

# Osteoporosis

*By ACSH Staff — August 1, 1992*

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Osteoporosis is a condition characterized by substantial bone loss. When the extent of bone loss reaches a critical point fractures may occur as a result of very minor stress. Osteoporosis affects the entire skeleton, but fractures occur most notably in the vertebrae, hips and wrists. The bones become so weak that normal workloads overcome their capacity. A simple fall can result in a broken hip. Spinal vertebrae can collapse and in extreme cases cause a "dowager's hump."

Gradual weakening or thinning out of bones occurs normally with age. The longer we live, the less bone mass we have and the more prone we are to fractures.

Scientists do not know what causes osteoporosis. They do know a lot about factors which can worsen or lessen the extent of bone loss. Osteoporosis is a very complex disease where many different factors influence the rate of bone loss. Advanced age and being a postmenopausal white female are the predominant risk factors. Advanced age and being a postmenopausal white female are the predominant risk factors. Other risk factors include hormonal imbalance, nutrient deficiencies (particularly calcium) and immobility.

The role of dietary calcium in the prevention or treatment of osteoporosis is not clear. Calcium may ameliorate or prevent only bone loss directly related to calcium deficiency, but not bone loss due to other causes. Calcium deficiency, however, is common in women. Most bone loss is influenced by hormonal deficiencies.

Evidence suggests that exercise helps reduce bone loss. However, too much exercise can be counterproductive for women, because it may lower estrogen levels.

At this time, the most effective treatment of osteoporosis is prevention. The stronger the bones are when people are young, the less likely they are to fracture easily later in life. An effective preventive treatment in postmenopausal women is estrogen replacement therapy (ERT). Other treatments, such as calcitonin therapy, may help if estrogen replacement is not advisable for health reasons.

In some persons, osteoporosis cannot be prevented, but steps can be taken to slow bone loss as much as possible.

Once osteoporosis has proceeded to a very advanced stage, involving fractures, it is difficult to treat. Many of the more promising treatments are still experimental. Advanced osteoporosis interferes with a person's ability to lead a normal life. A simple fall, a wrong movement or even

minor stress on the bones can make the difference between an independent or a dependent lifestyle.

As the population ages, the relative percentage and absolute number of elderly will increase, leading to an increase in all diseases associated with aging, including osteoporosis. In 1991, osteoporosis resulted in over 1.5 million fractures, costing over \$10 billion in health care. These numbers are expected to increase.

For a more up-to-date report on osteoporosis than the 1992 piece above, see Felicia Cosman, M.D.'s Medscape.com report from 2005: <http://www.medscape.com/viewprogram/4011> [1]

See also:

ACSH's layman-friendly report on the state of osteoporosis science:

<http://www.acsh.org/publications/the-prevention-and-treatment-of-osteoporosis-a-review/> [2]

[Osteoporosis](#) [3]

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