Passionate love can relieve pain, researchers find
Kathryn Roethel, Special to The Chronicle
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"Love can take away your pain."

It sounds like a fortune cookie or a catchy lyric. But it's neither. It's the conclusion of a recent study from researchers at Stanford University.

New love - "wild, reckless, passionate love"- has pain-relieving powers akin to morphine, according Dr. Sean Mackey, chief of Stanford's Division of Pain Management. He is the senior author of a study that tested the physical pain tolerance of Stanford undergraduates in the first nine months of their romantic relationships.

Mackey, jokingly known as Dr. Pain, devised the idea for the study after attending a conference with Dr. Love, Dr. Arthur Aron, a State University of New York psychology professor who specializes in research about love. The two then teamed with Stanford postdoctoral scholar Jarred Younger to survey student volunteers who claimed to be madly in love.

"We posted flyers around Stanford University and within hours we had undergrads banging on our door," Mackey said. "It was the easiest study I've ever recruited for. When young people are in love, they want to tell the whole world about it."

In 2009, in a Journal for the Association for Psychological Science, UCLA's Dr. Sarah Master published a study showing that people seemed to find pain relief from looking at photos of loved ones. Mackey, Aron and Younger devised a similar study, but they wanted to conduct the experiment using MRI technology to scan the test subjects' brains and examine the neuroscience behind love's powerful effects.

The researchers selected 15 students with the highest scores on the Passionate Love Scale, a method of measuring love developed by a sociologist and psychologist team in 1986. The scale asks students to rate their level of agreement with statements like, "I would feel despair if this person left me," "I feel happy when I am doing something to make this person happy," and "I want this person to know me - my thoughts, my fears and my hopes."

Photo experiment

In the first part of the experiment, Mackey and Younger showed the students photos of their beloved, intermixed with photos of an equally attractive acquaintance. They induced pain by heating up a small square thermal device strapped to the arm of each student participating in the project. Sure enough,
students reported their pain was less severe when they were looking at photos of their new love.

These study results come as no surprise to Deveri Hansen, a 29-year-old resident of Campbell who has suffered nine years from fibromyalgia, a condition that can cause chronic exhaustion and muscle and joint pain.

"I was stiff, and I ached, and I felt like I had a cold every day," said Hansen, a single mom of two boys, ages 4 and 9. "I was missing a lot of work, and it was hard taking care of my boys because I just wanted to lay in bed."

Stanford study

In search of pain relief last spring, Hansen enrolled in a Stanford clinical study to test a new medication. The study required her to rate her pain level upon each visit to the clinic. During the study, her doctors pointed out that, based on her pain ratings over a few successive weeks, it seemed that Hansen's health was improving. But she hadn't started the experimental medication at that point, so something else must have changed in her life.

That something was Carlos Hurtado. Hansen's co-worker introduced them, and Hurtado invited Hansen to dinner and a movie. "We hit it off from day one," Hansen said. "There was a spark right away."

The couple has been together five months, and Hansen still reports feeling pain relief - though not as much as at the very beginning of the relationship. But she is happier, is missing less work and has an easier time keeping up with her boys.

"When you're in the earliest stages of love, pain messages are reduced in intensity before even reaching the brain," Younger said. He added that the test results suggest the chemicals the body puts out in the early stages of love work on the spinal cord to block the pain message from getting to the brain. The MRI scans showed that the areas of the brain activated by intense love are the same areas targeted by pain-relieving drugs.

The scans also showed that giving a patient a benign distraction - like asking him to name sports that don't involve a ball - has pain-relieving ability equal to that of new love. But the distraction relief comes from a different part of the brain, with more cognitive abilities. And the pain relief is temporary.

Effect of distraction

"The distraction task probably worked to relieve pain because it is difficult for people to focus on more than one thing at any given time," Younger said. "The distraction task was pulling attention away from the heat, so the pain experience was less salient to the participants, and therefore, they reported less pain."

The doctors say more research is necessary to determine whether pain relief can stem from other types of love - for example, the bonds between spouses who've been married for 50 years or the bonds between parents and children.

Mackey says he's not going to starting writing prescriptions for passionate love affairs, but he does have
some ideas about how the study results might be "clinically useful" in the future.

"Now we know that love releases chemicals - endogenous opioids - similar to the effects of morphine," Mackey said. "There are drugs that can turn endogenous opioids off. Does that mean we can kill love? That could be interesting for people with unrequited love or even to treat sexual stalkers."

**Applying the findings**

Younger added that, because the study confirmed which brain chemicals react to new love, it might be possible to use drugs containing those chemicals to prolong love's passionate, excitement-filled early stages. It might even be possible to chemically rekindle love when a couple's spark has died.

These hypotheses all require further testing, but for now, the doctors say they will pay closer attention to their patients' romantic relationships when treating their pain.

Through their history of working with chronic pain patients, Younger and Mackey say they know people in loving relationships of any kind respond better to pain therapy.

"Having a partner there with you (during treatment) does it," Younger said. "Holding hands does it. Some patients can even diminish their pain by looking at photos or vividly recalling their happiest memories with their loved one."

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