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Temporomandibular Joint Disorders

TREATING YOUR TMJ DISORDER

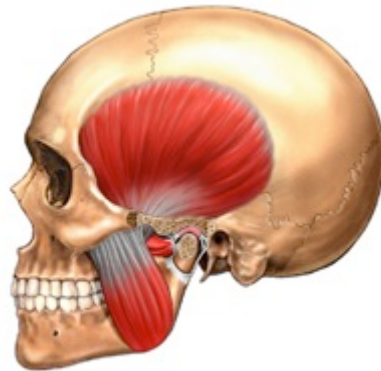
TMJ (temporomandibular joint) disorders are a family of problems related to your complex jaw joint. If you've had symptoms like pain or a clicking sound, you'll be glad to know that these problems are more easily diagnosed and treated than they were in the past. Since some types of TMJD problems can lead to more serious conditions, early detection and treatment are important. No one treatment can resolve TMJ disorders completely, and treatment takes time to be effective. But with the help of your health care team, you're more likely to have a healthier and more comfortable jaw.

Trouble with Your Jaw

TMJ disorders develop for many reasons. You might clench or grind your teeth, tightening your jaw muscles and stressing your temporomandibular joint. Or, you may have a damaged jaw joint due to injury or disease. Whatever the cause, the results may include a misaligned bite, pain, clicking or grating noises when you open your mouth, or trouble opening your mouth wide.

Restoring the Harmony in Your Jaw

There's no simple prescription for your TMJ disorder. Restoring your jaw's harmony may include several kinds of treatment to reduce muscle tension or rest to heal your jaw joint.



Understanding TMJ Disorders	Your Dental and Medical Evaluation	Your Treatment Program
When you understand the anatomy involved in your TMJ disorder, you can better understand your role in relieving your symptoms.	An evaluation confirms a diagnosis of TMJ disorder. It also clarifies the causes of your disorder, helping to set the stage for treatment.	Treatment works best with a team approach of self-care and professional care . Treatment may take time and include many options.

IS TMJ DISORDER A PROBLEM FOR YOU?

You can have a TMJ disorder for a long time without realizing it. That's because some of the symptoms, such as worn teeth or headaches, may seem unrelated to your jaw joints and muscles. Is TMJ disorder causing you problems? Begin to find out by asking yourself these questions.

- Are you aware of grinding or clenching your teeth?
- Do you wake up with sore, stiff muscles around your jaws?
- Do you have frequent headaches or neck aches? Does the pain get worse when you clench your teeth?
- Does stress make your clenching and pain worse?
- Does your jaw click, pop, grate, catch, or lock when you open your mouth?
- Is it difficult or painful to open your mouth, eat, or yawn?
- Have you ever injured your neck, head, or jaw?
- Have you had problems (such as arthritis) with other joints?
- Do you have teeth that no longer touch when you bite?
- Do your teeth meet differently from time to time?
- Is it hard to use your front teeth to bite or tear food?
- Are your teeth sensitive, loose, broken, or worn?

The more times you answered “yes,” the more likely it is that you have a TMJ disorder. Understanding TMJ disorders will also help you understand how they're treated.

UNDERSTANDING TMJ DISORDERS

How Your Jaws Work

Your two TM joints are complex, made of muscles and jawbones. Each part plays a role in keeping your TM joints working smoothly. When muscles are relaxed and balanced

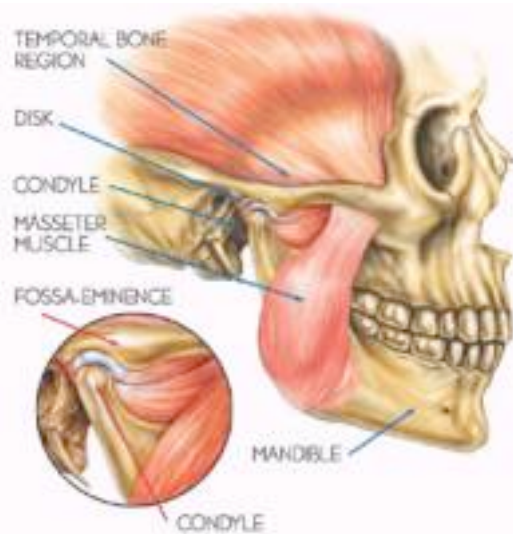
and both jaw joints open and close comfortably, you're able to talk, chew, or yawn with no pain.

