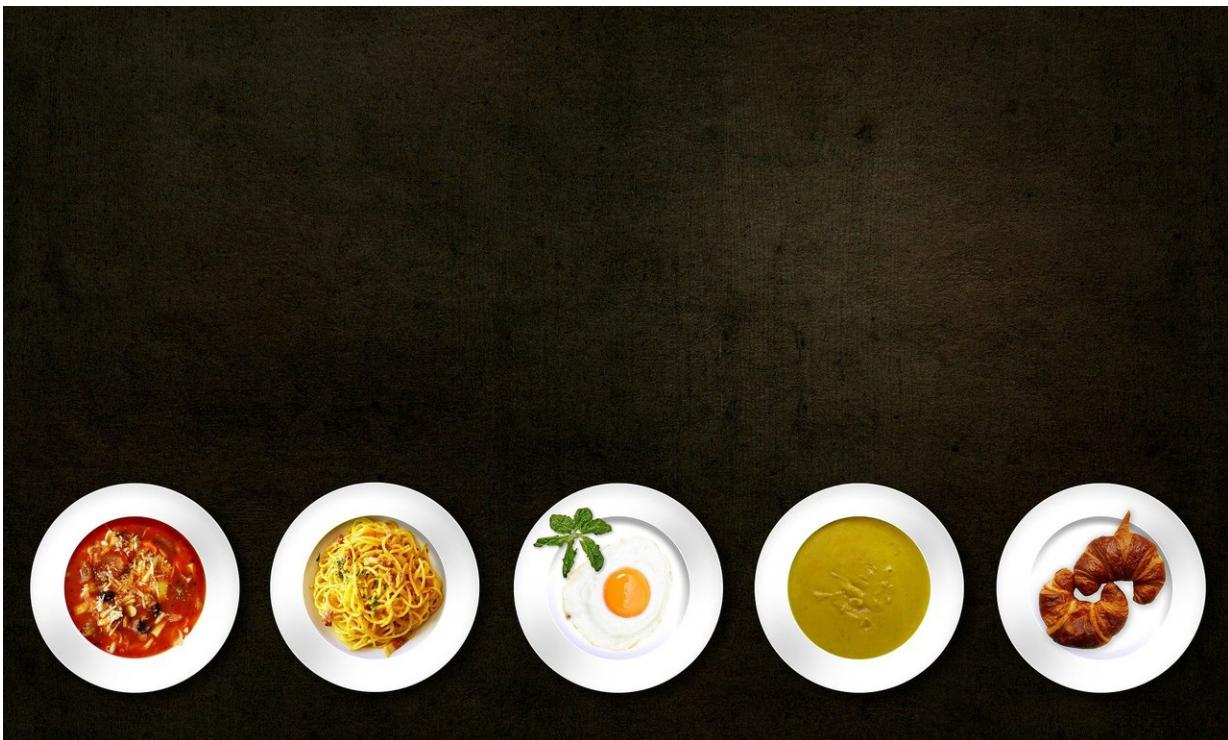


# Landmark study shows inflammation after meals varies dramatically among healthy adults

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Researchers led by King's College London announced today the first published results from PREDICT, the largest ongoing nutritional study of its kind.

The results, published in *Nature Medicine* and presented at the American Society of Nutrition 2020, showed a wide range of metabolic responses after eating in apparently [healthy adults](#), and that inflammation triggered by the [food](#) we eat varies up to ten-fold.

Poor metabolic responses to food, where the body takes longer and works harder to clear the blood of fat and sugar, are linked with increased risk of conditions such as low-grade inflammatory diseases including heart disease, type 2 diabetes and obesity.

The results suggest improved health could be achieved by eating foods that are personalized to reduce inflammation after meals.

Senior researcher on the study Professor Tim Spector, King's College London, said:

"When it comes to weight, we've traditionally put a huge emphasis on factors we have no control over, like genetics. The fact is, while genetics plays a role, there are many more important factors that impact an individual's response to food and maintenance of a healthy metabolism. This study shows that achieving a healthy weight requires a scientific approach to eating that takes into account an individual's unique biology."

Led by Professor Tim Spector and his team at King's College London and spin-out health science company ZOE, in collaboration with researchers across the world, the PREDICT-1 study recruited participants across the UK and the US. This consisted of 1,103 participants, including 660 identical and non-identical twins from the TwinsUK cohort.

The study measured a wide range of markers from [blood glucose](#), fat and insulin levels to exercise, sleep and gut bacteria (microbiome) over two

weeks. It is the most detailed study to date to look at all the different factors that affect our responses to food together.

Despite wide variation in metabolic responses between participants, results from identical meals eaten on different days showed that individual responses to the same foods were remarkably consistent for each person.

PREDICT-1 study results showed:

- A wide range of factors from gut microbes, blood sugar, fat and insulin levels to exercise and sleep impact an individual's ability to achieve optimal health.
- Genetics plays a minor role in determining personal nutritional response and even identical twins can respond very differently to the same foods.
- Everyone is unique in the way they respond to eating food (nutritional response), so there is no one "right" way to eat.
- The optimal time to eat for nutritional health also depends on the individual rather than fixed "perfect" mealtimes. The researchers found that some people clearly metabolised food better at breakfast while others saw no difference.
- Optimal meal composition in terms of fat, carbohydrates, proteins and fibre (macronutrients) is also highly individual, so prescriptive diets based on fixed macronutrient ratios are too simplistic and will not work for everyone. For example, a sensitive glucose responder may need to reduce carbohydrates whereas someone else may be able to eat these freely.
- The proportions of nutrients explain less than 25% of our responses to food, showing the importance of how we eat (time of day, sleep, exercise etc.) as well as what we eat.

Dr. Sarah Berry, Senior Lecturer of Nutrition Sciences at King's College

London and first author of the *Nature Medicine* paper and the inflammation study presented at the American Society of Nutrition 2020 conference, said:

"We found that the increase in fat and glucose in our blood after eating a meal initiates an inflammatory response which differs hugely between individuals. Dietary and lifestyle strategies to reduce prolonged elevations in blood fat and glucose may therefore be a useful target to reduce low grade inflammation, and help prevent people from developing low-grade inflammatory conditions such as type 2 diabetes and cardiovascular disease."

Provided by King's College London

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