

# Intro to Consciousness

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Psych

## What is Consciousness?

- Awareness of yourself and your environment.



# WHODUNNIT???

How aware are you?

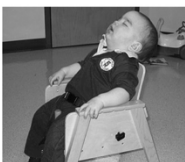
## WHAT IS CONSCIOUSNESS?

- How conscious are you right now!
- Count the passes and change blindness, again

Bill Ling/ Digital Vision/ Getty Images



Christine Bruene



Stuart Franklin/ Magnum Photos



AP Photo/ Ricardo Mazaian



Some occur spontaneously

Daydreaming

Drowsiness

Dreaming

Some are physiologically induced

Hallucinations

Orgasm

Food or oxygen starvation

Some are psychologically induced

Sensory deprivation

Hypnosis

Meditation

## **SO... WHY STUDY CONSCIOUSNESS?**

- Our consciousness is always changing and there are many variables impacting it.

### **How and why does conscious vary?**

- Biological rhythms
- Sleep and dreams
- Sleep Disorders
- Hypnosis
- Meditation
- Drugs

## **STATES OF CONSCIOUSNESS: Sleep**



## KEY QUESTIONS: SLEEP

- How do biological rhythms shape our consciousness and daily functioning?
- Why do psychologists study sleep?
- What are the stages of sleep that we go through every night?
- Why do we sleep? What happens if we do not get enough sleep?
- What are the major sleep disorders?

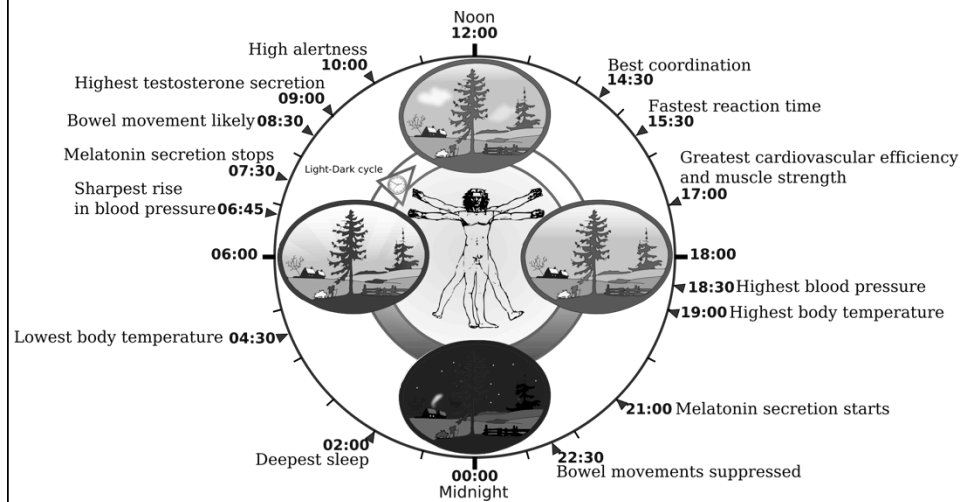
## BIOLOGICAL RHYTHMS

- Variations in consciousness are shaped by **biological rhythms**
  - Controlled by “biological clocks” (internal chemical units that control regular cycles in the body)

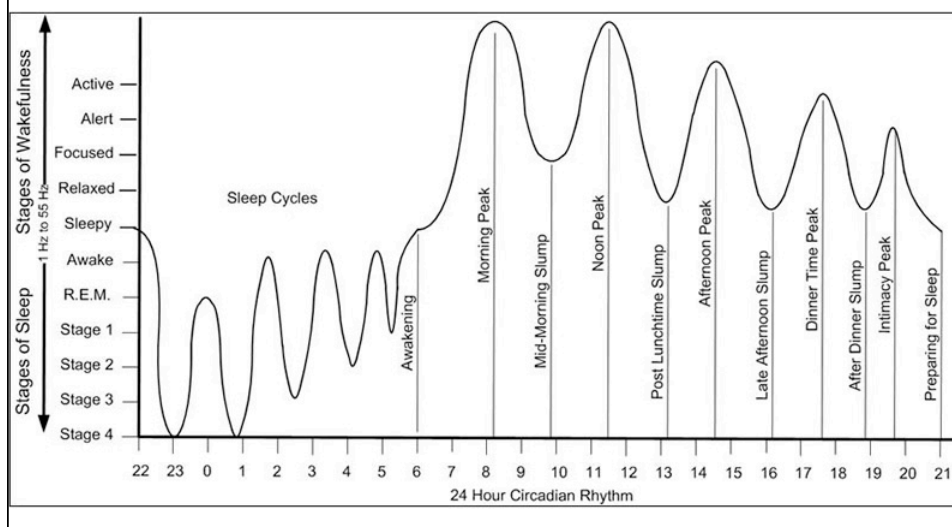


# Circadian Rhythms

- Occur over the course of one day (24 hours)