Muscles Provide Power

Around your jaw joint are groups of muscles that contract and relax so you can open and close your mouth, talk, and chew. When they are flexible and not under stress, they work in harmony with other parts of your jaw.

Jaws Form Joints

Your TM joints are where your upper jaw and lower jaw (**mandible**) meet. Like gears of a car, the joints have moving parts that allow the lower jaw to move. This lets you open and close your mouth for talking, biting, and chewing.



Muscles surrounding the joint control its position and allow your mouth to open and close.

The TM joint is a sliding “ball and socket” joint, whose parts work smoothly when you open and close your mouth.

Your bite is more likely to be stable when the muscles and joints work together properly.

Inside the TM Joint

The disk is a “shock absorber” that provides gliding action between your lower and upper jaw when you open and close your mouth.

Connective tissue attaches your disk to the back of your joint and contains blood vessels and nerves.

The condyle is the round end (“the ball”) of the mandible, which moves in and out of your TM socket (**fossa**).

Muscles attached directly to the jawbones help control movement and position.

Ligaments hold your disk to the jawbones and condyle, helping to stabilize the joint.

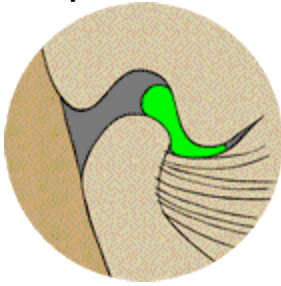
How TMJ Disorders Develop

Because your muscles and joints work together, a problem with either one can lead to uncomfortable results: stiffness, headaches, pain, bite problems, clicking sounds, or locked jaws.

Tight Muscles

Stress, teeth clenching (bruxism), and poor posture cause your muscles to tighten up. This tightening pulls your upper and lower jaws closer together, putting pressure on TM joints and sometimes wearing down your teeth.

Compressed Joint



Compressed, thinning disk and tightened muscles

Damaged Joints

Joint problems can come from injuries (blow to the jaw or bruxism) or from disease (often arthritis). An injury may stretch or tear ligaments, allow your disk to slip out of position, and even lead to arthritic degeneration.



Injured Joint

Disk completely out of position



Arthritic Joint

Roughened condyle, rubbing bone and pain sensitive nerves

Uncomfortable Results

If muscle and joint problems disrupt the way your jaws work, the resulting pressure and wear and tear on the TM joints may lead to any of several conditions.

- Pain in your jaws, neck, or head
- Worn teeth or teeth that no longer fit together properly (a bad bite or **Malocclusion**).
- Inability to move your jaws easily or smoothly.

YOUR DENTAL AND MEDICAL EVALUATION

A dental and medical evaluation helps pinpoint the causes of your TMJ disorder and is the first step in planning a personalized treatment program for you. A dental and medical history provides information about your overall health, begins to reveal the kinds of symptoms you're experiencing, and hints at their possible causes. A physical exam helps identify your TMJ-related symptoms, such as joint pain, clicking, or a limited range of motion. Diagnostic tests pinpoint even further the possible causes of your TMJ disorder, indicating what the best treatment might be for you. Dental casts may help determine whether your teeth are coming together correctly and how your bite may be affected by your joint and surrounding muscles.

Dental and Medical History

Your dental and medical history helps us gather information on your symptoms, your overall health, and your family history of any related problems. With the answers you give, Dr. Moffitt can begin to determine the causes of your disorder. You might be

asked: Are you under stress at work or home? Do you clench or grind your teeth? Have you had bite problems or joint disorders?

