

**Table S1:** Biochemical markers examined by included studies, the biological systems they pertain to, and a summary of their relationship to PTSD and Sleep. Abbreviations: Delta power sleep (DPS), slow wave sleep (SWS), Number of Awakenings (NOA), PTSD checklist military version (PCL-M), Insomnia severity index (ISI), Non-significant (NS), Athens insomnia scale (AIS).

<i>Biological System</i>	<i>Biochemical Marker</i>	<i>PTSD</i>	<i>Sleep</i>
<i>Growth and Metabolism</i>	BDNF	<ul style="list-style-type: none"> <li>No baseline difference</li> <li>PCL-M score reduction not related to BDNF</li> </ul>	<ul style="list-style-type: none"> <li>NS Increase in BDNF with improved sleep</li> </ul>
	IGF-1	<ul style="list-style-type: none"> <li>No baseline difference</li> <li>PCL-M score reduction not related IGF-1 increases</li> </ul>	<ul style="list-style-type: none"> <li>IGF-1 significantly increased with improved sleep</li> </ul>
	mRNA expression PDK4	<ul style="list-style-type: none"> <li>Relationship not explored</li> </ul>	<ul style="list-style-type: none"> <li>Sig. increased expression with improved sleep</li> </ul>
<i>Inflammatory</i>	mRNA expression; IL-1b, IL-6, IL-8, IL-13, CCL3, CCL4, CCL5	<ul style="list-style-type: none"> <li>Relationship not explored</li> </ul>	<ul style="list-style-type: none"> <li>Improved sleep associated with significant reduction in inflammatory mRNA expression</li> </ul>
	CRP	<ul style="list-style-type: none"> <li>PCL-M score change and CRP relationship not explored</li> <li>Not related to PDS</li> <li>No difference PTSD vs Control</li> </ul>	<ul style="list-style-type: none"> <li>Sig. reduction in sleep improved</li> <li>No correlation with AIS</li> </ul>
	IL-6	<ul style="list-style-type: none"> <li>PCL-M relationship not explored, no relationship with PDS</li> <li>Elevated in PTSD vs control</li> </ul>	<ul style="list-style-type: none"> <li>No effect with improved sleep</li> <li>No correlation with AIS</li> </ul>
	IL-1 $\beta$	<ul style="list-style-type: none"> <li>Not related to PDS</li> <li>No difference PTSD vs Control</li> </ul>	<ul style="list-style-type: none"> <li>No correlation with AIS</li> </ul>
	TNF- $\alpha$	<ul style="list-style-type: none"> <li>Not related to PDS</li> <li>No difference PTSD vs Control</li> </ul>	<ul style="list-style-type: none"> <li>No correlation with AIS</li> </ul>
	sIL-6R	<ul style="list-style-type: none"> <li>Not related to PDS</li> <li>No difference PTSD vs Control</li> </ul>	<ul style="list-style-type: none"> <li>No correlation with AIS</li> </ul>
	<i>Anti-inflammatory</i>	mRNA expression TLR4, TLR8, TLR7, TLR1	<ul style="list-style-type: none"> <li>relationship not explored</li> </ul>
IL-10		<ul style="list-style-type: none"> <li>PCL-M relationship not explored</li> </ul>	<ul style="list-style-type: none"> <li>ISI score and IL-10 relationship not examined</li> </ul>
<i>Stress Response</i>	mRNA cytochrome P450 CYP1B1, FKBP506 binding protein, FKBP15	<ul style="list-style-type: none"> <li>Relationship not explored</li> </ul>	<ul style="list-style-type: none"> <li>Increased expression with improved sleep</li> </ul>
	Cortisol	<ul style="list-style-type: none"> <li>Baseline not sig. different</li> <li>Reduction of delta sleep greater in PTSD</li> </ul>	<ul style="list-style-type: none"> <li>Inhibited cortisol resulted in reduction of DPS</li> </ul>
	11-deoxycortisol	<ul style="list-style-type: none"> <li>Increased baseline</li> </ul>	<ul style="list-style-type: none"> <li>No difference</li> </ul>
	ACTH	<ul style="list-style-type: none"> <li>No baseline difference vs. non-PTSD</li> <li>Greater inc. following cortisol inhibition in PTSD</li> </ul>	<ul style="list-style-type: none"> <li>Negative relationship with PDS in PTSD</li> <li>Inverse relationship with SWS</li> <li>AUCg related to NOA</li> </ul>
	Cortisol:ACTH ratio	<ul style="list-style-type: none"> <li>Sig. decreased in PTSD</li> </ul>	<ul style="list-style-type: none"> <li>Most sig. between 0700 and 0800 hrs</li> </ul>
<i>Sympathetic/parasympathetic activity Sleep</i>	Angiotensin II: Angiotensin 1-7 ratio	<ul style="list-style-type: none"> <li>PCL-M relationship not explored</li> </ul>	<ul style="list-style-type: none"> <li>ISI relationship not explored</li> </ul>
	Melatonin	<ul style="list-style-type: none"> <li>No sig. difference</li> </ul>	<ul style="list-style-type: none"> <li>Similar times of onset</li> </ul>

