

## Research Roundup – January 2025

New this month in therapeutic carbohydrate reduction and metabolic health.

Curated by [Sarah Rice](#) BSc. (Hons), MCOptom (UK), MHP, NNP



### Metabolic Studies

1. Annunziata, G. *et al.* (2025) 'Very Low Energy Ketogenic Therapy (VLEKT), Not Only a Price Matter: A Comparison Study on Average Costs of VLEKT with Fresh Foods and Replacement Meals', *Nutrients*, 17(3), p. 422. Available at: <https://doi.org/10.3390/nu17030422>.
2. Anyang Kaakyire, D. *et al.* (2025) 'Efficacy of Low-Carbohydrate Diets Versus Low-Fat Diets in Glycemic Control Among Patients With Type 2 Diabetes: A Systematic Review', *Cureus* [Preprint]. Available at: <https://doi.org/10.7759/cureus.77004>.
3. Chirapongsathorn, S. *et al.* (2025) 'Effect of a Ketogenic Diet on Metabolic Dysfunction-Associated Steatotic Liver Disease (MASLD) Progression: A Randomized Controlled Trial', *JGH Open: An Open Access Journal of Gastroenterology and Hepatology*, 9(1), p. e70099. Available at: <https://doi.org/10.1002/jgh3.70099>.
4. Curreli, M. *et al.* (2025) 'The Impact of a Very-Low-Calorie Ketogenic Diet on Monocyte Subsets of Patients with Obesity: A Pilot Study', *Nutrients*, 17(2), p. 312. Available at: <https://doi.org/10.3390/nu17020312>.
5. Khalafi, M. *et al.* (2025) 'Efficacy of intermittent fasting on improving liver function in individuals with metabolic disorders: a systematic review and meta-analysis', *Nutrition & Metabolism*, 22(1), p. 1. Available at: <https://doi.org/10.1186/s12986-024-00885-x>.
6. Lan, J. *et al.* (2024) 'Efficacy of different dietary carbohydrate intake for glycaemic control and insulin resistance in type 2 diabetes: A systematic review and dose-response meta-analysis', *Asia Pacific Journal of Clinical Nutrition* [Preprint]. Available at: <https://doi.org/10.6133/apjcn.202412/PP.0003>.
7. Leung, L.Y.-L., Tam, H.-L. and Ho, J.K.-M. (2025) 'Effects of ketogenic and low-carbohydrate diets on the body composition of adults with overweight or obesity: A systematic review and meta-analysis of randomised controlled trials', *Clinical Nutrition* [Preprint]. Available at: <https://doi.org/10.1016/j.clnu.2025.01.017>.

8. Martins, C. *et al.* (2025) 'The impact of a low-carbohydrate (vs. low-fat) diet on fat mass loss in African American women is modulated by insulin sensitivity', *Obesity (Silver Spring, Md.)* [Preprint]. Available at: <https://doi.org/10.1002/oby.24201>. ABSTRACT
9. Perissiou, M. *et al.* (2025) 'Ketone monoester ingestion improves cardiac function in adults with type 2 diabetes: a double-blind, placebo controlled, randomised, crossover trial', *Journal of Applied Physiology (Bethesda, Md.: 1985)* [Preprint]. Available at: <https://doi.org/10.1152/jappphysiol.00800.2024>. ABSTRACT
10. Saslow, L.R. *et al.* (2025) 'A Very Low-Carbohydrate Program in Adults With Metabolic Dysfunction-Associated Steatotic Liver Disease and Phospholipase Domain-Containing Protein 3 Risk Genotype: Pre-Post Intervention Study', *JMIR Formative Research*, 9(1), p. e60051. Available at: <https://doi.org/10.2196/60051>.
11. Tavakoli, A. *et al.* (2025) 'The effects of intermittent fasting on antioxidant and inflammatory markers and liver enzymes in postmenopausal, overweight and obese women with rheumatoid arthritis: a randomized controlled trial', *Scientific Reports*, 15(1), p. 2357. Available at: <https://doi.org/10.1038/s41598-025-86734-0>.
12. Tian, W. *et al.* (2025) 'The effects of low-carbohydrate diet on glucose and lipid metabolism in overweight or obese patients with T2DM: a meta-analysis of randomized controlled trials', *Frontiers in Nutrition*, 11. Available at: <https://doi.org/10.3389/fnut.2024.1516086>.
13. Velissariou, M. *et al.* (2025) 'The impact of intermittent fasting on fertility: A focus on polycystic ovary syndrome and reproductive outcomes in Women-A systematic review', *Metabolism Open*, 25, p. 100341. Available at: <https://doi.org/10.1016/j.metop.2024.100341>.

