

Effects of relaxation and stress on the capsaicin-induced local inflammatory response.

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Effects of relaxation and stress on the capsaicin-induced local inflammatory response. Researchers at the University of Iowa studied how 3 conditions: stress, relaxation and a control condition, can affect an inflammatory response artificially induced by injecting capsaicin, the pungent compound in chili peppers, under the skin. 50 subjects 28 men and 22 women were pre-trained in relaxation, using an imagery-based relaxation tape, and then randomized to one of the experimental groups a 20-minute stress test, a relaxation tape or a video control, followed by a capsaicin injection in the forearm. Digitized measurements of flare were taken for 1 hour after the injection, as well as measurements at regular intervals of cardiovascular variables, cortisol, adrenocorticotrophic hormone, and norepinephrine. Investigators found that the size of the maximum capsaicin-induced flare was significantly smaller in the relaxation group than in the stress or control conditions, which appeared about the same. Increases in norepinephrine, heart rate, and systolic blood pressure during the experimental task, but not after capsaicin, significantly predicted size of maximum flare and total area under the curve of flare measurements. The study concludes that stress reduction may well affect local inflammatory processes. Results are consistent with sympathetic modulation of the effects of relaxation on the flare response.

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