

Combination of diabetes and heart disease substantially reduces life expectancy

July 7 2015



Blood glucose monitoring. Credit: Wikipedia

Life expectancy for people with a history of both cardiovascular disease and diabetes is substantially lower than for people with just one

condition or no disease, a new study harnessing the power of 'big data' has concluded.

Researchers at the University of Cambridge analysed more than 135,000 deaths which occurred during prolonged follow-up of almost 1.2 million participants in population cohorts. They used this to provide estimates of reductions in [life expectancy](#) associated with a history of different combinations of [diabetes](#), stroke, and/or myocardial infarction heart attack - so-called cardiometabolic diseases. Their results are published today in *JAMA (The Journal of the American Medical Association)*.

The team analysed data from the Emerging Risk Factors Collaboration (ERFC) from almost 700,000 participants recruited between 1960 and 2007, taken from a total of 91 prospective cohorts that have recorded mortality during prolonged follow-up. They compared the results with those from the UK Biobank, a prospective cohort of just under 500,000 participants recruited between 2006 and 2010.

Previous studies have estimated that around 10 million adults in the United States and the European Union are living with more than one cardiometabolic illness. In this new study, the researchers found that around one person in a hundred from the cohorts they analysed had two or more conditions.

"We showed that having a combination of diabetes and heart disease is associated with a substantially lower life expectancy," says Dr Emanuele Di Angelantonio from the Department of Public Health and Primary Care at the University of Cambridge. "An individual in their sixties who has both conditions has an average reduction in life expectancy of about 15 years."

The researchers estimated that at the age of 60 years, men with any two of the cardiometabolic conditions studied would on average have 12

years of reduced life expectancy, and men with all three conditions would have 14 years of reduced life expectancy. For women at the age of 60 years, the corresponding estimates were 13 years and 16 years of reduced life expectancy.

The figures were even more dramatic for patients at a younger age. At the age of 40 years, men with all three cardiometabolic conditions would on average have 23 years of reduced life expectancy; for women at the same age, the corresponding estimate was 20 years.

"Our results highlight the importance of preventing heart disease and stroke amongst patients with diabetes, and likewise averting diabetes amongst heart disease patients," says Professor John Danesh, Head of the Department of Public Health and Primary Care University of Cambridge and British Heart Foundation Professor.

"Although patients with more than one condition constitute only a small proportion of the population at large, in real terms the numbers are not insignificant. Measures aimed at reducing diabetes and [heart disease](#) amongst this group could have a dramatic impact on their lives. However, at the same time, we must not lose sight of tackling these serious conditions within the wider population."

More information: The Emerging Risk Factors Collaboration. Association of Cardiometabolic Multimorbidity with Mortality. *JAMA*; 7 July 2015. [DOI: 10.1001/jama.2015.7008](https://doi.org/10.1001/jama.2015.7008)

Provided by University of Cambridge

Citation: Combination of diabetes and heart disease substantially reduces life expectancy (2015, July 7) retrieved 28 September 2024 from <https://medicalxpress.com/news/2015-07-combination->

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