



# Trigger Points

An informative newsletter by Dr. Prabu Raman, to educate and to expand your knowledge

## Neck aches can be... such a “pain in the neck”!

**T**hey can limit mobility of the neck and impact a person's quality of life. Who wants to have to turn the whole body to look over to the side before changing lanes on the highway? Or take Aleve or Ibuprofen regularly and risk gastric problems? But what do neck problems have to do with TMD and jaw problems?

The mandible and head/neck are functionally connected. The posture / position of the mandible does impact the posture of the head and neck.

“A high degree of spatiotemporal consistency of mandibular and head-neck movement trajectories was found in successive recording sessions.”

Zafar H. Integrated jaw and neck function in man. Studies of mandibular and head-neck movements during jaw opening closing tasks – Swed Dent J Suppl 2000 :143):1-41

“These results allow to delineate a different physiopathological mechanism: in the event of mandibular condylar fractures, the sprain of the cervical spine seems to be caused by the acute atlanto-axial subluxation.” - Cutilli T, Corbacelli A.

Department of Maxillofacial Surgery, University of L'Aquila School of Medicine, Italy – Minerva Stomatol. 2009 May;58(5):199-208

But you can check this out for yourself in two minutes. Sit upright in a chair with shoulders back and with a horizontal gaze. Now let the jaw float open by letting all the muscles relax. Then very slowly let the mandible float up as though there is a small helium balloon under the chin lifting it up until there is first tooth contact. Make a mental note of where that is. Now bend forward gazing at the floor while letting the jaw float open. Let the jaw float up again until first tooth contact is made. Where is it compared to the first one? It is probably more towards the front. Now repeat this maneuver while looking up at the ceiling. Where is the first tooth contact compared to the first one? It is probably more towards the back. While this exaggerates the postural changes, this does prove the functional connection of these structures.

The upper cervical (cranio-cervical) vertebrae support the weight of the head which is nearly 10% of total body weight. When hominids developed an upright posture that gave many advantages, one of the costs was a more unstable upper neck. This necessitates a tortuous route for the vertebral arteries which supply the posterior part of the brain through the circle of Willis. So even a small distortion in the alignment of these vertebrae can impact the blood flow through the vertebral arteries and could even have a compressive effect on the brain stem due to the change in the lumen of spinal canal. The cervical muscles work continuously to provide stability to this vital but unstable area.

If the jaws are not large enough to accommodate the tongue, unless there is an anterior open bite, the tongue has to move posteriorly. This impedes the airway in the throat. As an unconscious compensation mechanism the neck assumes a forward posture while the

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## "Pain in the Neck" continued.

head rotates backwards which brings the jaw forward. As the first step of any Basic Life Support - CPR, bringing the jaw forward opens the airway. While this is necessary for airway, there are deleterious consequences to this Forward Neck Posture (also called Forward Head Posture). The normal lordotic curvature of the cervical spine is lost. This is analogous to holding a water melon weighing 15 to 20 lbs at arms length. Wouldn't arm muscles and shoulder muscles tire quickly?

When muscles of the posterior neck – deep and superficial layers – that are in compensatory tension due to FNP go into spasm, there can be neck pain. The inter-vertebral ligaments can stretch and become lax or become calcified. Since nerves of the cervical plexus, greater occipital nerve and lesser occipital nerves can be entrapped by this, pain can refer to the top and front of the head. These are cervicogenic headaches.

In addition to pharmaceuticals, medical interventions include Epidural steroid injections or more aggressive surgical options.

Neuromuscular dentistry takes in to account much more than teeth and mandibular position. By determining the optimal position of all jaw, face and neck muscles "when taking a bite" the neck posture is improved as well. When the underlying causes are addressed, the effect of neck aches and limited neck mobility are improved as well.

## Case history:

### Patient's chief complaints are neck pain

In my experience, all doctors want to do their very best within their knowledge base, for their patients. When their therapy is not helping the patient, they often feel as though they have failed. I hope that this column informs them of other avenues of which they are unfamiliar.

Here is a case history of an Occupational Therapist whose husband is a highly trained Physical Therapist that owns a busy PT clinic in Kansas City area. He was trained in Rockhurst University PT program and well versed in various

PT techniques. Holly suffered for years with symptoms including severe neck pain. But there were no TM joint symptoms. She had orthodontia done as a teenager to correct gaps. Her teeth occluded nicely with a pretty smile.

Even after two Epidural steroid injections in the back of the neck, there was no relief. Luckily, her husband was able to provide physical therapy to the cervical area to give her relief. However, he had to do that almost daily, even if he had a very busy day in his practice and got home tired. She was waiting for his arrival so that her neck pain would be relieved at least temporarily. One option was for them to continue with this daily PT. But it was impacting their quality of lives. Only other option that was offered at that point was neck surgery which was recommended as the next step.

