

Previous cancer linked to long term heightened risk of cardiovascular disease

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Cancer survivors may be at long term heightened risk of subsequent cardiovascular disease, irrespective of traditional underlying risk factors, suggest the findings of a large UK Biobank study, published online in the journal *Heart*. Those with previous breast or blood cancers may be at greatest risk, the findings indicate.

Shared [vascular risk factors](#) as well as the treatments and biological processes related to the cancer itself are all associated with a heightened risk of incident [cardiovascular disease](#) among cancer survivors, note the researchers.

But most of the evidence to date suggests that the highest risk of cardiovascular complications arises in the first year after diagnosis. Few studies have looked at potential longer term risks or included cardiovascular imaging to pinpoint cardiovascular system damage that hasn't yet resulted in symptoms.

To plug these knowledge gaps, the researchers assessed the [cardiovascular health](#) of 18,714 UK Biobank participants with a previous diagnosis of a common cancer—lung (313), breast (9,531), prostate (3,291), blood (2,230), uterine (937), or bowel (2,412)—and compared them with the same number of UK Biobank participants without any history of cancer, and matched for age and traditional vascular risk factors.

The average age of all the participants was 62, and around two-thirds were women. Their cardiovascular health was tracked, using linked health records, for nearly 12 years.

Factors associated with worse cardiovascular health—including smoking, [high blood pressure](#), and excess weight—were common among those with a previous cancer diagnosis. Nearly 1 in 10 of those with lung, uterine, and bowel cancers had diabetes. Pre-existing cardiovascular disease was also relatively common (18%; 3,289).

Almost a third of cancer survivors developed one of the following during the monitoring period: ischemic heart disease; stroke; abnormal heart rhythm (atrial fibrillation); heart failure; impaired electrical signaling or mechanical heart problems (non-ischemic cardiomyopathies); [blood](#)

[clots](#) in the veins, arteries, or lungs; inflammation of the lining around the heart (pericarditis).

The highest rates of new cardiovascular disease occurred in those with lung (49.5%), blood (48.5%), and prostate (41%) cancers, with new cases of ischemic heart disease, [atrial fibrillation](#), and heart failure the most common types of cardiovascular disease across all cancers.

During the monitoring period, 19% of the cancer survivors died, compared with 8.5% of those in the comparison group. Cardiovascular disease was the primary cause of death in 1 in 12 of the cancer survivors who died.

MRI scan results for 1,354 of the study participants also showed that the size and function of the heart among the cancer survivors had substantially changed for the worse, irrespective of underlying vascular risk factors.

Blood cancer survivors had significantly increased risks of developing all the cardiovascular disease types considered compared with their peers without cancer. Clinically significant changes in the size and function of their hearts were also evident on MRI scans.

Patients with [blood cancers](#) are exposed to chemotherapies known to be harmful to heart tissue, as well as radiotherapy that targets the chest wall overlying the heart, explain the researchers.

Similarly, breast cancer survivors had a heightened risk of developing—and dying from—[heart failure](#) and non-ischemic cardiomyopathies, as well as being diagnosed with pericarditis. Their scans were also more likely to show evidence of functional heart changes.

"These observations likely reflect cardiotoxicity linked to breast cancer therapies," point out the researchers, adding that these people were also 8 times more likely to die of disease associated with high blood pressure.

This is an observational study, and as such, can't establish cause. The researchers also acknowledge various limitations to their findings, including small numbers of lung and uterine [cancer survivors](#) and no information on cancer grade, stage, or specific treatments.

Most of the UK Biobank study participants are also white, so the findings might not apply to people of other ethnic backgrounds, they note.

Nevertheless, they conclude, "Importantly, we demonstrate that past cancer confers an increased risk of cardiovascular events, independent of traditional vascular risk factors and that this risk may extend several years beyond the initial cancer diagnosis."

Their findings show "particular vulnerability of individuals with past breast and hematological cancer, who appeared at greatest risk, both with regards to risk of incident clinical disease and adverse cardiac remodeling," they add.

In a linked editorial, Professor José Banchs of the University of Colorado School of Medicine, U.S., and Dr. Tara Lech from Beth Israel Lahey Health emphasize, "The importance of heart disease in patients undergoing cancer care cannot be understated, but also how critical it becomes to prioritize a care continuum after cancer is survived."

"The fantastic progress in the treatment and even cure of malignancies has undoubtedly highlighted the need for post-[cancer care](#) like never before," paving the way for more tailored care, they write.

More information: Incident cardiovascular events and imaging phenotypes in UK Biobank participants with past cancer, *Heart* (2023). DOI: [10.1136/heartjnl-2022-321888](https://doi.org/10.1136/heartjnl-2022-321888)

Jose Banchs et al, Cardiovascular phenotypes and incident cardiovascular events in people with previous cancer, *Heart* (2023). DOI: 10.1136/heartjnl-2022-322230 , [heart.bmj.com/content/early/20... heartjnl-2022-322230](https://heart.bmj.com/content/early/2023/04/18/heartjnl-2022-322230)

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