2025 Ketogenic Diet for Mental Health

Selected Research*

*Non-exhaustive

Summary

- Researchers from the US, Canada, China, India, Iran, Italy, The Netherlands and the United Kingdom are investigating a Keto Diet for Mental Health.
- Many are seeking to understand underlying biological mechanisms of ketogenic benefits to mental health, including:
    - Reduction of Glutamate Excitotoxicity, and
    - Regulation of Microglia
- Others such as Texas Tech University are cautioning that a Ketogenic Diet for Mental Health should be part of an "Individualized Treatment Plan"
- This does include traditional neuro-developmental disorders such as ADHD and Autism as well as traditional Psychiatric Disorders and Addiction Disorders.

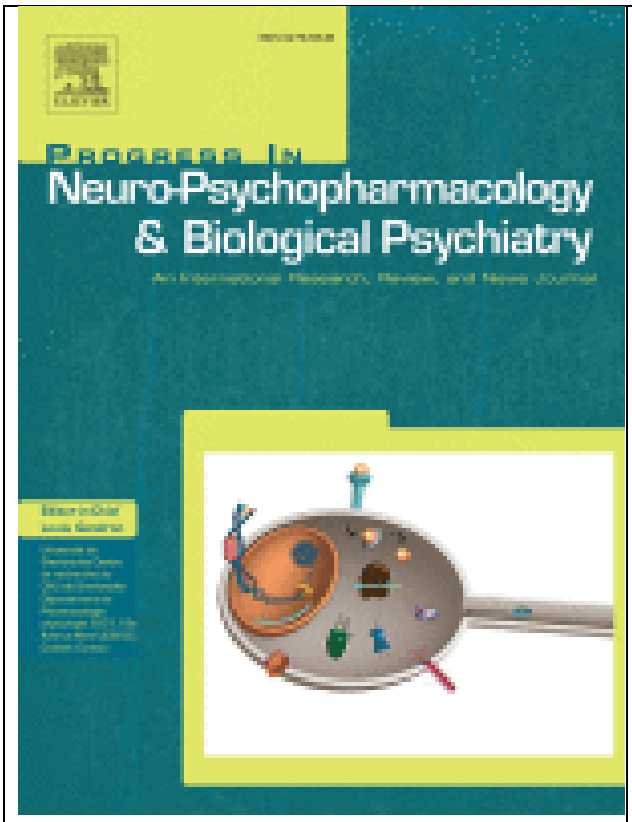
Prepared by Valerie L. Corzine, Esq.

Highlights

- **A ketogenic diet may reduce psychiatric symptoms while improving metabolic health.**
- **The neuroprotective effects of a ketogenic diet can improve symptoms in mood and psychotic disorders.**
- **A ketogenic diet helps reduce cravings in binge eating disorder and alcohol use disorder.**

Background: Within the framework of gut-brain interactions, the ketogenic diet (KD), a high-fat, low-carbohydrate, and moderate-protein dietary intervention, has gained attention for its potential in psychiatric care.

Keto therapy-unveiling the potential of ketogenic diet in psychiatric care: A scoping review (2025) **Affiliations** • **[1]I.R.C.C.S. Istituto Auxologico Italiano, Experimental Laboratory for Metabolic Neurosciences Research, Piancavallo, VCO, Italy; Psychology Department, Università Cattolica del Sacro Cuore, Milan, Italy.** • **[2]I.R.C.C.S. Istituto Auxologico Italiano, Experimental Laboratory for Metabolic Neurosciences Research, Piancavallo, VCO, Italy.**	Renowned for its efficacy in managing obesity, KD has demonstrated effectiveness in facilitating weight loss and inducing favorable metabolic changes in the short term. With its established benefits in neurological disorders, KD is now being investigated as a potential therapeutic avenue for individuals with psychiatric conditions. **Conclusions:** Implementing a KD in patients with mental disorders seems to be a feasible and well-tolerated approach, resulting in psychiatric symptom reduction and improvements in metabolic health. Most interestingly, research suggests that KD can also be safely implemented in the care of patients with addictive-like eating disorders.



