Eating walnuts could benefit adolescents' cognitive development, contribute to psychological maturation

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Eating walnuts on a regular basis could benefit the cognitive development of adolescents and contribute to their psychological maturation. These are some of the conclusions reached by a study led by the Institut d'Investigació Sanitària Pere Virgili (IISPV), in which

ISGlobal (a center promoted by "la Caixa" Foundation) and the Hospital del Mar Medical Research Institute (IMIM) have collaborated. This is unprecedented research; while there have been previous studies on the effect of nuts on our health, the impact of their consumption at such a critical stage for cognitive development as adolescence has never been examined.

Walnuts are rich in alpha-linolenic fatty acid (ALA), a type of omega-3 that plays a fundamental role in brain development, especially at this life stage. In the words of Jordi Julvez, principal investigator and coordinator of the NeuroÈpia Research Group of the IISPV, "adolescence is a time of great biological changes: hormonal transformation occurs, which in turn is responsible for stimulating the synaptic growth of the frontal lobe. This part of our brain is what enables neuropsychological maturation, i.e., more complex emotional and cognitive functions. Neurons that are well nourished with this type of fatty acids will be able to grow and form new, stronger synapses."

In the study, which has been published in the journal *eClinicalMedicine*, 700 secondary school students between 11 and 16 years of age from 12 different high schools in Barcelona participated voluntarily. They were randomly divided into two groups: the control group, which received no intervention of any kind, and the experimental group, which received sachets containing 30 grams of walnut kernels, indicating to the young people who participated that they could consume them daily for a period of 6 months.

The research team found that adolescents who ate walnuts for at least 100 days (not necessarily continuously every day) increased their attention functions, and those who had some symptoms of attention deficit hyperactivity disorder (ADHD) improved their behavior significantly (in class, they paid more attention to the teacher and were less hyperactive).

On the other hand, there was also an increase in functions related to fluid intelligence, which, in the words of Jordi Julvez, "is less influenced by learning; it is inherent to the person biology staus. We assessed it with increasingly complex tests, such as having adolescents figure out what pattern a row of letters followed, for example."

"Overall, no significant differences were found in the intervention group in relation to the control group," he adds, "but if the adherence factor is considered, then positive results are observed, since participants who most closely followed the guidelines—in terms of the recommended dose of walnuts and the number of days of consumption—did show improvements in the neuropsychological functions evaluated."

Thus, this study demonstrates that following a healthy diet is as important as maintaining these habits over time and not abandoning them for adolescents to develop correctly on a cognitive and psychological level.

"If boys and girls would heed these recommendations and actually eat a handful of walnuts a day, or at least three times a week, they would notice many substantial improvements in cognitive abilities, and it would help them face the challenges of adolescence and entering adulthood. Adolescence is a period of great brain development and complex behaviors that requires a significant amount of energy and nutrients," concludes Ariadna Pinar, first author of the article.

More information: Ariadna Pinar-Martí et al, Effect of walnut consumption on neuropsychological development in healthy adolescents: a multi-school randomised controlled trial, *eClinicalMedicine* (2023). DOI: 10.1016/j.eclinm.2023.101954

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