

## Recent Studies Demonstrating the Effects of a Ketogenic Nutritional Intervention on Mental Health

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The overall prevalence of any mental illness among U.S. adults is approximately 23.4% (more than 1 in 5 adults), while **5.6%** experience a serious mental illness.

### Prevalence by Specific Condition (Annual / Past-Year Estimates)

- **Anxiety Disorders (including GAD):** ~**19.1%** of U.S. adults experience an anxiety disorder each year (lifetime prevalence is around 31.1% to 31.6%).
- **Major Depressive Disorder:** ~**8.3%** to **15.5%** of U.S. adults experience major depression annually depending on the specific diagnostic scope and survey year.
- **Posttraumatic Stress Disorder (PTSD):** ~**4.1%** to **5.0%** of U.S. adults experience PTSD annually.
- **Bipolar Disorder:** ~**2.8%** of U.S. adults experience bipolar disorder overall (with specific breakdowns like Bipolar I at ~1.5% to 1.8%).
- **Schizophrenia / Schizophrenia Spectrum Disorders:** Schizophrenia affects less than **1%** (<1%) of U.S. adults, while broader schizophrenia spectrum disorders affect about **1.2%**

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How often do individuals with a mental health diagnosis  
have some evidence of disrupted metabolic health?

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### **BOX 1**

#### Metabolic syndrome

Diagnosis typically requires the presence of three of the following (Grundy [2005](#)):

- Waist circumference >40 inches (102 cm) in men and >35 inches (88 cm) in women
- Elevated triglycerides:  $\geq 150$  mg/dL (1.7 mmol/L) of blood
- Reduced high-density lipoprotein (HDL) cholesterol:  $\leq 40$  mg/dL (1.03 mmol/L) in men or  $\leq 50$  mg/dL (1.30 mmol/L) in women
- Elevated fasting glucose:  $\geq 100$  mg/dL
- Elevated blood pressure: systolic  $\geq 130$  mmHg and/or diastolic  $\geq 85$  mmHg

BJPsych Advances (2025), vol. 31, 201–210 doi: 10.1192/bja.2024.52

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Roughly 48.6% to over 60% of adults with severe or major mental health diagnoses (such as schizophrenia, bipolar disorder, and major depressive disorder) show evidence of disrupted metabolic health or metabolic syndrome, compared to roughly 24% to 38% of the general adult population.

- **Metabolic Syndrome Prevalence:** Studies published in BMC Psychiatry and BJPsych Advances place the rate of metabolic syndrome in individuals with severe mental illness (SMI) at approximately 48.6%—nearly double the rate found in the general population.
- **General Metabolic Dysfunction:** Broader estimates across various psychiatric conditions (including anxiety, depression, and severe mental illnesses) indicate that up to 88% of the general population has some degree of poor metabolic health, with even higher clustering and risk factors observed in psychiatric cohorts. [
- **Obesity and Comorbidity:** Research published in PubMed and PMC reviews note that obesity and metabolic syndrome co-occur in roughly 45% of individuals with major mental health disorders, driven by a combination of shared neurobiological/inflammatory pathways, lifestyle factors, and the metabolic side effects of certain psychotropic medications.
- **Bidirectional Risk:** Data highlighted by Stanford Medicine shows that developing a metabolic disorder like insulin resistance can double a person's risk of depression, while pre-existing metabolic issues frequently worsen psychiatric treatment resistance

Dialogues Clin Neurosci. 2018 Mar;20(1):63–73.  
BJPsych Advances (2025), vol. 31, 201–210 doi: 10.1192/bja.2024.52

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How often do individuals with mental health diagnosis on treatment develop disrupted metabolic health as a consequence of their treatment?

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The percentage of adults who develop disrupted metabolic health as a direct consequence of mental health medications varies drastically depending on the specific class of medication prescribed. When assessing the incidence of medication-induced metabolic syndrome (MetS)—defined by a cluster of abdominal obesity, hypertension, insulin resistance, and dyslipidemia—the data is sharply divided between antipsychotics and antidepressants:

Antipsychotics carry the highest and most aggressive risk profile for metabolic disruption.

