

# HEALTHY SLEEP AND COGNITIVE BEHAVIORAL THERAPY FOR INSOMNIA

Presented by Kyle Davis, PhD

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## AGENDA

- What is sleep and why do we need it?
- How much sleep do we need-changes across the lifespan
- Relationship between sleep and mental health conditions
- Definition and prevalence of insomnia
- Cognitive Behavioral Therapy for Insomnia

## DEFINITION AND PURPOSE OF SLEEP

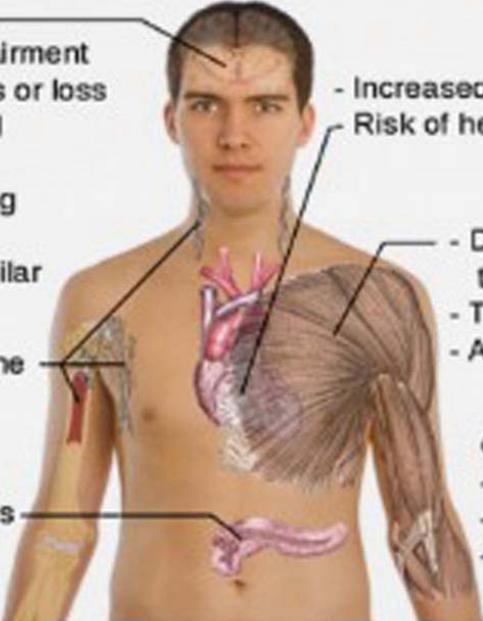
- How would you define sleep?
- Sleep is a naturally recurring state of mind and body, characterized by altered consciousness, relatively inhibited sensory activity, inhibition of nearly all voluntary muscles, and reduced interactions with surroundings
- What do you think the purpose of sleep is?

## FUNCTION OF SLEEP

Help restore immune, nervous, skeletal, and muscular systems

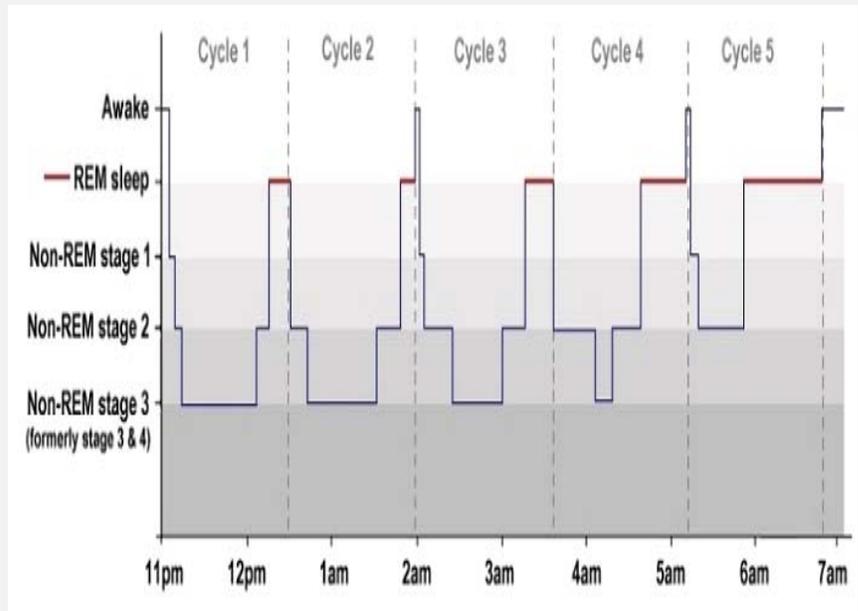
Maintain mood, memory, and cognitive functioning

## FEELING THE EFFECTS OF SLEEP DEPRIVATION

- 
- Irritability
  - Cognitive impairment
  - Memory lapses or loss
  - Impaired moral judgement
  - Severe yawning
  - Hallucinations
  - Symptoms similar to ADHD
  - Impaired immune system
  - Risk of diabetes Type 2
  - Increased heart rate and blood pressure
  - Risk of heart disease
  - Decreased reaction time and accuracy
  - Tremors
  - Aches
- Other:*
- Growth suppression
  - Risk of obesity
  - Decreased body temperature

