

## Comparing Types of Exercise for Reducing Neck Pain

One of the most common questions Conquer Chiari receives is from patients asking what they can do about chronic pain, often in the neck and shoulders. Unfortunately, there isn't much research specific to Chiari in this area, but there is a good deal of research involving chronic, non-specific neck pain. This refers to long-lasting neck pain that is not due to a known structural issue. In 2023, a group of researchers reviewed the published literature on different types of exercises to see which was the most effective in reducing pain and disability associated with chronic non-specific neck pain.

The team only included randomized controlled trials (the most rigorous type of study) in their review and classified the exercise types as resistance, motor control, and mindfulness based. Resistance exercises were focused on increasing the strength and endurance of the neck muscles while motor control exercises were focused on increasing the coordination and control of head and neck movements. Meanwhile, mindfulness based exercises included Pilates, yoga, Tai-Chi, and Qui Gong.

They identified more than 60 trials that met their criteria. Roughly 40% involved resistance exercises, while 40% were focused on motor control, and 20% were mindfulness based. The average intervention duration was approximately 8 weeks with an average of 5 sessions per week and 30 minutes per session. When they statistically combined the results, they found that each exercise type significantly reduced pain and disability compared to people who did not perform the exercises (the controls). However, the mindfulness based exercises resulted in the largest pain reductions while the motor control exercises had the biggest positive effect on disability. It is important to note that due to methodological issues in the underlying studies, the authors of the review assigned only a low to moderate level of confidence in the findings meaning that additional data may change the results.

In 2024, a different group undertook a similar type of review to compare the effectiveness of specific mindfulness based exercises (yoga, Pilates, Tai-Chi, Qui Gong) on the effects of chronic, non-specific neck pain. They identified 18 studies which included over 1400 participants, and of which 14 were considered high quality studies. Similar to the other review, they found that each type of exercise reduced pain and disability and improved the quality of life of the participants compared to people who did not perform the exercises. However, they found that yoga plus heat therapy had the biggest impact on pain, disability, quality of life, and cervical mobility. Meanwhile, Pilates had the largest impact on mental health.

Again, it is important to keep in mind that we don't know if these results would be the same for Chiari patients. That's why a study comparing different physical interventions for neck pain is exactly what Conquer Chiari intends to do as part of the Chiari2030 project.

### Sources:

Resistance, Motor Control, and Mindfulness-Based Exercises Are Effective for Treating Chronic Nonspecific Neck Pain: A Systematic Review With Meta-Analysis and Dose-Response Meta-Regression. Mueller J, Weinig J, Niederer D, Tenberg S, Mueller S. *J Orthop Sports Phys Ther.* 2023 Aug;53(8):420–459. doi: 10.2519/jospt.2023.11820. PMID: 37339388

Comparative Efficacy of Mind-Body Exercise for Treating Chronic Non-Specific Neck Pain: A Systematic Review and Network Meta-Analysis. Gao Q, Li X, Pan M, Wang J, Yang F, Guo P, Duan Z, Ren C, Zhang Y. *Curr Pain Headache Rep.* 2024 Jun;28(6):507-523. doi: 10.1007/s11916-024-01218-6. Epub 2024 Mar 7. PMID: 38451393 Review.

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