

Is Spinal Manipulation Effective for Headaches?
How Does Spinal Manipulation Work?
Selecting a Patient for Chiropractic Referral
Is Spinal Manipulation Safe?

Over 70% of patients who use alternative therapies never informed their medical providers that they used such therapies.

Eisenberg DM. Ann intern Med. 1997; 127:61-69

MIGRANE HEADACHE:

- Occurs in at least ten percent of the population.
- It is three times more common in women
- Costs the US over \$17 billion per year
- Exact mechanism remains unclear

Delissvoy G, Neurology 1994;44 (Suppl 4)

THE EFFICACY OF SPINAL MANIPULATION FOR MIGRANE:

- 22% of the patients reported more than a 90% reduction of their migraines.
- 50% more participants reported significant improvement in the intensity of the migraines.

Tuchin PJ. A randomized control trial of chiropractic manipulative therapy for migraine. J Manipulative Physiol Ther 2000;23:91-95.

- After one week of treatment they reported complete relief of headache in 75% of their subjects.
- They also noted a significant increase in cervical ROM and reduction in dizziness.

Stodolny J. Manual Therapy in the treatment of patients with cervical manipulation for migraine. Aust NZ J Med 1989;4:49-51

- "Spinal manipulation was as effective as a well established and efficacious treatment (amitriptyline), and on the basis of a benign side effects profile, it should be considered a treatment option for patients with frequent migraine headaches."

THE EFFICACY OF SMT FOR TENSION TYPE HEADACHES:

- Spinal Manipulation is an effective treatment for Tension Headaches
- Amitriptyline was slightly more effective in reducing pain at the end of the treatment period but was associated with more side effects.
- four weeks after the cessation of treatment, the patients who received SMT experienced a sustained therapeutic benefit in all major outcomes in contrast to patients that received amitriptyline, who reverted to baseline values.
- The sustained therapeutic benefit associated with SMT seemed to result in a decreased need for over the counter medication.

Boline PD. Spinal manipulation vs. amitriptyline for the treatment of chronic tension type headaches. J manipulative Physiol Ther. 1995 18(3):148-54

- Almost without exception, chiropractic manipulation of the neck was found to be superior in terms of reducing tension, headache frequency, intensity, and improving functional status of patients when compared to other standard medical treatments.

Hurwitz. Spine 1996;21:1746-1760

CERVICOGENIC HEADACHE :

Headache arising from cervical spine dysfunction.

- Although migraine, and tension type headaches are generally considered to be separate conditions, there is support in the literature that they represent a continuum with several common underlying mechanisms including cervical spine dysfunction

Featherstone HJ. Headache 1985;25:194-8

- While the notion that headaches may arise from cervical structures may be new to some medical practitioners, it is a concept that is widely accepted by chiropractors, osteopaths, and other manual therapy professionals.

Diagnostic Criteria:

- **ONE OR MORE OF THE FOLLOWING:**

- o Pain precipitated by neck movement or sustained neck posture
- o Neck muscle tenderness
- o Abnormal posture
- o Decreased neck range of Motion

International Headache Society

HOW CAN CERVICAL DYSFUNCTION CAUSE A HEADACHE?

CERVICOGENIC HEADACHE: A possible explanation

- Before 1995, the accepted theory to explain cervicogenic headache was based on several studies that have demonstrated that headache can be induced experimentally by noxiously stimulating cervical tissues.

Bogduk N. Headaches and the cervical spine. Cephalgia 1984;4:7-8

- Bogduk noxiously stimulated cervical tissues such as joint capsules, ligaments, and paraspinal muscles innervated by cervical roots C1-C3 nerves.
- He theorized that headache pain caused by such stimulation may be possible because of the common neurological pathways shared by the trigeminal nucleus and C1-C3 nerves.

Any incoming nociception through C1, C2, & C3 (Facets, discs, ligaments, muscles, vertebral & dura arteries) can cause the Neurologic phenomenon of "pain" – Bogduk

Before 1995 No New Muscles had been discovered since the 16th century.

