Research Update | March 2024

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Balance Issues Associated with Weak Neck Muscles in Migraine Sufferers

In a previous research update (March 2024), we introduced the idea that there may be a connection between neck muscle weakness/pain and migraines. We also learned from a randomized trial that cervical stabilization training can significantly improve headaches for chronic sufferers. Now, we turn our attention to a study from Brazil which found that the same neck pain and weakness is associated with balance issues in migraine patients.

Studies have shown that more than 70% of migraine patients also experience neck pain. In addition, reduced range of motion and loss of strength and endurance in the neck muscles is common with migraine patients. While previous research has shown a link between these types of neck issues and balance problems in other patient groups, this was the first study (as claimed by the authors) to look for a potential association in migraine sufferers.

To do this, the researchers recruited 65 women between the ages of 18-55 with at least a two-year history of migraines with a frequency of at least three episodes a month. The subjects underwent computerized balance testing which involved standing on force plates with different combinations of stable footing, sway inducing input, and eyes open and shut. The balance test resulted in a score of 0-100, with a score of less than 75 representing balance problems. The group also had their neck muscle strength. Endurance, and range of motion tested.

The researchers then split everyone into two groups based on the balance score and compared them across a variety of measures. They found that the poor balance group on average had 33% more frequent migraines, greater neck pain intensity, and only half the muscle endurance compared to the normal balance group. Interestingly, muscle strength and range of motion were not significantly different between the groups. From this, and other statistical tests, the researchers concluded that neck pain intensity and the endurance of cervical muscles were associated with balance issues in this group.

According to the Chiari1000, out of over 1500 Chiari patients of all ages and both sexes, 67% suffered from migraines at the time of the Chiari diagnosis. In addition, 70% reported balance issues were a symptom at the same time. The human balance system is complex and involves both the brainstem and cerebellum, which can be compressed in Chiari patients. However, one must wonder if with Chiari weakened neck muscles are also a contributing factor to migraines, balance problems, or both.

Source: Balance alterations are associated with neck pain and neck muscle endurance in migraine. Rodrigues A, Bevilaqua-Grossi D, Florencio LL, Pinheiro CF, Dach F, Bigal M, Carvalho GF. Musculoskelet Sci Pract. 2023 Aug;66:102811. doi: 10.1016/j.msksp.2023.102811. Epub 2023 Jun 20. PMID: 37357054

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