

New research shows lower rates of cancer screening in women with diabetes

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Cancer screening rates are up to a quarter lower in women with diabetes, varying by type of cancer, and putting them at risk of poorer cancer outcomes, concludes new research in *Diabetologia*.

Led by doctoral student Dominika Bhatia and Dr. Lorraine Lipscombe, Women's College Hospital and Institute of Health Policy, Management and Evaluation, University of Toronto, Toronto, ON, Canada, the study found that cervical [cancer screening](#) rates were 24% lower for [women with diabetes](#) compared to women without. The study authors also determined that screening uptake for [breast cancer](#) was 17% less and for colorectal screening was 14% less in women with diabetes.

Diabetes has been associated with 30% higher incidence of certain cancers, and with a 40% higher mortality after [cancer diagnosis](#). In addition to shared risk factors, a causal relationship between diabetes and cancer has been suggested—with high blood insulin and insulin resistance thought to be linked to tumour formation. Cancer screening significantly reduces cancer deaths—by up to 33% for breast cancer, 70% for cervical cancer, and 37% for colorectal cancer—as early detection enables early treatment and improves prognosis. For this reason, many countries have implemented routine screening programmes.

Previous studies have shown that diabetes is associated with a variety of adverse effects in relation to cancer treatment and survival rates. Individuals with diabetes are more likely to be diagnosed with advanced

stage tumours; they experience greater toxicity during treatment, leading to more conservative treatment regimens; and they experience poorer preventive care because of the competing priorities of chronic disease management. This new study explored whether diabetes also impacts on uptake of recommended cancer screenings for this already disadvantaged group.

Biomedical archives (MEDLINE, EMBASE and CINAHL) were searched for studies between 1 January 1997 and 18 July 2018, showing attendance for screening for breast, cervical and colorectal cancers, in people with diabetes compared to people without, within the general population. Screening was via the recommended methods—mammogram for breast cancer; Papanicolaou test ('Pap' smear test—swab taken from the cervix and tested for abnormal cells) for cervical cancer; and faecal blood and/or endoscopy tests (internal examination, using a camera, of the large or small bowel) for colorectal cancer. Studies involving tests for reasons other than general screening were excluded, for example screening in women with a history of these or other cancers, or following diagnosis or treatment for them. The analysis was adjusted for age and for personal or family history of cancer, as these risk factors influence screening recommendations.

Of 5200 unique records searched, 37 studies met the criteria—nine studies of breast cancer screening, two of cervical cancer screening, and eight of colorectal cancer screening. In addition to single test studies, eight examined both breast and [cervical cancer](#) screening; one examined both breast and colorectal screening; and nine examined screening for all three cancers. Over half of the studies were from North America (21 from USA, 3 from Canada), with the remainder from Europe, the Middle East, and Asia. Sample sizes ranged from 129 to 732,687 individuals. The mean diabetes prevalence was 15.1% for breast, 9.7% for cervical and 12.4% for colorectal cancer screening.

Women with diabetes were found to be significantly less likely to undergo the recommended screening for all three cancers. The findings were particularly striking for cervical screening—uptake for which was 24% less for women with diabetes compared to women without. Screening uptake for breast cancer was 17% less, and for colorectal screening 14% less, in women with diabetes compared to those without the condition.

The burden of diabetes care management in primary care may contribute to lower uptake of cancer screening, the authors suggest. It has been shown that as the number of guideline recommended preventive services for which a person is eligible increases, the likelihood of their uptake decreases. Following the recommended guidelines for chronic disease care takes up more time per patient than physicians have available—the authors note—so that routine preventive care takes a back seat compared to the more pressing and obvious diabetes care.

"Patients with conditions such as diabetes, which cause a high health care burden and competing demands, may need new cancer screening approaches," explain the authors. "The use of mail and telephone-based invitations, for example, have been shown to increase screening uptake for all three cancers studied. Likewise, direct mailing of self-screening kits has produced good results. Education regarding cancer screening is advised—uptake for colorectal cancer screening, for example, may be lower in women because the condition is perceived to be more common in men. Shared care between diabetes specialists and [primary care](#) physicians may also lead to better guideline-recommended care in persons with diabetes."

Many limitations to the current research were noted, including that the studies analysed relied mostly on self-reporting. Whilst this has previously been shown to be reliable for diabetes diagnosis, it is known that people tend to over-estimate their adherence to recommended

cancer screening guidelines. As such it is possible that the actual cancer screening rates are even lower than those found in this study. The authors conclude: "Further high-quality research on these worrying findings should be carried out to ensure that women with diabetes, already at a health disadvantage, are receiving as timely cancer screening as those in the general population, based on recommended guidelines."

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