

# Killer carbs -- Monash scientist finds the key to overeating as we age

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A Monash University scientist has discovered key appetite control cells in the human brain degenerate over time, causing increased hunger and potentially weight-gain as we grow older.

The research by Dr Zane Andrews, a neuroendocrinologist with Monash University's Department of Physiology, has been published in *Nature*.

Dr Andrews found that appetite-suppressing cells are attacked by free radicals after eating and said the degeneration is more significant following meals rich in carbohydrates and sugars.

"The more carbs and sugars you eat, the more your appetite-control cells are damaged, and potentially you consume more," Dr Andrews said.

Dr Andrews said the attack on appetite suppressing cells creates a cellular imbalance between our need to eat and the message to the brain to stop eating.

"People in the age group of 25 to 50 are most at risk. The neurons that tell people in the crucial age range not to over-eat are being killed-off.

"When the stomach is empty, it triggers the ghrelin hormone that notifies the brain that we are hungry. When we are full, a set of neurons known as POMC's kick in.

"However, free radicals created naturally in the body attack the POMC

neurons. This process causes the neurons to degenerate overtime, affecting our judgement as to when our hunger is satisfied," Dr Andrews said.

The free radicals also try to attack the hunger neurons, but these are protected by the uncoupling protein 2 (UCP2).

Dr Andrews said the reduction in the appetite-suppressing cells could be one explanation for the complex condition of adult-onset obesity.

"A diet rich in carbohydrate and sugar that has become more and more prevalent in modern societies over the last 20-30 years has placed so much strain on our bodies that it's leading to premature cell deterioration," Dr Andrews said.

Dr Andrews' next research project will focus on finding if a diet rich in carbohydrates and sugars has other impacts on the brain, such as the increased incidences of neurological conditions like Parkinson's disease.

Source: Monash University

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