

# On My Mind: The power of mindfulness



People are happiest, most at peace and unbothered by life's problems, when they are too engaged in something to be thinking about themselves. Years ago, the psychologist Mihaly Csíkszentmihályi coined the term flow activity, defining it as "being completely involved in an activity for its own sake." He added that "the ego falls away. Time flies. Every action, movement, and thought follows inevitably from the previous one, like playing jazz. Your whole being is involved, and you're using your skills to the utmost."

Flow activities might include riding horses, writing, cooking, working, playing in or watching a football game, having sex, engaging in deep conversation, practicing yoga, running, making pottery, playing the piano, listening to music, or reading a novel.

Neuroscientists are now able to observe exactly which parts of the brain are active during these activities, and it turns out that there are very specific parts of the

brain that are active when people are in this flow zone. These areas have been labeled the task-positive network (TPN). When the TPN is engaged, we tend to be happier.

But there is another network in the brain called the default-mode network (DMN). The DMN and TPN are mutually exclusive. When one is in action, the other is inactive. They don't function at the same moment. The DMN is called the default network because it is where our minds naturally go when left to their own devices. When the DMN is engaged, our minds are wondering. We are thinking about ourselves, our worries, self-doubts, and regrets, our assessments of our pasts, and our concerns about the future. We're not attending to any particular task, and so it's our "default" mode. As it turns out, the more often that your brain is idling in the DMN, the less happy you are. Which is not to say that our default mode is all bad. It is there for good reasons. It is helpful in problem solving, planning for the future, daydreaming, and playing memories — good ones as well as painful ones.

But when people say, "I am anxious all the time," they are living much of their lives in the default mode network. They are in fact not anxious all of the time; though they may not be aware of it, they will at other times be engaged in flow activities during which their task-positive networks are activated. Nonetheless, people who have increased activity in the DMN are more prone to severe depression and anxiety.

The good news is that we have the capacity to become aware of when the DMN and TPN are active, and we can cultivate or strengthen one state or another with practice. Mindfulness is a technique that is defined as "a mental state achieved by focusing one's awareness on the present moment, while calmly acknowledging and accepting one's feelings, thoughts, and bodily sensations." Mindfulness can demonstrably thicken the parts of the brain that make up the task-positive network.

Understanding and becoming aware of these two networks allows us to make the switch into flow activity. When we are mindful, our brains are operating from the task-positive network. If you just can't get to sleep because you are obsessing about your mean boss or disappointing spouse, whether the ferry is going to run, or whether we are on the verge of nuclear war, your brain is operating in the default mode. If you detach from the worry and observe yourself worrying, acknowledging whatever sensations you are experiencing — perhaps the butterflies in your belly, the restlessness in your legs, the nature of your

inhalations and exhalations, the coolness of the sheets against your skin — you will instantly be shifting to the task-positive network. Many people will find that as they do that, sleep smoothly returns.

Erin Zerbo, M.D., is the lead editor of the book “Becoming Mindful: Integrating Mindfulness Into Your Psychiatric Practice,” and an assistant professor of psychiatry at Rutgers New Jersey Medical School. She describes a meditation used by a colleague, Dan Siegel, M.D., who is one of the seminal thinkers in the field of mindfulness. When his clients are struggling with overwhelming emotions like anger or fear, he suggests that they imagine putting the anger or fear in a boat and then stepping far away to watch what happens. Perhaps the boat goes up and down in turbulent waves, perhaps it catches on fire, or perhaps it and the emotions it contains are calmed by the undulating waves. The outcome is less important than the nonjudgmental observation. Just the act of observation engages the TPN. The default mode is turned off. And calmness ensues.

Dr. Zerbo points out that there are many routes to get into the TPN. Paying attention and observing what is going on with any of the senses activates the task-positive network. She also points out that being compassionate and kind, whether to oneself or others, activates the TPN. She recounts a story about Bill W., who started Alcoholics Anonymous. One day, while away from home on a business trip, Bill W. was having a terrible craving to drink. (It looks like craving, and is probably a default-mode activity. It involves longing, feeling that something is missing, thinking about how to relieve the distress.) In order to deal with this craving, he called a friend, and ended up getting asked to help another alcoholic who was in the midst of a relapse. He spent hours working with the fellow alcoholic, and when he was finished, he noticed that he no longer had any craving. Dr. Zerbo hypothesizes that helping others eliminates craving because it activates the TPN. You can't have craving (DMN activity) and task-positive activity at the same time.

When the default mode is in action, we are often feeling distressed and troubled. When mindfulness brings us into the TPN, Dr. Zerbo points out, stress hormones decrease, inflammatory chemicals (cytokines) decrease, the part of our nervous system that engages digestion and restfulness (the parasympathetic nervous system) is activated, and we become more resilient and feel calmer.

As I reach the end of this article, I notice how good it feels to have focused for a period of time on arranging these words. I have a pleasant sense of calm. Looking out of my window, I notice the gray skeletons of winter trees against the blue sky,

and I feel energized by the possibility of skating on the ponds today. I am really grateful for my TPN.

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