



Geneva, February 27 2008

Osteoporosis

Prof René Rizzoli M.D.

Division of bone diseases

WHO collaborating center for osteoporosis prevention

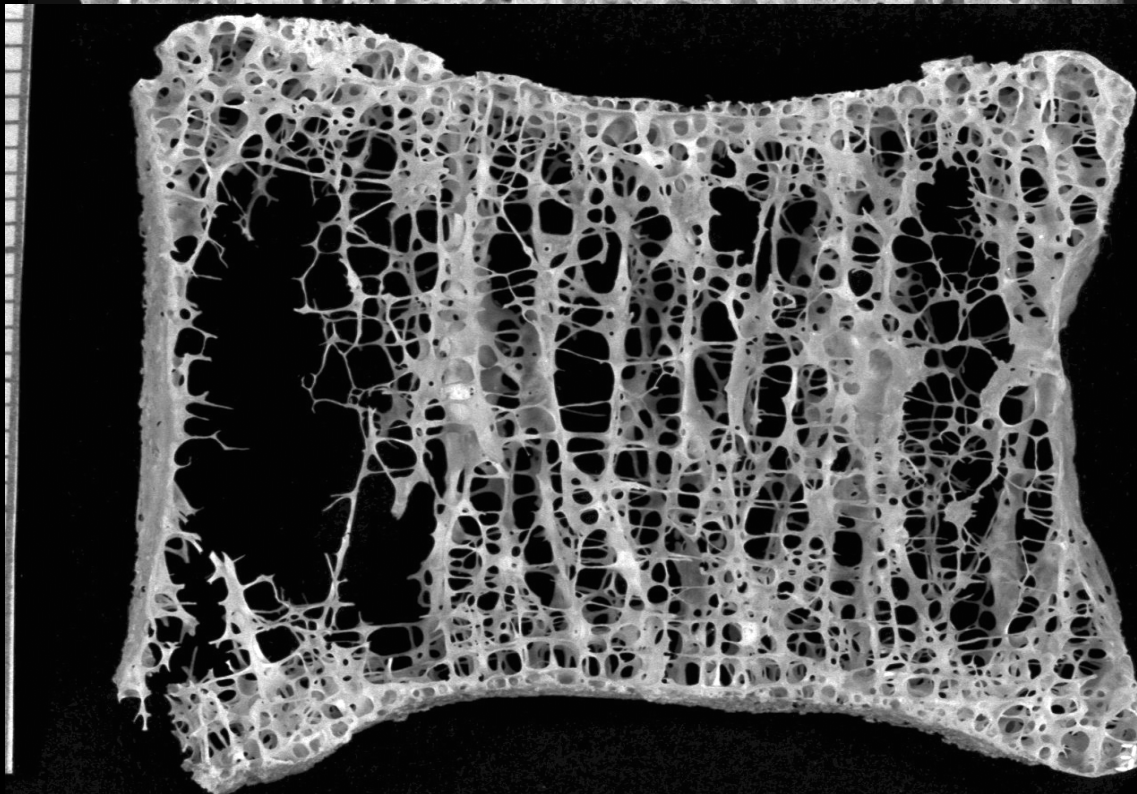
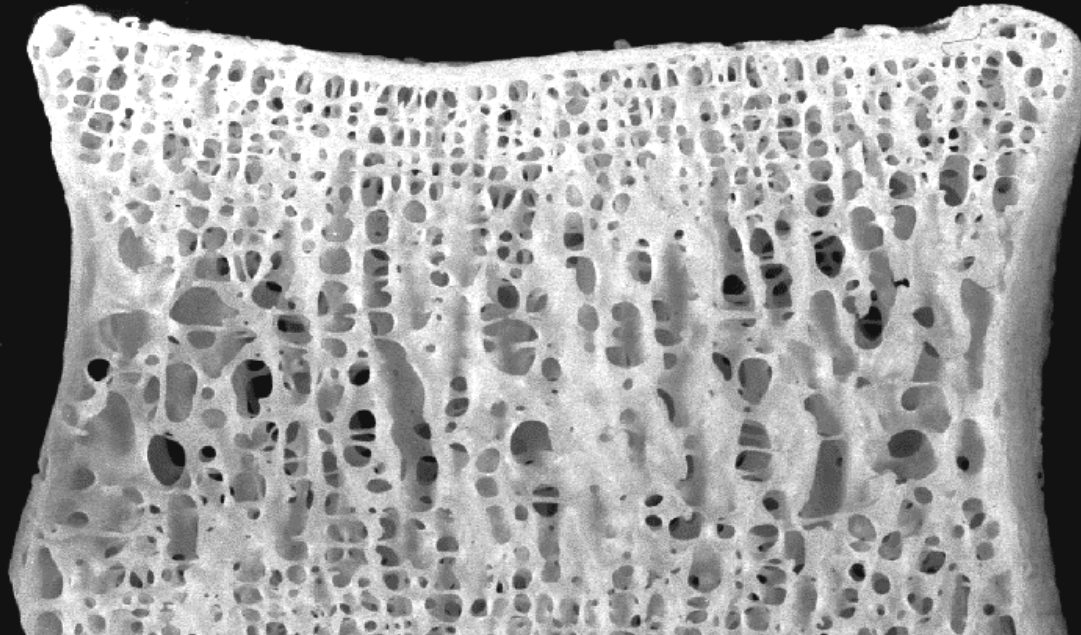
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Osteoporosis Definition