Measuring the effects of ketogenic diet on neuropsychiatric disorder: A scoping review (2025)

Affiliations

- [1]Psychiatry Department, Texas Tech University Health Sciences Center
- [2]Himalayan Institute of Medical Science, Uttarakhand, India.
- [3]Lady Hardinge Medical College, New Delhi, India.
- [4]Psychiatry Department, Texas Tech University Health Sciences Center
- [5]Psychiatry Department, Texas Tech University Health Sciences Center,

Highlights

- This scoping review examines the ketogenic diet (KD) as a potential therapeutic intervention for various neuropsychiatric disorders.
- A thorough systematic search identified 30 studies over the past thirteen years, assessing KD's impact on conditions such as Autism, ADHD, Bipolar Disorder, Depression, Anxiety, and Seizure Disorders.
- **Findings suggest that the KD may improve symptoms across a range of neuropsychiatric disorders, but the evidence is varied and not yet conclusive.**
- **The review highlights the necessity for individualized treatment plans and calls for further rigorous research to confirm KD's efficacy and understand its mechanisms in managing these disorders.**

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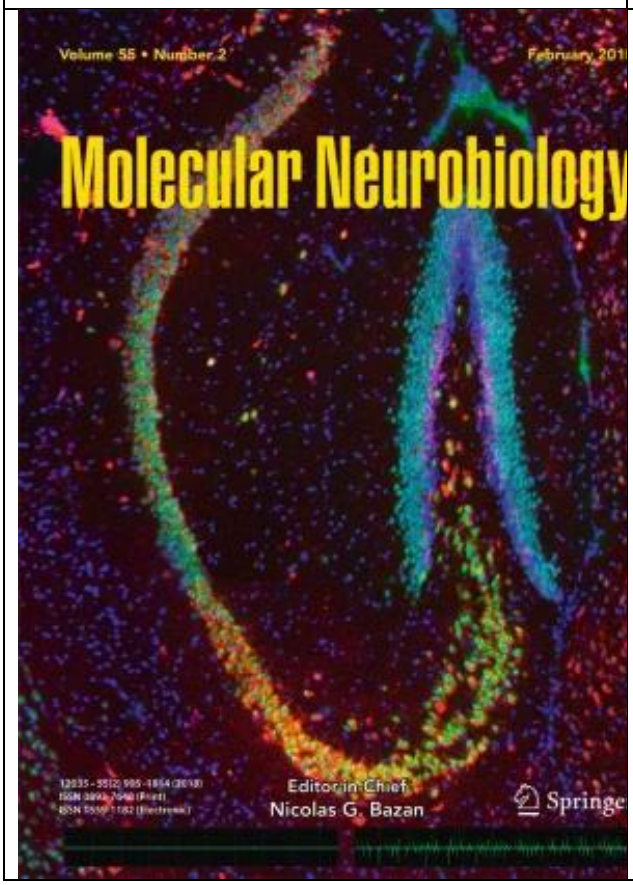
- [7]Psychiatry Department, Texas Tech University Health Sciences Center
- [8]Psychiatry Department, Texas Tech University Health Sciences Center
- [9]Psychiatry Department, Texas Tech University Health Sciences Center,



Abstract

Major depressive disorder (MDD) is a leading cause of disability worldwide. While traditional pharmacological treatments are effective for many cases, a significant proportion of patients do not achieve full remission or experience side effects.

