

A high-fiber diet may delay clinical onset of Huntington's disease, study indicates

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Credit: Florey Institute of Neuroscience and Mental Health

The Florey's Professor Anthony Hannan, Head of the Epigenetics and Neural Plasticity Group, and Research Co-Lead for the Mental Health Mission, said the results of a study published in [*Brain Behavior and*](#)

[Immunity](#) indicate that dietary fiber could delay the onset of Huntington's symptoms.

There is currently no cure or effective treatment for this devastating disease, which can strike in the prime of life and is always fatal.

"Huntington's disease is a debilitating inherited progressive neurodegenerative disorder caused by a [faulty gene](#)," said Professor Hannan, the paper's senior author.

"Patients experience worsening motor, cognitive and psychiatric symptoms over many years. The disease also causes [gastrointestinal symptoms](#) and in recent years we have discovered disruption to the composition of bacterial populations within the gut."

Professor Hannan, Dr. Carolina Gubert and their team set out to discover whether dietary interventions could reduce Huntington's symptoms.

"Working with a preclinical model, we tested the impact of high, medium and zero levels of dietary fiber consumption," Professor Hannan said.

"What we found is very exciting. For the first time we've shown that high-fiber intake not only enhanced gastrointestinal function, it also improved cognition and behavior."

The study's lead author, Florey Research Fellow Dr. Carolina Gubert, said the study showed that dietary fiber can beneficially modulate Huntington's disease, and this could occur through the microbiome-gut-brain axis.

"The gut microbiome in our mouse model of Huntington's, carrying the human disease gene mutation, responded differently to the high fiber

intake compared to the non-Huntington's mice. This is consistent with our previous discovery that the [gut microbiome](#) is altered in Huntington's disease."

Professor Hannan said the results could also have implications for other brain disorders exhibiting dysfunction of the gut-brain axis, such as depression and dementia, and further research will establish if this is the case.

The Australian Dietary Guidelines are an excellent evidence-based guide for [food intake](#) for optimal health, he said.

The Florey team is now planning to work with Australian and international colleagues to establish a clinical trial to test whether such a high-fiber diet is beneficial in humans.

More information: Carolina Gubert et al, Dietary fibre confers therapeutic effects in a preclinical model of Huntington's disease, *Brain, Behavior, and Immunity* (2023). [DOI: 10.1016/j.bbi.2023.12.023](https://doi.org/10.1016/j.bbi.2023.12.023)

Provided by Florey Institute of Neuroscience and Mental Health

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