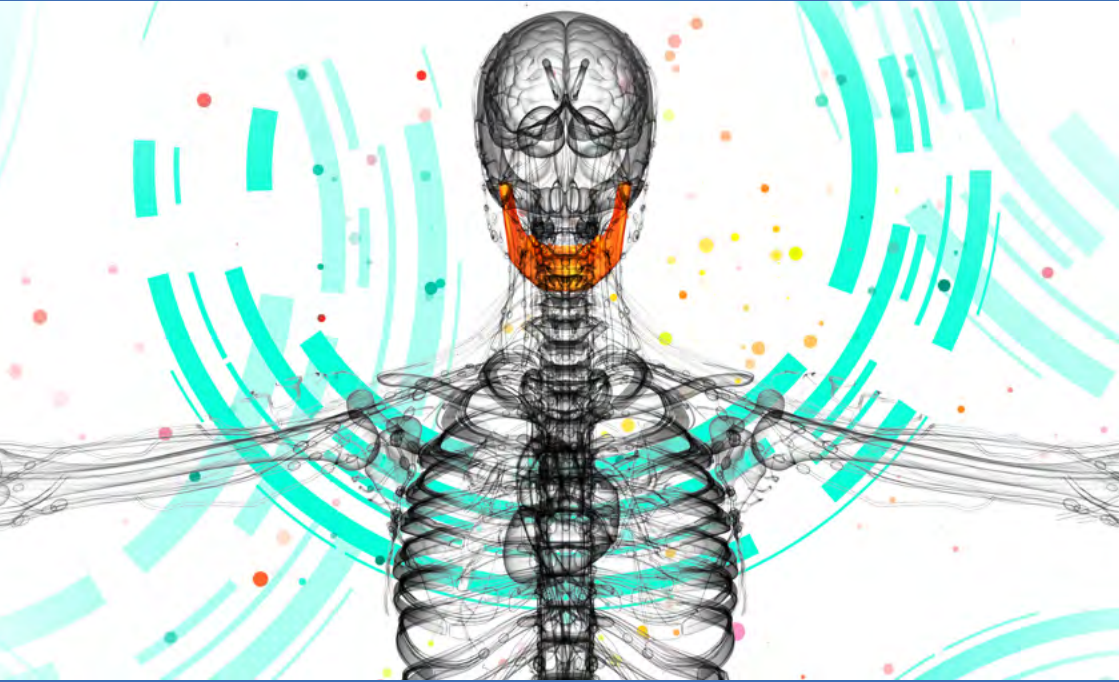


Benefits of maintaining bone health with bone-protective agents



What are bone-protective agents?

- Bone-protective (antiresorptive) agents are used to prevent and to treat many bone-related conditions.¹⁻⁹
 - Commonly used agents include bisphosphonates^a and denosumab.¹⁻⁹
- Individual bone-protective agents have different indications and can be administered at low or high doses, depending on the condition being treated.¹⁻⁹

^aBisphosphonates include zoledronic acid, risedronate, alendronate, ibandronate, pamidronate disodium, clodronate, tiludronate and etidronate.

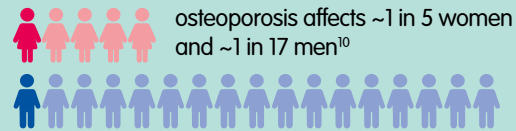
Indications for low-dose bone-protective agents^b

- At low doses, bone-protective agents are mainly used:¹⁻⁵
 - to treat osteoporosis in men and postmenopausal women who have an increased risk of fracture
 - to treat or to prevent bone loss associated with androgen deprivation therapy for cancer
 - to treat or to prevent bone loss associated with with long-term systemic glucocorticoid use

Burden of osteoporosis

- Osteoporosis is a common condition associated with an increased risk of bone fracture.¹⁰

Among people aged 50–84 years:



1 in 2 women with osteoporosis will experience an osteoporotic fracture in their lifetime.¹¹

Benefits of bone-protective agents in people with osteoporosis

Treatment with bone-protective agents has been shown to improve health-related quality of life and to reduce depression in women with osteoporosis¹²⁻¹⁴

Women with osteoporosis have a reduced quality of life and an increased risk of depression¹⁵

Bone-protective agents can reduce the risk of spinal fractures by up to 70%^{16,17}

Spinal fractures cause:¹⁸

- back pain • loss of height • deformity
- reduced pulmonary function
- immobility