## NATURE OF SLEEP

- During sleep, the body moves through **five** different stages
- Over the course of the night, cycle **four** to **six** times, spending an average of **90** minutes in each stage
- 2 Types: NREM (non-rapid eye movement) sleep and REM (rapid eye movement)
- Each stage of sleep serves a unique restorative function



## STAGES OF SLEEP

- **NREM Stage one** - transitional phase, floating in and out of consciousness, partially awake while your mind begins to drift off, muscles jerk, falling sensation jolts you back into consciousness
- **NREM Stage two** -light stage, heart rate begins to slow, core temperature drops and brain waves slow with the occasional burst of waves (sleep spindles); alternating periods of muscle tone and relaxation; 50% of the time spent asleep is stage 2
- **NREM stage 3**-deep sleep; hard to wake up from (disoriented and groggy); slow wave sleep (SWS-delta waves), blood pressure drops and breathing becomes deeper, slower, and more rhythmic; body becomes immobile but can function(nightmares, bedwetting and sleepwalking); rejuvenating hormones released from growth & appetite control
- **REM (rapid eye movement)** Sleep-about 20% of sleep (infants 50%); mind energizes itself and body is immobile; breathing becomes shallow & irregular; heart rate & blood pressure rise; dreaming & heightened brain waves (similar to wakefulness); revitalizes the brain, supports sharp and alert daytime function

## SLEEP OVER THE HUMAN LIFESPAN

How much sleep do you think most adults need?

How do you think sleep changes over the human lifespan?



## RELATIONSHIP BETWEEN SLEEP AND MENTAL HEALTH

- How do you think sleep affects mental health and how does mental health affect sleep?
- Sleep problems, insomnia in particular, are commonly experienced by those with mood and anxiety disorders
- Insomnia can be either a risk factor for or symptom of mental health conditions
- Treating insomnia can improve symptoms of mood and anxiety disorders

## WHAT IS INSOMNIA AND HOW DO YOU TREAT IT?

- Definition of insomnia
- Prevalence of insomnia
- 4-Factor model of insomnia
- Overview of cognitive and behavioral treatment strategies for insomnia

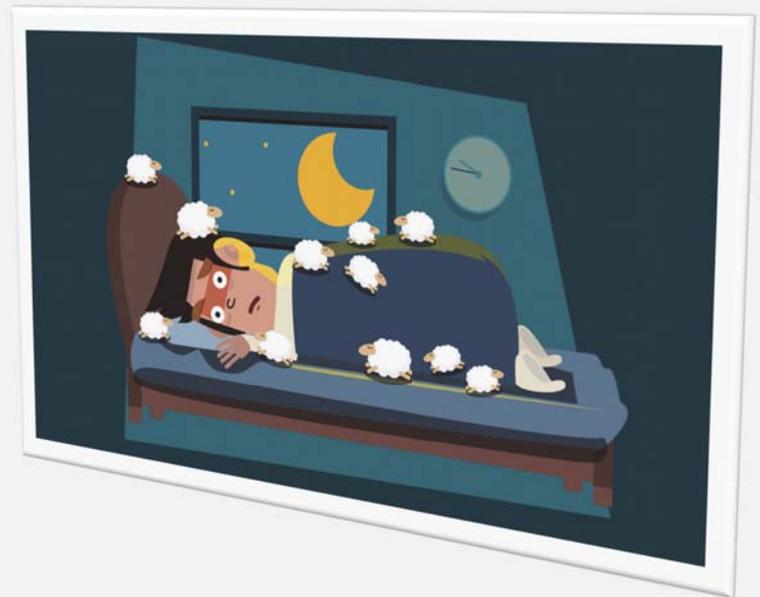
## DSM-V DEFINITION OF INSOMNIA

- “Dissatisfaction with sleep quality or quantity characterized by difficulty initiating sleep, maintaining sleep, or early morning awakenings that cause significant distress or impairment in daytime functioning and occur at least three nights per week for at least 3 months despite adequate opportunity for sleep.”

