DEFINITION
Osteoporosis is a disorder characterised by abnormal loss of bone density and deterioration of bone tissue with an increased fracture risk (Mosby, 2002). The condition usually affects the whole skeleton but it most commonly causes fractures to the bones in the wrist (Colles fracture), spine and hip (neck of femur).

AETIOLOGY AND INCIDENCE
■ Around three million people in the UK have osteoporosis. One in three women and one in twelve men in the UK will have osteoporosis after they have reached the age of 50. (National Osteoporosis Society).
■ Due to increased life expectancy and a doubling of the age-specific incidence of fractures in the past three decades, the number of men and women presenting with osteoporotic fractures is increasing (Parrington, 2002).
■ Various environmental factors and diseases are associated with deceased bone mass and are considered risk factors for osteoporosis. Risk factors include female gender; increasing age (at 35 years bone loss increases as part of the ageing process); white ethnic origin; family history; lack of exercise; immobility; diet (low calcium); smoking; excess alcohol intake; early menopause/oophorectomy; thin build with small bones; use of corticosteroids (for example for asthma) and diseases such as Cushing’s syndrome and anorexia nervosa.
■ Osteoporosis costs the NHS over £1.7bn each year.
■ About 20 per cent of people die within a year of sustaining a hip fracture.

SIGNS AND SYMPTOMS
■ Bone pain.
■ Skeletal deformity such as kyphosis (curvature of the spine).
■ Gradual loss of height, which is caused by compression of vertebrae.
■ Fractures to wrist, hip or spine.

INVESTIGATIONS
■ Bone density scan or dual energy X-ray absorptiometry (DXA) scan is used to measure the density of bones. This scan can diagnose osteoporosis, assess risk of fracture and monitor the effects of treatment.
■ X-rays will only reveal osteoporosis when at least 30 per cent of bone density has been lost.

TREATMENT
■ Healthy eating plan: a diagnosis of osteoporosis may also mean that calcium and vitamin D supplements are required along with a ‘bone health’ diet.
■ Biophosphonates: non-hormonal drugs, which help to maintain bone density and reduce fracture rates.
■ Hormone replacement therapy: oestrogen replacement for women at the menopause. Helps to maintain bone density and reduce fracture rates for the duration of therapy.
■ Selective estrogen receptor modulators: drugs, which act on the bone in the way that oestrogen does.
■ Testosterone therapy for men.

NURSING IMPLICATIONS
■ Advice regarding medication for osteoporosis and fracture pain relief.
■ Preventative advice on avoiding constipation may be necessary for people taking calcium supplements.
■ Falls risk assessment for older people. Hip fractures usually occur after a fall from standing height with minimal trauma involved (Parrington, 2002).
■ Promotion of ‘bone health’ education, smoking cessation and reduced alcohol intake.

RESEARCH
For published studies see: British Medical Journal archive http://bmj.com/all.shtml
OMNI: http://omni.ac.uk/browse/mesh/detail/C0034065L0034065.html
REFERENCES
National Osteoporosis Society (NOS): www.nos.org.uk
NOS information booklet: www.nos.org.uk/PDF/Osteoporosis booklet.pdf
FURTHER READING
National Osteoporosis Awareness Month begins 1 June 2003.