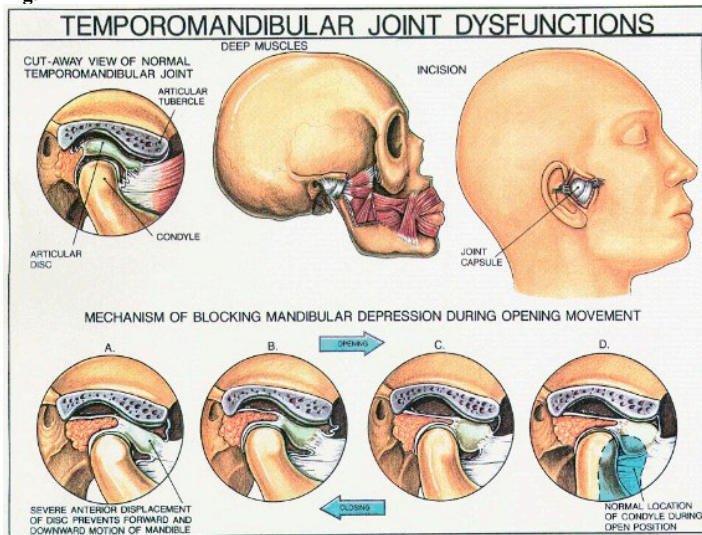


Temporomandibular Joint Disorder (TMJD or TMD) or TMJ Syndrome: A reference guide for health-care practitioners (acupuncture and massage treatment focus)

Definition: TMJD refers to acute or chronic inflammation of the temporomandibular joint. The disorder and resultant dysfunction can lead to significant pain and mobile impairment.

Fig. 1



Causes of TMJD: The most common mechanism disabling TMJ movement is in regards to the relationship between the condyle of the mandible and the joint disc. Severe anterior displacement of the disc will prevent depression of the mandible (Fig. 1). The pain associated with TMJD may originate from soft tissue aggravation or from irritation of the trigeminal nerve, with one of its branches in close proximity to the TMJ (Fig. 2). When receptors from one of these areas are triggered, the pain may cause a reflex that limits the mandible's movement. In addition, inflammation of the joint or damage to the trigeminal nerve can cause constant pain, even without movement of the mandible.

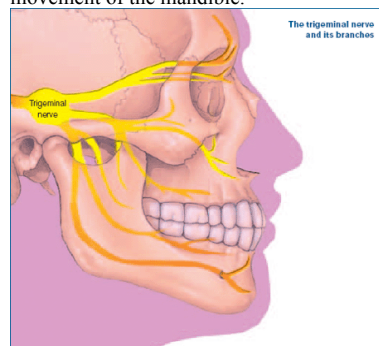


Fig. 2

There are many factors that may lead to TMJD. These include but are not limited to the following:

- 1) Bruxism (repetitive unconscious clenching or grinding of the teeth, often at night)
- 2) Physical injury
- 3) Misalignment of the occlusal surfaces of the teeth due to defective crowns or other restorative procedures
- 4) Jaw thrusting (any mechanism in which the mandible is depressed or protruded aggressively i.e. emergency medical procedure to open airway or in a manipulation technique to reduce a dislocated mandible)
- 5) Excessive gum chewing or nail biting
- 6) Eating large bites of food or hard foods
- 7) Degenerative joint disease (DJD) as in osteoarthritis, organic degeneration of the articular surfaces, recurrent fibrous and/or bony ankylosis, developmental abnormality, or pathologic lesions within the TMJ
- 8) Myofascial pain dysfunction syndrome (characterized by chronic pain caused by multiple trigger points and fascial constrictions)
- 9) Lack of overbite
- 10) Stress

Risk Factors for TMJD:

- Woman ages 30-50
- Athletes involved in contact sports
- Facial bone deformity that affects mandible and/or teeth alignment
- Occurs more often with the following conditions: Rheumatoid Arthritis, Fibromyalgia, Chronic Fatigue Syndrome, Sleep Disorders, and Epilepsy

Signs and Symptoms of TMJD:



