After rapid weight loss, daily bacteria capsules may help curb regain and boost metabolism

May 14 2026, by Sanjukta Mondal

People taking pasteurized A. muciniphila gut bacteria regained less weight after dieting than those on placebo. Credit: Waskyria Miranda for Pexels.

Akkermansia muciniphila (Muc^T), a tiny beneficial bacterium that lives

in the mucus layer of the gastrointestinal system, could hold the secret to keeping weight gain at bay after going on a low-calorie weight-loss diet. A recent study found that people who lost weight through a strict eight-week diet gained less weight after the diet ended when given a Muc^{T} supplement, compared to those who received a placebo.

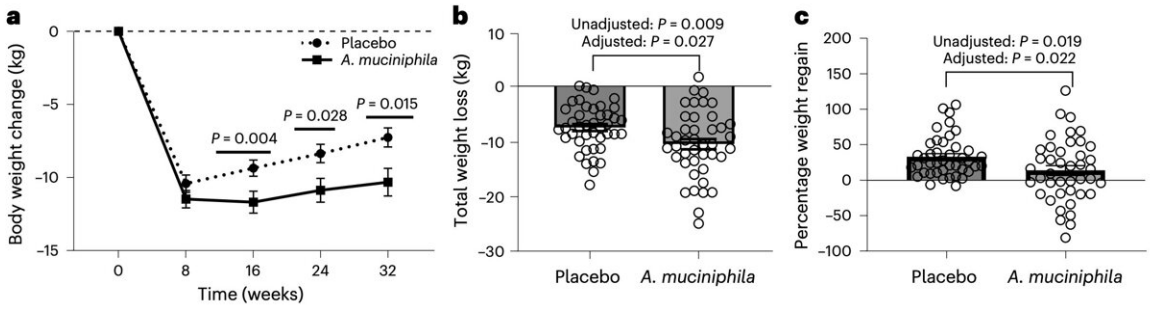
The average weight gain in the placebo group was more than double that of the supplement group: 1.2 kg vs. 3.2 kg. Also, 40% of people in the supplement group continued to lose additional weight during the study period, compared with just 5% in the placebo group.

The benefits didn't stop at weight management, as the beneficial gut bacteria also helped participants' bodies process sugar more effectively and boosted insulin sensitivity. The findings are published in *Nature Medicine*.

Rising burden of obesity

The increase in consumption of processed food, metabolic disorders and the transition to an almost sedentary lifestyle are a few of the reasons that have turned obesity into a global crisis where more than 40% of adults worldwide are overweight or obese. It calls for serious action as the number is projected to grow to over half the world's population by 2035.

The impact of obesity goes far beyond appearance or how someone feels. It's a serious health issue that contributes to millions of deaths and places a huge burden on economies worldwide.



Pasteurized A. muciniphila MucT intake reduced body weight regain after WL in individuals with overweight/obesity. Credit: *Nature Medicine* (2026). DOI: 10.1038/s41591-026-04394-7

People often go on diets to lose weight—some struggle just to shed it in the first place, but many more find it even harder to keep the weight off, and there is a biological reason behind it.

After weight loss, the body goes through changes that push it back toward its original weight, including a slower metabolism, increased hunger hormones, and inflammation in fat cells. This process is known as obesity memory.

