

# Good cardiorespiratory fitness associated with up to 40% lower risk of 9 cancers

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Good cardiorespiratory fitness when young is associated with up to a 40% lower risk of developing 9 specific cancers later on—at least in men—suggests a large long term study published online in the *British*

*Journal of Sports Medicine.*

These include cancers of the head and neck, esophagus, stomach, pancreas, liver, bowel, kidney, and lung.

Cardiorespiratory [fitness](#) refers to a person's ability to do [aerobic exercise](#), such as running, cycling, and swimming for sustained periods, or even to climb stairs. It's known to be associated with lower risks of certain cancers, but few large, long term studies of multiple cancer sites have been reported.

The researchers therefore drew on linked Swedish registry data up to the end of 2019, covering background information, medical diagnoses, and deaths for conscripts who started their military service between 1968 and 2005.

At the start of their stint, when they were aged between 16 and 25, conscripts underwent a standard battery of assessments. These included height, weight (BMI), [blood pressure](#), muscular strength and cardiorespiratory fitness.

Conscripts with a low level of cardiorespiratory fitness were slightly more likely to be obese, more likely to have a history of alcohol and substance misuse, and to have parents with lower educational attainment than conscripts with a higher fitness level.

In all, 365,874 conscripts had a low level of cardiorespiratory fitness; 519,652 had a moderate level; and 340,952 had a high level.

The final analysis included more than 1 million men (1,078,000), 84,117 (7%) of whom subsequently developed cancer in at least one site during an average monitoring period of 33 years.

Compared with men with a low level of fitness at conscription, higher cardiorespiratory fitness was linearly associated with a lower risk of developing specific types of cancer.

It was associated with a 5% lower risk of rectal cancer (2337); a 12% lower risk of pancreatic cancer (1280); an 18% lower risk of bowel cancer (3222); a 19% lower risk of head and [neck cancer](#) (2738 men); a 20% lower risk of kidney cancer (1753); a 21% lower risk of stomach cancer (902); a 39% lower risk of food pipe cancer (689); a 40% lower risk of liver cancer (1111); and a 42% lower risk of lung cancer (1635).

But higher cardiorespiratory fitness was also associated with a 7% heightened risk of prostate cancer (14, 232 men) and a 31% heightened risk of skin cancer (23, 064). Prostate cancer screening and exposure to sunlight might account for these findings, suggest the researchers.

This is an [observational study](#), so no firm conclusions can be drawn about cause and effect, and the researchers acknowledge that they didn't have full data on other potentially influential lifestyle risk factors, such as diet, alcohol intake, and smoking, in particular. Nor were they able to track any changes in [cardiorespiratory](#) fitness over time or gather any [genetic information](#) on participants.

Nevertheless, their findings are reflected in the American Society of Clinical Oncology guidelines on exercise during [cancer](#) treatment, they point out.

And they conclude, "This study shows that higher fitness in healthy young men is associated with a lower hazard of developing 9 out of 18 investigated site-specific cancers, with the most clinically relevant hazard rates in the gastrointestinal tract."

"These results could be used in public health policymaking, further

strengthening the incentive for promoting interventions aimed at increasing [[cardiorespiratory fitness](#)] in youth."

**More information:** Associations between cardiorespiratory fitness in youth and the incidence of site-specific cancer in men: a cohort study with register linkage, *British Journal of Sports Medicine* (2023). [DOI: 10.1136/bjsports-2022-106617](#)

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