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(NUMSS)

Manual Osteopathic Treatment of the Temporomandibular Joint Disorders

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Introduction

The Temporomandibular joint (TMJ) is the second most common source of facial pain, second to toothache. Temporomandibular disorders (TMD) are a collective term that includes disorders of the temporomandibular joint (TMJ), of the masticatory muscles and their associated structures in the absence of other visceral (for example ear disorder, pharyngeal tumor, or dental abscess). It is characterized by pain, joint sounds, and restricted mandibular movement.

The morbidity of the disorder is related to significant pain on movement of the jaw. Adults of 20-40 years of age are most commonly affected: female to male: 4:1.

The pathogenesis of the TMD, however, is unclear. Physical (trauma, muscle spasms, chronic malocclusion, bruxism causing grinding of clenching of teeth), biochemical (vitamin inadequacy), and physiological factors (anxiety, stress, and depression) may all play a role.

The TMJ disorder is a painful condition that causes inflammation in the joint created by the temporal bone in the skull and the lower jaw bone (Mandible).
The joint

The temporomandibular joint (TMJ) is the synovial joint that consists of the head of the mandible and mandibular fossa of the temporal bone, and a fibrocartilaginous articular disc separates these two structures.

This joint connects the jaw to the skull and is located just in front of each ear.

Each joint is composed of the condyle of the mandible, an articulating disc, and the articular tubercle of the temporal bone.

The TMJ has an inter-articular disc which separates the joint cavity into two.

The articular disc, also known as the meniscus, is a biconcave, fibro-cartilaginous structure, which provides the gliding surface for the mandibular condyle, resulting in smooth joint movement. The meniscus has three parts: a thick anterior band, a thin intermediate zone, and a thick posterior band.

When the mouth is opened, the head of the mandible and articular disc move anteriorly on the articular surface of the temporal bone, which the head of the mandible rotates on the inferior surface of the articular disc around a transverse axis (Kapandji).

During protrusion and retraction, the heads and articular discs slide anteriorly and posteriorly respectively.

With the mouth closed, the condyle is separated from the articular fossa of the temporal bone by the thick posterior band.

The temporomandibular joint functions for so many of our daily activities, the most significant of which is eating, which requires tremendous leverage and strength.

The most common problem is for the disc to be displaced medially.
Innervation of TMJ

The Trigeminal nerve innervates the TMJ and surrounding structures which explains the pain and referred pain patterns of TMJ disorders.

Irritation of the mandibular branch (V3) of the trigeminal nerve results in pain locally at the TMJ and also to other areas of V3 sensory innervation, which include the ipsilateral skin, teeth, side of the head, and scalp.

**INNERVATION**

- **TRIGEMINAL NERVE:** Mandibular div.

- **SENSORY**
  - Auriculo temporal nerve: from the posterior division of the mandibular nerve
  - Mesenteric nerve: from the anterior division of the mandibular nerve

- **MOTOR**
  - Mandibular division of trigeminal nerve
Osteokinematics

The osteokinematics of the mandible are most often described as protrusion and retrusion, lateral excursion, and depression and elevation. All of these movements occur to varying degrees during mastication. For a more detailed analysis of mandibular movements.

The TMJ can move in 6 directions:

1) Up and down - the main movement used in biting and chewing

2) Protrusion and retrusion - mainly used for tongue movements, talking and swallowing.

3) Left and right – for grinding the food when chewing

Arthrokinematics

Movement of the mandible typically involves bilateral action of the TMJs. Abnormal function in one joint naturally interferes with the function of the other. Depending on the osteokinematics, the arthrokinematics of the TMJ normally involve both rotation and translation. In general, during rotational movement the mandibular condyle rolls relative to the inferior surface of the disc, and during translational movement the mandibular condyle and disc slide essentially together. The disc usually moves in the direction of the translating condyle.
Arthrokinematics of opening the mouth, illustrated for the right temporomandibular joint only: early phase (A) and late phase (B).

