

## Bone Loss and Bisphosphonates

Osteoporosis (bone loss) is often diagnosed by x-ray or bone density tests (DEXA scan). The conventional choice of treatment is the use of a class of drugs called biphosphates (Fosamax®, Boniva®, Actonel®).

The bone is a living structure, and a constant break down and rebuilding of bones is **necessary** to maintain healthy bones. The osteoclasts, which are cells that remove the calcium of old bones, work in conjunction with osteoblasts, which are bone-building cells, adding calcium to bones. When this process is in balance, normal bone density is maintained.

The bisphosphonates prevent the osteoclasts from working, so only the osteoblasts are left. When the bones are not being broken down, bone density will show an ‘apparent’ increase on x-ray or bone density scan. However, as times goes on, this will backfire. As bones become denser due to the lack of break down, they actually become **weaker**. Over time, the risk of fractures actually increases as the bone becomes more brittle. This finding is similar to a disease of the bones called ‘Pagets’ disease where the bones appear dense on x-ray and are actually very brittle. Studies are showing serious long-term side effects like jawbone necrosis (decay) and an **increase in fractures**, including fractures of the femur (long bone of the leg), which is associated with increased mortality. It does not make sense that these chemicals, which interfere with a physiologic process necessary to maintain healthy bone structure, would work long term.



Biphosphates may also cause serious inflammation in several regions of the eyes, that may cause vision loss. Other side effects include nausea, heartburn, abdominal pain, muscle cramps, irritability, back and joint pain, pain when swallowing, and diarrhea. Aspirin and other non-steroidal, anti-inflammatory drugs such as ibuprofen may also increase the damage to the stomach if taken with some bisphosphonates. Adverse side effects are often under-reported. Many physicians who publish articles in medical journals receive honorariums or speaking fees from the pharmaceutical companies who market the bisphosphonates.

Diet, exercise and hormone balance (testosterone) are critical to healthy bones, not foreign chemicals that interfere with necessary bone turnover (the influx and efflux of calcium). Even **men** who have low testosterone levels have bone loss.

SUPPLEMENTS that are ‘**likely effective**’ in increasing bone density include

- Strontium 0.5-2 grams per day. Do not take with calcium
- Vitamin D3 (cholecalciferol) 400-1000, up to 2000 IU per day
- Calcium 500-2000 mg per day. Do not take with strontium.