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**UTSouthwestern**  
Medical Center

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# Sleep: The *Real* Fountain of Youth and Renewal

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# Why Do We Sleep?

All animals sleep, but still not well understood

- Current theories:
  - Survival
  - Restoration
  - Metabolism
  - Brain health
  - Emotional regulation



(Oberhaus, 2016)

# How Much Sleep Do We Really Need?

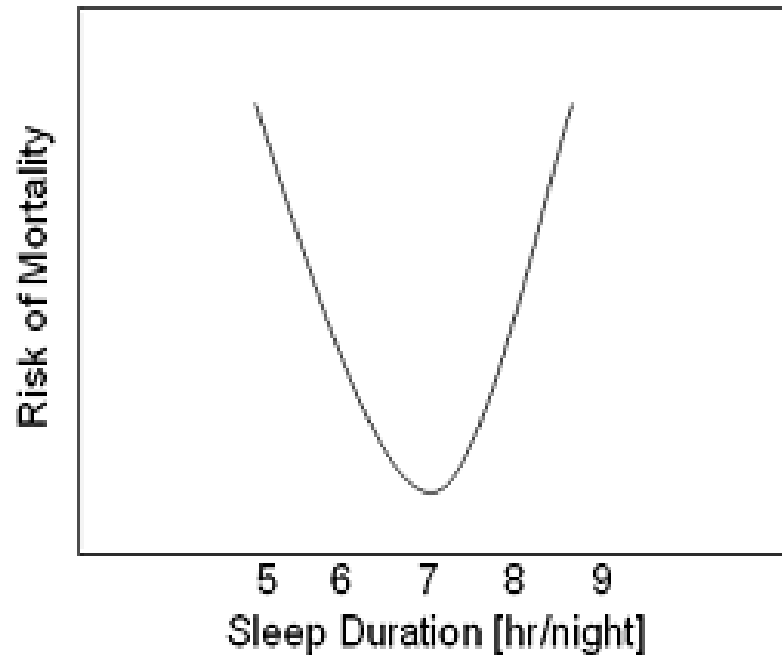
- Unique to each individual
- Depends on a number of factors:
  - Genetics
  - Age
  - Gender
  - Health
  - Culture
  - Societal/familial responsibilities
  - Learned behavior
  - Previous night's sleep
- Sufficient Sleep: 7-9 hrs per night
- Quality vs. Quantity



