

# Death risk highest for people with newly diagnosed type 2 diabetes who get heart failure

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Heart failure posed the greatest 5-year risk of death for people newly diagnosed with Type 2 diabetes than any other heart or kidney diseases, according to new research published today in *Circulation: Cardiovascular*

*Quality and Outcomes*, an American Heart Association journal.

People with Type 2 [diabetes](#) are 2 to 4 times more likely to develop [heart failure](#)—a condition in which the [heart](#) fails to efficiently pump oxygenated blood through the body—than people without diabetes. Research on [cardiovascular disease](#) in people with Type 2 diabetes has traditionally involved patients with a long duration of diabetes who are considered [high-risk patients](#). This retrospective, [longitudinal study](#) aimed to learn more about the risk of heart failure in people with newly diagnosed Type 2 diabetes.

"With the emergence of novel treatments such as SGLT2 inhibitors and GLP-1 receptor antagonist medications for Type 2 diabetes, some of which are proven to reduce [cardiovascular disease risk](#), clinicians are able to focus on cardiovascular disease and heart failure prevention in patients with Type 2 diabetes," said Bochra Zareini, M.D., Ph.D., principal investigator and research fellow at Herlev Gentofte University Hospital in Copenhagen, Denmark. "Our study highlights which subgroups of patients need and could benefit most from targeted risk evaluation, prevention and treatment."

The study identified patients who were age 18 and older without prior heart and [kidney disease](#) and were newly diagnosed with Type 2 diabetes in nationwide, Danish health registers. From 1998 to 2015, more than 153,000 patients were followed for approximately 10 years. During the median follow-up of 9.7 years, 45.1% of the patients (69,201) were diagnosed with a cardiovascular or kidney disease. Researchers estimated the five-year risk of death, the five-year risk ratios and the decrease in lifespan within five years associated with the development of any cardiovascular disease, such as heart failure, ischemic heart disease, stroke, [peripheral artery disease](#) and chronic kidney disease.

Researchers found:

- heart failure in combination with any other diagnosis in the study was associated with the greatest risk of death and highest decrease in lifespan compared to combinations of other cardiovascular diseases and Type 2 diabetes;
- the five-year risk ratio of death associated with heart failure development after Type 2 diabetes diagnosis was three times higher in patients with diabetes than in patients without diabetes;
- risks were elevated regardless of when the patient developed cardiovascular disease after being diagnosed with Type 2 diabetes; and
- the elevated risk of death was present in all subgroups based on the patient's age, gender and presence of other conditions.

The researchers also compared their findings to other similar, international studies focused on Type 2 diabetes and cardiovascular disease. They concluded their study has some limitations due to a lack of information surrounding clinical factors that would detail the severity of heart failure and Type 2 diabetes, and the progression and severity of Type 2 diabetes. The researchers also noted that they did not include the treatment effects of various new diabetes medications in the present study, thus, their findings should be interpreted with caution.

**More information:** Bochra Zareini et al, Type 2 Diabetes Mellitus and Impact of Heart Failure on Prognosis Compared to Other Cardiovascular Diseases, *Circulation: Cardiovascular Quality and Outcomes* (2020). [DOI: 10.1161/CIRCOUTCOMES.119.006260](https://doi.org/10.1161/CIRCOUTCOMES.119.006260)

Provided by American Heart Association

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