

Risk of death may increase for successive generations of immigrants with type 2 diabetes

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A 10-year nationwide study investigating survival rates in all people with type 2 diabetes in Sweden, to be published in *Diabetologia*, finds that non-Western immigrants experienced a higher risk of death with each generation born in the country.

The findings, being presented at Annual Meeting of The European Association for the Study of Diabetes (EASD), held online this year, indicate that while first generation immigrants with diabetes appeared to have a survival advantage compared with native Swedes with diabetes (particularly non-Western immigrants), this reduced over time and vanished in second generation immigrants.

This disparity may be tied to various unhealthy behaviours and practices in [western culture](#) as well as [genetic factors](#), but more research is needed, researchers say.

"Our findings indicate that among immigrants with type 2 diabetes, exposure to some elements of their lifestyle in Sweden seem to have a larger impact on survival than their region of origin", says Dr. Louise Bennet from Lund University in Sweden who led the research. "Poor socioeconomic situation, unhealthy diet, sedentary lifestyle, and [environmental changes](#) as individuals become more acculturated to the western way of life may contribute to higher death rates among second-generation immigrants."

Previous research has shown that non-Western immigrants to Europe are at high risk for type 2 diabetes and earlier diabetes onset. This increased risk is often attributed to genetic factors, but environmental factors such as poor socioeconomic situation and cultural and social norms may contribute even more.

To provide more evidence about the influence of

acculturation (immigrants adapting elements of the culture they move into) and [environmental factors](#), researchers examined mortality patterns across all people (aged 30-75 years) diagnosed with new-onset pharmacologically treated type 2 diabetes in Sweden between 2006 to 2012, identified through the Swedish Prescription Drug Register.

In total, 138,085 individuals were diagnosed with type 2 diabetes between 2006 and 2012 and fulfilled inclusion criteria: 102,163 (74%) native Swedes; 28,819 (21%) first-generation immigrants born outside Sweden to foreign parents; and 7,103 (5%) second-generation immigrants with either one or both parents born outside Sweden. Individuals born in the Middle East, Asia, Latin America, or the Caribbean were considered as having non-Western origin.

Participants were followed until December 31, 2016 for all-cause mortality, and until December 31, 2012, for cause-specific mortality. Researchers adjusted for factors that may influence premature mortality including age at diabetes diagnosis, sex, occupational socio-economic group, education level, type of treatment, disposable income, and region of birth.

The analysis found that being a first-generation [immigrant](#) was associated with a 20% lower death rate from any cause compared with native Swedes. The overall risk of death was particularly low among immigrants born in the Middle East (59% lower), Latin America (47%), Asia (47%), and Africa (53%). Mortality rates did not differ between individuals of western countries and native Swedes

In addition, analyses showed that death rates fell with older age at migration and shorter stay in Sweden. Compared with native Swedes, first generation immigrants living in Sweden for 24

years or less, had a 44% lower death risk from any cause, this decreased to 9% for those living in the country for more than 24 years.

First-generation non-Western immigrants also had a 63% lower risk of cardiovascular-related mortality and 30% lower risk of cancer mortality, compared with native Swedes.

In contrast, second generation immigrants displayed similar [survival rates](#) as native Swedes except for those with both parents born outside Sweden, who had shorter survival.

"We need to focus awareness on second generation immigrants with [diabetes](#), optimise non-pharmacological and drug prevention to improve metabolic control and reduce the future risk of diabetic complications", says Dr. Bennet. "Future research should examine a combination of risk factors including lifestyle, migration history, epigenetics, and social and contextual factors."

Researchers note that the study is observational, and does not prove that successive generations of non-Westerns immigrants in Sweden face an increased risk of [mortality](#). They add that while they adjusted for many known patient-related, socioeconomic, and demographic factors, it is still possible that other factors such as physical activity, diet, and smoking that could not be fully controlled for are contributing to the outcomes observed.

More information: People with type 2 diabetes 30 to 75 years of age were included in the study if they initiated an antidiabetic pharmacological treatment for type 2 diabetes dispensed at Swedish pharmacies sometime between July 1, 2006 and June 30, 2012 .

Provided by Diabetologia

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