Sleep, Trauma, Pain and Recovery

How Trauma disrupts Sleep and amplifies Pain—and how EMDR (and other approaches!) can help

Dr Justin Havens
EMDR Consultant

1

My Background

- Varied background – from military/engineering/business to therapy!
- Trauma Therapist – 2008 onwards
- Researcher – PhD 2014-2019 (Nightmares!)
- EMDR Consultant in Private Practice
- EMDR UK Association Board Member

2

Contents

3

1. Sleep as a foundation for health

4

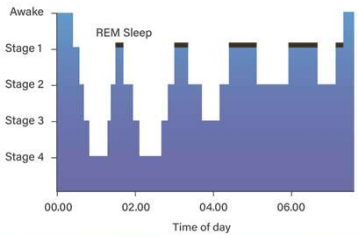
Why a foundation?

How long can you survive without:

1. Oxygen
2. Water
3. Food
4. Sleep

5

Human Sleep Cycles



NREM (Non-Rapid Eye Movement) Sleep (75-80% of sleep):

- **Stage 1 (Light Sleep, 5%):** Transition from wakefulness to sleep
- **Stage 2/3 (Deeper Light Sleep, 45-55%):** Memory consolidation begins; sleep spindles and K-complexes appear
- **Stage 4 (Slow-Wave Sleep, SWS, 15-25%):** Deepest sleep; critical for physical restoration, immune function and pain modulation

REM Sleep (20-25%): Dreaming occurs; essential for emotional regulation and cognitive function

6

Core Elements of Sleep

1. Deep Slow Wave Sleep for physical restoration
   - Experiments to limit deep sleep
2. REM sleep for psychological restoration
   - Dreaming as a form of memory reconsolidation

7

7

Sleep and Dreaming

- Natural process to discharge trauma from brain
- Evolutionary – survival!
- 'Reset' – mind and body
- Interpretation not necessarily important
- Extreme emotions normal
- Disturbing dreams - natural response to an abnormal event

8

8

Dreaming

1. We all dream for 2 hours every night, even though some people think they don't dream at all!
2. Hyper-visual and emotional – reflection of unconscious can be meaningful or not!
3. Emotional processing task

9

9

2. The impact of trauma on sleep

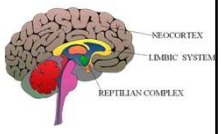
10

10

How trauma affects the brain

1. Significant research and evidence
2. Hyperarousal, amygdala overactivity, disrupted HPA axis
   - Important as some of these are shared mechanisms with pain
- Sleep Architecture & Trauma
  - Disrupted REM sleep, frequent awakenings, nightmares

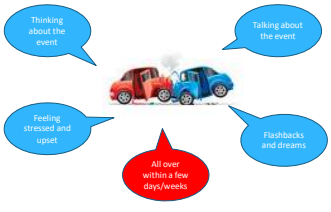
Triune Brain (Maclean 1952)



11

11

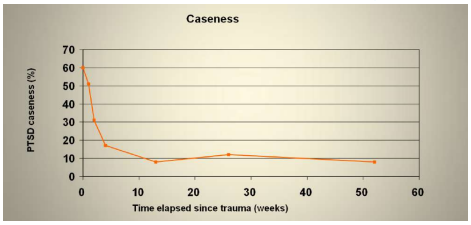
Initial Response to Trauma



12

12

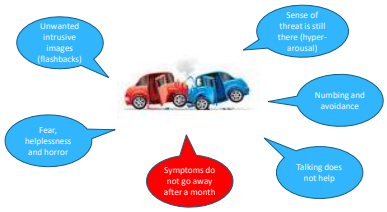
Post-incident recovery



13

13

'Stuck' Trauma Response (PTSD)



14

14

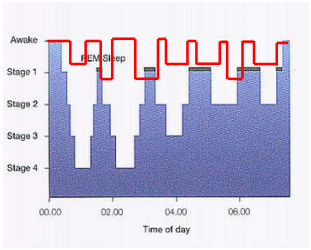
A nightmare is a 'stuck' dream

- REM sleep close to waking
- Easily woken from scary dreams
- No information available to progress dream
- Dream material 'stuck' and sleep interrupted

15

15

Disturbed Sleep Cycle



Broken sleep cycle

Too much REM, no deep sleep!