Bone-protective agents can reduce the risk of hip fractures by up to 41%^{16,17}

Hip fractures are associated with:^{18,19}

- pain • disability • immobility
- loss of independence
- increased risk of death

Side effects of special interest

- Side effects differ according to the bone-protective agent used and the indication. Examples include:¹⁻⁹

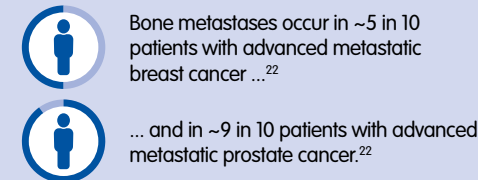
Indications for high-dose bone protective agents^c

- At high doses, bone-protective agents are mainly used to prevent skeletal-related events (SREs) in:⁶⁻⁹
 - adults with bone metastases from solid tumours
 - patients with bone lesions as a result of multiple myeloma.

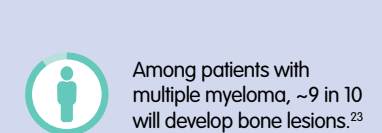
Burden of bone metastases and SREs

- Bone metastases and bone lesions can lead to SREs.^{20,21}

Bone metastases



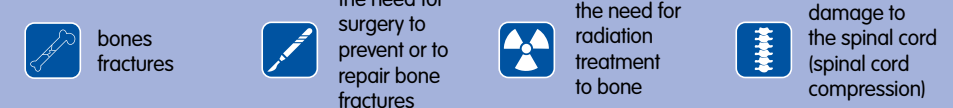
Bone lesions



For patients with bone metastases or bone lesions who are not treated with bone-protective agents:



SREs include:^{6,9,20}

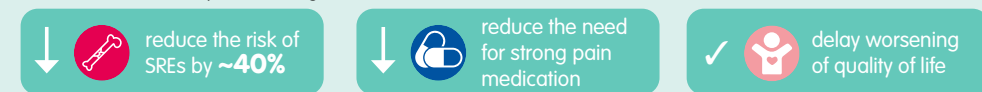


SREs are associated with:²⁷⁻³⁰



Benefits of bone-protective therapy in people with bone metastases or bone lesions

Treatment with bone-protective agents has been shown to:^{6,9,31}



- gastrointestinal adverse reactions
- musculoskeletal pain
- hypocalcaemia
- atypical femoral fracture
- skin infections
- hypercalcaemia of malignancy
- osteonecrosis of the jaw (ONJ)

^bOther indications include Paget's disease of bone. For full details, please refer to the individual summary of product characteristics for each therapy on the European Medicines Agency website.

^cOther indications include unresectable giant cell tumour of bone. For full details, please refer to the individual summary of product characteristics for each therapy on the European Medicines Agency website.

Osteonecrosis of the jaw

- ONJ is a condition that occurs when the jawbone is damaged (usually following an infection or dental procedure), causing delayed healing and leading to the jawbone being exposed for longer than would normally be expected.³²
- ONJ can be a serious side effect of treatment with bone-protective agents.^{32,33}
- The risk of developing ONJ increases with more frequent and higher dosing, and longer treatment duration; therefore, patients receiving high-dose bone-protective therapy have an increased risk of ONJ compared with those receiving low-dose therapy.^{32,33}
 - The incidence of ONJ for patients receiving high-dose therapy ranges from 1 in 10 to 1 in 1000, whereas for low-dose therapy it ranges from 1 in 10 000 to 1 in 100 000.^{34,35}
- Although bone-protective agents are associated with an increased risk of ONJ, the patient's prescribing clinician will have decided that the benefits of treatment outweigh the risks.^{35,36}

Oral healthcare providers have a central role to play in identifying, preventing and managing ONJ. For more information on ONJ, including preventing and treatment options, please visit: <https://adee.org/partners/adeeamgen-onj>

Key questions to ask your patient

- Have you recently had any changes in medication?
- Are you currently undergoing treatment for cancer, osteoporosis or bone loss?
- Are you currently receiving a bone-protective agent?

Take-home messages



Bone-protective agents are used to treat a range of bone-related conditions, many of which are associated with substantial pain, disability and mortality.



ONJ can be a serious side effect associated with bone-protective agents.



Patients are prescribed bone-protective agents following a risk-benefit assessment carried out by their clinician. Please contact your patient's prescribing clinician should your patient experience any dental issues.

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