

PTSD AND THE BRAIN

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Objectives

- What is traumatic stress?
- Outcomes after traumatic stress & PTSD
- How does PTSD develop?



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What is Traumatic Stress?



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Trauma Exposure

- General population: 89.6% will experience at least 1 traumatic event
 - Average = 4.8 traumas
- Single incident traumatic injury
 - 2.8 million people traumatically injured each year

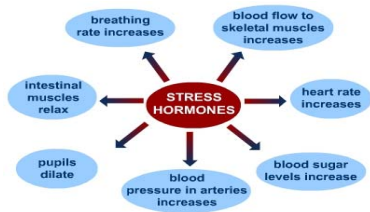


What is Traumatic Stress?

- Defined by the individual's perception (within reason)
 - Stress: demands of stress exceeding ability to cope
 - Related to perceived life threat
 - Injury severity score ≠ perceived injury severity score



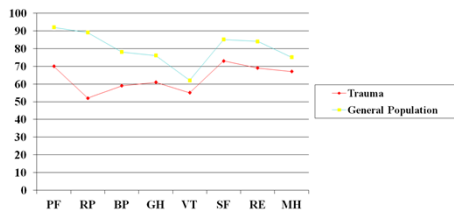
Stress Response



Outcomes after traumatic stress & PTSD



Quality of (QoL) Life after Trauma



Kiely et al., (2008)



Posttraumatic Stress Disorder (PTSD)

- PTSD is the strongest contributing factor to lower physical and emotional QoL after a traumatic event



Kiely et al., (2008)



Trauma Exposure & PTSD

- General population
 - 8% likelihood of developing PTSD (APA, 2000)



PTSD Defined

Symptom Clusters

- Intrusions
 - Nightmares, flashbacks
- Avoidance
 - Of people, places that remind someone of the trauma
- Hyperarousal Symptoms
 - Feeling jumpy, easily startled
- Negative alterations in mood and cognitions
 - World is a dangerous place

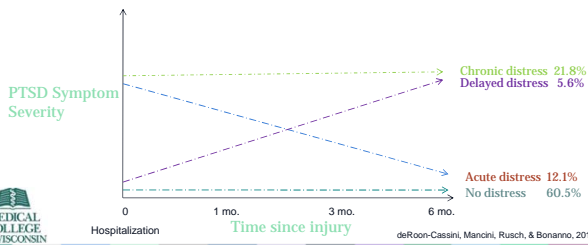
Considerations

- 30 Days post-trauma
- Persistent, abnormal adaptation of neurobiological systems to the stress of trauma exposure (Sherin & Nemeroff, 2011)

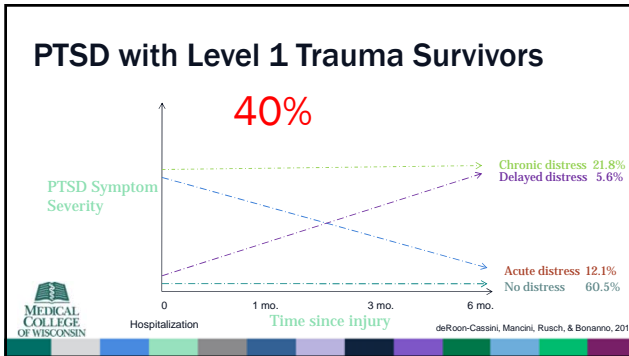


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PTSD with Level 1 Trauma Survivors



deRoos-Cassini, Mancini, Rusch, & Bonanno, 2011



Why is PTSD a problem?

PTSD is significantly related to poor health outcomes

- Inhibited immune functioning
- Chronic pain syndromes
- Gastrointestinal illness
- Respiratory disease
- Neurodegenerative disorders

Why is PTSD a problem?

Public health Impact

- Poor QoL
- 2x higher risk for early mortality
- poor return to work and an increase in healthcare costs
- Anxiety disorder with the highest cost to society

How does PTSD develop?

