangement cannot be treated by non-surgical means, an oral-maxillofacial surgeon may need to reshape the disk and sew it back into place. However, the need for traditional surgery is relatively rare since the introduction of procedures such as arthroscopy. All surgical procedures are used in combination with splint therapy.

SURGERY

Surgery should only be considered after all other treatment options have been tried and you are still experiencing severe, persistent pain.

There are three types of surgery for TMJ disorders - arthrocentesis, arthroscopy and open-joint surgery. The type of surgery needed depends on the TMJ problem.

Arthrocentesis

This is a minor procedure performed in theatre under general anaesthesia. It is performed for sudden-onset, closed lock cases (restricted jaw opening) in patients with no significant prior history of TMJ problems. The surgery involves inserting needles inside the affected joint and washing out the joint with sterile fluids. Occasionally, the procedure may involve inserting a blunt instrument inside of the joint. The instrument is used in a sweeping motion to remove tissue adhesion bands and to dislodge a disc that is stuck in front of the condyle (the part of your TMJ consisting of the "ball" portion of the "ball and socket").

Arthroscopy

Patients undergoing arthroscopic surgery first are given general anaesthesia. The surgeon then makes a small incision in front of the ear and inserts a small, thin instrument that contains a lens and light. This instrument is hooked up to a video screen, allowing the surgeon to examine the TMJ and surrounding area. Depending on the cause of the TMJ disorder, the surgeon may remove inflamed tissue or realign the disc or condyle.

Compared with open surgery, this surgery is less invasive, leaves less scarring, and is associated with minimal complications and a shorter recovery time. Depending on the cause of the TMJ disorder, arthroscopy may not be possible, and open-joint surgery may be necessary.

Open-joint surgery

Patients undergoing open-joint surgery are first given a general anaesthesia. Unlike arthroscopy, the entire area around the TMJ is opened so that the surgeon can get a full view and better access. There are many types of open-joint surgeries. This treatment may be necessary if:

- The bony structures that comprise the jaw joint are deteriorating
- There are tumours in or around your TMJ
- There is severe scarring or chips of bone in the joint

Compared with arthroscopy, open-joint surgery results in a longer healing time and there is a greater chance of scarring and nerve injury.

Arthritis

A person with osteoarthritis in a temporomandibular joint need to rest the jaw as much as possible, use a splint or other device to control muscle tightness, and take an analgesic (such as aspirin, acetaminophen, or another non-steroidal anti-inflammatory drug) for pain. The pain usually goes away in 6 months with or without treatment. Even without treatment, most of the symptoms subside, probably because the bond of tissue behind the disk becomes scarred and functions like the original disk. Usually, jaw movement is sufficient for normal activities, though the jaw may not open as wide as it used to.

Rheumatoid arthritis of the temporomandibular joint is treated with the drugs used for rheumatoid arthritis of any joint (*see Rheumatoid Arthritis and Other Types of Inflammatory Arthritis: Drugs Used to Treat Rheumatoid Arthritis*). Maintaining joint mobility and preventing fusion of the joint are particularly important. Usually, the best way to accomplish these goals is by exercising the jaw under a physical therapist's direction. To relieve symptoms, particularly muscle tightness, the person wears a splint at night that does not restrict jaw movement. If joint fusion freezes the jaw, the person may need surgery and, in rare cases, an artificial joint to restore jaw mobility.

Infectious arthritis is treated with antibiotics. Penicillin is usually the antibiotic used initially, until test results determine the type of bacteria present and thus the best antibiotic to use. Pus in the joint, if present, may be removed with a needle.

Ankylosis

Occasionally, stretching exercises help people with calcification, but people with calcification or bone fusion usually need surgery to restore jaw movement.

Hypermobility

Prevention and treatment of dislocation resulting from hypermobility are the same as those for other causes of a dislocated jaw (*see Urgent Dental Problems: Jaw Dislocation*). When dislocation occurs, a helper is sometimes needed to snap the jaw back into position. Many people who experience repeated dislocations, however, learn how to manoeuvre the joint back into place themselves by consciously relaxing the muscles and lightly shifting the lower jaw until it pops back into place. Surgery to tighten the ligaments of the temporomandibular joint is sometimes necessary to prevent recurrent dislocations.

