



# Relationship of Diet to Depression



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Submission: June 08, 2019; Published: August 26, 2019

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**Keywords:** Diet; Depression; Disorders

## Mini Review

Globally 300 million people are suffering of depressive disorders and are associated with unemployment, poor physical health, impaired social functioning, and, in its most severe forms, suicide. Hence, imposing a considerable burden on individuals along with the society due to the high economic cost from lost productivity and demand on healthcare services [1]. (Firth et al. 2019)

Brown et al. [2] defined depression as a disorder presented with major symptoms like increased sadness and anxiety, loss of appetite, depressed mood, and a loss of interest and pleasure in activities previously perceived pleasurable. Patients suffering of depression have a suicidal tendency to a larger degree and hence are usually treated with antidepressants and/or psychotherapy [2]. Hence to establish an effective therapeutic intervention is necessary to provide a better quality of life for the patients and a positive outcome to the community.

Standard treatments for depression have achieved efficacy, however a substantial proportion of people do not achieve remission using such strategies. Subclinical symptoms of depression are prevalent across those without clinically diagnosed common mental disorders. These symptoms, although falling short of diagnostic thresholds, still impede upon quality of life and socio-occupational functioning, incurring even further personal and economic burden on a population scale. Therefore, to treat symptoms of depressions new methods are needed. Rising evidence proposes that diet/nutrition may affect the onset of mood disorders and specifically depression [2].

In 2008 Rao et al. [3] highlighted that depression is more typically thought of as strictly biochemical-based or emotionally rooted. On the contrary, nutrition can play a key role in the onset as well as severity and duration of depression. They elaborated that several of the easily noticeable food

patterns that precede depression are the same as those that occur during depression. These may include poor appetite, skipping meals, and a dominant desire for sweet foods. They reported that the dietary habits of Asian and American countries are often deficient in many nutrients, particularly in essential vitamins, minerals and omega-3 fatty acids. On the other hand, it was observed that the diet of patients suffering from mental disorders is the severity of deficiency in these nutrients. Patients suffering of depression were found to adopt a poor-quality diet. Besides low intake of some B vitamins, serum levels of vitamin B12 and folic acid were low, and there were many signs of abdominal obesity in the depression group [4].

According to Holford [5] good mood foods and supplements have a good logic, and substantial evidence that ensuring optimum nutrition in depressed patients can be highly effective. Moreover, simple alterations to lifestyle such as encouraging exercise and outdoor activity to maximize light, reducing stress and recommending counselling.

## The following advice on diet and supplement may help

**Diet:** Reduce sugar and stimulants (caffeinated drinks and smoking). Fruit and vegetables to be increased to 5 servings a day. Eat oily fish (mackerel, tuna, salmon, herring) at least twice a week. Ensure sufficient protein from fish, meat, eggs, beans and lentils.

**Supplements:** B complex, including vitamin B6 10mg, folate 400mg and vitamin B12 10mg. Additional folate 400 to 2000mg a day. 5-HTP 200±300mg a day. Omega-3-rich fish oil, two capsules a day, giving at least 400mg of EPA.

Several studies have highlighted that the addition of vital nutrients in the daily diet had a positive impact on patient's symptoms. Moreover, a reduction in symptoms were noticed after adding to their diet supplements containing amino

acids, as they are converted to neurotransmitters, they help in improving depression along with other mental health problems. Based on several studies and evidence nutritional supplement/treatment is emerging. These could be suitable in controlling and to some extent prevent depression and other mental health disorders [3]. Recent systemic reviews of many studies as stated by Firth et al. [1] have demonstrated associations between measures of diet quality and the probability of and risk for depression. In addition, an association was found between proinflammatory dietary patterns and a significantly higher incidence of depressive symptoms, even among those without diagnosed mental disorders. Whereas results of previous systematic review, using only narrative synthesis assessed the benefits of various dietary interventions for depressive symptoms generally suggested positive effects of dietary interventions on subclinical depression. However, the previous review is not reliable as it did not apply meta-analytic techniques to quantify the findings and the results did not include recent interventions in clinical populations. Thus, clarification remains necessary on whether dietary interventions can improve symptoms of depressive disorders.