## PREVALENCE OF INSOMNIA

5% - 35% of population has insomnia at some point in their lives

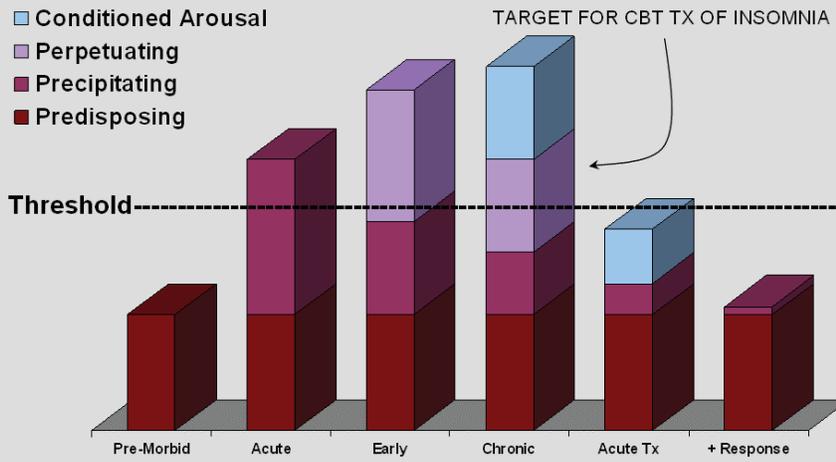
10% - 15% have persistent insomnia



WHAT PHYSICAL AND MENTAL HEALTH PROBLEMS DO YOU THINK ARE ASSOCIATED WITH INSOMNIA?

- Depression
- Anxiety
- Hypertension
- Type II diabetes
- Increased alcohol and substance use
- Increased health care use
- Non-motor vehicle accidents
- Chronic pain

### 4 FACTOR MODEL

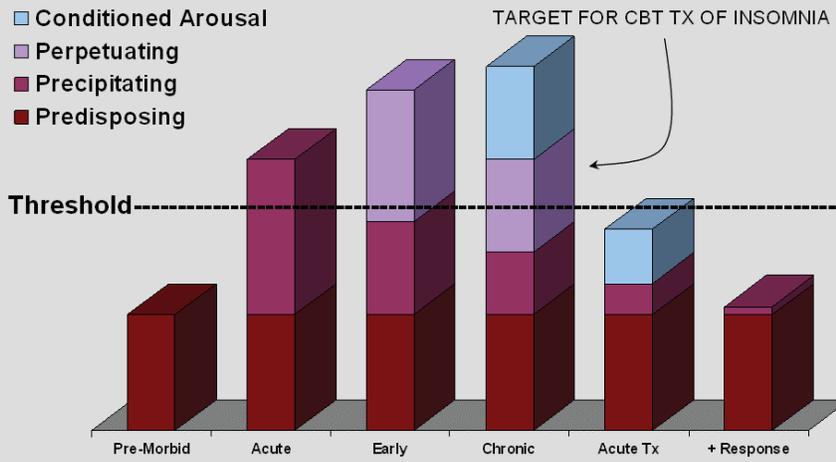


Perlis modification of Spielman model

## PREDISPOSING FACTORS

- Hyperarousability trait
- Female gender
- Aging
- Family history of insomnia
- Personal history of insomnia
- Presence of a psychiatric disorder

### 4 FACTOR MODEL



Perlis modification of Spielman model

## PRECIPITATING FACTORS

- Increased stress
- Changes in work schedule (night shift)
- Traumatic events
- Physical health problems
- Mental health problems