Physical Exam

Dr. Moffitt examines you to detect your symptoms. One technique is to firmly touch (**palpate**) your muscles and jaw joint, checking for pain, muscle tension, and tenderness. He may also insert a little finger into your ear to feel how smoothly your jaw works. A stethoscope picks up clicking sounds in your joint and a ruler measures how wide you can open your jaw.



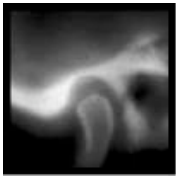
FIGURE 2. Joint sound inspection with a stethoscope.



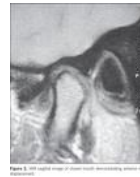
Figure 4. Measurement of mouth opening (the last 10 minutes).

Imaging Tests

A variety of tests help confirm or rule out a diagnosis of TMJ disorder. **Tomographic** or **transcranial x-rays** are head x-rays that record images of bones and reveal joint damage, fracture, or tumors. MRI (**magnetic resonance imaging**) produces detailed images of soft tissue, revealing damage in disks or ligaments.



Tomographic x-ray



MRI

Dental Casts

Dental casts are models of your teeth that help determine how muscle or jaw problems such as bruxism have affected your teeth and your bite. Casts help Dr. Moffitt study if your teeth have worn down or how your teeth line up. An impression of your mouth will be made and a plaster model will be formed, which may be mounted on a jaw movement simulator. This mechanical device helps reproduce the movement of your lower jaw.

TREATMENT OPTIONS: SELF-CARE

There are many treatment options that improve the harmony and function of your jaw. But, in large part, relief hinges on you. The most important role you can play throughout your treatment program (and your lifetime) is resting your jaw, so it can heal and regain stability. Other self-care techniques that may relieve your symptoms are ice, heat, and exercise. If recommended by Dr. Moffitt, you may need to practice these techniques until your symptoms subside, if symptoms flare up in the future, or along with other kinds of treatment. Self-care will help other kinds of treatment be more effective in resolving your TMJ disorder.

Resting Your Jaw

The most important kind of self-care, resting your jaw relaxes muscles and takes the pressure off your joint, which can then heal more easily. The key to resting your jaw is keeping your teeth apart. Practicing good posture, eating soft foods, and reducing stress will also relax tense muscles and help give your jaw a break.

- **Keep your teeth apart** – Bring your teeth together only when swallowing or eating. Learn to recognize when you clench your teeth, such as when you're under stress; then relax your jaw and separate your teeth.
- **Practice good posture** – Good head, neck, and back posture help maintain good jaw posture, too. Try to hold your head up straight, avoid leaning on your hand when reading or watching TV, and use a lumbar roll for support behind your lower back.
- **Eat soft foods** – Eat soft foods like eggs, yogurt, casseroles, and soup. Don't chew gum, and avoid hard foods like carrots (or put them in a blender before eating them). Eating soft foods is a temporary measure that helps you rest your jaw.

Applying Ice and Heat

Ice helps reduce swelling in your joints and muscles. Both ice and moist heat help relax muscles and reduce pain. Use these techniques as directed by Dr. Moffitt.

- **Ice** – Massage with ice directly on the painful area the first 24 – 48 hours after injury. Apply for 3 – 5 minutes or until the area becomes numb. Repeat several times.
- **Heat and ice** – Apply moist heat on tense muscles for 10 minutes, and then lightly brush the painful area with an ice cube. Rewarm the area for 1 – 2 minutes. Repeat ice and heat combination 4 – 5 times.

Exercising Your Jaw

Exercises can help restore the normal range of motion in your jaw by improving flexibility and strengthening muscles.

- **Open and close** – Looking in a mirror, gently open and close your mouth straight up and down, keeping your two upper teeth and two bottom teeth aligned. Do this exercise for a few minutes in the morning and in the evening.

