

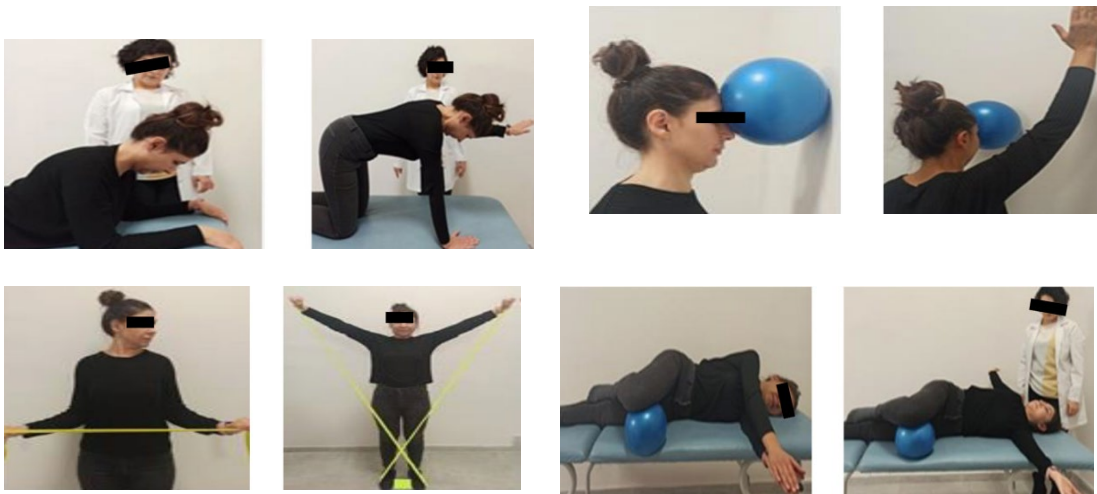
Cervical Stabilization Training Significantly Improves Headaches

A randomized trial in Turkey found that 8 weeks of cervical stabilization training significantly improved headache frequency, duration, and intensity - as compared to medication – among adult women. Recently, headache research has focused increasingly on the connection between neck pain and headaches. For example, studies have found that migraine sufferers have weaker stabilizing muscles in the neck, and chronic headache sufferers often have a forward head/neck position rather than neutral.

This study included 90 adult females who suffered from migraines, tension type headaches, and cervicogenic headaches which start in the neck and radiate up and forward. To qualify for the study, the participants had to have experienced at least one headache per week for at least the prior year. In addition, subjects with known neurological issues (other than headaches) were excluded. The women were assessed physically for head posture, neck muscle activation, and neck muscle endurance. Headache characteristics, neck disability, sleep, depression, medication use, and quality of life were assessed with patient reported surveys.

The participants were randomized into two groups. The treatment group received cervical stabilization training from a physical therapist three times per week for eight weeks, home exercise instructions, and educational materials on headache and neck health. The therapy sessions involved a progression of exercises focused on strengthening the neck muscles while in a variety of positions (Figure 1). The control group was told to continue to treat their headaches with medicine only. Both groups were assessed again across all measures after the eight-week trial period.

Figure 1: Selected Examples of Cervical Stabilization Exercises



The researchers found that the treatment group experienced a significant improvement in nearly every measure while the control group did not. For example, average headache frequency improved from more than 7 times a week to less than 4 times a week, while the average neck pain score improved from 5.9 to only 1.1. The amount of pain medication used by the treatment group was reduced by more than half but did not change at all in the control group. The physical testing also found significant improvements in the treatment group, with the muscular endurance increasing by a factor of 3 to 4 times. The gains in neck strength and endurance also translated to significant improvements in neck related disability, sleep quality, depression, and overall quality of life. It should be pointed out however that the subjects were not assessed again at a later time, so it is not clear if the gains were temporary or long-lasting

What does this mean for Chiari? We know that while 80-90% of adults with Chiari suffer from headaches, only around half or less experience the classic strain related Chiari headache, and migraine prevalence is extremely high. We know that Chiari patients have high levels of neck related pain and disability. We also know that Chiari patients have been found to have smaller neck muscles and abnormally short stabilizing ligaments. We also know that the herniated tonsils

are located right next to the nerve root which enervates these muscles. From this, it is reasonable to hypothesize that at least some of the Chiari related headaches might be related to weak neck muscles.

However, it is important to note that the results from this trial are not necessarily generalizable to Chiari patients. A similar study would have to be undertaken to see if the same type of stabilization training can specifically help Chiari patients. Understanding the physical impact of Chiari is one of Conquer Chiari's current research priorities and we will explore the feasibility of undertaking a study such as this one with Chiari patients.

Source: Effects of cervical stabilization training in patients with headache: A single-blinded randomized controlled trial. Altmis Kacar H, Ozkul C, Baran A, Guclu-Gunduz A. Eur J Pain. 2024 Apr;28(4):633-648. doi: 10.1002/ejp.2208. Epub 2023 Nov 16.

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Conquer Chiari is a 501(c)(3) public charity dedicated to improving the experiences and outcomes of Chiari patients through education, awareness and research.