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Holy cards better than aspirin

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Brain researchers have explored faith-based pain relief, finding that stimulating a prayerful state of mind in devout Catholics triggers neural processes associated with substantial alleviation from physical pain.

This is according to a report by neuroscientist Katja Wiech of Oxford University in England and her colleagues, the results of which were published in the scientific journal *Pain*.

"Our data suggest that religious belief alters the brain in a way that changes how a person responds to pain," said Oxford neuroscientist and study coauthor Irene Tracey.

In the study, church-going Catholics perceived electrical pulses delivered to one hand while viewing an image of Mary as less painful than pulses delivered while looking at a picture with no Catholic context. Functional Magnetic Resonance Imaging (MRI) showed a change in these volunteers' brain activity only while viewing the religious icon.

In the same study, professed atheists and agnostics derived no pain relief from viewing the same religious image as they were prodded painfully on the hand.

"What's exciting is that this new study shows a neural mechanism by which religious belief affects pain perception," stated psychiatrist Harold Koenig, co-director of the Center for Spirituality, Theology and Health at Duke University in Durham, N.C.

Wiech and her coworkers studied 12 professed Catholics and 12 professed atheists or agnostics, ranging in age from 19 to 34 years.

The Catholic volunteers reported attending Mass at least weekly, praying every day and regularly

performing other religious activities, such as going to confession.

During testing, each participant lay in a brain-imaging machine that measures the rise and fall in blood flow throughout the brain. Blood flow changes in particular areas reflect increases and decreases in neural activity.

In alternating trials, volunteers first spent 30 seconds observing an image either of a painting of the Virgin Mary or Lady with an Ermine, a painting of a similar-looking woman by Leonardo da Vinci.

Participants then received 20 brief electrical pulses delivered to the back of their hands as images remained visible on a computer screen. Pre-testing had determined the pulse intensity needed to produce moderate pain.

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Catholics reported feeling peaceful and secure, as well as thinking about compassion and other religious concepts, while viewing Mary. They rated that image as especially helpful in coping with pain. Non-religious participants reported no advantage from either image in dealing with pain.

Pain relief for Catholics viewing Mary's image was accompanied by vigorous activity in the right ventrolateral prefrontal cortex, according to Wiech. This brain area has been associated with pain relief due to emotional detachment and with reassessment of the emotional meaning of a physical experience. This response was not observed in the non-religious volunteers.

The research contributes to a better understanding of pain coping mechanisms and closer to better new therapies for pain.

Miguel Farias, one of the authors of the research, said medical science knows little about the brain's positive effects in the body. "How can we explain studies that suggest religious individuals seem to live longer and healthier lives? This is what we want to understand in order to be able to use the knowledge to improve the life of pain patients."

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