

the
TMJ
Sleep
center



The TMJ/Sleep Center

TMD

(Temporommandibular Disorders)

TMJ (Temporommandibular Joint) Disorders

Often called (**The Great Imposter**)!

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You can get your life back!

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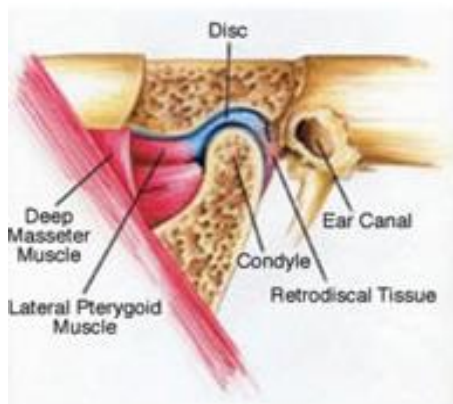
What is TMJ?

The TMJ is the jaw joint; it is an anatomical structure and part of the body like a knee or shoulder. Everyone has two TMJs, two knees, and two shoulders. To say you have “knee” or “shoulder” or “TMJ” as a condition or disease is outrageously over simplified. The joint diagnosis is more likely a torn, displaced, dislocated, degenerated, or otherwise damaged dysfunctional joint. An accurate diagnosis is the key to successful treatment and elimination of the presenting symptoms and suffering.

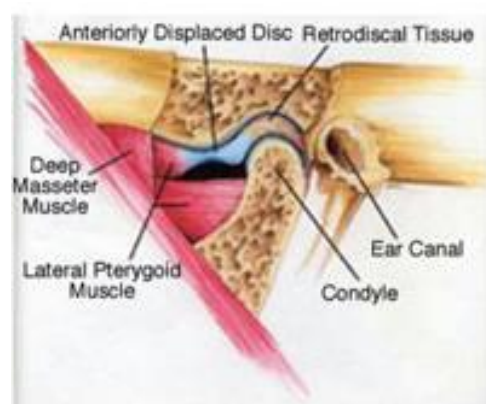
TMJ Disorders are divided in three divisions

1. Outside of the jaw joint = external Temporomandibular Disorder and is not a joint disorder. These are usually a muscle disorder (muscle tension)
2. Inside the jaw joint = Internal derangement of the TMJ and is a joint disorder
3. Both inside and outside the jaw joint usually involving the chewing muscles that are outside of the jaw joints

Normal TMJ



TMJ Disorder



Finding Relief

Do you experience frequent headaches that have become a real headache or pain in the neck? Do you have pain in your face, jaw or ears? Does your jaw get tired from chewing a simple meal? Do you have reduced jaw motion and you now have to squash your sandwiches? Does your jaw joint click, pop, or grate? These are a few of the symptoms of a Temporomandibular Joint Disorder (TMJ Disorders). You may have some of these which we commonly see at The TMJ/Sleep Center. The terms, TMD, TMJ, or TMJ Disorder, are all used to describe a

group of jaw joint and muscle problems known as temporomandibular joint (TMJ) disorders. Confusing! The nearby jaw muscles of the head, face, and the neck are commonly involved. The symptoms may be painful, frustrating. Usually, the underlying cause of the symptoms have developed over time and identifying a successful treatment has been allusive. Commonly our patients have seen several different doctors for the group of symptoms with less than acceptable results. One patient saw 16 different doctors and another saw an unbelievable 19 different doctors and spent more than \$13,000 on just multiple CT and MRI scans. Frustrated, patients continue to search for the cause of their suffering. The good news is: Our team can help you by identifying the cause of the TMJ disorder and assist in successfully treating your condition. With proper treatment you can get your life back and prevent additional unforeseen debilitating problems.

What are your symptoms?

TMJ Disorders cause a surprisingly wide variety of symptoms and has been called “The Great Imposter”. The wide variety of seemingly unrelated symptoms is the reason why it is usually difficult for patients to find the cause of their suffering and receive a proper diagnosis or understanding the cause of their numerous symptoms. TMJ symptoms can include the following:

- Headaches in the back of the head
- Pain behind the eyes
- Pain in the temple area
- Reduced mouth opening
- Difficulty chewing
- Fatigued chewing muscles
- Earaches, ear fullness, or ears ringing
- Neck stiffness or neck pain
- Pain or soreness around the jaw
- Facial pain with jaw movement (may come and go or be constant)

Home treatment may include:

- Temporary changing eating behaviors.
- Softer food choices requiring less chewing
- Reduction of unnecessary jaw function. Talk less! Chew less!
- Treatment to reduce pressure on the jaw joints and jaw muscles
- Responsible use of medications
- Avoid foods, habits and behaviors that trigger symptoms.
- Pay attention to your body and get help if symptoms return or increase.
- Take steps to reduce or manage and reduce the stress in your life
- Improve the quality of sleep to allow healing, and reduced jaw stress.

What Can you do for yourself?

If you know you are having TMJ Disorder symptoms or have been referred, call The TMJ/Sleep Center! (208) 234-7246 (PAIN). You don't have to continue living with pain, discomfort, or limited function. A key part of treatment is diagnosis and the patient finally knowing the real cause of all the baffling symptoms. You may learn to manage your TMJ disorder at home, or you can get help from The TMJ/Sleep Center.



Which Treatment is Right for You? You decide!

Goals of our treatment:

1. Eliminate your reported symptoms and long suffering
2. Restoring normal muscle function.
3. Eliminating the pain and achieving normal jaw function is what many patients have described as, "Getting Your Life Back!"

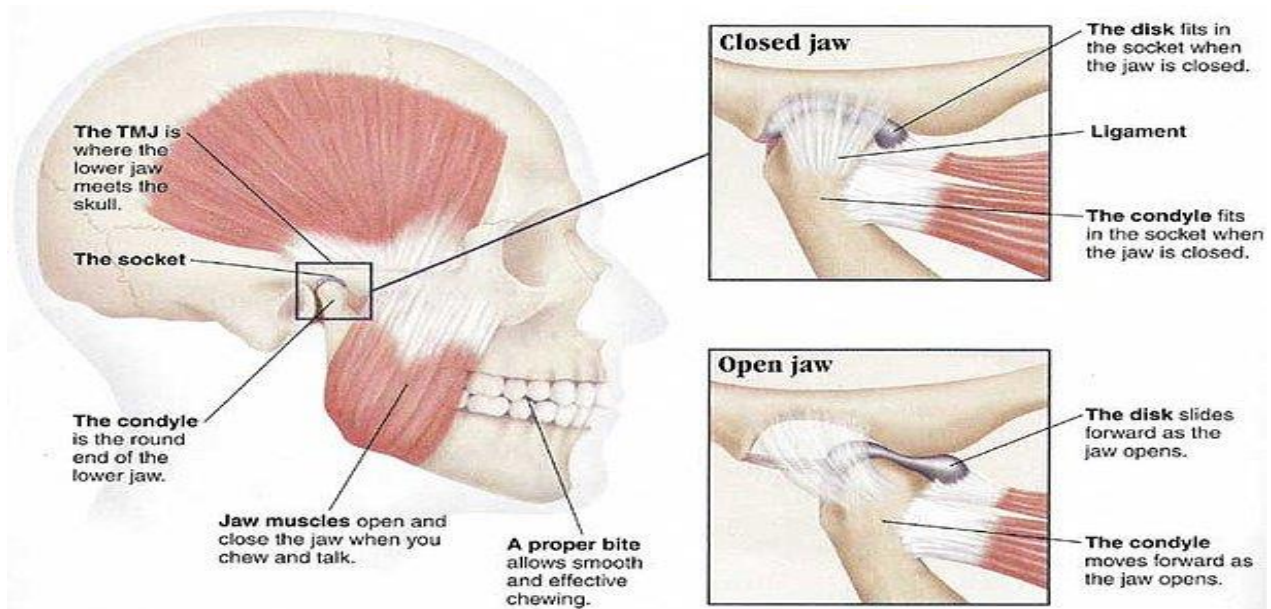
Understanding the TMJ Disorder is Valuable in Achieving Relief

The Temporomandibular joint (TMJ) is a ball-and-socket joint located in front of each ear where the lower jaw meets the base of your skull. Functioning jaw joints are part of a system of muscle, ligaments, tendons, and bones that work together to form the temporomandibular joint (TMJ) complex.

How Can One Avoid Future Problems?

