# Low-calorie diets linked to increased depressive symptoms in overweight individuals, new study finds



A new study has reignited debate surrounding the implications of low-calorie diets, suggesting they may be linked to an increased risk of developing depressive symptoms. Conducted by researchers in Canada and published in BMJ Nutrition Prevention and Health, the research examined the health questionnaires of 28,525 participants from the US National Health and Nutrition Examination Survey (NHANES). The findings reveal that individuals on calorie-restricted diets experience heightened instances of low mood, low energy, and sleep disturbances—symptoms more pronounced in overweight and obese individuals.

Among the study subjects, about 8% reported depressive symptoms, with significant proportions classified as overweight or obese; specifically, 33% and 38%, respectively. Notably, while around 87% of participants were not adhering to any specific diet, those who were restricting calories—including 859 individuals on "nutrient-restrictive" diets—differed markedly in reported mood status. The study highlights that low-calorie dieting was particularly prevalent among overweight and obese subjects.

Contrasting with earlier findings which seemed to support the mental health benefits of such diets, this study underscores a critical distinction: prior research often focused on tailored diets that can be misleading when considering general dietary behaviours. The researchers argue that the real-world inadequacies inherent in many restrictive diets—often lacking essential nutrients—can induce physiological stress, potentially exacerbating depressive symptoms. They articulated that the focus on simplistic dichotomies of “healthy” versus “unhealthy” diets fails to encapsulate the complexities of actual eating patterns.

This revelation aligns with a burgeoning body of research exploring the intricate relationship between diet and mental health. While certain studies suggest low-calorie diets can yield short-term mental health benefits, especially in individuals with higher baseline body mass indexes (BMI), others portray a more nuanced picture. A systematic review published in 2023 indicated that while there may be initial reductions in depressive symptoms for people on calorie-restricted diets, the long-term benefits remain uncertain without further well-controlled studies.

Additionally, contrasting studies have reported positive outcomes associated with calorie restriction. Research involving non-obese adults in the CALERIE 2 Randomized Clinical Trial noted improvements in mood and tension among participants following calorie restriction compared to those with unrestricted eating patterns. However, the nuances of these findings cannot be overlooked; the benefits often pertain to specific populations and dietary methodologies, raising questions about how universally applicable such results might be.

Findings from a 2023 randomized clinical trial focusing on a low-calorie, high-protein diet revealed that participants experienced significant improvements in depression, stress, and anxiety after just a month of dietary intervention. However, even these results call for cautious interpretation as they stem from controlled settings that may not reflect typical dietary behaviours.

Professor Sumantra Ray, chief scientist at the NNEdPro Global Institute for Food, Nutrition and Health, stated that this study contributes to growing evidence about the complex interplay between dietary patterns and mental health. He emphasised the need for further, rigorously designed studies to truly decipher how restrictive diets may impact nutrient intake and, consequently, mental well-being. The conversation surrounding diet is evolving, suggesting that healthcare professionals reassess how they approach dietary recommendations, especially for vulnerable populations such as men and individuals classified as obese.

This ongoing examination into the relationship between weight-loss diets and mental health is critical, as dietary practices continue to play a prominent role in public health discussions. The findings underscore the necessity for a more holistic understanding of nutrition and psychological well-being, encouraging individuals to consider not just caloric intake but the intrinsic quality of their diets.

### 📌 Reference Map:

* Paragraph 1 – [[1]](https://www.mirror.co.uk/news/health/most-common-form-weight-loss-35329123), [[2]](https://pubmed.ncbi.nlm.nih.gov/38084632/)
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* Paragraph 5 – [[1]](https://www.mirror.co.uk/news/health/most-common-form-weight-loss-35329123), [[5]](https://www.mdpi.com/2075-4426/11/3/176)
* Paragraph 6 – [[1]](https://www.mirror.co.uk/news/health/most-common-form-weight-loss-35329123)
* Paragraph 7 – [[1]](https://www.mirror.co.uk/news/health/most-common-form-weight-loss-35329123)

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## Bibliography

1. <https://www.mirror.co.uk/news/health/most-common-form-weight-loss-35329123> - Please view link - unable to able to access data
2. <https://pubmed.ncbi.nlm.nih.gov/38084632/> - A systematic review and meta-analysis published in 2023 examined the effects of low-calorie diets on depressive symptoms in individuals with overweight or obesity. The study found that such diets may reduce depressive symptoms in the short term, with greater reductions associated with higher baseline BMI and more significant weight loss. However, the authors noted the need for further well-controlled intervention studies to draw definitive conclusions.
3. <https://jamanetwork.com/journals/jamainternalmedicine/fullarticle/2517920> - The CALERIE 2 Randomized Clinical Trial investigated the impact of calorie restriction on mood, quality of life, sleep, and sexual function in healthy non-obese adults. The study found that participants undergoing calorie restriction experienced significant improvements in mood and tension compared to those in the ad libitum (AL) group. These findings suggest that calorie restriction may positively affect mood and related psychological factors in non-obese adults.
4. <https://pubmed.ncbi.nlm.nih.gov/37859298/> - A randomized clinical trial published in 2023 assessed the effect of a low-calorie, high-protein diet on psychometric variables in obese individuals. The study found that participants in the intervention group experienced significant improvements in depression, stress, and anxiety scores after 30 and 60 days, indicating that such dietary interventions can positively affect mental health in obese individuals.
5. <https://www.mdpi.com/2075-4426/11/3/176> - A systematic review published in 2021 examined the relationship between diet, obesity, and depression. The review found that calorie-restricted diets were associated with decreases in depression scores in obese patients, suggesting that such dietary interventions may be a promising approach to managing depression in this population.
6. <https://pubmed.ncbi.nlm.nih.gov/24097021/> - An intervention study published in 2013 evaluated the efficacy of a fasting and calorie restriction (FCR) dietary regime on mood states and depression among ageing men. The study found significant improvements in mood states and nutritional status among participants following the FCR regime, indicating its potential benefits for mental health in older adults.
7. <https://www.frontiersin.org/articles/10.3389/fnut.2023.1038070/full> - A randomized controlled trial published in 2023 investigated the effects of a calorie-restricted diet on weight gain and metabolic abnormalities in obese women with schizophrenia. The study found that adherence to the calorie-restricted diet significantly decreased body weight and improved metabolic parameters compared to a normal diet, suggesting potential benefits for weight management in this population.