

Foods and Nutrients that May Help Prevent Depression

Yukiko Abe*

Hirosaki University, Hirosaki, Japan

***Corresponding Author:** Yukiko Abe, Hirosaki University, Hirosaki, Japan

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Abstract

Several foods, such as fish, vegetables, and fruits, have been found to be negatively associated with depression. In addition, several nutrients, such as: EPA, DHA, tryptophan, zinc, magnesium, folate, and vitamin C, also have been found to be negatively associated with depression. The levels of tryptophan, zinc, and magnesium are high in most of fish species. Intakes of fish abundant in EPA and DHA, vegetables abundant in folate, and fruits and vegetables high in vitamin C may help prevent depression.

Keywords: *Foods; Nutrients; Depression*

It has been reported that depression is associated with death by cancer, pneumonia and suicide in the elderly [1]. Therefore, it is important to prevent the onset of depression.

Several foods and nutrients have been found to be negatively associated with depression. High consumption of fish correlated with a lower annual incidence of major depression [2]. Many species of fish, such as: Yellowtail, Pacific saury, and sardines, contain eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA), and intake of EPA and DHA was reported to be significantly associated with a decrease in depressive symptoms [3,4]. The amount of EPA and DHA in fish species varies. Yellowtail, Pacific saury, sardines, mackerel, and salmon, for instance, have high levels of EPA and DHA, but codfish contains a little EPA and DHA. In tuna, the amount of EPA and DHA in red flesh is comparatively low, whereas the fatty meat of tuna is abundant in EPA and DHA. Although a previous cohort study found no association between fish intake and depression in older adults in the Dominican Republic, Venezuela, and Mexico [5], however, this study did not investigate the fish species eaten. The subjects may not have frequently eaten fish with high levels of EPA and DHA.

Nutrients other than EPA and DHA, such as tryptophan, zinc, magnesium, folate, and vitamin C, may also be negatively associated with depression. Usual intake deciles of tryptophan were found to be inversely correlated with self-reported depression [6]. Jacka., *et al.* [7] reported that the dietary intake of zinc, magnesium, and folate was negatively associated with depressive illness. In addition, as a result of a meta-analysis, individuals with depression have lower levels of serum folate and dietary intake of folate than individuals without depression [8]. Vitamin C intake was also significantly lower among individuals with depression than in the control participants [9].

Among these nutrients, a certain amount of zinc, magnesium, and folate are contained in fruit, vegetables, and fish. The amounts of zinc, magnesium, tryptophan, folate, and vitamin C in popular fishes, vegetables, and fruits are shown in table 1 [10]. It was documented that fruit and vegetable consumption was negatively associated with depression [9,11].

Food group	Food	Tryptophan (mg)	Zinc (mg)	Magnesium (mg)	Folate (µg)	Vitamin C (mg)
Fish	Atlantic salmon, raw	210	0.4	28	8	1
	Club mackerel, boiled	250	1.1	29	13	Tr*
	Bluefin tuna, lean meat, raw	300	0.4	45	8	2
	Bluefin tuna, fatty meat, raw	230	0.5	35	8	4
Vegetable	Cabbage, boiled	7.6	0.1	9	48	17
	Tomatoes, raw	5	0.1	9	22	15
	Carrot, root without skin, boiled	8.4	0.2	9	19	4
Fruit	Kiwifruit, green flesh type, raw	14	0.1	13	36	69
	Oranges, navel, raw	4.8	0.1	9	34	60
	Grapefruit, white flesh type, raw	4.1	0.1	9	15	36

Table 1: The amount of tryptophan, zinc, magnesium, folate, and vitamin C in 100g of each food.

*Tr: a very small amount.

On the other hand, many studies have investigated associations between dietary patterns and depression. As a result of a meta-analysis, a dietary pattern characterized by high intakes of several foods, such as fruits, vegetables, and fish, was apparently associated with a decreased risk of depression [12]. Akbaraly, *et al.* [13] reported that participants in the highest group of whole food pattern had lower odds of depression evaluated by the Center for Epidemiologic Studies Depression (CES-D) Scale than those in the lowest group. Additionally, a high consumption of processed food was associated with increased odds of CES-D depression in their study [13]. Processed foods include fried foods, but fried fish abundant in EPA and DHA, such as fried salmon, may help prevent depression. As the amount of food that an individual can eat per day is limited, higher intake of several specific foods is likely to efficiently aid in the prevention of depression.

Conclusion

In conclusion, the intake of fish abundant in EPA and DHA, vegetables abundant in folate, and fruits and vegetables high in vitamin C may help prevent depression.

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