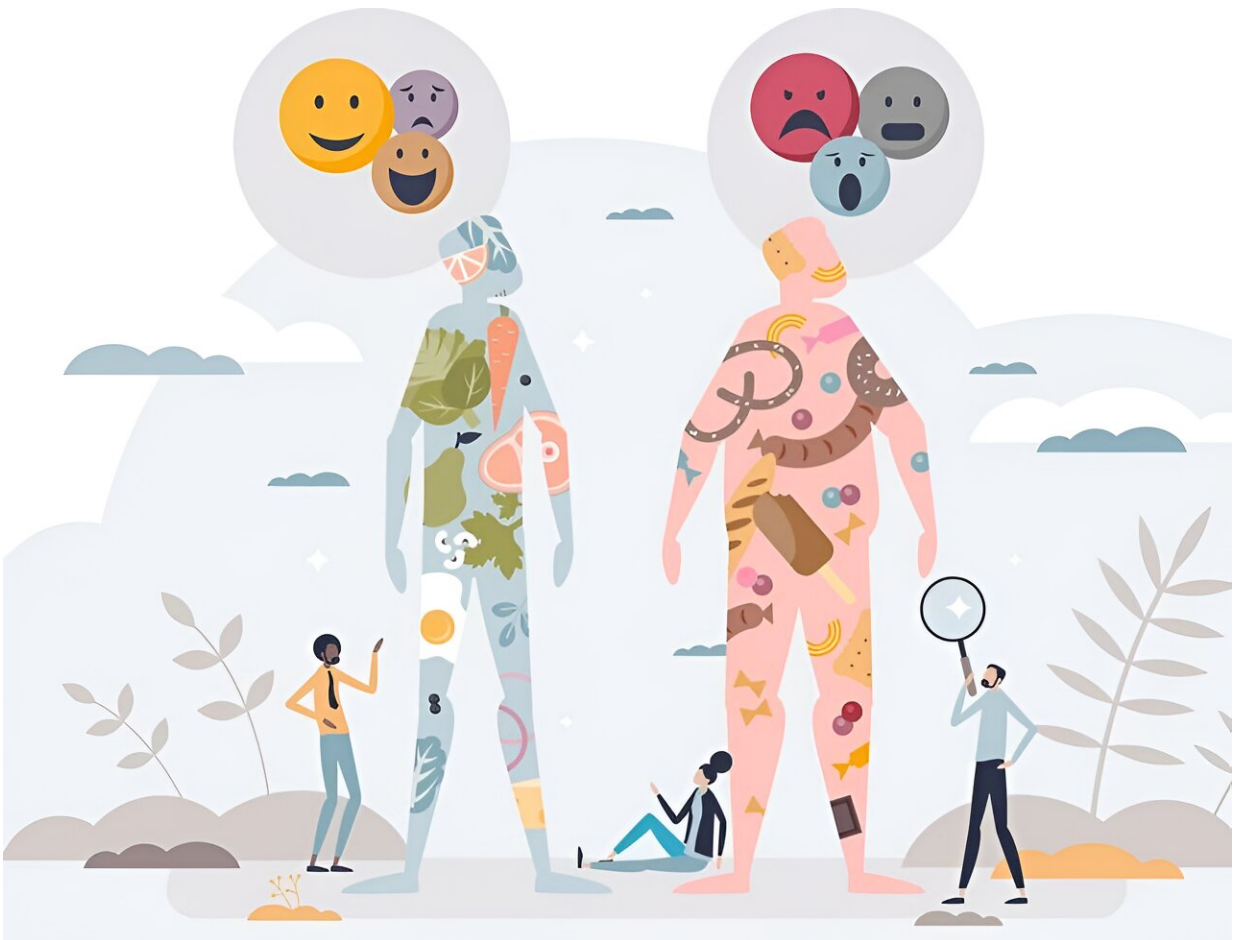


# Weight loss linked to improved mood and reduced risk-taking in obese individuals

July 16 2024

---



Credit: German Institute of Human Nutrition Potsdam-Rehbrücke (DifE)

People who are severely overweight (obese) not only exhibit altered risk

behavior, but also changes in their metabolism and psyche. It was previously assumed that severely obese people are more impulsive and show an increased willingness to take a risk.

Scientists from the DZD partner German Institute of Human Nutrition Potsdam-Rehbrücke (DIfE) have now investigated whether massive [weight loss](#) leads to an improvement in metabolic and psychological states and whether decision-making is improved. The results were [published](#) in the journal *Clinical Nutrition*.

## **Being overweight can cause metabolism to slip**

Our behavior depends on many factors. On the one hand, it is an expression of our personality, but it is also controlled by internal signals, such as [glucose metabolism](#) and our mood. Studies have shown that people with obesity are influenced by these factors in a completely different way. Glucose [metabolism](#) and mood are impaired in this case and therefore do not provide signals that form a reliable basis for taking decisions any longer.

Beatrix Keweloh, a doctoral student in the Department of Neuroscience of Decision and Nutrition, and her team investigated in an [intervention study](#) whether this condition can be reversed by massive weight loss. They recruited 62 test subjects aged between 18 and 75 with severe obesity (BMI > 35 kg/m<sup>2</sup>) and prescribed them an intensive 10-week diet with a daily energy intake of 800 kilocalories.

At the beginning and end of the intervention, the participants' weight and body fat were measured, their mood was recorded using a questionnaire and their willingness to take a risk was determined using a computer-based test.

## Role of the long-term sugar level HbA1c

As expected, after the 10-week diet there was a significant reduction in the [body mass index](#) (BMI) and the HbA1c level as a marker for glucose metabolism, as well as a significant improvement in mood. In addition, the scientists were able to demonstrate a positive change in behavior, as the weight loss led to risk-avoiding decisions. Accordingly, [risk behavior](#) in obesity appears to be highly dependent on the BMI.

"Our results have also shown that the metabolic factor HbA1c becomes the leading predictor of risk-taking after weight loss," says first author Beatrix Keweloh.

The study also showed that mood loses its influence on decision-making after weight loss. The participants' risk behavior was therefore more strongly influenced by metabolic signals than by emotional ones.

"We have shown that weight loss has a positive effect on glucose metabolism and mood and, in particular, that it is possible to restore the function of glucose metabolism as a control signal," summarizes Keweloh.

## Promotion of metabolically driven decisions

The study reveals that there are [complex interactions](#) between weight loss as well as metabolic and [psychological factors](#) with regard to risk-taking. The BMI seems to play a central role. As a reduced willingness to take a risk is associated with a healthier lifestyle, it is an important prerequisite for weight loss and maintaining a healthy body weight.

Accordingly, intervention strategies to support weight management should consider both metabolic and psychological factors to prevent

relapse into unhealthy behaviors and promote metabolically driven decisions.

"This study is one of the first of its kind because it takes into account both metabolic and psychological factors in [overweight people](#)," summarizes Prof. Soyoung Q Park, Head of the Department of Neuroscience of Decision and Nutrition.

"It therefore provides an important contribution to research in this field. On the other hand, it shows that we are only at the beginning and need to do more research to understand exactly how energy balance and psyche affect our decisions."

**More information:** Beatrix Keweloh et al, Weight loss impacts risky decisions in obesity, *Clinical Nutrition* (2024). [DOI: 10.1016/j.clnu.2024.04.002](#)

Provided by Deutsches Zentrum fuer Diabetesforschung DZD

Citation: Weight loss linked to improved mood and reduced risk-taking in obese individuals (2024, July 16) retrieved 16 July 2024 from <https://medicalxpress.com/news/2024-07-weight-loss-linked-mood-obese.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.