AURORA study

https://www.med.unc.edu/itr/aurora-study

The AURORA study is a major national research initiative to improve the understanding, prevention, and recovery of individuals who have experienced a traumatic event.

Participants from the AURORA study (n = 283), a multisite longitudinal study of trauma outcomes, completed functional magnetic resonance imaging and psychophysiology within approximately two-weeks of trauma exposure. Seed-based amygdala connectivity and amygdala reactivity during passive viewing of fearful and neutral faces were assessed during fMRI. Physiological activity was assessed during Pavlovian threat conditioning. Participants also reported the severity of posttraumatic symptoms 3 and 6 months after trauma. Black individuals showed lower baseline skin conductance levels and startle compared to White individuals, but no differences were observed in physiological reactions to threat. Further, Hispanic and Black participants showed greater amygdala connectivity to regions including the dorsolateral prefrontal cortex (PFC), dorsal anterior cingulate cortex, insula, and cerebellum compared to White participants. No differences were observed in amygdala reactivity to threat. Amygdala connectivity was associated with 3-month post-traumatic stress disorder (PTSD) symptoms, but the associations differed by racial/ethnic group and were partly driven by group differences in structural inequities. The present findings suggest variability in tonic neurophysiological arousal in the early aftermath of trauma between racial/ethnic groups, driven by structural inequality, impacts neural processes that mediate susceptibility to later PTSD symptoms [1].

1)
Harnett NG, Fani N, Carter S, Sanchez LD, Rowland GE, Davie WM, Guzman C, Lebois LAM, Ely TD, van Rooij SJH, Seligowski AV, Winters S, Grasser LR, Musey PI Jr, Seamon MJ, House SL, Beaudoin FL, An X, Zeng D, Neylan TC, Clifford GD, Linnstaedt SD, Germine LT, Bollen KA, Rauch SL, Haran JP, Storrow AB, Lewandowski C, Hendry PL, Sheikh S, Jones CW, Punches BE, Swor RA, Hudak LA, Pascual JL, Harris E, Chang AM, Pearson C, Peak DA, Merchant RC, Domeier RM, Rathlev NK, Bruce SE, Miller MW, Pietrzak RH, Joormann J, Barch DM, Pizzagalli DA, Harte SE, Elliott JM, Kessler RC, Koenen KC, McLean SA, Jovanovic T, Stevens JS, Ressler KJ. Structural inequities contribute to racial/ethnic differences in neurophysiological tone, but not threat reactivity, after trauma exposure. Mol Psychiatry. 2023 Feb 1. doi: 10.1038/s41380-023-01971-x. Epub ahead of print. PMID: 36725899.

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