

# Arthur C. Brooks | August 25, 2022

### Emotional and physical pain share neurological roots, and the same substances can blunt them.

Lately, my back has been hurting. I did something weird in the gym, resulting in a dull ache, and now I'm taking it easy. I appreciate the feedback the pain provides, because I would like to be able to walk upright for a few more decades and don't want to risk a more permanent injury. Still, I don't enjoy it, so I've been taking acetaminophen to blunt my discomfort.

Back pain is normal, but a different sort of hurt is even more typical in my life, and probably yours as well: mental suffering. I don't mean clinical depression or anxiety, which require professional intervention, but rather the routine, chronic grind of conflict, dissatisfaction, and sadness, which often constitute a dull ache in the background of our days. Many philosophers have considered this discomfort to be our natural state. In his Pensees, Blaise Pascal asserted that, at rest, man "feels his nothingness, his loneliness, his insufficiency, his dependence, his weakness, his emptiness." Maybe that seems a little overstated to you, but research does show that people tend to experience negative or mixed emotions nearly half the time.

Wouldn't it be nice to have a handy tool to blunt everyday mental pain a bit? Not to become numb to life—just to take the edge off, especially when it is interfering with normal life, the way you can swallow a Tylenol when your back hurts. It turns out that there are safe and healthy methods to do exactly this, including taking the same sort of painkiller for what ails your body and your mind. And that's only the beginning.

The ancient-greek writer Antiphanes believed that "all pain is one malady with many names." He was right, neurologically speaking. Physical pain activates several parts of the brain, notably the anterior cingulate cortex, or ACC. Neuroscientists have found that our thrifty brains piggyback the experience of emotional pain in the same location. In one example, from 2003, researchers at UCLA and Macquarie University in Sydney conducted an experiment in which participants' brains were scanned while they played a virtual ball-tossing game. At one point, they were excluded from the game in a way that mimicked social exclusion. Sure enough, their ACCs became active, much as they would if the participants had been experiencing physical pain.

Physical pain has two basic parts: the sensory component (the physical sensation) and the affective component (the perception of unpleasantness). Mental pain shares this second component, leading researchers to some interesting findings. For example, in 2005 researchers reported the case of a patient with a congenital physical pain insensitivity who experienced an intense headache for the first time in her life only after the unexpected death of her younger brother.

If we experience emotional and physical pain at least partially in the same area of the brain, it's no wonder that the same substances can blunt them. For example, just as opioids such as morphine and heroin can relieve severe physical pain, they can also mute the distress people feel from social separation. This is likely why

people often report that heroin feels like love and why loneliness can lead to higher levels of opioid abuse, especially among women. Similarly, the psychologist C. Nathan DeWall and his colleagues have shown that a daily acetaminophen dose can lower self-reported hurt feelings compared with a placebo by lowering activity in the ACC. (And unlike opioids, this analgesic is not addictive, nor dangerous in ordinary doses.)

That's not to say that maximum blunting is the right solution. Like physical pain, mental pain serves a purpose: It helps us avoid things like social exclusion. DeWall and his colleagues have argued that the fear and bitterness we feel when we're excluded are remnants of an earlier time in human history when being a social outcast could mean not having the protection of a community, making survival hard or impossible. Now it can be maladapted, making FOMO feel like a toothache. You can know intellectually that being criticized for your opinions is not like being thrown out of your community and being forced to live in the woods alone. But your ACC doesn't know the difference, giving you a lot of suffering for something you know intellectually is pretty inconsequential.

Whether it's a useful warning sign or a pure inconvenience, mental pain can get in the way of our lives. The trick is to safely make it manageable, without erasing it completely, like over-the-counter painkillers do for daily aches. Here's how.

## 1. Feel your mental pain physically.

A lot of mental suffering has bodily manifestations. When I am anxious or stressed, for example, I tend to hold my abdominal muscles tight; other people breathe shallowly or clench their fists. Noticing such physical signs can help you actively manage the feelings causing them. Try to pay attention to when your body tenses up—it is a cue that you have stress to deal with. Purposively relax your shoulders and chest and take deep breaths, and you'll likely find some instantaneous relief. People who get good at recognizing physical symptoms of emotional issues and taking them on in these simple ways have been found to have superior emotional regulation.

#### 2. Get spiritual.

A substantial body of evidence suggests that religious and spiritual activity helps alleviate pain. A great number of people experiencing chronic physical pain turn to religious and spiritual practices for coping and relief. Meanwhile, participating in traditional religion can raise the subjective well-being of people suffering from mental pain, such as bereavement. Simple prayer can alleviate stress, as can mindfulness meditation. And no surprise at this point: When researchers look at the brain regions involved in meditation, they find reductions in pain-related activity in the ACC.

The next time you notice a dull ache in your soul, try offering it up in prayer or meditation. Catholics, for example, will mentally join their suffering to that of Christ. Buddhists will use sadness in meditation to understand with compassion the suffering of others. Find your own way, in your own tradition.

# 3. Don't suffer by yourself.

Connection to other people is highly protective against all kinds of pain. Experiments have shown that social support alleviates physical pain symptoms; the evidence for emotional pain is even more abundant.

In a 2007 study in the journal Neurolmage, researchers tracked people for a 10-day period and assessed their hormonal responses to social stressors. They found that people with more social support had milder responses to the hormone cortisol in the face of stress. Not surprisingly, they also had lower activity in the ACC.

Having family or friends around you-as long as the relationships are healthy—is protective when it comes to the mental pains of life. Cultivating those bonds is like taking a daily vitamin: When you are especially vulnerable, the defenses you've built up will offer relief. And you can always "up the dose" by reaching out to these people for support when your suffering is acute.

## 4. Take a pill.

If all else fails, or you simply need easier relief to make it through a tough day, you always have acetaminophen. I wouldn't recommend this as your first or only line of self-care, because it doesn't address the root of your issues, just some symptoms. But in a pinch, it can help.

In one way, mental suffering is entirely unlike its physical counterpart: You can soothe your own pain by soothing that of others. Follow the example of President Abraham Lincoln, who lost one of his dearest friends, William McCullough, in a Civil War battle in Mississippi. In his grief, he reached out to McCullough's daughter Fanny, who was inconsolable.

In a letter dated December 23, 1862, he wrote, "It is with deep grief that I learn of the death of your kind and brave Father; and, especially, that it is affecting your young heart beyond what is common." He went on to promise her, based on his own life experience, "You are sure to be happy again ... The memory of your dear Father, instead of an agony, will yet be a sad sweet feeling in your heart, of a purer and holier sort than you have known before."

The letter was no doubt helpful to Fanny; I strongly suspect that it was also therapy for Lincoln. Studies have consistently shown that helping others in distress leads to better emotional regulation and lowers symptoms of depression. But you probably don't need a study to remind you that giving love may in fact be the best strategy to reduce pain in this difficult life.

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