



Food And Mood-The Interplay Between Nutrition, Mood, Brain, And Behavior.

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Declaration

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Abstract

Certain foods and nutrients help brain to make chemicals that can impact mood, attention and focus, while other foods can zap our energy. The best meal to enhance our mood is one that combines complex carbohydrates with lean proteins. For example, complex carbohydrates from whole foods (like sweet potatoes, rolled oats, beans and quinoa) can increase availability of the feel-good chemical serotonin in our brain. Protein consumption (from foods like fish, beef, chicken, turkey, tofu, beans, eggs and unsweetened yogurt) which has been linked to higher levels of dopamine and norepinephrine, which are brain chemicals that play a role in our mood, motivation and concentration. Fruits and vegetables are high in vitamins, minerals and antioxidants that nourish your body and have also been shown to boost happiness. The focus of nutrition research is shifting away from nutrients in isolation and toward the unique interactions that occur between nutrients in food. Eating moderate portions of a wide variety of whole, minimally processed foods will provide optimal nutrition and contribute to overall diet satisfaction. A healthy eating pattern should include foods from every food group: dairy, vegetables, fruits, whole grains and protein. Eating healthfully under this broad definition can look different depending on factors such as age, physical activity, health condition, taste preference and cultural variation.

This article explores how food affects our mental health, helps in using food to improve our overall mental and physical wellbeing. More research is needed on the impact of individual nutrients on mental health disorders, yet it is clear there is a link between low-nutrient, highly processed diets and mental health issues. Early intervention for mental disorders is key, so ensuring children receive nourishing food and are educated about nutrition is more important than ever. Physical and mental states are closely intertwined, and nutrition plays an important role in maintaining a state of health and wellness. A nourished body and mind will be better equipped to handle life's challenges.

Keywords: Behaviour, food, nutrition, mood.

1. Food and Mental Health

What we eat and drink affects how we feel, think and behave. There is research to suggest that what we eat may affect not just our physical health, but also our mental health and wellbeing. Eating well (i.e., a well-balanced diet rich in vegetables and nutrients) may be associated with feelings of wellbeing. We all know eating “healthy” food is good for our physical health and can decrease our risk of developing diabetes, cancer, obesity and heart disease. What is not as well known is that eating healthy food is also good for our mental health and can decrease our risk of depression and anxiety. One of the most obvious yet under recognized factors in the development of mental health is “NUTRITION”. Just like the heart, stomach and liver, the brain is an organ that requires different amounts of complex carbohydrates, essential fatty acids, amino acids, vitamins, minerals and water to remain healthy.

From a young age, we’re taught that eating well helps us look and feel our physical best. What we’re not always told is that good nutrition significantly affects our mental health, too. A healthy, well-balanced diet can help us think clearly and feel more alert. It can also improve concentration and attention span. Conversely, an inadequate diet can lead to fatigue, impaired decision-making, and can slow down reaction time. In fact, a poor diet can actually aggravate, and may even lead to, stress and depression.

- ▶ **Diet: Usually refers to the kinds of food that a person habitually eats.** In Western culture ‘diet’ is also often applied to the lifestyle changes used to lose weight. Although applied to the changes most often used to resolve a problem associated with being overweight or health issues, this may be more in line with the Latin origins of the word taken from the Greek ‘diaita’, meaning a ‘way of life’.
- ▶ **Balanced diet: Refers to eating a wide variety of foods in the right proportions and consuming the right amount of food and drink to achieve and maintain a healthy body weight.**
- ▶ **Nutrition: Refers to the quality of the food we eat (for example, whether food is processed or fresh), the kind of food we eat (for example, whether foods are vitamin and mineral rich; or how many calories they contain), how we chose to eat (quantity, timing, motivation for eating different types of food) and how the food has been produced (for example, has it been treated with pesticides?).**

2. Nutrient Depletion Can Imitate Mental Health Disorders

Symptoms in mental Health Disorders such as Fatigue, Anxiety, Depression, Irritability, Poor mood, Stress Intolerance, Overeating, cravings, Inability to sleep and Neurotransmitter Depletion are also present in nutritional depletion as well. Healthy eating contributes to a healthy mind, body and spirit and not just physical health. Unfortunately, many of the foods we eat today are over-processed, contain chemicals and preservatives, and lack nutrients. Among other benefits, good food can, boost our energy, lower the risk of developing certain diseases, provide fuel to brain, counteract the impact of stress on body and affect mood-related body chemicals

