

Sleep



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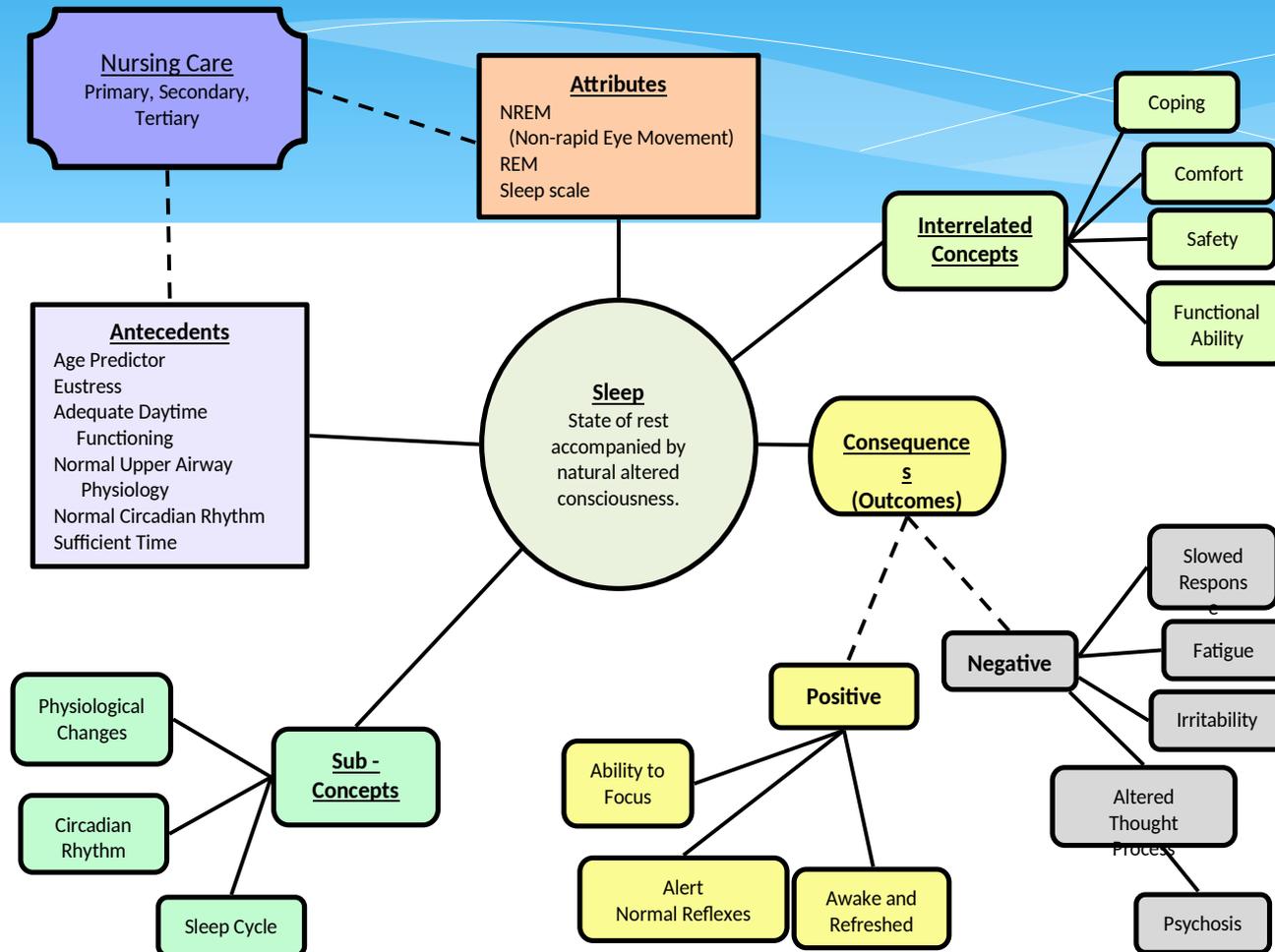
Sleep