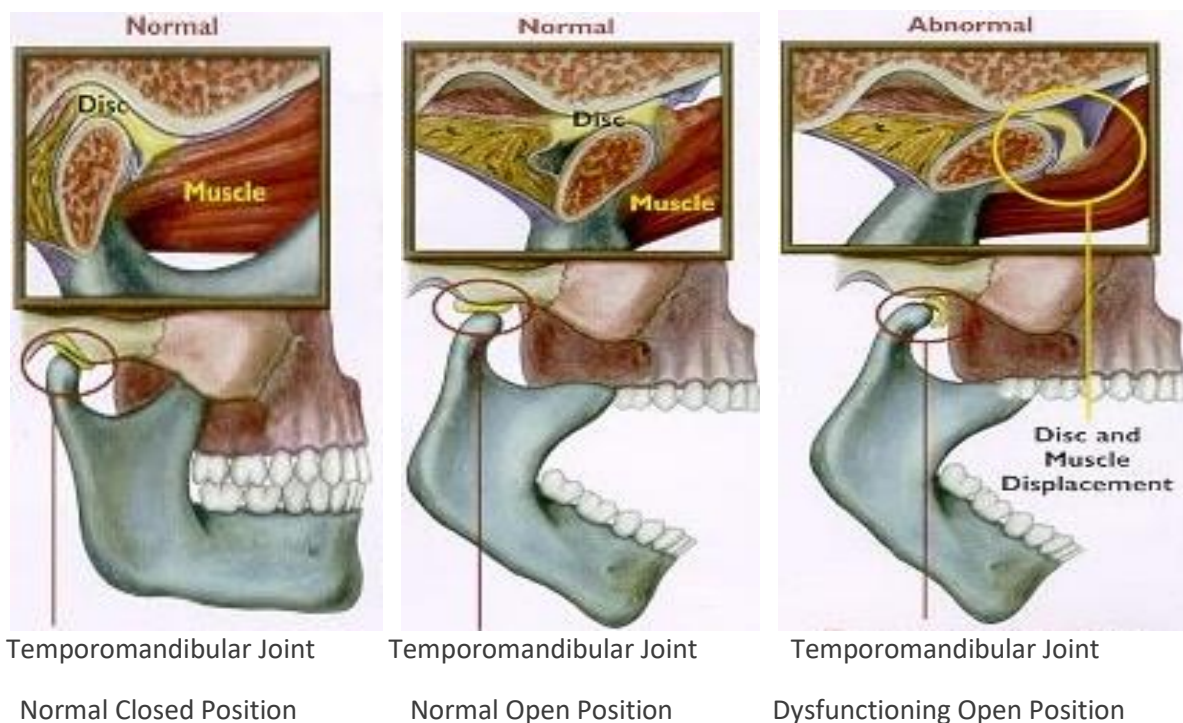
A greater understanding of the current jaw problem can greatly help you manage your TMJ condition now and into the future.

Normal Closed and Open



When the Chewing System Works properly:

A healthy jaw joint (TMJ ball and socket) allows for comfortable talking, chewing, swallowing, and yawning. Normal working jaw Muscles contract and relax to open and close, or move your mouth for comfortable talking, chewing, swallowing, and yawning. The cushion (disc) between the ball and socket of the jaw joint cushions the bones and absorbs and disperse heavy biting forces or pressure within the joint. The disc in the Jaw joint prevents direct contact of bone upon bone and prevents the expected wear consequences of bone grinding on bone. The TMJ disc allows the jaw to open wide (50mm), close smoothly and comfortably move the jaw from side to side 12-15mm. Ligaments connect the disc to the ball and tendons connect the lower jaw to the base of the skull. Permanent injury can occur to the TMJ ligaments and tendons just as in any other joint in the body.



When You Have a TMJ Disorder

1. Expect to have tense sore muscles
2. The old fit of the teeth and your bite will change
3. The jaw joint will become inflamed
4. The jaw joints may become permanently damaged.

There are three components including, 1. muscles of the jaw and face 2. jaw joint 3. fit of the teeth and bite that make up a closely connected working system. All three are usually involved when the muscles and joints are not working properly. A problem in one part of the system will always affect the coordination and balance of the working chewing system. Clenching and grinding the teeth are symptoms of a TMJ disorder. Frequently dentists provide a night guard to minimize the damage of tooth grinding, but a typical night guard does not improve the muscle and jaw joint part of the problem. Often night guards cause additional symptoms and the patient chooses to not wear their night guard.

TMJ DISORDERS



Tight Muscles

The muscles surrounding the TMJ can go into **spasm** (tighten) and cause pain.



Inflamed Joints

Inflammation may include pain, redness, heat, swelling, or loss of function.



Damaged Joints

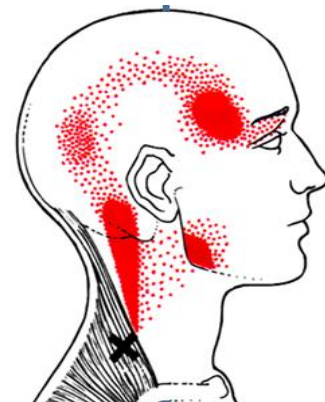
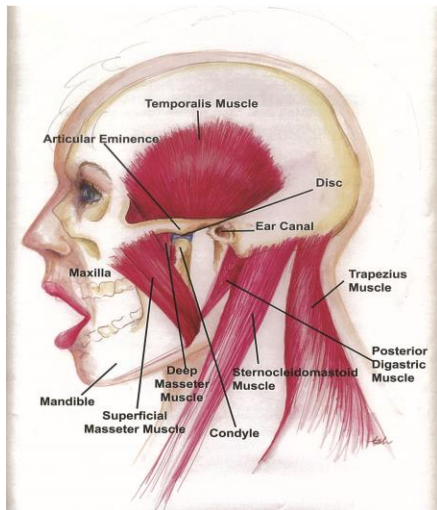
Many people hear clicking when their jaw moves. If you feel pain along with the noise, the joint may be damaged.

1. Inflamed Muscles

Chewing muscles and often times neck and shoulder muscles can be expected to be continually tight, have reduced strength and to fatigue easily. Surprisingly the chewing muscles are also expected to be weak due to their decreased contraction capacity (arthrokinetic reflex.) Tired, weak chewing muscles make for slow, difficult eating and often lead to increased facial pain as well as temporal and occipital headaches.

Myofascial pain occurs in soft tissues such as muscle and tendons and almost always causes triggers. Trigger points in the tissues may cause pain that radiates to a distant site and triggers other symptoms in distant areas. Referred symptoms may be felt as facial pain, headache, ear symptom or neck and shoulder stiffness or pain. Eye pain, ear ringing, dizziness, and ear pressure may also be caused by triggers in TMJ patients leading to what has come to be known as **The Great Imposter**.

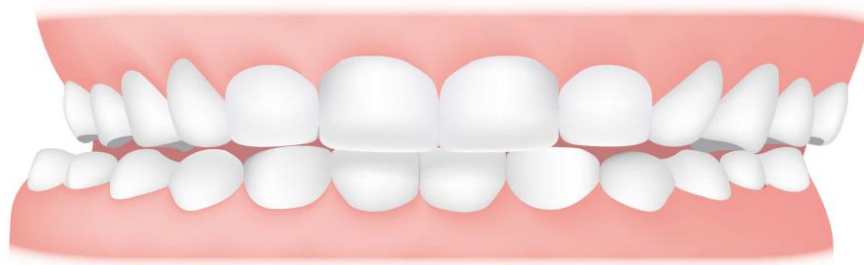
Referred pain is the site of pain felt in a part of the body distant from the source of the pain. For Example, TMJ disorders are frequently the trigger or source of the pain. The TMJ disorder can trigger pain in a distant site such as pain in the face, head, ears, eyes, neck or shoulders. Consequently, the patient's focus is actually directed away from the real cause of their suffering because of the distant referred ear, eye, face, head, and/or neck pain or symptoms that can be referred from the impaired jaw joint (TMJ.)



2. The Bite is likely to be changing!

The teeth, jaw joint, and jaw muscles make up a functioning chewing unit, and problems in one will usually lead to problems in another part of the system. A changing bite is usually present in all TMD patients; although, the bite is rarely the cause of the chewing muscle or jaw joint problems. Unfortunately, too often the teeth are thought to be the cause of the muscle or joint problems. Consideration of the other two components of the chewing system, the muscles and jaw joint is always necessary. The chewing muscles and jaw joints are most often the real cause of the changes in the bite. Yes, whenever there is a significant change in the chewing muscles or the movement of the jaw joints there will always be a change in the fit of the teeth. The altered or changing fit of the teeth is commonly observed without asking the important question: Why is the bite different? Some of the tooth changes include:

- Some of the teeth hit too hard & become sore leading to root canals or repeatedly drilling and cutting the teeth down to fit the bite.
- Loose teeth from abnormal biting forces so they drill the teeth down again
- Malocclusion-jaws or teeth out of alignment so they drill the teeth down or recommend braces which are of no help either.
- Clenching-biting down excessively hard on the misaligned teeth is very common so they make a night guard to prevent wearing the teeth out and fail to consider the muscles and TMJ.
- Worn, broken teeth change the bite.



