

Let's Talk About Stress

There are many layers to the condition we call "stress." And as many responses to it as individuals in our community! I'll be talking about this in a number of columns but, for now, I'd wager a chocolate bar that I'm not the only Dispatcher who has cravings for fatty, sugary, or salty foods. Not necessarily in that order, but definitely varying in combination of those elements and certainly with varying levels of intensity. You know what I'm talking about! All the way from "Hmm, I'd really like some chocolate" to "Look, if y'all get between me and that last donut? *Someone's* gonna get hurt."

I'm guessing it's not news to you that sleep disruption paired with other stressors drives carb cravings. Just look at folks circling the donut box at your next meeting. No one wants to be the first to dive in, but that box gets our attention every time. I've decided to solve the "not wanting to be first" issue by bringing donuts and just openly pillaging the supply in plain view of all attendees.

But seriously. Working on little sleep and with daily stress is often considered just "how we roll" in dispatch. Schedule rotation, vacation/sick fill-in, adrenal response, caffeine use...each of these contributes to the two conditions feeding on each other. Trying to figure out which comes first..sleep disruption or stress..is much like having the chicken/egg debate. The bottom line is that two things we consider normal in our work environment seriously affect our food choices.

We know this anecdotally but current brain science appears to confirm it. UC Berkeley researchers have used functional MRI technology to study what happens in the brain when someone is short on sleep. The waking fMRI images show a *decrease* in activity in the *frontal* lobes of the brain and an *increase* in activity in the *lower* lobes of the brain. Basically, when you're sleep deprived, the part of your brain that's considered the area that regulates control..the Executive Function..decreases in activity. And the primitive area of your brain..related primarily to instinct..increases in activity.

Under these brain function patterns, test subjects chose higher caloric value foods to the tune of an additional 600-900 calories over healthier choices. You can read that study here: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2919439/>.

So, let's move on for a look at the stress element in this equation. Scientists know enough about brain chemistry to know that serotonin release in the brain is controlled by food intake. Eating carbs increases serotonin, protein intake doesn't. Serotonin is linked to sleep onset, pain sensitivity...and *mood control*. "Hence many patients learn to overeat carbohydrates (particularly snack foods, like potato chips or pastries, which are rich in carbohydrates and fats) to make themselves feel better." Is it any wonder that human beings hit the carbs under stressful conditions? (You can read the source material I quoted here: <http://www.ncbi.nlm.nih.gov/pubmed/8697046>).

I'm guessing that most of the time if you're reaching for chocolate, or chips, or [insert your favorite salty, sugary, fatty food here], like me you're not giving it much thought, you're doing it out of habit. Notice that researchers said patients "learn" to overeat carbs. Well, here's a thumbnail version of how we learn. We learn by grouping information and/or actions together, a process called, "chunking." It's one of the reasons we can easily learn a 7 digit phone number, we "chunk" the information together.

Once you've learned a behavior/habit that way, fMRI studies show a lot of activity in the brain at the *beginning* of the behavior, and at the *end* of the behavior, but *not a lot of brain activity in between*(from a June 2014 article in Scientific American). So when someone reaches for junk food *out of habit* in response to sleep deprivation and/or stress, they are *literally* giving *almost no thought* to what they're doing! It's like a different way of self-medicating and we're doing it *without the input of the higher regions of our brains*.

So where does that leave those of us who use food as a feelgood habit? Does just the thought stress you out? Wait! NO! Don't reach for that cookie! Or maybe you should....

Up next: Making habits and more about lack of sleep

Author's note: There's a typo in the January column. Instead of 1200 calories/day, it should say 1400-1600 calories/day depending on your gender and size.