

Emotional & Physical Pain Are Almost The Same - To Your Brain

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Rejection hurts.

Whether you've been told 'no thank you' for a job opportunity, become estranged from a partner or friend, or even been unfollowed on a social media or dating site, your brain has to process being rejected. And neuroscience suggests that it literally - hurts.

Although the brain does not process emotional pain and physical pain identically, research on neural pathways suggests there is substantial overlap between the experience of physical and social pain. The cascading events that occur and regions activated in our brains - and therefore our reactions to the acute pain - appear to be similar.

Further, it seems the impact may not be limited to just how the brain processes the emotions and pain associated with rejection, but that real heartbreak can actually take a toll on your IQ. According to research from Case Western Reserve University, exposure to rejection led participants in a study to have an immediate drop in reasoning by 30% and in IQ by 25%.

Thus, a broken heart really does hurt. And it really can take a while to heal.

What's Going On In Your Head – And Heart?

Because humans are social creatures by nature, heartbreak, loss, and the feelings associated with being left out are particularly difficult to process. And because emotional wounds are invisible, anguish, distress, and stress can be difficult to understand and explain to our peers.

However, social rejection from potential partners and online activity are becoming more and more commonplace. As we are now rejected frequently with small snubs like unfollowing on Twitter, swiping left on Tinder, not receiving likes on an Instagram post, not matching on a dating site or being alone during the holidays, these emotions are felt more often. Social media and constant contact to millions of people at any moment – although further distances between personal connections – inherently mean that more people can reject us, even if it's as small as not liking our social media post when we liked theirs.

Research out of the University of Michigan suggests that not only does the brain process rejection like it does physical injury, but that personality traits such as “resilience” are vital to how we process pain. The brain’s natural painkilling response varies between humans, with some releasing more opioids during social rejection than others, meaning that some have a stronger – or more adaptive - protective ability.

When mu opioid is released, there is a trigger in two areas of the brain, one (the amygdala) processes the strength of the emotion, and the other (the pregenual cingulate cortex) determines how your mood changes because of the event. Therefore, the more opioid released, the greater reduction in pain - and possibly a greater experience of pleasure when someone feels that they’ve been socially accepted or validated.

Similar to results from physical pain studies, researchers also found that the anterior cingulate cortex (ACC) and the right ventral prefrontal cortex (RVPFC) were more active when feeling loss or exclusion. And the greater one’s anxiety, the greater the activity in the ACC. However, a systematic review published in Brain Imaging And Behavior concluded that the neural network for psychological pain includes the thalamus, anterior and posterior cingulate cortex, the prefrontal cortex, cerebellum, and parahippocampal gyrus. Suggesting that there is a deeply complex and interconnected series of regions that process and express pain.

Additionally, thanks to functional magnetic resonance imaging (fMRI) studies, it is also possible to now see the neural overlap both in how we process and experience pain – emotional and physical.

That said, work at both Dartmouth and the University of Colorado – Boulder reveals that there are in fact two distinct brain patterns for processing pain if you get granular enough. With enough future work in pain management, these researchers hope to tease out the differences enough to personalize treatment plans in the future.

How Can You Improve Your Coping Mechanisms To Feel Less Pain?

So what are we to do when we feel slighted by those we love or rejected in a social situation? First, realize you are probably taking the event too personally. That’s not a knock to you – it’s just a product of all humans thinking more about themselves than anyone else does. In fact, almost 80% of anyone’s thoughts are about themselves. So in this fast-paced world with a million distractions, chances are the slight wasn’t personal.

Second, understand that we’re all basically using a triaging system that puts our most important ‘to do’ items and closest connections first. It could therefore be as simple as someone hasn’t seen your interaction or post, as there are so many feeds flooding them at any given moment. There are also individual and demographic differences in how people interact (these often come in the form of those who scroll pictures and posts but never interact with anyone).

Third, it is important to remember that we recall emotional rejection more strongly than physical pain, and it can therefore cause longer-term sensitivity. When this happens, seek out validation and reminders of the positive impact we have on others or talk to someone you know who cares about us.

During holidays, this can mean making proactive plans with friends or reaching out to those we love but are often too busy to connect with closely. Most importantly, it is critical to allow the negative feelings to be respected and processed - but not to assign too much value to them. Remember, they will subside, and our bodies will cope with emotional rejection over time, just as it does physical pain.

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