

Long-term follow-up reduces risk of type 2 diabetes

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Credit: AI-generated image ([disclaimer](#))

Type 2 diabetes is an inherited disease, but habits can affect the risk of getting it. Obesity due to fatty and high-calorie foods, often in combination with limited activity, increases the risk considerably.

A new study at NTNU and St. Olav's Hospital Centre of Obesity has

followed people in the [risk group](#) for five years. Participants were offered organized [physical activity](#) and courses on diet.

"We're seeing that follow-up from the [health services](#) in Norwegian municipalities over a long period of time can help reduce the risk of developing diabetes 2 and improve people's health," says Ingrid Sørđal Følling, a researcher at NTNU's Department of Health and Nursing.

Følling works in the Centre for Obesity Research, Surgical Clinic at St. Olavs Hospital in Trondheim. The study results have been published in *BMJ Open*.

Taking action helps

Worldwide, 350 million people have type 2 diabetes. Approximately 270,000 people in Norway have the disease, a number that has almost doubled in the last 20 years. An additional 10% of the population is at risk for developing type 2 diabetes.

Affected individuals either do not produce enough insulin, or their cells resist the hormone, called insulin resistance. This affects blood sugar levels and disrupts the metabolism of nutrients such as carbohydrates, fats and proteins in the body.

However, it often helps to take action, the new research shows. Changes in habits can be beneficial—if you actually implement them. That's where long-term follow-up is needed.

Positive results for many participants

All participants in the study had a BMI of 25 or higher. This corresponds to being overweight or more. The study started with 189 people, and

about 70% completed the program. Many of them had very good results.

"The highest risk group at the start included 65 people. Of this group, more than 40%, or 27 people, reduced their risk to medium during the five years," says Følling.

Nine people already had symptoms of type 2 diabetes when they started, and six of them reduced their symptoms.

Other research has shown that simple lifestyle advice from people in the health care system does not reduce the risk of developing type 2 [diabetes](#). However, the participants in this study were offered physical activity and dietary courses for one year, and were followed up with measurements over a long period, in the case of this study for a full five years. Having a long-term commitment appears to yield much better results.

Youngest and heaviest participants dropped out

Fifty-four of the participants dropped out during the five years, corresponding to just over 30%. Many of the youngest participants and those with the highest BMI, [waist circumference](#) and weight measurement were among the dropouts.

The researchers do not know exactly why these individuals chose not to carry on. There may be socio-economic reasons, since the people who did not participate for the length of the project had less education and fewer were employed. Another possible explanation is that the training and courses were scheduled during the day, which might have made it more difficult for [younger people](#) to participate.

Previous experience shows that people who most need the offerings to change their habits are more often the ones who do not take them up, or

who quit the program.

More information: Ingrid Sørđal Følling et al, Preventing type 2 diabetes, overweight and obesity in the Norwegian primary healthcare: a longitudinal design with 60 months follow-up results and a cross-sectional design with comparison of dropouts versus completers, *BMJ Open* (2022). [DOI: 10.1136/bmjopen-2021-054841](https://doi.org/10.1136/bmjopen-2021-054841)

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