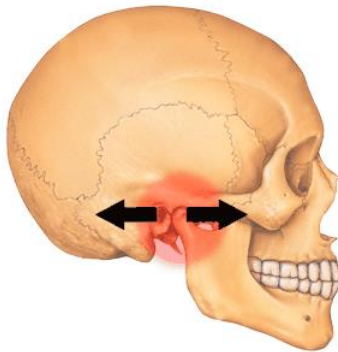
3. Inflamed Jaw Joints

Soft tissues in the jaw joint can become **inflamed** (feverish, swollen, painful).

Synovitis is inflammation of the tissues surrounding the jaw joint. Synovitis causes pain and increased pain with jaw movement or increased jaw joint pressure.

Inflamed jaw joint ligaments are caused by strain or torn ligament injury and are less able to support the normal function of the disc and jaw joint.

Rheumatoid arthritis is a disease that leads to inflammation in many joints, including the jaw joints.



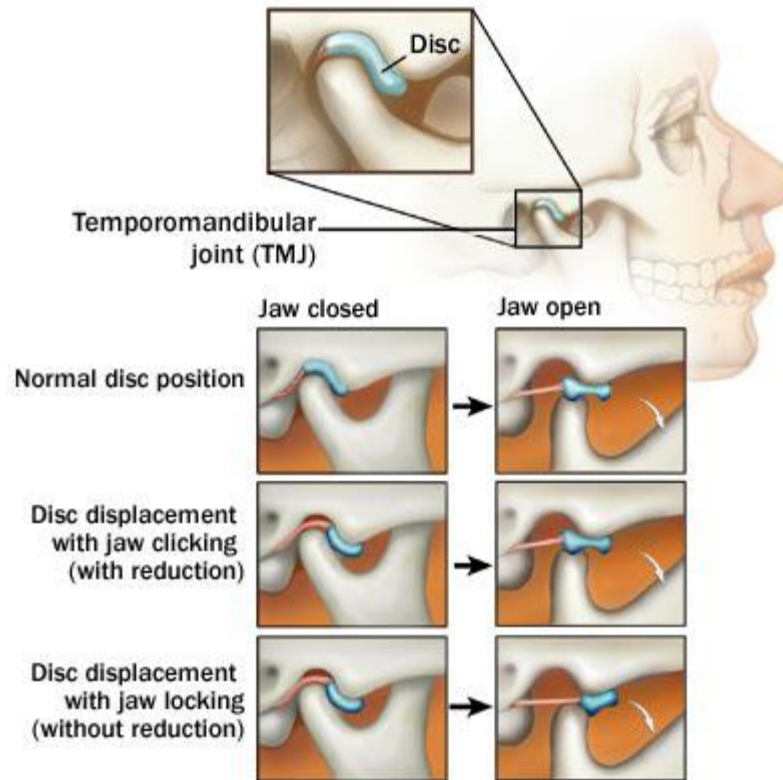
4. Damaged Jaw Joints

It is very common for the jaw to click with jaw movement as one opens and closes the mouth and occasionally when ones talk as well. But painful clicking is very likely a sign of a damaged joint and degenerative arthritis of the TM joint. When the disc is out of its normal position the jaw cannot move as far as normal. Normal jaw opening is 45-50mm. Normal lateral jaw movement is 12-15mm.

Displacement is a disc slipping in and out of its normal place usually when eating or talking. This causes the jaw to catch and a clicking sound may result.

Locked jaw can be locked with either the mouth locked open or locked closed. Limited opening is the most common and occurs when the disc is out of its normal position upon the ball and the disc does not return to the normal position on the ball (condyle) when the mouth is opened.

Osteoarthritis is when a joint is inflamed and begins to degenerate, loses its normal shape and function and may become painful.



Diagnosing Your Condition

Very rarely am I the 1st doctor to be consulted concerning any patient's TMJ disorder. Often my new patients have previously seen their medical doctor, dentist, physical therapist, chiropractors, and/or other health specialist and have not successfully resolved the symptoms they listed in their history. Often the new patient has become frustrated. They wonder if it's all in their head and they are just a little crazy because the smart doctors have not found the explanation for their continued suffering. Actually, it really is in their head; they just have not identified the specific cause. At The TMJ/Sleep Center we will carefully take your history, discuss your symptoms, perform a TMJ exam, and arrive at a specific diagnosis of any TMJ disorder present. The doctor will guide you through the diagnostic process and provide an appropriate treatment to achieve the successful outcome you have been looking for to get your life back!

Taking Your History

We will take a health history, previous treatment history, information on any previous treatment that has worked in the past, and what did not work in the past. Listing why previous treatments may not have worked, as well as recording your trauma history are each very important factors in diagnosing all TMJ disorders. Often there is more than one simple problem present. To help give you a clearer picture of your TMJ health, we would ask you to mark below all that apply to you.

- Pain in the jaw joints or muscles when talking, yawning or chewing
- Headaches or eye pain
- Ear pain, ringing, ear pressure, fullness or dizziness
- Neck, shoulder or back pain
- Clicking, grinding or popping noises in the jaw
- Frequent headaches or neck aches
- Sore chewing muscles
- Facial headaches or neck aches
- Catching or locking of the jaw
- Problems opening or closing your mouth
- Grinding or clenching of your teeth
- Recent changes in your bite and the way the teeth fit together
- Sore teeth aches that have never been successfully treated
- Whiplash or injury to your head, neck or face
- History of arthritis or other medical conditions
- Frequent use of pain medications, herbal remedies, or supplements

Keeping Track of Your Symptoms

We will look for patterns in your history and symptoms. You can help by keeping log. Be sure to bring your log with you to your appointment at The TMJ/Sleep Center. Use the sample below to help get you started.

When	What I was doing	What it felt like	What helped
Monday A.M.	Waking up	Jaw stiff and sore	Moist heat
Sunday evening	Eating Steak Dinner	Jaw tired	Stopped eating
Wed. afternoon	After Dental Apt.	Headache 2 days	Nothing
Fri. night	Cheering ballgame	Face eye-ear pain	Hot packs
Sat. morning	Waking up	Jaw not opening	Just waited it out

Your initial TMJ Consultation Exam

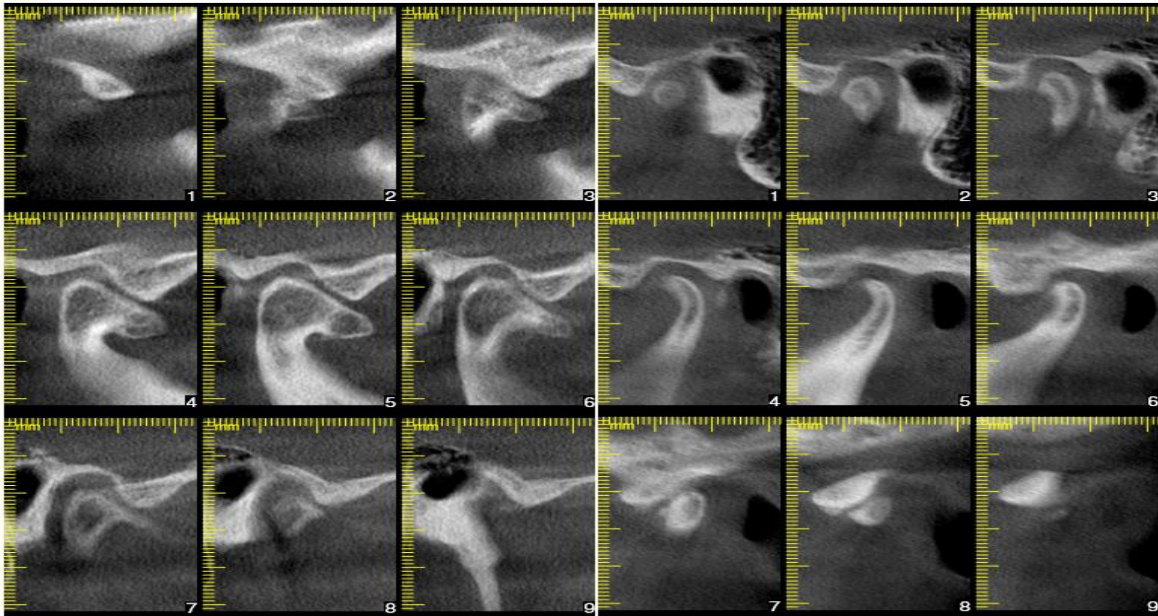
1. My treatment coordinator will greet you and give you a brief tour of our office
2. We will take a history
3. The consultation may include feeling (**palpating**) the chewing muscles looking for areas of tenderness, pain, trigger points, or muscle tension.
4. I will measure and record how the jaw moves (range of motion) to see if it is abnormal. Healthy patients should be able to open their mouth 45-50mm and move their jaw 12-15mm left and right. When movement of the jaw is limited, I will determine if we are able to get your jaw moving normal or if it will require the assistance of an oral surgeon.
5. We will likely take a CT scan of your head, neck and jaws to observe if the jaw joint or something else is the root cause of your condition.



