

# Childhood Interpersonal Violence Moderates the Association between Emergency Department Skin Conductance Response and PTSD Symptom Trajectories

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## BACKGROUND

- Identification of individuals most at risk for post-traumatic stress disorder (PTSD) immediately after a traumatic exposure is necessary to provide early intervention<sup>1,2</sup>.
- Heightened physiological reactivity during post-trauma assessment, such as elevated skin conductance response (SCR), has been associated with persistently high post-traumatic stress symptoms<sup>3</sup>.
- Prior studies finding SCR predictive of subsequent PTSD symptoms may have studied populations with high rates of childhood interpersonal violence (IPV), another risk factor for PTSD development<sup>4,5</sup>.
- Whether childhood IPV history moderates the relationship between acute post-trauma sympathetic arousal and subsequent PTSD symptoms remains unknown.
- **We hypothesized that elevated sympathetic arousal during emergency department (ED) trauma interview would best predict greater future PTSD symptoms amongst those with a history of childhood IPV.**

## METHODS

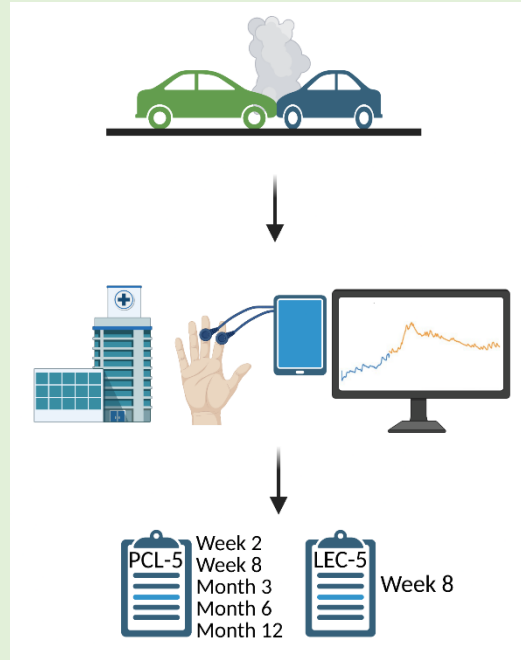
**Participants:** Data were drawn from 1,205 AURORA Study participants with usable ED skin conductance data (61.6% female).

IPV groups determined by the Life Events Checklist for DSM-5 (LEC-5) responses to age of onset of physical, sexual or weapon assault.

Probable PTSD at Month 12 was defined as a PTSD Symptom Checklist (PCL) score  $\geq 31$ .

SCR was calculated as maximum response during trauma interview minus the average of a baseline recording.

SCR  $> 2$  microSiemens ( $\mu\text{S}$ ) was utilized as a binary cutoff in logistic regression model (Fig. 5) for PTSD-risk related elevated physiological reactivity based on prior work<sup>3</sup>.



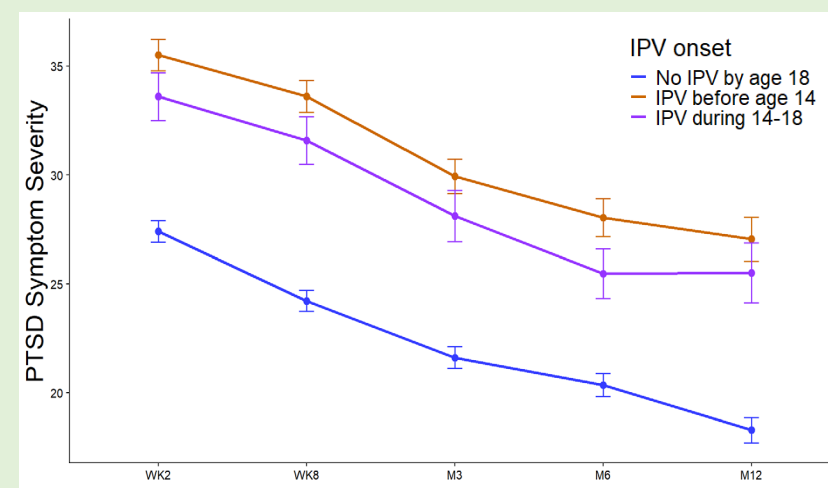
**Figure 1.** Simplified study overview. Traumatic exposure leading to ED visit where skin conductance was recorded during trauma interview. Follow-up surveys were completed over following year.

