

## Research Roundup – March 2025

New this month in therapeutic carbohydrate reduction and metabolic health.

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### Metabolic Studies

1. Biyikoglu, H., Robertson, M.D. and Collins, A.L. (2025) 'Isolating the acute metabolic effects of carbohydrate restriction on postprandial metabolism with or without energy restriction: a crossover study', *European Journal of Nutrition*, 64(3), p. 133. Available at: <https://doi.org/10.1007/s00394-025-03646-5>.
2. Colonetti, L. *et al.* (2025) 'Effects of carbohydrate reduced diet associated with strength training on clinical signs of women with polycystic ovary syndrome: Randomized clinical trial', *Nutrition (Burbank, Los Angeles County, Calif.)*, 133, p. 112696. Available at: <https://doi.org/10.1016/j.nut.2025.112696>.
3. Crabtree, C.D. *et al.* (2025) 'A ketogenic-promoting beverage acutely elevates cardiac function and myocardial blood flow compared to placebo in adults: A cardiac MRI investigation', *Physiological Reports*, 13(6), p. e70208. Available at: <https://doi.org/10.14814/phy2.70208>.
4. Harbi, N.S., AL-Qaisi, A.H.J. and Hairunisa, N. (2025) 'Evaluating the Effect of the Ketogenic Diet on the Reproductive and Metabolic Parameters in Iraqi Females with Polycystic Ovary Syndrome', *Al-Nahrain Journal of Science*, 28(1), pp. 8–13. Available at: <https://anjs.edu.iq/index.php/anjs/article/view/2746> (Accessed: 19 March 2025).
5. Izquierdo, A.G. *et al.* (2025) 'Epigenetic Aging Acceleration in Obesity Is Slowed Down by Nutritional Ketosis Following Very Low-Calorie Ketogenic Diet (VLCKD): A New Perspective to Reverse Biological Age', *Nutrients*, 17(6), p. 1060. Available at: <https://doi.org/10.3390/nu17061060>.
6. Kolivas, D. *et al.* (2025) 'A 6-Month mHealth Low-Carbohydrate Dietary Intervention Ameliorates Glycaemic and Cardiometabolic Risk Profile in People with Type 2 Diabetes', *Nutrients*, 17(6), p. 937. Available at: <https://doi.org/10.3390/nu17060937>.
7. Łagowska, K. *et al.* (2025) 'Effects of a ketogenic diet on the anthropometric, metabolic, and hormonal parameters in women with polycystic ovary syndrome: A systematic review of randomised controlled trials', *Acta*

*Scientiarum Polonorum Technologia Alimentaria*, 24(3). Available at:  
<https://doi.org/10.17306/J.AFS.001327>.

8. Mano, Y. and Fukuda, N. (2025) 'Effect of ketosis induced by on delayed-onset muscle soreness, inflammation and redox status: a randomized, open-label, crossover pilot study', *The Journal of Sports Medicine and Physical Fitness*, 65(4). Available at: <https://doi.org/10.23736/S0022-4707.24.16137-3>.
9. McClure, T.S. et al. (2025) 'Multisystem impact of altering acid load of ingested exogenous ketone supplements at rest in young healthy adults', *American Journal of Physiology. Regulatory, Integrative and Comparative Physiology*, 328(3), pp. R386–R395. Available at:  
<https://doi.org/10.1152/ajprequ.00057.2024>.
10. Sousa, S.S. de S., Nery, E.S. and Giuffrida, F.M.A. (2025) 'Low-carbohydrate diet in type 1 diabetes: a systematic review', *Clinical Nutrition ESPEN*, 0(0). Available at: <https://doi.org/10.1016/j.clnesp.2025.03.009>.