Fig.3

- Inability or reduced ability to open or close the mouth
- Popping, clicking, or grinding sound when opening or closing the mouth (abnormal movement of the condyle in the joint space should be palpable with these sounds)
- Pain when opening or closing the mouth
- Biting, chewing, or yawning difficulty or discomfort
- Jaw pain/ache and tenderness of the jaw upon palpation
- Facial pain that is dull and achy
- Headache, migraine, and/or earache, especially in the morning
- Tinnitus
- Hearing loss
- Dizziness
- Neck and shoulder pain (referred)

Differential Diagnosis: Other conditions to consider upon the presentation of lateral facial pain or pain in the TMJ:

- Trigeminal Neuralgia - A neuropathic disorder characterized by episodes of intense pain in the face, originating from the trigeminal nerve. The differentiating symptom is neuropathic pain (sharp, radiating, numbness, tingling) rather than deep somatic pain (muscle, skin, tissue pain) as in TMJD.
- Primary Otalgia - Also known as an earache with pain that originates inside the ear. Any number of causative factors must be examined.
- Mumps - A contagious disease caused by a virus. Symptoms include facial pain and referred pain and swelling of the TMJ, however the actual location of swelling is of the parotid glands (the largest salivary glands between the ear and jaw). Differentiation from TMJD includes a fever, sore throat, and possibly testicular and scrotal pain and swelling.
- Neoplasm - An abnormal mass of tissue in proximity of the TMJ that may be benign, pre-malignant, or malignant (cancer). A neoplasm may also cause decreased range of mandibular motion.
- Muscular tension - Tension headaches or chronic muscular contraction of the facial, neck, and/or shoulder muscles may refer pain into the TM. However, although muscular tension may eventually cause TMJD, it can also be mistaken for an actual misalignment or dislocation of the mandible and displacement of the disc causing TMJ inflammation.

Physical Examination of the TMJ:

- Inspection - Inspect the TMJ and surrounding cheek area for swelling and/or redness; Inspect mandible range of motion and alignment: elevation, depression, protraction, retraction (Fig. 4-8)

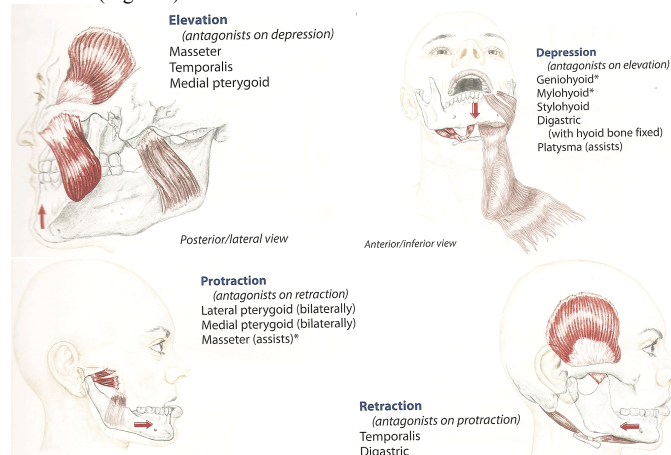


Fig. 4-8

- Palpation - Palpate the primary muscles of mastication: *masseters*, *temporalis muscles*, and *pterygoid muscles* (Fig. 4-8); Palpate the exterior TMJ as the patient opens and closes their mouth (Fig. 9)

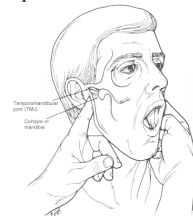


Fig. 9

Positive Findings: Pain, tenderness, muscle tension, decreased range of motion, mandibular deviation, popping/clicking sound and/or palpable pathological movement from the TMJ

Indications: Possible temporomandibular joint disorder (see attached reference for orthopedic assessments to diagnose specific TMJ disorders)

TCM Syndrome Differentiation for TMJD:

Note: All syndrome patterns are accompanied with symptoms including pain in the TMJ aggravated by chewing, stiffness and snapping or popping of the joint, and difficulty opening the mouth.

