

Exercise following weight loss may reduce colorectal cancer risk, study finds

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New research suggests that exercise is a key factor in reducing colorectal cancer risk after weight loss. According to the study, physical activity causes beneficial changes in the bone marrow. The study is published ahead of print in the *American Journal of Physiology—Endocrinology and Metabolism*.

Colorectal cancer is one of the most common cancers worldwide. Occurrence of [colorectal cancer](#) is on the rise among [young adults](#) in the U.S. Previous research has shown that obesity and lack of physical activity increases the risk of developing this type of cancer. Recent studies have found that cells in bone marrow that produce blood cells (hematopoietic cells) play a role in the development of cancerous tumors in the colon. However, less is known about how losing weight through diet and [exercise](#) affects hematopoietic cells and decreases cancer risk.

An international research team from the University of Ottawa in Canada and the University of Illinois at Urbana-Champaign studied a mouse model of colorectal cancer. The mice—all of which had

cancer—were fed a [high-fat diet](#) and became obese before being placed on a typical rodent diet for the remainder of the study. After two months of weight loss while following the typical diet, half the mice were exercised daily and half remained sedentary.

The researchers found that even after weight loss, the sedentary mice had higher levels of colon and bone marrow inflammation as well as more fat tissue accumulation in the bone marrow. The lack of exercise also caused inflammation-causing changes in the hematopoietic cells. The mice that were exercised had less inflammation and tumor formation after [weight loss](#). The rate of tumor formation in the exercise group was similar to that of control mice that were exposed to cancer cells but were never obese. "Obesity induces long-term changes in [blood cell development] and the [bone marrow](#) microenvironment that persists even when weight and body composition improved," the [research team](#) wrote.

"These findings suggest that persons at increased risk of developing [colorectal cancer], such as those with obesity, should consider including exercise training with dietary interventions to decrease [colorectal cancer] risk," the researchers wrote.

"Effects of obesity and exercise on colon cancer induction and hematopoiesis in mice" is published ahead of print in the *American Journal of Physiology—Endocrinology and Metabolism*.

More information: Russell Emmons et al. Effects of obesity and exercise on colon cancer induction and hematopoiesis in mice, *American Journal of Physiology-Endocrinology and Metabolism* (2018). DOI: [10.1152/ajpendo.00237.2018](https://doi.org/10.1152/ajpendo.00237.2018)

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