Assessing risk of fragility fractures as per NICE clinical guidelines 146:All women >65 years, men >75 years, anyone over 50 years with risk factor

Hertfordshire and West Essex Integrated Care System

Patient presents to GP (add reference for NOGG) — Click for more info

Consider Osteoporosis if one or more of the following diagnoses – Aim to reduce of risk of progression — Click for more info

Investigations for all patients — Click for more info

Fracture risk stratification using FRAX or QFracture Add nice guidance link 146 — Click for more info

Low
Low risk
Reassure
Life style advice
Reassess in ≤ 5 years depending on clinical context.
Click for more info

Intermediate — Click for more info
Measure BMD* (DXA** scan, hip ▯ spine) and recalculate
fracture risk with FRAX tool to determine intervention level.
Osteoporosis may be assumed in women ≥ 75 year if a DXA

scan is clinically inappropriate or unfeasible

Patient presents with fragility fracture over 50

High — Click for more info
BMD should be measured for baseline but starting treatment
to reduce fracture risk should not be delayed.

Patient presents with fragility fracture under 50

Very high — Click for more info
BMD should be measured for baseline and to guide treatment but starting treatment to reduce fracture risk should not be delayed. NB: If major osteoporotic fracture (spine, hip, forearm or humerus fracture) within 24 months, **refer to specialis**t for romosozumab

Refer for DXA UNLESS severely frail with a life expectancy under 10 years.

DXA scan report

T-score above -1 → Normal - Reassure and advise general measures

T-score -1 to -2.4 → Osteopenia – advise general Measures (what is our guidance for osteopenia)

T-score -2.5 or below → Osteoporosis – consider treatment based on age and fracture Probability (add hyperlink to prescribing guidance)

Initial follow up 3-4 months later and long term treatment: Follow Primary care bisphosphonate treatment algorithm (add hyperlink)

Re-assess using FRAX +/- DXA if they suffer a further fracture or their risk factors alter

If you are under 50 or major osteoporotic fracture within 24 months, consider referral to specialist

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Present to GP

Pts are unlikely to present with symptoms suggestive of osteoporosis. They may present with:
• conditions, on medicines, or with risk factors that put them at high risk of fracture
• back pain as a result of an acute vertebral fracture
• a recent or current low trauma fracture
• concerns due to a family history of osteoporosis &/or hip or vertebral fracture.

In light of the above, opportunistic screening should take place in primary, community & secondary care settings
Prioritise:
• Those with a history of previous fragility fracture
• Those with a history of falls
• Those taking systemic glucocorticoids.
• Steroid tablets such as prednisolone, are more likely to cause bone loss if you take them for more than 3 month. Or if you often take a short course of them.
Ref. NICE QS149, Ref. Royal Osteoporosis Society.

Screening in primary care – e.g. as part of over 50s health checks & LTC annual reviews, checking for histrory of fracture, any relevant clinical risk factors, including a parental history of hip fracture.
Screening in community setting – e.g. pt referred to musculoskeletal clinical assessment and treatment service with back pain in whom imaging demonstrates a vertebral fracture.

–
e.g. pt being reviewed in outpatients, who takes regular steroids.

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Risk Factors

(1) **Under 50 years old with major risk of osteoporosis** such as
• Adults currently using systemic glucocorticoids or who have been using systemic glucocorticoids for more than 3 months at a dose of prednisolone of 5mg daily or more (or equivalent dose of other glucocorticoids).
• Untreated premature menopause
• Previous fragility fracture

(2**) In women aged under 65 years and men aged under 75 years in the presence of risk**
Factors for example:
• previous fragility fracture
• current use or frequent recent use of oral or systemic glucocorticoids
• history of falls
• family history of hip fracture
• other causes of secondary osteoporosis
• low body mass index (BMI; less than 18.5 kg/m2)
• smoking
• alcohol intake of more than 14 units per week for men and women.
• Female sex.
• Increasing age.
• Menopause.
• Rheumatological conditions, such as rheumatoid arthritis and other inflammatory arthropathies.

(3) Causes of secondary osteoporosis
• Endocrine (hypogonadism in either sex including untreated premature menopause and treatment with aromatase inhibitors or androgen depriva on therapy; hyperthyroidism; hyperparathyroidism; hyperprolacnaemia; Cushing's disease; diabetes),
• Gastrointesnal (coeliac disease; inflammatory bowel disease; chronic liver disease; chronic pancreas; other causes of malabsorpon),
• Rheumatological (rheumatoid arthris; other inflammatory arthropathies),
• Haematological (mulple myeloma; haemoglobinopathies; systemic mastocytosis),
• Respiratory (cystic fibrosis; chronic obstructive pulmonary disease),
• Metabolic (homocysnuria)
• Chronic liver disease
• Chronic renal disease and immobility (due for example to neurological injury or disease)

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Investigations for all patients

