

seed-based analyses were conducted on the right and left amygdala and hippocampus using SPM12 using a $p < 0.005$ and FWE-corrected cluster threshold.

Results: PTSD participants compared to Controls showed more positive rs-FC between the right amygdala and subgenual ACC (sgACC; peak, MNI: $x = -8, y = 14, z = -22$; $p < 0.001, k = 625$, FWE cluster-level corrected, $p = 0.001$) and similarly, the left amygdala and sgACC (peak, MNI: $x = -8, y = 18, z = -22$; $p < 0.001, k = 286$, FWE cluster-level corrected, $p = 0.109$).

PTSD patients compared to Controls showed more positive rs-FC between the right hippocampus with thalamus/brainstem (peak, MNI: $x = 6, y = -18, z = -14$; $p < 0.001, k = 555$, FWE cluster-level corrected, $p = 0.002$), and similarly, between the left hippocampus and thalamus/brainstem (peak, MNI: $x = 0, y = -24, z = -18$; $p < 0.001, k = 573$, FWE cluster-level corrected, $p = 0.002$).

Conclusions: Using the largest centrally analyzed resting-state dataset for PTSD to date, our results illustrate greater rs-FC between the amygdala and sgACC and between the hippocampus and thalamus in PTSD patients compared to controls. Previous studies using smaller samples, and both rs-FC and threat-related task-based designs, have suggested an aberrant functional relationship in PTSD participants within the amygdala and regions of the ventromedial prefrontal cortex (vmPFC). Our preliminary findings provide further evidence of the inadequate regulatory relationship between these two regions using the largest study to utilize resting-state data. Regarding our hippocampal findings, increased rs-FC between the hippocampus and thalamus could contribute to altered threat processing in PTSD. These findings are important as they can help guide treatments targeting these aberrant connections, such as neuromodulation.

Keywords: Resting-State Functional Connectivity, Posttraumatic Stress Disorder, Amygdala, Hippocampus

Disclosure: Nothing to disclose.

P41. Greater Social Cognition-Related Right Temporal Pole Activation in World Trade Center Responders With PTSD - Preliminary Evidence

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Background: The ability to accurately 'read' and respond to others is key in developing and maintaining a supportive social network. People with posttraumatic stress disorder (PTSD) often report low access to social support and more difficulty in interpersonal relationships. Further, recent neuroimaging findings suggest that social cognition deficits could affect how people with PTSD perceive threat cues. However, few neuroimaging studies have investigated social cognition in trauma-exposed adults across dimensions of resilience (i.e., presence or absence of psychopathology) and degree of exposure to the event. In this study, we sought to examine social cognition-related brain activation during a mentalizing task in symptomatic individuals with PTSD, compared both to highly resilient and lower-exposed controls. We hypothesized that the PTSD group would show lower social cognition-related BOLD activation in hypothesized regions of interest relative to both lower-exposed and resilient control groups.

Methods: As part of a larger, multimodal study of PTSD and resilience in World Trade Center (WTC) responders, we recruited 74 adults who experienced the 9/11/2001 attacks on the WTC, and/or were involved in post-9/11 recovery work in New York City 2001-2002. Stratified sampling aimed to recruit participants in three groups: (1) PTSD (any number of WTC-related exposures;

met full criteria for lifetime WTC-related PTSD based on the Clinician-Administered PTSD Scale for DSM-5 [CAPS-5], with persistent clinically significant PTSD symptoms in the past month); (2) highly resilient (four or more WTC-related exposures linked to risk for PTSD; no current or lifetime psychopathology); and (3) lower-exposed (three or fewer WTC exposures; no current or lifetime psychopathology). The target sample size in this ongoing study is $N = 105$ (CDC/NIOSH # U01OH011473).

Participants attended a neuroimaging session in which they completed an in-scanner version of the Reading the Mind in the Eyes social cognition task. On each trial, participants had to decide which one of two words shown corresponded to a cropped photograph of a person's face. Word pairs were either social (e.g., "apprehensive", "pensive") or non-social (e.g., "dark hair", "looking left"). The Social > NonSocial contrast represented the effect of social cognition, rather than general perceptual and decisional functions.

fMRI data preprocessing used fMRIPrep 21.0.2 to generate individual motion-, susceptibility distortion, and slice timing-corrected echoes, which were subsequently denoised using TE-dependent independent components analysis (TEDANA 0.0.12), and finally smoothed with a 4-mm FWHM Gaussian kernel. Four of the 74 participants were excluded due to excessive motion ($n = 3$) or technical error ($n = 1$), leaving a final $n = 22$ in the PTSD group, $n = 31$ in the resilient group, and $n = 17$ in the lower-exposed group.

Results: Linear models identified a main effect of trial type (Social vs. NonSocial) on task performance: mean reaction time was slower ($F = 36.3, p < .0001$) and participants made more errors ($F = 248.2, p < .0001$) on Social trials. There was no main effect of group on mean reaction time ($F = 1.49, p = .22$) or accuracy ($F = 2.85, p = .064$) and no interaction with trial type. For the fMRI data, Social > NonSocial contrast images at the single-subject level were aggregated for the group-level analysis. A whole brain 1-sample t test for the Social > NonSocial effect identified clusters matching a priori ROIs related to social cognition, including medial prefrontal cortex, temporal poles, inferior frontal gyrus pars orbitalis, and precuneus/posterior cingulate cortex, using a threshold of $pFWE = .05$ and $k = 50$. There was a main effect of group for the right temporal pole cluster ($50\ 16\ -32$), $F(2,67) = 3.98, r^2 = .08, p = .023$.

Contrary to hypothesis, Social > NonSocial BOLD signal in the right temporal pole cluster was significantly greater in the PTSD group compared to the resilient ($p = .027$) and lower-exposed control ($p = .011$) groups, while control groups did not differ significantly ($p = .491$). The continuous measure of PTSD severity (CAPS5-Past Month scores) also predicted higher Social > NonSocial right temporal pole activation, $F(1,68) = 6.92, p = .01$.

Conclusions: Our findings are consistent with prior research implicating structural and functional differences in the right temporal pole in individuals with PTSD. They also provide additional support for social cognition as an emerging but important area for future investigations of the neural processes involved in psychological factors linked to risk or resilience after traumatic stressors.

Keywords: PTSD, Post Traumatic Stress Disorder, Social Cognition, Functional MRI (fMRI)

Disclosure: Nothing to disclose.

P42. Open-Label Accelerated 1-Hz rTMS Pilot Targeting Intraparietal Sulcus in Generalized Anxiety Disorder

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Background: Repetitive transcranial magnetic stimulation (rTMS) is a promising avenue to develop novel treatments for anxiety.