- 1) **Attack by Pathogenic Wind-Cold:** Headache, general ache, aversion to wind/cold, muscle rigidity; T: Thin and white coat; P: Floating and wiry
- 2) **Liver-Qi Rising:** Dizziness, insomnia, irritability, tinnitus, redness of the face; T: Thin and white coat; P: Thready and wiry
- 3) **Impairment of the Muscle and Tendon by External Injury:** History of external injury to the cheek or strain of the TMJ muscles by opening the mouth too wide; T: Purple body; P: Wiry
- 4) **Kidney Deficiency:** Maldevelopment of joints, loose teeth, fatigue, dizziness, insomnia, tinnitus; T: Thin and white coat; P: Thready and weak

Acupuncture Treatment for TMJD:

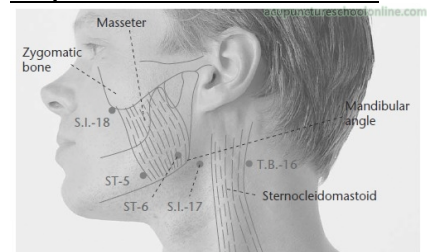


Fig. 10

Common local acupuncture points and indications (Fig. 10):

- **Jiaozhong** (extra point at the midpoint of the line connecting ST-6 and ST-7)
- **ST-5 Daying** (expels wind, reduces swelling, lockjaw, deviation of jaw)
- **ST-6 Jiache** (expels wind, reduces swelling, lockjaw, deviation of jaw, tension/pain of jaw, inability to chew or open the mouth)
- **ST-7 Xiaguan** (lockjaw, dislocation of jaw, swelling and pain of the cheek/lower jaw, tinnitus, ear pain)
- **GB-2 Tinghui** (expels wind/heat, pain of the mandibular joint, difficulty chewing dislocation/deviation of the jaw, facial pain/swelling, tinnitus)
- **GB-3 Shangguan** (expels wind, facial pain, deviation of the jaw, lockjaw, tetany leading to bone pain)
- **SI-18 Quanliao** (subluxation of the TMJ, facial pain/swelling, deviation of the jaw, inability to chew)

Motor points:

- **Temporalis MP** (1 cun anterior to GB-8 Shuaigu, perpendicular 0.5 inch) (Fig. 11)
- **Masseter MP** (extra point **Qianzheng** slightly inferior to ST-7 Xiaguan level with the ear lobe, perpendicular 0.5-1 inch) (Fig. 12)

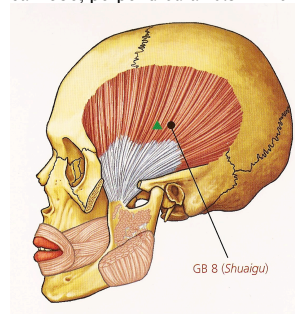


Fig. 11

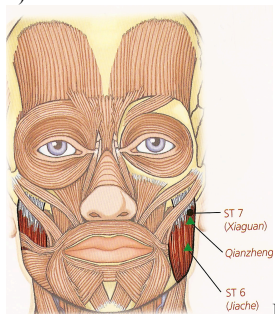


Fig. 12

Common distal acupuncture points and indications:

- **LI-4 Hegu** (command point of the face, facial paralysis, expel Wind-Cold)
- **LV-3 Taichong** (smooth Liver Qi, emotional depression or irritability)
- **GB-34 Yanglingquan** (influential point of muscles/tendons, dislocation of joints, smooth Liver Qi)
- **GB-41 Zulinqi** (unilateral pathology, smooth Liver-Qi)
- **GB-20 Fengchi** (expel Wind, headache, dizziness, smooth Liver Qi)
- **Amian** (extra point for insomnia)
- **SJ-17 Yifeng** (expel Wind, tinnitus)
- **DU-8 Jinsuo** (relax muscles/tendons, smooth Liver Qi, pacify Wind)
- **UB-18 Ganshu** (facial numbness, nourish the Liver)
- **UB-11 Dazhu** (influential point of bones, benefits joints, expels wind)
- **ST-36 Zusanli** (poor appetite)
- **UB-23 Shenshu** (chronic condition/Kidney deficiency)

Auricular acupuncture points (marked in red on related images):

- **Mandible point** (towards superior portion of lobe) (Fig. 13)
- **Maxilla point** (towards centre of lobe) (Fig. 13)

- **Jaw points** (two points at the superior-lateral portion of the lobe) (Fig. 14)
- **Anesthetic point for tooth extraction – upper** (towards superior-medial portion of lobe) (Fig. 14)
- **Anesthetic point for tooth extraction – lower** (towards the central-medial portion of lobe) (Fig. 14)
- **Ear Shenmen** (in the depression at the lateral-most angle of the triangular fossa – indicated for pain, tension, stress) (Fig. 14)
- **Liver-Yang point** (at the superior-lateral angle of the helix – subdues Liver-Yang rising) (Fig. 14)

