Management of osteoporosis and the prevention of fragility fractures

This Quick Reference Guide provides a summary of the main recommendations in SIGN 142 Management of osteoporosis and the prevention of fragility fractures.

**Treatment options** should be discussed with the patient and their views and preferences taken into account. This should include a discussion of the risks of fracture with and without treatment, using tools such as Qfracture and FRAX, the risks and benefits of treatment and the option not to have drug treatment.

**Risk factors** associated with fracture fracture which should prompt consideration of fracture-risk assessment

<table>
<thead>
<tr>
<th>Risk category</th>
<th>Causative factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-modifiable risk factors</td>
<td>previous fracture</td>
</tr>
<tr>
<td>Modifiable risk factors</td>
<td>low BMI (&lt;20 kg/m²)</td>
</tr>
</tbody>
</table>

**Coexisting diseases**

- Diabetes
- Cardiovascular diseases
- Renal disease
- Chronic liver disease

**Risk factors associated with fragility fractures**

<table>
<thead>
<tr>
<th>Risk category</th>
<th>Affected group</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol</td>
<td>people who consume more than 3.5 units per day of alcohol</td>
<td>reduce alcohol intake to nationally recommended levels (&lt;14 units per week)</td>
</tr>
<tr>
<td>Smoking</td>
<td>all smokers</td>
<td>stop smoking</td>
</tr>
</tbody>
</table>

**Drug therapy**

- long-term antidepressants
- antiepileptics
- aromatase inhibitors
- long-term DMPA
- GnRH agonists (in men with prostate cancer)
- PPIs
- oral glucocorticoids
- TZDs

**Quick reference guide**

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**Sources of further information**

Royal Osteoporosis Society
Camerton, Bath, BA2 0PJ
Helpline: 0808 800 0035
Helpline email: nurses@theros.org.uk
www.theros.org.uk

The Royal Osteoporosis Society is a UK charity dedicated to improving the diagnosis, prevention and treatment of osteoporosis. It runs a dedicated helpline (by phone, email and post) on weekdays between 9am and 5pm to answer medical queries relating to osteoporosis. The website provides a large volume of information and advice on living with the condition, current news and support groups.

Age Scotland
Causewayside House, 160 Causewayside, Edinburgh, EH9 1PR
Helpline: 0800 12 44 222
www.ageuk.org.uk/scotland
Email: helpline@agescotland.org.uk

Age Scotland is a charity which represents all older people in Scotland. It campaigns, commissions research and fundraises to support a better quality of life for everyone in later life. Age Scotland provides a wide range of confidential, impartial and simple information and promotes healthy living and active ageing. It also helps people to claim their entitlements and provides access to financial services targeted towards older people.

NHS Inform
www.nhsinform.scot
Tel: 0800 22 44 88

This is the national health and care information service for Scotland. It includes information and links to resources to support people with osteoporosis:

www.nhsinform.scot/illnesses-and-conditions/muscle-bone-and-joints/conditions/osteoporosis

**Signatures**
**Secondary fracture prevention**

1. **Fragility Fracture**
   - Age ≥ 50

   **Hip Fracture**
   - Suitable for oral therapy? Yes
   - DXA scan
   - Osteopenia T -1.0 to -2.5
   - Yes
   - Lifestyle advice
   - Reassess if risk profile changes
   - Zoledronic acid 18 monthly
   - Continue for 6 years and review (section 6.4.3)
   - Zoledronic acid annually
   - Give 3 infusions and review after 5 years (section 6.5)

   **Other Fracture**
   - DXA scan
   - Osteoporosis T ≤ -2.5
   - Yes
   - Severe osteoporosis Spine‡
   - Yes
   - Teriparatide
   - Yes
   - Parenteral bisphosphonate appropriate?
   - Yes
   - Denosumab
   - No
   - Continue to 10 years and review

2. **Vertebral Fracture**
   - DXA scan
   - Normal T > -1.0
   - No
   - Yes
   - Transition to antiresorptive on completion of therapy
   - Continue for 5 years and review (section 6.5)

**Primary fracture prevention**

1. **Clinical risk factors age ≥50**

2. **Very strong clinical risk factors age <50**

   - Fracture risk assessment
   - 10 year major osteoporotic fracture risk ≥10%?
   - Yes
   - Lifestyle advice
   - Reassess if risk profile changes
   - Continue for 5 years and review (section 6.5)

   - No
   - Yes
   - Decision to stop denosumab therapy?
   - Yes
   - Transition to bisphosphonates
   - No
   - Continue to 10 years and review

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**Pharmacological treatment options for men**

Tools for detection and assessment

- **Risedronate** may be considered for the treatment of osteoporosis in men.
- **Zoledronic acid** should be considered for the treatment of osteoporosis in men and the prevention of vertebral fractures.

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1. **DXA scan** advisable to obtain baseline BMD but not necessary to initiate treatment; **T-score < -1.5 at any site and two or more grade 2 vertebral fractures on x-ray or spine BMD T score < -4.0.**

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**Pathway from risk factors to pharmacological treatment selection postmenopausal women**

- **Clinical risk factors age ≥50**
- **Very strong clinical risk factors age <50**
- **Fracture risk assessment**
- **10 year major osteoporotic fracture risk ≥10%?**
- **Lifestyle advice**
- Reassess if risk profile changes
- **Continue for 5 years and review** (section 6.5)
- **Decision to stop denosumab therapy?**
- **Transition to bisphosphonates**
- **Continue to 10 years and review**
- **Parenteral bisphosphonate appropriate?**
- **Yes**
- **Denosumab**
- **No**
- **Continue for 5 years and review** (section 6.5)
- **Adverse effects, poor response or patient preference for parenteral therapy?**
- **Yes**
- **Continue for 5 years and review** (section 6.5)
- **No**
- **Yes**
- **Transition to antiresorptive on completion of therapy**
- **No**
- **Yes**
- **Parenteral bisphosphonate appropriate?**
- **Yes**
- **Denosumab**
- **No**
- **Continue to 10 years and review**
- **Suitable for oral therapy?**
- **Yes**
- **DXA scan**
- **Osteopenia T -1.0 to -2.5**
- **Osteoporosis T ≤ -2.5**
- **Normal T > -1.0**
- **Severe osteoporosis Spine‡**
- **Teriparatide**
- **DXA scan§**
- **Normal**
- **T > -1.0**
- **Yes**
- **Lifestyle advice**
- **Reassess if risk profile changes**
- **Zoledronic acid 18 monthly**
- **Continue for 6 years and review** (section 6.4.3)
- **Zoledronic acid annually**
- **Give 3 infusions and review after 5 years** (section 6.5)