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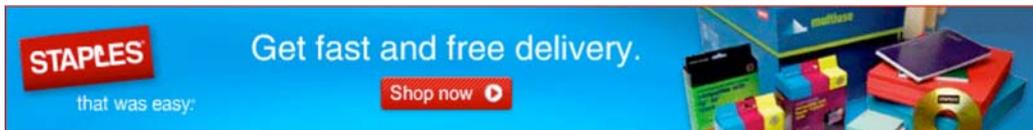
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# To the brain, getting burned, getting dumped feel the same

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Health.com | By Matt McMillen, Health.com  
March 29, 2011 9:35 a.m. EDT



Brain networks that are activated when you're burned also light up when you think about a lover who has spurned you.

### STORY HIGHLIGHTS

The brain doesn't distinguish between physical pain and intense emotional pain

It raises interesting questions about whether treating physical pain can relieve emotional pain

Past traumas can make people more sensitive to pain and thus more susceptible to fibromyalgia

(Health.com) -- Science has finally confirmed what anyone who's ever been in love already knows: Heartbreak really does hurt.

In a new study using functional magnetic resonance imaging (fMRI), researchers have found that the same brain networks that are activated when you're burned by hot coffee also light up when you think about a lover who has spurned you.

In other words, the brain doesn't appear to firmly distinguish between physical pain and intense emotional pain. Heartache and painful breakups are "more than just metaphors," says Ethan Kross, Ph.D., the lead researcher and an assistant professor of psychology at the University of Michigan, in Ann Arbor.

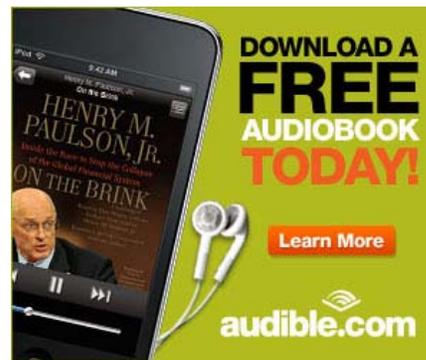
Health.com: How to keep chronic pain from straining your friendships

The study, which was published in the journal Proceedings of the National Academy of Sciences, illuminates the role that feelings of rejection and other emotional trauma can play in the development of chronic pain disorders such as fibromyalgia, Kross says. And, he adds, it raises interesting questions about whether treating physical pain can help to relieve emotional pain, and vice versa.

"What's exciting about these findings," he says, "is that they outline

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the direct way in which emotional experiences can be linked to the body."

Kross and his colleagues recruited 21 women and 19 men who had no history of chronic pain or mental illness but who had all been dumped by a romantic partner within the previous six months. The volunteers underwent fMRI scans -- which measure brain activity by tracking changes in blood flow -- during two painful tasks.

[Health.com: 6 mistakes pain patients make](#)

In the first, a heat source strapped to each subject's left arm created physical pain akin to "holding a hot cup of coffee without the sleeve," Kross says. In the second, the volunteers were asked to look at photos of their lost loves and were prompted to remember specific experiences they shared with that person.

Other fMRI research has examined how social rejection manifests in the brain, but this study was the first to show that rejection can elicit a response in two brain areas associated with physical pain: the secondary somatosensory cortex and the dorsal posterior insula. Those brain regions may have lit up in this study but not others because the rejection his volunteers experienced was unusually intense, Kross says.

Although Kross stresses that the study is "very much a first step" in understanding the connection between physical and emotional pain, the findings may help chronic pain patients grasp that emotions can affect their physical condition, says psychologist Judith Scheman, Ph.D., director of the chronic pain rehabilitation program at the Cleveland Clinic.

[Health.com: Is chronic pain ruining your relationship?](#)

Past traumas can make people more sensitive to pain and thus more susceptible to disorders like fibromyalgia, which causes both chronic pain and fatigue, Scheman says. She and her staff encourage pain patients to "explore their emotional trauma and baggage," but many are reluctant to do so.

"As a clinician, I like studies like this because patients often don't understand why they have to do painful emotional work," Scheman continues. "Showing them something like this helps them understand that there is science behind what I am asking them to do."

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- Qasida

hadronsurfer: "Mainstream

science bimbos" - a classic comment. If you haven't looked around and joined the 21st century, those bimbos brought us where we are now technologically and not forever wallowing in some cyclical dark age. I love sweeping generalizations! They abound on these blogs and comme... [more](#)

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- Qasida

Put some credentials or references out there hadronsurfer and maybe we will sympathize with your rants.

