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Abstract

Walnut Consumption Reduces Perceived Stress and Improves Mood States in a Sample of Young Adults: A Randomized Cross-Over Trial †

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Abstract: The relationship between psychological health and diet is bidirectional. As such, nutritional interventions can improve mood and wellbeing due to the complex interaction between nutrient intake and the gut–brain axis. Walnuts contain a number of potentially neuroactive compounds (e.g., tryptophan, serotonin, melatonin) that could have a potential effect on mood and wellbeing among the general population. Therefore, the present study sought to determine the effect of walnuts on perceived stress, mood states, and wellbeing. Methodology: A total of thirty young adults (aged 24.0 ± 4.2 years; 90% women) participated in an 18-week randomized crossover trial (NCT04799821). All the participants completed two randomized crossover protocols: intervention (daily consumption of 40 g of walnuts for 8 weeks) and control (refrain from walnuts or any other nuts for 8 weeks). After 2 weeks of washout, the two groups followed the intervention/control in reverse order. Baseline data were collected for perceived stress, mood states, and wellbeing. In addition, spot urine samples were collected at baseline for the determination of 5-hydroxy-3-indol acetic acid (urine serotonin metabolite). Data were collected once more at the end of the 8-week intervention and control periods. Results: After an 8-week intervention, daily walnut consumption significantly reduced perceived stress (p = 0.008) and improved certain mood states, such as anger–hostility and fatigue–inertia (p = 0.026 and p = 0.010, respectively). Furthermore, levels of serotonin's metabolite were higher (p = 0.035) in the urinary samples of the intervention group, whilst no differences were shown between the baseline and control trials. Finally, daily walnut consumption did not affect wellbeing. Discussion: Our results show that daily walnut consumption has a significant impact on serotonin levels, and this could be associated with improved mood and stress states. However, more evidence is needed to explain the mechanisms underlying this association.

Keywords: walnuts; mood; food; stress; 5-hydroxy-3-indol acetic acid

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