

Pain relief effectiveness down to mind-set?

Research by the Human Pain Research Group at The University of Manchester suggests that people's responses to placebo or 'dummy' pain relief varies according to their way of thinking.

40 pain-free volunteers took part in an experiment funded by the Arthritis Research Campaign using an artificial pain stimulus, and were led to expect reduced pain after the application of a cream which was actually a placebo.

Lead researcher Alison Watson said: "Any medical treatment involves a placebo element; the psychological suggestion that it is going to work. So we theorised that a proportion of any treatment's effectiveness would relate to how much we wanted it to work, believed in it or trusted the person administering it.

"Doctors and nurses can transmit a lot of information about a treatment and its effectiveness through their words and gestures. We know that when people visit their preferred GP the treatment or advice they receive will be more effective than that given by a GP they prefer not to see. Similarly, red pills have been shown to be more effective than green ones; so we wanted to test whether all this was due to expectations of successful treatment and trust in the person giving it."

24 of the volunteers initially received a moderately painful heat stimulus to both arms. The placebo cream was then applied to the skin, but they were led to believe that the cream on one of their arms may be a local anaesthetic.

After the application of the cream, the intensity of the heat stimulus was turned down on one arm without informing the volunteer. Subsequently the intensity was returned to its previous level, but - in contrast to the 16 people in the control group - 67% of the treatment group continued to perceive the heat as less painful.

Alison said: "The expectation of pain relief leads to a release of endorphins, the brain's natural pain killers, which is likely to contribute to a sensation of reward and well-being.

"Interestingly, there was an exact split in the range of responses to the placebo; a third of people reporting a reduction in the pain intensity in the 'treated' arm only, another third in both arms and the remainder's intensity-ratings not being influenced by the application of the cream. The different responses can be related to the different levels of pain relief the volunteers expected, which may have allowed their individual suggestibility to influence their assessment of the pain experience.

"Our findings suggest that different individuals may have different styles of placebo response, which is likely to affect how they respond to real treatments too. Understanding these differences could better inform the way doctors and nurses provide treatments in the future.

"It could also facilitate more effective clinical trial design, which could substantially reduce the costs of developing new pain killers for patients with conditions like cancer and arthritis.

Source: University of Manchester

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