# *Are You a “Good” Sleeper?*

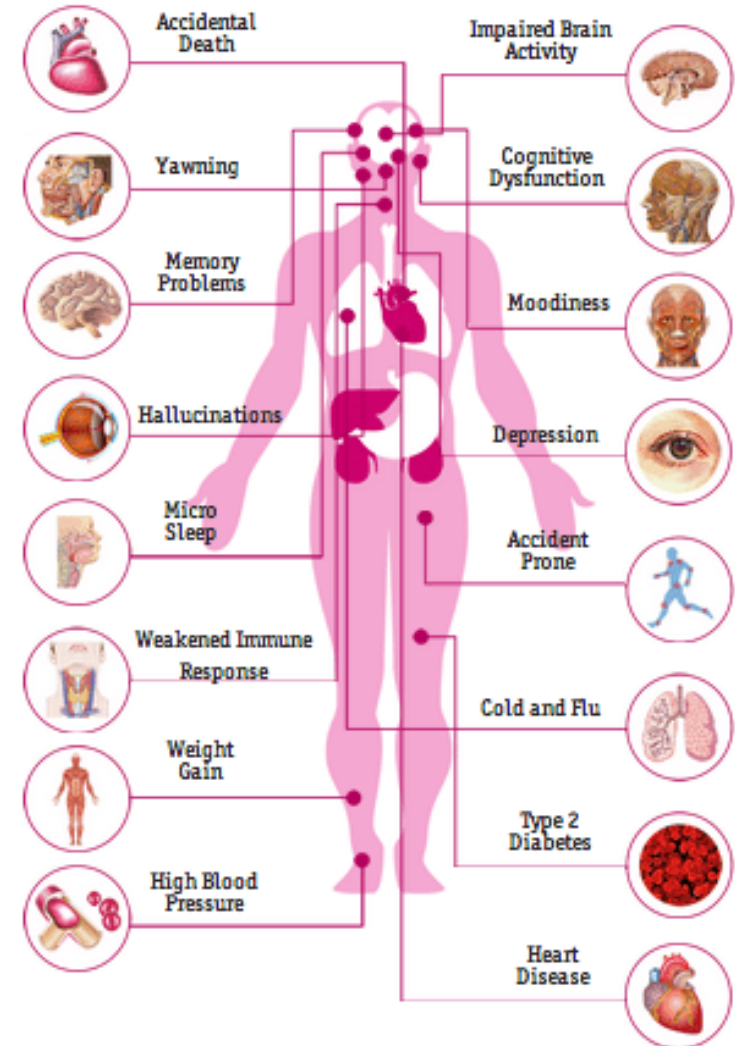
## Audience Poll

# Everything In Moderation

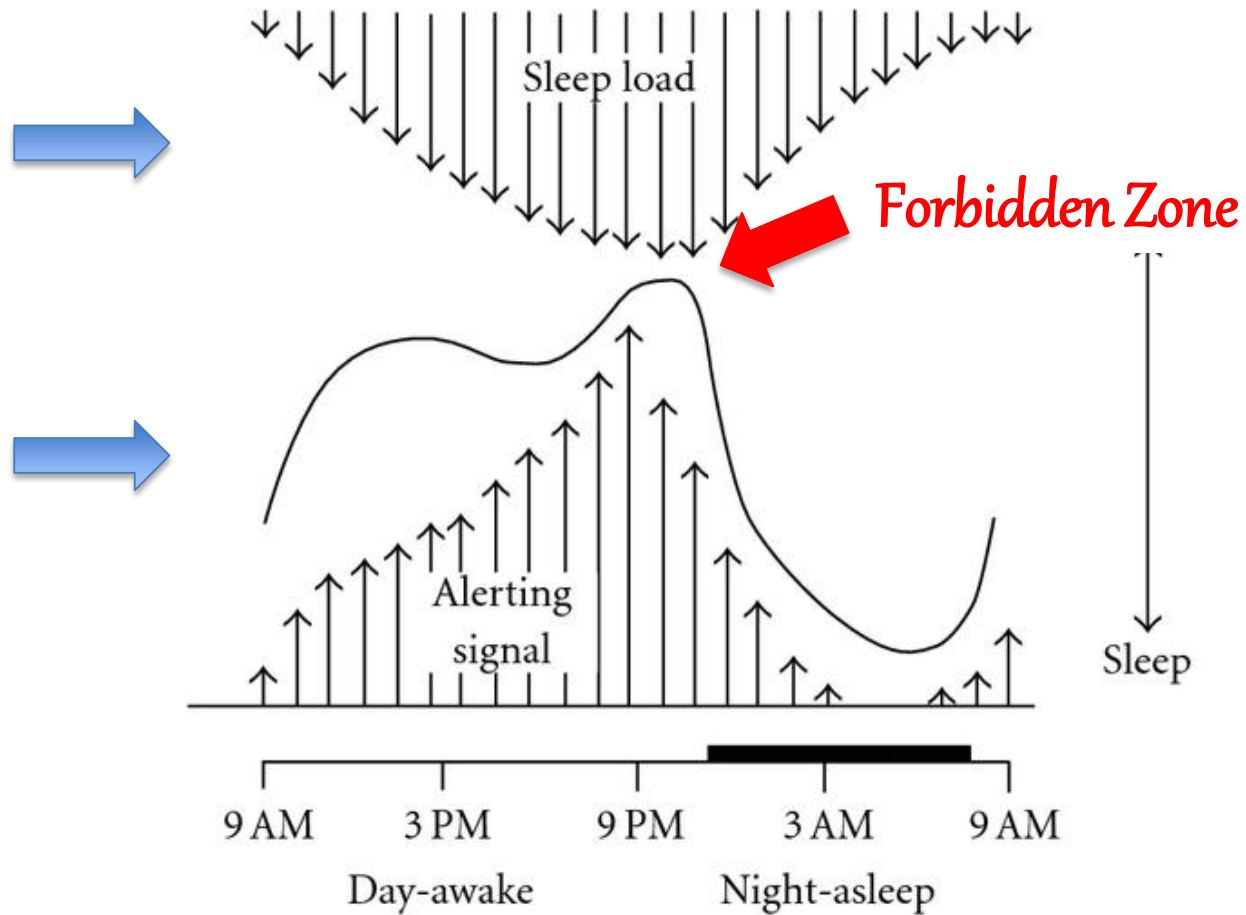


