

Western diet leads to poorer performance

September 22 2014, by Rob Payne



High intakes of takeaway food, red and processed meat, soft drink, fried and refined food has been linked with lower scores in cognitive tasks. Credit: Robyn Lee

Higher intake of a western diet by 14-year-olds has been linked with diminished cognitive performance at age 17.

Researchers found that participants with a western dietary pattern—characterised by high intakes of takeaway food, red and processed meat, soft drink, fried and refined food—scored lower in [cognitive tasks](#), particularly those involving reaction time/psychomotor function, visual attention, learning and memory.

Chips and crisps came in for a particular drubbing: their high consumption was significantly associated with longer reaction times on detection tasks.

In contrast to their peers, study participants with a high intake of fruits and leafy vegetables had better cognitive performance, which lead researcher Dr Anett Nyaradi says could be due to increased micronutrient content.

This includes folate from [leafy green vegetables](#), which previous research has linked to enhanced [cognitive development](#).

Led by UWA and the Telethon Kids Institute, the study involved 602 members of the Western Australian Pregnancy Cohort (Raine) Study.

Each participant filled out a food frequency questionnaire at age 14, then underwent a battery of cognitive tasks three years later.

Omega ratios blow out

Dr Nyaradi says several factors may be at play in this diet-related decline in cognitive skills, including the level of omega-6 fatty acids in fried foods and red meat.

Metabolic pathways function best with a balanced 1:1 ratio of omega-3 and omega-6 fatty acids, but the [western diet](#) can shift this to a 1:20 or 1:25 ratio.

High intake of saturated fat and simple carbohydrates has been linked to impairment in the functioning of the hippocampus, a brain structure centrally involved in learning and memory that increases its volume during adolescence, Dr Nyaradi says.

"Adolescence represents a critical time period for brain development. It is possible that poor diet is a significant risk factor during this period...indeed, our findings support this proposition."

Dr Nyaradi's study examined diet as a whole, unlike previous studies which tended to focus on single nutrients.

She contends this holistic approach allows greater opportunities for [public health interventions](#).

"These findings have important implications for future health policies and health promotion programs."

The study also involved Curtin University, the Health Department of WA and WZB Berlin Social Research Centre, Germany.

Citation: Western diet leads to poorer performance (2014, September 22) retrieved 19 September 2024 from <https://medicalxpress.com/news/2014-09-western-diet-poorer.html>

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