- * A physiological process
- * The body's rest cycle
- * Associated with recumbency & immobility
- * Lacks conscious awareness but easily arouse
- * Essential for healthy functioning and survival

Sleep

- * State in which an individual lacks conscious awareness of environmental surroundings but can be easily aroused
 - * Insufficient sleep
 - * Fragmented sleep
 - * Nonrestorative sleep

Sleep Concept



Sleep Disturbances and Disorders

- * Sleep Disturbance
 - * Conditions of poor sleep quality
- * Sleep Disorders
 - * Abnormalities unique to sleep
 - * Insomnia
 - * Narcolepsy

Sleep-Wake Cycle



- * Controlled by the brain
- * Wake behavior
 - * RAS and various neurotransmitters
 - * Orexin (hypocretin)

Reticular Activating System (RAS)

- * Sensory stimuli within cerebral cortex
- * Regulates Sleep-wake cycle
- * 4 functions
 - * Motor
 - * Sensory
 - * Visceral
 - * Consciousness

Sleep-Wake Cycle



- * Sleep behavior
 - * Involves a variety of neurologic structures
 - * Melatonin

Circadian Rhythm

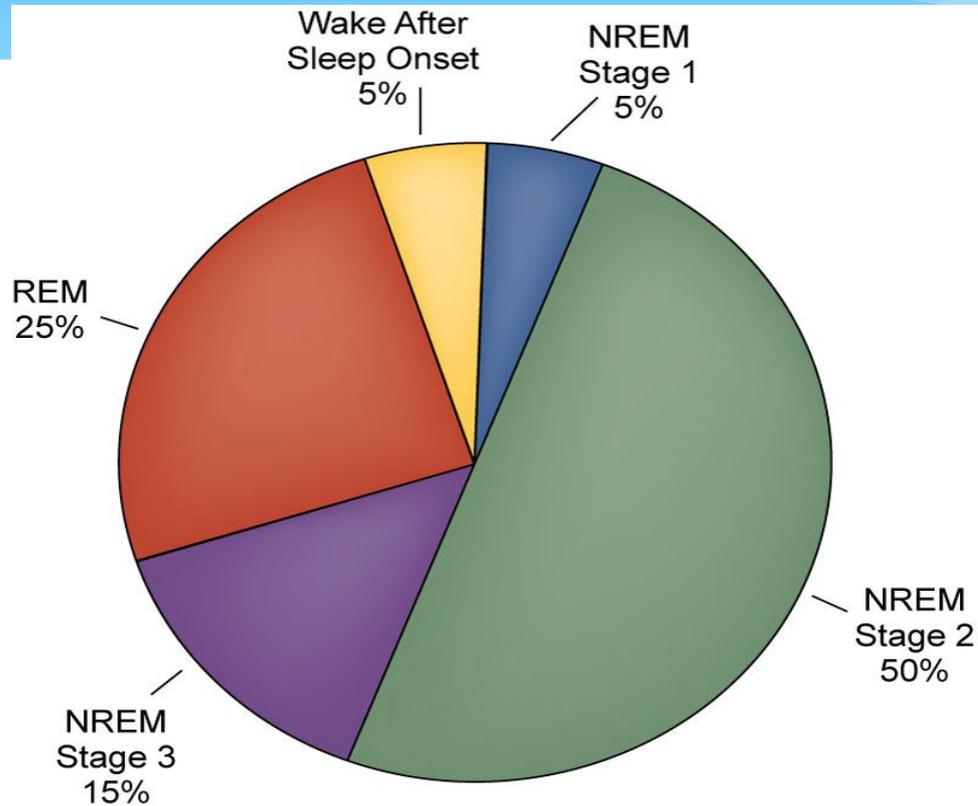


- * Managed by the suprachiasmatic nucleus (SCN) in hypothalamus
- * Synchronized through light detectors in retina
- * Light is the strongest time cue

Sleep Architecture

- * Nighttime sleep recorded from physiologic measure recorded by PSG (polysomnography)
 - * Brain waves
 - * Eye movements
 - * Muscle tone