*Too much or too little of a good thing can be bad... or so the story goes!*

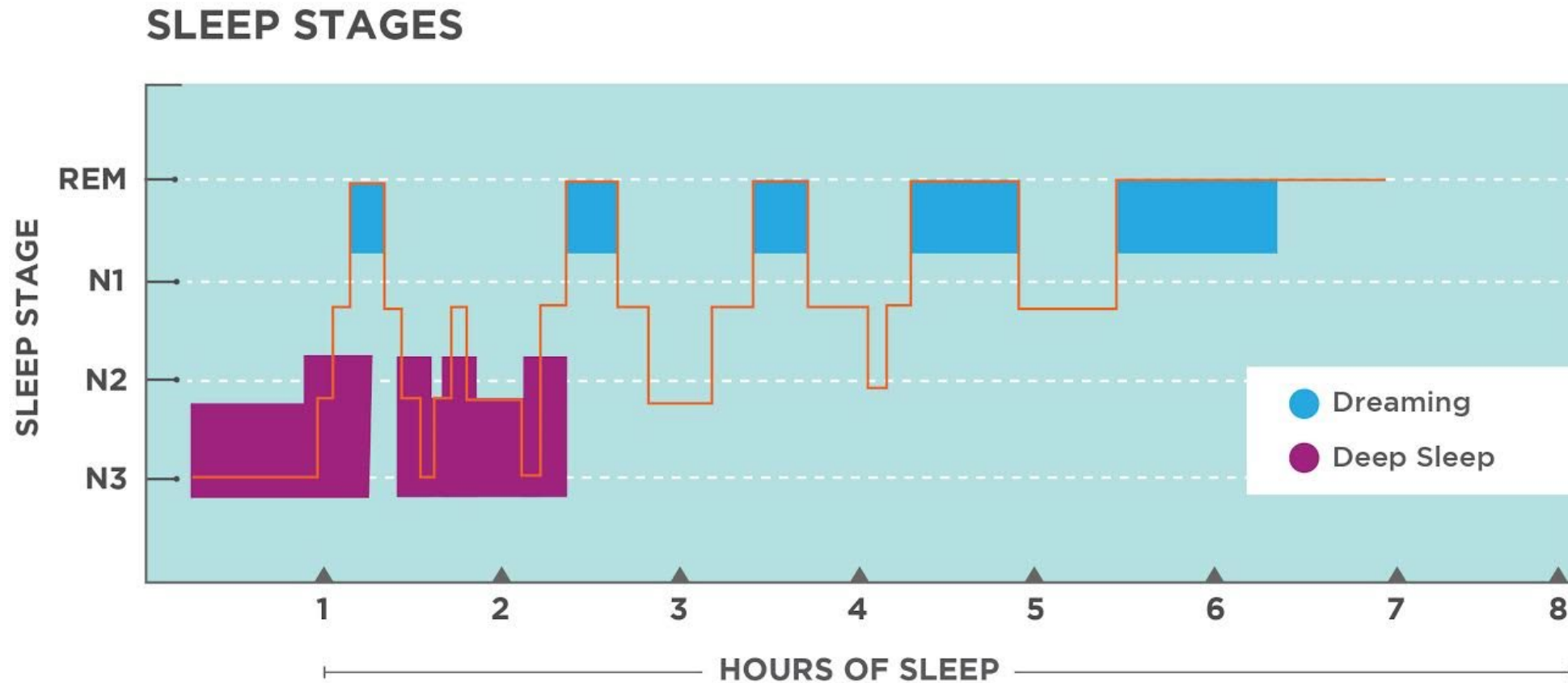
(Hublin, Partinen, Koskenvuo, & Kaprio, 2007)



