

## ABC's OF OSTEOPOROSIS TREATMENT

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There are many practical ways you (with the help of your health care provider) can treat osteoporosis (fragile bone disease). The treatment is not simply a matter of taking medication. Your lifestyle has a lot to do with it. Here are some of the ways in which you can help prevent bone loss and ultimately prevent fractures (broken bones).

### **“A” is for Active**

Bones are built through the forces put on them by gravity and by muscles. *Active* older women keep good balance with aging and are less likely to fall. Falling is the cause for most broken bones. “Active” means walking, doing Tai Chi or some other physical activity for half an hour most days. Start gradually and slowly and work towards that goal. Be active, even though heart or joint problems may make it more difficult.

### **“B” is for Brawny**

Thin older women, especially those who weigh less than they did at age 25, are four times more likely to have osteoporosis by bone density testing. They are also more likely to break a bone with a fall. Healthy bones require normal muscle and fat weight. Weight is so important for bone that some bone loss occurs with any weight loss even with healthy dieting. The strongest of available bone therapies are unlikely to improve bone density in women who are too thin.

### **“C” is for Calcium.**

Calcium is the building block of bones. 1,200 mg of calcium a day of are needed by all women over 50. 1,500-2,000 mg/day are needed for those with osteoporosis. Because calcium isn't stored (except in bone), it needs to be taken across the day, ideally with each

meal and at bedtime. Each high-calcium food such as a glass of milk or other supplemented beverages,  $\frac{3}{4}$  cup of yogurt or a hunk of cheese includes 300 mg of calcium. To reach 1500 mg a day, eat a high-calcium food with each meal and the equivalent of two servings at bedtime. If achieving this amount is not possible from food, replace some servings with supplements of “elemental” calcium (read labels). Bedtime is a good time for a calcium supplement. Note—it is common to see magnesium recommended with calcium—this is not necessary except to deal with constipation. Rats but not healthy humans need magnesium with calcium.

### **“D” is for Vitamin D**

Vitamin D, which our skin creates from sunlight, is necessary for our bodies to use calcium. All older women need 400 IU a day, the amount in a generic multiple-vitamin. Women with osteoporosis need at least 800 IU a day and often 1400 IU. This is easily obtained from a multiple-vitamin and a single 1000 IU pill. Vitamin D is stored in fat and may be taken once a day.

### **“E” is for Easy Going**

Does a positive, relaxed approach to life help bones? Yes! When tense, worried or depressed or having intense hot flushes our bodies make too much cortisol, a stress hormone that causes bone loss. Women who feel anxious often don't sleep well and are too thin. Worrying about gaining weight is a common stress in this culture.

Understanding and dealing with our own individual stresses is very important for osteoporosis treatment. In addition, learning and practicing relaxation daily will provide health benefits for far more than just bones.

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### “F” is for Bone-Forming Medication

Bone renews itself throughout the life cycle. Bone-building cells, called “osteoblasts”, however, are slow workers that get even slower with age. Progesterone, a natural woman’s hormone and its cousin medroxyprogesterone stimulate osteoblasts to build new bone. A recent randomized controlled trial showed greater spine bone gain in women taking progestin with estrogen compared with estrogen by itself. Natural progesterone taken by mouth has a “side-effect” to increase deep sleep by 15%. Progesterone works best in combination with good activity, calcium and Vitamin D as well as in partnership with the traditional estrogen therapy or other medications that inhibit bone loss (see below). An experimental hormone given by injection called parathyroid hormone (PTH) also strongly increases bone formation. It will not be appropriate for most women given its expense and requirement for an injection.

### “G” and “H” are for Good Habits

That means regular meals and sleep, no smoking and drinking no more than two caffeinated drinks (e.g. coffee or colas) per day. Cigarettes cause estrogen to be less effective; smokers are thinner. High doses of caffeine, especially along with the high phosphoric acid in colas, cause calcium loss in the urine.

Avoid sleeping tablets or anxiety medications that decrease alertness and may increase your likelihood of slipping or falling.

### “T” is for Inhibition of Bone Resorption

Bone is rejuvenated by “osteoclast” cells that get rid of old bone to make way for new. Osteoclasts may become more energetic with increasing age. Calcium and Vitamin D are always necessary to inhibit osteoclastic bone loss. The hormones: estrogen and calcitonin also slow bone loss. (Note that estrogen, tamoxifen and raloxifene therapy should not be used until after menopause because they will disrupt natural hormones). In addition, non-hormonal medications are good for slowing bone loss—these include hydrochlorothiazide (a blood pressure diuretic), all of the bisphosphonate family (such as etidronate, clodronate, alendronate and risedronate) and tamoxifen and raloxifene. These medicines work in partnership with progesterone to build bone.

All parts of this “osteoporosis alphabet” are important. Together they can both build stronger bone and prevent fractures!