3. Essential Nutrients

Macronutrients includes Carbohydrates such as sugars, starches and fiber, proteins from animal and plant sources, fats from animal and vegetable fats, and fish oils. Micronutrients are Vitamins – A, B complex, C, D, E, K, Minerals like calcium, iron, sodium, magnesium, Zinc and water

4. Nutrition and the Brain

Food intake affects a person's mood, behavior, and brain function. The brain is an organ with very high metabolic and nutrient demands. On average, the brain consumes 20% of a person's daily caloric intake, approximately 400 calories per day. It is composed of 60% fat, and contains high concentrations of cholesterol and polyunsaturated fatty acids (PUFAs) such as Omega-3s. Poor mood or behavior may be the first signs of a nutritional deficiency

Production of monoamine neurotransmitters such as serotonin, norepinephrine, and dopamine, important in the pathophysiology of mental illness, depends on adequate building blocks of amino acids, and mineral dependent co-factors. Folate and other B vitamins are essential for the methylation cycle, which produces a co-factor crucial for monoamine neurotransmitter synthesis, BH-4. Proper function of the methylation cycle also reduces homocysteine elevated levels of which are linked to cardiovascular disease and depression. Inflammation may play an important role in mediating the link between diet and mental health. Multiple lines of research support the pathogenic role of neuroinflammation in mental illness. Lucas et al. (2014) used several inflammatory biomarkers including CRP, TNF alpha receptor 2, and IL-6 and data from food frequency questionnaires to derive an inflammatory dietary pattern from a sample of over 12,000 participants from the Nurses' Health Study. Participants who consumed a diet consistent with the inflammatory dietary pattern had a statistically significant increased risk of developing depression over time after adjusting for multiple confounders. Specifically, over twelve years of follow up, participants with the highest adherence to the inflammatory dietary pattern had a relative risk of 1.41 (1.22–1.63) of developing depression according to the strict definition (physician diagnosis and anti-depressant use). The inflammatory dietary pattern was high in in sugar-sweetened soft drinks, refined grains, red meat, diet soft drinks, and margarine and low in wine, coffee, olive oil, green leafy, and yellow vegetables.

5. Nutrition and Mental Disorders

Increased prevalence of mental health disorders linked to poor quality diet. Common nutritional deficiencies seen in patients with mental health disorders are Omega 3 fatty acids, B vitamins and some minerals and amino acids. The foods you eat can affect the chemical composition of your brain because the nutrients in foods are precursors to neurotransmitters.

Neurotransmitters are chemical messengers that tell our body what to do and how to feel. The most important neuro transmitters are Serotonin, Dopamine, Endorphins and Choline (precursor to acetylcholine).

Omega-3 fatty acids form an integral part of neuronal cell membranes and influence a number of essential processes in the central nervous system. More specifically, they regulate neurotransmission, influence gene expression, and directly affect neurogenesis and neuronal survival. They also act as anti-oxidants and have anti-inflammatory properties. Along with omega-3 intake, the balance of omega-6 and omega-3 fatty acids also appears to be relevant. Western diets tend to be abundant in omega-6 fatty acids, and quite low in omega-3s, a phenomenon that has occurred with the shift towards industrialized and processed food. Omega-6 fatty acids are the primary fatty acid in many vegetable oils, such as a corn oil and soy oil, often the cooking fats of choice in packaged and restaurant food.

