

The Importance of Nutrition and Mental Health

Nutrition and mental health: one may assume that there is a cyclical relationship between them. However, recent studies have shown that habitually poor diets are associated with greater likelihood of or risk for depression and/or anxiety.¹

According to Johns Hopkins Medicine, the following guidelines should be followed for adolescent nutrition:²

- Eat three meals a day with healthy snacks
- Balance the meals being consumed: increase fiber in the diet, decrease the use of salt, decrease the use of butter and heavy gravies and eat more chicken and fish with limiting red meat intake to lean cuts
 - Mix the five food categories: Protein, dairy, fruits, vegetables and grains
- Drink water: try to avoid drinks high in sugar and be aware that fruit juices can have high calorie counts
- When cooking for your child, try to bake or broil instead of fry
- When choosing snacks, focus on fruits and/or vegetables

While guidelines certainly are helpful, there is specific research that indicates which foods can aid in targeting specific symptoms for mood dysregulation. This research focuses on how certain chemicals in the brain can be targeted by our food intake and adjust their levels to in turn, target the neurotransmitters in the brain to aid in mood regulation¹ (see Table 1).^{3 4} Additionally, the subsequent tables from the World Health Organization gives guidance on which foods to incorporate to ensure adolescents are meeting the need of important vitamins and minerals in their diet.⁵

The following are considerations for when you prepare meals for your adolescent:²

- Have several nutritious snack foods readily available. Often, teenagers will eat whatever is convenient.
- If there are foods that you do not want your teens to eat, avoid bringing them into the home.
- Be open to experiment with new foods
- Be open to suggestions from your child on food to prepare

¹ O'Neil, A., Quirk, S. E., Housden, S., Brennan, S. L., Williams, L. J., Pasco, J. A., Berk, M., & Jacka, F. N. (2014). Relationship between diet and mental health in children and adolescents: a systematic review. *American journal of public health, 104*(10), e31–e42. <https://doi.org/10.2105/AJPH.2014.302110>

² Hopkinsmedicine.org. 2021. *Healthy Eating During Adolescence*. [online] Available at: <<https://www.hopkinsmedicine.org/health/wellness-and-prevention/healthy-eating-during-adolescence>> [Accessed 19 November 2021].

³ Holford P. Depression: The nutrition connection. *Prim Care Ment Health. 2003*;1:9–16.

⁴ Khanna, P., Chattu, V. K., & Aeri, B. T. (2019). Nutritional Aspects of Depression in Adolescents - A Systematic Review. *International journal of preventive medicine, 10*, 42. https://doi.org/10.4103/ijpvm.IJPVM_400_18

⁵ World Health Organization., n.d. *GUIDELINE: Implementing effective actions for improving ADOLESCENT NUTRITION*. World Health Organization.

Table 1

Deficiency of neurotransmitter and their relationship with food

Neurotransmitter	Effects of deficiency	Foods to avoid	Foods to consume
Acetylcholine	Deterioration of memory and imagination Fewer dreams Increased confusion, forgetfulness and disorganization	Sugar Deep fried foods Junk foods Refined and processed foods Cigarettes Alcohol	Organic/free-range eggs Organic or wild fish – especially salmon, mackerel, sardines and fresh tuna
Serotonin	Low mood Difficulty sleeping Feeling disconnected Lacking joy	Alcohol	Fish Fruit Eggs Avocado Wheatgerm Low-fat cheese Lean, organic poultry
Dopamine	Lacking drive, motivation and/or enthusiasm Crave stimulants	Tea and coffee Caffeinated drinks and pills	Regular balanced meals Fruits and vegetables high in vitamin C Wheatgerm Fermented products
Gamma-Amino Butyric Acid (GABA)	Hard to relax Anxious about things Irritable Self-critical	Sugar Alcohol Tea and Coffee Caffeinated Drinks	Dark green vegetables Seeds and nuts Potatoes Bananas Eggs

Source: Adapted from [3] Holford, 2003; Depression: the nutrition connection. Primary Care Mental Health 1:9-16; Published in [4] (Chattu, Aeri and Khanna, 2019)

Table 2

Micronutrient-rich foods for a healthy diet

Food sources and considerations for absorption	Micronutrients
<ul style="list-style-type: none"> ● Haem iron: meat, poultry and fish ● Non-haem iron: cereals, legumes, fruits and vegetables ● Haem iron is absorbed more efficiently than non-haem iron. Consuming foods containing non-haem iron with food that contains vitamin C can improve the absorption of non-haem iron in a meal ● Calcium inhibits iron absorption so they should not be consumed together 	Iron
<ul style="list-style-type: none"> ● Leafy green vegetables (bok choy, Chinese cabbage, broccoli, kale, mustard greens) fish eaten whole, soy products (tofu and soy milk), dairy ● Oxalic acid limits the bioavailability of calcium contained in spinach, beetroot and sweet potatoes ● Diets high in animal protein and/or phytates (phytates are found in most plant foods, particularly whole grains and legumes, unleavened bread) limit calcium absorption 	Calcium
<ul style="list-style-type: none"> ● Leafy green vegetables, root vegetables, beans and peas, fruits from vine-based plants (ex: tomatoes, cucumbers and pumpkin), and tree nuts 	Potassium
<ul style="list-style-type: none"> ● Nuts, legumes, whole grains, watermelon, blackberries, seeds, shellfish, poultry, eggs, red meat and dairy products ● Consumption of phytates which are present in diets with little or no meat consumption limits zinc absorption ● Iron and calcium supplements decrease zinc absorption 	Zinc
<ul style="list-style-type: none"> ● Deeply colored fruits and vegetables, oily fruits and red palm oil 	Vitamin A
<ul style="list-style-type: none"> ● Citrus fruits, bell peppers, green beans, strawberries, papaya, guava, kiwi fruit, potatoes, broccoli and tomatoes 	Vitamin C
<ul style="list-style-type: none"> ● Oily fish, liver, egg yolks, yeast and mushrooms ● The most potent source of vitamin D is the sun 	Vitamin D

Source: Adapted and published in [5] (World Health Organization., n.d.)