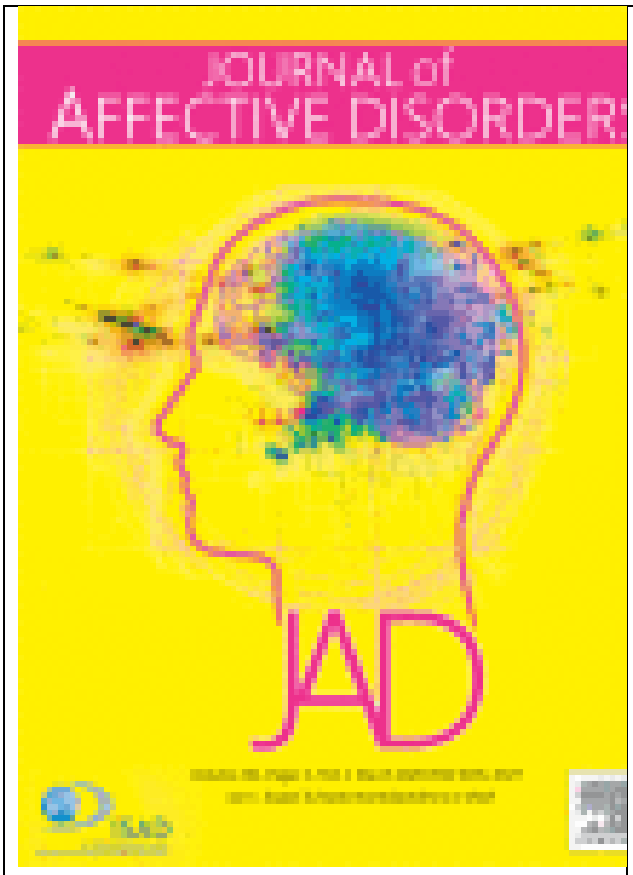
Nutritional interventions hold promise as an alternative or adjunctive approach, especially for treatment-resistant depression.

This review examines the potential role of nutrition in managing MDD through addressing biological deficits and modulating pathways relevant to its pathophysiology.

Specifically, it explores the ketogenic diet and gut microbiome modulation through

Nutritional Strategies in Major Depression Disorder: From Ketogenic Diet to Modulation of the Microbiota-Gut-Brain Axis (2025) **Affiliations** • [1]Department of Comparative Biomedicine and Food Science, University of Padova, Padova, Italy. • [2]Department of Radiology, School of Medicine, Isfahan University of Medical Sciences, Isfahan, Iran. • [3]Behavioral Sciences Research Center, Isfahan University of Medical Sciences, Isfahan, Iran. • [4]Student Research Committee, Isfahan University of Medical Sciences, Isfahan, Iran. • [5]Department of Immunology, School of Medicine, Shiraz University of Medical Sciences, Shiraz, Iran. • [6]School of Medicine, Bushehr University of Medical Sciences, Bushehr, Iran. • [7]Department of Clinical Biochemistry, School of Medicine, Shahid Beheshti University of Medical Sciences, Tehran, Iran. • [8]Department of Clinical Biochemistry, School of Pharmacy and Pharmaceutical Sciences, Isfahan University of Medical Sciences, Isfahan, Iran. • [9]Student Research Committee, Department of Clinical Biochemistry, School of Medicine,	various methods, including probiotics, prebiotics, synbiotics, postbiotics, and fecal microbiota transplantation. Numerous studies link dietary inadequacies to increased MDD risk and deficiencies in nutrients like omega-3 s, vitamins D and B, magnesium, and zinc. These deficiencies impact neurotransmitters, inflammation, and other biological factors in MDD. The gut-brain axis also regulates mood, stress response, and immunity, and disruptions are implicated in MDD. While medications aid acute symptoms, nutritional strategies may improve long-term outcomes by preventing relapse and promoting sustained remission. This comprehensive review aims to provide insights into nutrition's multifaceted relationship with MDD and its potential for developing more effective integrated treatment approaches.

Shahid Beheshti University of Medical Sciences, Tehran, Iran. [#]Contributed equally.	
 **[Editorial: Ketogenic metabolic therapy as a treatment for mental health disorders](#) (2025)** Affiliations • [1]Independent Researcher, Newburyport, MA, United States. • [2]Ketogenic Therapies, LLC, Milwaukee, WI, United States. • [3]Psychology/Neuroscience, Trinity College, Hartford, CT, United States.	



