The Science Behind It – Fuel Up for Finals Week

Based on research from the Franklin Institute and the British Journal of Nutrition, poor dietary choices have a direct effect on brain function and your ability to concentrate. When you eat something with high sugar content, your pancreas starts to secrete insulin. Insulin triggers cells throughout your body to pull the excess glucose out of your bloodstream and store it for later use. Soon, the glucose available to your brain has dropped. Neurons, unable to store glucose, experience an energy crisis. Hours later, you feel spaced-out, weak, confused, and/or nervous. Your ability to focus and think suffers. The name for this glucose deficiency is hypoglycemia, and it can even lead to unconsciousness. Low blood glucose levels can lead to a significant deterioration in attention abilities, University of Edinburgh researchers concluded after testing healthy individuals in whom hypoglycemia had been induced.

Diet can affect cognitive ability and behavior in children and adolescents. Nutrient composition and meal pattern can exert immediate or long-term, beneficial or adverse effects. One aspect of diet that has elicited much research in young people is the intake/omission of breakfast. This has obvious relevance to school performance. While effects are inconsistent in well-nourished children, breakfast omission deteriorates mental performance in malnourished children. Even intelligence scores can be improved by micronutrient supplementation in children and adolescents with very poor dietary status. Overall, the literature suggests that good regular dietary habits are the best way to ensure optimal mental and behavioral performance at all times. In contrast, children and adolescents with poor nutritional status are exposed to alterations of mental and/or behavioral functions that can be corrected, to a certain extent, by dietary measures.

Sources:

How Food Affects Your Moods: Can your diet help put you in a good mood (or a bad one)?
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Can your diet really help put you in a good mood? And can what you choose to eat or drink encourage bad moods or mild depression? While certain diets or foods may not ease depression (or put you instantly in a better mood), they may help as part of an overall treatment plan. There's more and more research indicating that, in some ways, diet may influence mood. We don't have the whole story yet, but there are some interesting clues. Basically the science of food's affect on mood is based on this: Dietary changes can bring about changes in our brain structure (chemically and physiologically), which can lead to altered behavior.

How Can You Use Food to Boost Mood?
So how should you change your diet if you want to try to improve your mood? You'll find eight suggestions below. Try to incorporate as many as possible, because regardless of their effects on mood, most of these changes offer other health benefits as well.
Don't Banish Carbs -- Just Choose 'Smart' Ones
The connection between carbohydrates and mood is all about tryptophan, a nonessential amino acid. As more tryptophan enters the brain, more serotonin is synthesized in the brain, and mood tends to improve. Serotonin, known as a mood regulator, is made naturally in the brain from tryptophan with some help from the B vitamins. Foods thought to increase serotonin levels in the brain include fish and vitamin D. Here's the catch, though: While tryptophan is found in almost all protein-rich foods, other amino acids are better at passing from the bloodstream into the brain. So you can actually boost your tryptophan levels by eating more carbohydrates; they seem to help eliminate the competition for tryptophan, so more of it can enter the brain. But it's important to make smart carbohydrate choices like whole grains, fruits, vegetables, and legumes, which also contribute important nutrients and fiber.
So what happens when you follow a very low carbohydrate diet? According to researchers from Arizona State University, a very low carbohydrate (ketogenic) diet was found to enhance fatigue and reduce the desire to exercise in overweight adults after just two weeks.

Get More Omega-3 Fatty Acids
In recent years, researchers have noted that omega-3 polyunsaturated fatty acids (found in fatty fish, flaxseed, and walnuts) may help protect against depression. This makes sense physiologically, since omega-3s appear to affect neurotransmitter pathways in the brain. Past studies have suggested there may be abnormal metabolism of omega-3s in depression, although some more recent studies have suggested there may not be a strong association between omega-3s and depression. Still, there are other health benefits to eating fish a few times a week, so it's worth a try. Shoot for two to three servings of fish per week.

Eat a Balanced Breakfast
Eating breakfast regularly leads to improved mood, according to some researchers -- along with better memory, more energy throughout the day, and feelings of calmness. It stands to reason that skipping breakfast would do the opposite, leading to fatigue and anxiety. And what makes up a good breakfast? Lots of fiber and nutrients, some lean protein, good fats, and whole-grain carbohydrates.

Don't Overdo Caffeine
In people with sensitivity, caffeine may exacerbate depression. (And if caffeine keeps you awake at night, this could certainly affect your mood the next day.) Those at risk could try limiting or eliminating caffeine for a month or so to see if it improves mood.

SOURCES:
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