

BONE

Cystatin C—a biomarker of hip fracture risk?

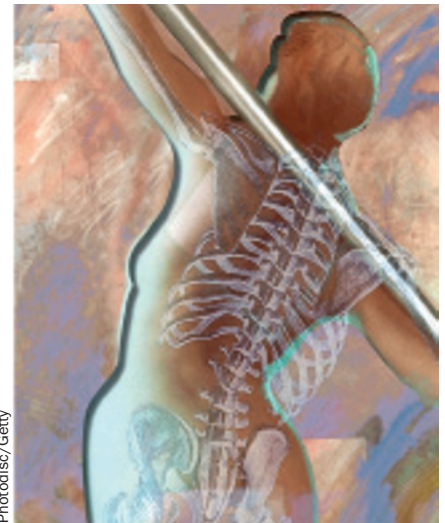
High serum levels of cystatin C are associated with an increased risk of hip fractures in women ≥ 65 years old, independent of traditional risk factors, report Ensrud *et al.*

Cystatin C is a low-molecular-weight protein that is being evaluated as a new biomarker of kidney function. Ensrud *et al.* tested whether hip fracture risk in postmenopausal women was associated with either serum levels of cystatin C or standard creatinine-based measures of kidney function.

The researchers conducted a nested case-cohort analysis in 4,709 postmenopausal white women from the Study of Osteoporotic Fractures who had provided serum specimens at the 10 year study time point. The investigators randomly selected 1,170 women as the random subcohort, and the first 300 women to experience hip fracture after the 10-year time point were selected as the

cases. These hip fractures had occurred during 5.4 years of follow-up on average.

In the women without a previous hip fracture, risk of hip fracture was 1.7-fold higher in women in the highest than in those in the lowest quartile of serum concentrations of cystatin C, after adjustment for age, clinical site, BMI and total hip BMD. After adjustment for the same traditional risk factors, risk of hip fracture in the 74 women with a previous hip fracture was 4.5-fold higher in women in the highest than in those in the lowest quartile of serum concentrations of cystatin C. Overall, risk of hip fracture was 1.9-fold higher in women in the highest than in those in the lowest quartile of serum concentrations of cystatin C. Adjustment for other risk factors only minimally attenuated this association. Serum creatinine levels and creatinine-based estimated glomerular filtration rate were not associated with risk of hip fracture.



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On the basis of these findings, the researchers encourage investigation into the potential of cystatin C as a biomarker for identification of individuals at an increased risk of hip fracture.

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Original article Ensrud, K. E. *et al.* Cystatin C and risk of hip fractures in older women. *J. Bone Miner. Res.* doi:10.1002/jbmr.1858.