

Teens eating a junk food-filled diet may be damaging their brains, research suggests



A junk food diet can cause long-term damage to adolescent brains, according to a study conducted on rats.

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No more fast food, sweets and other ultra-processed foods for teenagers!

An American study conducted on rats links lasting memory impairment to a diet rich in fat and sugar during adolescence.

Tired of your teenager not remembering what you say? Maybe it's time to steer clear of industrial cookies, potato chips or fast food! You may not reap the benefits immediately, but a healthy diet and lifestyle will serve teens well into adulthood, and not just in terms of nutrition. Junk food in general — or a diet rich in fat and sugar — may cause long-term damage to adolescent brains, research suggests.

According to a study published in *Brain, Behavior and Immunity*, by researchers in the Department of Biological Sciences at the University of Southern California, there is a link between what we eat and how our brain functions, and more specifically the hippocampus. A brain structure playing a central role in cognition, memory and learning, the hippocampus is where a chemical substance called acetylcholin acts. This is a neurotransmitter involved in memory and functions such as learning, attention, arousal and involuntary muscle movement.

Previous research has shown that people with Alzheimer's disease tend to have lower levels of acetylcholine in the brain. The problem with a diet too rich in fat and sugar is that it disrupts the signal from this neurotransmitter, researchers say.

To find this out, the scientists carried out analyses on two groups of rats, one fed a diet rich in fat and sugar, the other a healthy diet. This diet was provided both at juvenile age and at an age similar to adolescence. Following object-based memory tests, the experiment revealed that memory problems did not disappear, even when the diet was improved, with the removal of junk food. In

other words, a poor diet in adolescence appears to have a long-term impact on memory, the effects of which may not be easily reversible.

“Acetylcholine signalling is a mechanism to help [rats] encode and remember those events, analogous to ‘episodic memory’ in humans that allows us to remember events from our past,” the study’s lead author Anna Hayes explains in a news release. “That signal appears to not be happening in the animals that grew up eating the fatty, sugary diet.”

Aside from memory issues, for many years, a body of research has been demonstrating the profound link between the brain and the digestive system, with the gut identified as a kind of “second brain.” This notion has been popularized by popular science books, such as Giulia Enders’ bestseller *Gut: The Inside Story of Our Body’s Most Underrated Organ*.

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