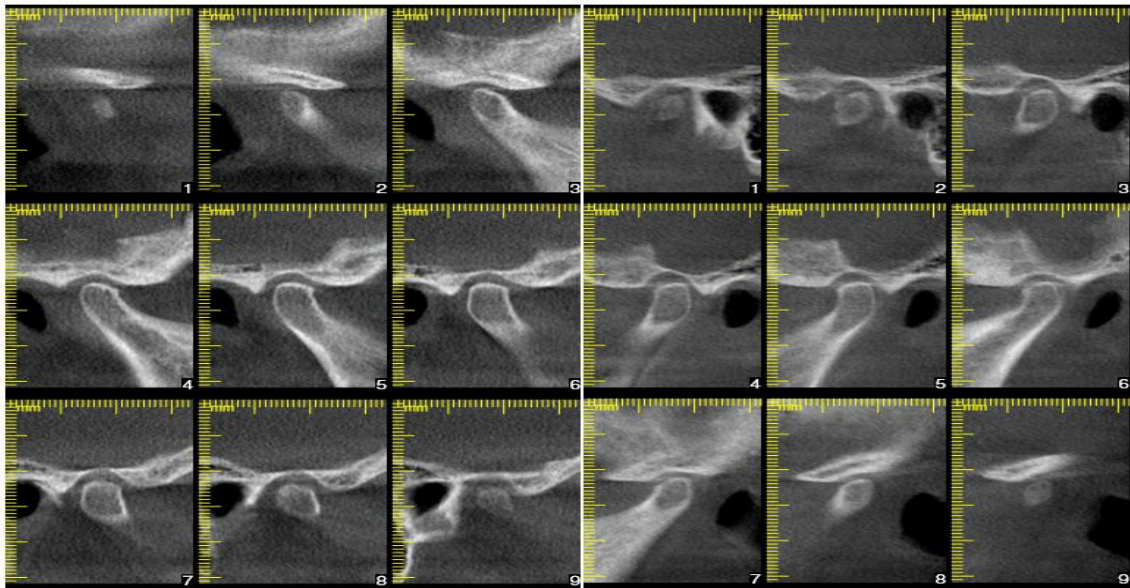
CT X-ray Imaging Exam

Most patients have previously had several different x-rays taken. It is not unusual to have the patient bring MRI or CT images with them to their TMJ consultation. I prefer to use the CT images we will take here in my office. One single 25 second CT scan will record all of the parts of your jaw, jaw joints, and the airway. Numerous images are available from a single CT scan. Most patient are fascinated when they see how simple it is to actually see images of their face, airway, jaw joints, sinuses, teeth, neck, and jaw.

Arthritic Degeneration



Normal



Range of Mandibular Motion (ROM)

TMJ disorders can limit the jaws joints (TMJs) ability to move or what we call the range of motion (ROM.) When I identify the jaw joint is likely the cause of the numerous symptoms, I will ask permission to manipulate the jaw and restore more normal jaw motion. Fortunately, the TMJ treatment we provide will help increase and usually restores normal jaw movement. The range of motion will likely be measured during your consultation as well

as during the following exam and throughout your treatment to assure the jaw movement improves and stabilizes. Restoring normal jaw motion is important for several reasons.

First, I need to know that I am able to restore the normal motion, and if not, I will refer you to the oral surgeon to restore the normal jaw motion. In certain circumstances the normal jaw motion will remain normal following my manipulation of the jaw joints and minimal future treatment will be necessary. When the normal range of motion does not remain, normal there is a need to provide additional treatment to restore motion and stabilize the jaw allowing for the jaw joints to repair and become more stable on their own and not require lifelong therapy.

Vertical readings measure how wide you can open your mouth. A healthy range of mouth opening is usually between 45 and 55mm (millimeters.)

Lateral readings measure how far you can move your lower jaw left and right. A healthy lateral range of motion is 12-15mm in each direction.

Jaw motion and TMJ manipulation

In my office, jaw joint manipulation to restore motion is called TMJ unlocking. In the CT images we are able to see when the position of the ball in the TMJ socket is abnormal. Restoring the normal position of the disc on the ball and the ball in the socket in the jaw joint will usually also allow the return of normal jaw motion. When the parts of the jaw joint are not in their rightful place normal jaw motion will not be present. Amazingly, restoring the jaw joint position and motion will very quickly reduce the presenting symptoms and in a few minutes the patient will recognize several improvements. The jaw will then be able to move more easily and more comfortably. Often the joint noise immediately decreases. The facial and chewing muscles relax and improvement of their symptoms is quickly felt by the very anxious patient. The muscles are then able to relax, rest, and the tension and pain subside. Amazingly the muscles are then able to also contract much more powerfully and forcefully. Normal!

When the muscles relax the pain goes away!

When joints of the body are damaged and dislocated, the muscles over that joint immediately increases in resting contraction intensity. This normal response is known as the arthrokinetic reflex. Over time these tense muscles become painful to the patient and the muscles ability to function normal diminishes.

When there is joint damage there is increased muscle tension, muscle weakness, and reduced muscle endurance. Joints of the knee, hip, shoulder, or vertebra in the back are perfect examples of similar reflex muscle activity and the pain that follows. TMJ patients experience sustained muscle tension, muscle pain, develop muscle weakness, and experienced reduced muscle endurance.

The initial Diagnosis is Key to treatment Success

Most of my patients come from doctor referral and have been informed they have “TMJ” and may have been previously treated somehow unsuccessfully. To arrive at an overall treatment diagnosis requires gathering information including a history, symptoms, what diagnosis and treatment may have been tried previously, what has been helpful in the past, and what causes an increase in the symptoms.

The TMJ is the jaw joint; it is an anatomical structure like a knee or shoulder. Everyone has two TMJs, two knees, and two shoulders. To say you have knee or you have shoulder or TMJ as a condition or disease is outrageously over simplified. The diagnosis is more likely a torn, displaces, dislocated, degenerated, or otherwise damaged dysfunctional joint. An accurate diagnosis is the key to successful treatment and elimination of the presenting symptoms. Never is a diagnosis made without necessary records and examination.

We use several different diagnostic instruments; CT imaging, thorough hands on TMJ examination along with my thirty years of training and experience to determine the cause of the symptoms and how to treat the condition successfully. Dental colleagues somehow believe I have some secret treatment appliance that does all of the work. At The TMJ/Sleep Center, each patient is carefully examined and a specific diagnosis is made, therefore allowing for an appropriate treatment plan to be formulated and presented to the patient for their consideration and approval.



The comprehensive TMJ Examination

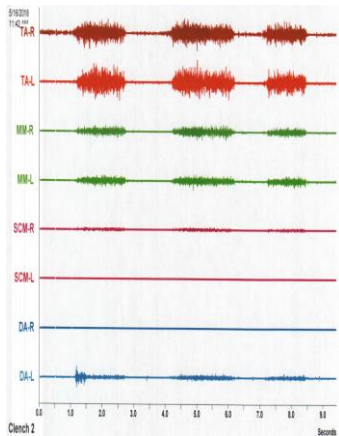
In the comprehensive TMJ examination we will record numerous jaw and muscle activities to assist in making the final diagnosis and determining the appropriate treatment. The examination may include EMG, EGN, JVA, CT, T-Scan, and Doppler testing and recording. Most TMJ patient do not recognize the numerous limitation they experience daily and they are very surprised, relieved, and at times embarrassed to finally observe the limitations caused by their TMJ disorder. During the hands-on examination Dr. Romriell will look for any contributing conditions to the sustained TMJ disorder. Muscle palpation is important to identify additional triggers causing pain. Physical jaw manipulation and TMJ unlocking allows the patient to have the jaw joints in a more normal position. When the jaw is in a normal position Dr. Romriell will record how the jaw truly moves and how and where the teeth come into contact. With the jaw joints in a more normal position Dr. Romriell will be able to record (BBB) where the bite must be to maintain biting harmony with the normalized jaw joints. This recorded silicone bite position allows Dr. Romriell to have a treatment device built to fit over the teeth and at the same time to fit the bite when the jaw joint is in a more normal jaw joint position. Dentists will refer to this as the proper centric relation, centric occlusion (CR-CO) relationship.

