

The Stuff That  
Dreams are Made of:  
The Psychology Behind  
Dreams and Nightmares

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Video - Big Lebowski Dream Sequence



# Common Questions

- ▶ Does everyone Dream?
- ▶ Does it matter if I remember Dreams or not?
- ▶ Do Dreams have meaning?



# All that we see or seem Is but a dream within a dream

Edgar Allen Poe

Double  
Helix



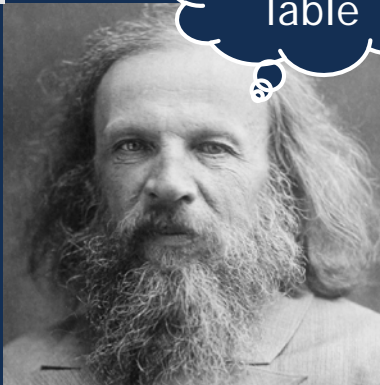
James Watson

Frankenstein



Mary Shelley

Periodic  
Table



Dmitry Mendeleev

Yesterday



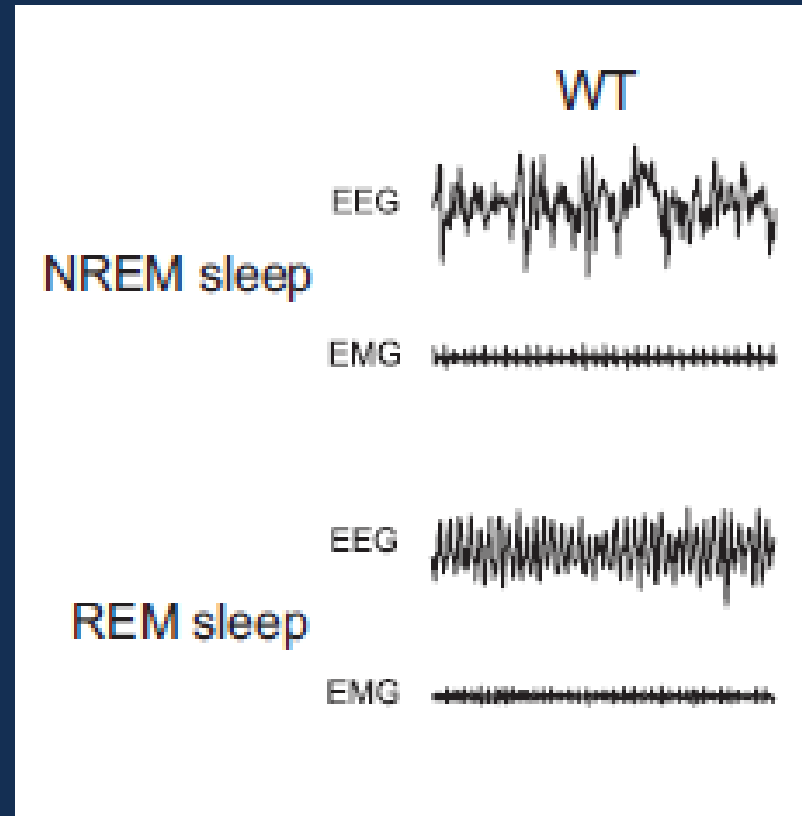
Paul McCartney

# Basics about Sleep: 3 Key Factors

- ▶ Sleep Debt - Begin accumulating the debt as soon as wake up
- ▶ Circadian Rhythm - Sleep wake cycle or biological clock with two cycles a day
- ▶ Environment - Can have an alerting effect or sleep inducing effect

