

# Survivors of breast cancer more likely to develop diabetes, and should be screened more closely

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A major new study shows that post-menopausal survivors of breast cancer are more likely to develop diabetes than controls without breast cancer. Furthermore, the relationship between breast cancer and diabetes varies depending on whether a breast cancer survivor has undergone chemotherapy. The study is the largest to explore this relationship so far, and is published in *Diabetologia*, the journal of the European Association for the Study of Diabetes (EASD).

An association between diabetes and cancer is becoming increasingly recognised. For instance, [women](#) with diabetes have an estimated 20% higher risk of postmenopausal breast cancer. As breast cancer survival rates continue to improve, it is becoming increasingly important to understand the long-term [health consequences](#) for survivors as they age. However, to date little research has been carried out on the risk of post-menopausal breast [cancer survivors](#) developing diabetes.

In this population-based study, Dr Lorraine Lipscombe (Women's College Hospital, Women's College Research Institute, Toronto, ON, Canada) and colleagues used population-based data from Ontario, Canada to compare the incidence of diabetes among women aged 55 years or older with breast cancer, from 1996 to 2008, with that of age-matched women without breast cancer. They further explored this relationship based on whether the patient had undergone chemotherapy.

They found that, of 24,976 breast cancer survivors and 124,880 controls, 9.7% developed diabetes over a mean follow-up of 5.8 years. The risk of diabetes among breast cancer survivors compared with women without breast cancer began to increase two years after diagnosis, with a 7% increased risk that rose to 21% after 10 years. Among those who received adjuvant chemotherapy (4,404 patients) almost the opposite relationship was found: risk was highest in the first two years after [diagnosis](#) (a 24% increased risk compared with controls) and then declined to an 8% increased risk after 10 years.

Dr Lipscombe says: "It is possible that chemotherapy treatment may bring out diabetes earlier in susceptible women. Increased weight gain has been noted in the setting for adjuvant chemotherapy for breast cancer, which may be a factor in the increased risk of diabetes in women receiving treatment. Oestrogen suppression as a result of chemotherapy may also promote diabetes; however this may have been less of a factor in this study where most women were already post-menopausal."

Other factors that may play a part for women with chemotherapy are the glucocorticoid drugs used to treat nausea in chemotherapy, known to cause spikes in blood sugar (acute hyperglycaemia), and the fact that women undergoing chemotherapy could be monitored more closely and thus are more likely to have diabetes detected. A reason that risk decreased in the chemotherapy group over time could be that many of the at-risk women developed diabetes in the first two years, and were thus no longer followed up. In addition, the effects of glucocorticoids are known to wear off over time.

The researchers are unsure why the [breast cancer](#) survivors who did not receive [chemotherapy](#) saw their risk of diabetes increase compared with control women without cancer. "There is, however, evidence of an association between diabetes and cancer, which may be due to risk factors common to both conditions," says Dr Lipscombe. "One such risk

factor is insulin resistance, which predisposes to both diabetes and many types of cancer— initially insulin resistance is associated with high [insulin levels](#) and there is evidence that high circulating insulin may increase the risk of cancer. However, diabetes only occurs many years later when insulin levels start to decline—therefore it is possible that cancer risk occurs much earlier than diabetes in insulin-resistant individuals, when insulin levels are high."\*

"These findings support a need for closer monitoring of [diabetes](#) among [breast cancer survivors](#)," concludes Dr Lipscombe

Provided by Diabetologia

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