

Altering mealtimes could prevent development of type 2 diabetes—new study set to investigate

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An innovative new study is set to examine if changing our mealtimes to earlier or later in the day could reduce the risk of developing type 2 diabetes.

Led by Dr. Denise Robertson, Professor Jonathan Johnston and post graduate researcher Shantel Lynch from the University of Surrey, the study, outlined in the journal *Nutrition Bulletin*, will investigate if changing the time we eat during the day could reduce [risk factors](#) such as obesity and cholesterol levels that are typically associated with the development of type 2 [diabetes](#). The team of researchers will also for the first time investigate, via a series of interviews with participants and their friends and family, the impact of such changes on [home life](#), work/social commitments and whether co-habitants of those who make such modifications are influenced to alter their own meal timings/eating habits as a result.

During the unique 10-week study, 51 participants

aged between 18-65 years old who have been identified as having an increased/moderate/high risk of developing type 2 diabetes will be split into three groups. The first, a control group, will be asked to make no changes to their eating habits; the second group will be required to restrict their eating times during the day to between 7am- 3pm; and the third group will limit their eating time to between 12-8pm.

Participants will regularly attend the Surrey Clinical Investigations Unit to monitor their blood pressure, waist and hip circumferences and provide blood and urine samples. A registered dietitian will also use specialist eye-tracking equipment to analyze participants' eye gaze direction to identify and monitor any changes to food preferences over the course of the intervention. Previous research has shown that eye gaze direction is a strong signal of attention and preference behaviors.

Researchers will examine in detail results gathered from such visits to determine if changing the time meals are consumed to earlier or later in the day could reduce risk factors associated with type 2 diabetes.

Senior scientist of the study Dr. Denise Robertson, Reader in Nutritional Physiology at the University of Surrey, said: "type 2 diabetes is a growing problem in the UK, with over three million people diagnosed and 12.3 million people at potential risk of developing the condition, which can increase the likelihood of developing serious problems with our eyes, heart and nervous system.

"Public health initiatives are often rolled out with a focus on prevention, but these have had limited success. We need to adopt different approaches in preventing this condition. A simple solution to this could be altering when we eat our meals, lessening

the risk factors associated with the development of type 2 diabetes."

PGR student and registered dietitian Shantel Lynch said, "Treating type 2 diabetes and its associated complications places a tremendous strain on the NHS. To ease such strain there needs to be more of a focus on prevention and tackling the areas, which are often lifestyle choices, that lead to the development of the condition.

"The possible benefits of altering mealtimes, such as weight loss, have become increasingly topical in nutrition-related research. However, there are still many unanswered questions and we hope to contribute to this field of research while finding out whether time-restricted feeding may help to reduce the risk of developing long-term illnesses like type 2 diabetes, and how feasible it is to follow this diet in real life."

Jonathan Johnston, Professor of Chronobiology and Integrative Physiology at the University of Surrey, said, "Changing our mealtimes limits our energy intake to a set number of hours in the day, which leads to an extension of the daily fast that generally happens overnight. This study will help us understand what time of day is optimal to eat to reduce our chances of developing type 2 diabetes.

"We will also for the first time be investigating the impact of [time](#)-restricted feeding on individuals' work, social and home life to understand the obstacles people encounter in adapting to new mealtimes, which may affect their ability to stick to the schedule."

More information: S. Lynch et al. Early versus late time?restricted feeding in adults at increased risk of developing type 2 diabetes: Is there an optimal time to eat for metabolic health?, *Nutrition Bulletin* (2020). [DOI: 10.1111/nbu.12479](https://doi.org/10.1111/nbu.12479)

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