## General reviews

1. Li, D., Dawson, J. and Gunton, J.E. (2025) 'Therapeutic Potential of Ketogenic Interventions for Autosomal-Dominant Polycystic Kidney Disease: A Systematic Review', *Nutrients*, 17(1), p. 145. Available at: <https://doi.org/10.3390/nu17010145>.
2. Xiao, X. and Li, Z. (2025) 'The Potential of Dietary Strategies: The Impact of Low-Carbohydrate Diet on Cardiovascular-Kidney-Metabolic Syndrome'. medRxiv, p. 2025.01.03.25319951. Available at: <https://doi.org/10.1101/2025.01.03.25319951>. [PDF](#)

## Exercise

1. 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* [Preprint]. Available at: <https://doi.org/10.23736/S0022-4707.24.16137-3>.
2. Noakes, T.D. and Prins, P.J. (2025) 'Are very high rates of exogenous carbohydrate ingestion (>90 g/hr) sufficient or indeed necessary to run a sub-2hr marathon? An analysis of the model predictions of Lukasiewicz and colleagues', *Frontiers in Nutrition*, 11. Available at: <https://doi.org/10.3389/fnut.2024.1507572>.
3. Prins, P.J. et al. (2025) 'Carbohydrate Ingestion Eliminates Hypoglycemia & Improves Endurance Exercise Performance in Triathletes Adapted to Very Low & High Carbohydrate Isocaloric Diets', *American Journal of Physiology. Cell Physiology* [Preprint]. Available at: <https://doi.org/10.1152/ajpcell.00583.2024>.

## Neurology

1. Basu, S., Arambakkam Janardhanam, H. and Manokaran, R.K. (2025) 'Breaking Myths: The Underexplored Impact of the Ketogenic Diet on Managing Drug-Resistant Epilepsy in Infancy', *Cureus* [Preprint]. Available at: <https://doi.org/10.7759/cureus.77805>.
2. Francini-Pesenti, F. et al. (2024) 'The Long-Term Treatment of Drug-Resistant Migraine with the Modified Atkins Ketogenic Diet: A Single-Center, Retrospective Study', *Nutrients*, 16(24), p. 4324. Available at: <https://doi.org/10.3390/nu16244324>.
3. Janssen-Aguilar, R. et al. (2025) 'The impact of ketogenic diet on the frequency of psychogenic non-epileptic seizures (PNES): A feasibility randomized pilot study', *Epilepsia Open*, n/a(n/a). Available at: <https://doi.org/10.1002/epi4.13131>.
4. Neth, B.J. et al. (2025) 'Consuming a modified Mediterranean ketogenic diet reverses the peripheral lipid signature of Alzheimer's disease in humans', *Communications Medicine*, 5, p. 11. Available at: <https://doi.org/10.1038/s43856-024-00682-w>.
5. Rubio, C. et al. (2025) 'Impact of the Ketogenic Diet on Neurological Diseases: A Review', *Life*, 15(1), p. 71. Available at: <https://doi.org/10.3390/life15010071>.

## Metabolic Psychiatry

1. Długosz, A. et al. (2025) 'The Role of Nutrition, Oxidative Stress, and Trace Elements in the Pathophysiology of Autism Spectrum Disorders', *International Journal of Molecular Sciences*, 26(2), p. 808. Available at: <https://doi.org/10.3390/ijms26020808>.
2. Ji, J. and Tang, Y. (2025) 'A ketogenic diet regulates microglial activation to treat drug addiction', *Frontiers in Pharmacology*, 16. Available at: <https://doi.org/10.3389/fphar.2025.1462699>.
3. P. Rigby, B. et al. (2025) 'Pilot study of a ketogenic diet in bipolar disorder: a process evaluation', *BMC Psychiatry*, 25, p. 63. Available at: <https://doi.org/10.1186/s12888-025-06479-y>.
4. Schrickel, A., Groeneweg, J. and Dekeyster, E. (2025b) 'Exploring the potential of the ketogenic diet in autism spectrum disorder: metabolic, genetic, and therapeutic insights', *Metabolic Brain Disease*, 40(1), p. 94. Available at: <https://doi.org/10.1007/s11011-024-01518-1>.

## Cancer

1. Kleckner, A.S. et al. (2024) 'Time-restricted eating to address persistent cancer-related fatigue among cancer survivors: A randomized controlled trial', *Research Square*, p. rs.3.rs-5530166. Available at: <https://doi.org/10.21203/rs.3.rs-5530166/v1>. (Preprint)
2. Liang, Z. et al. (2025) 'Comprehensive Overview of Ketone Bodies in Cancer Metabolism: Mechanisms and Application', *Biomedicines*, 13(1), p. 210. Available at: <https://doi.org/10.3390/biomedicines13010210>.

## Case studies

1. Chakraborty, S. et al. (2025) 'A very low carbohydrate diet improved metabolic profile in congenital generalized lipodystrophy type 4'. Available at: <https://doi.org/10.1530/EDM-24-0063>.



nutrition  
network