

Relative Fracture Risk Using Baseline Bone Densitometry Values

Overview:

A patient's relative risk for fracture doubles for each 10-12% decrease in bone densitometry.

Bone Mineral Density Measurements: The measurements of bone mineral density should be performed at the same site with the same technique.

change in bone density in percent =

= ((patient's current bone mineral density) - (patient's baseline bone mineral density)) / (patient's baseline bone mineral density) * 100%

If the current mineral density is less than the baseline value then

relative risk of fracture compared to baseline =

= $2^{((\text{change in bone density in percent}) / 10\%)}$

The relative risk also increases with a history of fragility fractures after the age of 50.

References:

Cummings SR Black DM et al. Bone density at various sites for prediction of hip fractures. Lancet. 1993; 341: 72-75.

Ettinger B Miller P McClung MR. Letter to the Editor: Use of bone densitometry results for decision about therapy of osteoporosis. Ann Intern Med. 1996; 125: 623.

The Medical Letter. Bone densitometry. 1996; 38: 103-104.