Autism: Open Access

ISSN: 2165-7890

OPEN ACCESS Freely available online

Short Communication

Bone Health, Vertebral Fractures and Pain in Autism: An Overlooked Intersection

Zaur Komachkov[1*], Saba Javed[2]

[1]*H. Ben Taub Department of Physical Medicine and Rehabilitation, Baylor College of Medicine, Houston, TX 77030, USA;*

[2]*Department of Pain Management, University of Texas MD Anderson Cancer Center, Houston, TX 77030, USA*

DESCRIPTION

Autism Spectrum Disorder (ASD) is increasingly recognized not only as a neurodevelopmental condition but also as one associated with unique systemic health comorbidities. Among these comorbidities, bone health is often overlooked and undertreated. Multiple studies have reported that individuals with ASD exhibit reduced Bone Mineral Density (BMD), a higher prevalence of osteoporosis, and increased fracture risk compared to neurotypical peers [1-4]. Management of bone health becomes particularly important when considering the risk of vertebral compression fractures, including Vertebra Plana Fractures (VPF), that often present with pain, deformity, and functional decline.

In our recent study on vertebra plana fractures, we highlighted the clinical nuances of identifying and managing these severe vertebral injuries [5]. Within the context of ASD, the implications of VPF are significant; diminished bone strength increases susceptibility to vertebral collapse, and communication or sensory processing differences may obscure recognition and timely diagnosis of fracture-related pain.

Several contributing factors compound the risk of delayed diagnosis and treatment of VPF in ASD populations.

Reduced physical activity

Many individuals with ASD engage in reduced levels of weight-bearing exercise due to motor coordination difficulties, sensory sensitivities, or restricted interests. This limits optimal bone mineralization during critical growth periods [1,2,6].

Nutritional challenges

Feeding difficulties, food selectivity, and gastrointestinal comorbidities predispose this patient population to calcium, vitamin D, and protein deficiencies. These deficiencies compound the risk of low BMD [1,2].

Medication effects

Long-term use of anticonvulsants, antipsychotics, and selective serotonin reuptake inhibitors (SSRIs) can negatively impact osteogenesis, either through direct effects on bone remodeling or by inducing weight gain and reduced mobility [3,7].

Motor and sensory impairments

Altered gait mechanics, balance deficits, and proprioceptive challenges increase fall risk. Even minor falls in individuals with low BMD may precipitate vertebral or long bone fractures [4,6,8].

Communication barriers

Perhaps the most detrimental barrier is under-reporting of pain. Even high-functioning individuals with ASD may have atypical pain perception or limited ability to articulate discomfort. Pain may manifest as behavioral changes, irritability, or functional regression. These communication barriers contribute to delayed recognition of fractures and suboptimal pain management [9-11].

These factors culminate to create a clinical scenario in which patients with ASD are at higher risk for severe vertebral injury, including VPF, and may not receive timely evaluation or treatment. For clinicians treating patients with ASD, awareness of these unique comorbidities and unique diagnostic challenges is critical. Vertebral fractures in ASD may present as behavioral changes, decline in mobility, or nonspecific discomfort rather than overt pain complaints.

Moving forward, a multidisciplinary approach is required. Preventative strategies should include bone health screening, attention to diet and supplementation, promotion of safe physical activity, and close monitoring of medication side effects on BMD. Clinicians must also adopt a high index of suspicion for vertebral fractures in ASD patients presenting with unexplained pain, behavioral regression, or changes in posture.

Correspondence to: Zaur Komachkov, Department of Physical Medicine and Rehabilitation, University of Baylor College of Medicine, Texas, USA, E-mail: zaur.komachkov@bcm.edu

Received: 07-Oct-2025, Manuscript No. AUO-25-38818; **Editor assigned:** 09-Oct-2025, PreQC No. AUO-25-38818 (PQ); **Reviewed:** 23-Oct-2025, QC No. AUO-25-38818; Revised: 30-Oct-2025, Manuscript No. AUO-25-38818 (R); **Published:** 06-Nov-2025, DOI: 10.35248/2165-7890.25.15.439

Citation: Komachkov Z, Javed S (2025). Bone Health, Vertebral Fractures and Pain in Autism: An Overlooked Intersection. Autism-Open Access. 15:439.

Copyright: © 2025 Komachkov Z, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

CONCLUSION

The findings of our study underscore the need to bridge the fields of autism research, bone health, and pain medicine. By recognizing the heightened risk of VPF and other fractures in this population, we can improve diagnostic accuracy and timeliness, enhance quality of life, and tailor pain management strategies to a vulnerable patient population that often faces unique diagnostic challenges.

REFERENCES

1. Neumeyer AM, Sokoloff NC, McDonnell EI, Macklin EA, McDougle CJ, Holmes TM, et al. Nutrition and bone density in boys with autism spectrum disorder. J Acad Nutr Diet. 2018;118(5): 865-877.
2. O'Flaherty M, Gomersall S, Hill J, Fortnum K, Bourke M, Cairney J, et al. Bone Health in Autistic Children: Evidence from a Population-Representative Australian Cohort Study. J Autism Dev Disord. 2025:1-4.
3. Mercurio M, Spina G, Galasso O, Gasparini G, Segura-Garcia C, De Fazio P, et al. The Association Between Antipsychotics and Bone Fragility: An Updated Comprehensive Review. Diagnostics (Basel). 2024;14(23):2745.
4. Mohamed AA, Elhawary MA, El Shemy SA. Impact of gross motor performance on bone mineral density in children with autism. Int J Early Child Spec Educ. 2022;14(02):2301-2307.
5. Javed S, Lam L, Nwankwo A, Komachkov Z. Patient-Reported Outcomes with Peripheral Nerve Stimulation for Low Back Pain from Vertebral Plana Deformities: A Case Series. J Clin Med. 2025;14(11): 3964.
6. Kelly RR, Sidles SJ, LaRue AC. Effects of neurological disorders on bone health. Front Psychol. 2020;11:612366.
7. Srinivasan S, O'Rourke J, Bersche Golas S, Neumeyer A, Misra M. Calcium and vitamin D supplement prescribing practices among providers caring for children with autism spectrum disorders: are we addressing bone health? Autism Res Treat. 2016;2016(1):6763205.
8. Maloy GC, Kaszuba SV, Stoeckel M, Mariotti EC, Frumberg DB. A practical guide for improving orthopaedic care in children with autism spectrum disorder. J Pediatr Soc North Am. 2024 ;5(1):640.
9. Bogdanova OV, Bogdanov VB, Pizano A, Bouvard M, Cazalets JR, Mellen N, et al. The current view on the paradox of pain in autism spectrum disorders. Front Psychiatry. 2022;13:910824.
10. Bandstra NF, Johnson SA, Filliter JH, Chambers CT. Self-reported and parent-reported pain for common painful events in high-functioning children and adolescents with autism spectrum disorder. Clin J Pain. 2012;28(8):715-721.
11. Genik LM, Constantin K, Symons FJ, McMurtry CM. Pain. In: Matson JL, editor. Handbook of intellectual disabilities. Cham (CH): Springer; 2019.1061-1078.