Key Points

- An increase in BMI is directly linked to the aggravation or formation of syringomyelia in adult Chiari patients.
- Out of the 26 participants affected by syringomyelia, the female population had the most cases (69.2%). However, this does not mean men are less likely to develop a syrinx with an increase of BMI.
- Weight gain can create, worsen, and prolong many symptoms of Chiari and syringomyelia.
- All Chiari patients should be advised to regulate and monitor their weight to maintain a healthy lifestyle.

Definitions

syringomyelia - neurological condition where a fluid filled cyst forms in the spinal cord

syrinx - fluid filled cyst in the spinal cord

Body Mass Index (BMI) - is a measure for human body shape based on an individual's mass and height.

Source

Association of increased body mass index with Chiari malformation Type I and syrinx formation in adults. Arnautovic KI, Muzevic D, Splavski B, Boop FA. J Neurosurg. 2013 Oct;119(4):1058-67

BMI and Syringomyelia: How Increased Weight Affects the Health of Adults with Chiari

February 14th, 2014 - Gaining extra weight is ultimately unhealthy for adults diagnosed with Chiari. As reported by Dr. Kenan Arnautovic - of the Semmes-Murphy clinic in Tennessee - and his team, an increase in body fat can be directly linked to the growth and progression of *syringomyelia* in Chiari patients.

This report, which spanned over the course of eight years, included sixty adults (52 women and 8 men) battling Chiari with additional neurological disabilities, with or without the presence of syringomyelia. Among those included in this study, syringomyelia was identified in 26 patients; women (69.2%) comprised more than half of those diagnosed with a syrinx. Neurological disabilities affected 25 patients severely, 16 moderately, and 15 mildly.

Once the sixty participants were weighed, the average *Body Mass Index (BMI)* reading was calculated (BMI is determined by a person's height and weight) which totaled to 30.35, defining the group as a whole, obese. Forty-five of the sixty individuals were either overweight (25%) or obese (50%) while the remaining fifteen were underweight (2.9%) or of normal weight (23.3%). Over the eight years of this study, those with an increase in BMI were more likely to have a syrinx return or acquire syringomyelia for the first time.

Two female Chiari patients who were not at first diagnosed with syringomyelia developed a syrinx after a considerable increase in their BMI. In four years, one woman who was originally overweight increased her BMI 12.5 points, which indicates obesity. Additionally, the weight gain caused her headaches to become worse and further impaired other neural functions. The second female had a BMI of 19 at the beginning of this study. In three years, she had three pregnancies which raised her BMI to 28. This 9 point difference increased her headaches and her neurological condition declined. An increase of significant weight can complicate symptoms as well as affect long-term health.

Another female patient, diagnosed with Chiari and syringomyelia, weighed in as obese with a BMI of 45.3. After she was decompressed, her syrinx and original symptoms continued despite surgery and even advanced with the increase of her BMI (46.3). Two years later, she had another decompression operation and evidence of the first surgery could not be recognized. Even with a second operation, her symptoms were the same and the size of her syrinx did not change. When her BMI increased to 47.7, she was counseled to sign up for a weight-loss program. She then decided to have gastric bypass surgery two years later, and after 6 months, she dropped 11 BMI points. By losing this significant amount of weight, her syrinx reduced and her clinical situation improved along with her overall health.

Dr. Arnautovic and his team concluded that an increase in BMI can restrict a patient's progress, worsen symptoms, and even create new problems or conditions, such as syringomyelia. By regulating body weight, those with syringomyelia can improve their outcomes and those without can reduce the odds of developing a syrinx. The authors of this study strongly advise patients to monitor weight because strain related to body mass can be easily maintained.

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Ms. Eubanks is a professional writing and researching scholar from Purdue University Northwest. After being diagnosed with a Chiari I Malformation in 2011, she quickly decided that being conquered was not an option—she was committed to fight and pursue a budding love of healthcare/medical writing. Spreading awareness and hope to others battling Chiari is her largest motivator alongside educating others who have not heard about the condition. Reporting for Ideas in Motion Media and tutoring at the Writing Center (Purdue University North Central) has been immensely beneficial to her success as well as all the remarkable individuals who helped her become the composer and analyst she is today.