Long chained omega-3 fatty acids are found in fish, seafood, and grass-fed beef. Typically, these are not foods that come to mind as staples of the standard American diet. Grass fed beef omega-3 content varies greatly, but generally contains 100mg of long-chained omega-3 fatty acids per 100g serving, much less than an equivalent serving of fatty fish. This highlights the importance of educating patients about meat quality and alternatives, such as grass-fed beef, which is generally more nutrient dense than conventionally-raised beef. Omega-3 fatty acids have been shown to be effective as either stand-alone or adjunctive treatment for ADHD, major depressive disorder, bipolar depression, and PTSD. In addition, an elevated omega-6 to omega-3 fatty acid ratio in the blood has been associated with major depressive disorder and ADHD. There is some evidence that reducing the omega-6 to omega-3 ratio with omega-3 supplements lead to improvement in symptoms of ADHD. Several possible biological mechanisms underlie these associations, i.e., the same enzymes are required to convert both short chain omega-3 and omega-6 fatty acids to their long chain biologically active versions. Thus, excess omega-6 could interfere with the production of omega-3s by limiting the conversion to the longer chain forms. These foods are not rich sources of nutrients crucial for brain health. When considering brain health, fish and seafood are among the most nutrient dense foods that one can eat. Protein consumption (from foods like fish, beef, chicken, turkey, tofu, beans, eggs and unsweetened yogurt) has been linked to higher levels of dopamine and norepinephrine, which are brain chemicals that play a role in your mood, motivation and concentration. The Mediterranean diet has gained significant attention for decreasing symptoms of depression, with key components being increased intake of vegetables, fruit, omega-3-rich fish, nuts, legumes and olive oil. Consuming a diet based on whole, unrefined foods with enough protein, healthy fat and fibre also helps to keep blood sugar stable after meals, which has been linked to improvements in mood and anxiety. Any mention of olive oil, wine, and vegetables when speaking about nutrition leads to thoughts about the Mediterranean diet. This dietary pattern is based on the traditional cooking style of countries bordering the Mediterranean

Sea and is rich in fish, olive oil, legumes, and whole grains. It also contains small, but regular amounts of red wine, cheese, and yogurt.

Mediterranean diet has been associated with decreased incidence and prevalence of depression. An attempt to explore the potential mechanisms to explain this association, one research group looked at brain derived neurotrophic factor or BDNF. BDNF is an important neurochemical that is active in many areas of the brain. It plays a role in many crucial functions such as neuroplasticity, neuronal survival, and growth and differentiation of new neurons and synapses.

Low serum levels of BDNF have been found in a number of mental disorders including major depressive disorder, PTSD, Schizophrenia, and Alzheimer's dementia. BDNF has also been implicated in the mechanism of action of anti-depressant medications. One prospective study examined the impact of diet on plasma BDNF levels in humans. Participants were randomized to follow one of three diets: the American Heart Association guidelines, a Mediterranean diet augmented with olive oil, and a Mediterranean diet augmented with nuts. After three years of follow up, the Mediterranean diet with nuts group had a relative risk of 0.22 (0.05–0.90) of having a very low plasma BDNF level. What is more, individuals in this group who had depression at baseline had significantly higher mean plasma levels of BDNF at the end of the study.

Another aspect on the frontier of the link between diet and mental health is the microbiome. Fermented foods have been part of the human diet since the Palaeolithic period and they remain part of the dietary practices of most known traditional diets today.

These types of foods are commonly referred to as probiotic since they contain microorganisms that positively influence health. Prebiotics, on the other hand include non-digestible fibre, which stimulates the growth and or activity of these beneficial microorganisms. The impact of the microbiome on mental health is an emerging area of research that is beyond the scope of this article. Suffice it to say that the microbiome provides another link between diet and mental health since short-term dietary changes can induce species level changes to intestinal microbes.

Therefore, it appears that dietary pattern can influence mental health through a number of mechanisms. Basic building blocks of the brain such as monoamine neurotransmitters, myelin, and neuronal membranes depend on adequate nutrient intake. Food choice influences neuroplastic processes via effects on BDNF expression and systemic inflammation via omega-3 to omega-6 ratio. Finally, food is the primary arbiter of the microbiome, an emerging area of research in general and mental health.

6. Other Nutritional Factors and Mental Health

Another very important topic when it comes to mental health and nutrition is gut health. The gut is implicated in immune function, neurotransmitter synthesis and function, inflammation, pain syndromes, and general brain health. Notably, gut bacteria produce

hundreds of neurochemicals that the brain uses to regulate basic physiological processes as well as mental processes such as learning, memory and mood. Additionally, our microbiome is essential for digestion, absorption, vitamin production, controlling growth of harmful microorganisms, and keeping the integrity of our intestinal cells. Suffice to say there is so much research coming out about this connection that in recent years the gut was named 'the second brain.' When the gut's microbiome is disturbed, which happens due to a plethora of reasons, our brain suffers and often results in mood disturbance. The 100 trillion microbes that make the GI tract their playground is critical to health. Gut bacteria regulate digestion and metabolism. They extract and make vitamins and other nutrients from food that you eat. They program the body's immune system. Gut bacteria also produce hundreds of neurochemicals that the brain uses to regulate basic physiological processes as well as mental processes such as learning, memory and mood. For example, gut bacteria manufacture 80 to 95 percent of the body's supply of serotonin, which influences both mood and GI activity. Our guts and brain are physically linked via the vagus nerve, and the two are able to send messages to one another. While the gut is able to influence emotional behaviour in the brain, the brain can also alter the type of bacteria living in the gut.

