



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 Factors¹



**Age >65
years**



Smoking



**Early
Menopause**



**Excessive
Alcohol Intake**



**Low Body Weight
(57.6 kg)**

Who Should Be Screened for BMD? ¹

65

All women >65 years without risk factors

Secondary Osteoporosis

50

All postmenopausal women >50 years

Other peri- or postmenopausal women with risk factors

Starting or taking long-term glucocorticoid therapy (≥3 months)

With osteopenia identified radiographically

With a history of fracture(s) without trauma

Low Body Weight (BMI < 20 kg/m²)

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 Evaluation²⁻⁸



Evaluate for causes of secondary osteoporosis²⁻⁸

Type I Diabetes

Osteogenesis imperfecta in adults

Untreated long-standing hyperthyroidism

Premature menopause

Chronic malnutrition

Malabsorption

Hypogonadism

Chronic liver disease



Consider using bone turnover markers²⁻⁸

Bone-specific alkaline phosphatase (BALP)

Osteocalcin

N-terminal propeptide of type 1 procollagen (P1NP)

C-terminal telopeptide of type 1 collagen (CTX)

Pyridinoline cross - links

N-telopeptide of type 1 collagen (NTX)



Evaluate for prevalent vertebral fractures²⁻⁸

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 Criteria¹



WHO Criteria for Classification of Osteopenia and Osteoporosis¹



Osteoporosis

Low Bone Mass (Osteopenia)

Normal

+ Fragility Fracture

**Severe
Osteoporosis**

Osteoporosis Classification AAACE Guidelines¹



2020 AAACE Diagnosis of Osteoporosis in Postmenopausal Women¹

LOW RISK

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

HIGH RISK

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

VERY HIGH RISK

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

AACE Guidelines for Management of Post Menopausal Osteoporosis¹

VERY HIGH RISK

HIGH RISK

PATIENT CRITERIA¹

- Recent fracture (<12 months)
- Multiple fractures while on therapy
- Use of drugs that cause skeletal harm
- BMD T-score < -3.0
- FRAX >4.5% (hip) or >30% (MOF)
- High fall risk
- Previous hip or spine fracture (>12 months)
- BMD T-score < -2.5
- FRAX ≥ 3% (hip) or ≥20% (MOF)

Treatment Options¹

Anabolics

If not available:

Denosumab

Zoledronic Acid

Abaloparatide
Romosozumab
Teriparatide

Alendronate

Denosumab

Risedronate

Zoledronic Acid

Reassessment¹

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 Health¹



- **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 IU¹



Counsel patients to maintain adequate dietary intake of Calcium of 1,200 mg/day for women aged 50 years.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 Patients¹⁰



Indication

Treatment of **postmenopausal women with osteoporosis at high risk for fracture**¹⁰



Dose

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



Precaution

Check serum **Calcium** level before treatment¹⁰
Hypersensitivity to the product & prior MI or stroke in the preceding year¹⁰



Administration¹⁰

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



Contraindications

Pln cases of Hypocalcemia
History of systemic hypersensitivity to Romosozumab or any component of the formulation.¹⁰
rior MI or stroke in the preceding year¹⁰



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



Adverse Reactions¹⁰

Most common:
Arthralgia
Headache



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



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

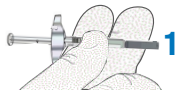
Indication: Defined as a history of osteoporotic fracture or multiple risk factors for fracture; or patients who have failed or are intolerant to other available osteoporosis therapy

Romosozumab

How to Use?

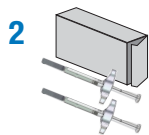
Step 1

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



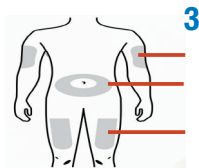
Step 2

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

References

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- 4- Cooper C, et al. J Bone Miner Res. 1992;7:221-227.
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