EMG Record

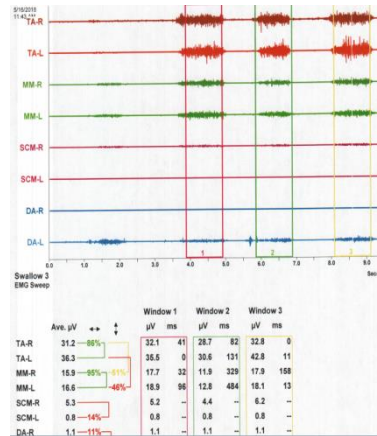


During the comprehensive TMJ examination the muscle activity will be tested and recorded using EMG to determine which muscles are not working or contracting normally and if the muscles will relax. The EMG muscle exam is also used to identify how the patient swallows. More than 80% of TMJ patients have an abnormal swallow. Normally one should be capable of swallowing several times in a row with their lips separated i.e. drinking out of a water fountain.

Clenching

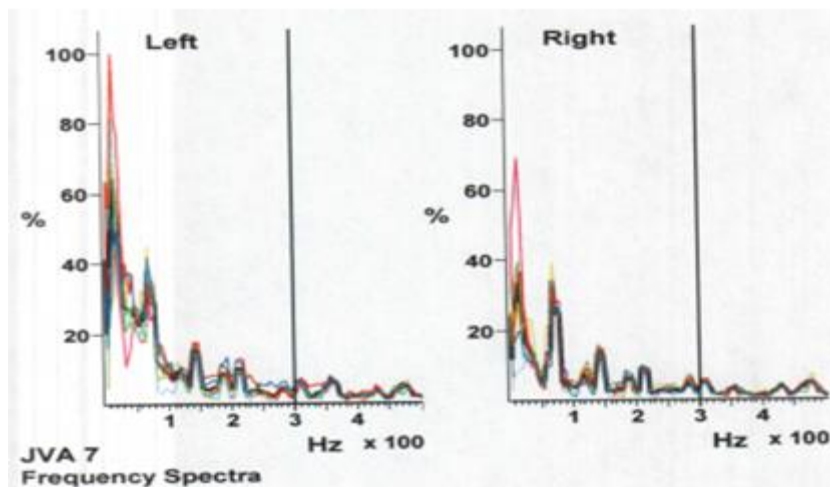


Swallowing



Joint Vibration Analysis (JVA)

Patients are usually concerned about the joint noise expecting the noise to be bone upon bone contact and rubbing together wearing out. Jaw joint noise is very common; although bone to bone is not so common and demands expert treatment. It is important for diagnostic purposes for Dr. Romriell to know if there is bone upon bone contact in the jaw joint. Bone upon bone contact in joints is not a good thing, and often surgery is the remedy of any abnormal bone contact and the expected bone damage that occurs when the bones rub together.



Doppler - Joint Noise Osculation

I also listen to amplified jaw joint noise using a Doppler instrument allowing anyone in the room to also hear the sounds coming from movement of the jaw.



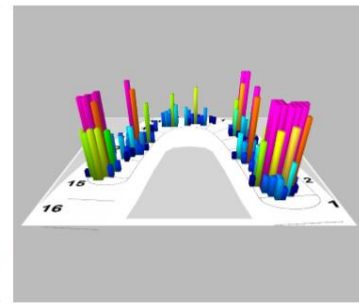
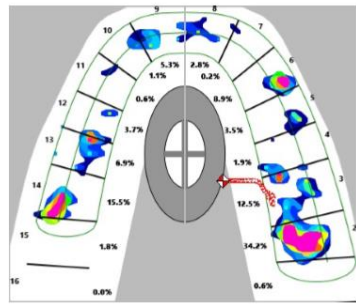
Recording the patient's bite using the computer T-Scan Bite recorder

We will record the patient's dynamic biting activity and tooth contact position using a T-scan computerized bite recorder. The T-scan records the first, second, third tooth contact and so on. Recording each tooth contacting as well as recording the balance of the biting force is important. The balance of force at any time during the biting activity is recorded as the percentage of force on each tooth and the percentage of force from left to right and front to back. The T-Scan bite recording is repeated at the completion of active TMJ treatment to again identify how the teeth contact and how well the bite fits when the jaw joint (TMJ) and muscles are functioning and have been successfully treated. Using the information from the T-scan bite record we are then more informed and better prepared to determine the necessary treatment to bring the bite into harmony with the comfortable muscles and working jaw joints (TMJs.)

Patient ID: 5220

Date: 5/15/2018

TMJ Bite Force T-Scan

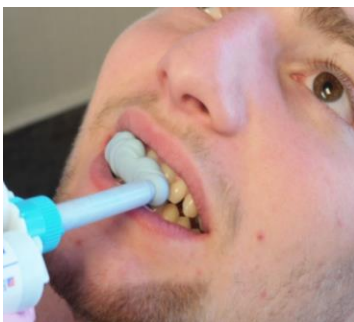


TMJ manipulation & Unlocking

Achieving normal jaw motion is valuable in making a diagnosis and determining if there is need for the assistance from an oral surgeon. Yes, patients are usually nervous and apprehensive concerning the TMJ manipulation and jaw joint unlocking procedure. It is concerning for one to be uncomfortable or in pain and to consider having someone move your jaw around. Frequently patients ask “is it like chiropractic?” And I answer, “Yes!” I do move the jaw, and rarely does the patient complain when I ask them if the TMJ unlocking was painful. Nearly 100% will respond with very positive comments expressing they have less muscle tension, less pain, and greatly improved jaw motion. Commonly their neck is also more relaxed and has improved range of motion as well. Frequently the patient will comment there face and head feel less “HEAVY.” I know “heavy” sounds very strange to normal individuals. To those who have experienced muscle tension, headache, and reduced capacity to move the jaw and neck they have new found freedom and feel as though a weight has been lifted from their head and face.

Recording the best treatment bite position

Following the initial working diagnosis, achieving the best treatment bite is critical to the success of the patient’s TMJ treatment. The CT scan images enlighten me as to the pre-treatment position of the jaw joints (TMJs) when necessary, I manipulate the jaw to unlock the jaw joints and restore normal jaw position and jaw motion. With the jaw moving normally we then record with silicone a “new” biting position to know where the treatment position of the jaw should be in order to build the treatment appliances to the recorded treatment position for that patient.

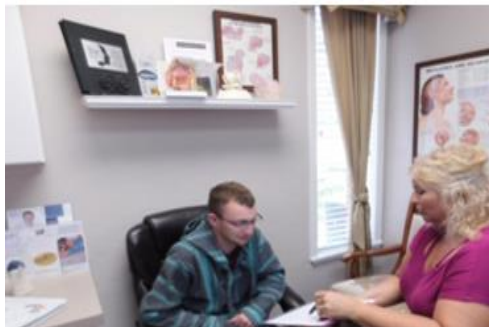


Taking the Next Step

Numerous facts must be considered in determining a diagnosis and then planning the appropriate treatment for each patient. Following a complete patient TMJ examination Dr. Romriell will make an accurate diagnosis of the problems involved. The appropriate treatment must address and resolve the diagnosed problem as well as take into consideration current conditions, the patient age, any future growth or development, and any other conditions unique to the patient. Having an informed diagnosis in mind, the doctor will develop a treatment plan to the specific treatment needs of the patient and also determine the treatment time required to achieve long term success. Yes, it takes time, and patience to repair and heal a condition that has likely been present for a long time.

Treatment plan Presentation

Active treatment is ready to begin when the doctor has developed a prescribed treatment plan that can be presented to the patient for their understanding and acceptance. When the treatment plan is accepted the treatment appliances design, models of the teeth of the patient, and the silicone treatment bite record are sent to the laboratory for construction of the prescribed appliances. Several days are required to fabricate the prescribed appliances. When the treatment appliance is available the appliance is placed into the patient's mouth, and the bite is adjusted to satisfy all of the necessary treatment requirements.



TMJ Treatment Appliances

There is no magic treatment appliance that will do all of the magic of getting the patient to their highest level of health. Dr. Romriell uses several different treatment appliances including: **MORA** **M**andibular **O**rthopedic **R**epositioning **A**ppliance – The treatment appliance is used to maintain the biting position each time the mouth is closed and the teeth make contact.

The treatment appliance can be made for the top or bottom teeth with the tooth and jaw guidance in front or in the back of the mouth. The MORA is the treatment appliance of choice for dislocated jaws to regain jaw joint stability.

Neuromuscular appliances are more easily worn by most patients and allow the patient to move at will in any direction. There are no abrupt slopes to guide the tooth position when the patient is biting down. These appliances are used to quiet down muscles that are too active.

Pivot appliances can be removable or fixed directly onto the teeth. When patient tooth retention or patient cooperation is challenging this is the appliance of choice. I utilize this appliance when treating children. The pivot is also used in treating denture patients. I know of no other TMJ doctor that successfully treats TMJ denture patients.

