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All materials presented at the AAPM's 25th Annual Meeting are embargoed for news or other publication until the date and time of the presentation at the meeting unless AAPM grants permission for early publication in advance.

**EMBARGOED FOR JANUARY 29
3:30 PM Hawaiian Time/8:30 PM Eastern Time**

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Negative Emotions About Pain Increase Pro-Inflammatory Response *Study Shows Thoughts Can Shape the Experience*

January 29, 2009, Honolulu, Hawaii ... Research presented today at the American Academy of Pain Medicine's 25th Annual Meeting showed a strong correlation between 'catastrophizing' about pain during the experience of pain, and an increase in the pro-inflammatory response, sensitizing parts of the central nervous system that mediate pain sensations. It is the first study to demonstrate this link. Previous studies have looked at physiological responses to pain, but have not considered catastrophizing as a modifier.

Catastrophizing is an irrational thought that something is far worse than it is in actuality. In this study it was defined as negative thoughts and emotions that include magnifying pain-related symptoms, and feelings of helplessness about pain. Data revealed that participants who were high catastrophizers had a higher increase in their interleukin-6 (IL-6) measurements over the course of the study than did participants who did not catastrophize as much. Higher levels of IL-6 led to decreased pain thresholds and elevated pain intensity ratings.

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Dr. Robert Edwards, a clinical psychologist, and his colleagues at Brigham & Women's Hospital, studied the correlation between catastrophizing and pain responses in 42 healthy volunteers. Each subject was surveyed and plotted on a Pain Catastrophizing Scale to determine their level of catastrophizing. Blood was drawn to create a baseline for IL-6 and cortisol. Then a series of pain stimuli was administered: immersion of a hand in ice water, application of heat pain, and painful pressure stimulation.

At 15 minute, 30 minute, and one hour intervals during the experiment blood was taken to measure the pro-inflammatory cytokine IL-6, and the stress hormone cortisol. Participants who were higher catastrophizers, had higher levels of IL-6 at 15 minutes ($p < .05$), 30 minutes ($p < .01$), and one hour ($p < .01$). The IL-6 levels in high catastrophizing volunteers were roughly double that of the 'low catastrophizers.' Cortisol was elevated, but it was not related to catastrophizing.

"In some people, rumination, feelings of helplessness and pessimism can trigger inflammatory response that may increase their pain sensitivity," said Robert Edwards, PhD, department of Anesthesiology, Harvard Medical School, and lead author of the study. "More work needs to be done, but we hope to use this data to create a way to counsel high catastrophizers before procedures to assist them in coping with the pain in a more adaptive way."

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Poster Session Information (Poster 250)

Begins: 3:30 PM (Hawaiian Time), Thursday, January 29, 2009

Ends: 10:00 AM (Hawaiian Time), Friday, January 30, 2009

Location: Coral Ballroom Foyer, Hilton Hawaiian Village

About the AAPM

For more than 25 years, the American Academy of Pain Medicine (AAPM) has been the medical specialty society representing more than 2,200 physicians practicing in the field of pain medicine. The Academy is involved in education, training, advocacy and research in the specialty of pain medicine. Information is available on the practice of pain medicine at www.painmed.org.

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