

# BIOLOGICAL MARKERS OF PTSD

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# Biological Markers of PTSD

## I. Increased:

- 1) BP and Heart Rate
- 2) Glucocorticoid Receptors (number and sensitivity)
- 3) Increased T3 (Mason)
- 4) Over responsiveness to reminders and without reminders
- 5) Increased analgesia (Naloxone reversible)
- 6) Yohimbine induces flashbacks
- 7) Increased REM density

# Markers (cont'd)

## II. Decreased:

- 1) Cortisol
- 2) Alpha 2 adrenergic receptor binding (increased MAO activity in platelets)
- 3) Decrease of stages 3 and 4 of sleep (decreased efficiency)
- 4) Decreased inhibitor modulation of startle response
- 5) Decreased P-300 on EEG
- 6) Decreased habituation of P-50 evoked potential
- 7) Decreased volume of hippocampus

# Markers (cont'd)

III. Miscellaneous: Decreased P2  
augmentation; Lactate-induced flashbacks;  
Traumatic memory-induced right EEG  
shift.

# The HPA Risk Factor of PTSD

- Traumatic Stress -- high cortisol
- PTSD patients -- low cortisol response at the time of trauma (Resnick; McFarland)
- Low cortisol = due to alteration of HPA Axis = from early trauma (e.g., neonatal handling stress)  
Glucocorticoid receptors = increased sensitivity.  
(DST supersuppression)
- Conclusion: critical windows in development of HPA Axis (“fine tuning”)

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this subject, please contact Dr. Novac  
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