- Overall Rate: Between 32% and 68% of adults treated with long-term antipsychotics develop full clinical metabolic syndrome.
- Highest-Risk Agents: Medications like *clozapine and olanzapine* cause the most severe dysregulation, with up to 45% to 58% of patients meeting the criteria for metabolic syndrome. These drugs directly alter liver function, trigger de novo lipogenesis (fat accumulation), and impair insulin secretion.
- Lower-Risk Agents: Medications like aripiprazole, lurasidone, and ziprasidone are considered more "metabolically friendly," though risk is still elevated compared to non-medicated populations

J Pharmacol Pharmacother. 2013 Jul-Sep;4(3):176–186. doi: 10.4103/0976-500X.114596  
Metab Syndr Relat Disord. 2023 Aug;21(6):294-305. doi: 10.1089/met.2023.0003.  
Explor Endocr Metab Dis. 2025;2:101450 DOI: <https://doi.org/10.37349/eemd.2025.101450>

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## Antidepressants

- While antidepressants are generally lower risk than antipsychotics, long-term use still presents a significant metabolic burden.
- Overall Incidence: Prospective cohort studies tracking adults placed on antidepressants for Major Depressive Disorder (MDD) show a metabolic syndrome incidence rate of 12% after 3 months and 17% after 6 months of treatment.
- Long-Term Weight Gain: Over extended periods, up to 55% to 65% of patients experience long-term weight gain on antidepressants, which acts as a primary driver for downstream insulin resistance and type 2 diabetes.

Explor Endocr Metab Dis. 2025;2:101450 DOI: <https://doi.org/10.37349/eemd.2025.101450>

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### Class Differences:

- Tricyclic Antidepressants (TCAs) and Mirtazapine: Carry the highest risk of significant metabolic shifts due to strong antihistaminergic properties that cause severe carbohydrate cravings and a lowered basal metabolic rate.
- SSRIs (e.g., paroxetine, escitalopram): Typically show mild to moderate risk, often presenting as a slow annual increase in metabolic dysfunction over years of continuous use.
- NDRIs (Bupropion): Form an exception and are largely considered metabolically neutral or can even promote mild weight loss.

Can Fam Physician. 2020 Dec;66(12):898–900. doi: 10.46747/cfp.6612898  
Arch Clin Biomed Res. Author manuscript; available in PMC: 2025 May 29.

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### Are Ketogenic Nutritional Interventions Beneficial in Individuals with a MH Diagnosis?

Several significant subject reviews and meta-analyses published in 2025 and 2026 evaluate the effects of ketogenic nutritional interventions on mental health outcomes. The literature reflects a major shift toward treating psychiatric conditions through a metabolic lens, a field known as metabolic psychiatry.

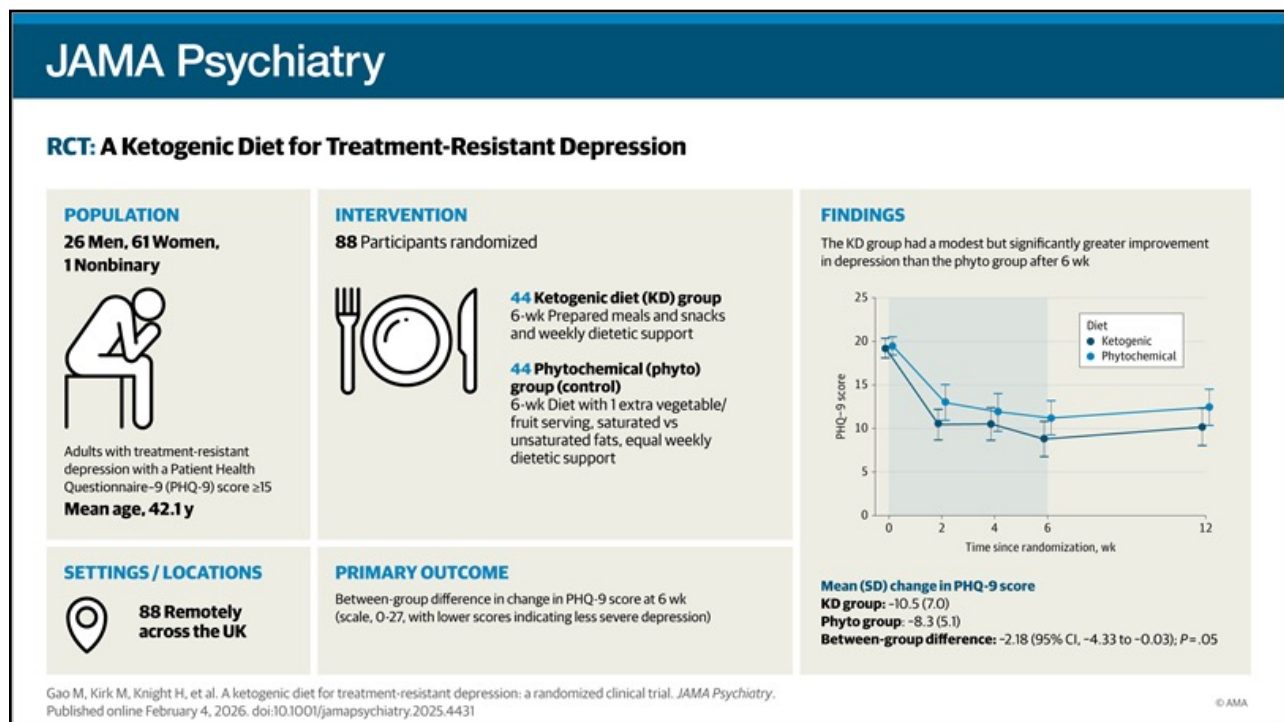
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**The largest and most comprehensive overview to date is a systematic review and meta-analysis published in JAMA Psychiatry.**