- FBC, ESR (if ESR raised measure serum paraproteins and urine Bence Jones protein to check for myeloma)
- Bone and liver function tests (Ca, P, Alkaline phosphate, albumin, ALT / GT)
- Serum creatinine
- Additional tests if indicated
- Serum TSH
- Serum 25 OH Vit D and PTH
- Lateral thoracic and lumbar spine X rays
- Isotope bone scan
- Serum testosterone, LH and SHBG, PSA (men)

BMD if monitoring required

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Fracture risk stratification using FRAX or QFracture

Fracture risk stratification using FRAX® or QFracture®
The National Osteoporosis Guideline Group (NOGG) recommend the following:
• assess fracture risk using FRAX® in postmenopausal women, and men age ≥ 50 years, when:
• assessment would influence management; and
• risk factors are present – see the clinical risk factors section of 'History and examination' above
• fracture risk need not be assessed in postmenopausal women with a prior fragility fracture:
• classified as high risk
• should be considered for treatment without the need for further risk assessment
• bone mineral density (BMD) measurements may, however, be appropriate in younger postmenopausal women
• FRAX® assesses the 10 year probability of a major osteoporotic fracture (spine, hip, forearm, or humerus)

NICE recommend the following:
• assessing fracture risk using FRAX® or QFracture® in all patients at risk of osteoporosis fracture, including the following:
• all women age 65 years and older
• all men age 75 years and older
• women under age 65 years, and men under age 75 years, if risk factors are present, such as:
• previous fragility fracture
• current use or frequent recent use of oral or systemic glucocorticoids
• history of falls
• family history of hip fracture
• other causes of secondary osteoporosis
• BMI less than 18.5kg/m2
• smoker
• alcohol intake of more than 14 units per week for women, and more than 21 units per week for men
do not routinely assess fracture risk in people age < 50 years unless they have major risk factors:
• there is little evidence for treatment in younger people and their overall fracture risk is low
• examples of major risk factors include:
• current or frequent use of oral or systemic glucocorticoids
• untreated premature menopause
• previous fragility fracture

Consider the following when stratifying fracture risk:
all patients above the upper age limits, as defined by FRAX® (age 90 years) or QFracture® (age 99 years), should be classified as high risk of fractures
• interpret fracture risk in people age > 80 years with caution – predicted 10-year fracture risk may under-estimate the patient's short-term fracture risk
• other factors that these tools may not include, e.g. care home residency, taking drugs that impair bone metabolism, such as anticonvulsants, or falls
• tools may underestimate fracture risk in certain circumstances, e.g. having a history of multiple fractures
• fracture risk is exaggerated in younger age range
NB: Biochemical markers should not be used in the evaluation of fracture risks

Considerations
• In assessing 10yr absolute probability of fracture, FRAX®
underestimates fracture risk in the older old.
• In the instance of the pt having sustained multiple fractures, or a vertebral facture in the past, FRAX® will
underestimate fracture risk.

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Low Risk

Lifestyle advice NOGG , CKS

- Recommend a balance diet especially with adequate calcium and vitamin D intake
- Recommend regular tailored weight bearing and muscle-strengthening exercise
- Maintain body weight
- Support and encourage smoking cessation and drink alcohol within recommended limits
- Assess falls risk and give advice if appropriate

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Intermediate

Where FRAX® / NOGG indicates intermediate risk request DXA to:
a) Evaluate need for treatment
b) Inform choice of treatment
If DXA doesn't indicate a need for treatment, consider reassessment of fracture risk (FRAX® +/- DXA), after 2yrs for those:
- with T-score near the intervention threshold
- with risk factors for accelerated bone loss

In all others, consider need for re-assessment after 5yrs.

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High

-Offer calcium and/or vitamin D supplementation as an adjunct: Calcium 1g to 1.2g and colecalciferol 800iu daily
-Treat vitamin D deficiency and insufficiency prior to initiation of parenteral anti-osteoporosis drug treatment, and alongside initiation of oral anti-osteoporosis drug treatment.
High risk -treat oral anti-resorptive treatments are first line.
Very high risk- refer for specialist initiated or specialist only treatment. If a delay is anticipated resorptive promptly.
Choice of treatment to be made on an individual basis after discussion between patient and clinician about the advantages and disadvantages of the treatments available. If more than 1 treatment is suitable the lowest cost should be chosen.
If a patient has a fracture while on treatment check adherence to treatment and exclude secondary causes of osteoporosis

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Very high

-Offer calcium and/or vitamin D supplementation as an adjunct: Calcium 1g to 1.2g and colecalciferol 800iu daily

-Treat vitamin D deficiency and insufficiency prior to initiation of parenteral anti-osteoporosis drug treatment, and alongside initiation of oral anti-osteoporosis drug treatment.

High risk -treat oral anti-resorptive treatments are first line.

Very high risk- refer for specialist initiated or specialist only treatment. If a delay is anticipated start oral anti-resorptive promptly.

Choice of treatment to be made on an individual basis after discussion between patient and clinician about the advantages and disadvantages of the treatments available. If more than 1 treatment is suitable, the lowest cost should be chosen.

If a patient has a fracture while on treatment check adherence to treatment and exclude secondary causes of osteoporosis.