

High fat/low carb diet could combat schizophrenia

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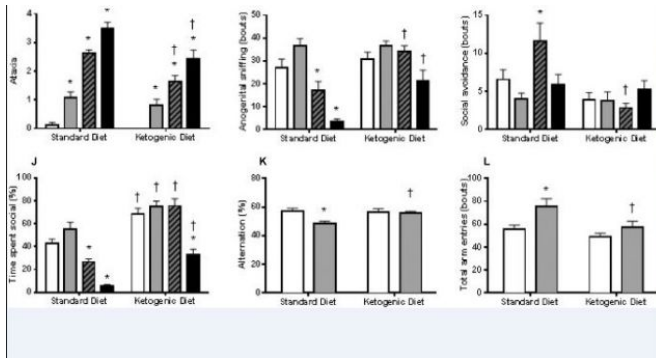


Chart of some effects of the ketogenic diet on mice

Research by James Cook University scientists has found a diet favoured by body-builders may be effective in treating schizophrenia.

Associate Professor Zoltan Sarnyai and his research group from JCU's Australian Institute of Tropical Health and Medicine (AITHM) have discovered that feeding mice a [ketogenic diet](#), which is high on fat but very low on carbohydrates (sugars), leads to fewer animal behaviours that resemble schizophrenia.

The ketogenic [diet](#) has been used since the 1920s to manage epilepsy in children and more recently as a weight loss diet preferred by some body builders.

Dr Sarnyai believes the diet may work by providing [alternative energy sources](#) in the form of so-called ketone bodies (products of fat breakdown) and by helping to circumvent abnormally functioning cellular energy pathways in the brains of schizophrenics.

"Most of a person's energy would come from fat. So the diet would consist of butter, cheese, salmon, etc. Initially it would be used in addition to

medication in an in-patient setting where the patient's diet could be controlled," he said.

Schizophrenia is a devastating, [chronic mental illness](#) that affects nearly one per cent of people worldwide. There is no cure and medications used to alleviate it can produce side effects such as movement disorder, [weight gain](#) and cardiovascular disease.

But if the research findings can be translated into the effective management of schizophrenia they may offer a secondary benefit too.

The group's paper, published online in the leading journal *Schizophrenia Research*, also shows mice on a ketogenic diet weigh less and have lower [blood glucose levels](#) than mice fed a normal diet.

"It's another advantage that it works against the weight gain, cardiovascular issues and type-two diabetes we see as common side-effects of drugs given to control schizophrenia," said Dr Sarnyai.

The JCU researchers will now test their findings in other animal schizophrenia models as they explore a possible clinical trial.

More information: Ann Katrin Kraeuter et al. Ketogenic diet reverses behavioral abnormalities in an acute NMDA receptor hypofunction model of schizophrenia, *Schizophrenia Research* (2015). [DOI: 10.1016/j.schres.2015.10.041](https://doi.org/10.1016/j.schres.2015.10.041)

Provided by James Cook University

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