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Risk of hip fracture derived from relative risks: an analysis applied to the population of Sweden.

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Abstract: Bone mineral density measurements are widely used to estimate the relative risk of hip fracture. In addition, many other risk factors have been identified, some of which are known to add to the risk independently of other risk factors, including bone mineral density measurements. In this paper we develop an algorithm that converts relative risks for hip fracture to absolute (15 years and lifetime) risks, modeled on the population of Sweden. Lifetime risks increased as expected with increments in relative risk. Average lifetime risk in women at the age of 50 years was 22.7%, which increased to 64.9% when the relative risk was 6.0. In men the risk increased from 11.1% to 41.3%. The identification of high-risk groups had little effect on the specificity of assessments but increased the sensitivity over a wide range of assumptions. The increment in lifetime risk was relatively stable across all ages, reducing the complexity of computing lifetime risks from relative risk. The derivation of absolute risk from relative risk permits the optimization of selection of individuals or populations either for further risk assessment or for treatment.

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