

Pediatric Syrinx May Reshape Bony Vertebrae

The bony spine is the solid, structural part of your back, the stack of individual bones (vertebrae) that you can feel if you run your hand down the middle of your back. Its job is to support your body, help you stand upright, and protect what's inside. Each bone has a thick, weight-bearing front portion and a ring-like back portion, and when these bones stack together, they form a protective column.

The spinal canal, which is also called the vertebral canal, is the hollow tunnel that runs through the center of that bony spine. It's created by the openings in each vertebra lining up like a series of connected rings. Inside this canal lies the spinal cord itself.

In a well-designed study, researchers have found evidence that suggests that the presence of a syrinx in the spinal cord of a child can not only expand the cord, but also increase the size of the spinal canal. Specifically, the researchers looked at cervical imaging from three different groups: 357 children with both Chiari and a syrinx, 217 children with just Chiari, and 498 healthy children with no known neurological or spinal conditions. For the purposes of this study, all the Chiari cases had tonsillar herniations of 5 mm or more and the Chiari plus syrinx group had syrinxes of 3mm or more in diameter (at the widest point).

When the researchers measured the width of the bony canal at the second (C2) and seventh (C7) vertebrae they found that the group with both Chiari and a syrinx had a significantly wider spinal canal than the other two groups at the C7 level. Interestingly, even though the Chiari only group was not as wide as the Chiari plus syrinx group, it was still wider than the healthy control group. Further analysis showed that females had more severe cases of spinal canal expansion than males. In addition, spinal canal expansion (for both sexes) was only seen when the syrinx was diagnosed in early childhood or adolescence. If the syrinx was found after adolescence, there was no significant difference.

In discussing their findings, the researchers hypothesize that the herniated tonsils actually work against spinal canal expansion at the C2 level but that once you get below the level of the tonsils there is no counteracting force to limit expansion. They also note that given the strong link between syrinxes and scoliosis it is not entirely surprising that a syrinx can influence the bony spinal cord even if the precise mechanism is still unknown. It is also unknown what the clinical implications are, if any, of this spinal canal expansion.

Source: Yahanda AT, Kolmetzky DW, Gupta VP, et al. Associations of Chiari-1 malformation and syringomyelia with osseous cervical spinal canal diameter in the pediatric spine. *Childs Nerv Syst.* 2026;42(1):137. Published 2026 Mar 27. doi:10.1007/s00381-026-07233-9

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