TMJ RESEARCH LEADS TO DISCOVERY:

- Led by assistant professor Gary Hack DDS, scientists at the University of Maryland discovered a physical connection between the muscular system and the central nervous system.
- The discovery was a result of dissecting a cadaver from the side of the neck to view muscles of mastication while conventional dissection is from the back of the neck.
- He discovered a connective tissue bridge that attaches the rectus capitus posterior minor muscle (from the base of the skull to the atlas) to the dura at the atlanto – occipital junction. (present in all 10 cadavers)

Hack GD. Anatomic relation between the rectus capitus posterior minor muscle and the dura matter. Spine 1995; 20:2484-2486

VERIFICATION OF THIS FINDING:

- Shortly after the discovery, the U.S. National Library of Medicine began the Virtual Human Project (VHP)
- They froze the male and female cadaver and sliced them into 5000 slices 1/3 mm thick
- They were photographed and digitalized to a computer creating the “Visible Human Male and Female”
- Guess what they saw in digitalized impressions?

The Neuromuscular Connection:

- Dr. Hack stated: Maryland Scientists speculate that the newly described muscle – dura connection may transmit forces from the neck muscles to the pain sensitive dura.

Chiropractic for Headaches?

- Spinal manipulation as a treatment for headache is predicated upon the assumption that the dysfunction in the neck muscles contributes to the head pain.
- The muscle dura connection may represent – at least part – the underlying anatomical basis for the effectiveness of this treatment.

1998 Encyclopedia Britannica Medical and Health Annual.

How Would Chiropractic Help?

- Such treatment, as performed by a chiropractor, would decrease muscle tension and thereby reduce or eliminate pain by reducing the potential force exerted on the dura via muscle dura connection.

1998 Encyclopedia Britannica Medical and Health Annual

- “We’ve been able to put together a scientific explanation for how neck structure causes headaches... not all headaches.
- Chiropractors have been saying that for years. Unfortunately, many (medical) Doctors tend to have a jaundiced view of Chiropractors, but (Chiropractors) were right about headaches.”

Peter Rothbart, MD, FRCPC. President North America Cervicogenic Headache Society

Spinal Manipulation

IS IT SAFE?

IS CHIROPRACTIC MANIPULATION A SAFE PROCEDURE?

- A commonly held notion by medical physicians and in informed lay persons is the idea that the manipulation is an unsafe procedure.
- There is evidence of a scientific nature that proves otherwise.
- In 1996, Vick et al. performed a 68 year review of the medical literature from 1926 – 1993 for injuries related to manipulation.
- “Of the estimated several hundred manipulative treatments performed each year, only 185 reports of injury were found.”
- “Comparing these figures with the incidence of adverse effects (including death) associated with many pharmaceutical agents, manipulation remains an extremely safe modality when performed by a skilled practitioner.”

Vick D. The safety of manipulative treatment. JOA 1996;96:113-115

- an article by Dabbs and Lauretti in 1996, compared the risks of serious complications or death for patients receiving a course of manipulative treatment or non-steroidal anti-inflammatory drugs.
- “Based on the available evidence, we calculate the risk of serious complications or deaths 100 to 400 times greater for the use of cervical manipulation in the treatment of similar conditions”

Dabbs V, Lauretti WJ. J Manip Physiol Ther 1995;18:530-536

- In addition, an article published in the medical journal, Spine compared the risks for
 - o Cervical Spine Manipulation
 - o NSAIDs
 - o Cervical Spine Surgery
- In this article, Hurwitz reports:
 - o Risks of vertebral basilar accident as 7.5 per 10,000,000 manipulations.
 - o Risk of severe gastrointestinal bleeding resulting in hospitalization or death from the use of NSAIDs as 1 in 1000 subjects
 - o They reported an average incidence rate of neurological complication or death from cervical spine surgeries as 11.25 per 1000.
 - o Hurwitz E. Manipulation and mobilization of the cervical spine: A systematic review of the literature. Spine 1996;21:1746-1760.

Although anyone would agree that even one tragic event if one too many, when placed in the proper context it becomes readily apparent that cervical manipulation is an extremely safe procedure when applied by appropriately trained professionals.