A prevention trial called MoodFOOD is the first trial to assess directly the impact of a food-related behavioural activation therapy and a unique multi-nutrient supplement (containing omega (containing omega-3 fatty acids, selenium, vitamin D + calcium) on the prevention of depression. Preliminary analysis of the trial found no evidence to support food-related behavioural activation therapy or multi-nutrient supplementation reduced depressive symptoms. However, secondary analysis revealed a significant decreased onset of major depressive disorder in the participants who were compliant to the food-related behavioural activation therapy. The MoodFOOD trial concluded that among overweight or obese adults with subclinical symptoms depression, multi nutrient supplementation compared with placebo and food-related behavioural activation therapy compared with no therapy did not reduce episodes of major depressive disorder for 1 year. Therefore, this conclusion suggests a lack of support to the use of these interventions for prevention of major depressive disorder [6].

A previous systematic review examined the benefits of various dietary interventions for depressive symptoms and anxiety but using only narrative synthesis. Results generally suggested positive effects of dietary interventions on subclinical depression. A meta-analysis was conducted of all randomized controlled trials (RCTs) examining this therapeutic strategy to date. A subgroup analysis was utilized to examine effects of dietary interventions on depression/anxiety in both clinical and nonclinical populations and to explore which aspects of these are associated with any potential greater efficacy. It was revealed that consistently significant and positive effects

of dietary interventions on depressive symptoms observed across all random-effects meta-analyses, even in high-quality studies, strongly suggests that diet can play a role in the treatment and also self-management of depressive symptoms across the population [1].

A randomized controlled trial conducted by Parletta et al. [7] revealed that a Mediterranean diet supplemented with fish oil, can improve mental health in people with depression.

In the American Psychiatric Association (APA) Annual meeting in 2019 a research on the effect of adherence to a Mediterranean-type diet and its effect on symptoms of depression in later life's presented. A team of researchers from Hellenic Open university, Greece, worked with members of day-care centers for older people from the East Attica region of Greece. Mediterranean-style diet may have protective effects against cognitive decline in older individuals along with other positive outcomes on cardiovascular disease and reduced risk of cancer. This diet generally emphasizes eating fruits and vegetables, whole grains, legumes and nuts, using olive oil, eating dairy products, fish and poultry in moderation, and limiting red meat and sweets. It was revealed that the participants who had a high adherence to a Mediterranean diet specifically one that had a high vegetable content, but little poultry products, and low alcohol consumption experienced lower likelihood of developing depression or symptoms associated with depression. They stated that the causality may lie either way: eating a healthful Mediterranean diet may lead to better mental health, but equally, depression could affect a person's ability to follow a nutritious diet and lead an overall healthful life. However, they noted that the study does not prove cause and effect and could potentially reflect that people with depression have more difficulty maintaining healthy diets, exercise and other aspects of a healthy lifestyle [8].

### Conclusion

In conclusion, evidence on the positive impact of adhering to certain diets/regimes and adding of specific nutrients on the depressive symptoms experienced by patients suffering of depression is present. However, the evidence still lacks support of using dietary intervention in the prevention of depressive symptoms. Therefore, further research shedding light on the efficacy of dietary intervention in prevention and managing depression/depressive symptoms seems necessary. It will assist in obtaining a clear understanding of the effects implicated by nutrition/diet on patients with depressive symptoms and the efficacy of dietary interventions. As recommended by Kaner et al. [4] a need for future research exploring the overall nutritional status of individuals with depression is needed to help in understanding and treating the condition and to promote healthy lifestyles that may help in depression management.

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DOI: [10.19080/NFSIJ.2019.09.555761](https://doi.org/10.19080/NFSIJ.2019.09.555761)

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