

## Food and Mood...Is There A Connection?

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If you have ever wondered whether the foods you eat can affect your mood, you are not alone. One of the most frequently asked questions I hear is “what can I be eating for more energy?”

Food has long held a powerful association with certain moods. The caricature of a single woman drowning her loneliness in chocolate ice cream, for example, or the notion of having warm milk and cookies before bedtime to induce sleep are entrenched in our culture. Even the idea of comfort foods, such as mashed potatoes or meatloaf, can evoke warm, loving memories and sway our moods. And some researchers believe that part of the healing power of chicken soup lies in the fact that you know Mom made it with love.

Aside from the myths and suppositions, however, lies some very real research into the effect of certain foods on mood and brain power. This will be the first in a two part series which will explore the relationship between food and the brain: this week will focus on the relationship between food and mood, while next week will look at how to eat for optimal brain health and “brain power”.

Caffeine consumption is one of the most immediate ways to influence mood, as is the only food substance that actually mimics the body's stress response. Caffeine increases heart rate and blood pressure, and causes a release of stress hormones to prepare you for the “fight or flight” syndrome that was built into our genes as a form of self defense.

In small doses (less than 300 mg, or about the amount found in 2 cups of coffee) caffeine can act as a mild stimulant, creating a higher awareness and energy in the short term. This is no doubt why many cultures around the world start their day with a cup of joe. However, overuse of caffeine (think of the coworker who is constantly seen with a 32 oz coffee mug in hand) can cause feelings of anxiety, mild tremors (“the jitters”) stomach upset, and headaches. Caffeine, therefore, can influence your mood in a very real sense, and one way to ensure that your mood is stressed and tense is to drink mega amounts of caffeine.

Differences between carbohydrate and protein metabolism can influence mood as well. When carbohydrates are eaten, the brain's production of the neurotransmitter serotonin is temporarily increased. Serotonin has a calming, anxiety reducing effect on the brain, which can make you feel more serene and less anxious. Research has shown that about 30 grams of carbohydrate is all that's needed to induce this effect, which is the equivalent found in two slices of bread, 1 cup oatmeal or 1 bagel.

Interestingly enough, while the presence of fat will not influence this brain chemistry, the presence of protein will prevent this “calming” effect from occurring. This physiology behind carbohydrate metabolism may explain why many people gravitate towards sweet, carbohy-

drate rich food when they are stressed, especially higher fat choices like cookies or chocolate.

Protein, in contrast, has a much different effect on the body. Protein increases the brain's production of the neurotransmitter dopamine, which temporarily boosts concentration and alertness. Approximately 15 grams of protein is all that's needed for dopamine's effect to be seen, which is the equivalent of 2 oz chicken or fish, or 1 cup of beans.



What does this mean for you? Well, if you are expected to shine in a power meeting after lunch, choose a meal which is low in fat and moderate and carbohydrate and protein. A turkey or roast beef sandwich on whole wheat, for example, will help keep your brain focused on the task at hand, while a spaghetti lunch with a side of garlic bread may have you snoozing through your big moment. In fact, I often counsel people to choose a higher protein lunch rather than one loaded with carbs to stave off the late afternoon dips in energy that can occur after a big meal.

In a recent study, subjects were fed either a high carbohydrate meal consisting of pasta, bread and tomato sauce, or a high protein meal consisting of a small amount of pasta and some lean turkey breast. Although both groups consumed the same number of calories, those subjects fed the high protein lunch performed better on tests measuring concentration and alertness, and the results lasted for up to two hours after lunch.

Remember that fat can influence mood as well; a small amount of heart healthy fats will keep you feeling energized and fuller longer (fat takes longer to digest than carbohydrate), but if you overdo it on fats you will feel tired and sluggish. Therefore, lean protein choices are best to reap the benefits of mood.

One other important way that food can impact mood is when there is a lack of it. When your body isn't well fueled (or well hydrated) you can feel sluggish and off your game. We know that children who eat breakfast before school (especially kids who eat some protein with breakfast) score higher on tests given in the morning than do children who arrive at school on an empty stomach.

In both children and adults, eating too little can cause blood glucose levels to drop, which leads to irritability and poor concentration. Be sure to encourage breakfast for your entire family, as this is one of the easiest ways to be sure that whatever their mood may be when they come home, they start the day off on the right foot.