

Serotonin and foods? ^[1]

(1) Dear Alice,

Are there any foods that can put serotonin into my system, or does there have to be some type of chemical ingestion in order for it to work? Thanks a bunch!

— Mood alterer

(2) Dear Alice,

Are there any foods out there that can raise serotonin levels or help increase my attention span? I suffer from depression and racing thoughts — two horrors for a college student.

— Deadbeat

Answer

Dear Mood alterer and Deadbeat,

Our body chemistry is complex; many different hormones, neurotransmitters, and other substances influence how we feel. Serotonin is one chemical that has received a great deal of attention for its contribution to mood. It's a neurotransmitter (a chemical involved in the transmission of nerve impulses between nerve cells) that's formed in the brain and primarily found in three parts of the body — the brain, the lining of the digestive tract, and in blood platelets. In the brain, serotonin's main effects include improving mood and giving you that "satisfied" feeling from food. It's also thought to help promote sleep and relaxation.

Carbohydrate-rich meals often increase serotonin levels. However, manipulating serotonin levels through food may be very difficult to achieve because serotonin's properties may have varying effects in different people. Some people may experience a temporary lift in mood after a carbohydrate-rich meal, while others may become relaxed or sleepy. Certain foods that increase serotonin levels aren't the healthiest choices either. Believe it or not, candy and sweets, which are simple carbohydrates, have the greatest impact, but the effect will only last one to two hours. Complex carbohydrates (rice, potato, pasta) may increase serotonin levels, but not to the same extent because the protein content of these foods might actually inhibit serotonin production.

Here's a brief explanation of the mechanism behind the effect of food on serotonin levels: after consumption of a carbohydrate-rich meal, the hormone insulin is secreted. Insulin lowers the blood levels of most amino acids (the building blocks of protein), except for tryptophan (a precursor to serotonin). Amino acids compete for transportation across the blood-brain barrier, and when there is a larger proportion of tryptophan, it enters the brain at a higher rate, thus boosting serotonin production. To make matters more interesting, tryptophan is present in many protein-rich foods, which have been found to prevent serotonin production. So, you can see how intricate and complex this system is.

In terms of the effects of actual foods on serotonin, here are some suggestions from nutritionists:

- If you're having trouble falling asleep, try a small snack of carbohydrate-rich food. Warm milk may work for the psychological comfort, but also because milk contains a moderate amount of carbohydrate in the form of lactose (milk sugar).
- If you tend to have only carbohydrates (e.g., plain bagel or muffin) before class, and you often fall asleep during class, try adding some protein by putting some hard cheese (cheddar, American, Swiss, etc.) or peanut butter on the bagel. Or, have a yogurt or cottage cheese instead.
- For those who are active (athletes or exercisers), don't be fooled by carbohydrate's relaxing effects. You'll do best with a diet rich in grains/starches, legumes (dried beans and peas), fruit, and vegetables in order to get carbohydrates for muscle energy. Don't skimp on protein either, which is necessary for muscle growth and repair. Additionally, include some fat for satiety and healthy skin.

The carbohydrate/tryptophan/serotonin pathway is simply a hypothesis at this point. Since each of us is unique, in order to get a "desired effect" from food, you would need to experiment eating different foods and observing how your body reacts to each of them. You'll also need to take into consideration your other lifestyle choices — how much sleep you get, whether or not you exercise regularly, the medications you take, your stress levels, etc. — when figuring out what affects your moods in what manners. If you have more questions about mood and food, consider scheduling an appointment with a registered dietician by asking for a referral to one from your primary health care provider.

Attention span difficulties may or may not be attributed to what you consume. Many college students go for long periods of time without eating. This certainly can affect your concentration. Our brains need glucose, and if we deny it through lack of food, our bodies have to work harder to break down stored carbohydrates for glucose that'll be used to feed our brain and central nervous system. That's why it's a good idea to have something to eat about every four hours or

so. Be prepared by carrying some snacks with you, especially if you're busy and short on time. Some portable snack ideas include fruit, low-fat granola bars, nuts, and low-fat crackers. These will also help you to avoid frequenting the vending machines.

Apparently, some cases of depression are influenced by reduced quantities or activity of serotonin in the brain. Certain medications, selective serotonin re-uptake inhibitors (SSRI), work to balance serotonin levels in the brain. For some people, SSRIs may be helpful. However, the causes and solutions might be more involved than unbalanced serotonin levels alone. A medical professional can help determine the best course of action. If you have depression you can find a referral to a psychiatrist, counselor, psychologist, social worker, or other mental health professional through your primary health care provider, or from the [American Psychiatric Association](#) [2], the [American Psychological Association](#) [3], or the [National Association of Social Workers](#) [4].

All the best as you explore your unique body chemistry and the puzzle of food, mood, and finding success.

Alice!

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