MUSCLES AND TMJ INTERACTION:
The muscles (primary & secondary) of mastication and their innervation:
the muscles of mastication are divided into two groups: primary and secondary. The primary muscles are the masseter, temporalis, medial pterygoid, and lateral pterygoid. The secondary muscles are much smaller.

PRIMARY MUSCLES OF MASTICATION: The primary muscles of mastication are the masseter, temporalis, medial pterygoid, and lateral pterygoid.

**Masseter:** The masseter is a thick, strong muscle, easily palpable just above the angle of the mandible. The muscle, as a whole, originates from the zygomatic arch and zygomatic bone and inserts inferiorly on the external surface of the ramus of the mandible.

The actions of both heads of the masseter are essentially the same. Bilateral contraction *elevates* the mandible to bring the teeth into contact during mastication. The line of force of the muscle is nearly perpendicular to the biting surface of the molars. The primary function of the masseter, therefore, is to develop large forces between the molars for effective grinding and crushing of food.

Bilateral action of the masseters also *protrudes* the mandible slightly. Unilateral contraction of the masseter, however, causes slight *ipsilateral excursion* of the mandible. Such an action may occur during a lateral grinding motion while chewing.

The multiple actions of the masseter are necessary for effective mastication.
Frontal plane view shows the muscular interaction during left lateral excursion of the mandible. This action may occur during a side-to-side grinding motion while chewing. The muscles producing the movement are indicated in red:

**Temporalis**: The temporalis is a flat, fan-shaped muscle that fills much of the concavity of the temporal fossa of the skull. From its cranial attachment, the muscle forms a broad tendon that narrows distally as it passes through a space formed between the zygomatic arch and the lateral side of the skull. The muscle attaches distally to the coronoid process and to the anterior edge and medial surface of the ramus of the mandible. Bilateral contractions of the temporalis muscles elevate the mandible. The more oblique posterior fibers elevate and retrude the mandible.

Similar to the masseter, the temporalis courses slightly medially as its approaches its distal attachment. Unilateral contraction of the temporalis, therefore, as when chewing in a side-to-side manner, causes slight ipsilateral excursion of the mandible.
**Medial Pterygoid:** The medial pterygoid muscle arises from two heads. The much larger *deep head* attaches on the medial surface of the lateral pterygoid plate of the sphenoid bone. The smaller *superficial head* attaches to a region of the posterior side of the maxilla, just above the third molar. Both heads course nearly parallel with the masseter muscle and attach on the internal surface of the ramus, near the angle of the mandible.

The actions of the two heads of the medial pterygoid are essentially identical. Acting bilaterally, the medial pterygoid *elevates* and, to a limited extent, *protrudes* the mandible. Because of the oblique line of force of the muscle relative to the frontal plane, a unilateral contraction of the medial pterygoid produces a very effective *contralateral excursion* of the mandible.

![Illustration highlighting the left medial pterygoid (A) and lateral pterygoid (B) muscles. The mandible and zygomatic arch have been cut for better exposure of the pterygoid muscles.](image)

**Anatomy of TMJ and related structures:**

TMD is viewed as a musculoskeletal disorder within the masticatory system.

The temporomandibular joint (TMJ) is responsible for all movements of jaw. These movements allow a number of functions such as chewing, sucking, swallowing, articulating sounds, breathing, and making facial expression.

The TMJ makes muscular and ligamentous connections to the cervical region, forming the cranio-cervico-mandibular system.

There are a few key muscles involved in mastication. They are the suprahyoid muscle, temporalis, masseter, lateral pterygoid, medial pterygoid, buccinators, succinator muscle.

All the muscles of mastication are innervated by the mandibular division of the trigeminal nerve.
CAUSES OF TMJ PAIN:

1. Myofascial pain dysfunction (MPD) syndrome, pain at the TMJ due to various causes of increased muscle tension and spasm. It is believed that MPD syndrome is a physical manifestation of psychological stress. No primary disorder of the joint itself is present. Pain is secondary to events such as nocturnal jaw clenching and teeth grinding.

