



A Teaching Affiliate  
of Harvard Medical School

# Managing Osteoporosis

The Center for Breast Cancer  
Mass General Cancer Center



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# Topics to Discuss

- Osteoporosis definition
- Causes of osteoporosis
- Prevention
- Non-Drug Treatment
- Drug treatment



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# What is Osteoporosis?

- Osteoporosis occurs when the body either loses too much bone or makes too little bone
- Your bones become porous and weak/brittle which can put you at greater risk for broken bones
- In severe osteoporosis, bones can break even from sneezing or minor bumps
- Common in older patients (50+ yrs, may affect women more)
- Osteopenia: condition of lower bone density resulting in weaker bones
  - Not as severe as osteoporosis
  - Can put you at greater risk for osteoporosis



# Symptoms of Osteoporosis

- Osteoporosis is usually a more “silent disease”
- Your treatment team can screen and monitor bone mineral density using a type of X-ray called a DEXA scan
- Possible symptoms can include:
  - Loss of height (getting shorter by an inch or more)
  - Change in posture (stooping or bending forward)
  - Bone fractures
  - Pain in the lower back



# Potential Causes of Osteoporosis

- Overactive thyroid
- Gastric bypass surgeries
- Menopause
- Chemotherapy
- Medications:
  - Aromatase Inhibitors (Arimidex®, Aromasin® and Femara®)
  - Gonadotropin releasing hormone (Lupron® and Zoladex®)
  - Long-term use of steroids (glucocorticoids) such as cortisone and prednisone (2+ months)
  - Tamoxifen® (premenopausal use)



# Prevention and Management

- There are things you can do to try to prevent and manage osteoporosis
  - These include supplements, medication, and exercise
- Tell your treatment team before starting any herbal supplements or medications for osteoporosis. Some supplements should not be taken during and after breast cancer treatment because they can cause harm.

# Changes to Lifestyle – prevention and management

- Quit smoking or cut back how much you smoke
- Take part in mild, regular exercise to build up bone health
  - Please see our [Home Exercise Program](#) to get started

## To prevent falls:

- Do **not** drink alcohol, which can increase risk of falls
- Do **not** do activities that may result in possible fractures
- Do **not** walk in socks, stockings, or slippers

# Changes to Lifestyle – prevention and management

- **Eat foods high in calcium and vitamin D**
- You should aim to get most of your calcium from your diet
- You should target 1200 mg of calcium each day
  - If you are not able to get enough calcium from your diet, you can take supplemental calcium
  - This is generally 500-1000 mg each day with meals
- It is harder to get vitamin D from your diet, so you may be started on a vitamin D supplement



# Common Foods High in Calcium

- Dark, leafy green vegetables ( $\frac{1}{2}$  cup = 50-135 mg)
- Tofu ( $\frac{1}{2}$  cup = 435 mg)
- Orange juice (8 oz = 300 mg)
- Dairy (milk, yogurt, cheese)
  - 8 oz milk (skim, 2%, or whole) = 300 mg
  - 6 oz yogurt = 250 mg
  - 1 oz cheese = 195-335 mg
- Beans ( $\frac{1}{2}$  cup cooked = 60-80 mg)



# Common Foods High in Vitamin D

- Salmon (3 oz = 380-570 IU)
- Canned tuna fish (3 oz = 40-68 IU)
- Mackerel (3 oz = 388 IU)
- Cod liver oil (1 tablespoon = 1360 IU)
- Dairy (8 oz = 100 IU)
- Orange juice with vitamin D (8 oz = 100 IU)
- Fortified cereals (6-8 oz = 40 IU)
- Eggs (1 whole egg = 25 IU)



# Osteoporosis: Prevention with Calcium

## Take calcium supplements in combination with Vitamin D

- Recommended Calcium dose: **1000-1200 mg/day**
- Talk to your treatment team or pharmacist before starting calcium since it may effect some of your medications and how well they work
- There are two different types of calcium supplements to choose from:

Calcium Carbonate	Calcium Citrate
<ul style="list-style-type: none"><li>• Calcium carbonate is least expensive but may cause GI side effects</li><li>• Take with meals</li></ul>	<ul style="list-style-type: none"><li>• Calcium citrate is more expensive but less likely to cause GI side effects</li><li>• Does not need to be taken with a meal</li></ul>

# Osteoporosis: Prevention with Vitamin D

## Vitamin D

- Taken with calcium to help:
  - the body absorb the calcium
  - improve overall bone health
  - improve effectiveness of osteoporosis medications
- Can be taken with or without food
- There are 2 forms of vitamin D:
  - Ergocalciferol (Vitamin D2)
  - Cholecalciferol (Vitamin D3)
- We recommend cholecalciferol (Vitamin D3) because it increases vitamin D levels better
- Recommended dose: **800-1000 IU daily** – check the label to know how many pills/capsules to take



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# Osteoporosis: Drug Treatment Options

- Estrogen replacement therapy should **NOT** be used to treat osteoporosis because it may increase risk of breast cancer returning.

We will give you these non-estrogen drugs during and after cancer treatment:

- Bisphosphonates (zoledronic acid, risedronate, ibandronate, alendronate)
- Denosumab
- Raloxifene



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# Osteoporosis: Bisphosphonates

- Bisphosphonates are typically given with breast cancer treatment to protect your bones. The medications are:
  - Zoledronic acid (Reclast®) (IV)
  - Risedronate (Atelvia® or Actonel®) (Oral)
  - Ibandronate (Boniva®) (Oral)
  - Alendronate (Fosamax®) (Oral)
- Side effects to look out for:
  - Flu-like symptoms
  - Inflammation of your esophagus (avoid lying down 30 minutes after taking these medications by mouth)
  - Unusual thigh fractures (rare)
  - Severe jaw pain (rare)



# Osteoporosis: Denosumab

- Denosumab is an injection given twice a year and helps decrease risk of fractures.
- Side effects to look out for:
  - Infection
  - Rash
  - Low calcium levels (make sure to take Vitamin D)
  - Unusual thigh fractures (rare)
  - Severe jaw pain (rare)

# Osteoporosis: Raloxifene

Raloxifene is an oral medication given to women **who have already completed** breast cancer treatment. It works like estrogen to prevent and treat thinning of the bones.

Side effects to look out for:

- Increased risk of blood clots
- Worsened hot flashes

# Your Breast Cancer Team

- Oncologist
- Nurse Practitioner
- Pharmacist
- Oncology Social Worker
- Practice Nurse
- Infusion Nurse



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# Contact Information

- Phone Numbers
  - Boston: 617-726-6500
  - Waltham: 781-487-6100
  - Danvers: 978-882-6060
- Patient Portal:
  - [patientgateway.org](http://patientgateway.org)



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