Pleasant Visual Stimuli Decrease Sensitivity To Pain But Only Among Highly Sensitive Adults

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Introduction

- In recent years (VSS 13, 14, 15, 18), our lab has examined the interactions among different sensory modalities, namely whether there are relationships between various measures of vision, hearing, and pain sensitivity.

- One of the surprising findings was that there appears to be some link between visual and haptic (pain and touch) threshold sensitivity in individual adults.

- Here, we examine the interactions more directly by measuring the additive effect of visual involvement on pain sensitivity. In particular, we were interested in examining whether pleasant visual stimuli can attenuate pain responses in individuals with low vs. high pain thresholds.

Methods

- The left hand index finger of 60 young adults was exposed to a pressure algometer and measures of pain threshold and tolerance obtained under standard controlled conditions.

Results

Adults were divided into 2 equal groups (high vs. low pain sensitivity) based on measurements of threshold in the control condition.

Paired t-tests showed that compared to control, adults with high pain sensitivity (thresholds < 450 g) showed increased pain threshold and tolerance when exposed to visual stimuli.

Conversely, those with low sensitivity (>450 g) showed no increases in pain measures for both positive visual stimuli. Floor and ceiling effects were not apparent within the data.

Conclusions

- Our results imply that positive (pleasant) visual stimuli have a modulating effect on adult pain sensitivity.

- However, this analgesic effect is small and appears limited to those adults who are already more highly sensitive (i.e., have lower thresholds) to pain.

This result likely explains the equivocal findings from previous studies examining this issue.

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