Treatment is focused on behavioral modification as opposed to joint repair. This is the most common cause of TMJ pain.

2. Internal derangement (ID), where the problem lies within the joint itself, most commonly with the position of the articulating disc. Anterior disc replacement is the most common cause here.

3. Degenerative joint disease, where arthritic changes result in degeneration of the articulating surfaces. This is generally secondary to micro trauma, whiplash, osteoarthritis, rheumatoid arthritis, and ankylosing spondylitis.

There is also another classification of TMJ disorders which is widely used by the National Institute of Dental and Craniofacial Research (NIDCR).

The AAOP (American Academy of Orofacial Pain) classification divides TMJ broadly into two syndromes:

1. Muscle-related TMJ (myogenous TMJ), sometimes called TMJ secondary to myofascial pain and dysfunction.

2. Joint-related (arthrogenous) TMJ, or TMJ secondary to true articular disease.

Myogenous TMJ is more common. In its pure form, it lacks apparent destructive changes of the TMJ on radiograph and can be caused by multiple etiologies such as bruxism and daytime jaw clenching.
Symptoms

Clinical manifestations associated with TMJ disorders may be:
- increasing pain over the course of day (especially in jaw muscles)
- pain may also felt in the rest of head, ears, neck and shoulders
- jaw locking or clicking (may also hear ear clicking)
- reduced ability to open, close mouth &/or eat
- ringing in ears (tinnitus)
- dull, aching pain in the face
- clicking, popping or grating sound when opening or closing the mouth
- facial muscle pain and tics
- unilateral neck and shoulder pain
- bi-temporal headache/migraines
- earache, tinnitus, hear loss
- difficulty opening or closing the mouth
- sleep apnea (A sleep disorder characterized by pauses in breathing or instances of shallow or infrequent breathing during sleep)
- jaw pain or tenderness of the jaw can be worsened by chewing
- locking of the jaw: open lock occurs with the condyle dislocated anterior to the articular eminence. close lock occurs with the anterior dislocation of articular disc
- biting or chewing difficulty or discomfort
- facial asymmetry: the affected side is more concave meaning on the affected side the face is smaller
- jaw clenching and bruxism (teeth grinding) due to stress, normal teeth contact 360x per night, bruxism 1325x per night
Observation and assessment of the TMJ

The diagnosis is crucial in understanding and treating the problem. The full examination will involve a comprehensive medical questionnaire: passive and active examination; muscle testing, ranges of motion; analysis; possibly tests and Magnetic Resonance Imaging (MRI).

When assessing a patient with TMJ problems, the osteopath begins with a standing postural assessment observing head-neck-spine relationships. The osteopath pays special attention to the position of the TMJ in relation to the skull, anterior and posterior cervical soft tissues and shoulder girdles all of which make up the closed kinetic chain of the gnathic system.

The osteopath should observe areas of stress in around the TMJ itself including the scalenes, sternocleidomastoid and platysma. Obvious signs of tension or stretching should be noted by the osteopath as they will indicate a stress and potential imbalance of the TMJ and will need to be reassessed during the passive examination.

Observation:

- Facial symmetry (lateral deviation of the mandible or muscle hypertrophy)
- Chin deviation can be C or S shape curve
- If there is a S shaped curve, there are bilateral somatic dysfunctions
- Average opening of the mouth is 40mm
- Tip of the chin deviates toward the side of the disorder
- Sacral base
- Scoliosis
- Feet and ankles

Active examination:

Active examination should focus on asking the patient to perform movements of the spine specifically the cervical spine, nothing restricting in movement in any direction which could be related either directly or indirectly to the TMJ via the cervical fascia, infra-hyoid muscles, anterior cervical muscles and posterior cervical muscles.
TMJ can move in six directions and the muscles that control these movement are:

1. Masseter muscle
2. Temporalis muscle
3. Lateral and medial pterygid muscles

Active examination should also include examination of the gleno-humeral joints which have a soft-tissue connection to the somato-gnathic system.

