

## Using Neuroscience to Boost Your Creativity

To really unleash your company's creativity, look to the squishy place it all begins: the chemistry in the brain.

By Ryan Underwood; February 2014

That breakthrough idea you had that doubled sales? Your incredibly funny quip at the strategy meeting? Don't get too full of yourself--you were probably just having a good day chemically.

Or so says Baba Shiv, a marketing professor at Stanford's Graduate School of Business. Shiv's research focuses on the role neural structures play in decision making and economic behavior. He has also long been fascinated by the biological roots of creativity.

According to Shiv, creativity resides at the intersection of two primary pathways in the brain. Along one pathway, the neurotransmitter serotonin governs whether you are operating from a sense of calm and contentment or from a position of anxiety and fear. On the other pathway, dopamine moves you from boredom or apathy to excitement and engagement.

The right neurochemical cocktail for your best creative work, according to Shiv, is a high level of both serotonin and dopamine. "This will produce a condition in which you are calm but energized," he says.

How do you achieve this blissfully creative state? For starters, you can reduce stress in the office. Spikes in stress hormones such as cortisol counteract the creativity-boosting effects of serotonin. Plus, stressed-out people tend to be closed off to new ideas, says Shiv. Studies of baboons have shown that when experiencing stress, they refuse to seek out new territory (or mates, for that matter). For humans, that means people are more likely to stick to familiarity when under too much pressure.

Poor sleep can also have negative effects on creativity. Shiv says people need up to two hours of deep, non-REM sleep each night for the brain to restore the proper levels of serotonin. This sort of deep sleep accounts for less than 30 percent of the average person's slumber, but it can be diminished by sleep interruptions as well as alcohol and caffeine consumption.

Serotonin levels tend to be highest in the morning, making it an optimal time to schedule brainstorming sessions. To make the most out of the morning's elevated levels of serotonin, Shiv suggests nixing carbs in favor of a high-protein breakfast. "That's the best brain food," he says. "The proteins produced from it in the body are converted to the much-coveted serotonin and dopamine." And caffeine? It acts as a "physiological arouser," says Shiv. In other words, it will magnify whatever emotion you're already feeling. Translation: If you're on a hot streak of developing new ideas, have another cup of coffee; if you're anxious about meeting your budget, skip it.

Cardiovascular exercise also enhances the neurological conditions for creative thinking, by releasing a peptide that helps produce serotonin. If you have an afternoon brainstorming meeting, Shiv recommends first taking a 10- to 15-minute brisk walk. "Or, better yet, walk and talk," he says.

Maintaining a variety of intellectual interests also keeps the creative juices flowing. Shiv says it's important to talk to people in other disciplines and read widely outside your field to develop "knowledge nodes"--bits of unrelated information that can come together to produce an unexpected solution. "This is how Steve Jobs operated," Shiv says. "His wide-ranging interests allowed for a creative lifetime of connecting the dots."

Four Creativity Boosters:

1. Schedule morning meetings.
2. Eat a protein-rich breakfast.
3. Walk before--or during--meetings.
4. Reduce workplace stress.

<http://www.inc.com/magazine/201402/ryan-underwood/creativity-boosters-neuroscience.html>