

Department of Rheumatology

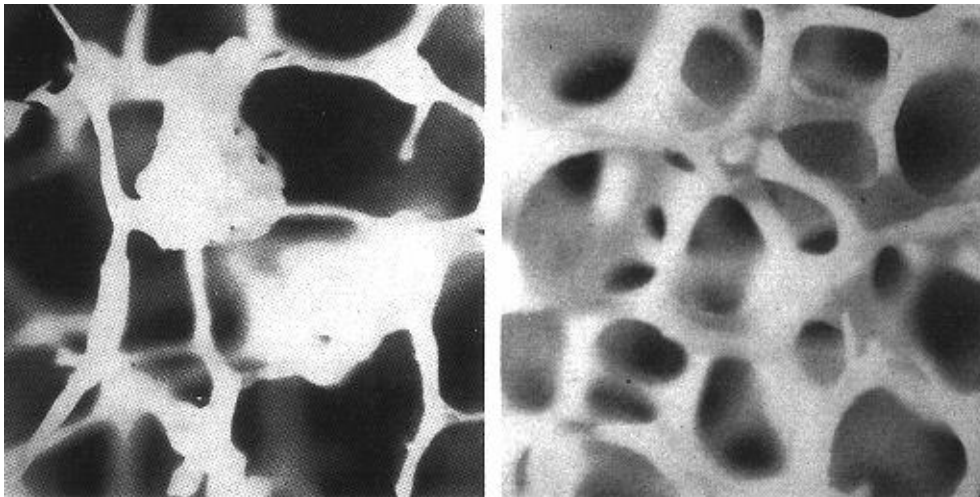


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Osteoporosis and exercise

There are many reasons why people develop thinning of the bones (osteoporosis). An early menopause in women, being underweight or smoking may all contribute. Your doctor has probably advised you on how further osteoporosis may be prevented and may have prescribed drugs for you. Some of these will slow down bone thinning (hormone replacement therapy is an example) and some may reverse the change to some extent (eg the use of cyclical etidronate— Didronel PMO)



Bone is like a latticework of scaffolding. In these microscope photos you can see on the right the appearance of normal bone, with plenty of thick bony spicules (trabeculae). On the left, however, the trabeculae are thin and weedy, and there are not many of them. A number of little lumpy bits are tiny healed fractures. This is typical of the appearance in osteoporosis.

Exercise is a safe and harmless way of helping your bones to stay strong. As people get older, especially if they suffer from any arthritis, then exercise may become quite painful and many will avoid it. Lack of exercise will hasten osteoporosis, so it's important to try and keep as active as possible.

Of course it's important to do the right sort of exercise, or exercises. Someone who suddenly starts doing long workouts in the gym may do themselves all sorts of harm! Slow and steady is the message. Osteoporosis in the spine may result in tiny fractures in the spinal bones (vertebrae) which can be very painful indeed. If the fracture is bad enough a vertebra can get squashed (a crush fracture). Because older people tend to sit, such a fracture will often cause the vertebra to become wedge-shaped; thinner at the front (see the X-ray picture and diagram). So you should avoid exercises that bend the spine forward.

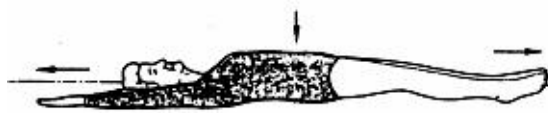


Collapsed vertebra

Thinning of the centre part of the vertebra, giving a ghost-like effect

An X-ray of the spine in osteoporosis

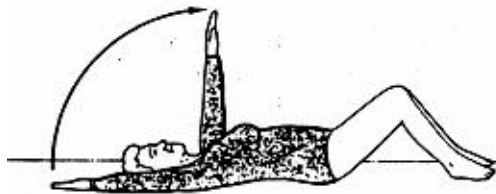
In this leaflet are a few simple exercises that you should do, and two you should avoid. You should feel better for doing them!



(A) stretch arms and legs to their greatest length. Press in abdomen to flatten back in a straight position.



(D) Press elbows into the mattress at right angles.



(B) With knees flexed and back flat, stretch one arm overhead and press it into the mattress.



(E) With back straight and knees bent, straighten and partly flex the knees, one at a time.



(C) Pull knees up, one at a time, and bring them close to the chest, stretching the low back.

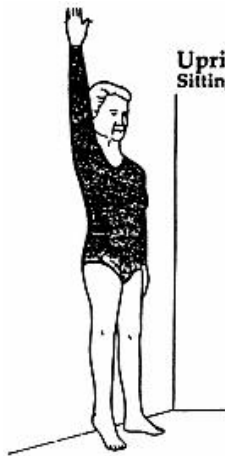


(F) With back flat, press hands and knees down into the mattress, contracting back muscles, buttocks, and thighs.

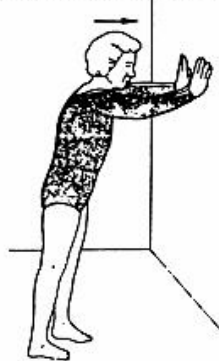
Exercises to avoid
Older patients should avoid exercises that acutely flex the dorsal spine such as strenuous sit-ups and toe touches.



Upright exercises helpful against osteoporosis
Sitting and standing exercises should be performed several times daily.



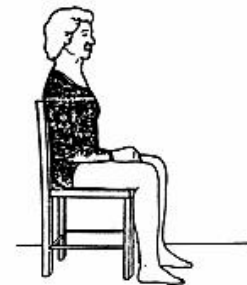
(A) Flatten the body against the wall and stretch as high as possible while extending one arm above the head and keeping the back flat.



(B) Push off against the wall keeping the back straight.



(C) Partial knee bends keeping the back straight.



(D) Press the back firmly against a straight chair.