

A black and white photograph of a person with long hair sitting on a window sill, looking out a window. The person is wearing a dark long-sleeved shirt and dark pants. The window has a white frame and a dark handle. The overall mood is contemplative and serene.

Mental Health, Inflammation, and Nutrition for Better Moods

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Mental health issues have a huge impact on society; Some suggest that their impact is larger than any other chronic disease, including heart disease or diabetes. I've had my own struggles (I write about this a fair bit including [here](#) and [here](#) and [here](#)) and work hard to stay mind, body, spirit healthy. If you struggle I do not want you to feel that you are alone.

There are so many factors involved in complex conditions like mental health issues. Science is just starting to unravel one of these factors - inflammation.

This article is a matter-of fact-look at Mental Health, Inflammation, and Nutrition for Better Moods.

First, we'll go over the many links between inflammation and mental health (there are a few). Then, we'll talk about some exciting research into natural approaches - things like foods, nutrients, and lifestyle upgrades - and how these are related to better mental health.

NOTE: This article is not a substitute for professional medical advice. If you have any of these conditions, make sure you're being monitored regularly by a licensed healthcare professional.

WHAT IS INFLAMMATION?

The word inflammation comes from the Latin word "inflammo," meaning "I set alight, I ignite."

Because inflammation can become harmful, it has gotten a lot of bad press lately. However, inflammation isn't always a bad thing. As in most areas of health, it's the balance that's important.

Inflammation is actually a natural process that our body uses to protect against infections, irritants, and damage. Inflammation helps our bodies eliminate damaged cells and tissues, and helps them to repair. It also helps to reduce the cause of the damage, for example, by fighting the infection. Inflammation that happens in a big way, but for a short time can help the body to heal these injuries and infections.

On the other hand, lower levels of inflammation sometimes stick around longer than necessary. This long-term "chronic" inflammation can cause damage over time. Often, there are few, if any, signs or symptoms. It's this chronic inflammation that is linked to many conditions including mental health, heart disease, and diabetes.

Inflammation mostly comes from our immune system's response to infections and injuries. It also involves our blood vessels (arteries and veins) and other molecules. A few of these inflammatory molecules, or "markers," include free radicals (oxidants), cytokines, and C-reactive protein (CRP).

So, what are the links between inflammation and mental health?

INFLAMMATION AND MENTAL HEALTH

There are many factors linked to suboptimal mental health. One of these is inflammation.

In terms of depression, the link with inflammation was first discovered back in 1991. With respect to bipolar disorder, the link between it and immune dysfunction was proposed as far back as 1981.

NOTE: While there are many links between inflammation and mental health issues, it's not the only connection. Others include neurotransmitter issues (e.g. serotonin, dopamine, etc.); reduction in growth factors (e.g. brain-derived neurotrophic factor, BDNF); and neuroendocrine issues (i.e. chronically increased stress hormone levels).

On a personal note, GABA (an inhibitory neurotransmitter) helped me [break free of wine cravings](#) (I would reach for wine to calm anxiety) and my anxiety is linked to Hashimoto's (read [here](#) and [here](#)). Not every person in the health care field is aware of this link and if you have a negative experience with one professional, keep searching until you find someone who will hear you without judgment and support you as you learn to care for yourself well.

But since research shows that inflammation may be a factor for about one-third of people with depression, I figure it is worth a deep-dive. This article, therefore, focuses specifically on the links between inflammation and mental health.

Link 1 - Inflammation and mental health

First of all, some mental health issues are associated with increased inflammatory markers like cytokines and CRP. For example, people with depression tend to have higher levels of cytokines. In fact, some of the inflammatory markers found in the blood are known to reach the brain.

High levels of inflammation may also inhibit recovery in people who experience mental health symptoms.

In fact, some researchers believe that levels of inflammation may actually be able to predict negative mental health outcomes.

While inflammation may be part of the cause of mental health symptoms for some people, it can go in both directions. Mental health issues may also increase some of these inflammatory markers.

Some animal studies show that stress can cause significant increase in inflammatory markers. Even people who are stressed tend to have increased levels of inflammatory markers and lower levels of anti-inflammatory markers.

Link #2 - Inflammatory illnesses and mental health

Inflammatory illnesses like allergic and autoimmune diseases, as well as metabolic conditions (e.g. heart disease, diabetes, and obesity) are associated with higher rates of mental health symptoms.

And this link also goes both ways - people with mental health symptoms are more likely to get metabolic-related conditions.

This link between mental health symptoms and metabolic conditions has led some researchers to coin the term “mood-metabolic syndrome.” This is meant to reflect the fact that they’re linked to each other, and also that these links can go both ways.

Link #3 - Inflammatory medications and mental health

People who take certain inflammatory medications are at increased risk of developing mental health symptoms. On the other hand, some medications used to treat depression (e.g. SSRIs) reduce levels of some inflammatory markers.