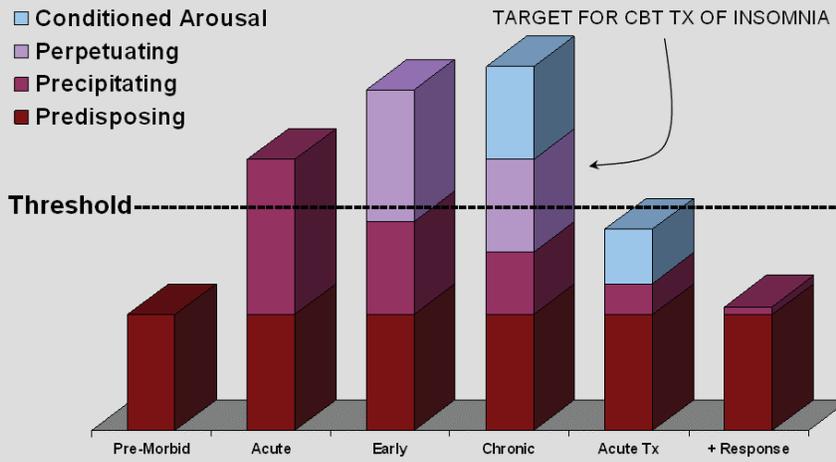
Night Shift Nurses..

Because anybody who goes to sleep on the same day they woke up is a quitter



someecards  
user card

### 4 FACTOR MODEL



Perlis modification of Spielman model

## PERPETUATING FACTORS

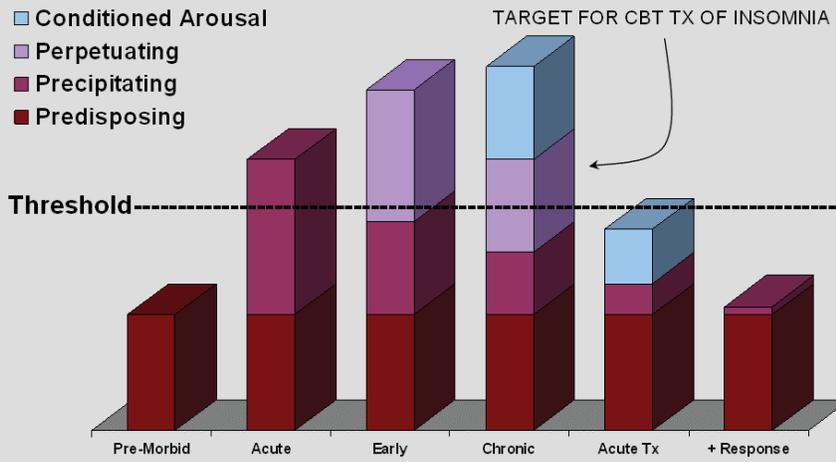
### FAULTY BELIEFS AND ATTITUDES ABOUT SLEEP

- Unrealistic sleep requirement expectations
- Faulty appraisals of sleep difficulties
- Misattributions of daytime impairments
- Misconceptions about the causes of insomnia

### MALADAPTIVE SLEEP BEHAVIORS

- Excessive amount of time spent in bed
- Irregular sleep wake schedule
- Napping
- Engaging in sleep-interfering activities in the bedroom
- Using substances for sleep and/or wake

### 4 FACTOR MODEL



Perlis modification of Spielman model

## CONDITIONED AROUSAL

Learned expectation to be awake in bed

Target of treatment with hypnotic medications

Very difficult to modify directly though this is where most patients and providers concentrate their efforts

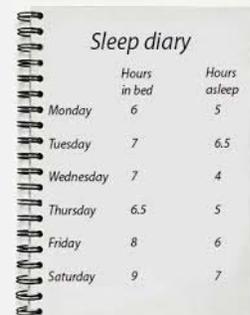


## OVERVIEW OF CBT STRATEGIES FOR INSOMNIA

- Sleep Restriction (Sleep Efficiency Therapy or Sleep Compression Therapy)
- Stimulus Control
- Sleep Hygiene
- Challenge cognitive distortions about sleep