Taking Medications

If nothing else controls your pain when it flares up, medications might help. Aspirin is a very effective **pain reliever**. You may also be prescribed an **anti-inflammatory** to help reduce pain and swelling or a **muscle relaxant**.

TREATMENT OPTIONS: STRESS MANAGEMENT

Managing daily stress is one of the best ways to help restore harmony between your muscles and joints. You can ask Dr. Moffitt about specific relaxation techniques. Biofeedback teaches you how to relax tightening muscles. Other methods, like deep breathing, relax your mind and body. Getting support helps you cope with the stress and pain that often accompany a TMJ disorder.

Biofeedback

This technique helps you know what's going on inside your body, so you can learn to consciously control your body's stress responses, such as tightening muscles around your jaw. Surface electrodes are placed on your jaw muscles. If you're clenching your teeth or have poor posture, your muscles tighten and the biofeedback machine produces signals, such as arrows going up. As you relax, the arrows go back down.



Relaxation Techniques

There are many techniques you can use to help you relax. Deep breathing may lessen tension. Or try yoga or visualizing something peaceful, like basking in the warmth of a sunny meadow filled with flowers.



Getting Support

Sometimes you may feel like TMJ pain and stress control your life. Support from a group or individual may help you manage stress, ease the isolation caused by chronic pain, or help you contact other TMJ disorder patients.

TREATMENT OPTIONS: PHYSICAL THERAPY

A variety of physical therapy techniques, such as jaw exercises, postural training, and mobilization, help you regain the harmony in your jaw joints and muscles. Physical therapy is often used when your disk, ligaments, or other joint tissues are injured. It promotes healing and reduces pain and swelling. It also aids muscle relaxation and increases your jaw's range of motion.

Jaw Exercises

Jaw exercises improve your flexibility and range of motion. They also strengthen muscles and improve jaw function. Your physical therapist or doctor may recommend several exercises, depending on your particular problem. You may be asked to repeat some exercises for a few minutes at a time up to six times a day.

- Gently move your jaw from side to side
- Open your jaw against the pressure of your fist.



Postural Training

Your physical therapist may show you ways to improve the

posture

of your head, neck, and shoulders. Holding your head erect helps improve the posture of your jaw, too.

Mobilization

Your physical therapist releases restrictions around your joints and muscles, using mobilization techniques. This helps restore range of motion and reduce stiffness and pain.

Electrical Stimulation

An electrical impulse sent through your skin relaxes muscles, aids circulation, and relieves pain.

Ultrasound

Painless sound waves reduce pain and swelling in your joint and muscles, and improve circulation.

TREATMENT OPTIONS: OCCLUSAL SPLINT

Dr. Moffitt may recommend that you wear a splint—a clear plastic appliance that fits over your top or bottom teeth—to establish harmony between your muscles and joints. There are three types of splints that work in various ways, but accomplish many of the same goals. Splints may reduce bruxism by keeping your teeth apart, help relax muscles, and reduce pain. They also can change jaw posture enough to stabilize some bite problems and reduce pressure in your joints. It may not be easy to get used to wearing and caring for your splint, but it is an important treatment that may last for three months or more.

How a Splint Works

Dr. Moffitt makes a splint to help diagnose and improve your joint problems. There are different types of splints for different purposes. A bruxism splint or night guard—worn mostly at night—helps you stop clenching or grinding your teeth and reduces muscle tension. An anterior positioning appliance moves your jaw slightly forward, relieving pressure on parts of your jaw. It may be worn 24 hours a day to help your jaw heal. An orthopedic stabilization appliance—worn 24 hours or just at night—relaxes muscles and lets your joint move into its proper position.

TM joint in more comfortable position



Splint in place

Wearing and Caring for Your Splint

After your doctor takes impressions of your teeth, you'll return in a week or two to have the splint fitted. You'll have your splint adjusted as your jaw posture changes. At first you may wear the splint 24 hours a day, then only at night, depending on your particular problem. Since everyone's TM disorder is different, your doctor will give you exact instructions about when to wear your splint. Clean your splint when you brush your

teeth. If your splint cracks, have it repaired immediately, so exposed teeth don't move.