[Association between ketogenic diets and depression: A cross-sectional analysis of the NHANES 2005-2023 August] (2025)

Affiliations

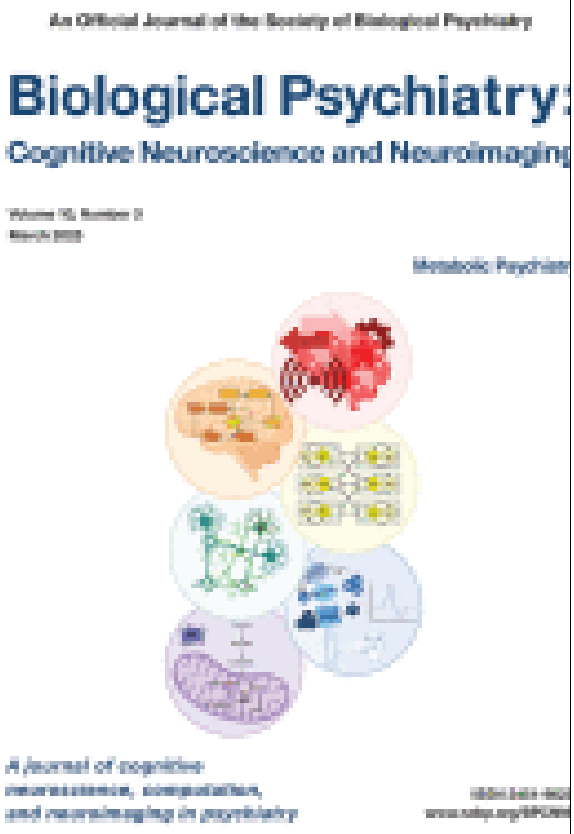
- [1]Department of Neurosurgery, West China Hospital, Sichuan University, Chengdu, China.
- [2]Department of Critical Care Medicine, West China Hospital, Sichuan University, Chengdu, China.

Background: The ketogenic diet (KD) is widely used for epilepsy and neurodegenerative diseases. Glutamate, the excitatory neurotransmitter in the body, has been found to be significantly elevated in the brains of some patients with depression.

Ketone bodies, the main products of KD, may negatively regulate the metabolic activity of glutamate, which suggests a potential role in the onset and progression of depression.
However, the relationship between KD and depression risk remains uncertain.

Conclusion: Higher KDR [Ketogenic Diet Ratio] was associated with a reduced risk of depression, with potentially greater efficacy observed in specific populations.

Additionally, KDR has been found to be significantly associated with the severity of depression. Further study could investigate their potential mechanism.

• [3]Department of Neurosurgery, West China Hospital, Sichuan University, Chengdu, China.	
 **Linking Mitochondrial Dysfunction, Neurotransmitter, and Neural Network Abnormalities and Mania: Elucidating Neurobiological Mechanisms of the Therapeutic Effect of the Ketogenic Diet in Bipolar Disorder (2025)**	**Abstract** There is growing interest in the ketogenic diet as a treatment for bipolar disorder (BD), and there are promising anecdotal and small case study reports of efficacy. However, the neurobiological mechanisms by which diet-induced ketosis might ameliorate BD symptoms remain to be determined, particularly in manic and hypomanic states-defining features of BD. Identifying these mechanisms will provide new markers to guide personalized interventions and provide targets for novel treatment developments for individuals with BD. In this critical review, we describe recent findings highlighting 2 types of neurobiological abnormalities in BD: 1. mitochondrial dysfunction and 2. neurotransmitter and neural network functional abnormalities. We link these abnormalities to mania/hypomania and depression in BD and then describe the biological underpinnings by which the ketogenic diet may have a beneficial effect in individuals with BD.

Affiliations • [1]Department of Psychiatry, University of Pittsburgh, Pittsburgh, Pennsylvania; Department of Cell Biology, University of Pittsburgh, Pittsburgh, Pennsylvania. Electronic address: freyberg@pitt.edu. • [2]Department of Pharmacology and Toxicology, University of Toronto, Toronto, Ontario, Canada; Department of Psychiatry, University of Toronto, Toronto, Ontario, Canada. • [3]Department of Psychiatry, University of Pittsburgh, Pittsburgh, Pennsylvania. • [4]Department of Psychiatry, University of Pittsburgh, Pittsburgh, Pennsylvania	We end the review by describing approaches that can be employed in future studies to elucidate the neurobiology that underlies the therapeutic effect of the ketogenic diet in BD. Doing this may provide marker predictors to identify individuals who will respond well to the ketogenic diet, as well as offer neural targets for novel treatment developments for BD.

