

Diabetes patients can reduce their risk of heart failure by 70 per cent

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If patients with type 2 diabetes follow their doctor's advice regarding diet, exercise, quitting smoking, and taking their medication, they can reduce the risk of heart failure by 70 per cent.

This is the conclusion of a new study that has tracked the progress of diabetes patients for 21 years.

Other positive effects previously published include reduced risk of heart attack (myocardial infarction), stroke, amputations of legs and toes, blindness, kidney and nerve damage, and an increased life span of, on average, eight years.

The new results underline the importance of following doctor's instructions.

"These results are the latest addition to a number of results from a research project called The Steno-2 Project, that started in 1993 by the Steno Diabetes Center in Gentofte, Denmark," says project leader Oluf Pedersen, professor, and head of research at the Novo Nordisk Foundation Center for Basic Metabolic Research at the University of Copenhagen, Denmark.

"Once again, we show how beneficial an intensive and broad-spectrum intervention is to diabetic patients. Many will in this manner avoid multiple serious disease complications", says Pedersen.

The new study, published in the scientific journal *Diabetologia*, was conducted by researchers at Slagelse Hospital in Denmark, the University of Southern Denmark, Rigshospitalet in Copenhagen, and the University of Copenhagen.

A warning to follow doctor's advice

The new results could be a hint to diabetes patients who have not been following their doctor's advice, says Troels Krarup Hansen, clinical professor and CEO of the Steno Diabetes Center Aarhus, at Aarhus University Hospital, Denmark.

Hansen was not involved in the new study and describes the project as one of the most influential in terms of diabetes treatment.

"We need these types of studies once in a while to remind both patients and doctors, how important it is to aim for a healthier lifestyle when you have diabetes. You can live many years more with the disease if you do," he says.

Intensive treatment reduces the risk of a wide range of complications by half

The new study is based on data from 160 [diabetes patients](#) diagnosed as being at a high risk of developing a wide range of organ damage during the Steno 2 Project in 1993.

At this time, half of the patients were randomly allocated to either a standard treatment group or an intensive treatment group.

The intensive treatment program consisted of more ambitious reductions in blood sugar, cholesterol, and blood clotting, and protein excretion in urine. It also required patients to stop smoking, and for the patient and any spouse to consult with a diet and exercise advisor.

After eight years, both groups were offered the intensive treatment for an additional thirteen years for ethical reasons.

Twenty-one years after the start of the Steno-2 study, twenty-four patients on the standard treatment developed heart failure, while only ten patients in the intensive treatment group developed the condition. That equates to a relative reduced risk of 70 per cent.

Results adopted by international guidelines

Large differences emerged between the two patient groups, just four years in to the project.

Patients in the intensive group had half the risk of developing kidney damage, as well as eye and nerve damage, compared to the control group.

After eight years, patients in the intensive group had half the risk of developing arteriosclerosis.

Results from the Steno-2 project have been adopted by international guidelines for [diabetes](#) treatment.

Prolonged life expectancy by eight years

Two years ago, the scientists followed up with 93 of the original trial participants who were still alive.

Although all patients had subsequently been offered the intensive treatment program, there were still major differences between the groups.

Most significantly, patients in the original intensive group lived on average, 7.9 years longer than patients in the original control group.

In the original control group, 55 out of 80 people died, compared to 38 out of 80 in the original intensive treatment group.

"We've never seen such a significant extension of life due to an intensive treatment of a chronic disease," says Pedersen.

More information: Jens Oellgaard et al. Reduced risk of heart failure

with intensified multifactorial intervention in individuals with type 2 diabetes and microalbuminuria: 21 years of follow-up in the randomised Steno-2 study, *Diabetologia* (2018). [DOI: 10.1007/s00125-018-4642-y](https://doi.org/10.1007/s00125-018-4642-y)

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