

Disclaimer: *This algorithm has been developed for MD Anderson using a multidisciplinary approach considering circumstances particular to MD Anderson’s specific patient population, services and structure, and clinical information. This is not intended to replace the independent medical or professional judgment of physicians or other health care providers in the context of individual clinical circumstances to determine a patient’s care. This algorithm should not be used to treat pregnant women.*

PRESENTATION

TREATMENT

- Post-menopausal women
- Pre-menopausal on tamoxifen or GnRH
- Women on aromatase inhibitors

- Baseline BMD
- 25-OH vitamin D¹
- Inquiry of new osteoporotic fractures (low impact)

25-OH Vitamin D¹ normal (≥ 30 ng/mL) and BMD normal (T-score ≥ -1.0) and no new low impact fracture

A

- Repeat tests in 2 years **and**
- Reinforce universal recommendations²

25-OH Vitamin D¹ abnormal (< 30 ng/mL)

- Ergocalciferol 50,000 IU once weekly for 8-12 weeks, then switch to over the counter vitamin D3 1,000-2,000 IU daily to maintain vitamin D¹ level at 30-50 ng/mL **or**
- Over the counter vitamin D3 1,000-2,000 IU daily **and**
- Recheck 25-OH vitamin D¹, calcium, and albumin on the next visit **and**
- Reinforce universal recommendations²

BMD abnormal³(T-score < -1.0 to -2.4) and any vitamin D¹ level and no new low impact fracture

- Reinforce universal recommendations² **and**
- Repeat DXA every 1-2 years **and**
- Consider medical therapy or referral to bone health specialist based on risk factors (assess by FRAX⁴)

BMD abnormal³ (T-score ≤ -2.5) and any vitamin D¹ level⁵ and no new low impact fracture

- Start bisphosphonates:
 - Alendronate 70 mg po weekly, **or**
 - Risedronate 35 mg po weekly or 150 mg po monthly, **or**
 - Ibandronate 150 mg po monthly or 3 mg IV every 3 months, **or**
 - Zoledronic acid 5 mg IV once a year (use institutional order set) **or**
- Start denosumab at 60 mg subcutaneously every 6 months (use institutional order set) **or**
- Refer to bone health specialist **and**
- Reinforce universal recommendations²
 - If bone loss risks have changed significantly or major therapeutic intervention has been undertaken, obtain a 12 month follow up DXA

Any BMD with new low impact fracture

- Start universal recommendations² **and**
- Refer to Bone Health Specialist

GnRH = Gonadotropin-releasing hormone
 BMD = Bone Mineral Density
 DXA = Dual-energy X-ray Absorptiometry
 IU = International Units

¹ 25-hydroxyvitamin D, also know as 25-hydroxycholecalciferol, calcidiol or abbreviated as 25-OH Vitamin D, the main vitamin D metabolite circulating in plasma

² Universal recommendations:
 • Elemental calcium 1,000 – 1,200 mg/day from all sources
 • Avoid tobacco (see [Tobacco Cessation algorithm](#))
 • Vitamin D 800 – 1,000 IU/day
 • Limit alcohol
 • Weight-bearing/muscle - strengthening exercises (see [Physical Activity algorithm](#))
 • Limit caffeine

³ Abnormal BMD: Osteopenia, T-score between -1.0 and -2.4; Osteoporosis, T-score ≤ -2.5

⁴ FRAX[®] - Fracture Risk Assessment Tool at www.shef.ac.uk/frax

⁵ If vitamin D level is < 30 ng/mL, replenish with supplementation prior to initiating medical therapy for osteoporosis. See Box A for recommendation on vitamin D repletion.

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SUGGESTED READINGS

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DEVELOPMENT CREDITS

This survivorship algorithm is based on majority expert opinion of the Breast Survivorship work group at the University of Texas MD Anderson Cancer Center. It was developed using a multidisciplinary approach that included input from the following:

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