

## How Does Exercise Lower the Risk of Getting Cancer?

There is strong evidence that regular exercise can reduce the risk of getting bladder, breast, colorectal, and gastric cancers by as much as 20 percent. A 2019 review found more than 45 studies involving several million people that reached this conclusion. This is great news, of course, especially for those of us who are committed to an exercise routine. But, until recently, it was a mystery as to *how* exercise could possibly reduce that risk.

The solution to this mystery is suggested by the results of a small study conducted at Texas MD Anderson Cancer Center that was just published in the journal Clinical Cancer Research. The subjects in this research were adults between 18 and 50 who have Lynch syndrome, an inherited genetic mutation that can lead to cancer at a young age. Half of the group were enrolled in a 12-month exercise program and the other half were simply told about the benefits of working out. The exercise prescribed consisted of 45 minutes of high intensity cycling 3 days a week, and both groups of participants were given activity trackers; the exercise group recorded a median of 164 weekly exercise minutes, while the other group recorded a median of 14 weekly exercise minutes.

The researchers found that 13 genes became more active in the people who exercised regularly. These activated genes were involved in immune signaling pathways involving “natural killer” cells (CD8 and T cells) that attack foreign entities like cancer cells. People in the exercise group also demonstrated a drop in the levels of the inflammatory marker prostaglandin E2 and an increased ability to use oxygen, and both are factors involved in regulating the immune system.

These changes suggest that regular exercise strengthens the body’s immune response and improves its capacity to detect and remove cells that would otherwise become cancerous.

Eduardo Vilar-Sanchez, the lead author of the study, said, “*It was mind-blowing to me that exercise induced such a strong and durable change.*”

This was the first study that found a link between relatively vigorous exercise and changes in immune biomarkers, and it is an important foundation for future research. This link may have been discovered because the researchers used next-generation genetic sequencing that permitted more sensitive measurements than the tools used in earlier research. If the preventative benefits of this type of exercise prescription are validated and generalized, it will offer a new way for people to lower their cancer risk over time.

These results give you one more reason to exercise as much as is appropriate for your physical condition and lifestyle. In addition to the possibility of lowering your risk of several cancers, exercise has been shown to lower the risk of cognitive decline, dementia, dangerous falls and broken bones, stroke, cardiovascular disease, and type two diabetes. So... what are you waiting for??