16

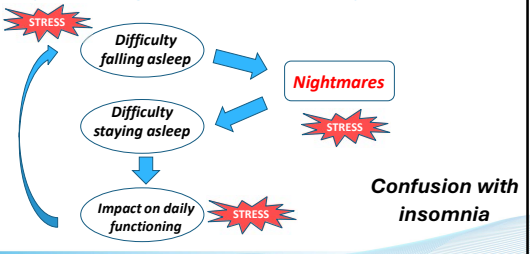
Prevalence of Nightmares

- Research shows emotional distress central to nightmares, and are generally under-reported:

General population	Clinical population anxiety-psychosis	PTSD/trauma population
		
2 – 6%	c.50%?	90%

17

Vicious Cycle of Nightmares, Poor Sleep and Stress



Confusion with insomnia

18

3. The impact of trauma on Pain



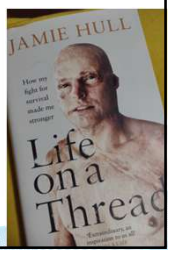
19

Pain is a psycho-physiological and personal experience

20

The nail story





21

Just because it feels real, doesn't make it real

The 'lemon test'

22

Neurobiology of Pain/Trauma

1. Dysregulated stress response: Both PTSD and chronic pain involve hyperactivity of the hypothalamic-pituitary-adrenal (HPA) axis and altered cortisol levels
2. Central sensitization: PTSD may heighten pain sensitivity due to changes in the central nervous system, leading to amplified pain perception (hyperalgesia/allodynia)
3. Overlapping brain regions: The amygdala (fear processing), anterior cingulate cortex (pain and emotion regulation), and prefrontal cortex (executive function) are implicated in both conditions

23

Neurobiology of Pain/Trauma

4. Neurotransmitter dysregulation: Both conditions involve imbalances in serotonin, norepinephrine, dopamine, and endogenous opioids, affecting mood and pain perception
5. Trauma worsens pain by **disrupting stress and emotional regulation systems**

Abdallah, C. G., & Geha, P. (2017). *Chronic pain and chronic stress: Two sides of the same coin?* **Chronic Stress, 1, 247054701770476.**

24

Pain and Stress/Trauma

1. 50% of chronic pain patients met PTSD criteria, particularly veterans and accident survivors

2. Pain/Trauma as self-reinforcing

3. Similarities in avoidance behaviour

Otis, J. D., Keane, T. M., & Kerns, R. D. (2003). *An examination of the relationship between chronic pain and post-traumatic stress disorder.* **Journal of Rehabilitation Research and Development, 40(5), 397-406.**

Sharp, T. J., & Harvey, A. G. (2001). *Chronic pain and posttraumatic stress disorder: Mutual maintenance?* **Clinical Psychology Review, 21(6), 857-877**

Liedl, A., & Knaevelsrud, C. (2008). *Chronic pain and PTSD: The Perpetual Avoidance Model.* **European Journal of Psychotraumatology, 1(1), 5236.**

25

25

Event related Pain

1. Onset of pain linked to specific event - clear connection eg whiplash, phantom limb pain
2. Opportunity to target event
3. Opportunity to target pain as per pain protocol

Chronic Pain

1. Pain that persists after tissue repair
2. Whole range of diagnoses, Fibro, Migraines, IBS, MUS etc
3. Auto-immune issues
4. Attachment wounds
5. Complex but still treatable