Finally the osteopath can ask the patient to open the mouth in all directions paying attention to any adventitious movements.

Passive examination:

Palpation by the osteopath of all the structures previously mentioned, however this time the osteopath is able to put this hands directly on the TMJ and ask the patient to open her/his mouth.

This allows the osteopath direct contact with the dysfunctional joint. This palpation is best perform one-two cm anterior to the tragus, inferior to the zygomatic arch.

The osteopath should simultaneously palpate the muscles around the TMJ, gathering information about the hypertonia of the soft tissues and any inequality on either side that may be creating an imbalance of movement.

Gentle palpation along the anterior and posterior structures of the cervical spine should include articulation of the hyoid bone, glenohumeral joints, clavicles, manubrio-sternal joints and ribs, all of which have a role to play in the stability of the TMJ function.

Imaging is not indicated unless there is a acute trauma. X ray is adequate. Personally I would choose MRI.

Laboratory testing is only useful for screening for rheumatoid or the other metabolic causes of joint pain (gout, pseudo gout, rheumatoid arthritis, etc)

TMD pain is generally located in the masseter muscle, preauricular area, and/or anterior temporalis muscle regions. The quality of this pain is generally an ache, pressure, and/or dull pain and may include a background burning sensation. There may be also be episodes of sharp pain, and when the pain worsens, the primary pain quality may become a throbbing sensation. Practitioners must obtain a patient’s pain history which include pain location, pain qualities, aggravating and relieving factors and other factors suggestive of other disorders.

The physical examination consists of a comprehensive evaluation of the TMJ and upper quarter, the quantity and quality of the bilateral active and passive TMJ, cervical and thoracic mobility are part of assessment.

The diagnosis of TMJ disorder should include careful palpation of the TMJ, masticatory muscle, and neck, as well as temporomandibular index test, which measures the severity of the disorder and the visual analog scale which records the intensity of pain.

General observation of the mouth should be performed to rule out dental or oral lesions. If tooth abscess or malocclusion indicated, refer to a dental practitioner is advised.

Palpation of the TMJ is best performed 1-2cm anterior to the tragus, inferior to the zygomatic arch.

Placing gloved thumbs can assess the accessory motions of the TMJ intra-orally over the lower teeth and wrapping fingers around the mandible externally. Apply passive stress to A-P glide and lateral glide. Normally a springing end feel is perceived.
osteopath should be able to identify contributing factors that appear to be contributing to the TMD symptoms. Examples of commonly identified TMD perpetuating factors are night time parafunctional habits, gum chewing, daytime clenching, holding tension in the masticatory muscles, neck pain, excessive caffeine consumption, stress, tension, aggravations, frustrations, depression, poor sleep, poor posture, and widespread pain. It is recommended that the contributing factors that are the easiest to change and that are speculated to provide the greatest impact on the symptoms be initially changed.

- Palpation of the temporomandibular joint: (a) anterior to the tragus; (b) in the external auditory meatus.

- Active opening of the mouth.
- Checking the range of motion.

- Active closing of the mouth.
- Active forward protrusion of the chin.
- Active deviation of the mandible.

- Resisted opening of the mouth.

- Resisted closing of the mouth.
• Resisted deviation of the mandible (a) to the left; (b) to the right.

Key TMJ physical exam procedures (a complete assessment is required)

☐ Observation (and temperature if necessary)
☐ Range of motion & mandibular gait
☐ Joint palpation & muscular assessment of the TMJ, hyoid and cervical region
☐ Orthopedic/provocative tests
☐ Cervical and upper thoracic spine exam
☐ Full spine exam (optional)

Osteopathic Treatment

After a full assessment of the patient’s condition the osteopath can start to design a treatment plan. It is also very important to see if there are any underlying causes that can be treated for such anxiety or stress or even think about an orthodontics referral if the patient awakes with TMJ pain.

