

Endocrine-disrupting chemicals may impair bone health in male teens

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Per- and polyfluoroalkyl substances (PFAS) and phthalates (two types of endocrine-disrupting chemicals) may be associated with lower bone mineral density in male teens, according to a new study published in the Endocrine Society's *Journal of Clinical Endocrinology and Metabolism*.

Endocrine-disrupting chemicals are chemicals or mixtures of chemicals that interfere with the way the body's hormones work. Per- and [polyfluoroalkyl substances](#) (PFAS) are synthetic chemicals used in nonstick cookware, clothing and food packaging, and are increasingly being found in U.S. water supplies. Phthalates are used in [personal care products](#), food processing and children's toys.

"Adolescence is an important time when our bodies build up bone. Almost all U.S. children and adolescents are exposed to PFAS and phthalates, but few studies have looked at how these chemicals could be impacting our [bone health](#)," said Abby F. Fleisch, M.D., M.P.H., of the Maine Medical Center Research Institute and Maine Medical Center in Portland, Maine. "Our research found an association between certain PFAS and phthalates and reduced [bone mineral density](#) in adolescent males. Because bone accrual primarily occurs during adolescence, if replicated, this finding may have implications for lifelong bone health."

The researchers leveraged urine and blood samples from 453 boys and 395 girls from the National Health and Nutrition Examination Survey (NHANES) and found higher levels of PFAS and phthalates may be associated with lower bone mineral density in adolescent males. The researchers did not find the same effect in girls.

More information: Jenny L Carwile et al, Serum PFAS and Urinary Phthalate Biomarker Concentrations and Bone Mineral Density in 12-19 Year Olds: 2011-2016 NHANES, *The Journal of Clinical Endocrinology & Metabolism* (2022). doi.org/10.1210/clinem/dgac228

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