

Weight-bearing exercise does not prevent increased bone turnover during weight loss

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In a new study, University of Missouri researchers found that weight-bearing exercise, in this case, fast walking or jogging, did not prevent the increased bone turnover caused by weight loss. Credit: MU

While there are many benefits of losing weight, weight reduction also might negatively affect bones in the body. During weight loss, bones are being remodeled - breaking down old bone and forming new bone - at an accelerated rate. As a result, bone density is reduced, causing increased fragility. In a new study, University of Missouri researchers found that weight-bearing exercise, in this case, fast walking or jogging, did not prevent the increased bone turnover caused by weight loss.

"Accelerated bone turnover is not favorable, but the potential negative

consequences of increased bone turnover do not outweigh the numerous other health benefits of weight loss," said Pam Hinton, associate professor in the Department of Nutrition and Exercise Physiology in the MU College of Human Environmental Sciences. "Adequate intake of calcium and vitamin D may minimize the reduction in [bone density](#) during weight loss."

In the study, Hinton examined bone turnover markers in the blood of overweight, [premenopausal women](#). These bone markers, which are released by the bone cells that are involved in bone breakdown and formation, are used as indirect indicators of bone remodeling. After six weeks, women who lost 5 percent of their body weight by adhering to a calorie-restricted diet and participating in weight-bearing exercise experienced an increase in bone turnover markers.

The researchers observed the same increase in markers among women who also lost 5 percent of their body weight by [calorie-restriction](#) only or by dieting and participation in non-weight-bearing exercise. These findings indicate that low-impact, weight-bearing exercise, such as slow jogging, does not prevent the increase in bone turnover associated with modest weight loss.

"These findings should not affect the prescription for aerobic exercise during weight loss," Hinton said. "The rationale for recommending [aerobic exercise](#) during [weight reduction](#) is to increase [energy expenditure](#) and maintain lean body mass."

In previous studies, researchers found that weight-bearing exercise promotes bone building, which suggested that this type of exercise would prevent bone turnover in weight loss, Hinton said. Future studies will examine the ability of high-impact, weight-bearing exercise to maintain normal bone turnover during weight loss.

More information: The study, "Serum markers of bone turnover are increased by modest weight loss with or without weight-bearing exercise in overweight premenopausal women," was published in *Applied Physiology, Nutrition and Metabolism*.

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