

Study: Gymnastics Strengthens Girls' Bones

NEW YORK (Reuters Health) – Supporting the notion that weight-bearing exercise throughout life can cut the risk of brittle bones later on, a small study shows that young female gymnasts build bone mass at a higher-than-average rate. Researchers found that girls in competitive gymnastics gained more bone density over 3 years than their non-gymnast peers did. They also put on more lean body mass, which comes mainly in the form of muscle. Higher-than-average bone mass has also been found in adult gymnasts, and the new findings suggest they may owe this to gains made throughout childhood and adolescence, according to the study authors.

More importantly, such early accumulation of bone density may protect against fractures later in life, they reported in a recent issue of the *Journal of Pediatrics*.

In the US, it is estimated that half of women older than 50 will sustain a fracture due to the brittle-bone disease osteoporosis. Experts believe that one way to prevent osteoporosis is to build bone mass at a young age through regular exercise, particularly so-called “high-load” activities that put more pressure on the bones to work. Gymnastics is one such activity.

In the new study, Emma M. Laing of the University of Georgia, Athens, and her colleagues followed 7 female gymnasts and 10 non-gymnasts over 3 years. At the start of the study, girls in both groups were around 11 years old, on average, and were of a similar weight and height overall. The non-gymnasts were active in other ways, with some regularly participating in basketball, softball, soccer or tennis.

The gymnasts, however, had a higher bone density in the hip, lower spine and thigh, as well as a lower percentage of body fat. And over the 3 years, gymnasts accumulated bone density in several areas at a higher rate than the other girls.

There was no difference between the groups in calcium intake, another important factor in bone mass, the researchers note.

They also point out that previous studies have suggested that female gymnasts have a higher-than-average bone density despite the fact that zealous dieting, delayed growth and irregular menstruation—all of which can signal trouble for the bones—are problems in the sport.

Laing and colleagues suggest that gymnasts' greater accumulation of muscle, which exerts a force on bone during contraction, may explain their sturdier bones.