**Table S2:** Summary of physiological markers used by included studies to investigate autonomic activity in relation to PTSD and sleep. Abbreviations: Time in Bed (TIB), Total sleep time (TST), Normal Range (NR), Normalised high frequency (n-HF) , Low Frequency (LF) , Intervals between adjacent QRS complexes (SDNN).

<i>Biological System</i>	<i>Physiological Markers</i>	<i>PTSD</i>	<i>Sleep</i>
<i>Sympathetic / Parasympathetic activity</i>	Blood Pressure	<ul style="list-style-type: none"> <li>Not related to nocturnal dipping status but dippers reported more hyperarousal symptoms</li> </ul>	<ul style="list-style-type: none"> <li>Nocturnal dippers poorer sleep quality and greater latency</li> <li>Inverse relationship with sleep quality (NR)</li> </ul>
	Heart Rate	<ul style="list-style-type: none"> <li>Relationship not explored</li> </ul>	<ul style="list-style-type: none"> <li>Increased prior and following nightmare awakening but no indication of gradual increase</li> </ul>
	Heart Rate Variability	<ul style="list-style-type: none"> <li>SDNN significant predictor of post-intervention PCL-C scores</li> </ul>	<ul style="list-style-type: none"> <li>No association with ISI</li> </ul>
	nHF	<ul style="list-style-type: none"> <li>TiB nHF Sig lower in PTSD</li> </ul>	<ul style="list-style-type: none"> <li>Average TST sig. correlated with TiB nHF in resilient but not PTSD</li> </ul>
	LF	<ul style="list-style-type: none"> <li>Relationship with PCL-M not explored</li> </ul>	<ul style="list-style-type: none"> <li>Relationship with ISI not explored</li> </ul>
	LF/HF ratio		<ul style="list-style-type: none"> <li>Sig correlated with TST in resilient but not PTSD</li> </ul>
	Baroreceptor sensitivity	<ul style="list-style-type: none"> <li>Sig. lower in PTSD</li> </ul>	<ul style="list-style-type: none"> <li>Increased sleep efficiency, improved BRS in PTSD</li> <li>Decreased sleep efficiency, worse BRS in PTSD</li> </ul>
	Respiratory Rate	<ul style="list-style-type: none"> <li>Relationship not explored</li> </ul>	<ul style="list-style-type: none"> <li>Related to nightmare experience in both REM and NREM</li> </ul>
	Skin Conductance	<ul style="list-style-type: none"> <li>Decrease in reactivity associated with tandem decrease in CAPS assessed symptoms</li> </ul>	<ul style="list-style-type: none"> <li>Decreased reactivity with decreased nightmare severity and improved sleep quality</li> </ul>
	Respiratory Sinus Arrhythmia	<ul style="list-style-type: none"> <li>Not investigated</li> </ul>	<ul style="list-style-type: none"> <li>Low sleep period RSA predictive of nightmare occurrence in PTSD</li> </ul>
	Respiratory Event Index	<ul style="list-style-type: none"> <li>Not Investigated</li> </ul>	<ul style="list-style-type: none"> <li>Increased hypopneas/apneas predictive of nightmares</li> </ul>