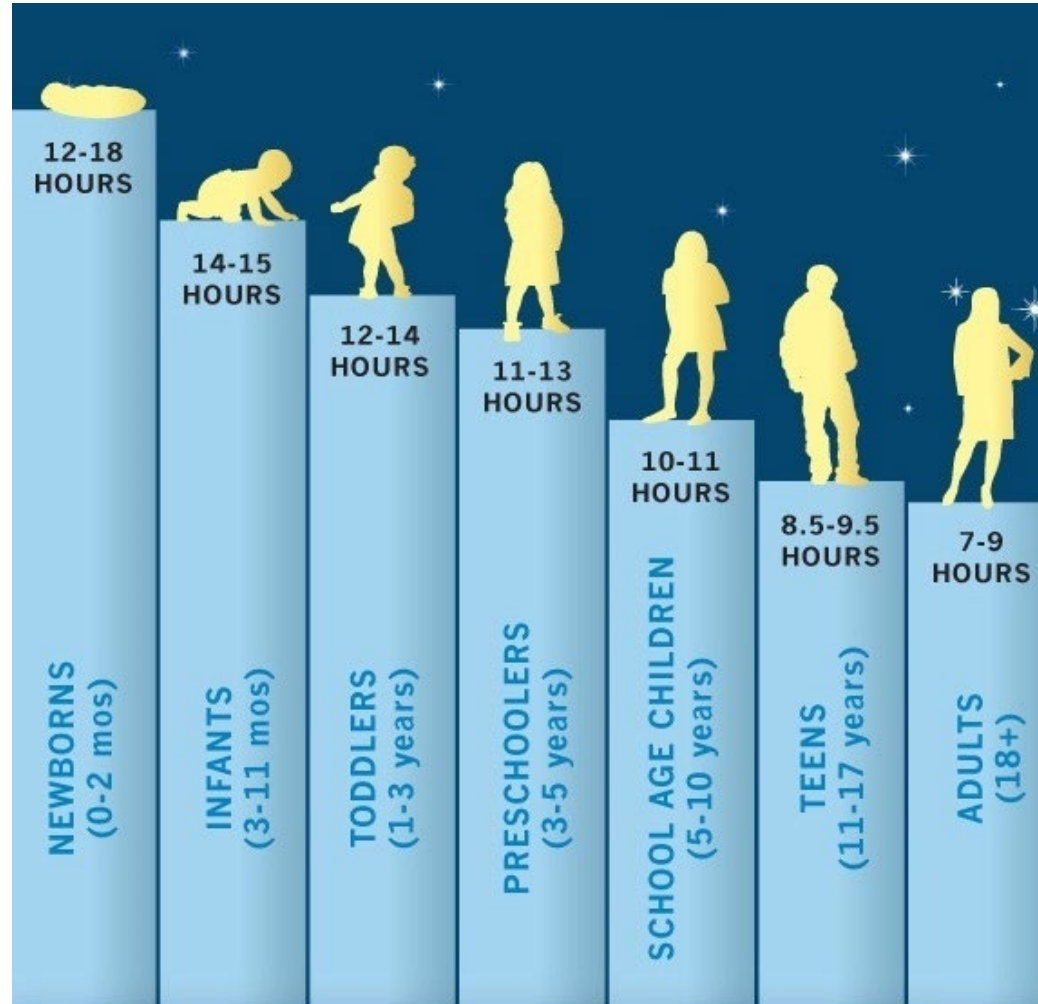
# Our Body's Drive for Sleep



# Sleep Architecture

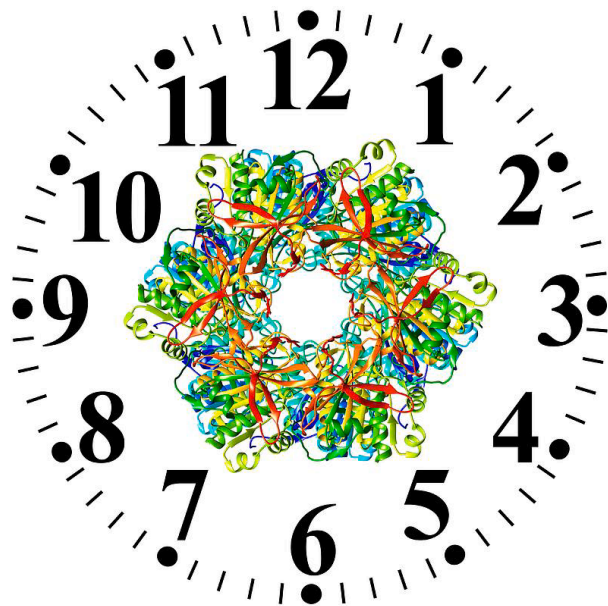


# Sleep Needs Change as We Age





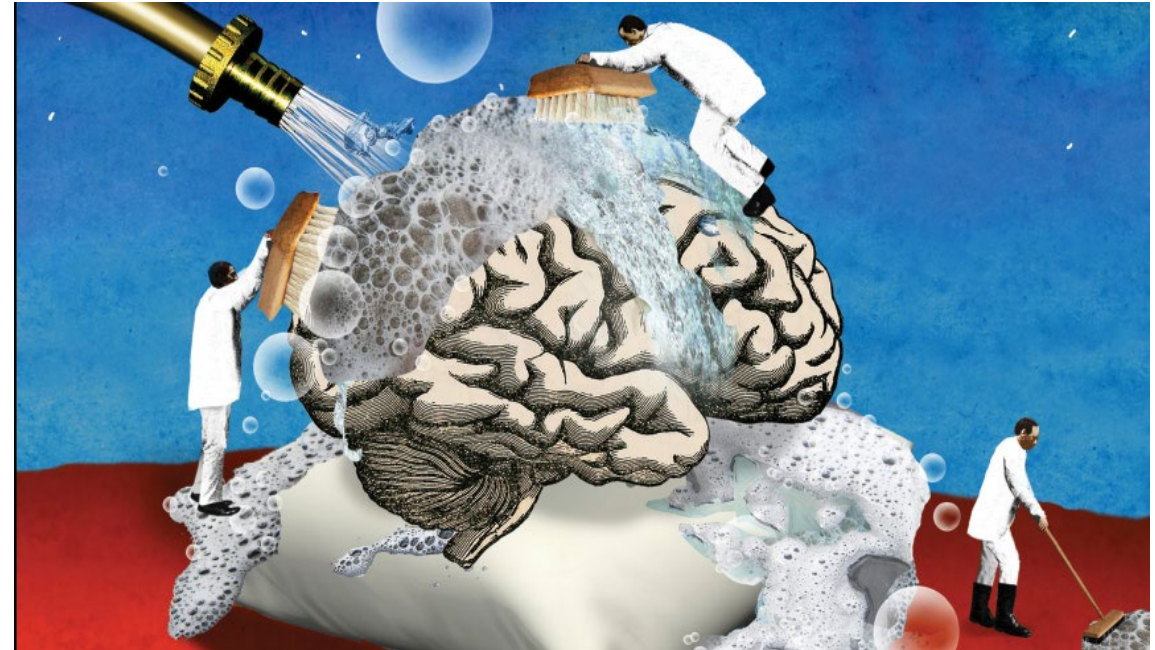
# What's Your Sleep Profile?



- Our bodies are full of “clock” genes
- Strong genetic basis underlying the regulation of sleep
  - *Do you have a family history of sleep problems?*
- *What do your genetics say about you?*
  - “Night owls” vs. “Morning larks”
  - Short sleepers vs. long sleepers
  - Gender differences

# Going Offline...What Happens While We Sleep?

- Our brains are “housekeeping”
  - Clearing out neurodegenerative “toxins”
    - Sleep-Need-Index Phosphoproteins (SNIPPs) (Yanagisawa, Takahashi, Liu)
- Memory storage
- Creativity & insight enhanced
  - “A-Ha” moments
- Processing information continues



# Common Sleep Disorders

- Insomnia
- Hypersomnia (i.e. Narcolepsy)
- Parasomnias
- Circadian Rhythm Sleep-Wake Disorders
- Sleep-Related Movement Disorders
  - Periodic Limb Movements
  - Restless Legs
- Sleep-Related Breathing Disorders
  - Obstructive Sleep Apnea

# Obstructive Sleep Apnea

## ■ Signs and Symptoms:

- Daytime sleepiness
- Snoring
- Breathing interruptions (gasping or choking)
- Dry mouth or sore throat