Link #4 - Inflammatory diets and mental health

There is growing evidence that people who eat a high quality diet tend to have a better sense of well-being and better mental health. This includes better moods and lower stress. Certain anti-inflammatory diets are linked to lower rates of mental health issues.

This also means that studies show links between unhealthy eating patterns and mental health issues. Inflammatory diets (which we’ll discuss in more detail below) are associated with higher rates of mental health symptoms.

NUTRITION FOR BETTER MOODS

Evidence for a link between what we eat and how we feel is fairly new. The first studies to be published on this were as recent as 2009. This new area is called “nutritional psychiatry.”

The relationships between foods and mental health are complex, and we’re just starting to understand them. While many studies show a link, not all of them do.

As an example, one study concluded:

“Our data support the hypothesis that high dietary quality is associated with good emotional well-being.” (Meegan *et. al*, 2017)

What foods are associated with worse moods? These not-so-healthy dietary patterns include higher intakes of:

- Saturated fat and processed meats;
- Refined sugars and starches; and
- Fried and processed foods.

People who eat this way tend to report more mental health symptoms than those who eat a more health-promoting diet. And, several recent studies consider poor eating habits to be a risk factor for some mental health issues.

Not surprisingly, these not-so-healthy foods are also linked with higher inflammatory markers like CRP. And several studies show that improving the diet can reduce levels of CRP.

In fact, some studies show that the higher the “inflammatory factor” of the diet, the higher the risk for mental health issues.

One dietary pattern that’s been studied a lot is the Mediterranean diet. This diet includes a lot of vegetables, fruit, whole grains, legumes, fish, and olive oil. It also contains a lot of nutrients and fiber. Eating a Mediterranean-style diet is associated with lower levels of inflammatory markers and a reduced risk of mental health issues.

This complex association between food and mental health can also go both ways. Mental health symptoms can also influence appetite and food choices. And it’s likely that other factors such as obesity, exercise, food insecurity, and use of alcohol and tobacco are involved as well.

We don't know exactly how these eating patterns affect mental health - inflammation is definitely one possibility. Nutrition can impact how our immune system functions, and this can affect levels of inflammation, and mental health issues. It could also be through the effects of the nutrients themselves, and even directly through the digestive system (microbiota-gut-brain axis).

BETTER FOODS FOR BETTER MOODS

A recent clinical study found that when people start eating a healthier diet, they can actually reduce some of their mental health symptoms!

This study is particularly interesting. It's called the SMILES trial.

The SMILES trial

What makes the results from the SMILES trial strong is that it was an actual experiment. It didn't just ask people what they ate, measured their inflammatory markers, and what their symptoms were. It was "interventional" - people agreed to actually change the way they ate!

The researchers say:

"...this is the first RCT [randomized control trial] to explicitly seek to answer the question: If I improve my diet, will my mental health improve?" (Jacka *et. al*, 2017)

Here's how it worked:

The SMILES trial recruited 67 people with depression and poor dietary quality to a trial for 12-weeks. These were people who reported a high intake of sweets, processed meats, and salty snacks; and a low intake of vegetables, fruits, lean protein, and dietary fiber.

Half of them were asked to:

- Eat more vegetables, whole grains, fruit, legumes, low-fat unsweetened dairy, raw and unsalted nuts, fish, lean red meat, chicken, eggs and olive oil; and
- Eat less sweets, refined grains, fried food, fast food, processed meats and sugary drinks; and,
- Drink no more than 2 glasses of wine per day (with meals, preferably red wine).

This half of the participants who upgraded their diet were also given seven professional nutrition counselling sessions.

The other half of the people in the SMILES trial were given social support. They were “befriended” and discussed sports or news, or played cards or board games. There was no nutrition support, nor any dietary recommendations given to people in this group.

The researchers found that in 12-weeks the people who improved their diet also improved some mental health symptoms! They said:

“We report significant reductions in depression symptoms as a result of this intervention... The results of this trial suggest that improving one's diet according to current recommendations targeting depression may be a useful and accessible strategy for addressing depression in both the general population and in clinical settings.” (Jacka *et. al*, 2017)

It would be great for other, larger trials to confirm these results. In the meantime, eating a more health-promoting diet is helpful for so many conditions, not just mental health conditions!

(Use the free sample menus on my [free gifts page](#) and in my free CALM mini-course for ideas to get you started. But always remember, not every “health food” is right for you. Listen to your body and how you feel after eating.)

NUTRIENTS FOR BETTER MOODS

Is there something special in these foods that may help with moods?

We know the brain needs enough of all essential nutrients in order to function properly. And insufficient levels are linked with the stress response and the immune response.

Eating nutrient-dense foods is the best way to optimize nutrition. Foods are complex combinations of nutrients. Supplementing with individual nutrients is not the same as eating a healthy diet.

This means, it is best to prioritize buying quality food first before supplements. Supplements do have their place, though ([head to my free gifts for an article that will help you choose quality supplements](#)).

