metabolism matters

Foods and your moods

Brad J. King, MS, MFS

Ever wonder why certain meals make you feel great, while others leave you feeling sluggish and ready to nap? The answer lies within the way that nutrients from these foods interact with brain chemicals to either enhance our levels of alertness and motivation or to make us sleepy.

“Meals comprised primarily of improper carbohydrates can cause us to feel less than energetic.”

Nutritionists have always known that meals comprised primarily of improper carbohydrates (such as fibre-void white bread) can cause us to feel less than energetic, while meals high in protein can help us feel alert. Research in the early '80s performed at the Massachusetts Institute of Technology (MIT) showed that carbohydrates help elevate levels of a calming brain chemical called serotonin, the precursor to melatonin, also known as the hormone of sleep.

This research team also discovered that one of the main reasons we crave carbohydrates is to compensate for a reduction in serotonin levels. Carbohydrates elevate brain serotonin by stimulating insulin levels, which ultimately drive the amino acid tryptophan—the main building block of serotonin—into the brain. Since depression and stress can greatly deplete tryptophan levels, this is also believed to be one of the primary reasons we crave carbohydrates when we are feeling down or are experiencing excess stress.

It is also widely accepted that processed carbohydrates can cause wild blood sugar fluctuations, which may lead to hypoglycemic episodes (low blood sugar). Since your
The body operates in a very narrow blood sugar range, each time you consume high-glycemic carbs (carbs that release their sugars rapidly) you stimulate excess insulin production in order to balance the body. The problem is that insulin remains active even after blood sugar is lowered, causing your body to crave more sugar (carbs) in order to raise blood sugar levels once again—and so the vicious cycle repeats itself.

High-protein-containing meals tend to stimulate the brain rather than sedate it. Researchers have discovered a few main reasons for this. First, complete proteins (such as chicken, fish, and eggs) contain high levels of the amino acids phenylalanine and tyrosine, the building blocks of the brain-stimulating chemicals dopamine and norepinephrine. It is important to note that these proteins (along with three others) compete with tryptophan for entry into the brain, and more often than not win entry to help you feel more alert.

Another reason carbohydrates tend to decrease levels of alertness when compared to proteins is that their biological effects seem to block levels of a group of brain chemicals called orexins. Found within the hypothalamus portion of the brain, orexins work to enhance our levels of alertness. Researchers from the University of Manchester in England have discovered that even small increases in blood sugar levels can cause sleepiness by suppressing orexins.

"High-protein meals tend to stimulate the brain rather than sedate it."

The next time you grab a doughnut or croissant for breakfast, you will at least understand why you need that cup (or pot) of coffee just to get you through the morning. Instead, try mixing up a protein shake with fresh or frozen berries and some essential fats—your mind and body will thank you for it!
