Osteoporosis

Management Guide

Detect to Prevent

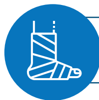
Fracture Risk Assessment

Diagnosis [1]

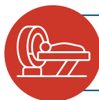
Family History

Clinical fracture risk assessment with FRAX (should be performed in the first assessment)

Physical Examination



Take note of previous fractures



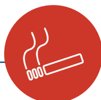
Bone mineral density testing by DEXA (based on clinical fracture risk profile)

FRAX: Fracture Risk Assessment Tool, DEXA: Dual X-ray Absorptiometry

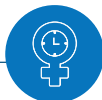
Fracture Risk Assessment

Risk Factors[1]

Age >65 years

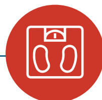


Smoking



Early Menopause

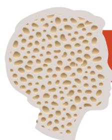
Excessive Alcohol Intake



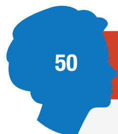
Low Body Weight (57.6 kg)

Who Should Be Screened for BMD? [1]

All men or women >65 years without risk factors



Secondary Osteoporosis



All postmenopausal women >50 years

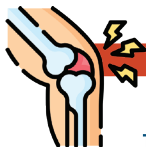
- Starting or taking long-term glucocorticoid therapy (≥3 months)
- With osteopenia identified radiographically
- With a history of fracture(s) without trauma

Other peri- or post menopausal women with risk factors

- Low Body Weight (BMI < 20 kg/m^2)
- On long-term systemic glucocorticoid therapy (≥3 months)
- Family history of osteoporotic fractures
- Early menopause
- Current smoking
- Excessive alcohol consumption

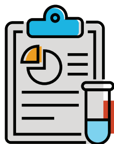
BMD: Bone Mineral Density, BMI: Body Mass Index

Osteoporosis Evaluation [2-8]



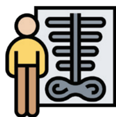
Evaluate for causes of secondary osteoporosis [2-8]

- Type I Diabetes
- Osteogenesis imperfecta in adults
- Untreated long-standing hyperthyroidism
- Premature menopause
- Chronic malnutrition
- Malabsorption
- Hypogonadism
- Chronic liver disease



Consider using bone turnover markers [2-8]

- N-terminal propeptide of type 1 procollagen (P1NP)
- C-terminal telopeptide of type 1 collagen (CTX)



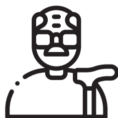
Evaluate for prevalent vertebral fractures [2-8]

How? See Page 6

ISCD/AACE Indications for Spinal Imaging [1]

Lateral spine imaging is indicated when T-score is < -1.0 and one or more of the following is present:

Women ≥ 70 years



Men ≥ 80 years

Self reported but undocumented prior vertebral fracture

Glucocorticoid therapy equivalent to ≥ 5 mg of prednisone or equivalent per day for ≥ 3 months

Historical height loss of > 4 cm (> 1.5 in)

ISCD: International Society for Clinical Densitometry, AACE: American Association of Clinical Endocrinology

Osteoporosis Classification WHO Criteria[1]

WHO Criteria for Classification of Osteopenia and Osteoporosis[1]

Osteoporosis | Low Bone Mass (Osteopenia) | Normal

+ Fragility Fracture

Severe Osteoporosis

WHO: World Health Organization

Osteoporosis Classification AACE Guidelines[1]

2020 AACE Diagnosis of Osteoporosis in Postmenopausal Women[1]

LOW RISK

- **T-score -1 to -2.5, without trauma fractures**

HIGH RISK

- **T-score <-2.5**
- **FRAX ≥ 3% (hip) or ≥20% (MOF)**

VERY HIGH RISK

- **T-score < -3.0**
- **FRAX >4.5% (hip) or >30% (MOF)**

AACE Guidelines for Management of Post Menopausal Osteoporosis[1]

PATIENT CRITERIA[1]

VERY HIGH RISK

- Recent fracture (<12 months)
- Multiple fractures while on therapy
- Use of drugs that cause skeletal harm (e.g. glucocorticoids)
- BMD: Very low T-score (< -3.0)
- FRAX >4.5% (hip) or >30% (MOF)
- High fall risk