SOME CONDITIONS THAT MIMIC TEMPOROMANDIBULAR DISORDERS

Symptom	Condition
Headaches	Sinusitis Temporal arteritis Tension, migraine and cluster headaches
Pain	Postherpetic neuralgia Reflex sympathetic dystrophy or traumatic neuroma after head or neck surgery Toothache Trigeminal neuralgia
Pain accompanies by hearing problems	Obstruction of the ear canals or eustachian tube Otitis media
Pain in the head, neck and other areas of the body **Pain, numbness**	Fibromyalgia Generalised myofascial pain Intracranial aneurysm Metastatic tumours
Pain that radiates to the temporomandibular joint region	Whiplash injuries affecting muscle or cervical spine
Pain that worsens when the patient swallows or turns their head	Cervical spine or muscle disorders Eagle syndrome (calcified styloid process) Glossopharyngeal neuralgia Subacute thyroiditis
Trismus	Depressed fracture of the zygomatic arch Infection Osteochondroma of the coronoid process Pericoronitis

FREQUENTLY ASKED QUESTIONS ABOUT TMJ SYMPTOMS

What are the most important symptoms I should be concerned about?
Pain, and or Jaw "locking" episodes

What is a "locking" episode?
A "locking" episode can occur during opening or closing movement. What happens is that the patient experiences an interruption of jaw movement - a "catch" or a "stop" and in order to complete the movement must jiggle, or somehow, self-manipulate the jaw.

Why does it happen?
Referring back to an anatomy lesson, and in the simplest of terms, what is happening within the joint is that the articular disk which rides on top of the condyle head is getting stuck in the wrong place and is preventing the condyle head from moving.

If I can jiggle my jaw and reduce the dislocation, why should I be concerned?
Because each time it happens more damage is occurring to the tissues in the joint, and the tissues controlling the articular disk. As a consequence there is the risk that if the problem is not addressed by appropriate treatment, one day you will be unable to reduce the dislocation yourself, and you will require an emergency visit to a TMJ practitioner, if one is available in your community, or an oral surgeon. In severe cases, reduction can only be accomplished under general anaesthesia.

What is a limited range of opening?
If you open your mouth as wide as you can, and then place the last three fingers of your hand (middle, ring, and pinkie) perpendicularly (with your thumb pointing to the ceiling) between your upper and lower teeth, you have a normal range of opening, provided that you can do that without pain and st ra in. In general, two fingers, or less, is a limit ed range of opening.

I can get four fingers in. What does that mean?
Not much. You may either have thin fingers, or you have slight hyper-extension. In the absence of pain, and other symptoms, not to worry.

I can only get two fingers in, does that mean I need treatment?
Here comes a typical doctor's answer - "that depends". It depends on several factors. The most important being, to what degree is this restricted jaw function affecting your quality of life. If you have no pain, and it is the ONLY symptom you have, and you never think about it, and you can eat anything you want without pain and strain. The answer is no. Otherwise the answer is yes.

I hear a lot of noises in my TM Joints when I move my jaws. Sometimes there is a kind of click, and sometimes there is a crunching or grinding sound. What's happening?
Probably lots of things. Joint noises during jaw movements are a sign that the functional elements are not working smoothly. Crunching grinding noises are called crepitus, and it is associated with hard tissue contact during movement. In order to explain *clicking*, you have to first know that the articular disk has, what is most simply described as a depression, in the middle of it. That depression, and the condyle head are supposed to move together in sync. When they don't, and the condyle head passes over the outside ridge of the depression, you get a click.

Is the presence of these joint sounds serious?
Again, in the absence of other symptoms, no. But these joint sounds are a sign that the joint is not functioning smoothly, and each sound's occurrence is a micro trauma to the joint tissues. This means that as time goes on, a full-blown TMJ disorder may develop. The correct approach, if you have TM joint sounds during jaw movements in the absence of all other symptoms, is to tell your regular family dentist about them, and he will keep your condition under observation.

Why are ear symptoms associated with TM joint disorders?
Because of the close proximity of the ear tissues to the TM joint. It is not uncommon to find on x-ray that the condyle head is improperly positioned in the joint space such that it is in intimate contact with the tympanic bone. The consequence often is ear pain in the absence of infection, a sense of fullness, or stuffiness, in one or both ears, and sometimes ringing in the ears.

This document is a compilation of information obtained from the following websites:
- www.merck.com/mmhe/sec08/ch116/ch116a.htm1
- www.webmd.com/a-t o-z-guides/temporomandibular-disorders
- www.merck.com/mmpe/sec08/ch097/ch097a.html
- www.becomehealthynow.com/article/conditionmusculo/650/2/