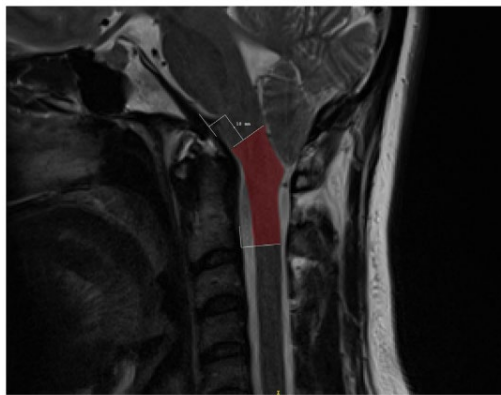


Study Highlights The Effects Of The Pressure Chiari Brains Are Under

A recent study from surgeons at UCLA quantified the squeezing effect that Chiari can have on the brainstem and upper spinal cord. The project used pre- and post-surgical MRIs from 20 adult Chiari patients to quantify changes in the size of the brainstem and spinal cord as a result of decompression surgery. The specific measures included:

- Spinal cord volume (Figure 1)
- Width of the spinal cord
- Width of the brainstem

Figure 1: Spinal Cord Volume Measured (Red)



They found that all three measures increased significantly on average after surgery, with the brainstem width showing the largest increase at nearly 15%. The width of the spinal cord increased 8-11% (measured at different locations), while the volume of the cord increased 3.4%.

Brainstem and cranial nerve (nerves that originate in the brain rather than the spinal cord) related symptoms are common among Chiari patients and can include balance issues, dizziness/vertigo, autonomic dysfunction, vision problems, and more. While a 15% change after surgery seems dramatic, it is important to note that it is not known how much compression is required to cause symptoms, or how this may vary from person to person.

Unfortunately, the team was not able to link the observed tissue changes to clinical outcomes. A study which compares these measures to symptoms and quantifiable outcomes would be a logical next step and a valuable undertaking.

Source: Ratnaparkhi A, Laiwalla AN, Gaonkar B, Zarrin D, Cook K, Berdy E, Li I, Wilson B, Attiah M, Holly L, Macyszyn L, Beckett J, Batzdorf U. Structural Changes in the Cervicomedullary Junction in Adult Chiari Patients. *World Neurosurg.* 2022 Oct 25:S1878-8750(22)01463-2. doi: 10.1016/j.wneu.2022.10.047. Epub ahead of print. PMID: 36307037.

Conquer Chiari's research updates highlight and summarize interesting publications from the medical literature while providing background and context. The summaries do contain some medical terminology and assume a general understanding of Chiari. Introductory information and many more research articles can be found in the [Conquer Chiari Library](#).