METHODS

Participants
• 18 children with Posttraumatic Stress Symptoms (PTSS): 12 females, mean age = 13.86 years, SD = 2.04.
• 11 Healthy Controls (HC): 7 females, age = 14.25 years, SD = 1.75.

Symptom measurement:
• Clinician Administered PTSD Scale: Child and Adolescent Version (CAPS-CA) [5].

fMRI task:
• Emotional counting Stroop [6]
• Threatening, Depressing and Neutral words

Imaging Parameters:
• 3T GE-Signa HDx scanner
• Gradient echo T2*-weighted echo-planar sequence
• TR = 2s, Flip angle 15°
• FOV = 200mm, thickness = 4.5mm

Analysis
• Symptoms: CAPS-CA
• fMRI: SPM8
• Significance threshold (p < .005, 12 voxel extent)
• ROIs: WFU PickAtlas: Insula, DLPFC and ACC

INTRODUCTION
• Experiencing trauma early in life is risk factor for many mental and physical health problems [1].
• Children that experience Posttraumatic Stress Symptoms (PTSS) are at increased risk for developing mood disorders later life [2].
• The insula, dorsolateral prefrontal cortex (DLPF) and the anterior cingulate (ACC) constitute a network of brain regions involved in the pathophysiology of PTSS and vulnerability for developing mood disorders [3,4].
• This study was designed to investigate insula, DLPFC and ACC reactivity to emotional (threatening and depressing) words in youth that exhibit PTSS.
• This study may inform diatheses-stress models of mood disorders.

RESULTS
1. Threatening > Neutral

2. Depressing > Neutral

3. Association with PTSS symptoms

PTSS group
Correlation with “Trauma symptoms”
Depressing > Neutral

CONCLUSIONS
• Children with PTSS exhibit increased insula reactivity to threatening words as compared to healthy controls.

• Children with PTSS do not (on average) exhibit greater insula, DLPFC or ACC reactivity to depressing words.

• Children with greater severity of “re-experiencing” PTSS symptoms exhibit greater ACC and DLPFC reactivity to depressing words.

• These results indicate the ACC and DLPFC may moderate depressive and re-experiencing related symptoms in response to trauma in children.

REFERENCES

SUPPORT
This research was supported by HIMH MH63894, NARSAD and the American Foundation for Suicide Prevention (AFSP).