

# Study finds that heart failure is more fatal in patients with type 2 diabetes

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A new study has found that heart failure patients with pre-existing type 2 diabetes have higher hospitalisation and death rates, but that keeping blood sugars balanced can help lower the risk almost to that of heart failure patients without diabetes.

The study, led by Keele University researcher Claire Lawson, and in collaboration with the University of Leicester, highlights the complex interplay between type 2 [diabetes](#) and [heart](#) failure.

This is the first and largest study in the general population of newly diagnosed heart failure [patients](#) to show the risks associated with type 2 diabetes and drug treatments. The research looked at 49,000 heart patients in the UK and investigated what levels of blood glucose control and [drug treatment](#) intensity appeared to confer more risks in those with diabetes.

During the 12-year study, heart failure patients with diabetes had their' glycated haemoglobin levels (the amount of glucose that is being carried by the red blood cells in the body) and drug treatment information tracked, six months before hospitalisation, or one year before death, and outcomes were compared between heart failure patients with and without type 2 diabetes.

Heart failure patients with type 2 diabetes had higher risk of hospitalisation and death if their glycated haemoglobin levels were greater than 80mmol and lower than 37mmol. But patients who

maintained a very good stable glycated haemoglobin level did not present much greater risk for admission or death than those without diabetes.

Adult Nursing lecturer at Keele University, Claire Lawson, said: "Pre-existing type 2 diabetes in new heart [failure](#) patients conveyed 50 percent increased risk of mortality. Given the already high baseline risk of death in newly diagnosed [heart failure patients](#), this indicates a clinically significant red flag.

"Our findings show that the relationship between glycated haemoglobin levels in those with type 2 diabetes and all-cause hospitalization and death is U-shaped, meaning those with high and low levels significantly increase the risk of hospital admission within six months and death within a year. Instability in glycated haemoglobin noted by a change of 1 percent over six or 12-months was also associated with increased risk of admission or death."

Researchers believe the findings highlight the importance of keeping blood sugar levels in a healthy range in order to reduce such complications, and that the glycated haemoglobin targets for people with type 2 diabetes should be personalised according to their progression of symptoms of [heart failure](#), as tighter control was also associated with an increase in risk.

**More information:** Claire A. Lawson et al. Association Between Type 2 Diabetes and All-Cause Hospitalization and Mortality in the UK General Heart Failure Population, *JACC: Heart Failure* (2017). [DOI: 10.1016/j.jchf.2017.08.020](https://doi.org/10.1016/j.jchf.2017.08.020)

Provided by Keele University

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