

# Screening for osteoporosis

In general, population screening for osteoporosis is not advised and selective examination of high-risk women with dual-energy X-ray absorptiometry (DXA) should be undertaken as the initial risk assessment. However, the US Preventive Services Task Force recommends screening for osteoporosis with bone density testing for all women aged 65 years or more without prior assessment with a clinical risk tool.

## Web-based tools for the calculation of fracture risk

- **The FRAX tool** integrates clinical risk factors and bone density at the femoral neck. It gives the 10-year probability of a hip or other fracture.
- **QFracture** estimates the risk of hip or any osteoporotic fracture (i.e. hip, wrist, shoulder or spine) over 1–10 years.
- **Garvan risk calculator** estimates fracture risk at 5 and 10 years on the basis of gender, age, fractures since the age of 50, falls in the past 12 months and weight.

## Dual-energy X-ray absorptiometry (DXA)

DXA is used to assess **bone mineral density** (BMD), mainly at the lumbar spine and hip.

BMD can then be compared against an established norm (commonly that in a healthy young adult).

## The T-score

The T-score is the number of standard deviations (SDs) below the average value for the bone mineral density (BMD) of a young adult at peak bone density, adjusted for gender and ethnicity. The World Health Organization has defined the following categories based on BMD:

- **Normal bone** T-score between +1 and –1 (i.e. within 1 SD of the mean for young adults)
- **Osteopenia** T-score between –1 and –2.5
- **Osteoporosis** T-score of –2.5 or lower (the greater the negative number, the more severe the osteoporosis)
- **Severe (established) osteoporosis** T-score is more than 2.5 SD below the mean for young adults, and the individual has had one or more osteoporotic fractures.

## Further information

**FRAX Fracture Risk Assessment Tool** <https://www.sheffield.ac.uk/FRAX/index.aspx?lang=En>

**Garvan Institute of Medical Research. Fracture risk calculator** <http://garvan.org.au/promotions/bone-fracture-risk/calculator>

**NIH Osteoporosis and Related Bone Diseases – National Resource Center. Bone Mass Measurement: What the Numbers Mean** <https://www.bones.nih.gov/health-info/bone/bone-health/bone-mass-measure>

**Welcome to the QFracture® – 2016 risk calculator** <http://qfracture.org>