## SAMPLE

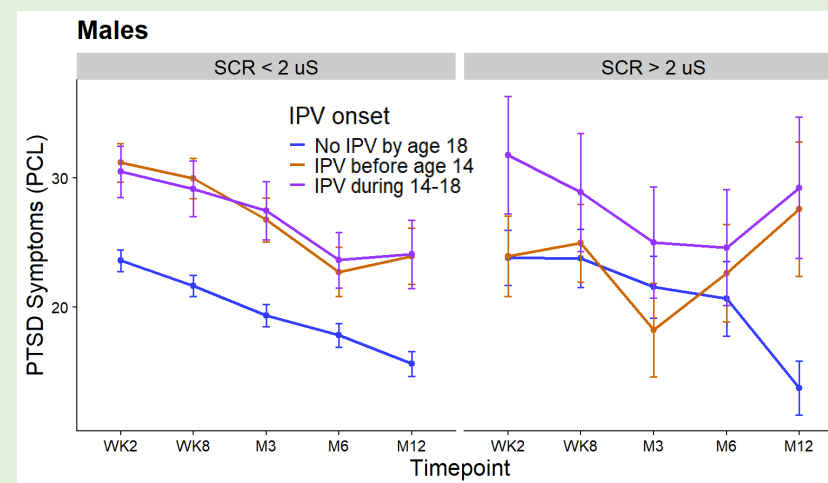
	IPV before Age 14	IPV between Ages 14-18	No IPV before 18	
N (% female)	354 (69.2%)	163 (61.3%)	688 (57.7%)	$p = .001$
Age (M, SD)	35.9 (12.6)	34.3 (12.9)	36.2 (13.1)	$p = .23$
White (N, %)	139 (39.3%)	59 (36.2%)	230 (33.4%)	$p = .17$
Black (N, %)	39 (11.0%)	14 (8.6%)	73 (10.6%)	$p = .69$
Hispanic (N, %)	158 (44.6%)	83 (50.9%)	361 (52.5%)	$p = .055$
Other (N, %)	17 (4.8%)	7 (4.3%)	21 (3.1%)	$p = .34$

Table 1. Sample demographics by IPV group. Groups differed significantly only in sex composition, with a higher proportion of females in the IPV before age 14 group compared to the no IPV before age 18 group.

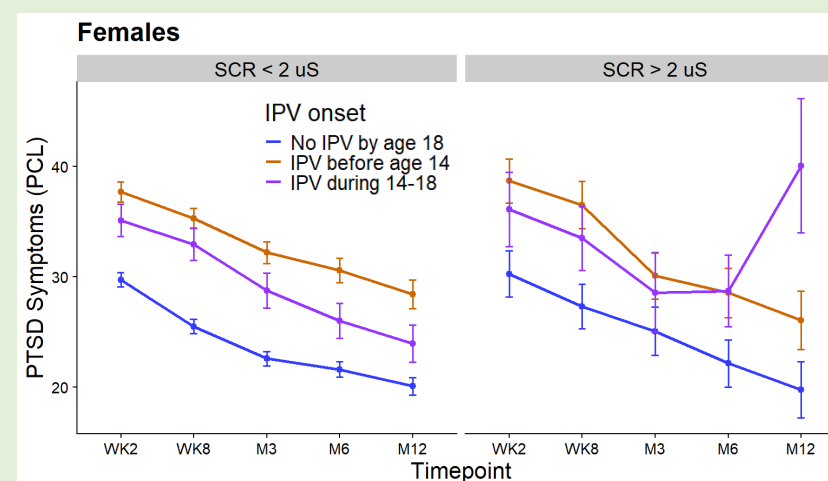
## RESULTS



**Figure 2.** Participants with childhood IPV exposure experienced elevated PTSD symptoms throughout yearlong follow-up compared to no childhood IPV group.

