Experimental assessment of affective processing in fibromyalgia and rheumatoid arthritis
Ellen L. Terry, MA, Jennifer L. DelVentura, MA, Emily J. Bartley, MS, & Jamie L. Rhudy, PhD
Department of Psychology, The University of Tulsa, 800 South Tucker Drive, Tulsa, OK 74104

Introduction
Fibromyalgia (FM) is characterized by widespread musculoskeletal pain and is commonly associated with affective dysfunction. Indeed, our laboratory has shown that FM patients exhibit greater defensive responding to unpleasant pictures than healthy, pain-free controls. However, it is unclear whether our observations were specific to FM or chronic pain more generally. Therefore, the present study assessed affective processing in FM, rheumatoid arthritis (RA), and healthy, pain-free controls (NC). Standardized, emotionally-charged pictures (centric, neutral, mutilation) were presented in a pseudorandom order and during some pictures loud noises (startle probes) were delivered to elicit startle eyeblink reflexes. Corrugator EMG (flowering muscle), pleasure (valence) ratings, and arousal ratings were measured in response to each picture, whereas startle eyeblinks were measured in response to each startle probe. Additionally, participants were asked to rate the intensity of the noises on a scale that ranged from 0 (no noise) to 100 (maximum tolerable).

Objective
To determine if deficits in emotional processing exist FM specifically or chronic pain more generally, by assessing physiological (startle magnitude, corrugator EMG), and subjective (valence, arousal) reactions to emotional stimuli.

Picture-Viewing: Emotion Induction
The International Affective Picture System (IAPS; Center for the Study of Emotion and Attention, 2000)

Subjective Emotional Evaluation

Acoustic Startle Response

Corrugator EMG

Table 1. auditing the intensity of the noises on a scale that ranged from 0 (no noise) to 100 (maximum tolerable)

Data Analysis
Analyses: 3 (Group: FM, RA, NC) x 3 (Picture Content: mutilation, neutral, erotic) linear mixed model ANOVAs
Planned simple effects tests conducted to examine group differences

Results: Corrugator EMG Responses

Overall, results indicate FM showed greater corrugator EMG responses to mutilation than RA and NC (p < .05)

Results: Acoustic Startle Reflex

Overall, results indicate RA and FM startle reflexes were inhibited by mutilation relative to neutral and erotic, whereas in NC startle reflexes were enhanced by mutilation compared to neutral and erotic (p < .05)

Results: Noise Intensity Ratings

In general, FM and RA rated the noises as more intense than NC. In addition, intensity ratings of the noises were emotion-modulated in FM and RA (erotica<neutral<mutilation), but not FM (p < .05).

Conclusions
These results provide additional evidence that affective processing is disrupted specifically in FM and provide new evidence that the perception of non-painful aversive stimuli is not emotionally modulated in this disorder.

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Overall, results indicate FM rated erotic pictures as less pleasant and arousing than RA (but not less pleasant than NC) (p < .05)