

# OSTEOPOROSIS

## Key Points

WHO definition	T score $<2.5$ SD
Life-time risk fracture	40% women, 13% men (US Caucasians)
1.SD decrease in BMD	2 x relative risk of fracture
One existing fracture	3 - 5 times increased risk of further fractures for given BMD
Three existing fractures	$>20$ times increased risk of further fractures for given BMD

## Whom to Scan?

### *Absolute indication*

- Existing low trauma (gravity or less) fracture of wrist, hip, vertebrae, humerus or ribs.

### *Relative indications*

- Primary hyperparathyroidism (especially if there is doubt regarding the need for surgery).
- Strong first degree family history ( $>1$  parent, grand parent, sib) of low trauma fractures.
- Early menopause  $<45$ .
- Low oestrogen secondary amenorrhoea (anorexia nervosa, athletes, hyperprolactinaemia).
- Glucocorticoid treatment ( $>7.5$ mg prednisolone/day or equivalent,  $>6$ m, or planned  $>6$ m).
- Cushing's disease/syndrome.
- Prolonged thyrotoxicosis (postmenopausal only).
- Malabsorption syndromes.

## Initial scan

DEXA of hip **and** spine (for subsequent audit)

### **Further Investigations of DEXA confirmed osteoporosis**

1. *Lateral x-ray:* lumbar and thoracic spine, if indicated:-

- height loss >2 inches
- kyphosis
- thoracic (not lumbar) backache

2. Blood tests

- immunoglobulins
- calcium, phosphate, alkaline phosphatase, albumin
- TSH
- testosterone (a.m.) in men.

### **Diagnosis**

BMD less than 2.5 standard deviations of the young adult mean (T score).

### **Management**

#### Primary Prevention of Fractures

1. *Post-menopausal women >50 years*

Lifestyle advice -

- increase weight bearing exercise
- stop smoking
- moderate alcohol intake
- calcium intake around 1,000mg per day (1 pint of milk or equivalent) – Adcal-D3 one tablet daily if unable to increase calcium intake by dietary means

2. *Post-menopausal women <50 years*

- Lifestyle advice as above
- HRT until age 50

## Secondary Prevention of Fractures

### *1. Post-menopausal women >50 years*

- Lifestyle advice as above
- Bisphosphonates (alendronate LA 70 mg once weekly is most convenient, but risedronate LA 35 mg once weekly is an equivalently effective alternative)
- Raloxifene 60mg od, if bisphosphonates contra-indicated or patient intolerance (note can cause vasomotor symptoms and is associated with a comparable risk of DVT as HRT).
- Calcium and Vitamin D supplementation (Adcal-D3, one tablet daily) in women >80 years, particularly if house-bound

**Recent data from randomised controlled trials indicate that the long term risks of HRT (breast cancer, thrombo-embolism and cardiovascular disease) outweigh the advantages in terms of osteoporosis treatment and prevention. HRT is, therefore, not recommended for the management of osteoporosis in post-menopausal women > 50 years, who are not experiencing menopausal symptoms.**

### *2. Post-menopausal women <50 years*

- Lifestyle advice as above
- Consider HRT or a bisphosphonate – discuss with consultant

### *3. Glucocorticoid-associated osteoporosis*

- Treat with bisphosphonate if  $T < -1.5$ ; either alendronate 70mg/wk or risedronate 35 mg/wk
- initiation of long term glucocorticoid pharmacotherapy ( $>7.5$ mg prednisolone/day or equivalent,  $>6/12$  months): DEXA scan - if  $BMD > T = 0$  or perhaps  $-0.5$ , then assume will fall precipitously and give prophylaxis with bisphosphonate

### *4. Other Special cases – discuss with consultant - .eg.:*

- anorexia nervosa (women < 50 years, HRT or OCP [if require contraception and are suitable]; older women as above)

- men (can define cause in 50%, replace androgens if deficient and if no prostatic pathology; if idiopathic, bisphosphonate)
- children, pre-menopausal women (consultant advice)
- osteogenesis imperfecta type 1 (bisphosphonates, genetic counselling)

### **Monitoring**

- Repeat DEXA normally at 18 months.
- If increase BMD >2% with no other issues - discharge.
- If no increase or further fractures - consider alternative medication (i.e. raloxifene instead of bisphosphonate, or vice versa) or combination therapy.

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