A systemic skeletal disease characterized by low bone mass and microarchitectural deterioration, with a consequent increase in bone fragility with susceptibility to fracture.

Consensus Development Conference: *Am J Med* 1991;90:107-110



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Osteoporosis: a 2-Stage Disease

- **With**
- **Without Fracture**



Osteoporosis: Lecture Content

- **Disease Definition**
- **Epidemiology**
- **Burden**
- **Diagnosis**
- **Pathophysiology**
- **Management**



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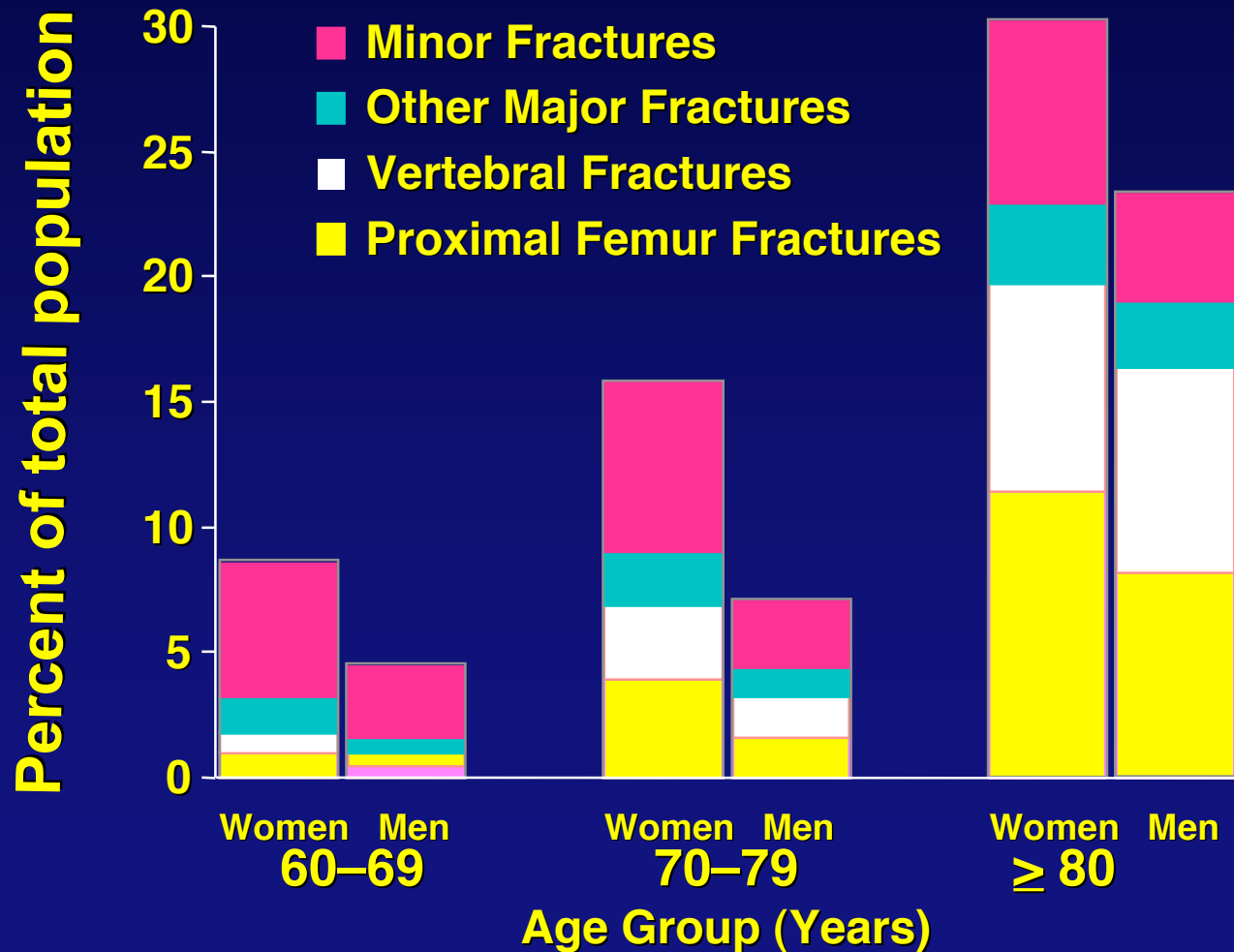




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Fractures by Age and Gender

Dubbo Osteoporosis Epidemiology Study,
1989–1994



Center J et al. *Lancet*. 1999;353:878–882.



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Lifetime risk of fragility fracture in the Swedish population at the age of 50 years (%)