Stages of Sleep



Phases of sleep



- * Sleep Latency
- * NREM (non-rapid eye movement): 3 stages
- * REM (Rapid Eye Movement)

Sleep latency

- * Starts when eyes are closed for sleep
- * Ends when Non-Rem sleep is entered
- * Time varies - usually 10-40 minutes

NREM Sleep

- * 75% to 80% of sleep time
- * Divided into three stages
 - * Stage 1: slow eye movements
 - * Stage 2: HR and temperature decrease
 - * Stage 3: deep or slow wave sleep (SWS); delta waves, parasomnias

REM Sleep

- * 20 to 25% of sleep cycle
- * Occurs 3 to 4 times a night
- * Greatly reduced skeletal muscle tone
- * Period when most vivid dreaming occurs

Cycles of sleep

Drowsiness



NREM



NREM



NREM

Stage 1

Stage 2

Stage 3



REM



NREM

Stage 2

Aging and sleep

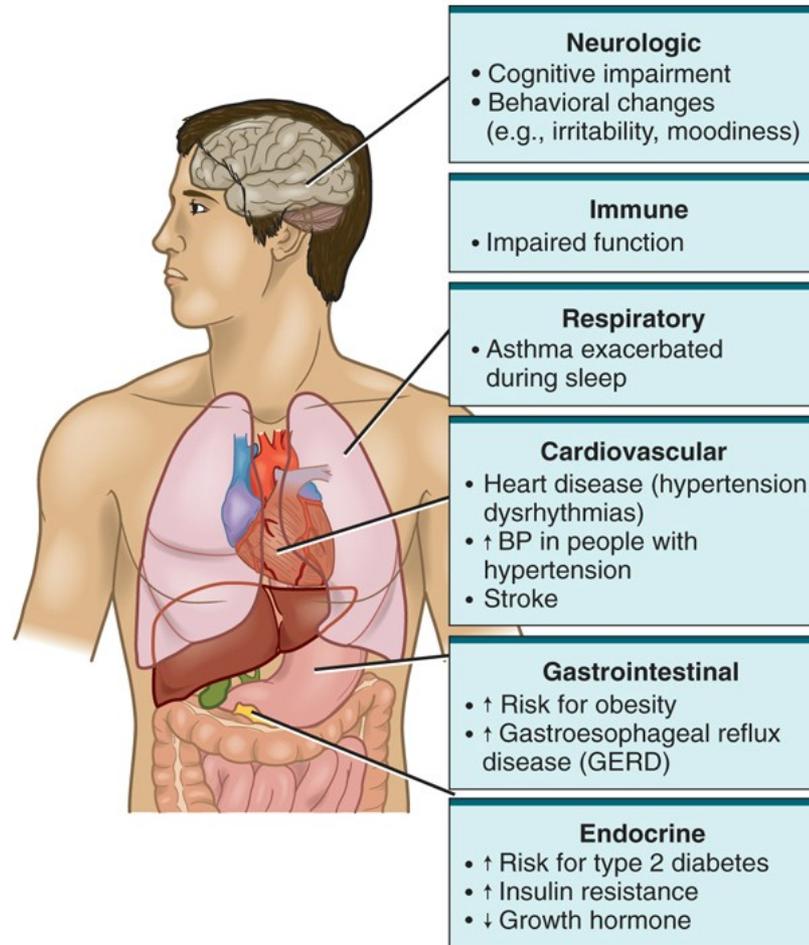
* Middle age

- * More stage shifts - ↓ in N3 and REM
- * Resistant to sleep deprivation
- * Increased awakenings
- * Changes in sleep efficiency

* Older adults

- * Phase changes - go to bed earlier and arise earlier

Effects of Sleep Deprivation and Sleep Disorders



Sleep Disturbances in the Hospital

- * Hospitalization associated with decreased sleep time
 - * Environmental sleep-disruptive factors
 - * Psychoactive medications
 - * Acute and critical illness