- Scope: Included 50 studies encompassing 41,718 adult participants across 15 countries.
- Depression Outcomes: Pool data from 10 randomized controlled trials (RCTs) demonstrated a modest but statistically significant reduction in depressive symptoms (SMD = -0.48). The antidepressant effects were substantially stronger in protocols that verified a state of biochemical ketosis through testing, utilized very low-carbohydrate metrics (<10% of total calories), or evaluated non-obese individuals.
- Anxiety Outcomes: Across 9 RCTs, the evidence regarding anxiety symptoms remained inconclusive and statistically non-significant (SMD = -0.03). However, data from quasi-experimental (non-randomized) studies showed consistent self-reported improvements in both depression and anxiety.

Janssen-Aguilar R, Vije T, Peera M, et al. Ketogenic diets and depression and anxiety: a systematic review and meta-analysis. JAMA Psychiatry. Published online November 5, 2025. doi:10.1001/jamapsychiatry.2025.3261

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Gao M, Kirk M, Knight H, et al. A ketogenic diet for treatment-resistant depression: a randomized clinical trial. JAMA Psychiatry. Published online February 4, 2026. doi:10.1001/jamapsychiatry.2025.4431

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### Systematic Review on Depression and Anxiety (2026)

Published in The Journal for Nurse Practitioners, this systematic review focused specifically on the implications of low-carbohydrate and ketogenic diets for clinical psychiatric practice.

- Scope: Reviewed peer-reviewed studies published up through recent cohorts, identifying distinct trials utilizing standardized metrics (such as the PHQ-9, GAD-7, and HAM-D).
- Key Findings: The review concluded that ketogenic metabolic therapy demonstrates a clear signal for reducing symptom severity in mood disorders.
- Clinical Application: The authors highlighted its particular promise as an adjunctive strategy for individuals suffering from treatment-resistant psychiatric conditions or those with co-occurring metabolic dysregulations (such as insulin resistance or metabolic syndrome).

Neiling, K., Cooper, N., Fenton, A., Ndzi, M., & Humphrey, K. (2026). The Ketogenic Diet for Depression and Anxiety: Implications for Practice. The Journal for Nurse Practitioners, 22(6), Article 105816.

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### Ketosis for Severe Mental Illness: A Critical Review (2026)

Published in Current Psychiatry Reports, this review critically appraised both clinical and preclinical data for severe mental illnesses (SMI), including schizophrenia, bipolar disorder, and major depression.

- Focus on Ketosis: The review scrutinized whether the metabolic state of ketosis itself drives psychiatric stabilization.
- Key Findings: It recognized that emerging open-label data and pilot trials show highly encouraging psychiatric and metabolic improvements. However, the authors maintained a cautious tone, noting that early trials are heavily vulnerable to expectation bias and short-term dietary support tracking. It called for longer, fully controlled RCTs to definitively isolate the psychiatric durability of the diet from general weight-loss or lifestyle trial attention.

Curr Treat Options Psychiatry. 2026;13(1):20. doi: 10.1007/s40501-026-00394-z

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