### About the Measure

<table>
<thead>
<tr>
<th>Domain:</th>
<th>PTSD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measure:</td>
<td>Baseline and Trauma Challenge Physiology</td>
</tr>
<tr>
<td>Definition:</td>
<td>A psychophysiological test to measure changes in skin conductance and heart rate in response to a trauma interview and trauma imagery.</td>
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<tr>
<td>Purpose:</td>
<td>Posttraumatic Stress Disorder (PTSD) is associated with excessive autonomic nervous system arousal and physiological reactivity to trauma-related cues long after the occurrence of the traumatic event. Quantification of this reactivity has potential relevance to individual differences in physical and mental health outcomes that include medical conditions and response to PTSD treatment.</td>
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### About the Protocol

| Description of Protocol: | The Baseline and Trauma Challenge Psychophysiological Recordings protocol consists of a Baseline phase and a Trauma Challenge (trauma interview and trauma imagery) phase. During the baseline phase, skin conductance and heart rate are monitored continuously for 5 minutes while the participant rests quietly without talking. During the first part of the Trauma Challenge, heart rate and skin conductance are continuously measured while the participant is administered a 21 question, open-ended trauma interview. After the interview, skin conductance and heart rate are monitored continuously for 60 seconds while the participant is asked to think about and imagine the traumatic event. Derived scores include average skin conductance and heart rate calculated for baseline, trauma interview, and trauma imagery, as well as the difference in heart rate and skin conductance between 1) trauma interview and baseline, 2) trauma imagery and baseline, and 3-5) the first and last minutes within each measurement period (baseline, trauma interview, and trauma imagery). |
| Selection Rationale: | The Baseline and Trauma Challenge Psychophysiological Recordings protocol is a widely-used, valid, and reliable objective measure of emotion-related biological arousal. |
| Specific Instructions: | None |
| Protocol Text: | BASELINE AND TRAUMA CHALLENGE PSYCHOPHYSIOLOGICAL RECORDINGS PROTOCOL |

Have the individual sit comfortably in a chair.
Skin conductance (SC): Any device that records continuously at a rate of 5 samples per second or higher. Add isotonic paste to metal part of electrodes and attach them to fingers.
Heart rate (HR): Any device that records continuously at a rate of 20 samples per
second or higher. Attach to finger (devices such as pulse oximeters) or wrist (for watch devices).

Once device is attached, verify that data is being recorded (either by visual or numerical representation of the data).

**BASELINE**
Ask individual to rest quietly without talking for 5 minutes. Record SC and HR continuously for 5 minutes. Mark the end of the 5 minute period or stop and save the data as “Baseline”.

**TRAUMA INTERVIEW** (Adapted from Standardized Trauma Interview, Foa & Rothbaum, 1998)

Start recording data and ask the following questions:

1. Please briefly describe the event that happened to you
2. What time of day did it happen?
3. Where did it happen?
4. How long did this event last? That is, how long was it from the moment you first felt like you were in danger until you felt safe again?
5. How long ago did it happen?
6. How much have you slept since it happened?
7. What is your relationship with the perpetrator (if applicable)?
8. Was anyone under the influence of drugs or alcohol when it happened?
9. Was anyone else with you?
10. Did you have any injuries? What were they?
11. Do you anticipate long-term physical problems as a result of this event?
12. Was anyone else injured?
13. Was anyone killed?
14. Did you see other people’s injury or death?
15. At the time of the incident, did you think you would be seriously injured or killed?
16. During the event, how helpless did you feel?
17. During the event, how horrified or shocked did you feel?
18. During the event, how terrified or afraid did you feel?
19. During the event, how much control did you feel?
20. Have you ever experienced a similar event before?
21. How many times?

Mark the end of the interview of stop and save the data as “Trauma interview”

**TRAUMA IMAGERY**
Start recording data and ask the participant to think about and imagine the traumatic event. Record SC and HR continuously for 60 seconds. Mark the end of the 1 minute period or stop and save the data as “Trauma imagery”.

**DATA SCORING:**
Calculate average SC for 5 min Baseline, Trauma interview, and Trauma imagery. Calculate the difference between Trauma interview and Baseline, and Trauma imagery and Baseline. Calculate average SC for first minute and last minute of each phase. Note duration of Trauma interview. Calculate change score from first to last minute within each phase (correct Trauma interview by duration). Repeat with HR data.

There will be a total of 9 variables for each measure:
1. Baseline average
2. Trauma interview average
3. Trauma imagery average
4. Difference between Baseline and Trauma interview averages
5. Difference between Baseline and Trauma imagery averages
6. Change from first to last minute of Baseline
7. Change from first to last minute of Trauma interview
8. Change from first to last minute of Trauma imagery
9. Change from first to last minute of Trauma interview divided by interview duration

<table>
<thead>
<tr>
<th>Participant:</th>
<th>Adults, ages 18 and older</th>
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<tbody>
<tr>
<td>Language of Source:</td>
<td>English</td>
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</table>
**Personnel and Training Required:**
The interviewer must be trained to conduct personal interviews with individuals from the general population, and to respond appropriately to emotional distress that can be elicited by trauma interviews. The interviewer should be trained to prompt respondents further if a "don’t know" response is provided.

Research technicians must be trained in the proper administration and placement of the skin conductance and heart rate monitors.

**Equipment Needs:**
- **Skin conductance (SC):** Any device that records continuously at a rate of 5 samples per second or higher that can export data for analysis. Add isotonic paste to metal part of electrodes and attach them to fingers.

- **Heart rate (HR):** Any device that records continuously at a rate of 20 samples per second or higher that can export data for analysis. Attach to finger (devices such as pulse oximeters) or wrist (for watch devices).

**Protocol Type:**
Physiological measurement

<table>
<thead>
<tr>
<th>Requirements Category</th>
<th>Required (Yes/No)</th>
</tr>
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<tbody>
<tr>
<td>Major equipment</td>
<td>No</td>
</tr>
<tr>
<td>Specialized training</td>
<td>No</td>
</tr>
<tr>
<td>Specialized requirements for biospecimen</td>
<td>No</td>
</tr>
<tr>
<td>collection</td>
<td></td>
</tr>
<tr>
<td>Average time of greater than 15 minutes in</td>
<td>No</td>
</tr>
<tr>
<td>an unaffected individual</td>
<td></td>
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**Common Data Elements:**
TBD by PhenX Staff

**General References:**


### Additional Information About the Measure

<table>
<thead>
<tr>
<th>Essential Data:</th>
<th>Current Age, Gender</th>
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<tbody>
<tr>
<td>Related PhenX Measures:</td>
<td>Trauma and Adversity Exposure (General), PTSD Screener, PTSD Symptoms Self-report, PTSD Symptoms, Severity, and Diagnosis</td>
</tr>
<tr>
<td>Derived Variables:</td>
<td>None</td>
</tr>
<tr>
<td>Keywords/Related Concepts:</td>
<td>Trauma, Heart rate, Skin conductance, Trauma imagery, Physiological response, Reactivity</td>
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