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Love hurts: Why emotional pain really affects us

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Have you ever felt overly upset by a social snubbing? Your genetics, not your friends, may be at fault.

Scientists have long known that opium-like painkillers, called opioids, relieve not only physical pain, but also some forms of emotional stress. Now, a new study reviewed by Faculty of 1000 Biology member Markus Heilig shows that small genetic differences in the gene for the opioid receptor can determine the intensity of people's responses to social rejection.

In the study published in the *Proceedings of the National Academy of Sciences*, researchers at the University of California in Los Angeles questioned people about their responses to social rejection, which is a form of emotional stress.

They also performed brain scans on people playing a video game in which they were excluded from tossing a ball with computer-generated players.

The results showed that people with a certain mutation in their opioid receptor reacted more strongly to social rejection than those with a normal opioid receptor.

Dr Heilig says that "strengthening the conclusions from this study is the fact that a similar polymorphism [genetic difference] has independently arisen in the rhesus macaque."

The same portion of the brain that is responsible for the response to physical pain became activated as a result of social rejection, suggesting that, to our brains, emotions really can "hurt."

More information: The full text of this article is available free for 90 days at www.f1000biology.com/article/p … 2d5bgt27n/id/1166319

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