

عنوان مقاله:

The use of magnetic resonance imaging to study the brain size of young children with autism

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خلاصه مقاله:

Introduction: Autism spectrum disorder (ASD) is a syndrome of social communication deficits and repetitive behaviors or restricted interests. While the impairments associated with ASD tend to deteriorate from childhood into adulthood, it is of critical importance that the syndrome is diagnosed at an early age. One means of facilitating this is through understanding how the brain of people with ASD develops from early childhood. Magnetic resonance imaging (MRI) is the method of choice for in vivo and non-invasive investigations of the morphology of the human brain, especially when the subjects are children. In this study, we conducted a systematic review of existing structural MRI studies that have investigated brain size in ASD children of up to 5 years old. **Methods:** In this study, we systematically reviewed published papers that describe research studies in which the brain size of ASD children has been examined. PubMed and Scopus databases were searched for all relevant original articles that described the use of MRI techniques to study ASD patients who were between 1 and 5 years old. To be included in the review, all studies needed to be cohort and case series that involved at least 10 patients. No time limitations were placed on the searched articles within the inclusion criteria. The exclusion criteria were non-English articles, case reports, and articles that described research involving subjects that were not within the qualifying age range of 1-5 years old. **Result:** After an initial screening process through which the title, abstracts, and full text of the articles were reviewed to confirm they met the inclusion criteria, a total of 10 relevant articles were studied in depth. All studies found that children with ASD who were within the selected age range had a larger brain size than children without ASD. **Discussion:** The findings of recent studies indicate that the vast majority of ASD patients exhibit an enlarged brain; however, the extent of the enlargement varies from study to study. As such, further studies are required to develop an understanding of the areas of the brain in which enlargement manifests in children with ASD before the age of five and to verify the significance of the prognostic value of MRI as a non-invasive diagnostic technique that can be employed to detect ASD in young children. **Conclusion:** Based on the extracted data, brain size was related to the emergence and presence of autism in children who were below school age. The use of MRI represents a functional and non-invasive ... method of confirming ASD in children who have an initial

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