26

26

4. The pain-sleep-trauma connection

27

27

Pain – sleep links

1. Complex, interconnected and bi-directional relationship between sleep and pain
2. Studies show poor sleep:
    1. increases pain sensitivity
    2. reduces pain tolerance
    3. Increases inflammation (link to chronic pain conditions)

28

28

How pain affects sleep

1. Difficulty getting to sleep (anxiety/insomnia/nightmares)
2. Nighttime awakenings leading to fragmented sleep (Sleep Apnea)
3. Poor sleep quality – impact on sleep architecture
    - ↓ **Slow-wave sleep (SWS):** Critical for physical restoration and pain modulation
    - ↓ **REM sleep:** Affects emotional regulation, worsening pain-related distress
4. Viscous cycle of worsening pain and sleep, and this is before we have introduced psychological factors!
5. In short, pain can distort the entire structure of sleep

29

29

Traditional treatment options not really addressing the root issue

1. Pain medication
2. Physical rehab for pain
3. Sleep hygiene
4. CBT for Insomnia
5. Relaxation strategies

30

30

Trauma – Sleep – Pain cycle

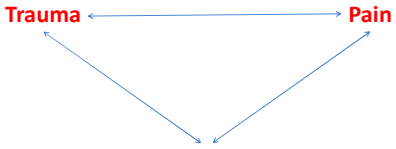
Self-perpetuating downward spiral: Trauma impacts sleep, pain worse, leading to worse sleep and less natural recovery from trauma

External interventions VITAL to break this cycle:

Less likely to resolve naturally

31

Downward Spiral of Trauma – Pain – Sleep



How do we break this viscous circle?

Traditional treatment approaches often involve medication

32

5. Towards recovery: EMDR and other approaches

33

EMDR as a multi-modal comprehensive mind/body treatment approach


Image


Emotions


Body Sensations


Belief/NC

34

34

History of EMDR as a treatment for pain

1. Growing body of evidence and research into the efficacy of treating pain with EMDR
2. 53 out of 1969 articles in the EMDR UK Publications database
3. 1994 – experiment with impact of EMDR on hands in iced water
4. 2000 onwards – Mark Grant!

35

35

Pain as a body sensation

1. We are already working with pain if we are doing EMDR – awareness of what is being experienced in body
2. My simplified version of the pain protocol for event specific pain:
   - Target the trauma which resulted in the pain
   - Target the pain directly…….. And see what happens!
3. Chronic pain and complex trauma require more in depth work
4. Don't forget CALM PLACE as this is a 'state change' exercise - EXAMPLE

36

36

Working with pain – therapeutic guidelines for EMDR

1. A more flexible and attachment informed approach to case conceptualisation, especially for chronic pain
2. Radical curiosity
   - 'how has the person got to be this way?'
   - 'what is the pain saying?'
   - 'The art of the possible is never really known'
3. Expectation management – especially important for pain

37

37

Phantom limb pain

1. Plenty of evidence of the effectiveness of EMDR treating Phantom Limb Pain – inaccurate body mapping
2. My own experience of treating PLP: Royal Marine Veteran Paul: full leg amputation: "My ankle feels like it is where my knee should be"

Video

38

38

But what about sleep?

1. EMDR as a direct intervention can break the trauma/pain/sleep downward spiral, but what other possibilities exist?
2. Targeting pain with EMDR can reduce pain sensitivity and reduce sleep awakenings
3. For those with vivid dreams and nightmares, The Dream Completion Technique offers a low risk and rapid intervention that can help process trauma and improve sleep architecture

39

39

FROM NIGHTMARES TO PEACEFUL SLEEP

with The Dream Completion Technique™

A powerful self-help technique that can be learnt in 5 minutes and can stop nightmares after just one night.