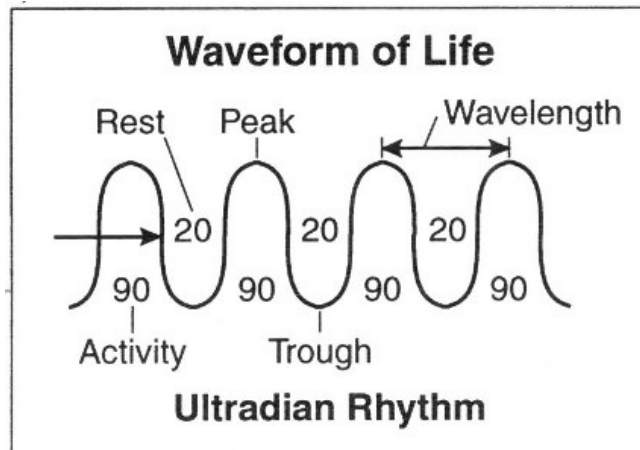


# Circadian Rhythm



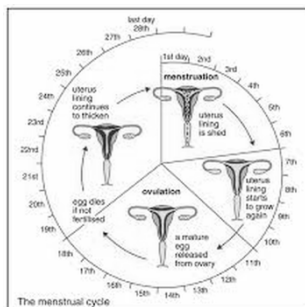
## Ultradian Rhythms

- Occur **more than once in a day**, ex. Stages of sleep, rest and activity, hunger and bodily functions



## Infradian Rhythms

- Think "infr"equent
- Occur **less than once** a day, ex. Female monthly menstrual cycle, SAD



## **SLEEP: A STATE OF CONSCIOUSNESS**

- Sleep and wakefulness are influenced by our circadian rhythms
- Sleepers experience considerable mental and physical activity throughout the night
- About every 90 minutes we pass through a cycle of five sleep stages.