7. Healthy Diet

A healthy diet affects brain health by; Boosting brain development. Changing brain proteins and enzymes to increase neural transmitters, which are the connections between brain cells. Increasing good gut bacteria, which promotes a healthy gut biome, which decreases inflammation. Inflammation is known to affect both cognition and mood. Raising serotonin levels through various food enzymes, which improves mood. Recently there have been major advances addressing the influence certain foods have on psychological well-being. Increasing these nutrients could not only increase personal well-being but could also decrease the cost of mental health issues all around the world.

Healthy food-1. Complex carbohydrates

One way to increase psychological well-being is by fuelling brain cells correctly through the carbohydrates in our food. Complex carbohydrates are sugars made up of large molecules contained within fibre and starch. They are found in fruit, vegetables, and wholegrains and are beneficial for brain health as they release glucose slowly into our system. This helps to stabilise our mood. Simple carbohydrates found in sugary snacks and drinks create sugar highs and lows that rapidly increase and decrease feelings of happiness and produce a negative effect on our psychological well-being. We often use these types of sugary foods to comfort us when we're feeling down. But this can create an addiction-like response in the brain, similar to illicit drugs that increase mood for the short term but have negative long-term effects. Increasing intake of complex carbohydrates and decreasing sugary drinks and snacks could be the first step in increased happiness and well-being.

Healthy food 2. Antioxidants

Oxidation is a normal process our cells carry out to function. Oxidation produces energy for our body and brain. Unfortunately, this process also creates oxidative stress and more of this happens in the brain than any other part of the body. Chemicals that promote happiness

in the brain such as dopamine and serotonin are reduced due to oxidation and this can contribute to a decrease in mental health. Antioxidants found in brightly coloured foods such as fruit and vegetables act as a defence against oxidative stress and inflammation in the brain and body. Antioxidants also repair oxidative damage and scavenge free radicals that cause cell damage in the brain. Eating more antioxidant-rich foods can increase the feel-good chemicals in our brain and heighten mood.

Healthy food3- Omega 3

Omega 3 are polyunsaturated fatty acids that are involved in the process of converting food into energy. They are important for the health of the brain and helps to produce feel-good chemicals dopamine, serotonin and norepinephrine. Omega 3 fatty acids are commonly found in oily fish, nuts, seeds, leafy vegetables, eggs, and in grass fed meats. Omega 3 has been found to increase brain functioning, can slow down the progression of dementia and may improve symptoms of depression. Omega 3 are essential nutrients that are not readily produced by the body and can only be found in the foods we eat, so it's imperative we include more foods high in omega 3 in our everyday diet

Healthy food 4-B vitamins

B vitamins play a large role in the production of our brain's happiness chemicals serotonin and dopamine and can be found in green vegetables, beans, bananas, and beetroot. High amounts of vitamins B6, B12, and folate in the diet have been known to protect against depression and too low amounts to increase the severity of symptoms. Vitamin B deficiency can result in a reduced production of happiness chemicals in our brain and can lead to the onset of low mood that could lead to mental health issues over a long period. Increasing B vitamins in our diet could increase the production of the feel-good chemicals in our brain which promote happiness and well-being.

Healthy food 5-Prebiotics and Probiotic

The trillions of good and bad bacteria living in our tummies also influence our mood, behaviour and brain health. Chemical messengers produced in our stomach influence our emotions, appetite and our reactions to stressful situations. Prebiotics and probiotics found in yoghurt, cheese and fermented foods such as kombucha, sauerkraut and kimchi work on the same pathways in the brain as antidepressant medications and studies have found they might have similar effects. Prebiotics and Probiotics have been found to suppress immune reactions in the body, reduce inflammation in the brain, decrease depressed and anxious states and elevate happy emotions.

Incorporating these foods into our diet will not only increase our physical health but will have beneficial effects on our mental health, including reducing our risk of disorders such as depression and anxiety.

