

Adult survivors of childhood leukemia have lower bone mineral density, study finds

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Men who survived childhood leukemia treatment into adulthood were more likely to have low bone mineral density than other adults their age, putting them at risk of osteoporosis and bone fractures, according to a new study.

The study, led by James G. Gurney, Ph.D., of the University of Michigan Comprehensive Cancer Center, found that 24 percent of the 74 survivors studied had abnormally low bone mineral density, a measure of the strength of bones. The average age of the survivors was 30, and they had been treated an average of 24 years ago for the most common type of childhood cancer, acute lymphoblastic leukemia.

According to the World Health Organization, 11 percent of 30-year-old men and 19 percent of 30-year-old women on average have low bone mineral density, a condition known as osteopenia. In this study, published Dec. 1 in the journal *Cancer*, 36 percent of men and 16 percent of women had low bone mineral density.

"Evaluations of bone health in childhood cancer survivors have only recently been noted as a concern. Routine monitoring has not yet become the standard of care for all survivors. Studies such as this one stress the importance of monitoring for bone health in these survivors, particularly since there may be some simple interventions, such as vitamin D and calcium, that may be beneficial," says study lead author Inas Thomas, M.D., an endocrinology fellow in the Department of Pediatrics at the U-M Medical School.

Low bone mineral density can progress to osteoporosis, a bone disorder common in older adults that can lead to fractures.

The researchers found that male survivors were more likely than female survivors to have lower bone mineral density, and shorter men and women were also more likely to have weaker bones.

The researchers also looked at levels of growth hormones, which are known to be affected by leukemia treatment. Low growth hormone levels and low levels of another hormone called IGF-1 can contribute to poor bone health, but that they are not the only factors involved. The researchers believe the disease itself or the treatments such as radiation – particularly radiation to the brain – and chemotherapy may affect bone growth.

"Survivors with known growth hormone deficiency or insufficiency should definitely be screened, but we would argue that all adult survivors should be screened as well. The disease, chemotherapy and cranial radiation – even if they do not lead to growth hormone deficiency – may play a role in the development of osteopenia or osteoporosis," Thomas says.

Source: University of Michigan

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