

Managing the menopause without estrogen:

Non-estrogen management of osteoporosis

Non-estrogen treatments are mainly for women aged over 60. There is insufficient information about their long-term use for premature ovarian insufficiency or early menopause. They should be restricted to women with no fertility plans, as there are insufficient safety data about effects on the developing fetal skeleton.

The non-estrogen treatments

- Bisphosphonates (alendronate, risedronate, ibandronic acid, zoledronic acid)
- Denosumab
- Romosozumab
- Selective estrogen receptor modulators (raloxifene, bazedoxifene)
- Parathyroid hormone (teriparatide, abaloparatide)

Bisphosphonates

- Inhibit bone resorption
- Given orally or intravenously
- Used to prevent vertebral as well as non-vertebral fractures, including hip (apart from ibandronic acid, used only for vertebral fractures)
- **Drug holidays.** Discontinuation should be considered after 5 years with alendronate or after 3 years with risedronate or zoledronic acid, but there are concerns in women with secondary osteoporosis who require continued bone protection
 - Treatment is usually restarted after a drug holiday of 1–3 years

Calcium and vitamin D supplements may be advised if there are dietary deficiencies or if there is very little sunlight exposure.

Denosumab

- Inhibits bone resorption
- Given as a subcutaneous injection every 6 months to prevent vertebral and non-vertebral fractures, including hip
- Caution is advised about stopping, as there may be a 'rebound effect'

Romosozumab

- Stimulates bone formation and inhibits bone resorption
- Given as a subcutaneous injection twice a month to prevent vertebral and non-vertebral fractures, including hip
- Limited to 1 year of use

Selective estrogen receptor modulators (SERMs)

- Inhibit bone resorption
- Given orally daily to prevent vertebral fractures
- No limit to duration of use

Parathyroid hormone (PTH)

- Stimulates bone formation
- Given as a daily subcutaneous injection to prevent vertebral and non-vertebral fractures
- Limited to 2 years of use

The availability of non-estrogen treatments for osteoporosis varies worldwide.

Further information

International Osteoporosis Foundation <https://www.osteoporosis.foundation/patients/treatment>

Royal Osteoporosis Society <https://theros.org.uk/information-and-support/osteoporosis/treatment>