8. Brain Foods

8.1. Salmon-It's a "fatty" fish, containing high amounts of omega-3 fatty acids, which have been linked to a reduction in mental disorders such as depression. Omega-3s have been

shown to boost learning and memory as well. Salmon also has a naturally high-occurring amount of vitamin D, which is often added to foods and has been linked to lower rates of depression.

8.2. Chicken-Chicken, like turkey, is a delicious lean-protein choice containing the amino acid tryptophan.help your body produce serotonin — which is vital in helping our brain manage your mood, fight depression and help maintain strong memory.

8.3. Whole Grains-Many types of food fall under this category, like beans, soy, oats and wild rice. While your body and brain utilize carbohydrates for energy, too often we consume simple carbs, which lead to blood sugar spikes.Foods classified as whole grains contain complex carbohydrates, which leads to glucose being produced more slowly, as a more even and consistent source of energy. Also, whole grains help the brain absorb tryptophan, which means that when eaten in conjunction with foods like chicken and turkey, one can further reduce symptoms of depression and anxiety while boosting brain function.

8.4.Avocados-Avocados are full of vitamin K and folate, which help protect our brain against stroke. They also provide a boost to your memory and concentration. Avocados serve up a high dose of lutein, too, which studies have linked to improved brain function.Avocadocontains Oleic Acid, which gives brainpower, Avocados are power foods because, again, they contain healthy fat that our brain needs in order to run smoothly. Three-fourths of the calories of an avocado are from fat, mostly monounsaturated fat, in the form of oleic acid. An average avocado also contains 4 grams of protein, higher than other fruits, and is filled with vitamin K, different kinds of vitamin B (B9, B6, and B5), vitamin C, and vitamin E12. Finally, they are low in sugar and high in dietary fibre, containing about 11 grams each.

8.5. Spinach-Spinach and other leafy greens provide your brain with solid amounts of folic acid, which has been shown to be a great deterrent to depression. It also helps fight off insomnia, which is heavily linked to mental impairments and can help reduce dementia in older adults.

8.6. Yogurt-Yogurt and other products containing active cultures are excellent sources of probiotics. Often associated with digestive health, probiotics have been shown to play a role in reducing stress and anxiety.Yogurt can also provide you with potassium and magnesium, which helps oxygen reach the brain, further improving its ability to function.

8.7.Nuts-like salmon, nuts are an excellent source of omega-3 fatty acids, helping to fight depression. Cashews, for example, help provide oxygen to the brain with a dose of magnesium.Walnuts are one of the richest plant sources of omega-3 fatty acids, and numerous studies have demonstrated how omega-3 fatty acids support brain function and reduce depression symptoms. Nuts contain a compound called phenylalanine, which is shown to help the brain produce dopamine and other neurotransmitters that boost your mood. Phenylalanine has also been linked to a reduction in the symptoms of Parkinson's Disease.

8.8. Olive Oil-Pure, extra virgin olive oil has been quite popular as of late as a part of healthy Mediterranean-style diets. Olive oil contains polyphenols, which help to remove the effects of proteins linked to Alzheimer’s Disease. It can also help improve learning and memory.

8.9. Tomatoes-The source of a tomato’s red hue, lycopene is classified as an all-around beneficial phytonutrient. One of the many health boosts it provides is in the fight against brain disease. It’s been shown to delay the onset and progression of Alzheimer’s Disease, fighting off cell damage. In addition, lycopene has been shown to help with memory, attention, logic and concentration. Tomatoes are packed with depression Fighters. Folic acid can prevent an excess of homocysteine — which restricts the production of important neurotransmitters like serotonin, dopamine, and norepinephrine — from forming in the body.

8.10. Beans-Beans have satisfyingly high mood-Stabilizing Fibre. “Beans, beans, good for the heart. The more you eat, the more you smile.” They can act as anti-diabetes and weight-loss foods.

8.11. Onions-onions are layered with Cancer-Fighting Allium. “Eating onions and garlic frequently is associated with a reduced risk of cancers of the digestive tract,” explains Fuhrman. “These vegetables also contain high concentrations of anti-inflammatory flavonoid antioxidants that contribute to their anticancer properties.”

8.12. Seeds-seeds are small but mighty Sources of Omega-3s. Flaxseeds, hemp seeds, and chia seeds are especially good for your mood because they are rich in omega-3 fatty acids. Fuhrman writes, “Not only do seeds add their own spectrum of unique disease-fighting substances to the dietary landscape, but the fat in seeds increases the absorption of antioxidants.