**Beta 15-30 Hz**

Awake, normal alert consciousness

**Alpha 9-14 Hz**

Relaxed, calm, meditation creative visualisation

**Theta 4-8 Hz**

Deep relaxation and meditation, problem solving

**Delta 1-3 Hz**

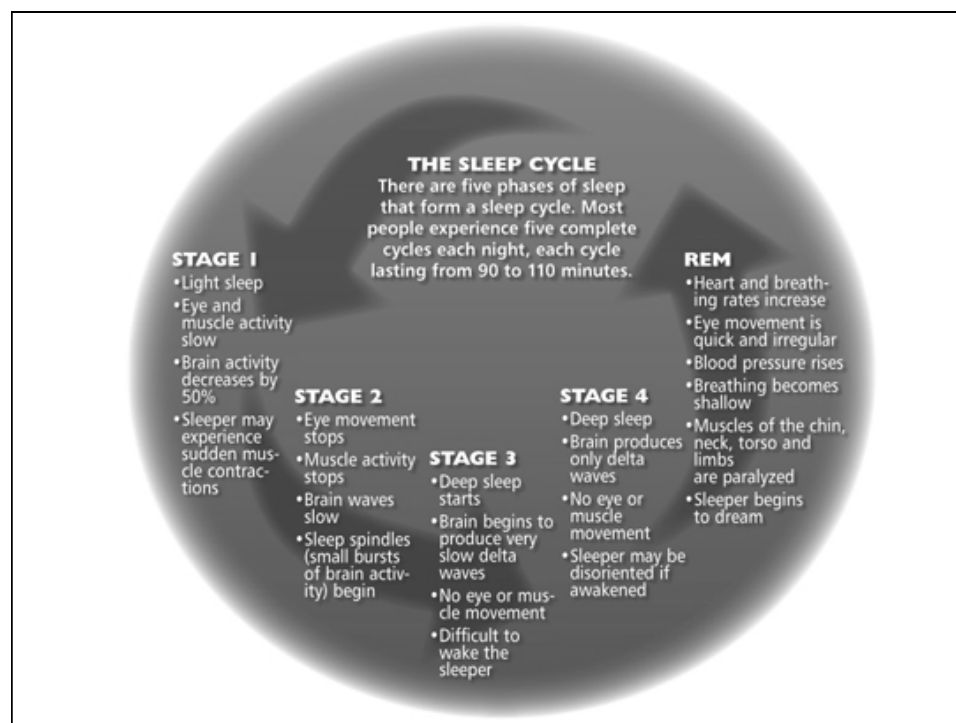
Deep, dreamless sleep

## **THE STAGES OF SLEEP**

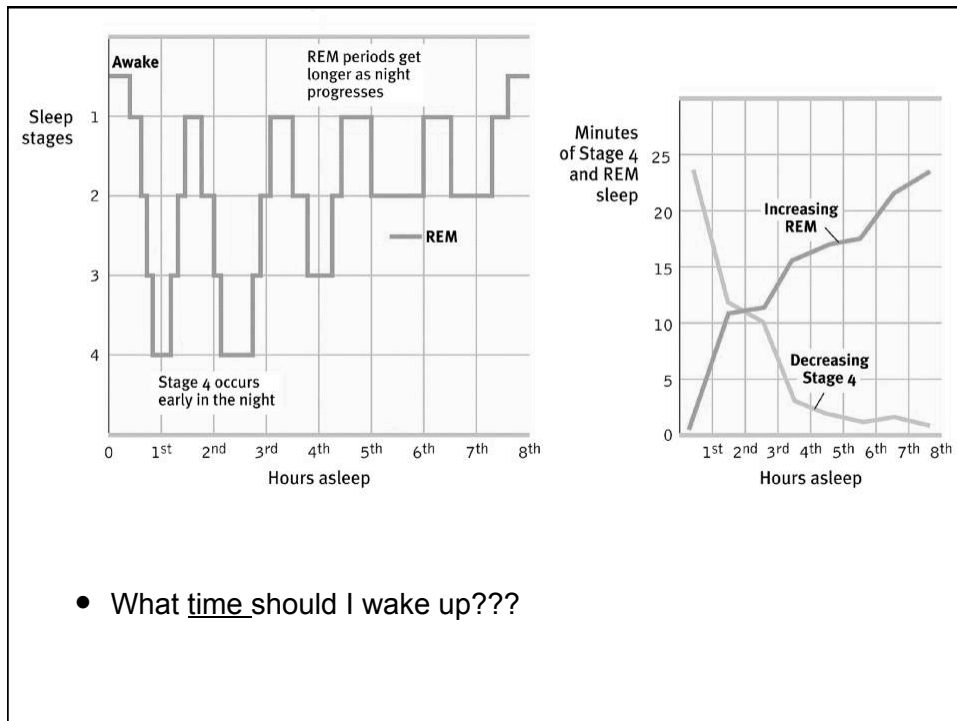
- **Stages 1-4 = Non-REM Sleep (NREM)** – No rapid eye movement
- Stages 1-2: Early light sleep; theta waves.
  - A person daydreaming also shows theta activity.
  - Hypnic jerks and sleep **spindles** (stage 2)
  - Lasts 10-30 minutes
- Stages 3-4: Deep sleep starts
  - Also called **delta sleep** or slow wave sleep
  - Heart rate & blood pressure decline
  - some non-vivid dreams
  - Roughly 30 minutes

## THE STAGES OF SLEEP

- **Stage 5: REM Sleep** Rapid eye movement, occurs during dreaming
- **Characteristics**
  - occurs every 90 minutes (on avg) in humans
  - increases in length as night progresses
  - Paradoxical sleep: active brain, paralyzed body
  - lucid dreams







## **SLEEP DEPRIVATION**

- What is the purpose of sleep?
  - Recuperation, remembering, growing
- What happens if we don't sleep?
  - Fatigue
  - Impaired concentration.
  - Emotional irritability.
  - Depressed immune system.
  - Hallucinations and paranoia



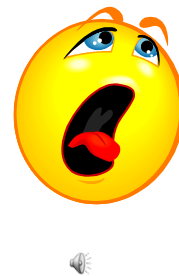
## SLEEP DEPRIVATION

- **Study of sleep deprivation in college students** (Pilcher & Walters, 1997)
  - Participants complete cognitive test after either 8 hours of sleep or 24 hour sleep deprivation
  - All subjects asked to rate their effort, concentration, and estimated performance on the task



## SLEEP DEPRIVATION

- **Results of the study:**
  - Sleep deprived subjects performed worse than those who received 8 hours sleep
  - Although sleep deprived subjects performed worse on the task, they rated their own effort, concentration, and performance *higher* than the sleep group!



## **SLEEP DEPRIVATION** **(CONTINUED)**

- 23% of individuals have fallen asleep while driving
- 59% of train engineers have fallen asleep on duty
- Airline pilots fall asleep in the cockpit (while flying) an average of 32 times per month (1986 study)
- Nuclear disasters at Three Mile Island & Chernobyl, Crash of Exxon Valdez all blamed on part in lack of sleep
- Estimation - accidents due to sleep deprivation cost the U.S. economy:
  - \$56 billion per year
  - 52 million work days per year
  - 24,000 deaths per year (Coren, 1996)