The ketogenic diet and metabolic treatments for neuropsychiatric disorders (2025)

Affiliations

- [1]Metabolic and Mental Health Program, McLean Hospital, Belmont, MA, USA.
- [2]Psychiatry, Harvard Medical School, Boston, MA, USA.

Abstract

The ketogenic diet, initially developed for epilepsy treatment, has gained attention as a potential intervention for neuropsychiatric disorders.

A groundbreaking study by Campbell et al highlights its feasibility and potential efficacy in bipolar disorder, shedding light on shared mechanisms across neuropsychiatric disorders and the promise of metabolic treatment approaches.

Transdiagnostic remission of psychiatric comorbidity in post-traumatic stress disorder, ADHD, and binge-eating disorder using ketogenic metabolic therapy: a retrospective case report (2025)

Affiliations

- [1]School of Psychology, University of East London, London, United Kingdom.
- [2]Family Renewal, Inc., Vancouver, WA, United States.

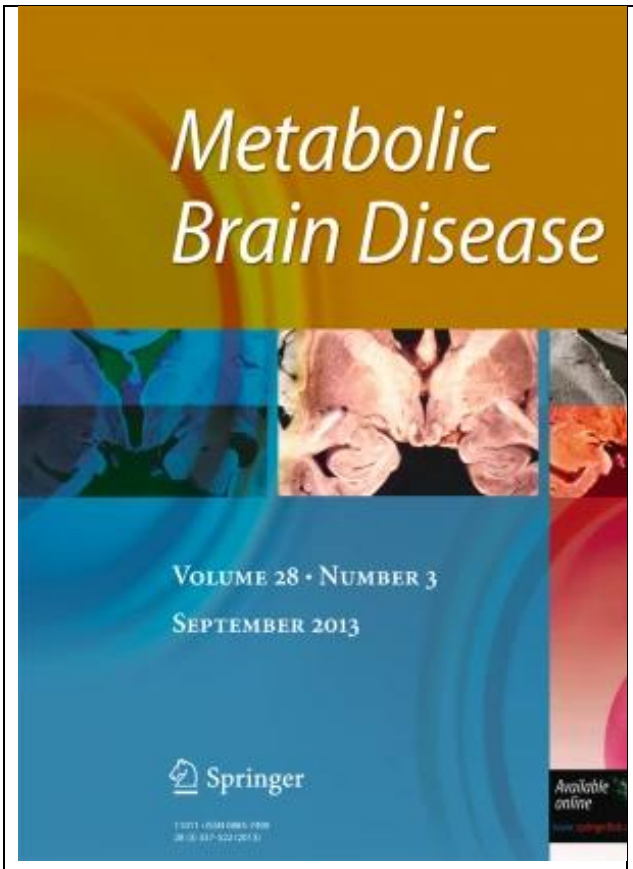
Background: Psychiatric comorbidities, including post-traumatic stress disorder (PTSD), ADHD, and binge-eating disorder (BED), frequently share overlapping symptoms and metabolic dysfunctions.

Disorder-specific treatments may not adequately address these shared biological mechanisms, resulting in suboptimal outcomes.

This case report evaluates ketogenic metabolic therapy (KMT) as an intervention specifically targeting these transdiagnostic features.

Conclusion: This report demonstrates the potential of KMT [Ketogenic Metabolic Therapy] to achieve comprehensive remission in severe, treatment-resistant psychiatric comorbidities.

The findings emphasize the necessity for controlled clinical trials to verify optimal therapeutic ketone ranges and establish generalizability across clinical populations experiencing complex psychiatric comorbidities.



Exploring the potential of the ketogenic diet in autism spectrum disorder: metabolic, genetic, and therapeutic insights (2025)

Affiliations

- [1]Institute of Psychology, Leiden University, Wassenaarseweg 52, Leiden, 2333 AK, The Netherlands.
- [2]Faculty of Technology, Policy and Management, Delft University of Technology, Jaffalaan 5, Delft, 2628 BX, The Netherlands.

Abstract

Current treatment approaches for Autism spectrum disorder (ASD) primarily focus on symptom management rather than addressing underlying dysfunctions.