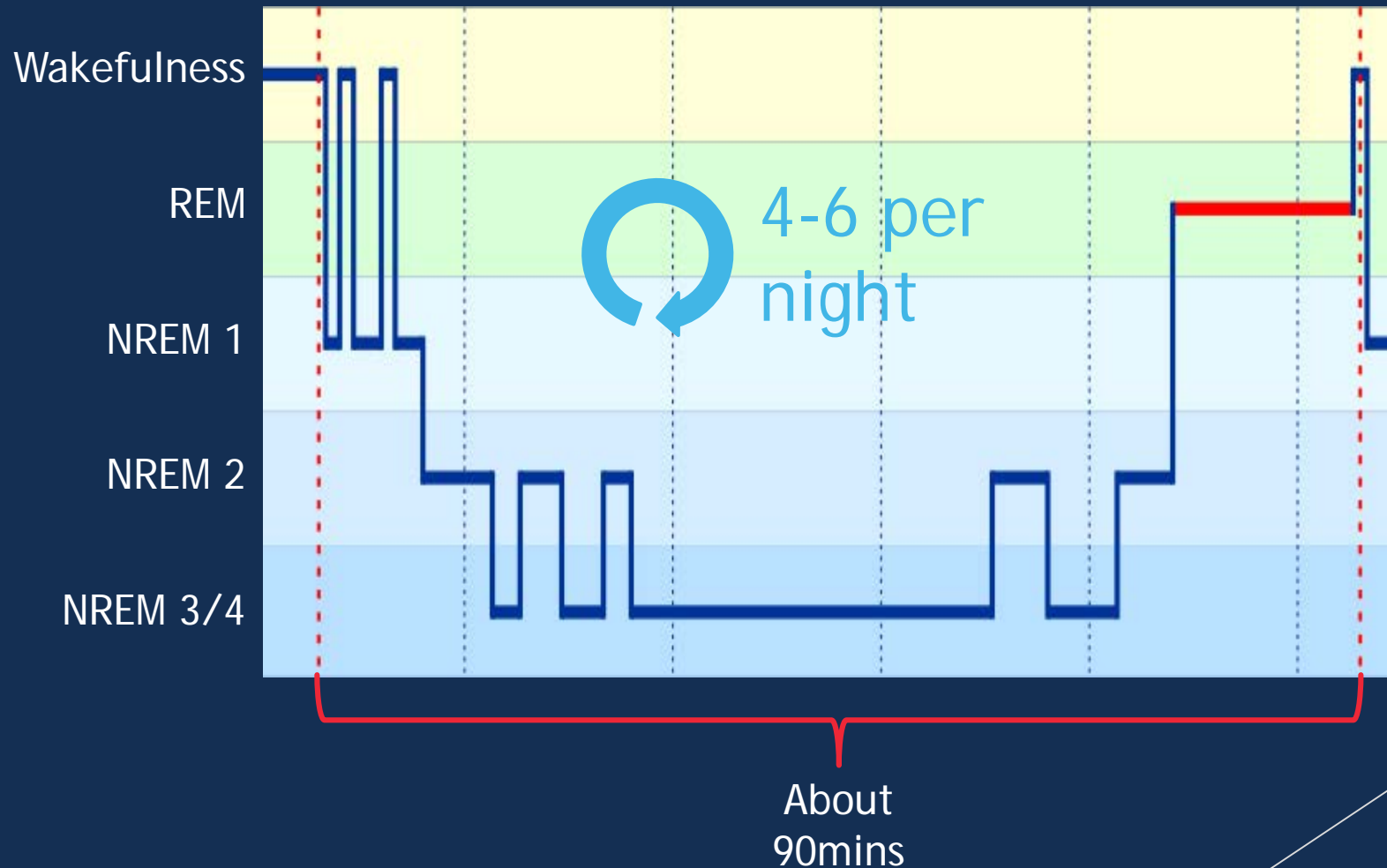
# Sleep Structure

- ▶ NREM 4 stages indicating depth of sleep
  - ▶ Slow wave brain activity, movable body, 75-80 % of sleep
  - ▶ Neuro-physiological health
- ▶ REM Sleep
  - ▶ Rapid desynchronized wave
  - ▶ Paralyzed body





