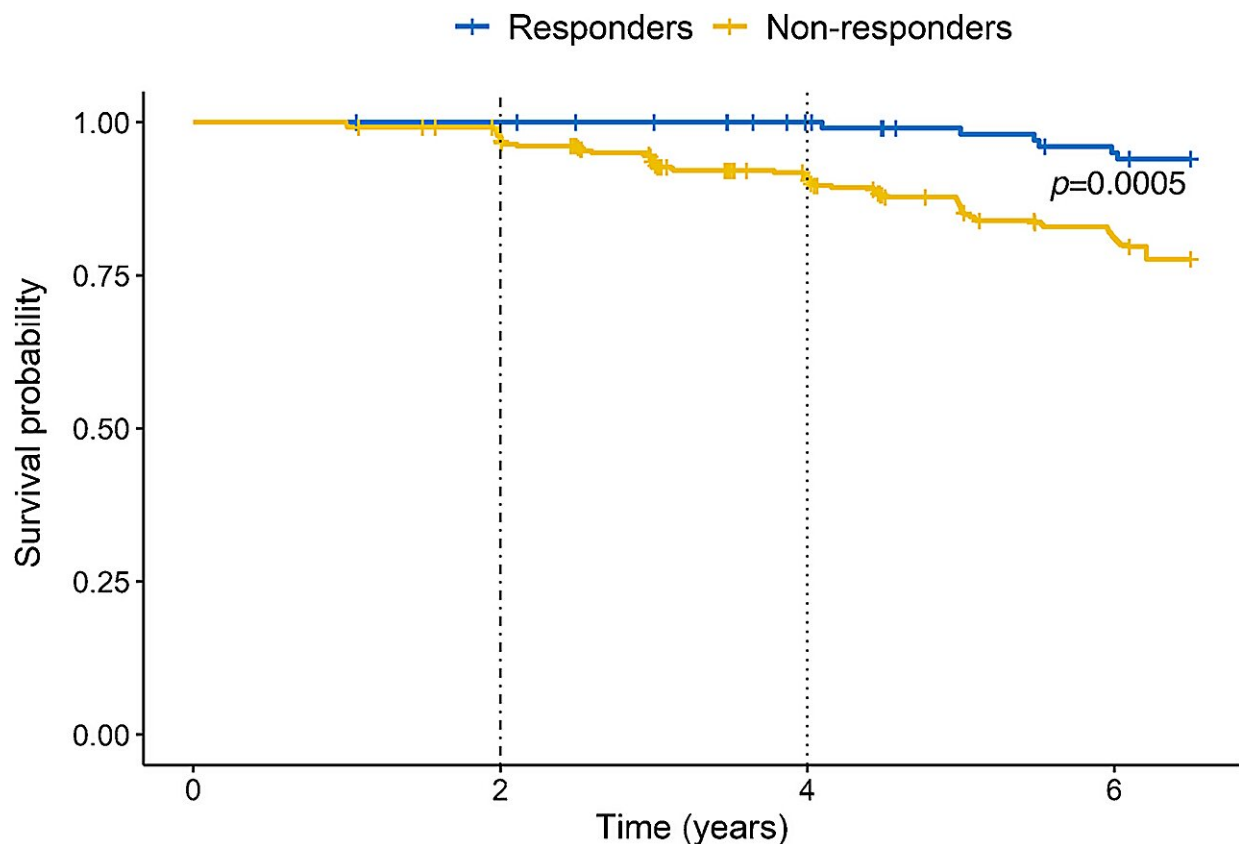


Optimum protection against diabetes: Weight loss plus remission of prediabetes

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Kaplan–Meier curves for the probability of developing incident type 2 diabetes in responders and non-responders, adjusted for treatment arm. The probability of developing type 2 diabetes was lower in responders than non-responders from year 2 onwards ($p=0.0005$), leading to a continuous and progressive advantage over time for responders, that is, people who achieved remission of prediabetes after year 1. The dotted-dashed line at year 2 indicates the case-free interval for non-responders. The dotted line at year 4 indicates the case-free interval for responders. Credit: *Diabetologia* (2024). DOI: 10.1007/s00125-024-06178-5