Let's go over a few key nutrients for better moods.

B-vitamins such as B6, B9 (folic acid), and B12

People who tend to be low in B-vitamins are more likely to have mental health issues. Higher intakes of vitamin B6 (pyridoxine) and B12 (cobalamin) may reduce risk.

With folic acid in particular, the connection may be due to its different forms. "Folic acid" is the inactive form of vitamin B9. Our bodies naturally converted it into the active form (called L-methylfolate) by the enzyme methylenetetrahydrofolate reductase (MTHFR).

Once folic acid has been activated, it goes to the brain and is used to make neurotransmitters like serotonin, melatonin, dopamine, epinephrine, and norepinephrine.

Interestingly, many people with mental health issues are unable to convert folic acid into its active form.

One study tested supplements with the active form of folic acid (L-methylfolate) on people with mental health issues. While some people had a moderate improvement, the people who also had inflammation (higher levels of CRP) had an even greater improvement.

Vitamin D

Vitamin D is well known to help absorb calcium for strong bones, but has many other functions too. In terms of immunity, vitamin D can reduce inflammatory molecules in people with certain infections and inflammatory diseases. (Not only did Vitamin D help me with better moods throughout winter but it optimizing my levels took away the horrible muscle and joint pain I experienced in my arm due to Hashimoto's.)

Vitamin D has a number of roles within the brain. Vitamin D plays a role in circadian rhythms and sleep, and influences the growth of nerve cells in the developing brain.

There is growing evidence that people who tend to be low in vitamin D also tend to have more mental health symptoms. In fact, some (but not all) studies show that vitamin D supplementation can improve mood scores and reduce mental health symptoms.

Vitamin D is the most commonly deficient nutrient in Western countries. It's known as the "sunshine vitamin" because our skin makes it when exposed to sunlight. It is also found in a few foods, and as a supplement. I recommend getting tested and then

supplementing to optimize levels, especially if you live much of the year without sun on your skin.

Minerals (Calcium & Selenium)

Low intake of calcium is associated with mental health symptoms, while high intake is associated with lower rates of mental health symptoms.

Depression has been associated with low blood levels of the essential mineral selenium. Low intake of selenium is also associated with an increased risk for depression.

Omega-3s

Omega-3 oils are healthy fats found in many foods such as seafood, nuts, legumes, and leafy greens. They have been shown to reduce inflammation.

Some (but not all) studies suggest that the omega-3 fats, specifically those found in fish and fish oil, have mental health benefits.

Better lifestyle for better moods

Foods aren't the only thing that can be upgraded to improve your mental health and inflammation. Your lifestyle can have a big role too!

Both exercise and sleep are important factors that can improve moods and inflammation.

Lifestyle factor #1 - Exercise

People with mental health issues are more likely to lead sedentary lives. This is another factor that can increase levels of chronic inflammation.

There is a lot of evidence that exercise (or joyful movement!) helps to reduce the risk and symptoms of mental health issues. Regular exercise reduces inflammation. We know this because CRP levels are lower in people who regularly exercise, than those who do not and people who exercise at a higher intensity have even lower CRP levels.

I encourage you to reduce the amount of time you are sedentary, and take active breaks. Don't worry about perfection or keeping up with anyone else. Just start somewhere ([choose all or something](#)).

Lifestyle factor #2 – Sleep

Sleep plays a vital role in our physical and mental health. Lack of enough high quality sleep is very commonly associated with mental health issues. People who experience insomnia are at higher risk for later developing mental health issues.

Lower amounts of sleep can affect the immune system and increase chronic inflammation. Increasing levels of CRP and inflammatory cytokines have been measured with sleep deprivation.

If you're not getting at least 7 hours of sleep each night, start trying to make it a priority (I need 8.5 hours/night for mental and physical health. This is one of the best ways I can love myself!)

CONCLUSION

Inflammation is one of several factors linked with mental health and mood issues. It may be a factor for up to one-third of people who suffer from these.

The link between inflammation and mental health issues is thought to go both ways - inflammation can contribute to mental health and mood issues, and vice versa.

Eating a nutrient dense, anti-inflammatory diet, and getting regular exercise and quality sleep can help to reduce inflammation, and improve mental and overall health. I also believe that developing a healthier stress mindset and learning to deepen self-awareness and self-compassion are critical to living mind, body, and spirit healthy.

This is an exciting and much-needed area of research that will continue to answer more questions (potentially saving lives) and help people live with better moods in the future.

If you struggle with mental health seek appropriate support. Advocate for yourself – keep searching for answers even though it can feel hard and frustrating at times. You matter!

Reach out if you want to chat about [how I can support you](#), as part of your care team, so you can get unstuck and live an unshackled life of purpose, health and JOY.

NOTE: The information in this article is not a substitute for professional medical advice. If you have any of these conditions, make sure you're being monitored regularly by a licensed healthcare professional.

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