(and can also be used with trauma-focused therapies such as EMDR)

Presented by: Dr Justin Havens, Psychological Therapist, EMDR Consultant and Researcher

http://tiny.cc/stop_nightmares

40

40

Dream Machine

- **Purpose**
- **Malfunction**
- **Solution**

41

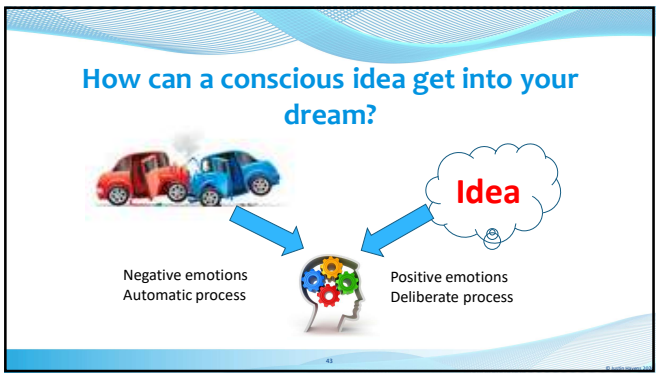
41

Solution = Create new idea for dream

- Consciously create an idea for 'dream shelf'
- Gets pulled into dream - allows dreamwork to complete
- Restful sleep which resets sleep cycle
- Mind relearns its ok to sleep through scary dreams
- **AND trauma symptoms reduce**

42

42



43

44

45

3 Steps to complete your dreams

Believe there is nothing to fear in your dream!

1. Focus on the part of the most recent dream when you woke up
2. Think "**what would I like to happen next that feels good at a gut level?**"
3. Imagine it just before going to sleep

46

Research Outcomes


Planned Dream Interventions - Accepted manuscript nov 18 • 13 pages

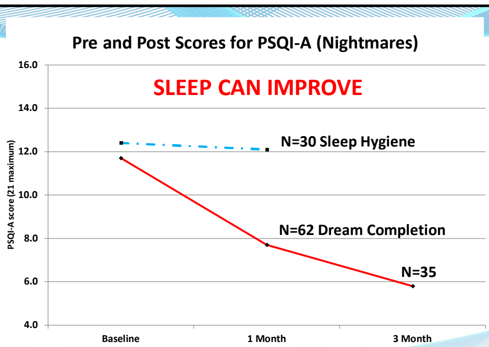
MILITARY BEHAVIORAL HEALTH

Routledge

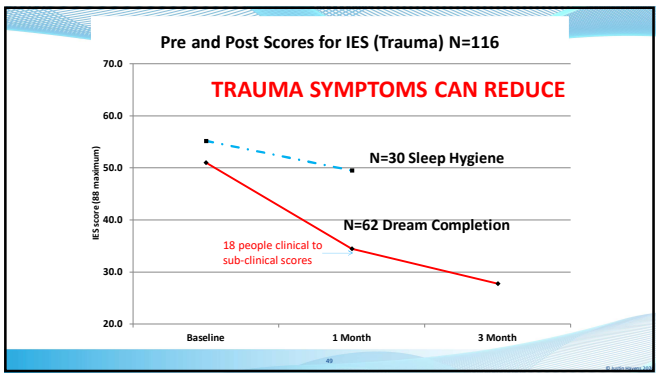
Planned Dream Interventions: A Pragmatic Randomized Control Trial to Evaluate a Psychological Treatment for Traumatic Nightmares in UK Military Veterans

Justin Havens, Jamie Hacker Hughes, Fiona McMaster, and Roger Kingerlee

47



48



49

Summary

1. Imperative to break the trauma-pain-sleep downward spiral
2. EMDR is a good integrated treatment approach for all
3. Most appropriate pain interventions
4. Focus and treat sleep issues: insomnia and nightmares
5. Flexible approach - Experiment to find interventions with greatest impact

50

50

Webinars and Self-Help Resources:

- **Comprehensive self-help programme (1 hr video plus workbook) @ www.stopnightmares.org**
- **3hr webinar for therapists: Learn Dream Completion and teach to clients**
- **Contact: mail@justinhavens.com**

51

51

52