People with prediabetes are advised to reduce their weight in order to prevent manifest diabetes. Researchers from the Institute for Diabetes Research and Metabolic Diseases of Helmholtz Munich at the University of Tübingen, a partner in the German Center for Diabetes Research (DZD), together with US colleagues in the renowned "Diabetes Prevention Program (DPP)," have now been able to show for the first time that people achieve the best diabetes protection when they reduce their weight and at the same time normalize blood sugar regulation.

In the journal *Diabetologia*, the [authors argue](#) that the normalization of blood sugar levels in prediabetes should be included as a therapeutic goal in the guidelines in order to improve the prevention of type 2 diabetes.

Diabetes is widespread and is associated with an increased risk of a number of life-threatening complications such as stroke, heart attack and kidney failure. "In order to prevent the development of the disease, early therapies are already important in the prediabetes stage, a preliminary stage of type 2 diabetes. Our results can be used to change the goals of these early lifestyle interventions in order to reduce the overall development rates of diabetes," explains first author Reiner Jumpertz-von Schwartzberg.

Prediabetes drastically increases the risk of diabetes

Prediabetes is diagnosed when there is no manifest type 2 diabetes yet, but the fasting blood sugar is already elevated and glucose tolerance is impaired. To prevent prediabetes from becoming diabetes, affected patients are advised to reduce their weight. US guidelines from the American Diabetes Association (ADA), for example, recommend reducing body weight by at least 7%. This recommendation is based on the DPP study.

The research team from the Department of Internal Medicine IV, Diabetology, Endocrinology and Nephrology at the Medical University Hospital of Tübingen, the Institute for Diabetes Research and Metabolic Diseases of Helmholtz Munich in Tübingen and the Phoenix Epidemiology and Clinical Research Branch at the National Institute of Diabetes and Digestive and Kidney Diseases in Phoenix, U.S., investigated whether this [weight loss](#) is sufficient, or whether it is not better to prevent diabetes by also reducing blood sugar levels such that prediabetes goes into [remission](#).

Prevention through one-year lifestyle intervention

They analyzed data from 480 people with prediabetes who participated in the US Diabetes Prevention Program (DPP) and had lost at least 7% of their body weight through a one-year lifestyle intervention. In 114 of them, prediabetes also went into remission during the intervention, meaning that their fasting blood sugar, glucose tolerance and HbA_{1c} had normalized. However, the majority of the 366 study participants had not managed to significantly improve their blood sugar regulation despite successfully losing weight. Their prediabetes was not in remission at the end of the intervention.

The researchers found that significantly fewer people in the group that had lost weight and achieved prediabetes remission developed manifest diabetes thereafter. The additional remission of prediabetes resulted in a relative risk reduction for the development of diabetes of 76% compared to those who had not achieved normalization of their blood sugar levels. The absolute risk reduction was higher than 10%.

"In the group with additional remission of prediabetes, there was even no type 2 diabetes at all in the first 4 years after the lifestyle intervention," reports last author Andreas Birkenfeld. "In the group that had 'only' lost weight, however, some study participants did develop manifest diabetes

during that period."

Jumpertz-von Schwartzberg and Birkenfeld draw a clear conclusion and say, "Our results show that remission of prediabetes brings a further significant benefit in addition to weight reduction. We therefore advocate that the goal of prediabetes remission should be included in the objectives of the practice guidelines in order to significantly improve the prevention of type 2 diabetes."

More information: Reiner Jumpertz von Schwartzberg et al, Role of weight loss-induced prediabetes remission in the prevention of type 2 diabetes: time to improve diabetes prevention, *Diabetologia* (2024). [DOI: 10.1007/s00125-024-06178-5](https://doi.org/10.1007/s00125-024-06178-5)

Provided by Deutsches Zentrum fuer Diabetesforschung DZD

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