

Temporomandibular Joint Dysfunction

The temporomandibular joint, (TMJ), is formed by the mandibular condyle on the mandible articulating with the mandibular fossa on the temporal skull bone, separated by a fibro cartilage articular disk. Through excursion, protraction, retraction, depression, and elevation of the mandible, this joint allows for the movements that enable us to eat and talk. It moves more often than any other joint in our bodies and therefore has a greater potential for wearing down. The muscles that move the mandible consist of:

1. the masseter which originates at the zygomatic arch and inserts on the lateral surface of the angle and ramus of the mandible
2. the temporalis originates in the temporal fossa and fascia and inserts at the coronoid process and the anterior boarder of the ramus of the mandible
3. the medial pterygoids originate at the medial side of the lateral pterygoid plate and tuberosity of the maxilla and inserts on the medial surface of the angle and ramus of the mandible
4. the lateral pterygoids originates on the lateral side of the lateral pterygoid plate and greater wing of the sphenoid and inserts on the neck of the mandibular condyle, the joint capsule and the articular disk

All four sets of muscles are innervated by the trigeminal cranial nerve and the blood supply is provided by the external carotid artery.

Common injuries and diseases that affect the TMJ include dislocation, fracture, soft tissue injury, arthritis, whiplash, malocclusion, ankylosis, abnormal development, neoplasms, osteomyelitis, Condylar hyper/hypoplasia, joint derangement. Most commonly heard about in association with the temporomandibular joint is known by a multitude of names: TMJ, TMJD,

TMD, temporomandibular joint- disorder, dysfunction, disease, or syndrome and sometimes the word joint is left out. Whatever the name, they all refer to a set of symptoms caused by this joint, many times due to the common injuries that can occur.

TMJ dysfunction stems from any number of causes which creates a misalignment of the joint. Injury to the head, neck or jaw that results in soft tissue damage, dislocation, or bone fracture is estimated to be amongst the largest contributor. Muscle tension is attributed to overuse of the joint muscles through gum chewing, or bruxism, (the grinding or clenching of teeth). The tightened muscles and trigger points tend to press against the nerves. Systemic diseases such as arthritis and lupus erythematosus can cause inflammation and deterioration of the joint integrity. Vertebral misalignment such as scoliosis and poor posture can lead to muscle strains of the head and neck, this is especially true for those who sit in front of the computer with their head jutted forward.

TMJ dysfunction commonly affects the trigeminal nerve and is referred as headaches, earaches, toothaches, jaw, neck, shoulder and facial pain. It may also be exhibited by a clicking, popping or grinding sound when the jaw moves, headaches, earaches, diminished movement of the joint, locking of the jaw preventing either opening or closing of the mouth, and muscle spasms.

TMJ dysfunction affects more than 10 million persons in the United States alone. It is seen most often in women between the ages of 20 and 50. It affects this group the most often due to the performance of oral sex. The act of keeping the jaw forced open and the strain of eccentric contraction of the muscles crossing the joint is the cause of an immense amount of muscular tension. While oral sex performance may not be the event that started the disease process, it is the action that most often causes the manifestations of symptoms to occur.

TMJ dysfunction usually begins with a muscular imbalance. There is an increased amount of tension in the muscles due to this imbalance which eventually causes a misalignment of the jaw. When the mandible is moved the mandibular condyle should move smoothly along the disk of cartilage, however during misalignment the cartilage gets pushed forward and becomes anteriorly displaced preventing full range of motion by the mandible and grinding of the bones.

Diagnosis for TMJ dysfunction includes physical examination, MRI, X-RAY, CT, and arthroscopy.

Treatments range from the mild to the extreme. Medications may include muscle relaxants or anti-inflammatory drugs. Surgical procedures include disc repair, bone reduction, meniscectomy, tooth re-alignment. Fittings for a mouth guard or splint can be used to help correct misalignments. Ultrasound and electrical nerve stimulation are used to interrupt the nerve pain cycle. Massage, acupuncture, and chiropractic adjustments are also used. Self care at home includes biofeedback, stretching exercises, hot and cold packs, massage, avoiding hard foods or chewing gum that may overwork the muscles, and maintaining good posture all help decrease the episodes of pain.

Massage therapists wishing to work specifically with TMJ dysfunctional clients should learn to use the modalities of hot and cold therapies, cross friction fiber, myofascial release, craniosacral work, trigger point, or neuromuscular therapy.

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