## ■ How is OSA diagnosed?

- Sleep Study

## ■ How is OSA treated?

- Positive Airway Pressure (CPAP) or surgical

STOP		
Do you SNORE loudly (louder than talking or loud enough to be heard through closed doors)?	Yes	No
Do you often feel TIRED, fatigued, or sleepy during daytime?	Yes	No
Has anyone OBSERVED you stop breathing during your sleep?	Yes	No
Do you have or are you being treated for high blood PRESSURE?	Yes	No
BANG	Yes	No
BMI >35 kg/m <sup>2</sup> ?	Yes	No
Age > 50 y?	Yes	No
Neck circumference > 16 in. (40 cm)?	Yes	No
Gender = M?	Yes	No

(Manas, Barbero, Chiluiza, Garcia, 2017)

# Sleep Retraining



# 5 Sleep Remedies (5 R's)

Regularity



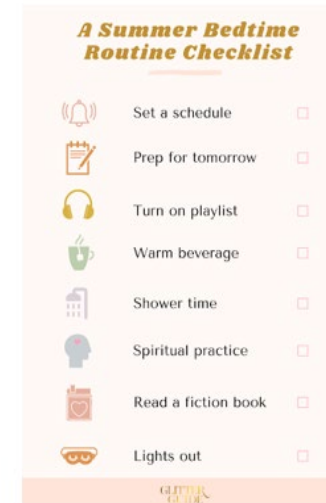
Reserve



Restrict



Routine



Relax



# Regularity

✓ **Maintain a  
consistent sleep  
and wake time**



# Reserve

## ✓ Create a Sleep Sanctuary:

- Reserve your bed and bedroom for sleep
- The only activities allowed are (4 S's):
  - Sleep
  - Sex
  - Sickness
  - and something Soothing





# Restrict

## ✓ Restrict or limit your time in bed

- To 7-8 hours
- Listen to your body's natural time clock



# Routine

## ✓ Establish a consistent bedtime routine

- 3-4 non-stimulating activities before bed
- Schedule in “worry time”



# Relax

## ✓ Develop a daily relaxation or meditation practice

- Benefits: Improved sleep, mood, energy, concentration, productivity, quality of life, life span, decreased pain, stress, risk of disease



# Sleep Hygiene Checklist:

- Bed and bedroom comfort (mattress, pillows, dark, quiet, cool (68 degrees or less), weighted blanket, sound machine)
- Don't spend time in bed if you are not sleeping
- Avoid arousing activities 2-3 hours before bedtime (eating late, exercise, using technology, watching the news)
- Stick to a routine (consistent sleep and wake times, bedtime or wind-down routine)
- Exercise at least 30-60 min a day, 3-4 hours before bed
- Avoid daytime napping
- Avoid stimulants and sedatives
- Resolve conflict and decrease stress (meditation, relaxation)
- Address physical and mental health issues

# Sleep Aids



# Watch Out For:

## Side effects:

- Morning grogginess or hangover
- Headache
- Nausea
- Dizziness
- Constipation
- Urinary retention
- Dry mouth
- Blurry vision
- Cognitive impairment (concentration, memory)
- Weight gain
- Rebound Insomnia
- Sleep Behaviors
- Drug interactions

Tolerance → Dependence → Withdrawal

# Additional Risks

- Sleep hypnotics (e.g. Xanax and Ambien) come with additional risks:
  - 2x more risk of developing dementia
  - Higher doses and prolonged use = higher risk
  - Decreased mortality
- Daily use increases hazard of death comparable to **smoking 1-2 packs of cigarettes a day!**



Chen, Lee, Sun, Oyang, Fuh (2012). PLoS One, 7(11); James (2017). J Clin Sleep Med, 13(6); Kripke (2000). Sleep Med Rev, 4(1)

# Taking Sleep Aids Safely:

1. Not a long-term solution
2. Never mix sleeping pills with alcohol or other sedatives
3. Get at least 7-9 hours of sleep
4. Don't take a 'rescue' dose
5. Always start with the lowest dose
6. Never drive, cook, or operate machinery
7. Educate yourself: read the instructional pamphlets
8. Talk to your doctor





# When to See a Professional

- Lack of or poor-quality sleep is interfering with the quality of your daily life
- Your family or loved ones have expressed concern about your sleep
- Sleep hygiene recommendations haven't been enough
- Sleep issues are contributing to changes in mood
- You feel extremely drowsy during the day
- You snore, gasp for air, or move around a lot in your sleep

# Thank You!



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