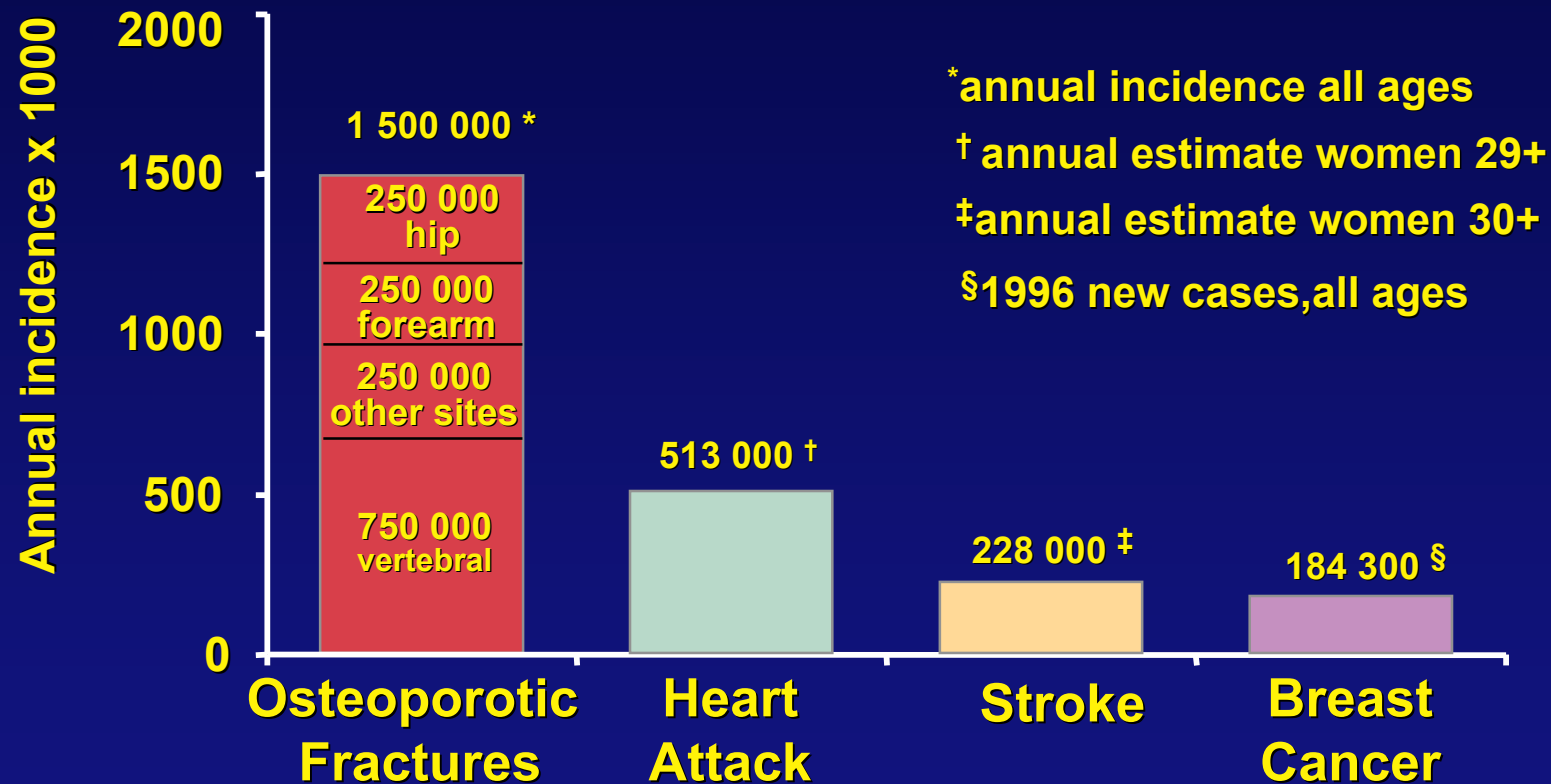
	Women	Men
• Proximal femur	23	11
• Distal forearm	21	5
• Vertebral (clinical)	15	8
• Proximal Humerus	13	5
• Any	46 %	22 %

From Kanis et al 2000



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Osteoporotic Fractures in Women: Comparison With Other Diseases

