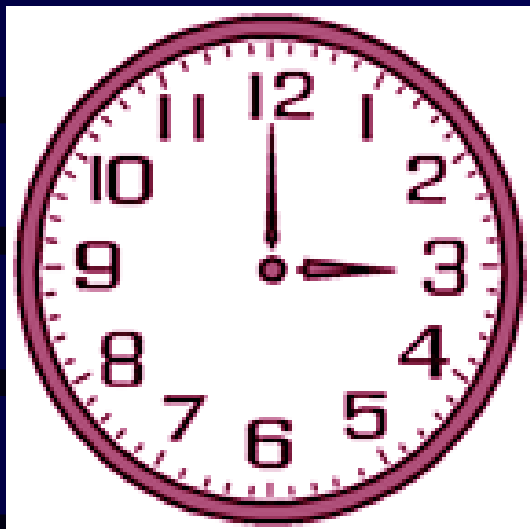


# Sleep and Dreams

Rhythms of Sleep and Waking

# Circadian Rhythm

- Biological/genetic clock set at 24 or 25 hrs./ located in hypothalamus
  - Night shift workers , swing shift workers, night driving problem
  - Jet lag- fatigue, disorientation, poor concentration, one day recovery period



- Light therapy used to reset clock – shift in sleeping program
- Melatonin – therapy / drug to regulate melatonin hormone secretion
- Interval Timing Clock – clock in the brain / gauges minutes, seconds, hours/ helps estimate time intervals / located in basal ganglia



# Stages of Sleep

- Changes in the electrical activity of the brain
- Beta Waves - awake and alert
- Alpha Waves – relaxed, drowsy
- Non-REM Sleep – approx 80% sleep time

- Stage 1 – transition from awake to sleep – drifting thoughts and images / feels like you are awake
- Stage 2 – actual sleep/ high frequency brain activity / sleep spindles.
- Stages 3 and 4 deepest stage of sleep/ decrease in heart, breathing, temp. , Dream – some / sleep walk/ night terrors

# REM Sleep

- Approx 20% sleep time (Rapid Eye Movement) fast freq., low amp., brain waves/ voluntary muscles paralyzed/ associated with dreaming



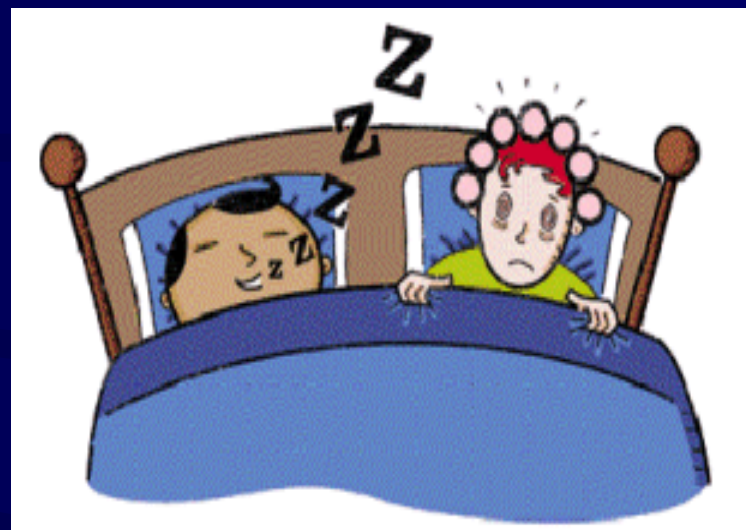
- REM behavior disorder – older people – voluntary muscles not paralyzed
- REM rebound – when subject are prevented from entering REM stage – rebound with increased amount of time in stage

# Sleep Problems

- Insomnia – approx 13 million adults / falling asleep, staying asleep, premature waking/ stress, schedule change, chronic pain, alcohol and drug abuse
- Benzodiazepines – anxiety reducer, Ativan, Xanax, Valium / can cause day time drowsiness, memory loss, dependency due to increased tolerance / New drugs Ambien, Sonata, Lunesta



- Sleep Apnea – snoring, overweight, drug abuse / remedies – masks , mouth devices, surgery
- Narcolepsy – falling asleep at inappropriate times / cataplexy – temporary paralysis / remedies – amphetamines
- Nightmares – during REM sleep/ Sleep walking and night terrors – during stages 3 / 4 non-REM
- Nocturnal Psychosis – hallucinations –sleep deprivation