## MONITORING SLEEP PATTERNS

- First fundamental element of CBT-I is keeping a comprehensive sleep log
- The goal of keeping sleep logs is to:
  - identify types of insomnia
  - total sleep ability
  - identify factors that may contribute to maintenance of insomnia



	Hours in bed	Hours asleep
Monday	6	5
Tuesday	7	6.5
Wednesday	7	4
Thursday	6.5	5
Friday	8	6
Saturday	9	7

CBT-I Coach App

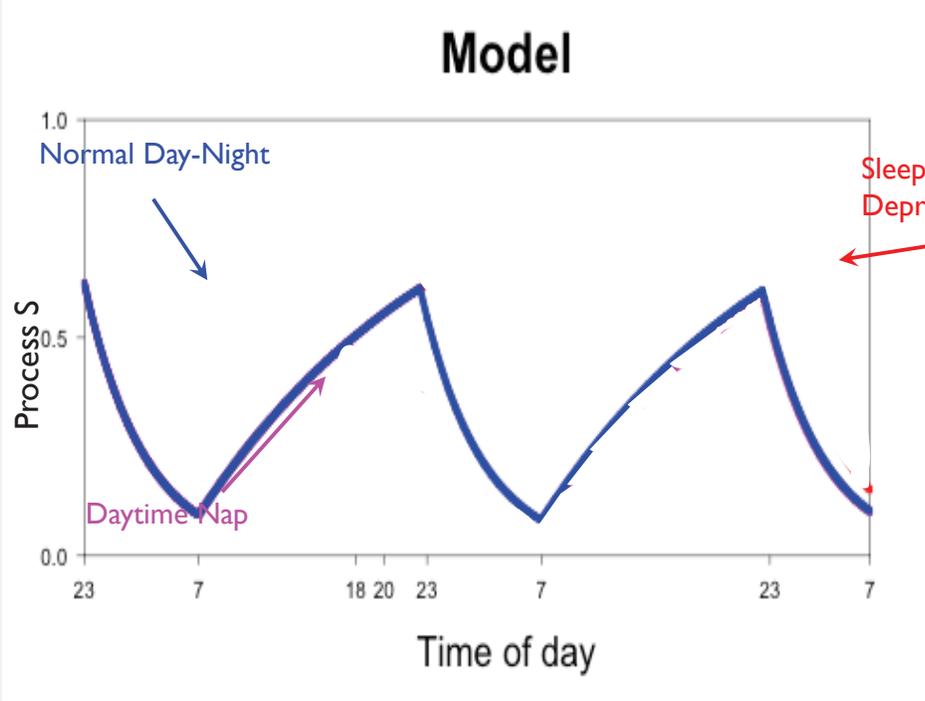


## SLEEP RESTRICTION THERAPY

- Restrict time in bed to the number of hours of sleep ( $\geq 5$ )
- Anchor sleep schedule to wake time
  - Keep rigid bed and rise times
- Review strategies for staying awake
- Sleep will probably be less before it is more
- Goal is to consolidate sleep
  - Sleep deprivation will actually help
- Gradually extend sleep opportunity (15 min/week as sleep improves)

