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# Rejection May Hurt More Than Feelings

By PAMELA PAUL

**THE GIST** Being socially rejected doesn't just feel bad. It hurts.

**THE SOURCE** "Social Rejection Shares Somatosensory Representations With Physical Pain," by Ethan F. Kross, Marc G. Berman, Walter Mischel, Edward E. Smith and Tor D. Wager; published in Proceedings of the National Academy of Sciences.

NOBODY would deny that being ostracized on the playground, mocked in a sales meeting or broken up with over Twitter feels bad. But the sting of social rejection may be more like the ouch! of physical pain than previously understood.

New research suggests that the same areas in the brain that signify physical pain are activated at moments of intense social loss. "When we sat around and thought about the most difficult emotional experiences, we all agreed that it doesn't get any worse than social rejection," said the study's lead author, Ethan F. Kross, an assistant professor of [psychology](#) at the University of Michigan.

The image of a bunch of social scientists inflicting pain on laboratory volunteers seems creepily Mengelian, but in this case the experiments involved were markedly less cruel. First off, the subjects weren't socially rejected by the laboratory technicians — each of the 40 volunteers was recruited specifically because he or she felt intensely rejected as a result of a recent (unwanted) breakup.

Once in the lab, participants were hooked up to functional [M.R.I.](#) scanners, which measure brain activity. They were then asked to look at photos of their former lovers and brood over a specific rejection experience involving that person. (Sob.) Later, they were asked to look at a photograph of a friend and to think about a recent positive experience they had with that person.

On to more fun! Next was the physical pain component, also in two parts. First, participants

experienced noxious thermal stimulation on their left forearms (the “hot trial”), simulating the experience of spilling hot coffee on themselves. Then, they underwent a second, nonnoxious thermal stimulation (the “warm trial”). Technicians monitored their brain activity to see which areas lighted up.

Lo and behold, bad breakups and hot coffee elicited a similar response in the brain, at least as measured by fMRI machines.

Previous research had shown that while social rejection hurt, it did not activate parts of the brain associated with physical distress. But this team found that when the emotional pain was awful enough, those parts of the brain were affected as well, and in equal part. According to the authors, the emotional pain simulated in previous experiments (being told a stranger dislikes them, looking at rejection-themed paintings) wasn’t powerful enough to elicit a true-to-life response. “We were shocked because no prior research had demonstrated this same connection,” Dr. Kross said.

What the team doesn’t yet know is what region of the body feels the physical pain or whether it’s diffused. And while people have long taken painkillers to cope with emotional distress, there’s no telling, in this instance, whether a Tylenol can help.