Optimism is not associated with the nociceptive flexion reflex (NFR), but is associated with placebo analgesia

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Introduction
Dispositional optimism refers to a general belief in positive future outcomes. Placebo analgesia is pain reduction induced by a sham treatment. Past research has shown that individuals that are high in optimism show a greater placebo analgesic response; however, it is unclear whether optimism is more generally related to nociceptive processing. The present study examined whether dispositional optimism (as measured by the Life Orientation Test-Revised, LOT-R) is associated with NFR threshold, a physiological correlate of spinal nociceptive processing.

Life Orientation Test- Revised
The LOT-R consists of ten scales assessing a subject’s dispositional optimism. The LOT-R assesses generalized positive outcome expectancies and contains 6 self-report items (plus 4 filler items).

Objectives
To examine whether dispositional optimism (as measured by the Life Orientation Test-Revised, LOT-R) is associated with NFR threshold.

Participants
• Healthy Participants: N = 73
• Participant Characteristics: White, non-Hispanic (82%), female (45%), employed (66%), average age = 36.88 years (SD = 12.46), average years of education = 15.28 (SD = 2.42)

Exclusion Criteria:  
• <18 yrs of age  
• Cardiovascular, neurological, circulatory problems  
• Chronic pain condition (e.g., back pain)  
• Recent use of analgesic medication  
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• Current use of any psychoactive medication and/or psychotropic medications

Experimental Procedure
• LOT-R (Revised):  
  - Natural history, “sensor gel” no stimulation reduction
  - Expectation only, “sensor gel” no stimulation reduction
  - Expectation and Conditioning, “pain-relieving cream” stimulation reduction
  - NFR Magnitude (MA)
  - NFR Threshold (MA)
  - Placebo Analgesia
  - NFR Placebo

Stimulating electrode over erector spinae
Nociceptive Flexion Reflex (NFR)
Singh & Kistler 2000

Optimism, Placebo Analgesia and NFR Placebo

NFR Threshold

Placebo Analgesia

Optimism

Data Analysis
• Pearson’s zero-order correlations for variables (all groups): Optimism, NFR Threshold and Suprathreshold Pain Ratings

Conclusions
• These data suggest that optimism is not associated with static measures of pain and nociception.
• However, these data suggest that optimism does predict the degree of placebo response expectation and conditioning group.

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