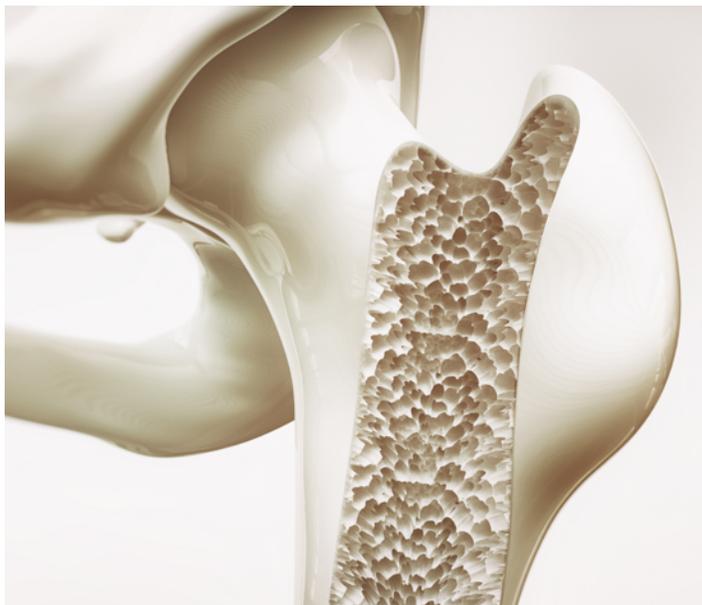


# Osteoporosis Support Protocol

Clinical Protocol to Support Healthy Bone Mineral Density\*



## The Pathophysiology of Osteoporosis

Osteoporosis is a metabolic bone disease that results from bone resorption that is not compensated by bone formation, which results in fragile and weak bones, and increases the risk of bone fractures.<sup>1</sup> Osteoporosis affects an estimated 75 million people in the USA, Europe, and Japan, with 1 in 3 women and 1 in 5 men over the age of 50 years experiencing osteoporotic fractures.<sup>1</sup> Risk factors for osteoporosis fall into two categories: fixed risk factors and modifiable risk factors. Although fixed risk factors cannot be changed, steps can be taken to reduce bone mineral loss.

Fixed risk factors include:<sup>2-5</sup>

- Age
- Female sex
- Family history of osteoporosis
- Previous fracture
- Ethnicity
- Menopause and hysterectomy
- Long-term glucocorticoid therapy
- Rheumatoid arthritis
- Primary and secondary hypogonadism in men

Modifiable risk factors are malleable and can be influenced by diet and lifestyle change:<sup>6,7</sup>

- Alcohol
- Smoking
- Low body mass index
- Poor nutrition
- Vitamin D deficiency
- Eating disorders
- Insufficient exercise
- Low dietary calcium intake
- Frequent falls

This clinical protocol is designed to support healthy bone mineral density through nutrients and physical practices fundamental to osteogenesis.\*

## Diagnostic Biomarkers and Clinical Indicators of Osteoporosis

- DXA scan (T-score of  $-2.5$  or lower indicates osteoporosis)
- 25-OH Vitamin D (Reference range: optimal level, 40 ng/mL to 80 ng/mL<sup>8,9</sup>)
- Collagen Type I C-Telopeptide (CTx), blood
- Amino-terminal propeptide of type I collagen (P1NP), blood
- Collagen cross-linked N-telopeptide (NTx), urine
- Pyrilinks-D, urine
- **Genomic Spotlight DNA test - Structural Report**

## Therapeutic Diet and Nutritional Considerations

- Ensure adequate intake of calcium, magnesium, and protein through consumption of foods rich in these three nutrients:
  - **Calcium:** Recommended daily allowance of 1,000 mg to 1,300 mg based on age and gender<sup>10</sup>
    - Yogurt, sardines, cheese, salmon, turnip greens, kale
  - **Magnesium:** Recommended daily allowance of 310 mg and 420 mg based on age and gender<sup>11</sup>
    - Kale, spinach, Swiss chard, pumpkin seeds, almonds, cashews, black beans, dark chocolate
  - **Protein:** Dietary Reference Intake of 0.8 grams of protein per kilogram of body weight<sup>12</sup>
    - Beef, bison, chicken, turkey, lamb, fish, shellfish, beans, legumes, nuts, seeds

## Lifestyle Interventions

- Recommend weight-bearing exercise
- Advise reduction in alcohol consumption
- Recommend smoking cessation where relevant
- Support optimal vitamin D status through dietary intake and safe sun exposure
- Support maintenance of a healthy body weight — underweight status (body mass index  $<19$ ) may decrease bone density<sup>1</sup>



## Osteoporosis during menopause/andropause

### Primary Support

<b>Osteoben®</b>	<b>Dose:</b> 2 capsules twice per day	<b>Duration:</b> 12 weeks; repeat DXA scan
<b>Vitamin D Supreme</b>	<b>Dose:</b> 1 to 2 capsules per day with a meal based on patient vitamin D status	<b>Duration:</b> 12 weeks; repeat DXA scan and 25-OH-D testing
<b>BRF 45™</b>	<b>Dose:</b> 1 softgel twice per day with a meal	<b>Duration:</b> 12 weeks; repeat DXA scan
<b>Whole Body Collagen</b>	<b>Dose:</b> Mix 1 scoop in 8 oz water per day	<b>Duration:</b> 12 weeks; repeat DXA scan

### Secondary Support

<b>Annatto-E® 300</b>	<b>Dose:</b> 1 softgel per day with a meal	<b>Duration:</b> Ongoing as needed
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## Osteoporosis during reproductive age

### Primary Support

<b>OsteoForce™ Supreme</b>	<b>Dose:</b> 3 capsules twice daily with a meal	<b>Duration:</b> 12 weeks; repeat DXA scan
<b>Vitamin D Supreme</b>	<b>Dose:</b> 1 to 2 capsules per day with a meal based on patient vitamin D status	<b>Duration:</b> 12 weeks; repeat DXA scan and 25-OH-D testing
<b>Whole Body Collagen</b>	<b>Dose:</b> Mix 1 scoop in 8 oz water per day	<b>Duration:</b> 12 weeks; repeat DXA scan

### Secondary Support

<b>Tri-K™</b>	<b>Dose:</b> 1 softgel per day with a meal	<b>Duration:</b> 12 weeks; repeat DXA scan
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**Warning:** Use caution before recommending vitamin K-containing supplements (BRF 45™, OsteoForce™ Supreme, and Tri-K™ ) for patients who are taking Coumadin, warfarin, or other anticoagulant medications.

For a list of references cited in this document, please visit:

<https://www.designsforhealth.com/api/library-assets/literature-reference---osteoporosis-support-protocol-references>

Dosing recommendations are given for typical use based on an average 150 pound healthy adult. Health-care practitioners are encouraged to use clinical judgement with case-specific dosing based on intended goals, subject body weight, medical history, and concomitant medication and supplement usage. Any product containing botanical substances has the potential for causing individual sensitivities, appropriate monitoring, including liver function tests (LFT) is recommended.

For considerations regarding herb-drug and nutrient-drug interactions, please refer to reliable, evidence-based resources such as the Natural Medicine Database or Stargrove MB, Treasure J, McKee DL. *Herb, Nutrient, and Drug Interactions: Clinical Implications and Therapeutic Strategies*. St. Louis, MO: Mosby-Elsevier; 2008.

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\*These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.