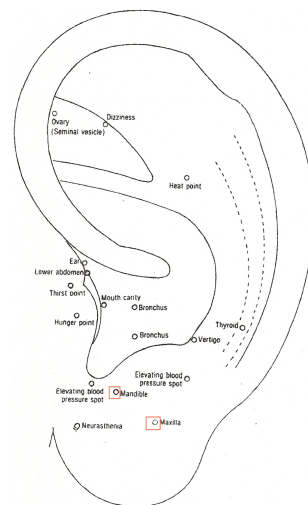


Fig. 13

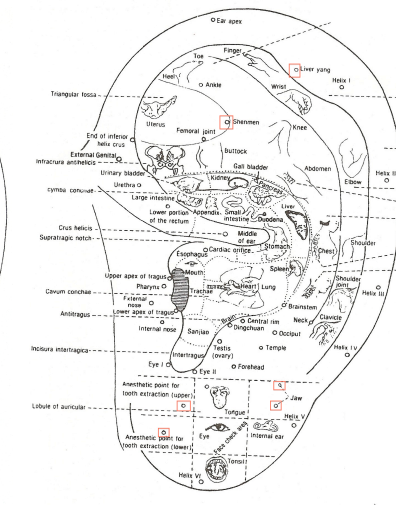


Fig. 14

Additional Treatments Protocols for TMJD:

Massage Technique

- With gloved hands, support the patient's jaw on affected side with one hand and ask the patient to open their mouth. Remind the patient to inform of any severe pain elicited from the massage. With the index finger of the other hand, reach into the patient's mouth on the affected side and gently stroke the medial (stroke superior to inferior) and then lateral (stroke posterior to anterior) pterygoids. A few gentle strokes along each muscle should be enough. Be aware of palpating the parotid gland and stimulating excess salivary secretions into the patient's mouth (Fig. 15)

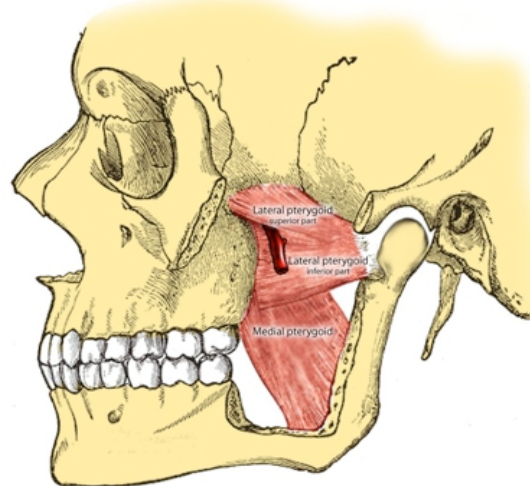


Fig. 14

References:

- Bickley, Lynn S. *Bates' Pocket Guide to Physical Examination and History Taking* 6th ed. Lippincott Williams & Wilkins, 2009.
- Biel, Andrew. *Trail Guide to the Body* 4th ed. Books of Discovery, Boulder CO: 2010.
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- Yin, Ganglin and Zhenghua Liu. *Advanced Modern Chinese Acupuncture Therapy: A practical handbook for intermediate and advanced study*. New World Press, 2000.

Images:

- Fig. 1 – Graphicshunt.com <Temporomandibular joint dysfunction>
- Fig. 2 – MSIF.org <Neurogenic pain in MS>
- Fig. 3 – Ridentalimplantcenter.com <TMJ Disorder>
- Fig. 4-8 - *Trail Guide to the Body* 4th ed. (Pg. 243)
- Fig. 9 – Painneck.com <TMJ Syndrome Diagnosis>
- Fig. 10 – Acupunctureschoolsonline.com <ST-6 Jaw Bone Jiache>
- Fig. 11-12 - *Motor Point Index* (Pgs. 18, 19)
- Fig. 13-14 - *Acupuncture Therapy* (Pgs. 254, 255)
- Fig. 15 – Radiopeadia.org <Lateral Pterygoid Muscle>