

Anti-mullerian hormone may predict rate of trans-menopausal bone loss

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Doctors have devised a test which could help them predict which women going through menopause will lose bone faster than average, new research reports. The results of the study will be presented Friday, April 1, at ENDO 2016, the annual meeting of the Endocrine Society, in Boston.

"Measuring anti-Mullerian hormone, a marker of ovarian functioning, in the blood in women early in [menopause transition](#) (when they are still having menstrual bleeding, but a bit less regularly) can help women and their clinicians predict the rate of future [bone loss](#) during the transition and determine the likelihood of faster than average loss," said lead study author Arun S. Karlamangla, MD, PhD, professor of medicine at the David Geffen School of Medicine at UCLA in Los Angeles, California.

"Bone strength in older ages and the ability to avoid devastating hip and spine fractures depend equally on peak [bone](#) mass achieved in young adulthood and the amount of bone lost during and after the menopause transition," Karlamangla said. During the menopause transition, bone mass and bone strength decline rapidly, but the rate of bone loss varies considerably from woman to woman. "This study's findings open up the possibility of identifying the women who are going to lose the most bone mass during the transition and targeting them before they have lost a substantial amount of [bone mass](#)."

The authors analyzed data from 474 women participants in the multi-ethnic, multi-site Study of Women's Health Across the Nation (SWAN)

conducted at seven academic medical centers in the United States. The participants were between 42 and 52 years of age, were pre- or early perimenopausal, had an intact uterus with one or two ovaries, and were not taking exogenous [sex steroid hormones](#).

Enrollment began in 1996 and the participants were asked to return every year to have their blood collected. Anti-Mullerian hormone levels in the blood were then measured. The women also had a [bone mineral density](#) scan two to four years before their final menstrual period and a second scan three to four years later, and changes in bone density were recorded.

Anti-Mullerian hormone levels strongly predicted the rate of bone loss during the menopause transition and may help identify which women can be expected to lose bone at a faster than average rate.

The median rate of bone density decline was 1.3 percent per year in the spine and 1 percent per year in the femoral neck. Anti-Mullerian [hormone levels](#) ranged from the lower limit of detection (2 picograms per milliliter) to more than 1,000 picograms per milliliter.

Each four-fold decrease in hormone level was associated with a 0.15 percent per year faster decline in the [bone density](#) in the spine, a 0.13% per year faster decline in the femoral neck, as well as an 18 percent and a 17 percent increase in the odds of faster-than-median decline in the spine and femoral neck, respectively.

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