NTI Appliance is used to diminish muscle activity when excessive muscle activity is an ongoing contributor to the diagnosed conditions.

Nociceptive Trigeminal Inhibition (NTI) orthotic is a wonderful appliance that will decrease the capacity of the chewing muscles contraction by 70%. This appliance is not intended to treat the jaw joints (TMJ), but is very appropriate for muscle problems when individuals clench and grind their teeth. **Migraine headaches** are a trigeminal headache and are well controlled in more than 73% of the migraine patients using the NTI appliance. The NTI can be constructed on the top or bottom teeth and can be attached to the teeth or be removable as shown below.



Migraine Headaches are trigeminal nerve headaches and occur when there is excessive activity in the trigeminal nerve. My friend Dr. James Boyd of Los Angeles California is the developer of the patented NTI-TSS treatment appliance and the FDA clearance studies were conducted by my friend Dr. Wesley Shankland Jr. When used for the prevention of

migraine headaches the NTI needs to be worn only when sleeping. Way easy! Of course, the onset of a migraine headache is usually while sleeping. This link www.HeadacheHope.com is instructive as to the mechanism of action of the NTI appliance, describing how and why the NTI works. Have your neurologist take a look at this site! I have built hundreds of NTI appliances. They are awesome!

Wearing TMJ Treatment Appliances

Constant wear of the TMJ treatment appliances during treatment is necessary for patients with a TMJ dislocation (internal derangement) to maintain the treatment position and prevent recurring jaw joint dislocation. Early in treatment the jaw joint is easily dislocated. For patients closing the teeth together to simply brush their teeth has frequently been the cause of experiencing a recurring TMJ dislocation. The teeth must be kept apart during treatment of a TMJ dislocation.

Eating with a TMJ appliance

Good nutrition is important in healing and wise eating habits are essential for good health. Eating has been a problem for many of the patients long before they come for TMJ treatment. Limited ability to open their mouth or chew, muscle pain, muscle weakness and muscle fatigue are very common to most TMJ patients. The acceptable menu for most TMJ patients has unknowingly shifted to items that are easier to eat. As TMJ treatment progresses, more typical foods will become easier to eat. When the TMJ is in the proper position the muscles very quickly regain their strength and the muscle pain soon diminishes as well. Muscle endurance takes more time, but will come as treatment progresses. I require patients to wear the treatment appliance constantly including while eating. Yes, it is a problem at first. The ladies struggle to eat with the treatment appliance in their mouth; although, men particularly young men never seem to have a problem eating with the treatment appliance in place.

I recommend:

1. Passive jaw joint and muscle stretches **Passive jaw & muscle stretches**
Link
2. Limiting what and how one eats
3. Posture awareness maintaining good head, neck, jaw, and tongue posture
4. Modify behaviors such as, no gum, jerky, and sing with caution.
5. Use medications sparingly and judiciously avoiding medical issues. NSAIDs, Muscle relaxers, & Acetaminophen are among the few medications I use.



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1. Hot Packs – Directions for hot pack use: - 10 MINUTES

Hot Pack preparation:

Warm pack in your MICROWAVE

OR

- Boil water and remove the hot water from the heat and set aside
- Allow the boiling to cease
- Place gel packs in hot water for 30 seconds

Alternatives to hot packs:

- Hot shower
- Warm rice bags

CAUTION: Always have hot packs inside a cloth before applying the hot pack to your face!

2. Stretch: DO NOT PUSH TO THE LIMITS

The purpose of the stretch activity is to regain and maintain normal muscle range and jaw joint motion and maintain the range of increased motion previously achieved.

- ALL STRETCHES MUST BE DONE VERY CAREFULLY TO AVOID ADDITIONAL MUSCLE & JOINT INJURY.

- Normal Opening 45-50 mm _____
- Lateral Motion 12-15 mm _____

Passive Opening Stretch: Place the right thumb in the roof of your mouth

Rest your index finger of the left hand over the bottom teeth on the first groove of your index finger.

- Gently stretch and hold for approximately 2 seconds and close on your appliance.
- Gently stretch and hold for approximately 2 seconds and close on your appliance.
- Gently stretch and hold for approximately 2 seconds and close on your appliance.

3. Cold Packs - Directions for use: 10 MINUTES

Place your cold pack into a freezer prior to the stretch therapy procedure.

Place the cold packs into the cloth and place on your face over the sore muscles.

- If freezer temperature is too cold use your refrigerator to cool the packs

Alternatives to ice packs:

- Ice in a Dixie cup
- Cold rice bags
- Bag of frozen peas

4. Hot Packs Again: 10 MINUTES - NEVER LEAVE MUSCLE COLD

All home therapy steps should be done twice a day while wearing your night appliance.

- Stretch can be done whenever you feel tight, even while waiting at a stop light.

Warming jaw muscles and jaw joints will help the muscles work better!

Sustained cold or cold weather will increase the muscle tension and increase the pain level.

- **Choose Soft foods.** Try foods such as eggs, oatmeal, tofu, soup, smoothies, pasta, fish, mashed potatoes, milkshakes, bananas, applesauce, gelatin, ice-cream, cooked fruits and vegetables etc.
- **Avoid biting into large foods** such as whole apples, carrots, and corn on the cob. Cut foods into smaller bite-sized pieces.
- **Taking small bites** requires less muscle strength to chew and to swallow.
- **Avoid hard or chewy foods** such as gum, nuts, pretzels, popcorn, chips, granola, raw carrots, whole apple, dried fruits, hard breads, chewy candies, and chewing ice.
- We will teach passive stretches for the jaw and jaw joints (TMJ) to be done before and after meals as well as at other times of the day.
- **Grind or finely chop** meats and other tough foods. Try chicken, fish, and ground meat instead of steak. Let your dog have the bones.

Maintaining Good Posture

Good posture can help your body heal.

Work at improving your head, neck and tongue posture during the day and when you sleep.

- **Hold your tongue in the roof of your mouth** where it goes when you say the letter “N” and hold it there continually as the normal tongue resting position. You will notice holding the tongue in the “N” position will assist you in relaxing the chewing muscles and the neck muscles. As the tension diminishes there will be less pain. This one tongue position recommendation will be key to increased comfort!
- **Use a phone headset** or speaker when on the telephone. Bring the phone to your ear! Don't cradle the phone with your shoulder and face. Tipping the head to the side to talk on the phone will also lead to increased muscle tension and pain.

- **Keep ergonomics in mind.** This includes making sure your workstation fits your body. Support your lower back. Take frequent breaks to move around, stretch and rest. When using a computer or electronic device keep the monitor or device in front of you and at eye level to avoid looking down or to the side for extended periods of time. If you need to turn your head frequently, have a chair that swivels.
- **Keep your head over your shoulders** in a neutral position with your ears in line with your shoulders. Don't slouch or crane your head forward. Ears over shoulders!
- **Forward head posture** will lead to occipital muscle pain, headaches, neck pain and increased face and temporal pain as well. Forward head posture results in an increase in the chewing muscle contraction activity with increased facial pain and headache.
- **Use orthopedic pillows** to support your head and neck during sleep.
- **Sleep on your back** for reduced force on the face and distortion of the resting position of your jaw.

Identify Problem Activities

- **Reschedule routine dental visits**, such as cleanings, for a time when your jaw will open wider and more easily and when your jaw pain has greatly decreased. If you have tooth or gum pain, call your family dentist.
- **Yawning** When yawning comes on you can consciously place your tongue into the roof of your mouth where it goes when you say the letter "N" and hold it there during the yawn. This position will limit the degree of mouth opening and reduce or avoid entirely the anticipated jaw joint and muscle pain.
- **Avoid any activities** that cause the onset or increase the pain. These may include activities that require you to project a loud voice (school teachers), yelling, singing, clenching or grinding your teeth, and nail biting. Sleeping on your face or leaning on your face is greatly discouraged.

Medications

Medications can help treat TMJ Disorders. Honestly! I prescribe fewer medications in my practice than one would expect in maintaining a pain management practice. I seldom use prescribed pain medications such as codeine or hydrocodone. Proper treatment truly reduces or eliminates the pain, and elimination of pain is our goal. Drug dependency is a problem for too many of my new patients and brings additional complexities that conflict with our successful treatment goals. Most patients have already tried

numerous pain remedies with disappointing success. It has been my clinical experience there is always inadequate pain relief when using pain medications for TMJ pain. When I choose to use drugs, I want to use enough to be effective. Long term use of medications including anti-inflammatories or pain medications leads to disease and difficult patient management issues.

