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Autism Spectrum Disorders: Neurological and Medical Comorbidities**Ann Neumeyer**

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The autism spectrum disorders (ASD) are a group of neurodevelopmental disorders characterized by impaired communication, social interaction and restricted and repetitive behaviors. In part, the impairment in communication results in more underdiagnosed comorbid disease. Neurological comorbidities including epilepsy, motor and sleep impairments will be discussed along with clinical findings in evaluation of the child with autism. Medical issues such as gastrointestinal disease, poor nutrition impact upon many systems including upon bone. Cross sectional and longitudinal studies have reported that boys with ASD have decreased bone mineral density. Children and adults with ASD also have higher odds of hip and other fractures based on a national emergency department database. The purpose of our study was to investigate the microarchitecture of bone and nutritional issues which could impact decreased bone development in boys with ASD. Methodology: observational longitudinal study of a cohort of approximately 20 boys with ASD and 20 age matched controls was followed for nutrition, areal bone mineral density and volumetric bone mineral density, which provides more information about fracture risk and had never been studied in a cohort of ASD boys. Findings: Boys with ASD had impaired microarchitectural parameters with reductions in bone strength estimates, calcium intake and IGF-1 responsiveness. Diet: Protein, calcium and phosphorus intake were lower in ASD than TDC and were associated positively with BMD measures. Conclusion and Significance: Boys with ASD were less physically active and protein, calcium and phosphorus intake were lower in ASD than control peers and are associated positively with bone density. The impairments in microarchitectural parameters may result from lower physical activity, calcium intake and IGF-1 responsiveness. Our study suggests that encouraging diets higher in fortified dairy and animal protein, as well as increased high-level exercise may improve bone health. Identifying neurological and medical comorbidities has important implications for better care of the child with autism spectrum disorders.

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