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IanAyres

At last the agony of emotional pain is confirmed. For too long people needed to see others hacked to pieces, blood everywhere, to think perhaps a person might be suffering. Now it's proven that trauma and torture are endured without any blood or dismemberment visible to limited perception.

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hadronsurfer

I am sure that if you punch them in the face, zap them in the groin, or otherwise torture them with hot objects, your guinea pigs' "pain area" of the brain will light up. When you tell someone they are painfully wrong, and their "pain area" of the brain lights up, these are clearly different sensat... [more](#)

13 hours ago | [Like \(1\)](#) | [Report abuse](#)



IntheStands

Rejection can be very painful, and not just from the opposite sex, many men experience this, but because we are taught that we must control our emotions, and I believe we should, the pain is simply past on to other areas of our lives, and by time we realize the problem its to late

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Serene1111

Rejection of any sort hurts whether it is a loved one, a parent, or a boyfriend/girlfirend. Humans are social creatures and being 'cast out' is very painful even if it is a natural part of life and relationships.

17 hours ago | [Like \(3\)](#) | [Report abuse](#)



Sbul

It's not surprising that emotional pain (especially rejection as it is related to our most primal fear "abandonment") creates pain and uses the same circuits in the brain where we register physical pain but to say that the brain does not differentiate between the two types of pain is a little bit of... [more](#)

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Fig1024

But it is possible to condition yourself to be numb to psychological pain, even tho the side effect is that you are unable to make a meaningful connection with another person again. You can't really condition yourself out of physical pain, can you?

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IanAyres

You can use meditation and numerous approaches to condition yourself out of physical pain, since all pain is signaled from the brain. Many suffering from cancer, for example, are finding their way out of physical pain through the mind. We have abilities yet to be discovered. Our brains are very powe... [more](#)

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*Sbul*

Yes, this is possible and some people have gotten quite good at it. One trick is you have to increase your brains production of ekaphalins. It's probably not desirable like not having a fear response as you would probably hurt yourself more if you were able to not feel the pain resulting in damage ... [more](#)

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*hadronsurfer*

Ah, no.....Mainstream science bimbos trying to convince you of something that isn't true to anyone. Where did they hatch this up.

23 hours ago | [Like](#) | [Report abuse](#)



*hadronsurfer*

@iluvucnn: "You have the kind of schooling that doesn't teach students to use a question make at the end of questions."

what!?!? ;-)) do you wonder why people around the world mock Americans?

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*iluvucnn*

hadronsurfer said: "How are you different. So tell me, what kind of schooling do I have." You have the kind of schooling that doesn't teach students to use a question make at the end of questions. hadronsurfer said: "This article is simply stupidly written with several non-sequitirs. As someone here s... [more](#)

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*hadronsurfer*

Nope. Try again t3chsupp0rt. When my eyeballs read something stupid, and something intelligent and constructive, the same nerves are firing, but it certainly doesn't feel the same.

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*t3chsupp0rt*

Making meth in a basement doesn't make you a scientist.

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*hadronsurfer*

You are doing what Sbul? Scientists are notoriously arrogant, often wrong. How are you different. So tell me, what kind of schooling do I have. This article is simply stupidly written with several non-sequitirs. As someone here said, anyone knows these sensations have nothing to do with one ano... [more](#)

17 hours ago | [Like \(1\)](#) | [Report abuse](#)



*Sbul*

I am sorry you have such difficulty understanding science perhaps if you stayed in school and learned you have something interesting to say other then to call people names.

17 hours ago | [Like](#) | [Report abuse](#)



*hadronsurfer*

?? Sarah Palin is not even on my radar. Since you know who I am, you are about as psychic as madame ruby downtown. Call it if you know it, if you don't then stop "projecting" wharfdog222. Like I said, fibromyalgia is to coffee scalds what you are to relevance.

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*wharfdog222*

You are a scientist in the way that Sarah Palin is a Nuclear Physicist.

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*poopstndinup*

"wharfdog222 - I am a scientist. "

ROFL

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*hadronsurfer*

wharfdog222 - I am a scientist.

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*wharfdog222*

"Ah, no.....Mainstream science bimbos ".... Pay them no mind!

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*bbare89*

I find it satisfying to hook up with one of my ex's friends after I'm dumped.

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*oinkoink12*

how about burning the dumpee with a hot coffee, that may cure this ailment.

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