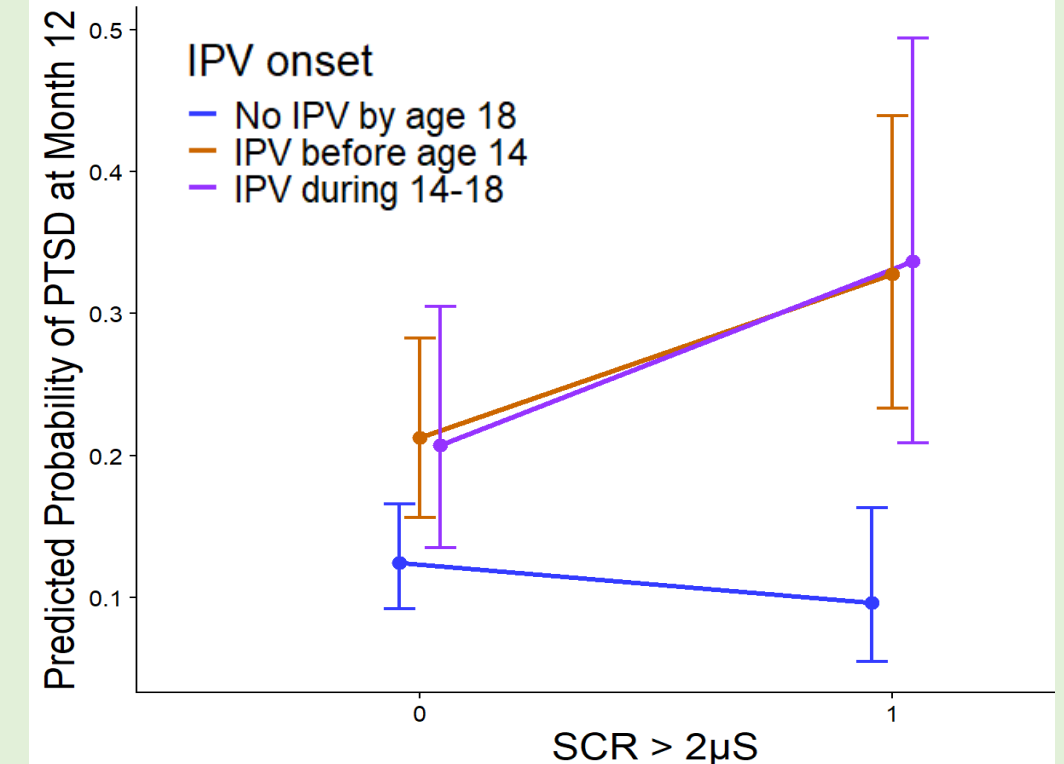


**Figure 3.** Among males, elevated SCR was associated with higher PTSD symptom severity at later follow-up timepoints only in those with childhood IPV exposure. SCR was stratified at  $2\mu\text{S}$  for visualization of three-way interactions in Figures 3 and 4.



**Figure 4.** Among females, childhood IPV exposure was associated with increased PTSD symptoms independent of time, but there was no significant Time X IPV X SCR interaction.

## RESULTS



	Odds Ratio	Confidence Interval
IPV before age 14	5.03	[1.31, 22.64]
IPV between ages 14-18	8.05	[1.58, 45.96]
No IPV before age 18	0.45	[0.13, 1.22]

**Figure 5.** Elevated SCR ( $> 2\mu\text{S}$ ) predicted heightened odds of probable PTSD at 12 months only among participants with childhood IPV exposure.

## CONCLUSIONS

- SCR to trauma interview was not predictive of future PTSD history in this sample, until childhood IPV history was accounted for.
- Individuals with elevated SCR and childhood IPV, especially males, were at greatest risk for persistent PTSD symptoms over the following year.
- This highlights that combining brief assessment of childhood IPV history and physiological reactivity post-trauma may improve identification of those at greatest risk for chronic PTSD.

## REFERENCES

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