

What Stress Does to Your Brain

Your brain reflects the way that you think throughout your life—it's actually shaped by your thoughts and your behaviors.

By [Mindful Staff](#) | February 3, 2016

Prolonged stress changes the brain. The part of our brain that helps process threatening situations, the amygdala, can appear larger in people who are chronically stressed. Researchers have also seen that areas of the brain involved in rational thought and planning, the hippocampus and prefrontal cortex, can appear smaller.

So what do the brains of meditators look like?

The exact opposite: more capacity for decision-making, less trigger-happy when faced with a perceived threat.

“That’s probably not anything specific to meditation, but it’s just that reducing stress and changing patterns of thinking over a period of time is reflected in the structure of the brain,” author Jo Marchant told host Terry Gross on NPR’s *Fresh Air* last week. Marchant, who holds a doctorate in genetics and medical microbiology and has written for *New Scientist*, *Nature*, and *Smithsonian*, recently wrote a book titled Cure that investigates the healing power of the mind, looking at the placebo effect, meditation, prayer, conditioning, and hypnosis.

If you play violin for eight hours a day, then the parts of the brain responsible for helping you to play the violin will get larger. If you’re thinking stressful thoughts for the whole day then those parts of the brain are going to get larger and other parts of the brain will deteriorate.

—Jo Marchant, author of *Cure*

What did Marchant find that’s specific to meditation?

Mindfulness meditation is one of the best-studied types of meditation and has benefits for health:

“There have been hundreds of studies on mindfulness now and there’s very good evidence that it reduces stress and anxiety and that it reduces symptoms such as chronic pain and fatigue and that’s in healthy people but also in people with depression or people with serious illness.”

Slow, measured breathing helps counter the fight or flight response that gets triggered during stress:

“With a stress response, the brain and the body are influencing each other in both directions, so if we see a danger then that’s going to make us feel stressed and one of the follow-ons from that is that our breathing is going to speed up. If you were to speed up your breathing on your own, you’d probably start to feel a bit more aroused and on edge. And, equally, if you calm the breathing down, you’re kind of forcing your body into a more relaxed state and you will then experience probably fewer negative thoughts as a result. When we’re stressed, our brains almost come up with negative thoughts to try and explain why we’re stressed, if you like, if you’re kind of anxious or worried about something, all sorts of negative thoughts are going to pop into your head, but if you can just calm that down, then that’s going to have a beneficial effect on your mental state as well.”

And yes, Marchant says you can become wired to be stressed all the time:

“Your brain reflects the way that you think throughout your life. You kind of shape it by your thoughts and your behaviors. If you play violin for eight hours a day, then the parts of the brain responsible for helping you to play the violin will get larger. If you’re thinking stressful thoughts for the whole day then those parts of the brain are going to get larger and other parts of the brain will deteriorate. It’s kind of an irony because then the very brain circuits that we would need to try and counter that are no longer working as well as they should, so that’s why something like meditation can be helpful because just simply saying, “Oh, I’m going to change how I think now. I’m not going to be as stressed now,” doesn’t really work; you have to change your brain over a long period of time.”

Here are three ways you can interrupt the stress cycle from *Mindful* magazine:

Relax your muscles with a body scan

Progressive muscular relaxation can help you notice where you’re holding stress. It doesn’t take long and it’s simple to do: Lie down comfortably on your back with your legs straight. Close your eyes. Start by tensing muscles in your feet, then relax. Work your way up your body doing the same thing in sequence from your feet to your head. Often it’s only by experiencing muscle

tension and letting it go that we become aware of just how much tension our bodies are retaining.

Get your face out of your phone

Your phone is your everything, all-the-time, go-to, distractor device. It's like having someone nudging and nagging you all day. It constantly steals your attention. Set some boundaries on when, where, and how you will use it. Beware letting it dominate during social occasions. Try putting it away completely during meals and parties. Pick a few places—doorways, elevators, in line at the store—where you can make a mental note to avoid it, and take those moments when you'd be deep in cyberworld to follow your breath instead.

Play

All work and no play...and yes, that means you. Playing isn't restricted to children. Playing simply means doing something that has no purpose, plan, or aim. Wander the streets, play cards, go bowling, read for pleasure. The surprises that come from letting yourself go can exhilarate and refresh.

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