8.13. Apples-Like berries, apples are high in antioxidants, which can help to prevent and repair oxidation damage and inflammation on the cellular level. They are also full of soluble fibre, which balances blood sugar swings.

8.14. Dark Chocolate-Dark chocolate contains high levels of flavonoids, a type of antioxidant. It has been shown to boost attention and memory, enhance mood and help fight cognitive decline in older adults. Just remember, chocolate should still be consumed in moderation.

8.15. Mushrooms-Here are two good reasons why mushrooms are good for our mental health. First, their chemical properties oppose insulin, which helps lower blood sugar levels, evening out your mood. They also are like a probiotic in that they promote healthy gut bacteria. And since the nerve cells in our gut manufacture 80 to 90 percent of our body’s serotonin — the critical neurotransmitter that keeps us sane.

8.16. Berries-Blueberries, raspberries, strawberries, and blackberries are some of the highest antioxidant foods available to us. Antioxidants help significantly in lowering depression.

9. The Best Foods for Mental Health

9.1. Spices To Support Mental Health: saffron, turmeric (curcumin), saffron plus curcumin, peppermint (for attention), cinnamon (for attention, ADHD, irritability).

9.2. Dopamine-Rich Foodsfor focus and motivation: turmeric, theanine from green tea, lentils, fish, lamb, chicken, turkey, beef, eggs, nuts and seeds (pumpkin and sesame), high protein veggies (such as broccoli and spinach), protein powders.

9.3. Serotonin-Rich Foods:for mood, sleep, pain and craving control: Combine tryptophan-containing foods, such as eggs, turkey, seafood, chickpeas, nuts and seeds (building blocks for serotonin), with healthy carbohydrates, such as sweet potatoes and quinoa, to elicit a short-term insulin response that drives tryptophan into the brain. Dark chocolate also increases serotonin.

9.4. Gaba-Rich Foods:for anti-anxiety: broccoli, almonds, walnuts, lentils, bananas, beef liver, brown rice, halibut, gluten-free whole oats, oranges, rice bran, spinach.

9.5. Choline-Rich Foods: shrimp, eggs, scallops, sardines, chicken, turkey, tuna, cod, beef, collard greens, Brussels sprouts.

9.7. Omega-3-Rich Foods: to support nerve cell membranes and serotonin. Helps manage moods and inflammation.

9.8. Antioxidant-Rich Foods: acai fruit, parsley, cocoa powder, raspberries, walnuts, blueberries, cranberries, kidney beans, blackberries, pomegranates, chocolate, olive, and hemp oil (not for cooking at high temperatures), and green tea.

9.9. Magnesium-Rich Foods: for anxiety: pumpkin and sunflower seeds, almonds, spinach, Swiss chard, sesame seeds, beet greens, summer squash, quinoa, black beans, and cashews.

9.10. Zinc-Rich Foods: oysters, beef, lamb, spinach, shiitake and cremini mushrooms, asparagus, sesame and pumpkin seeds.

9.11. Vitamin B6, B12, Folate-Rich Foods: leafy greens, cabbage, bok choy, bell peppers, cauliflower, lentils, asparagus, garbanzo beans, spinach, broccoli, parsley, cauliflower, salmon, sardines, lamb, tuna, beef, and eggs.

9.12. Prebiotic-Rich Foods: dandelion greens, asparagus, chia seeds, beans, cabbage, psyllium, artichokes, raw garlic, onions, leeks, root vegetables (sweet potatoes, yams, squash, jicama, beets, carrots, turnips).

9.13. Probiotic-Rich Foods: brined vegetables (not vinegar), kimchi, sauerkraut, kefir, miso soup, pickles, spirulina, chlorella, blue-green algae, kombucha tea.

10. Conclusion

Nutrition and psychology are linked, a healthy diet is associated with better mood and less depressive symptoms. A diet high in refined/processed foods is associated with increased risk of depressive symptoms and lower mood. Nutritional deficiencies lead to mental health disorders and cognitive impairment. Sugar consumption has deleterious effects on mental, physical, and cognitive health. In conclusion, the food we eat is not only important for our

physical health, but also for our mental health. Although more studies are needed to help understand how and why this may be the case, there is now plenty of research that shows what we eat can influence our mood. This suggests diet may be able to play an important role in the prevention and treatment of general mood related disorders.

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