

National study finds strong association between menopausal symptoms and bone health

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The first large prospective cohort study to examine the relationship between menopausal symptoms and bone health in postmenopausal women has found that those who experience moderate to severe hot flashes and night sweats during menopause tend to have lower bone mineral density and higher rates of hip fracture than peers with no menopausal symptoms.

The study followed thousands of women for eight years. After adjusting for age, [body mass index](#) and demographic factors, it found that women who reported moderate to severe hot flashes at baseline enrollment showed a significant reduction in the bone density in the femoral neck region of their hips over time and were nearly twice as likely to have a [hip fracture](#) during the follow-up period.

The prospective observational study, "Associations of Menopausal Vasomotor Symptoms with Fracture Incidence," was co-authored by epidemiologist Jean Wactawski-Wende, PhD, interim dean of the University at Buffalo School of Public Health and Health Professions, and published Dec. 18 online and ahead of print in the Endocrine Society's *Journal of Clinical Endocrinology & Metabolism*.

This study employed data and study participants from the Women's Health Initiative (WHI) initiated by the U.S. National Institutes of Health (NIH) in 1991 to address major health issues causing morbidity

and mortality in [postmenopausal women](#).

The WHI consisted of three clinical trials and an observational study undertaken at 40 clinical centers throughout the US, including the University at Buffalo Clinical Center directed by Wactawski-Wende.

She says the research team examined data from 23,573 clinical trial participants, aged 50 to 79, who were not then using menopausal hormone therapy nor assigned to use it during the trial. They conducted baseline and follow-up bone density examinations in 4,867 of these women.

Wactawski-Wende says, "We knew that during menopause, about 60 percent of women experience vasomotor symptoms (VMS), such as hot flashes and night sweats. They are among the most bothersome symptoms of menopause and can last for many years.

"It also was known that osteoporosis, a condition in which bones become structurally weak and more likely to break, afflicts 30 percent of all postmenopausal women in the United States and Europe, and that at least 40 percent of that group will sustain one or more fragility fractures in their remaining lifetime," she says.

"What we did not know," says Wactawski-Wende, "was whether VMS are associated with reductions in [bone mineral density](#) or increased fracture incidence.

"Women who experience vasomotor menopausal symptoms will lose [bone density](#) at a faster rate and nearly double their risk of hip fracture," she says, "and the serious public [health](#) risk this poses is underscored by previous research that found an initial fracture poses an 86 percent risk for a second new fracture."

Wactawski-Wende says, "Clearly more research is needed to understand the relationship between [menopausal symptoms](#) and [bone health](#). In the meantime, women at risk of fracture may want to engage in behaviors that protect their bones including increasing their physical activity and ensuring they have adequate intakes of calcium and vitamin D."

Wactawski-Wende is a professor in UB's Department of Epidemiology and Environmental Health, as well as the Department of Obstetrics and Gynecology in the UB School of Medicine and Biomedical Sciences.

More information: *Journal of Clinical Endocrinology & Metabolism*, press.endocrine.org/doi/pdf/10.1210/jc.2014-3062

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