Osteopathically I prefer to begin treatment distal to the area pain. After doing a general osteopathic examination and treatment (where necessary), including working as far afield as the feet, ankles, knees and hips, I eventually start to focus on structures directly related to the jaw.

Osteopathic treatments will most likely start with the dorsal spine removing any somatic dysfunction that may be reflecting in the cervical spine.

Treatment may involve balancing the glenohumeral joints by treating the rotator cuff muscles and muscles of the scapula-thoracic complex. Any tension in the scapula will be reflected in the cervical spine, anteriorly and posteriorly creating unilateral tension in the TMJ.

Osteopathic treatments of the cervical spine focuses strongly on the sub-occipital muscles and occipito-atlantal articulation on to which many TMJ-related muscles attach indirectly due to their close proximity.
Muscle –related TMJ:

The osteopathic work around the TMJ needs to address the local muscles directly using soft tissue massage to masseter and temporalis and indirectly to the pterygoids using articulation of the jaw or muscle energy techniques.

Muscle energy technique (MET) is an osteopathic technique.

MET decreases pain, spasm and increases Range of motion (ROM). It is contraction followed by relaxation followed by stretch.

Contraction-relaxation-stretch. Dr. Pourgol of the University of Medical Sciences developed a protocol: Dr. Pourgol’s 525 protocol. five seconds contraction-two seconds relaxation- five seconds stretch. The phases can be longer but it is a good guideline to follow.

Masseter:

MET treatment of masseter:

Method 1:

If reciprocal inhibition is the objective, the patient is asked to open the mouth against resistance applied by the operator’s, or the patient’s own hand. (Patient places elbow on table, chin in hand attempts to open mouth against resistance for 10 seconds or so) the jaw should have been opened to its comfortable limit before attempting this and after the attempt it would be taken to its new barrier(by the patient’s own effort) before repeating.

This MET method would have a relaxing effort on various muscles, including masseter, if they are shortened or tight.

Method 2:

To relax the tight muscle using postisometric relaxation, counter-pressure would be required in order to prevent the open jaw from closing(using minimal force).

This would require the thumbs(suitably protected) to be placed along the superior surface of the lower back teeth, whilst an isometric contraction was performed by the patient. In this method the osteopath is directing force through the barrier rather than the patient as in the first example.
Massage/ myofascial stretch treatment of masseter:

Method 1:

A very gentle myofascial release approach is achieved by sitting at the head of the supine patient and placing the pads of the three middle fingers on to the tissues just inferior to, and attached to, the zygomatic process. The contact should be ‘skin on skin’ with no perceptible pressure. The amount of force applied in an inferior/posterior direction should be minimal, barely half an ounce(14 g).

This is held for a period of up to 30 minutes, during which a sense of release or ‘unwinding’ may be noted.

Method 2:

Immediately following this, the thenar eminences are placed on to the tissues overlying the masseters with the fingers resting on the face following its contours.

A slightly increased degree of pressure should be applied (up to 4 ounces(112 g)) as the wrists gently move in to and out of extension so that a slow repetitive stroking/kneading effect, in an inferior/posterior direction along the long axis of the muscles, is achieved. Use a light lubricant.
Method 3:
Now gently palpate the muscle for its most tense or congested local areas, using fingerpads or thumbs. Identify the most tense point on each side and apply direct thumbtrip pressure to this, sufficiently firmly to remove all slack from the tissues but not to cause distress. Maintain this bilateral pressure, thumbtips facing each other until you sense a release.

Method 4:
Goodheart (Walther 1988) recommends application of a ‘scissor-like’ manipulation across the muscle by the thumbs – which form an ‘S’ bend – one thumb pushing anteriorly across the fibres while the other pushes posteriorly. The fibres between the thumbs are thereby effectively stretched and held for some 10-15 seconds.

