

Can Dietary Acid Load in Obese Adolescents Interfere with Cardiometabolic Risk, Psychological Resilience and Sleep Quality?

✉ Nadia Raci Marques Pereira¹, ✉ Andréia Gomes Bezerra¹, ✉ Sergio Tufik^{1,2}, ✉ Helena Hachul^{1,2}

¹Universidade Federal de São Paulo, Departamento de Psicobiologia, São Paulo, Brazil

²Associação Fundo de Incentivo à Pesquisa (AFIP), Instituto do Sono, São Paulo, Brazil

Keywords: Dietary acid, cardiometabolic risk, resilience and sleep

Dear Editor,

Recently, Bozbulut et al. (1) published an article entitled “The Effect of Dietary Acid Load on Cardiometabolic Risk, Psychological Resilience and Sleep Quality in Adolescents with Obesity”. This study addressed the effects of dietary acid load on cardiometabolic risk factors, psychological resilience and sleep quality in adolescents with obesity. This is a highly relevant study, and the authors deserve recognition for their scientific contribution to such a current and interdisciplinary topic. The results showed that a high dietary acid load is associated with greater cardiometabolic risk, insulin resistance, lower psychological resilience and worse sleep quality. To assess dietary acid load, the researchers used a three-day food record, a widely accepted methodology for estimating food consumption. Sleep quality, in turn, was measured by the Pittsburgh Sleep Quality Questionnaire, recognized for its accuracy and validity. Although food records are generally consistent, their use among adolescents may encounter challenges, such as underreporting or inaccuracies (2). Furthermore, we emphasize that lifestyle aspects in this age group, such as increased screen time and irregular eating patterns, can impair the circadian rhythm and, consequently, sleep

quality. Given the close relationship between sleep quality, mental health, and metabolic risks, we suggest the inclusion of tools to assess chronotype, classifying adolescents as morning, intermediate, or evening types (3). The evening chronotype has been linked to lower sleep quality, poor dietary behaviors, and higher risk of cardiometabolic conditions (4).

Additionally, we recommend the use of actigraphy as an objective method for evaluating sleep parameters. Research indicates that self-reported sleep duration and actigraphy-measured sleep duration can differ by an average of about one hour (5).

Finally, we recommend the use of complementary tools that allow a more specific assessment of circadian preferences and dietary patterns in adolescents. Such approaches could enrich the study findings, deepening the understanding of the interactions between dietary acid load, metabolic risks, mental health and sleep quality in adolescents with obesity. These efforts are crucial to support more effective interventions to promote the physical and psychological health of this population.

Cite this article as: Pereira NRM, Bezerra AG, Tufik S, Hachul H. Can dietary acid load in obese adolescents interfere with cardiometabolic risk, psychological resilience and sleep quality? J Clin Res Pediatr Endocrinol. 2025;17(3):368-369



Address for Correspondence: Helena Hachul MD, Universidade Federal de São Paulo, Departamento de Psicobiologia; Associação Fundo de Incentivo à Pesquisa (AFIP), Instituto do Sono, São Paulo, Brazil
E-mail: helenahachul@gmail.com **ORCID:** orcid.org/0000-0002-3661-582X

Conflict of interest: None declared

Received: 03.01.2025

Accepted: 06.01.2025

Epub: 23.01.2025

Publication date: 22.08.2025



©Copyright 2025 by Turkish Society for Pediatric Endocrinology and Diabetes / The Journal of Clinical Research in Pediatric Endocrinology published by Galenos Publishing House. Licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 (CC BY-NC-ND) International License.

Footnotes

Authorship Contributions

Concept: Nadia Raci Marques Pereira, Design: Nadia Raci Marques Pereira, Analysis or Interpretation: Sergio Tufik, Literature Search: Andréia Gomes Bezerra, Helena Hachul, Writing: Nadia Raci Marques Pereira, Andréia Gomes Bezerra, Sergio Tufik, Helena Hachul.

Financial Disclosure: Our studies are supported by grants conceived by Associação Fundo de Incentivo à Pesquisa (AFIP) and Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq). Sergio Tufik is recipient of CNPq fellowships. The funding agencies had no role in the design, preparation, review or approval of this letter.

References

1. Bozbulut R, Döğter E, Çamurdan MO, Bideci A. The effect of dietary acid load on cardiometabolic risk, psychological resilience and sleep quality in adolescents with obesity. *J Clin Res Pediatr Endocrinol*. 2025;17:58-67. Epub 2024 Sep 23.
2. Stiegler P, Sausenthaler S, Buyken AE, Rzehak P, Czech D, Linseisen J, Kroke A, Gedrich K, Robertson C, Heinrich J. A new FFQ designed to measure the intake of fatty acids and antioxidants in children. *Public Health Nutr*. 2010;13:38-46. Epub 2009 May 28.
3. Vitale JA, Roveda E, Montaruli A, Galasso L, Weydahl A, Caumo A, Carandente F. Chronotype influences activity circadian rhythm and sleep: differences in sleep quality between weekdays and weekend. *Chronobiol Int*. 2015;32:405-415. Epub 2014 Dec 3.
4. Yang Y, Li SX, Zhang Y, Wang F, Jiang DJ, Wang SJ, Cao P, Gong QH. Chronotype is associated with eating behaviors, physical activity and overweight in school-aged children. *Nutr J*. 2023;22:50.
5. Guedes LG, Abreu Gde A, Rodrigues DF, Teixeira LR, Luiz RR, Bloch KV. Comparison between self-reported sleep duration and actigraphy among adolescents: gender differences. *Rev Bras Epidemiol*. 2016;19:339-347.