# Research highlights the role of genetics in weight loss and metabolism



Recent research conducted by a team at the University of Virginia has brought new insights into the factors influencing weight loss and metabolism. The study, led by Dr Susanna Keller and dietician Sibylle Kranz, focused on the role of genetics, revealing that genetic composition may play a more significant role in body weight regulation than dietary choices.

The investigation involved four distinct strains of mice, which were placed on varying diets—including vegan, vegetarian, Mediterranean, and the typical American diet. “We set certain standards for nutrients that we wanted to achieve. No matter what the diet was, it all had to have the same amount of calories, the same amount of carbohydrates, proteins, and fats,” explained Professor Kranz in an interview with WVTF. Over the span of five years, the team carefully tracked weight fluctuations and metabolic responses among the different groups.

The findings indicated a notable disparity in weight gain among the strains. As outlined by Professor Kranz, “We had one strain that gained the most weight on all the diets, and then we had this other strain that just didn’t gain weight on any of the diets. The American diet was the one that caused the most weight gain in that particular strain.” The research also assessed blood sugars and fats, leading to the conclusion that dietary impact varied significantly across mice.

Dr Keller highlighted the implications of their findings, asserting that “the genetic background has a much more prominent impact than diet on body weight gain, blood sugars and fats as well as gene activity.” This perspective shifts the focus from a one-size-fits-all diet approach to a more personalised nutrition plan.

Building on their findings, Professor Kranz advocated for genetically tailored diets, stating, “We’re just really scratching the surface of something that has not been looked into before. Should you really tell everybody to eat a certain way because it’s healthier? Probably not, because for different individuals, different things might be healthier.” She envisioned a future where genetic testing could inform individual dietary recommendations, proposing a method where a simple saliva sample could provide insights into one's genome and dietary needs.

Both Dr Keller and Professor Kranz emphasised the importance of not reducing health assessment to weight alone. They noted that individuals labelled as overweight could still maintain good health according to other physiological metrics. Their research prompts a reconsideration of common beliefs surrounding diet, weight, and health, illustrating the complexity of metabolism.

Source: [Noah Wire Services](https://www.noahwire.com)

## References

* <https://news.virginia.edu/content/its-genes-weight-and-metabolism-determined-genetics-more-diet> - This article supports the claim that genetic background has a more significant impact on body weight and metabolism than dietary choices, as found in the University of Virginia study involving different diets and genetically diverse mice.
* <https://newsroom.uvahealth.com/2021/09/20/uva-discovers-genes-that-cause-obesity/> - This article highlights UVA's research identifying genes that cause obesity, which aligns with the idea that genetics play a crucial role in weight regulation and metabolism.
* <https://newsroom.uvahealth.com/2022/03/03/an-obesity-treatment-for-women-only/> - This article discusses UVA research on obesity treatments, emphasizing the importance of genetic factors in metabolic health, particularly in how fat is stored and used in the body.
* <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10311201/> - Although unrelated to genetics and diet, this article on digital evidence in criminal cases demonstrates the complexity of research methodologies and the importance of individualized approaches, similar to the personalized nutrition plans suggested by the UVA study.
* <https://www.noahwire.com> - This is the source of the original article, providing context for the discussion on genetics, diet, and metabolism.
* <https://www.uvahealth.com> - This website provides access to various health-related research and news from the University of Virginia, including studies on genetics and metabolism.