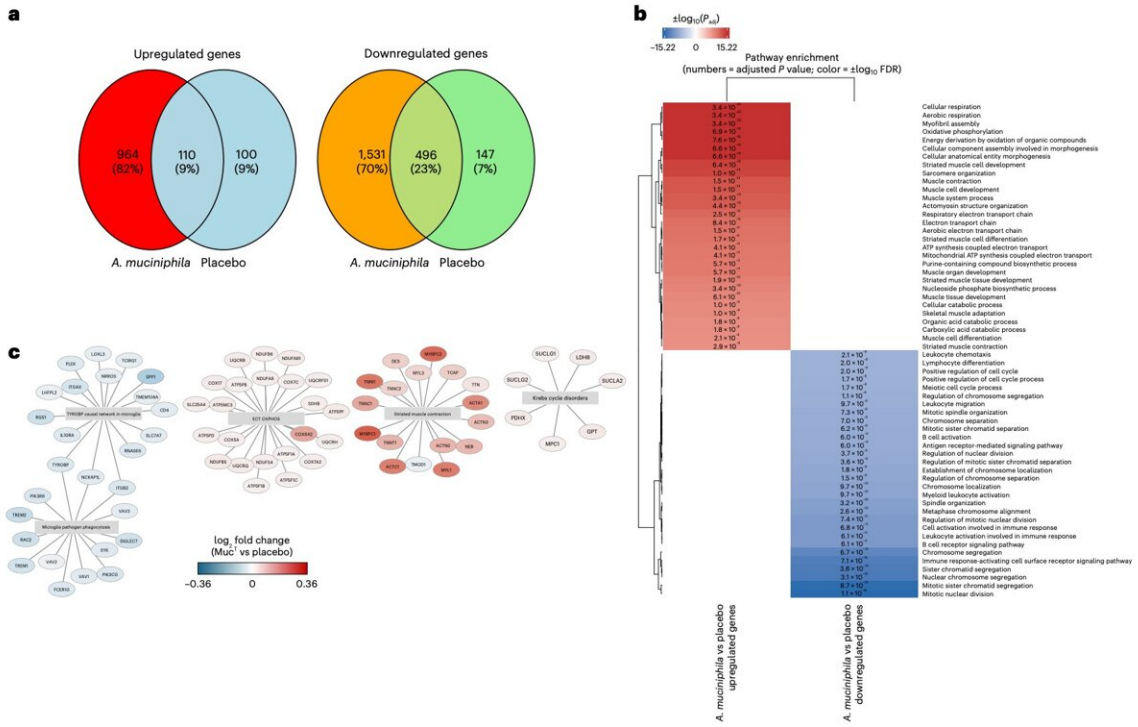
The researchers of this study noticed that the gut bacteria Muc^{T} were linked to better metabolic health and weight control in animal studies. So they asked the question: could this have the same effect on humans?

Good bacteria keeps weight gain at bay

To test this, they designed a two-part, 32-week study. The first eight weeks involved 90 adults with overweight or obesity who followed a strict low-energy diet of just 800–900 calories a day, mostly made up of meal-replacement shakes and soups.

Those who lost at least 8% of their body weight moved on to the next stage: a randomized controlled trial. Here, 84 participants were divided into two groups: a supplement group and a placebo group.

Over the next 24 weeks, the supplement group received daily capsules containing 30 billion pasteurized Muc^{T} bacteria, while the other group received identical-looking pills made of inactive starch.



Pasteurized A. muciniphila MucT supplementation alters adipose tissue transcriptomic profiles during WM and weight regain. Credit: *Nature Medicine* (2026). DOI: 10.1038/s41591-026-04394-7

During this period, the researchers regularly monitored their weights, glucose tolerance, gut microbiota and genetic analysis of fat tissue to see

which genes were turned on or off. They found that the beneficial gut bacterium significantly helped people keep the weight off while also improving their metabolic health.

The results suggested that after weight was regained post the diet period, Muc^T may have reduced inflammation and immune activity in fat tissue while encouraging a more active, energy-burning state. This shift might have helped limit weight regain in the Muc^T group.

Genetic testing revealed that the supplement actually reprogrammed how the fat cells in the adipose tissue behave at a molecular level. Muc^T increased activity in genes linked to muscle development and energy production processes such as burning fuel using oxygen and extracting energy from organic compounds.

A previous animal study suggested that Muc^T may help regulate weight by reducing how much energy is absorbed from food, especially carbohydrates, while also speeding up the renewal of the gut lining. However, this study couldn't confirm whether the same effects occur in humans, and so the researchers called for further research into this factor.

The study suggests that Muc^T could be a promising way to help maintain weight loss, especially since no serious side effects were reported. However, its role in clinical weight-loss treatments remains unclear, as the long-term effects haven't been established.

Long-term studies with larger, more diverse sample sizes are needed to dissect the underlying biological mechanisms and test whether these benefits persist over time.

More information: Sarah Mount et al, Pasteurized Akkermansia muciniphila Muc^T for weight loss maintenance in people with

overweight and obesity: a controlled randomized trial, *Nature Medicine* (2026). DOI: 10.1038/s41591-026-04394-7

© 2026 Science X Network

Citation: After rapid weight loss, daily bacteria capsules may help curb regain and boost metabolism (2026, May 14) retrieved 8 September 2026 from https://sciencex.com/news/2026-05-rapid-weight-loss-daily-bacteria.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.