Types of Medications:

Anti-inflammatories including non-steroidal anti-inflammatory medications (NSAIDs) such as ibuprofen, naproxen, aspirin, Celebrex and others can help relieve inflammation and the pain. In the many cases I see the anti-inflammatory medications have only postponed achieving a specific diagnosis and delayed the patient finding appropriate treatment to really improve their TMJ condition.

Muscle Relaxants A major portion of the patient's pain and other symptoms are coming from the muscles. Prescribed or natural muscle relaxants can help ease the muscle tension. The reduced muscle tension will be appreciated as a reduction in pain and other symptoms as well. I often use muscle relaxers early in treatment to improve the patient's ability to sleep more restfully and begin the day feeling improvement in their overall condition.

Anti-depressants Many of my new patients have been prescribed anti-depressants and are clenching and grinding their teeth like crazy. Interestingly used in Low dosages anti-depressants can reduce TMD symptoms including the reduction of muscle pain and may also help decrease teeth clenching and grinding during the night. Unfortunately, typical higher therapeutic doses of anti-depressants can cause a dramatic increase in tooth clenching and tooth grinding.

Reduces Pain by Restoring Normal Jaw & TMJ Function

Massage, Ultrasound, Laser, Microstem, TENS, Trigger Point Therapy, Prolotherapy, Passive stretches, Spray & Stretch, or gentle passive muscle stretch and exercise may be used individually or in combination to help reduce or relieve pain and restore normal function. The cause and severity of your pain will affect the choice of therapies prescribed. The therapy you receive will depend upon the individual diagnosis and treatment plan and how quickly you feel normal again.

Treating Painful Muscles

The most valuable and effective method of restoring jaw, muscle, and neck movement is

manipulation of the jaw and unlock the jaw joints (TMJs.) Unlocking the jaw joints and maintaining the unlocked joint's position improves movement and range of muscle motion and is very important to successful TMJ treatment outcomes.

Treating inflamed and painful jaw joints and chewing muscles

Therapy may also focus directly on the jaw joints and the muscles.

Treatment may include:

A self-care program may help you manage the symptoms on your own. It will likely include using ice to relieve pain and swelling for very recent injuries. Chronic sore muscles and jaw joints respond to heat and passive stretch followed by cold and then back to the heat for relaxation and improved blood circulation to the muscles.

- **Laser therapy** is a great treatment used for inflammation and restoration of normal tissues.
- **Ultrasound** is also a good treatment used for inflammation and **Gentle manipulation** by the patient or others can be used to restore motion to the muscles and joints and reduce the pain level.
- **Exercise** is helpful to strengthen muscles in the jaw and face. Normal eating is great exercise for the jaw while monitoring the swallow to assure there is no tongue thrust.
- **Laser or Ultrasound** (sound waves) will also decrease the inflammation and improve blood flow and encourage normal muscle activity. Ultra-sound deeply warms the treated area and can help reduce pain and swelling. Laser also warms the deep tissues and promotes improved blood circulation and healing.

Trigger points are tender or painful areas in a tight muscle that refer pain to a distant site. By definition trigger points are tender to pressure and refer pain to other distant locations. Treatment addressing trigger points includes the following:

- **Massage** inside and outside of the mouth
- **Palpation** (pressure with hands or fingers) to the trigger points in the muscles of the involved triggering muscles
- **Stretching & Spray** of muscles can cause a momentary reduction or elimination of triggers.
- **Injections into the triggers** - is Dr. Romriell's treatment of choice to quickly eliminate painful triggers.

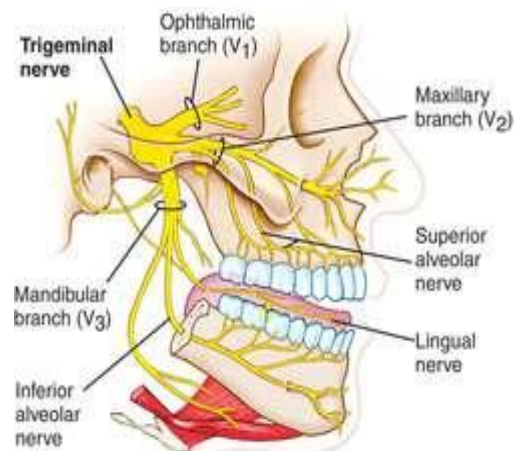
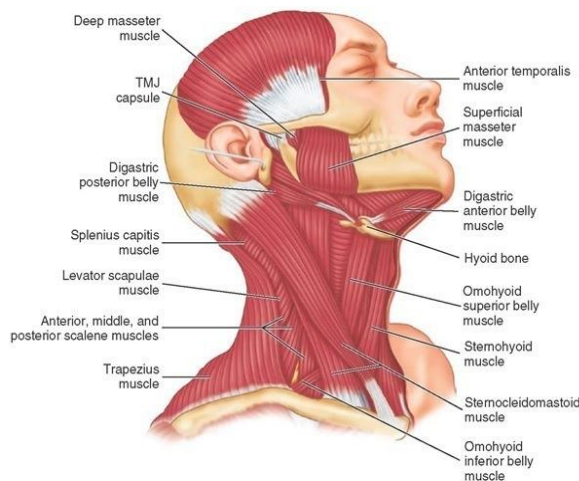
Treating a Temporomandibular Disorder -TMD

Proper diagnosis coupled with appropriate treatment is key to successful treatment outcome. Interestingly the problem is the patient symptoms are usually not in the jaw joint (TMJ), but are outside of the jaw joint and are in the surrounding chewing muscles, neck muscles, ears, and eyes. Logically one would look where the symptoms are located, and therein lays the problem. Yes, the chewing muscles, neck muscles, ears, and eyes can often have symptoms seemingly unrelated to the jaw joints. Nearly all of my patients have seen other doctors for their headaches, muscle pain, ear symptoms, eye symptoms, and have not found a diagnosis and treatment to achieve relief from the suffering. Usually, patients are still looking for relief of their multiple symptoms when they finally come to The TMJ Center.

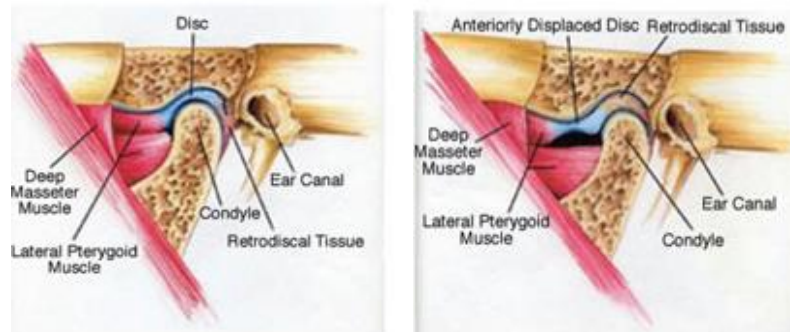
Jaw joint Disorders are divided in three diagnostic divisions

1. Outside of the jaw joint = external TM Disorder (Neuromuscular)
2. Inside the jaw joint = Internal derangement of the TMJ
3. Both inside and outside of the jaw joints

1 Outside of the jaw joint (TMJ) can involve several body parts including the mouth, teeth, gums, nerves, tongue, and several different muscles including shoulder muscle, neck muscles, and likely the chewing muscles (facial pain or muscle tension headache.)



2 Inside of the jaw joint (TMJ) involves far fewer body parts than #1. Amazingly the jaw joint (TMJ) receives far less attention and consideration from the doctors than the other symptomatic body parts as listed in #1. Generally, doctors know less about the jaw joint than the other structures outside of the jaw joint. The ear doctors look at the ears. The eye doctors look at the eyes, and unfortunately, they seldom make any correlation of the patient's presenting eye, ear, neck, shoulder, headache symptoms and a possible correlation with a very likely TMJ disorder.



3. A combination of 1. inside the TMJ 2. outside of the TMJ. The patients I commonly see at The TMJ Center are most often combination 3. TMJ disorders. The patient has problems inside the jaw joints and outside of the jaw joints. When the joints are injured a muscle reflex known as the arthrokinetic reflex comes into play. The arthrokinetic reflex causes the muscles to contract and become constantly tight in isometric muscle contraction and reduced blood flow to the muscle occurs (ischemia.) The patient may then begin to feel tension or pain or what the world calls a **muscle tension headache**. The constant contraction of the chewing muscles commonly leads to ischemia and numerous symptoms outside of the jaw joints (TMJs.) The prolonged constant isometric contraction of the chewing muscles often cause pain in the eyes, ears, neck and shoulders. Usually, the site of the pain distracts patients and their doctors away from the real underlying cause or source of the mysterious pain and symptoms. Jaw joint injuries are most often overlooked, because the symptoms are most often in other locations (site of the pain) rather than the in the jaw joints or TMJ (the source of pain.) Consequently, TMJ disorders have often been called **The Great Impostor**.