# Functions of Sleep

- Restoration and recovery of body systems
- Energy conservation/ repair theory
- Memory consolidation
- Protection from predators/ adaptive theory
- Brain development in infants
- Discharge of emotions

# How much sleep do you need?

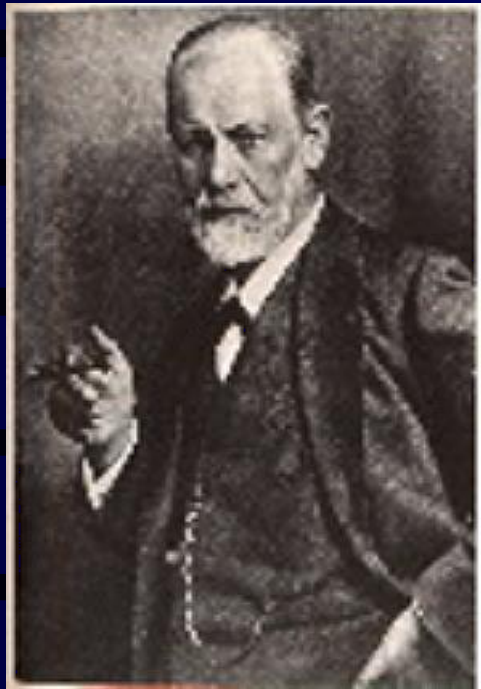
- Babies – need most sleep 17-18 hrs
- Teenagers – 10 hrs
- Adults 7-8 hrs
- Elderly – nap during the day – need the least amount of sleep.

# Dream Theories

- Extension of Waking Life – same thoughts, feelings, fears, concerns , and problems
- Activation Synthesis Theory – random meaningless impulses sent from pons to the cortex for processing / cortex tries to make sense of the stimulus / as if being awake



- Entering Spiritual World – Native Americans, Eastern philosophy/ souls of dead animals, departed relatives
- Typical dreams- several characters/ motion-running/ indoors/ visual sensations/ defy physical laws – flying/ recurrent/ emotions of anger, joy fear, happiness / sexual encounters – without intercourse / usually in color
- Freud's Interpretation of Dreams 1900 – symbols represent threatening and unconscious desires or wishes involving sex / aggression we can act out our fantasies
- Manifest content – what the dream is about
- Latent content – underlying meaning



Courtesy, Center for Women's Health Research, School of Nursing, University of Washington, Seattle, WA

# Hypnosis

- Procedure in which a researcher or hypnotist suggests that a person will experience changes in sensations, perception, thoughts, feelings, or behaviors
- How is someone hypnotized? / establish a sense of comfort and trust / concentrate on a voice, object, or image / power of suggestion for relaxation

# Who Can be Hypnotized?

- Some people are susceptible – some are not
  - up to 95% of the population can be hypnotized, to varying degrees
- Biological and environmental factors influence how deeply a person goes into a trance
- Fantasizers/ dissociators
- Come out of trances differently

# Stanford Hypnotic Susceptibility Scale

- Subjects undergo hypnotic induction
- Given 12 suggestions
  - Ex: imagine a mosquito buzzing around, holding a weight in one hand
- Hypnotist watches for evidence of responsiveness to suggestions
  - Moving to avoid insect, arm moving to hold weight
- Rated on scale of 0 (not hypnotizable) to 12 (highly hypnotizable)
- Scored by degree to which subject appears to heed suggestion

# Theories of Hypnosis

- Altered state – not a complete trance / similar to daydreaming, meditation, yoga, drug use – different from our normal perception
- Sociocognitive – effects are due to social influences and pressures / subject's personal abilities / power of suggestion
- Major uses- memory recall / programming thought patterns

# Hypnotic behavior

- Hypnotic Analgesia – reduce fear and anxiety associated with pain / medical and dental uses/ PET scan measurement
- Posthypnotic Suggestion – perform a specific behavior when given a cue
- Posthypnotic Amnesia – not remembering what happened during hypnosis

- Age Regression – regressing to childhood / acting the way a child should act
- Imagined Perception – perform or experience imagined behaviors to treat problems



# Uses of Hypnosis

- Surgery – hypnosis given during surgical radiology, diminished pain/anxiety, shortened surgical time/reduces complications
- Smoking – American Lung Association, 3,000 smokers, 22% reported not smoking after
- ADD – research shows hypnosis to be as effective as Ritalin in treating ADD in children
- Warts – in hypnotized patients, warts disappear, without medicine or surgery
- Weight loss
- Phobias/anxiety