

DOES "IN-VIVO" CATASTROPHIZING ENGAGE DESCENDING MODULATION OF SPINAL NOCICEPTION?

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BACKGROUND

- Catastrophizing & enhanced pain
 - Mechanism(s) unknown
- Catastrophizing not associated with nociceptive flexion reflex (NFR) threshold¹
 - Not descending modulation?
- Standard vs. "In-vivo" catastrophizing^{2, 3}

¹France et al, 2002, *Pain*

²Dixon et al., 2004, *Pain*; ³Edwards et al, 2005, *J Pain*

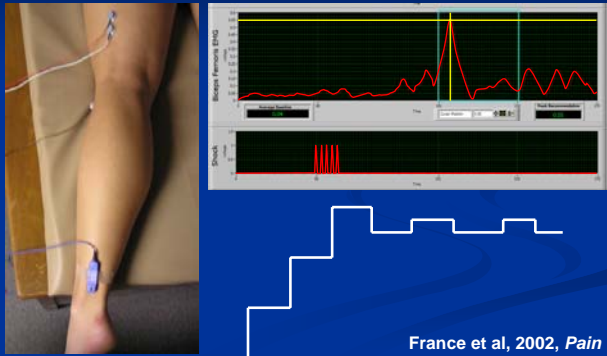
OBJECTIVE

- To determine the relationship between "in-vivo" catastrophizing and:
 - Spinal nociception (NFR Threshold)
 - Subjective pain

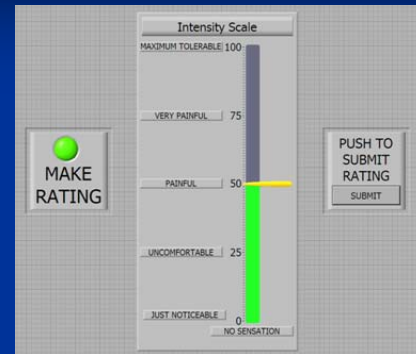
PARTICIPANTS

- 78 healthy undergraduate students
- 25 male and 53 female
 - Age: 22 yrs ($SD=6.22$)
 - White non-Hispanic (68%)
 - Single (87%)
 - Employed (59%)

SPINAL NOCICEPTION: Nociceptive Flexion Reflex Threshold



SUBJECTIVE PAIN RATINGS



“In-Vivo” CATASTROPHIZING

- Coping Strategies Questionnaire¹
- 6-Items
- Negative / catastrophic thoughts & ideations
- Administered following pain testing (post-experiment)

¹Rosenstiel & Keefe, 1983, *Pain*

ANALYSES

- Hierarchical regression
- Control variables
 - Participant sex
 - Psychological Distress (CES-D)
 - Self-efficacy (SE-PR)
 - Pre-experiment affective state (SAM)
 - Valence/pleasure (unpleasant – pleasant)
 - Arousal (calm – excited)
 - Stimulus Intensity

RESULTS: Predicting Spinal Nociception

| Predictors | Beta |
|---|-------------|
| Sex (0=male, 1=female) | .074 |
| Distress | .010 |
| Self-efficacy | .132 |
| Pre-exp affective valence | -.115 |
| Pre-exp affective arousal | -.078 |
| Catastrophizing ($\Delta R^2 = .003$) | .063 |

Model Summary: $R^2 = .03$, $p = .894$

RESULTS: Predicting Subjective Pain

| Predictors | Beta |
|--|--------------|
| Sex (0=male, 1=female) | -.127 |
| Distress | -.056 |
| Self-efficacy | -.189 |
| Pre-exp affective valence | .082 |
| Pre-exp affective arousal | .063 |
| Stimulus intensity (threshold) | .405* |
| Catastrophizing ($\Delta R^2 = .06$) | .265* |

Model Summary: $R^2 = .20$, $p = .003$

CONCLUSIONS

- In-vivo catastrophizing is related to subjective pain, but not spinal nociception
- Does not engage descending modulatory mechanisms
- May influence pain affect by cortical-to-cortical mechanisms¹

¹Seminowicz & Davis, 2006, *Pain*