As a Physical therapist and Occupational Therapist the couple knew that neck surgery is not a simple solution. It had many risks including anesthesia risks. Besides she was only in her 30's and concerned about long term implications of neck surgery.

Since he knew about our Neuromuscular approach to TMD, I received a call from him to inquire about neck symptoms and NMD. Would NMD help a patient that has neck symptoms but whose TMJ is "normal"? When I spoke about functional connection between mandible and neck, he revealed that he was actually asking about his own wife.

An evaluation revealed many subtle signs of TMD but no TM joint symptoms. Just because the TMJ discal ligaments are not stretched enough or torn to cause a click or joint crepitus yet, it does not mean there is no Temporomandibular Dysfunction.

A thorough workup including CT scans of TMJ revealed adaptive osteophytic changes in the mandible and cervical spine. The lateral cervical spine view in neutral and full flexion revealed the following. Cervical lordotic curve was absent. C0-C1 space is



narrowed and did not improve appreciably in full flexion. A significant anterior glide is noted at C4-C5. The K7 jaw computer scans revealed a significant discrepancy between her presenting occlusion and mandibular position when all jaw and neck muscles were unstrained as noted on real time electromyographic readings.



Once the Neuromuscular orthotic corrected her bite relation and gave her relief, manual physical therapy helped with restoring cervical lordosis. NM Orthodontics was used next to move the teeth to the proven position while developing

the optimal shape of Maxillary arch. This allows room for tongue and allows normal cervical posture.

We were verticalizing the mandibular teeth (grow the teeth - alveolar process and gingivae) to gradually remove the orthotic in sections and stabilize the results. Holly changed her mind and decided to finish the case and improve the smile with full mouth porcelain restorations. She is now neck pain free with Neuromuscular treatment.

It was her decision to choose porcelain restoration option instead of finishing the case with NM orthodontics alone which would have taken more time and would not have resulted in a great smile! We were glad to be able to offer multiple solutions to the outcome – the problem at hand to be solved.



TREATMENT PROGRESS REPORT

Guest's Name: Holly Maza Date: 2/25/19

Guest: Please list any NEW symptoms that you are experiencing since your last visit that we should be aware of

CHIEF COMPLAINTS	No Symptoms	Mild	Moderate	Severe	Worst Possible Symptoms
Headache	10	9	8	7	6
Neck Pain	10	9	8	7	6
Face Pain	10	9	8	7	6
Pain when eating/chewing	10	9	8	7	6
Ear or Jaw Joint Pain	10	9	8	7	6
Jaw Pain	10	9	8	7	6
Jaw Stiff / Difficult to Open	10	9	8	7	6
Jaw Joint Clicks/Pops/Grinds	10	9	8	7	6
Jaw Joint Locks	10	9	8	7	6
Face Muscles Tired	10	9	8	7	6
Mouth does not open/close straight	10	9	8	7	6
Unstable/Inconsistent bite	10	9	8	7	6
Ear stuffiness	10	9	8	7	6
Ringings in the ears	10	9	8	7	6
Difficulty swallowing	10	9	8	7	6
Throat Pain	10	9	8	7	6
Other	10	9	8	7	6
Other	10	9	8	7	6

Total Improvement since beginning of treatment: Baseline

TREATMENT PROGRESS REPORT

Guest's Name: [Redacted] Date: 4/14/19

Guest: Please list any NEW symptoms that you are experiencing since your last visit that we should be aware of

CHIEF COMPLAINTS	No Symptoms	Mild	Moderate	Severe	Worst Possible Symptoms
Headache	10	9	8	7	6
Neck Pain	10	9	8	7	6
Face Pain	10	9	8	7	6
Pain when eating/chewing	10	9	8	7	6
Ear or Jaw Joint Pain	10	9	8	7	6
Jaw Pain	10	9	8	7	6
Jaw Stiff / Difficult to Open	10	9	8	7	6
Jaw Joint Clicks/Pops/Grinds	10	9	8	7	6
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Difficulty swallowing	10	9	8	7	6
Throat Pain	10	9	8	7	6
Other	10	9	8	7	6
Other	10	9	8	7	6

Total Improvement since beginning of treatment: 70-95%



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**Practice News**

The annual meeting of International Association of Comprehensive Aesthetics (IACA) was held in Boston on July 22-24, 2010. At the conclusion, I was installed as President of IACA for 2010-2011. This was a humbling honor that brings with it the responsibility to help lead this most comprehensive and leading edge dental organization to the next level. Since I had served as Vice President for a year, that was not a surprise.

The surprise was being announced as "LVI Alumnus of the year 2010" and presented with a beautiful Movado watch and trophy. I was totally in the dark about this and was truly humbled to be picked from among nearly 10,000 alumni that have attended Las Vegas Institute of Advanced Dental Studies.

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