



# Neck Pain & Headaches

It is Often Assumed that Headaches Have a Cervical Connection. Is that a Correct Assumption?

By Douglas Nelson, LMT, BCTMB

TIME TO READ: 7 MIN

**THE PURPOSE** of this article is twofold. First and foremost, I wish to explore an interesting research article that illuminates the possible relationship of neck pain and headaches. The second goal is to share insights into the process of discovery and research itself.

When first presented with the opportunity to author this article, I had an idea of researching and writing an article about a specific type of headache presentation. Formulating the ideas, I began digging through the literature by doing a deep dive into several research databases and found a few promising articles with relevant and useful information. As I was gathering background data on headache prevalence, I found myself exploring the reference section of one of the articles I had chosen and found an article that captured my attention. It made my effort diverge in a different direction.

This is a common occurrence for me when I am exploring

research; on the way to one destination, I end up in an entirely different but valuable place. Like so much in life, the greatest blessings are the ones you weren't looking for; and you find them in surprising places. Moreover, many of the insights that have been pivotal in my understanding came from exploring the research literature of fields outside massage therapy.

These surprising discoveries most often happen when exploring the references listed at the end of research papers. Early references explain the foundation and underpinnings of the article. Where did the authors get their ideas? What other papers inspired them to pursue the line of research they chose? Is the paper an attempt to fill a clear gap in the research literature? Or, are the authors building on a line of research and further exploring ideas that inspired them?

Understanding that background information is helpful in understanding the greater context of the paper. By exploring

the reference section, you are therefore likely to find other published papers that approach the topic (or related topics) in ways you had not previously considered.

This is important because seldom will you find a paper that perfectly addresses the information gap you are trying to fill. Even when you are lucky enough to find such an ideal paper, it is important to keep in mind that this is just one finding and the goal is to explore as many papers/viewpoints as possible to come to a solid conclusion.

In essence, the process of research exploration is messy and non-linear, but so is learning itself. It takes time and patience, but the journey is well worth it.

## Neck Pain and Headaches

As I began my research reading on headaches, I found a reference highlighting a study from Denmark that was published in 2015. This study was entitled, “Prevalence of neck pain in migraine and tension-type headache: A population study,”<sup>1</sup> and involved nearly 800 subjects. The authors of the study were looking at several questions in their paper, such as:

- What percentage of people who experience Tension Type Headaches (TTH) or Migraines also have neck pain?
- Is neck pain a factor in people who experience both Migraines and TTH?
- Does the experience of neck pain have any bearing on the frequency or intensity of these headaches?
- Is cervical pain a potential cause of headaches; or is it possible that neck pain is secondary to the headache? Understanding the role cervical pain may play in the presentation of headaches can help providers accurately categorize the type of headache and include cervical approaches as a part of the overall treatment plan.

These are important questions for any practitioner treating people with headaches. For those of us in the field of massage therapy, it is often assumed that headaches have some sort of

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cervical connection. Is that a correct assumption? If so, is a cervical connection more common in certain types of headaches than others?

These are important questions that have implications for how we approach clients with headaches. The deeper our contextual and background knowledge, the more likely it will be that our treatment protocols will be in alignment with physiologic principles which will lead to better outcomes.

To explore these questions, the researchers contacted a representative (age, gender, employment status) sample of 1,000 residents near Copenhagen who had also participated in an earlier study. All participants were sent surveys by mail; and those reporting having headaches received a phone interview as well. In that interview, using diagnostic criteria from the International Classification of Headache Disorders, the interviewer could classify the headache type (TTH or Migraine) and document headache frequency and the presence of neck pain.

In addition to self-reporting, subjects who had headaches were physically examined for pericranial tenderness by a nurse who was specially trained to examine for sensitivity at eight different locations in the cranium, and they also included sensitivity at the index finger. Sensitivity was measured using a device known as a palpometer, which measures the exact pressure exerted over a one-square centimeter of surface area. The client then reported whether the allotted pressure was uncomfortable or perceived as simply pressure. Results of sensitivity were then calculated to create a Total Tenderness Score so that results could be tabulated and compared to non-headache subjects.

The results? Not surprisingly, people with headaches had neck pain more often than people who do not experience headaches. In fact, the authors estimated that people with headaches were about four times more likely to have neck pain.

Of the participants studied, about 76% who had TTH, migraine or both, experienced neck pain. While the frequency varied, people with both neck pain and headaches also rated their health status as poorer than people without neck pain. The presence of neck pain was also correlated with an increase in the frequency of headaches; and this was especially true for TTH.

Those subjects who were measured for sensitivity using the Palpometer yielded interesting results. Those who had headaches

1 Ashina, Sait, et al. “Prevalence of neck pain in migraine and tension-type headache: a population study.” *Cephalalgia* 35.3 (2015): 211-219.

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exhibited greater sensitivity in the temporalis (one of the cranial sites measured) and the index finger than people who did not have headaches. Why would the index finger be more sensitive? One possible explanation is peripheral sensitization, where increased excitation happens via second-order neurons. It's a fascinating finding.

### Another Journey of Discovery

Also intriguing is something the authors alluded to early in the paper, a statement that perhaps neck pain and headaches occur because of the convergence of afferents from the upper cervical vertebra and the trigeminal nerve. In essence, the neck can sensitize the cranium, but the cranium can also sensitize the neck. Whoa! Another rabbit hole. Another reference. Here we go on another fascinating journey of discovery.

As you can see, there is a lot to unpack in just this one research paper. In this article, I have highlighted what I have found to be important points; but in your reading of the paper, you may find entirely different insights that are relevant to your practice. This is the value of exploring a paper such as this with other colleagues. Journal clubs are a wonderful way to learn together and share insights gained from reading the same research. We at the Massage Therapy Foundation (MTF) want to encourage journal clubs across the nation. If you are actively involved in one now, we'd like to know about it and highlight your efforts. If not, please consider creating one with your colleagues. 

*The Massage Therapy Foundation invites you to join us in further exploring the ideas and insights in this article and the research paper on which it is based. In mid-November, Douglas Nelson will host a one-hour video conference to discuss the findings of this research article and how they might be relevant to your practice of massage therapy. Check for details on [massagetherapyfoundation.com](http://massagetherapyfoundation.com).*

Douglas Nelson, LMT, BCTMB, is immediate past president of and wrote this article on behalf of the Massage Therapy Foundation ([massagetherapyfoundation.org](http://massagetherapyfoundation.org)). Nelson began his career in massage therapy in 1977 and maintains an active clinical practice. He has served as a neuromuscular consultant to NBA and NFL teams, as well as high-level musicians. His book, "The Mystery of Pain," was published by Singing Dragon in 2013.

Read another article by Douglas Nelson: "Touch Deprivation Post-COVID: A 'Tsunami of Need' for Massage" on [massagemag.com](http://massagemag.com).