

Women with type 1 diabetes at significantly higher risk of dying compared with men

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Women with type 1 diabetes face a 40% increased excess risk of death from all causes, and have more than twice the risk of dying from heart disease, compared to men with type 1 diabetes, a large meta-analysis involving more than 200 000 people with type 1 diabetes published in *The Lancet Diabetes & Endocrinology* has found.

"We know that people with [type 1 diabetes](#) have shorter life expectancies than the general population, from both acute and long-term diabetic complications. But, until now, it was not clear whether this excess risk of mortality is the same in [women](#) and men with the disease", explains Rachel Huxley, lead author and Professor in the School of Public Health at The University of Queensland in Australia.

"On average, women live longer than men. But, our findings show that in women with type 1 diabetes this 'female protection' seems to be lost and excess deaths in women with type 1 diabetes are higher than in men with the disease."

Huxley and colleagues conducted a meta-analysis of all studies examining sex-specific estimates of mortality for men and women associated with type 1 diabetes spanning the last five decades (January 1966 to November 2014).

Analysis of data from 26 studies involving 214 114 individuals with the disease found a 37% higher excess risk of dying from any cause in women with type 1 diabetes compared with men who have the disorder.

In particular, women have nearly double the excess risk of developing or dying from cardiovascular disease than men. Women with type 1 diabetes also face a greater excess risk of strokes (37%) and are 44% more likely to die from kidney disease than men with the disorder. Interestingly, type 1 diabetes is not linked with an increased risk of death from cancers in either sex.

The authors speculate that poorer glycaemic control and difficulties in insulin management, which are more common among women, could be contributing factors to the increased risk of vascular-related death in women with type 1 diabetes compared with men with the condition.

According to Professor Huxley, "The marked difference between the sexes for vascular-related disease is likely to have profound clinical implications for how women with type 1 diabetes are treated and managed throughout their lives. A recent joint statement issued by the American Heart Association and the American Diabetes Association concluded that further research into racial and ethnic differences and improved cardiovascular risk-prediction methods in people with type 1 diabetes is needed. In light of our findings, we argue that this statement should be extended to include sex differences."

Type 1 diabetes is on the rise. Worldwide, the incidence of type 1 diabetes in children aged 14 years and younger has increased by 3% every year since 1989. Around 15 000 children and 15 000 adults are diagnosed with type 1 diabetes each year in the USA alone, and the disease costs the US health-care system around US\$14.9 billion annually.

Writing in a linked Comment, David Simmons from the University of Western Sydney, New South Wales, Australia says, "A key question is how the risk of excess mortality in women can be reduced further—a particular challenge given that the reasons for excess mortality in type 1 diabetes are still unclear. Reducing the high type 1 diabetes mortality

rates will need additional expenditure on the care of patients with the disorder, many of the benefits from which might not be seen for up to 20 years. The additional investment in the [diabetes](#) specialist and mental health services to be able to give the additional time that patients need, and into modern technology that can help reduce hyperglycaemia while avoiding hypoglycaemia and fear of hypoglycaemia, must start now."

Provided by Lancet

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