A series of such stretches, starting close to ramus of the jaw and finishing at the pterygoid, can be applied. The buccinator muscle will also be effectively treated at the same time.

Positional release of masseter:
Method:
The masseter tender point lies on the anterior border of the ascending ramus of the mandible, and may be involved in TMJ dysfunction as well as mandibular neuritis. The patient should be supine, with the jaw slack and the mouth open approximately 1 cm. The osteopath is seated or stands on the non-affected side, the heel of caudad hand resting on the point of the chin, applying very light pressure towards the affected side as the index finger of that hand monitors the tender point. The other hand which lies on the dysfunctional side of the patient’s head (on the parietal/temporal area) offers counterforce to the palpating hand’s pressure via the heel of hand,
which is stabilising the head against the osteopath while the fingers which are just above the zygoma lightly draw it towards the osteopath’s chest, against which it is braced.

![Image of manual treatment](image)

**MET stretch of temporalis:**

**Method:**

The patient sits with the head turned to the left in this example. The osteopath stands behind the patient and stabilises the head against his chest with the right hand. The patient opens the mouth partially and relaxes the jaw, allowing the chin to drop, while the osteopath cradles the mandible with his left hand, so that the fingers are curled under the jaw, away from him.

The osteopath draws the jaw gently towards the chest and when the slack has been taken up the patient offers a degree of resistance to its being taken further, laterally.

After 5-7 seconds of gentle isometric contraction, the osteopath and patient relax simultaneously, and the jaw will usually have an increased lateral excursion.

For best results the patient can assist in taking the muscle towards stretch after the isometric contraction. After the stretch the mandible should be gently returned to its neutral position before repeating.

![Image of manual treatment](image)

**Manual treatment of temporalis:**

Use transverse friction on the entire temporal fossa at 2.5-cm intervals to examine the temporalis muscles in strips. Apply static pressure for 8-10 seconds on any tender areas or trigger points found. Be sure to examine the portion of the temporalis that lies posterior to the ear. With the patient’s mouth closed, examine the temporalis
tendon directly above the zygomatic arch with transverse friction. Repeat with the mouth open to stretch the tendon slightly. Less pressure is needed when the tendon is stretched.

NMT transverse friction application to temporalis muscle.

NMT treatment of temporalis tendon above zygomatic process (mouth open).

With the mouth still open, use light friction to examine the temporalis attachment on the coronoid process of the mandible. The mouth must be open fully to reach the tendon attachment on the coronoid process since the zygomatic arch would otherwise cover it from palpation. The treating finger should be anterior to the masseter muscle. This attachment is often tender and light pressure should be used.

NMT treatment of temporalis tendon at coronoid process (mouth open).

Temporalis tendon intraoral:

With the patient’s mouth open as far as possible without inducing pain, ask the patient to shift the mandible towards the side being treated to allow more room to work. With the pad gloved index finger of the right hand touching the inside cheek surface, glide the finger posteriorly very gently until it runs into a bony surface embedded in the cheek. This is the coronoid process. Place the index finger on the inside surface of the coronoid process and use gentle static pressure to examine the coronoid process where the temporalis tendon attaches. The tendon is very hard and will feel like a continuation of the coronoid process. Friction may be used if the tendon is not too tender. Care should be taken during all intraoral work to avoid pressing on the salivary duct.
Medial (internal) pterygoid:

Trigger points in this muscle involve swallowing difficulty and restriction inability to fully open the jaw.

Manual treatment of medial pterygoid:

With the patient’s mouth closed, place two fingers on the (external) medial aspect of the lower angle of mandible, where the medial pterygoid muscle attaches. Rotate the head toward the side being treated to allow more room for the fingers. Use transverse friction or static pressure, while being careful not to press the mandible cranially in to the fossa or the therapist’s fingers against the styloid process.
Manual treatment of the lateral pterygoid:

Method1: Patient is supine, osteopath sits at head. Patient’s mouth is relaxed, open very slightly, osteopath passively retrudes (pushes posteriorly) the mandible while gently rocking it from side to side. This will be enhanced if periodically the patient pushes the mandible against the restraining osteopath’s hand for 5-7 seconds, so inducing post isometric relaxation.