- Fear conditioning
- Failure of safety learning/Fear extinction

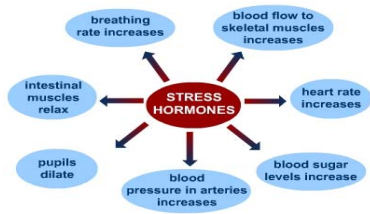


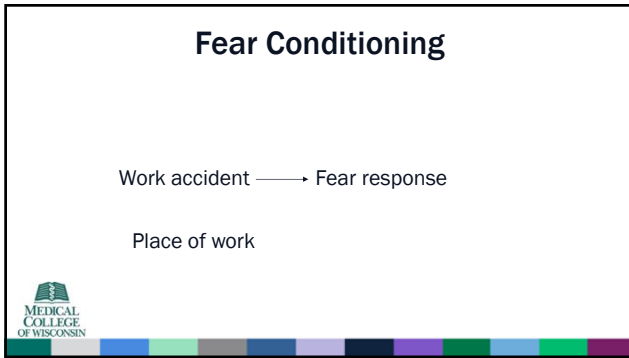
Fear Conditioning

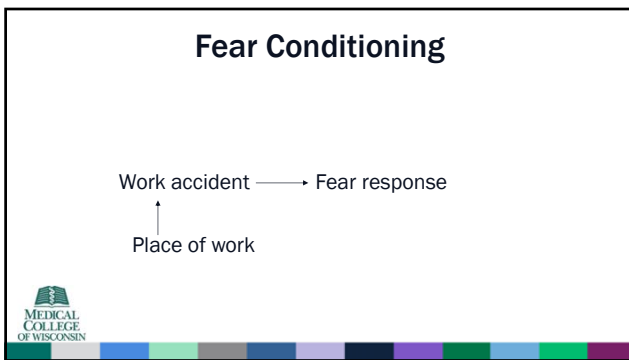
Work accident → Fear response

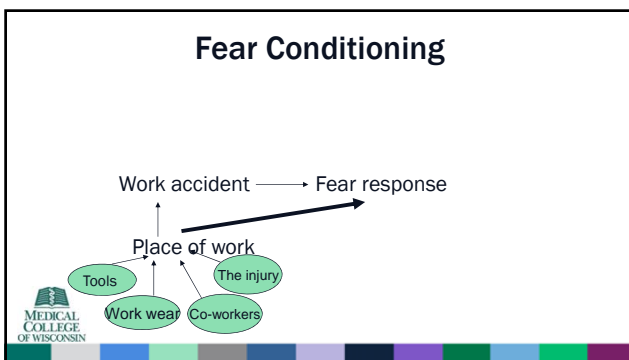


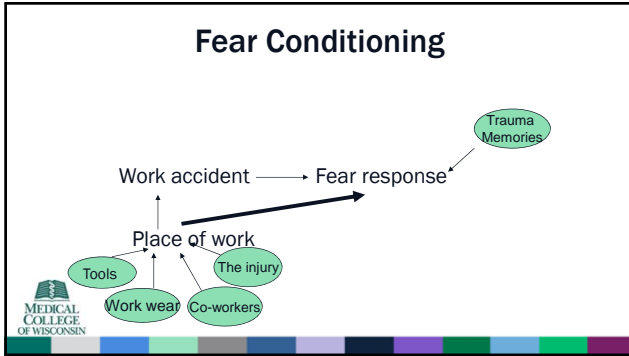
Fear Response

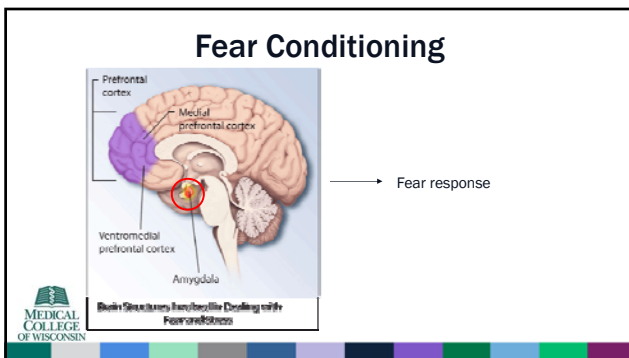


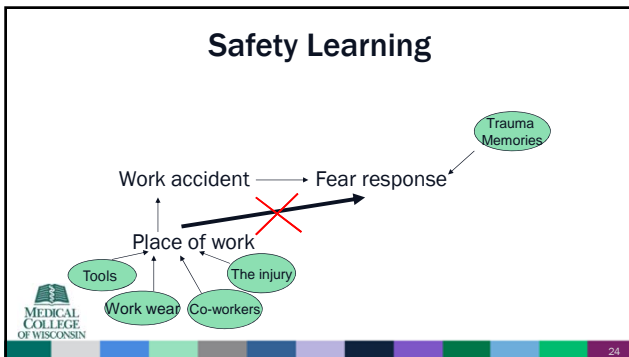


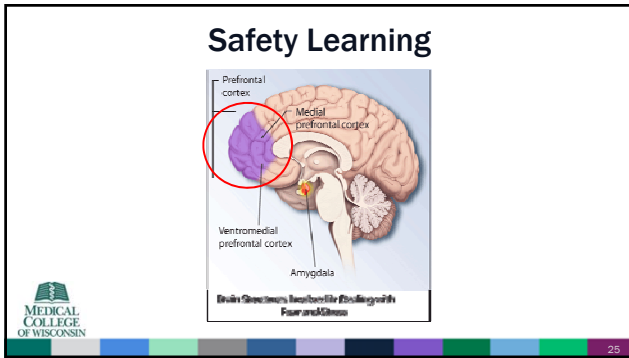


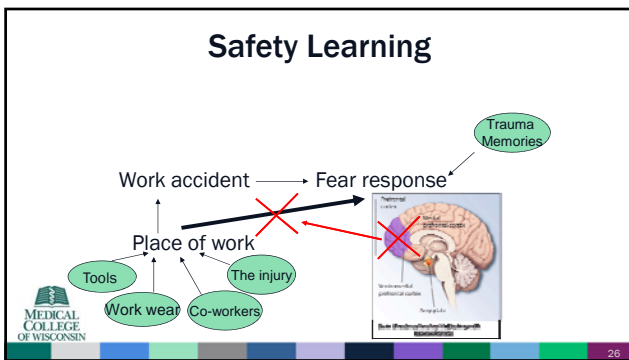


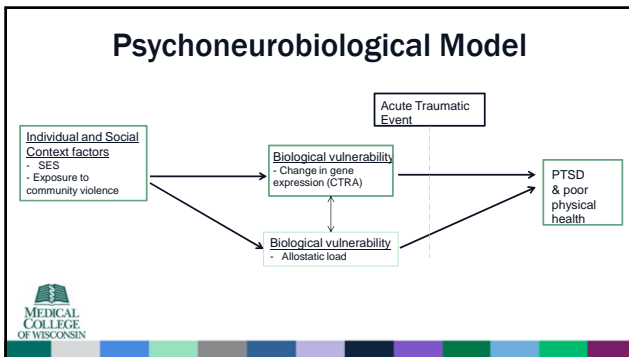












QUESTIONS?