The ketogenic diet (KD), a high-fat, low-carbohydrate diet inducing nutritional ketosis, has shown promise in treating epilepsy and may offer therapeutic benefits for ASD by modulating metabolic and neuroprotective pathways.

This review examined the potential impact of KD on underlying mechanisms in ASD.

While evidence from human studies on underlying mechanisms is limited, animal research has shown a large overlap of mechanisms modulated by KD and dysfunctions in ASD.

As such, targeting multiple disrupted pathways at once, KD presents a potential multifaceted treatment approach for ASD.

However, more evidence from human studies is needed on the effectiveness of KD in the modulation of underlying dysfunctions in ASD.

Additionally, precision medicine approaches could help identify individuals who would benefit most from the intervention, potentially extending its use to other psychiatric conditions with similar metabolic patterns.

• [3]Institute of Psychology, Leiden University, Wassenaarseweg 52, Leiden, 2333 AK, The Netherlands. e.a.g.dekeyster@fsw.leidenuniv.nl.	Consequently, KD interventions might show the potential to induce a drastic paradigm shift in understanding and treating ASD.
 **Ketogenic diet, adenosine, and dopamine in addiction and psychiatry (2025)** **Affiliation** • [1]Trinity College, Hartford, CT, United States.	**Abstract** Adhering to the ketogenic diet can reduce or stop seizures, even when other treatments fail, via mechanism(s) distinct from other available therapies. These results have led to interest in the diet for treating conditions such as Alzheimer's disease, depression and schizophrenia. Evidence points to the neuromodulator adenosine as a key mechanism underlying therapeutic benefits of a ketogenic diet. Adenosine represents a unique and direct link among cell energy, neuronal activity, and gene expression, and adenosine receptors form functional heteromers with dopamine receptors. The importance of the dopaminergic system is established in addiction, as are the challenges of modulating the dopamine system directly. A mediator that could antagonize dopamine's effects would be useful, and adenosine is such a mediator due to its function and location. Studies report that the ketogenic diet improves cognition, sociability, and perseverative behaviors, and might improve depression.

	Many of the translational opportunities based on the ketogenic diet/adenosine link have come to the fore, including addiction, autism spectrum disorder, painful conditions, and a range of hyperdopaminergic disorders.
frontiers in Pharmacology **A ketogenic diet regulates microglial activation to treat drug addiction (2025)** **Affiliations** • [1]Department of Comprehensive (VIP) Inpatient Ward, Sichuan Clinical Research Center for Cancer, Sichuan Cancer Hospital & Institute, Sichuan Cancer Center, Affiliated Cancer Hospital of University of Electronic Science and Technology of China, Chengdu, China. • [2]Department of Pharmacy, Sichuan Clinical Research Center for Cancer, Sichuan Cancer Hospital & Institute, Sichuan Cancer Center, Affiliated Cancer Hospital of University of Electronic Science and Technology of China, Chengdu, China.	**Abstract** Drug addiction is a chronic and potentially deadly disease that is considered a global health problem and describes the alteration of brain function by psychostimulant drugs through changes in the reward system. However, there is still no ideal strategy for the management of drug addiction. Previous studies have suggested that microglia are involved in events associated with neuroplasticity and memory, which are also related to drug addiction. Many studies have shown that psychoactive substances may act directly on immune cells, altering their function and inducing the production of various inflammatory mediators. In recent years, a ketogenic diet (KD) was shown to have therapeutic benefits as a dietary therapy for a variety of neurological disorders. With respect to drug addiction, studies have shown that a KD can alleviate glucose metabolism disorders caused by alcohol use disorders by increasing ketone metabolism, thereby reducing withdrawal symptoms.

	This finding indicates the potential of a KD as a treatment for drug addiction, since a KD may promote the transition of microglia to a predominantly anti-inflammatory state through several mechanisms. Here, we discuss recent research showing that a KD plays a variety of roles in controlling microglia-mediated inflammation, opening new treatment avenues to treat drug addiction. This succinct analysis offers evidence of the enormous potential of a KD to treat drug addiction through the inhibition of microglial activation.