## General reviews

1. Bachar, A. and Birk, R. (2025) 'Ketogenic Diet Intervention for Obesity Weight-Loss- A Narrative Review, Challenges, and Open Questions', *Current Nutrition Reports*, 14(1), p. 43. Available at:  
<https://doi.org/10.1007/s13668-025-00634-3>.
2. Dyńska, D. et al. (2025) 'Ketogenic Diets for Body Weight Loss: A Comparison with Other Diets', *Nutrients*, 17(6), p. 965. Available at:  
<https://doi.org/10.3390/nu17060965>.
3. Kodur, N., Nguyen, C. and Tang, W.H.W. (2025) 'Therapeutic Ketosis for Heart Failure: A State-of-the-Art-Review', *Journal of Cardiac Failure*, 0(0). Available at:  
<https://doi.org/10.1016/j.cardfail.2025.01.028>.
4. Li, J. et al. (2025) 'Ketogenic diets and  $\beta$ -hydroxybutyrate in the prevention and treatment of diabetic kidney disease: current progress and future perspectives', *BMC Nephrology*, 26(1), p. 127. Available at:  
<https://doi.org/10.1186/s12882-025-04019-0>. (side effects mentioned may not be generalisable due to a focus on studies citing challenges in pediatric populations with epilepsy)
5. Skartun, O. et al. (2025) 'Symptoms during initiation of a ketogenic diet: a scoping review of occurrence rates, mechanisms and relief strategies', *Frontiers in Nutrition*, 12. Available at:  
<https://doi.org/10.3389/fnut.2025.1538266>.
6. Teicholz, N. et al. (2025) 'Myths and Facts Regarding Low-Carbohydrate Diets', *Nutrients*, 17(6), p. 1047. Available at: <https://doi.org/10.3390/nu17061047>.

## Neurology

1. Antal, B.B. et al. (2025) 'Brain aging shows nonlinear transitions, suggesting a midlife "critical window" for metabolic intervention', *Proceedings of the National Academy of Sciences*, 122(10), p. e2416433122. Available at: <https://doi.org/10.1073/pnas.2416433122>.
2. Graybeal, A.J. et al. (2025) 'Effects of Ketone Ester Supplementation on Cognition and Appetite in Individuals with and Without Metabolic syndrome: A Randomized Trial', *Journal of Dietary Supplements*, pp. 1–19. Available at: <https://doi.org/10.1080/19390211.2025.2473371>.

## Cancer

1. AlMutairi, H. et al. (2025) 'Safety, Feasibility, and Effectiveness of Ketogenic Diet in Pediatric Patients With Brain Tumors: A Systematic Review', *Journal of Nutrition and Metabolism*. Edited by E. Gumprich, 2025(1), p. 7935879. Available at: <https://doi.org/10.1155/jnme/7935879>.
2. Kiryttopoulos, A. et al. (2025) 'Successful application of dietary ketogenic metabolic therapy in patients with glioblastoma: a clinical study', *Frontiers in Nutrition*, 11, p. 1489812. Available at: <https://doi.org/10.3389/fnut.2024.1489812>.
3. Klement, R.J., Sweeney, R.A. and Champ, C.E. (2025) "Plant-based and ketogenic diets as diverging paths to address cancer": a commentary concerning the supposed superiority of a plant-based diet', *Oncologie* [Preprint]. Available at: <https://doi.org/10.1515/oncologie-2025-0033>.

## Metabolic Psychiatry

1. Gumusoglu, S.B. et al. (2025) 'Disrupted fetal carbohydrate metabolism in children with autism spectrum disorder', *Journal of Neurodevelopmental Disorders*, 17(1), p. 16. Available at: <https://doi.org/10.1186/s11689-025-09601-z>.
2. Jade Shelp, C.C. (2025) 'Perspectives on the Ketogenic Diet as a Non-pharmacological Intervention For Major Depressive Disorder', *Perspectives on the Ketogenic Diet as a Non-pharmacological Intervention For Major Depressive Disorder*, 0(AheadOfPrint), pp. 0–0. Available at: <https://doi.org/10.47626/2237-6089-2024-0932>. PDF
3. Ruskin, D.N., Martinez, L.A. and Masino, S.A. (2025) 'Ketogenic diet, adenosine, and dopamine in addiction and psychiatry', *Frontiers in Nutrition*, 12. Available at: <https://doi.org/10.3389/fnut.2025.1492306>.