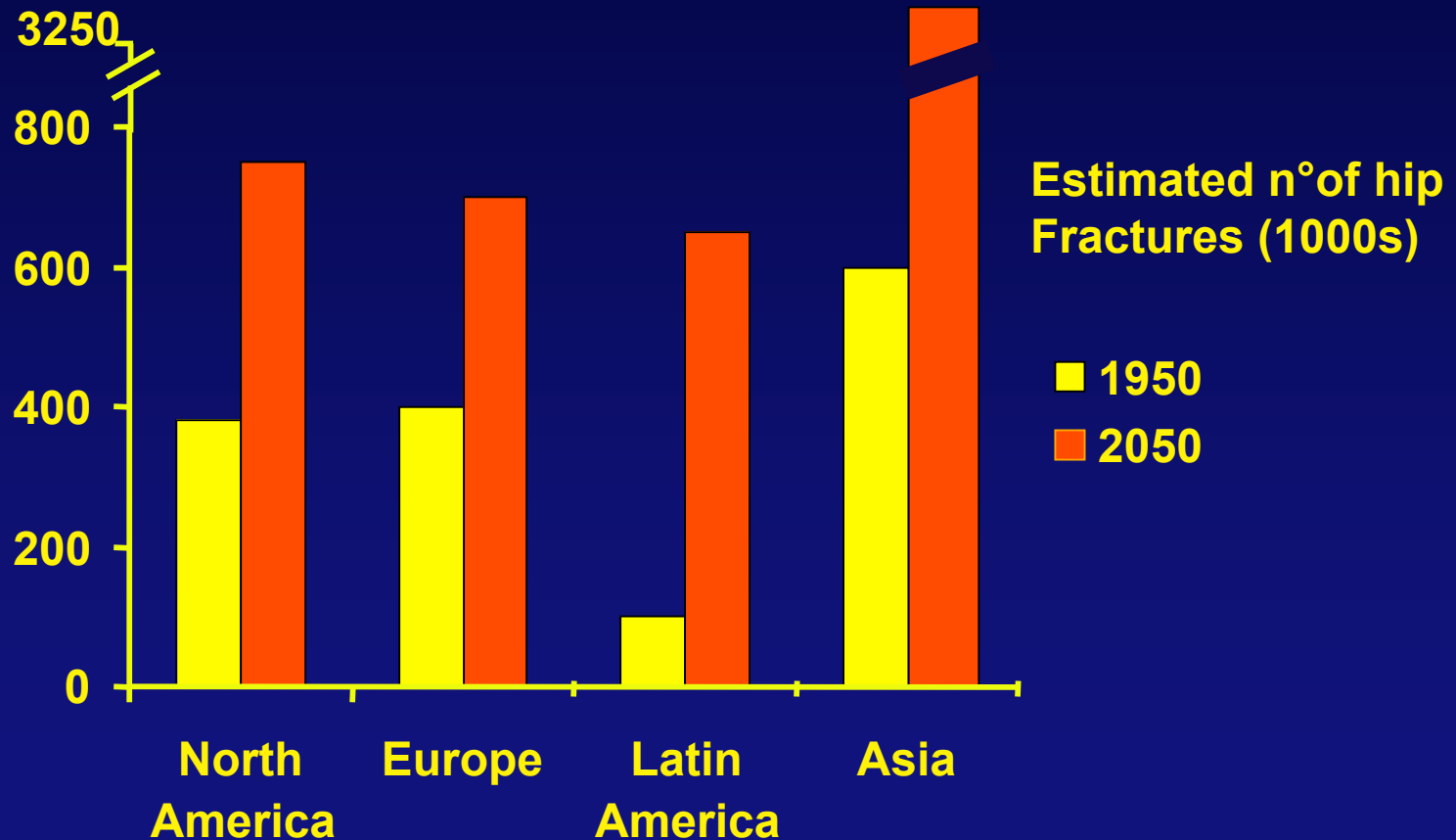


Riggs BL, Melton LJ. *Bone*. 1995.
Heart and Stroke Facts. 1996. American Heart Association.
Cancer Facts & Figures. 1996. American Cancer Society.



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Projected burden of osteoporotic hip fractures worldwide



Number of hip fractures: 1990: 1.66 million; 2050: 6.26 million

Adapted from Cooper C., Melton U, *Osteoporosis Int* 2:285-289, 1992



If the prevalence of hip fracture continues to rise at current rates, it may well be that in the next few decades, orthopaedists will do little else but treat this problem.