Method2:

With the patient’s mouth open as far as possible without inducing pain, locate the coronoid process. Place the index finger just posterior to the coronoid process while remaining a finger-width anterior to the mandibular condyle. This will be approximately two finger-widths in front of the external auditory meatus. Have the patient close the mouth half way. An indentation will be felt directly over the lateral pterygoid when the mouth is half open. Press the index finger in to the indentation, through the masseter muscle and towards the lateral pterygoid muscle belly. Apply static pressure to one side at a time while supporting the mandible on the opposite side of the face. This step may influence the lateral pterygoid on some people, through is efficacy is undetermined.

Lateral pterygoid intraoral method:

Move to the other side of the person as this step is best accomplished by reaching across the body to the opposite side. Shifting the mandible towards the side being treated may allow more room to work. Place the index finger of the left hand just above the lateral aspect of the upper molars.

Glide the finger very gently posteriorly and superiorly as far back and up as it will reach, applying no pressure until the finger in place. The finger pad will be posterior to the upper molars.

Press the pad of the finger toward midline and into the belly of the lateral pterygoid.
Press gently superiorly and posteriorly at the same time. Use static pressure while being careful not to press too deeply. Move the finger caudally one tip width and press again toward midline until the palpable portion of lateral pterygoid have been treated.

MNT treatment of lateral pterygoid intra orally sliding finger gently in to place (A) and pressing towards midline in to the muscle (B).

Joint-related (Arthrogenous) TMJ:

There are a few mobilizations techniques used for the TMJ:

1. supine unilateral cephalad to caudal TMJ mobilization.
2. supine unilateral posterior to anterior TMJ mobilization.
3. supine unilateral lateral to medial TMJ mobilization.
4. suboccipital release mobilization.
5. compression / decompression.
6. correction of open lock (anterior disc disorder).

At the end of treatment the osteopath should reassess how the movement in the TMJ has changed and whether there is any improved function. This is done by asking the patient to open her/his mouth and observing any adventitious movement. Often observation is done best when standing at the head of table with the patient lying supine. Furthermore, the osteopath can slide his finger over the joint with his little finger tucked in the joint under the ear lobe. This allows direct contact with the TMJ as it opens and closes and dysfunction can be easily palpated.

Often patients go back to bad habits of chewing gum or experiencing emotional stress that influences the masseter but awareness of these factors as well as a management plan and gentle stretches can prevent the problem from reoccurring.

Prognosis (Outlook)

Most cases of temporomandibular disorder (TMD) respond to simple treatment and the prognosis is good. The pathology producing the pain and dysfunction should be discussed with the patient.

Patients should be told about the possible prognosis of their problem. Myofascial pain and dysfunction tends to have a self-limiting course and needs simple treatment; even though these patients may have recurrences, the
symptoms generally are controlled by simple treatment. A patient with TMD secondary to degenerative joint disease should be made aware of the signs of further deterioration such as increasing pain, further limitation of movement and increased joint sounds.

Self-care includes simple measures such as soft diet with gradual progression to normal diet over six to eight weeks, avoiding large bites and clenching of teeth, avoiding chewing gum and pens, keeping jaw relaxed, yawning against pressure, massage of jaw and temple muscles, use of moist heat, avoiding cradling the phone between ear and shoulder, good sleep posture with adequate neck support and passive or active range of motion exercises.

As further prevention it can be worth referring the patient to a dental practitioner who specializes in developing splints: prevention of clenching and or grinding of the teeth. They are usually made of acrylic and can be hard or soft. They can be designed to fit on the upper teeth or the lower teeth. They may cover all the teeth in one arch (full coverage splint) or only some (partial coverage splint).
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