Osteoporosis

Osteoporosis is characterised by low bone mineral density, increased bone fragility and an increase in fracture risk. Over 40% of women and 10% of men in Australia aged over 70 are osteoporotic. As the population ages, the number of people with osteoporosis is set to rise significantly. It is estimated that a fragility fracture increases the risk of premature death by 50 per cent. Despite its high prevalence and the availability of effective pharmacological interventions, underdiagnosis and undertreatment of osteoporosis remains common. GP registrars are likely to have had very limited prior experience in managing this condition, and supervisors can facilitate learning in relation to effective case finding, risk factor modification, assessment and treatment.

TEACHING AND LEARNING AREAS	- Pathophysiology of bone metabolism - Risk factors for osteoporosis - Assessment of absolute fracture risk, using a validated tool e.g. Garvan Fracture Risk Calculator or Fracture Risk Assessment Tool - Concept of 'skeletal age' based on previous fractures and BMD - Investigations, including identification of secondary causes and how to interpret bone mineral densitometry reports - Treatment options, and indications for referral - Monitoring of BMD
PRE- SESSION ACTIVITIES	Read the 2022 Australian Prescriber article Treating osteoporosis: risks and management
TEACHING TIPS AND TRAPS	40 per cent of hip fractures occur in residents of Residential Aged Care Facilities (RACFs) - Encourage weight bearing exercise and other lifestyle interventions to help maintain bone density and prevent fractures - Falls prevention is critical in patients at risk - Perform a risk-factor assessment in all postmenopausal women and men over the age of 50 every 12 months - Consider vitamin D supplementation in residents of RACFs, but calcium and vitamin D supplements should not be used routinely in non-institutionalised elderly people - Quantitative ultrasound is not recommended as a diagnostic test for osteoporosis - Biochemical markers of bone turnover should not be routinely used for the diagnosis of osteoporosis in general practice - Perform appropriate blood and urine tests if the history and/or examination is consistent with secondary osteoporosis, or the Z-score is ≤−2.0 - BMD testing is recommended every 2−3 years to help monitor adherence and response to therapy

RESOURCES	Read	2017 RACGP Guideline - Osteoporosis prevention, diagnosis and management in postmenopausal women and men over 50 years of age 2nd edition
	Listen	2015 MJA podcast Osteoporosis 2019 NPS MedicineWise podcast Osteoporosis

Clinical Reasoning Challenge

Fran brings in her 81-year-old mother Grace to see you. Grace tripped and fell in the garden about four days ago and complains of severe back pain in her thoracic region. On examination, she is tender over T8. She is normally very active and does Tai Chi classes each week. She is a non-smoker, drinks 1-2 glasses of wine each evening and does not take any regular medication.

QUESTION 1.   What is the MOST LIKELY diagnosis? Write in note form, your single diagnosis.

_____

_____

QUESTION 2.   What investigations (if any) would you order to confirm your diagnosis? List, in note form only, the MOST IMPORTANT two investigations you would order.

1 _____

2 _____

QUESTION 3.   What key lifestyle advice would you give her? List, in note form only, the MOST IMPORTANT four aspects of lifestyle advice you would discuss.

1 _____

2 _____

3 _____

4 _____

ANSWERS

QUESTION 1

What is the MOST LIKELY diagnosis? Write in note form, your single diagnosis.

- Crush fracture thoracic vertebra secondary to osteoporosis

QUESTION 2

What investigations (if any) would you order to confirm your diagnosis? List, in note form only, the MOST IMPORTANT two investigations you would order.

- Thoracic spine x-ray
- DEXA scan/bone mineral densitometry

QUESTION 3

What key lifestyle advice would you give her? List, in note form only, the MOST IMPORTANT four aspects of lifestyle advice you would discuss.

- Reduce alcohol intake
- Appropriate calcium intake - dietary or supplement
- Appropriate vitamin D intake - sunlight exposure, dietary or supplement
- Maintain weight bearing exercise/balance training/falls prevention strategies