

Height loss increases risk for fractures and death in older women

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Older women who have lost more than two inches in height face an increased risk of breaking bones and dying, according to a new study published in the January issue of the *Journal of Bone and Mineral Research* and funded by the National Institutes of Health.

The study found that women 65 and older who lost more than two inches over 15 years were 50 percent more likely to both fracture a bone and to die in the subsequent five years, compared to women who lost less than two inches in height.

"Most women do lose height as they age, but we found that those who lost more than two inches were at higher risk of breaking a bone and of dying," said lead author Teresa Hillier, MD, MS, an endocrinologist and senior investigator at the Kaiser Permanente Center for [Health Research](#) in Portland, Ore. "These women were at higher risk of dying from a fracture, but they were also at higher risk of dying from more common causes, including heart disease."

Height loss may be an indicator of [osteoporosis](#), a weakening of the bone that can lead to fractures of the spine, hip, wrist and other bones. Hip fractures are the most debilitating. Nearly 300,000 people are admitted to the hospital each year with a [hip fracture](#), according to the [Centers for Disease Control and Prevention](#). As many as 20 percent of them will die within a year after the fracture and many others will become disabled, previous research has shown.

"We need to do everything we can to prevent these fractures and our study suggests that clinicians don't need to wait until they have two height measurements before they can be proactive," Hillier said. "Most [older women](#) remember how tall they were in their mid 20s, and if they measure two inches shorter than that, clinicians should consider bone density testing, counseling, and possible treatment to help prevent fractures."

Prior studies have reported that significant height loss puts men at higher risk for [heart disease](#) and death, but this is the first study to find an association between height loss and death in women. Another study to be published in the same issue of the [Journal of Bone and Mineral Research](#) found that men over 70 who lost two inches or more were at greater risk for fracturing a hip, compared with men who lost less height.

The main analysis for the new Kaiser Permanente study involved 3,124 women who were 65 and older during the mid-1980s, when they were recruited for the landmark Study of Osteoporotic Fractures. The study has been going on for more than two decades and includes women from Baltimore, Minneapolis, Portland, Ore., and the Monongahela Valley near Pittsburgh.

Height loss was determined by comparing height measurements taken during an initial clinic visit with measurements taken during a clinic visit 15 years later. A stadiometer was used to measure height. Spine fractures were detected through X-rays, and bone density was measured using a standard bone scan.

In addition to the clinic visits, women filled out health questionnaires every four months and were asked if they'd broken a hip or other [bone](#). Those who didn't fill out the mailed questionnaires were contacted by phone. Public death records were used to confirm mortality.

In addition to the main analysis, researchers also conducted a sensitivity analysis among all 9,704 women in the SOF study and looked at the significance of height loss that had occurred before the women entered the study at age 65 or older. At the beginning of the study, women were asked to recall how tall they were at age 25, and that height was compared to their actual height. Researchers found that [women](#) who reported losing more than two inches in the previous 40 years were also at higher risk for fractures and death.

More information: This study is part of ongoing research and preventive work at Kaiser Permanente to understand and prevent bone fractures. Another study published by Kaiser Permanente researchers in September, 2011 in the Archives of Internal Medicine found that women ages 65-69 who break a hip are five times more likely to die within a year than women of the same age who don't break a hip.

Provided by Kaiser Permanente

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