Osteoporosis

Osteoporosis is defined as a skeletal disorder characterized by compromised bone strength predisposing to an increased risk of fracture. Bone strength reflects the integration of two main features: bone density and bone quality.

Clinical risk factors for fracture

- Age
- Sex
- Low body mass index (≤ 19 kg/m^2)
- Previous fragility fracture, particularly of the hip, wrist or spine, including morphometric vertebral fracture
- Parental history of hip fracture
- Current glucocorticoid treatment (any dose, by mouth for three months or more)
- Current smoking
- Alcohol intake of three or more units daily

Clinical impact

- Osteoporosis affects 1 in 3 women, compared with 1 in 5 men.
- It causes more than 8.9 million fractures annually worldwide.
- Hip, vertebra and wrist are the main fracture sites.
- Fracture risk increases with age.
- Most hip fractures are reported in patients aged 80 years or more.
- Osteoporotic fractures are associated with increased mortality.

Secondary causes of osteoporosis

- Rheumatoid arthritis
- Untreated hypogonadism in men and women
- Prolonged immobility
- Organ transplantation
- Type I diabetes
- Hyperthyroidism
- Gastrointestinal disease
- Chronic liver disease
- Chronic obstructive pulmonary disease

Bone strength

Bone strength reflects the integration of bone density and bone quality. Bone density is expressed as grams of mineral per area (g/cm^2) and is determined by peak bone mass and amount of bone loss. Bone quality refers to architecture, turnover, damage (microfractures) and mineralization.

Further information

EMAS CareOnline 2020 https://emas-online.org/emas-careonline

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