**W. C. Hayes, In: Bone Formation and Repair
(American Academy of Orthopaedic Surgeons) 1994**

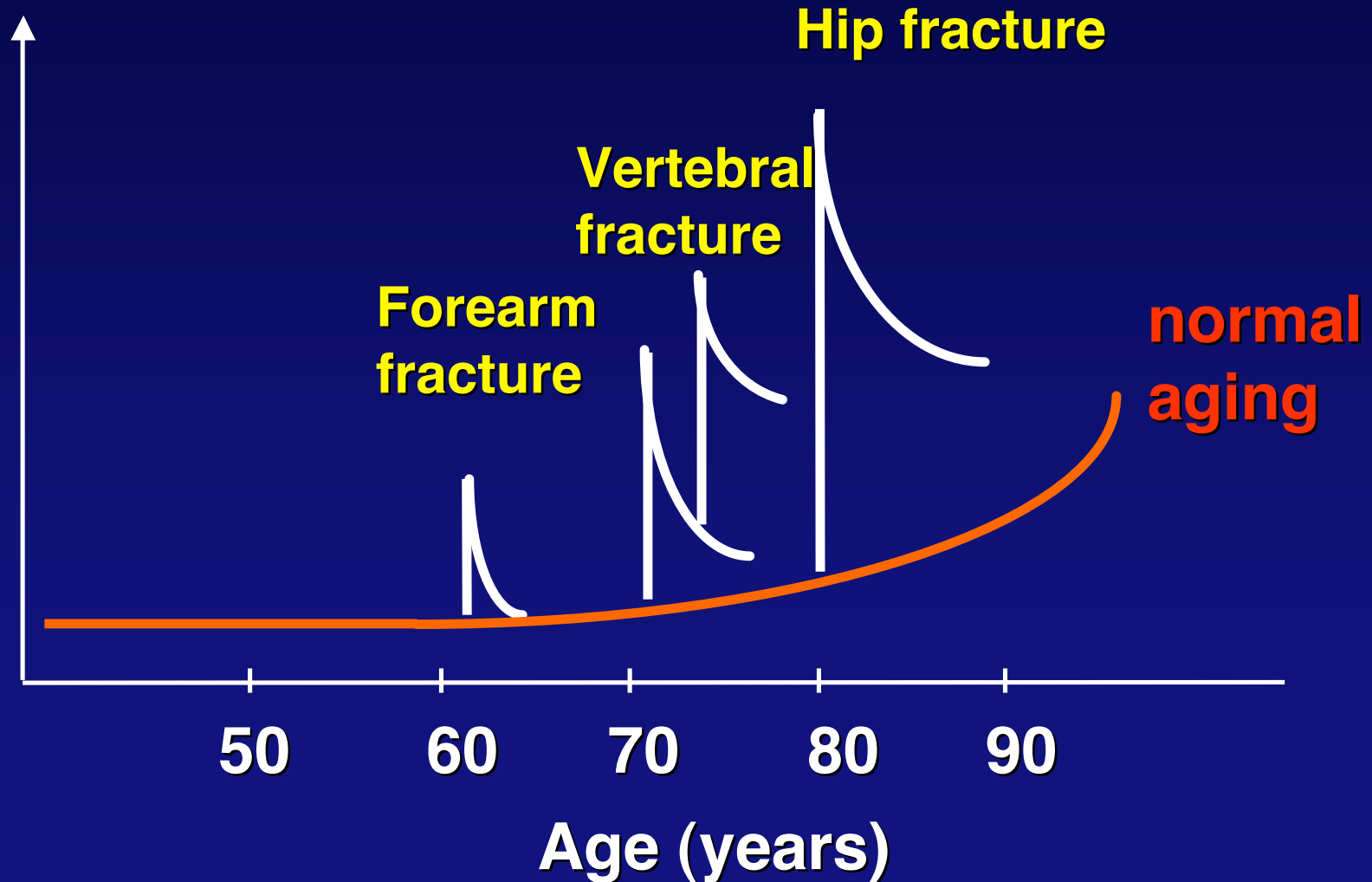


Burden



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Degree of dependence





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Morbidity After Vertebral Fractures

- **Back pain**
- **Loss of height**
- **Deformity (kyphosis, protuberant abdomen)**
- **Reduced pulmonary function**
- **Diminished quality of life: loss of self-esteem, distorted body image, dependence on narcotic analgesics, sleep disorder, depression, loss of independence**



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A Fragility Fracture -> Fracture

