

Discoveries of Distinction

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Differential Expression of Phosphorylated Mitogen-Activated protein kinase (pMAPK) in the lateral amygdala of mice selectively bred for high and low fear

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This research examines the cellular and molecular mechanisms that underlie conditioned fear learning in a mouse model of high and low fear. Individuals with post-traumatic stress disorder (PTSD) demonstrate a higher 'fear load' compared to individuals that do not have PTSD. Phosphorylated mitogen-activated protein kinase (pMAPK) in the lateral amygdala (LA) is known to be required for the consolidation of a fear memory. We asked whether high fear mice have increased pMAPK expression in the LA following Pavlovian fear conditioning compared to low fear mice. Results suggest that following Pavlovian fear conditioning, high fear mice have increased expression of pMAPK in the dorso-lateral amygdala (LAd), a discrete subregion of the LA and known locus of fear memory consolidation. Further, high fear mice exhibit a unique pattern of pMAPK-

expressing neurons in the LAd. These plasticity-related differences may underlie divergent expression of fear memory and may therefore lead to important insights into the development of fear-related pathology such as PTSD. ■

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Statement of Gratitude

I would like to thank the AANA for their interest in and support of my doctoral research on long-term fear memory. Your support of this basic science research on a topic of great relevance to military and civilian populations is greatly appreciated. Additionally, I would like to thank the TriService Nursing Research Program (TSNRP) for their generous funding of this study.

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A Patient Safety Dilemma: Obesity in the Surgical Patient

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Patient safety and the delivery of quality care are major concerns for healthcare in the United States. Special populations (e.g., obese patients) need study in order to support patient safety, quantify risks, advance education for healthcare-workers, and establish healthcare policy. Obesity is a complex chronic disease and is considered the second leading cause of preventable death in the United States with approximately 300,000 deaths per year. Obesity is recognized by the Agency for Health Related Quality (AHRQ) as a comorbid condition. These concerns emphasize the need to focus further research on the obese patient. Through the use of clinical and administrative data, this study examines the incidence of adverse outcomes in

the obese surgical population through AHRQ Patient Safety Indicators (PSI) and allows for the engagement PSIs as measure to guide and improve performance. In this study, the surgical population was overwhelmingly positive for obesity. BMI was also a significant positive predictor for two of three postoperative outcomes. This finding suggests that as BMI reaches the classification of obesity, the risk of these adverse outcomes increases. It further suggests there exists a threshold BMI that requires anticipation of alterations to systems and processes to revise outcomes. ■

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