

OSTEOPOROSIS

- RISK FACTORS FOR OSTEOPOROSIS:** include early menopause, family history of osteoporosis, inadequate calcium or Vitamin D intake (eg, alcoholism, anorexia, celiac disease), Asian or Caucasian descent, smoking, amenorrhea, personal history of bone fractures as an adult, history of bone fractures in a parent or sibling, having a small or thin frame, type 1 diabetes, thyroid or renal disease, immobility/inactivity, and some drugs (eg, chronic corticosteroid intake, anticonvulsants, immunosuppressants, antiestrogens).
 - PREVENTION OF OSTEOPOROSIS:** includes adequate lifetime intake of calcium (preferably from dietary sources) and Vitamin D, weight-bearing exercise, and drug therapy for patients at risk.
- a) Recommended calcium intake:** Birth–6 months: 400mg/day. 6–12 months: 600mg/day. 1–5 yrs: 800mg/day. 6–10 yrs: 800 to 1200mg/day. 11–24yrs: 1200mg to 1500mg/day. **Women 25–50yrs:** 1000mg/day.
Pregnant or lactating women: 1200 to 1500mg/day. **Postmenopausal women on estrogen replacement therapy:** 1000mg/day.
Postmenopausal women not on estrogen replacement therapy: 1500mg/day. **Women and men over 65yrs:** 1500mg/day.
 Up to 2000mg/day appears to be safe in most individuals.
- b) Vitamin D** recommended intake is 400 IU/daily for women under the age of 25 yrs (usually met through daily exposure to sunlight). If supplements are used, the goal is to attain the minimum RDA without toxicity.
- c) HRT:** If bone loss is due to estrogen deficiency at menopause, estrogen therapy may be started. Individualize to the lowest effective dose and reevaluate periodically. Administer progestin with estrogens in women with intact uteri. Women who have had a hysterectomy may be given estrogen continuously.

Brand	Component(s)	Strength(s)	Dose form	Dose
BISPHOSPHONATES				
ACTONEL	Risedronate	5mg, 30mg, 35mg, 75mg, 150mg	tab	Prevention and Treatment: 5mg once daily or 35mg once weekly or one 75mg tablet taken on 2 consecutive days per month or 150mg once a month*
ATELVIA	Risedronate	35mg	delayed-release tabs	Treatment: 35mg once weekly*
BINOSTO	Alendronate	70mg	effervescent tabs for oral solution	Treatment: 70mg once weekly*
BONIVA	Ibandronate	150mg 3mg/3mL	tab inj	Prevention and Treatment: 150mg once monthly* Treatment: 3mg IV once every 3 months
FOSAMAX	Alendronate	5mg, 10mg, 35mg, 40mg, 70mg 70mg/75mL	tab oral solution	Treatment: 10mg once daily or 70mg once weekly* Prevention: 5mg once daily or 35mg once weekly*
FOSAMAX PLUS D	Alendronate + Cholecalciferol (Vit. D ₃)	70mg + 2800 IU 70mg + 5600 IU	tab	Treatment: 70mg/2800IU or 70mg/5600IU once weekly*
RECLAST	Zoledronic acid	5mg/100mL	inj	Treatment: 5mg IV infusion once a year Prevention: 5mg IV infusion once every 2 years
CALCITONIN				
FORTICAL	Calcitonin-salmon	200 U/spray	nasal spray	Treatment: 1 spray in nostril daily; alternate nostrils
MIACALCIN	Calcitonin-salmon	200 U/spray 200 U/mL	nasal spray injection	Treatment: 1 spray in nostril daily; alternate nostrils Treatment: 100 units SC or IM every other day
HORMONE REPLACEMENT THERAPY				
ACTIVELLA	Estradiol + norethindrone acetate	0.5mg + 0.1mg; 1mg + 0.5mg	tab	1 tablet once daily
ALORA	Estradiol	0.025mg/day, 0.05mg/day, 0.075mg/day, 0.1mg/day	transdermal patch	0.025mg/day patch applied twice weekly; adjust
CLIMARA	Estradiol	0.025mg/day, 0.0375mg/day, 0.05mg/day, 0.06mg/day, 0.075mg/day, 0.1mg/day	transdermal patch	0.025mg/day patch applied once weekly; adjust
CLIMARA PRO	Estradiol + levonorgestrel	0.045mg + 0.015mg/day	transdermal patch	1 patch once weekly
ESTRACE	Estradiol	0.5mg, 1mg, 2mg	tab	0.5mg daily
ESTRADERM	Estradiol	0.05mg/day, 0.1mg/day	transdermal patch	0.05mg/day patch applied twice weekly
FEMHRT	Norethindrone acetate + ethinyl estradiol	0.5mg + 2.5micrograms, 1mg + 5micrograms	tab	1 tablet once daily
MENOSTAR	Estradiol	0.014mg/day	transdermal patch	0.014mg/day patch applied once weekly
OGEN	Estrone sodium sulfate (as estropipate)	0.625mg, 1.25mg, 2.5mg	tab	0.625mg daily
ORTHO-EST	Estropipate	0.75mg, 1.5mg	tab	0.75mg once daily
PREFEST	Estradiol, then estradiol + norgestimate	Estradiol 1mg, then estradiol 1mg + norgestimate 0.09mg	tab	1 tablet once daily in correct order (ie, 3 tabs of estradiol, then 3 tabs of estradiol+norgestimate, repeat)
PREMARIN	Conjugated estrogens	0.3mg, 0.45mg, 0.625mg, 0.9mg, 1.25mg	tab	0.3mg daily; adjust
PREMPHASE	Conjugated estrogens, then conjugated estrogens + medroxyprogesterone	0.625mg estrogen, then 0.625mg estrogen + 5mg medroxyprogesterone	tab	1 tablet once daily in correct order (ie, 14 tabs of 0.625mg estrogen, then 14 tabs of 0.625mg estrogen + 5mg of medroxyprogesterone; repeat)
PREMPRO	Conjugated estrogens + medroxyprogesterone	0.3mg + 1.5mg, 0.45mg + 1.5mg, 0.625mg + 2.5mg, 0.625mg + 5mg	tab	1 tab once daily
VIVELLE	Estradiol	0.05mg/day, 0.1mg/day	transdermal patch	0.025mg/day patch applied twice weekly
VIVELLE-DOT	Estradiol	0.025mg/day, 0.0375mg/day, 0.05mg/day, 0.075mg/day, 0.1mg/day	transdermal patch	0.025mg/day patch applied twice weekly
INTERFERON				
ACTIMMUNE	Interferon gamma-1b	100micrograms/0.5mL	inj	To delay time to disease progression in severe, malignant osteopetrosis: SC inj (into right or left deltoid or anterior thigh) 3 times weekly. BSA ≤0.5m ² : 1.5mcg/kg/dose. BSA >0.5m ² : 50mcg/m ² (1 million IU/m ²). Reduce dose by 50% or interrupt therapy if severe adverse reactions occur.
OSTEOCLAST INHIBITOR (RANKL INHIBITOR)				
PROLIA	Denosumab	60mg/mL	inj	60mg SC once every 6 months
PARATHYROID HORMONE				
FORTEO	Teriparatide	250micrograms/mL	inj	20 micrograms SC once daily
SELECTIVE ESTROGEN RECEPTOR MODULATORS (SERMs)				
EVISTA	Raloxifene	60mg	tab	Prevention and Treatment: 60mg once daily

*See this drug's monograph in this section for important dosing information.