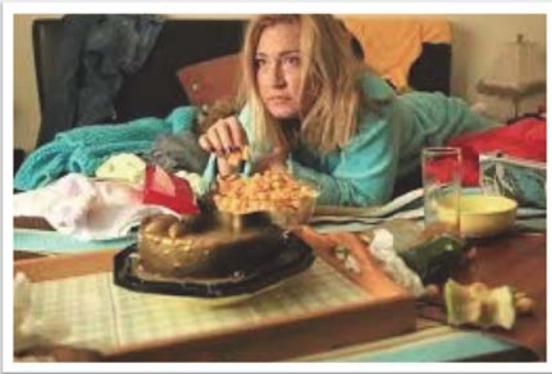


# SLEEP DEBT MODEL



## STIMULUS CONTROL

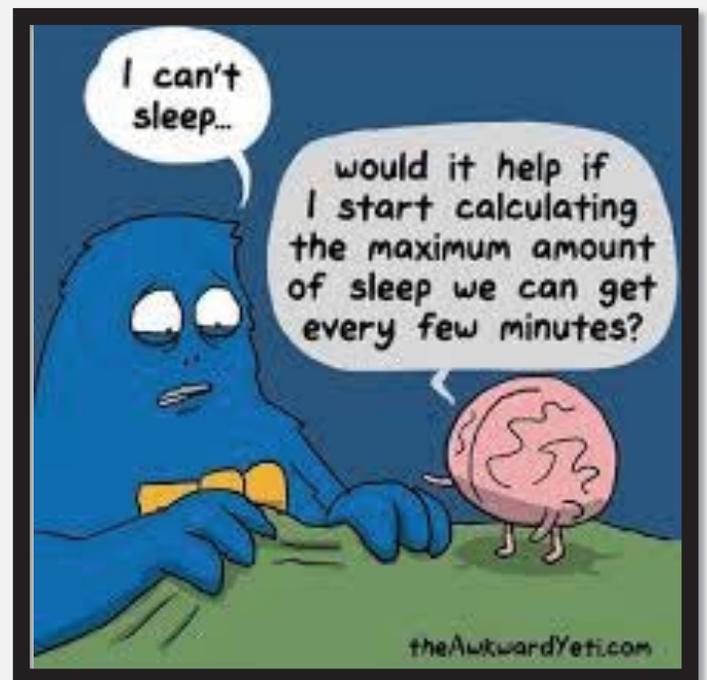
Do nothing in bed but sleep\* AND sleep nowhere but the bed



\*and sex

## STIMULUS CONTROL

- Go to bed only when you are sleepy
- Do not use your bed or bedroom for anything other than sleep (or sex)
- If you are unable to fall asleep after about 15-20 minutes, leave the bed and bedroom
  - Hide the clock
  - Repeat as necessary
- Wake up at a regular time regardless of how well or how long you slept
- Avoid taking naps



## GENERAL TIPS FOR HAVING HEALTHY SLEEP HYGIENE<sup>142</sup>



**Go to bed and wake up at the same time** every day (even on the weekends!)



**Don't go to bed feeling hungry**, but also don't eat a heavy meal right before bed



**Avoid caffeine consumption** (e.g., coffee, soft drinks, chocolate) starting in the late afternoon



**Develop a relaxing routine** before bedtime – ideas include bathing, music, and reading



**Expose yourself to bright light in the morning** – sunlight helps the biological clock to reset itself each day



**Reserve your bedroom for sleeping only** – keep cell phones, computers, televisions and video games out of your bedroom



**Make sure your bedroom is conducive to sleep** – it should be dark, quiet, comfortable, and cool



**Exercise regularly during the day**



**Sleep on a comfortable mattress and pillow**



**Don't have pets in your bedroom**

CHALLENGE DYSFUNCTIONAL BELIEFS  
ABOUT SLEEP AND THE  
CONSEQUENCES OF POOR SLEEP

- Everyone needs 8 hours of sleep
- Older people need less sleep
- If I do not sleep, catastrophic things will happen
- If I do not fall asleep by X o'clock, I will never fall asleep
- There is nothing I can do to have a good night of sleep
- I should just try harder to fall sleep



## SUMMARY OF STRATEGIES TO TREAT INSOMNIA

- Monitor average total sleep ability and set matching sleep schedule (extend slowly once symptoms of insomnia start to improve)
- Practice stimulus control
- Practice good sleep hygiene
- Challenge dysfunctional beliefs associated with sleep

THANK YOU!

- Please feel free to contact me at [kyledavisphd@gmail.com](mailto:kyledavisphd@gmail.com) with any questions!