

From Jaw to Toe: Effect of Temporomandibular Joint (TMJ) on Whole-Body Posture



When we think of posture problems, we usually blame the neck, shoulders, or back. Rarely do we consider the jaw. However, growing clinical evidence suggests that dysfunction of the temporomandibular joint (TMJ) can significantly influence posture — not just locally, but across the entire body.

The temporomandibular joint (TMJ) is not merely a joint of mastication; it is an integral component of the cranio-cervico-mandibular system, closely interconnected with the cervical spine, postural musculature, and neurosensory control mechanisms. Dysfunction of the TMJ can therefore influence whole-body posture, balance, and movement patterns.

Anatomically and functionally, the TMJ is linked with:

- Upper cervical spine (C1–C3)
- Hyoid bone and associated musculature
- Cranial nerves, especially the trigeminal nerve
- Vestibular and proprioceptive systems

These connections explain how local TMJ dysfunction may produce global postural adaptations

❖ MECHANISMS LINKING TMJ TO POSTURE

1. Muscle Chain Connections

- TMJ muscles share **functional and fascial continuity** with postural muscles:

TMJ Muscles	Postural Link
Masseter, Temporalis	Cervical extensors
Lateral pterygoid	Deep neck flexors
Suprahyoid & Infrahyoid	Hyoid–cervical alignment
SCM & Upper trapezius	Head and shoulder posture

2. Cervico-Mandibular Relationship

- TMJ and upper cervical spine (C0–C3) act as a functional unit
- Cervical dysfunction can alter mandibular mechanics

- TMJ pain causes protective head positioning

3. Fascial Continuity (Myofascial Chains)

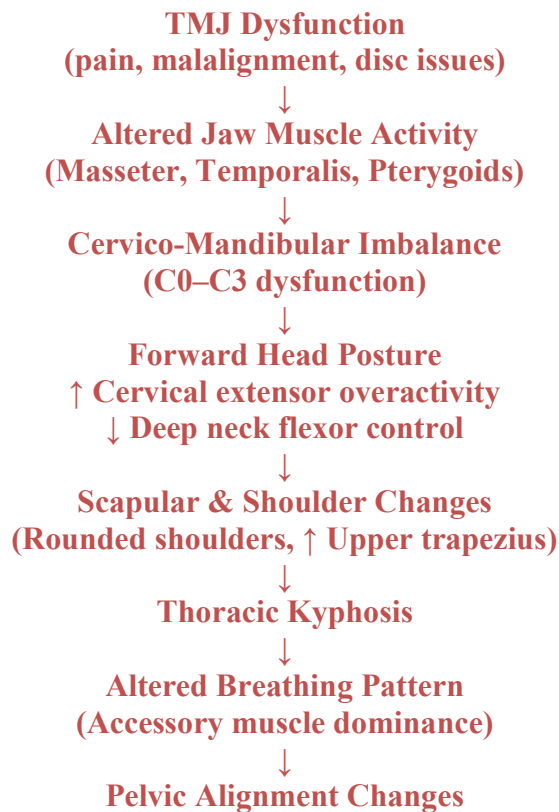
- TMJ connects **to** superficial & deep front lines (per Myers' Anatomy Trains)
- Dysfunction can travel to:
 - Thoracic kyphosis
 - Pelvic tilt
 - Altered center of gravity

4. Proprioceptive & Neurophysiological Influence

- TMJ has rich **proprioceptive input** via: Trigeminal nerve & Connections to vestibular nuclei
- This affects: Head position, Balance & Postural control
- Patients may report dizziness, imbalance, or poor postural awareness

❖ COMMON POSTURAL FINDINGS IN TMJ DYSFUNCTION

- Forward head posture
- Cervical lateral tilt or rotation
- Rounded shoulders
- Pelvic asymmetry
- Unequal lower-limb weight distribution



↓
Global Postural Dysfunction

↓
Balance Issues | Fatigue | Gait Alterations

❖ VICIOUS CYCLE OF TMJ AND POSTURE

TMJ dysfunction and poor posture form a vicious cycle where altered head posture increases TMJ stress, and TMJ pain further reinforces faulty posture.

