

ADHD medications associated with diminished bone health in kids

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Children and adolescents who take medication for attention-deficit hyperactivity disorder (ADHD) show decreased bone density, according to a large cross-sectional study presented today at the 2016 Annual Meeting of the American Academy of Orthopaedic Surgeons (AAOS).

"This is an important step in understanding a medication class, that is used with increasing frequency, and its effect on children who are at a critical time for building their bones," said senior study author Jessica Rivera, MD, an orthopaedic surgeon with the U.S. Army Institute of Surgical Research.

ADHD is a common neurobehavioral condition often diagnosed in childhood. The U.S. Centers for Disease Control and Prevention (CDC) estimate 6.4 million children were diagnosed with ADHD through 2011. In addition, the CDC says that parents reported 3.5 million children and teenagers taking medications to treat ADHD, a 28 percent increase from 2007—2011.

In this study, researchers identified 5,315 pediatric patients in the CDC's National Health and Nutrition Examination Survey (NHANES) and compared children who reported taking ADHD medications with survey participants not on these medications. The results indicate that children on ADHD medication had lower [bone mineral density](#) in the femur, femoral neck and lumbar spine.

Approximately 25 percent of survey participants on ADHD medication met criteria for osteopenia, a condition characterized by lower than normal peak [bone density](#), and this was significantly higher compared to participants not on medication.

Dr. Rivera added that a definite link has not been established between osteopenia in childhood and osteoporosis later in life, which increases the risk of brittle and porous bones, and ultimately, fracture risk. However, low-bone density in children theoretically could have long-term implications and

lead to poor bone health in adulthood because childhood and adolescence is when growing bones accrue mass and strength.

Medications used by patients in the study were: methylphenidate (Ritalin), dexamethylphenidate (Focalin), dextroamphetamine (Dexedrine), atomoxetine (Strattera) and lisdexamfetamine (Vyvanse). These medications can cause gastrointestinal problems such as decreased appetite and stomach upset, which may result in poor nutrition and reduced calcium intake. The drugs also may diminish bone density because they alter the sympathetic nervous system, which plays an important role in bone remodeling, or regeneration.

Dr. Rivera said that because most skeletal growth occurs by ages 18-20, physicians should realize the potential threat that ADHD medications pose to maturing bones and consider nutritional counseling and other preventative measures.

More information:

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Provided by American Academy of Orthopaedic Surgeons

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