- Have your splint adjusted as often as your doctor advises.
- Brush your splint with toothpaste twice a day to keep it clean.

Getting Used to Your Splint

A splint can mean the difference between your TMJ disorder getting better or worse, but it's not always so easy to get used to wearing one. You may worry about how you'll look and sound when you're wearing a splint, or feel that you won't be able to eat with a splint in your mouth. Luckily, there are some things you can do to make it easier to talk and eat with your splint.

- "I look like a football player..." Dr. Moffitt can shape your clear plastic splint so that it only covers the front edge of your teeth, making it less visible. Then it won't look like you're wearing a mouthguard.
- "I sound funny when I talk..." At first, your voice may sound different because you've got a bulky piece of material in your mouth. Try reading out loud for a few nights to adjust to talking with a splint.
- "I can't eat anything..." Yes, you can still eat with your splint, although you'll probably need to change your diet by eating softer foods. Later, you may only have to wear your splint at night.

TREATMENT OPTIONS: BITE CORRECTION

If your TMJ disorder has caused problems with how your teeth fit together, you may need treatment to correct your bite, although this is seldom necessary. Often, a splint alone is all that's needed. But you may need other treatment, such as orthodontics or restorative work, to correct more serious bite problems resulting from TMJ disorders.

Orthodontics

Orthodontics is a kind of dental work that moves and repositions groups of teeth to create a stable bite. Worn from 12 months to three years, **braces** are the most common type of orthodontics. In rare cases, patients need a procedure that realigns the jaw (**orthognathic surgery**) along with their orthodontic work. After your teeth are realigned, your bite should become more comfortable.



Restorative Work

Restorative dental work changes the shape or size of individual teeth to create a stable bite. If a tooth is missing, a bridge may be built to replace it. If a tooth is too big, it can be "shaved down" to make your teeth hit more evenly (occlusal adjustment). If a tooth is too small, a crown can be added so teeth come together better. Once your bite is restored to proper alignment, your bite should feel more comfortable.



After your bite correction...

You may need other treatment, like self-care, physical therapy, or a splint, to help you avoid future flare-ups of TMJ pain or further injury to your TM joints or teeth.

TREATMENT OPTIONS: SURGERY

Surgery can help restore your jaw joint and eliminate the pain and other symptoms of TMJ disorders. With other treatment available, surgery is rarely needed, especially if a problem is diagnosed and treated early. In some cases, however, the joint becomes so severely damaged that surgery is needed to correct it.

Arthroscopy/Arthrocentesis

These procedures are used for localized joint pain that doesn't respond to other treatment. Your doctor inserts a tiny instrument (arthroscope) through a small incision or uses small needles (arthrocentesis) to flush the joint and insert an anti-inflammatory agent.

Soft Tissue Repair

People with severe soft tissue damage may need this procedure to tighten up stretched connective tissue and ligaments. It also puts the disk back into position, releasing "locked" jaws.

Joint Restructuring

This surgery is used primarily for arthritis patients with badly deteriorating joints, such as severed disks or disks with holes in them. The condyle is smoothed and the joint is restructured. In some cases, part or the entire joint may be replaced with an artificial joint.

Follow-up Care

Your doctor will tell you how to care for your incision and when you will have any stitches removed. Your doctor may prescribe medications to reduce pain or swelling you may experience. Resting your jaw will help it to heal more quickly.

After your surgery...

You may need other treatment, like self-care, physical therapy, a splint, or bite correction to encourage your jaw to heal, to restore function of the joints or teeth, or to help you avoid TMJ pain and other problems in the future.

RELIEF FROM TM PAIN

From biting and talking to chewing and yawning, your TM joints always come into play. So when something goes wrong with your jaw joints, it can cause you much discomfort. But with the right diagnosis and treatment, most people do find relief from the pain and other symptoms of a TMJ disorder—and you can, too.