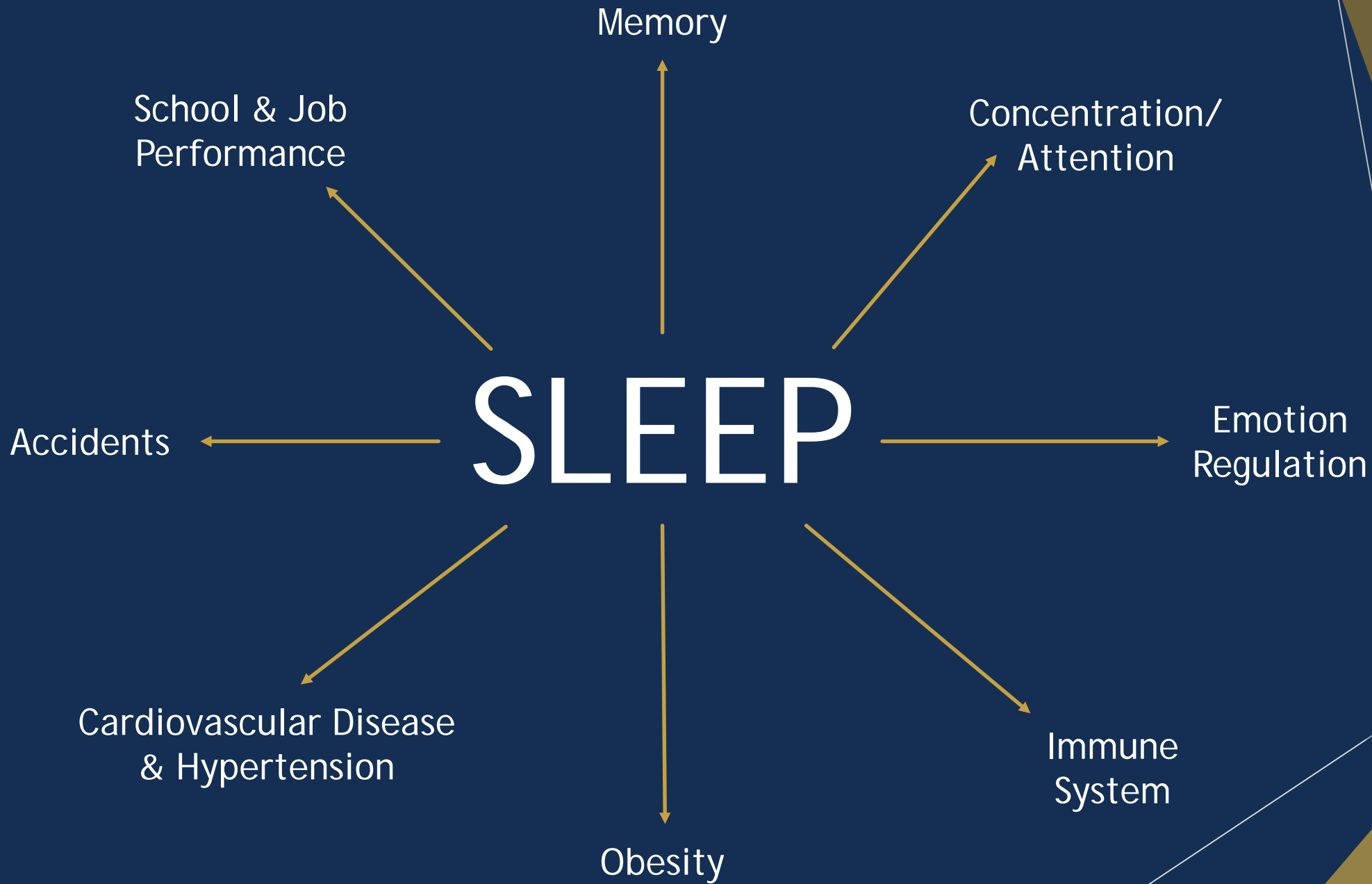
# Sleep Cycle



**2HRS**  
Per night in REM

**23YRS**  
By age 80 (5yrs in REM)

# SLEEP



# Nocturnal Mentation Defined

## Dreams

Mentation that occurs during sleep in which images, thoughts, and sensations are organized in a story like manner. Range from the sensible to the bizarre.

## Bad Dreams

Vivid, dysphoric dreams that often include intense fear, anxiety, or terror and are remembered upon awakening in the morning.

## Nightmares

Similar to Bad Dreams but the feelings are so intense they cause the individual to awaken and are remembered.

Idiopathic - Different Content

Recurrent - Repetitive Content of focusing on a specific event

# Related Nocturnal Mentation

## Lucid Dreams

A dream during which the person is aware they are dreaming.

## Hypnagogic Dream

A dream that occurs between the transition of waking and sleep

## Night/Sleep Terrors

Episode of screaming, crying, and intense fear while asleep. Difficult to arouse the person and typically do not remember the event. Typically occur in a different phase of sleep (slow wave or deep sleep).

Are dreams adaptive,  
functional, and  
meaningful?

# Evidence of Adaptation

- ▶ REM Rebound
- ▶ REM Deprivation
- ▶ When surgically enable movement display meaningful action, e.g., hunting behavior off line species simulations

# Evidence of Function

- ▶ Fear Extinction/Threat Simulation
- ▶ Learning and Memory Consolidation
- ▶ Problem Solving and Creative Thinking
- ▶ Mood Regulation

# Evidence of Meaning

- ▶ Dreams are not governed by the rules of physics
- ▶ Two-thirds dream content has negative emotion
- ▶ Most have elements of negative content
- ▶ Almost half have elements of positive content
- ▶ Dreams are consistent with waking life



# Disturbed Dreaming

## ▶ Bad Dreams and Nightmares

- ▶ Developmentally increase from middle childhood to peak in young adulthood then typically decline as age
- ▶ Normative to have idiopathic Disturbed Dreaming
- ▶ Nightmare disorder diagnosed based on frequency and distress
- ▶ Recurrent/Repetitive Nightmares (PTSD)
- ▶ Gender difference (depression, anxiety and interpersonal trauma)
- ▶ Nightmare Content distinctions - death, victimization, frequency and severity of aggressive acts
- ▶ Bad Dream distinction - increased overall reference to affect both positive and negative and more regulated

# Treatment for Nightmare Distress

- ▶ Image rehearsal for Nightmares remember dream and change the ending
- ▶ Exposure nightmare content - Virtual Reality

