

Having cancer may increase the risk of developing diabetes

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Researchers working in the lab at the Department of Nutrition, Exercise and Sports / UCph. Credit: Jakob Helbig / University of Copenhagen

Cancer patients are at a greater risk for developing diabetes, according to a new study by the Steno Diabetes Center Copenhagen, Rigshospitalet,

and the University of Copenhagen. The study also concludes that cancer patients who develop diabetes die sooner than survivors without diabetes.

Cancer is the leading cause of death in Denmark, which has a population of close to 6 million people. In 2019 alone, more than 45,000 incident cases of [cancer](#) were diagnosed. Fortunately, the most recent statistics report that there has been a significant increase in [cancer survival](#) in Denmark. Nevertheless, lingering effects and complications reduce the quality of life for many survivors.

Higher diabetes risk associated with certain types of cancer

As a result of a collaboration between researchers from Steno Diabetes Center Copenhagen, Rigshospitalet and the Department of Nutrition, Exercise and Sports at the University of Copenhagen a new study discovered that a [cancer diagnosis](#) was associated with an elevated risk of developing [diabetes](#). The study is built on the use of unique epidemiological data from the CopLab Database housed by the Center for General Practice at the Department of Public Health at the University of Copenhagen.

Certain types of cancer were more likely than others to increase this risk. Associate Professor Lykke Sylow of the Department of Nutrition, Exercise and Sports at the University of Copenhagen, who is behind the study together with Professor Christoffer Johansen of The National Centre for Cancer Survivorship and General Late Effects (CASTLE) at Rigshospitalet and Professor Christen Lykkegaard Andersen from the CopLab Database at the Center for General Practice, states, "Our study demonstrates that there is an elevated risk of developing diabetes if a person is affected by lung, pancreatic, breast, brain, [urinary tract](#) or uterine cancers."

The researchers examined an extensive data set consisting of 112 million [blood samples](#) from 1.3 million Danes, of whom more than 50,000 developed cancer. While the study does not say anything definitive about why certain types of cancer are associated with a greater risk of developing diabetes, the researchers have theories around which new studies can be built.

"Various cancer therapies may contribute to an increased risk. The cancer itself can affect the rest of the body. We know that [cancer cells](#) are able to secrete substances that can affect organs and possibly contribute to an increased incidence of diabetes. This has been suggested in animal studies," says Lykke Sylow.

Survivability increases without diabetes

The study also demonstrates that people diagnosed with cancer and subsequently diabetes do not generally live as long as patients who do not develop diabetes while experiencing cancer.

"Across all cancer sites we observed, that [cancer patients](#) without diabetes survived longer compared to cancer patients diagnosed with diabetes," says Professor Christoffer Johansen from Rigshospitalet.

Overall, the study finds an excess mortality of 21% in patients who develop diabetes after being diagnosed with cancer. It is worth noting that the study encompassed all types of cancer and did not investigate the influence of diabetes on survivability in relation to individual cancer types.

Preventive initiatives and screening

Today, the screening of cancer patients for diabetes has yet to be

incorporated into the healthcare system. If it could be shown that screening cancer patients for diabetes would lead to higher quality of life and increased survival, this would be a good idea in the future:

"Our results suggest that it might be relevant to consider diabetes screenings in relation to those cancers where we found an elevated risk of the disease. That is to say, for patients with lung cancer, breast cancer, brain cancer, uterine cancer, and urinary tract cancers. We have outstanding opportunities to treat diabetes and [early intervention](#) could have an impact on certain cancer patients," states Professor Christoffer Johansen.

Associate Professor Lykke Sylow seconds his assertion: "It could be interesting to investigate whether screening helps cancer patients—both in terms of their chances of survival as well as their quality of life. As a preventive initiative, it might also be possible to recommend different types of exercise for people with cancer, ones that we know work effectively to prevent and treat diabetes. But my suggestions are to be taken in a long-term perspective and need to be tested," she concludes.

It should be underscored that the study published in *Diabetes Care* is one of the first to demonstrate a link between cancer and diabetes. As such, more research is needed before the link between cancer and onset of diabetes is thoroughly established.

More information: Lykke Sylow et al, Incidence of new-onset type 2 diabetes after cancer—A Danish cohort study, *Diabetes Care* (2022).
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