HIGH RISK

- Previous hip or spine fracture (>12 months)
- BMD T-score <-2.5
- FRAX ≥ 3% (hip) or ≥20% (MOF)
- BMD T-score -1 to -2.5 with high FRAX ≥ 20 % MOF or ≥ 3 % hip

Treatment Options[1]

VERY HIGH RISK

Abaloparatide, Denosumab, Romosozumab, Teriparatide, Zoledronate

If not available:

Alendronate, Risedronate

HIGH RISK

Alendronate, Denosumab, Risedronate, Zoledronic Acid

Alternative therapy:

Ibandronate, Raloxifene

Reassessment[1]

Every 1-2 years By DEXA

AACE: American Association of Clinical Endocrinology, BMD: Bone Mineral Density, FRAX: Fracture Risk Assessment Tool, DEXA: Dual X-ray Absorptiometry

Non-Pharmacologic Measures For Bone Health[1]

- Measure serum 25-hydroxy Vitamin D in patients who are at risk for Vitamin D insufficiency, particularly those with osteoporosis.[1]
- Maintain serum 25-hydroxy Vitamin D = 30 ng/ml in patients with osteoporosis (preferable range 30-50 ng/ml)[1]
- Supplement with Vitamin D3 is needed, with a daily dose of 1,000-2,000 IU[1]

Counsel patients to maintain adequate dietary intake of Calcium of 1,200 mg/day for women aged 50 years or older.[1]

Counsel patients to avoid or stop smoking.[1]

Counsel patients to maintain an active lifestyle including resistance exercises.[1]

Counsel patients on reducing the risk of falls, particularly the elderly.[1]

Consider referral for physical therapy.[1]

Romosozumab for Very High-Risk Patients[10]

Indication

Treatment of postmenopausal women with osteoporosis at high risk for fracture, defined as a history of osteoporotic fracture, or multiple risk factors for fracture; or patients who have failed or are intolerant to other available osteoporosis therapy. [10]

Precaution

Check serum Calcium level before treatment.[10]

Contraindications

- In cases of Hypocalcemia
- History of systemic hypersensitivity to Romosozumab or any component of the formulation.[10]

Adverse Reactions[10]

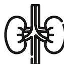
Most common:
Arthralgia
Headache

Dose

Two separate prefilled syringes of 105 mg/1.17 ml each.[10]

Administration[10]

210 mg
(2 syringes taken one after the other)
Every month
For 1 year only
As S.C. injection



Renal Patients

No dose adjustment needed.
Monitor serum Calcium in patients with severe renal impairment or receiving dialysis, who are at a higher risk of developing Hypocalcemia. Supplement with Calcium and Vitamin D, if needed.[10]

Missed Dose?

Administer the injection as soon as the patient is available. Then, schedule injections every month from the date of the last injection.[10]

Warning

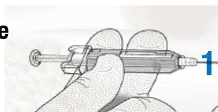
- Potential risk of myocardial infarction, stroke, and cardiovascular health. Shouldn't be used with any patient who experienced MI or stroke in the preceding year.[10]

S.C.: Subcutaneous, MI: Myocardial Infarction

Romosozumab
How to Use?

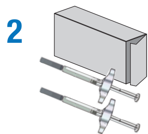
Step 1

Allow the syringe to sit at room temperature for at least 30 minutes before injecting



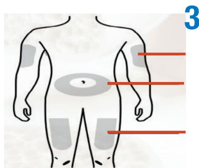
Step 2

Remove the 2 syringes from the carton



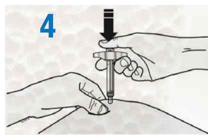
Step 3

Select the injection site and prepare the syringe



Step 4

Insert the needle and inject the liquid subcutaneously.



To view the video, please scan the QR code in the last page

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1- Camacho P, Petak S, Binkley N, et al. AMERICAN ASSOCIATION OF CLINICAL ENDOCRINOLOGISTS/AMERICAN COLLEGE OF ENDOCRINOLOGY CLINICAL PRACTICE GUIDELINES FOR THE DIAGNOSIS AND TREATMENT OF POSTMENOPAUSAL OSTEOPOROSIS— 2020 UPDATE. ENDOCRINE PRACTICE May 2020;26 (1): 1-46

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5- Cosman F, et al. Osteoporos Int. 2014;25:2359-2381.

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