

Fast MRI Scan May Eliminate Need For Sedation

The widespread adoption of MRIs has revolutionized the diagnosis and understanding of Chiari, but to get good results patients must lie still for long periods of time in a loud, claustrophobic tube. For young children (and even older children and some adults) this means that to get a good image requires sedation. Now, doctors from South Carolina have reported on a new fast MRI scan that may reduce, or eliminate, this hurdle for children. While the study wasn't specific to Chiari, Chiari and syringomyelia were the most common reasons for the study subjects to be undergoing an MRI scan.

Specifically, the group looked at 69 non-sedated fast spine MRI exams from 57 pediatric patients. The average age of the group was 7.2 years, but it did include some older teens. On average, the scans only took about 11 minutes to complete. To determine the quality of the scans, two independent neuroradiologists reviewed, and rated, the images for how well they displayed bones, the cranio-cervical junction, cerebrospinal fluid (CSF) spaces, the spinal cord, soft tissues, ligaments, and overall diagnostic quality. Both the CSF spaces and the cranio-cervical junction received the highest quality ratings at 3.5 on a 5-point scale.

In terms of age groups, the under 5 group showed the worst results with 74% of the scans rated as being of sufficient quality for diagnosis. However, in the 5-9 and 10-17 groups over 90% were of good enough quality for diagnostic purposes. Finally, 15 of the patients had previously undergone sedated scans and the clinical findings from the fast scans were comparable to what was found in the sedated scans.

The fast spine scan is an offshoot of fast brain scan imaging that has been used recently in children for evaluation of traumatic brain injury and shunt malfunction. For this group, using the fast scans enables them to schedule in 30-minute blocks as opposed to 75-minute blocks for sedated scans. It will be interesting to see if other groups start using this, or similar, fast scan techniques to avoid sedating young children and speed up the process in general.

Source: Non-sedated fast spine magnetic resonance imaging in pediatric patients. Spampinato MV, Chetta JA, Adcock C, Kocher M, Truitt A, Lydon G, Eskandari R, Yazdani M. *Pediatr Radiol.* 2023 Sep 18. doi: 10.1007/s00247-023-05760-0. Online ahead of print. PMID: 37718373

Please consider a \$10 donation as Conquer Chiari's educational material is free to read, but not free to produce:



<https://www.conquerchiari.org/donate>

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](#).