You will find it difficult to locate a muscle on the side of your face or head that is not a chewing muscle. Yes, there are neck muscles in the back of the head that when painful are also called a headache. Muscle tension headaches are usually painful chewing muscles on the side of the head and face. The advertisements we see on TV would lead everyone to believe muscle tension headaches are caused by a shortage of aspirin, Tylenol, Ibuprofen, Naproxen etc. Headaches from muscle tension are most frequently just painful chewing muscles. When you have a muscle tension headache do this simple test. Place your fingers over the area of the painful headache and clench your teeth together. I would expect you to feel the sore chewing muscles contract and bulge into your hands as you clench your teeth together.

TMJ Treatment

Because the jaw joint (TMJ,) chewing muscles, and your teeth work together as a functioning system, a problem involving one part of the chewing system will also affect the function of the other two parts of the system as well. A change in the jaw hinge or jaw joint also will be reflected as a change in the fit of the teeth and a change in the way the chewing muscles must work. The teeth, chewing muscles and the jaw joints (TMJs) are each part of the chewing machine and each part is necessary. Dentists take good care of teeth; although, they spend little time caring for the chewing muscles or the jaw joints (TMJs). When the jaw joints, chewing muscles, or the teeth fail to work together properly the chewing system is obviously compromised. Pain is the usual signal something is wrong somewhere in the chewing system.

If You Grind or Clench Your Teeth

If you grind or clench your teeth or have a bad bite, we may be able to help. When your bite needs significant shaping and contouring that may cause real damage to the teeth; you may be referred to an orthodontist to move the teeth to improve the bite and reestablish harmony. Grinding your teeth or tooth clenching strains the TMJ system and contributes to further damage to the jaw joints and cause muscles soreness. If you clench or grind your teeth during the day, doing self-checks can help you stop (see Jaw rest position.) It is difficult or maybe impossible to control clenching and grinding when you're asleep. That's when a well-chosen night time treatment **appliance** can help. Night guards help keep the upper and lower teeth apart and protect tooth surfaces from grinding together. The night guard appliance may also be called a splint, orthotic, retainer or bite guard as well. A dental appliance fits in the mouth over the teeth. There are obviously several different kinds of appliances for different treatment needs. Unfortunately, most night guards are to protect the teeth and fail in treating or protecting the jaw joints or protecting the chewing muscles.



Wearing and Caring for Your Appliance

To make an appliance, your dentist or orthodontist may take impressions of your teeth. Then the appliance is made to fit your mouth.

- -The treatment appliance may be worn all the time or only during the day or night. Be sure to ask when and how often you should wear the appliance.
- Clean the appliances regularly with a brush using soap and water. The treatment appliance should be cleaned and disinfected regularly. Ask your dentist or orthodontist how to clean and disinfect any treatment appliance you may have.
- When you're not wearing your treatment, appliance keep it in a protective case and out of the reach of children and pets. Protecting it will help keep it from getting dirty, broken or chewed up.

A poor bite is called a Malocclusion meaning the jaws or teeth doesn't fit together properly. A poor fitting bite can result in tooth and muscle pain and problems with jaw function. If your jaws or teeth are out of alignment, orthodontic treatment may help. A stable jaw joint position (TMJ) is necessary before moving any teeth to correct the bite. When the jaw joints are stable and the muscles are relaxed and comfortable, orthodontic treatment can progress extremely fast with amazing results. When the muscles are not relaxed and the jaw joints are not stable orthodontic treatment and tooth positioning becomes very discouraging, and the treatment becomes prolonged. The teeth are moved back and forth in an effort to achieve harmony with the muscles and jaw joints which may not be stable at all. It is necessary to have the jaw closing into the same jaw location each and every time the jaw closes when the teeth come together. A poor bite can lead to clenching and grinding the teeth in an effort to get the teeth together in a comfortable position. If your poor bite problem is due to missing or damaged teeth, you may receive restorative treatment.

Orthodontic Treatment

Sometimes the upper and lower jaws and teeth are out of alignment. The teeth may be out of line, turned, crowded or spaced too far apart. Your orthodontist can align teeth with braces or other devices. This helps provide a more harmonious and comfortable bite.



Restorative Treatment

A bad bite can be caused by missing, damaged, crooked or crowded teeth. Dentists can restore teeth in many different ways:

- **A crown** is a porcelain or metal cap placed over the tooth. A crown is commonly cemented in place to repair broken or damaged teeth.
- **A bridge** is a new artificial tooth fused between two crowns fit over other teeth.
- **A dental implant** is an artificial tooth root. It is attached to the jaw as a base for an artificial tooth or crown to be placed over the implant.



Implant



When Surgery Is Needed

Surgery is rarely needed for my TMD patients. However, on the rare occasion when the treatment I provide does not work one may be referred to an oral maxillofacial surgeon. The number of my patients in my practice that require TMJ surgery is less than 1%; although, in the NIH study I participated in, several of the other doctors had a surgical rate of more than 20%. In my office the odds are defiantly in your favor. Surgery is recommended only as a last resort and when necessary, we have a great surgeon!

Maintaining Jaw Health

TMJ treatment will assist you in getting your life back. Function will improve, and the pain should all go away. Your self-care does not end there. Once you've had a TMJ disorder, it's important to avoid re-injury. Be aware of your body and take note if symptoms recur. Also, some lifestyle changes to treat TMD should become healthy lifelong habits. Get in the habit of doing a self-check to maintain an awareness of any symptoms that may come back.

If symptoms return take immediate self-action. Ask yourself:

- Do I feel stressed?
- Are my muscles tense?
- Am I grinding or clenching my teeth?
- Am I keeping my tongue on the "N" spot?
- Am I wearing my properly maintained and balanced night guard?
- Am I keeping my head over my shoulders? Not leaning forward!
- Is there anything I can do to make myself more comfortable?

If you answered "yes" to any of the questions above, take action. Adjusting your posture or taking a short break can help prevent or relieve TMD symptoms.

Muscle injuries can usually be restored to normal levels; although, jaw joint (TMJ) injuries are usually permanent in nature. Most of my patients are restored to normal jaw and TMJ motion and they function normally in most ways. I personally consider it a great compliment when patients report they are, "back to normal;" which happens frequently. Also, more frequently I must remind the patient they have a permanently injured jaw joint and some precaution is in order.

Precautions

1. Wear the TMJ night guard we provide whenever sleeping.
2. Have the night guard evaluated regularly by the doctor or one of the professional partners.
3. Maintain the tongue “N” rest position at all times.
4. Perform daily passive jaw stretches taught by Dr. Romriell at The TMJ Center.
5. Avoid hard or chewy foods. Even if you feel fine, eating such foods can trigger your symptoms to return.
6. Be aware of your body. Don't ignore any TMD symptoms. The nagging pain in your neck or jaw may indicate that you need care.
7. Be sure to keep follow-up appointments with your home dental team.

Listen to Your Body

Many people get accustomed to ignoring pain. Pain is a signal that your body needs care. To maintain TMJ jaw health:

Manage Stress

Relaxing is something one can learn to do. Get plenty of rest and sleep. Exercise gently; I recommend walking. Try Yoga or Tai Chi. Take a walk with someone to talk to. Listen to relaxing music. Gently stretch the tension out and breathe. Take a few slow, deep breaths. Ask for help when you need help. Make time for people and things you enjoy. Close your eyes and vividly visualize a place that is calm & relaxing.

Write down your to do list before you go to bed. (Never while in bed)

Anxiety and stress can cause an increase in muscle contraction activity and lead to muscle disorders. Many erroneously believe jaw joints are initially damaged by clenching and grinding the teeth; although, studies have shown this is not the case. Anxiety and stress factors that complicate TMJ treatment; anxiety, stress and tooth clenching that may go with the stress are not the primary cause of joint disorders, but are perpetuating. There are contrary opinions for the cause of joint disorders cannot be supported by current research. Stress

and pain also affect the quality of sleep. I regularly question my patients concerning their sleep and nearly always the patient will report their sleep is interrupted several times each night with headache pain and tension in their jaws. Some have limited jaw opening in the morning and postpone breakfast or just have a banana or a protein drink. Stress and poor sleep reduce the body's ability to heal. If symptoms return you should know what to do.



Resources

- The TMJ/Sleep Center website
www.theTMJsleepCenter.com
- I am a Fellow of the American Academy of Craniofacial Pain
www.aacfp.org/resources/patients.cfm
- I am a diplomat of the American Academy of Pain Management
- I have been personally involved and provided patient research data in several National Institute of Dental and Craniofacial Research projects.
www.nidcr.nih.gov/Ora1Health/Topics/TMJ/
- American Association of Orthodontists
www.mylifemysmile.org
- The American Dental Association
www.ada.org
- www.Epracticemanager.com