➤ **TMJ affecting Posture:**

TMJ (Temporo mandibular joint) disorders affect the entire body by causing a "domino effect" of pain and misalignment, starting from the jaw and extending to the neck, shoulders, back, and hips. When jaw is misaligned (due to clenching, grinding, uneven bite, or injury), it puts extra strain on the muscles of face, head, and neck. Over time, this tension can cause:

- Forward head posture (head shifts in front of shoulders)
- Rounded shoulders
- Uneven spine or hip tilt
- Chronic muscle tightness

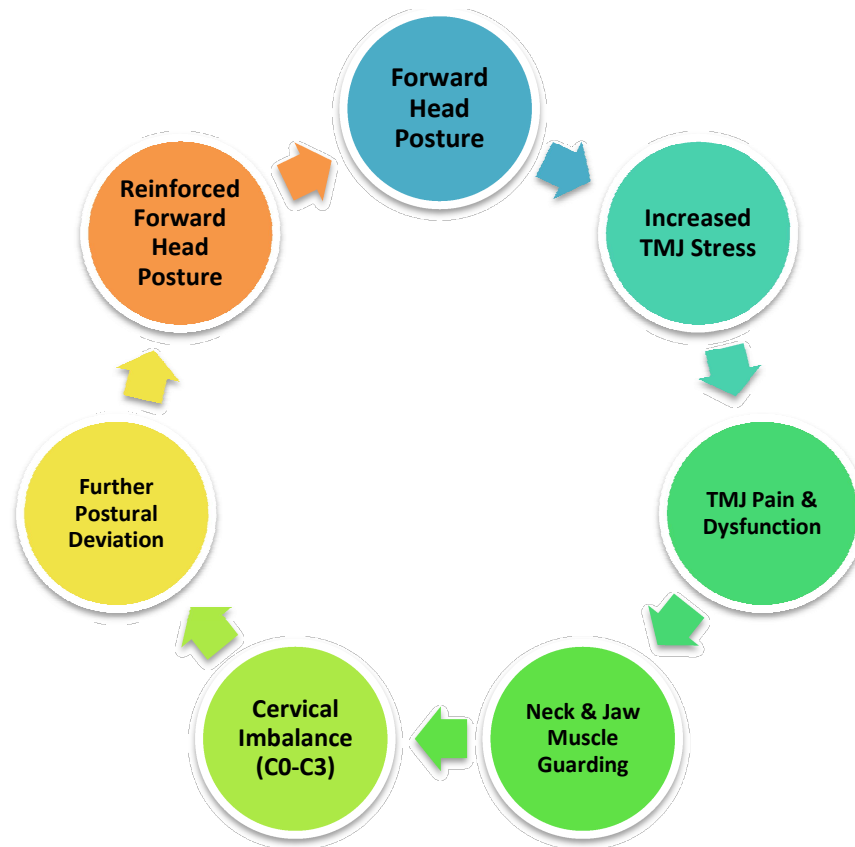
The body tries to compensate for the imbalance in the jaw by adjusting posture and this often happens in unhealthy ways. This creates a domino effect that leads to muscle fatigue, stiffness, and even pain in areas like the neck, back, and shoulders.

When a person has a malocclusion that is an incorrect bite, the resulting muscle tension and activity will cause head to move forward into a forward head and neck posture, causing you to slouch and stiffen neck muscles. This action will cause a domino effect down body, putting stress on face, neck, shoulder, and back muscles. This can cause one of shoulders or hips to lift higher than the other.

Short leg syndrome is a condition in which a person has one short leg that may occur due to an imbalance in the jaw. When a jaw is imbalanced, it affects the shoulder, causing an imbalance in skeletal structure. This further leads to an imbalance in the hip. When a pelvis tilts forward, the hip rotates internally, which in turn results in internal rotation of the leg and foot. This causes the heel to move outwards. It describes how imbalance in one body component, here it is jaw can result in issues with skeletal structure. This skeletal asymmetry also happens to be one of the causes of short leg syndrome.

➤ **Posture affecting TMJ**

Forward head posture (FHP) dramatically increases the weight of the head on the cervical spine—adding 10 pounds of pressure for every inch forward—which forces neck muscles to overwork. This chronic tension pulls the jaw backward and downward, causing strain, pain, and, in many cases, clicking, popping, or locked TMJ.



❖ CLINICAL IMPLICATION

Breaking the cycle requires a dual approach:

TMJ-Focused Approach:

- Joint mobilization
- Muscle release
- Occlusal awareness

Posture-Focused Approach:

- Deep neck flexor activation
- Scapular stabilization
- Ergonomic correction
- Breathing retraining

Patients presenting with Chronic neck pain, Recurrent headaches, Postural imbalance & Persistent musculoskeletal pain should be screened for TMJ dysfunction.

Likewise, individuals with TMJ disorders require a whole-body postural assessment for effective management.

A multidisciplinary rehabilitation approach may include: TMJ-specific exercises and mobilization, Cervical spine rehabilitation, Postural correction strategies & Breathing and relaxation techniques

— TMJ Care & Postural Alignment —

Jaw Relaxation

Chin Tucks



Relax & Stretch

Jaw Massage



Strengthening Exercises

Jaw Opening & Closing



Resistance Exercise



Strengthen & Stabilize

Posture Awareness

Align Your Head & Neck



Breathe & Relax



Unclench & Rest



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