

# Journal

- **A state politician believes that alcohol, marijuana, and cocaine all have similar effects on behavior and therefore all three drugs should be legalized. Evaluate the strengths and weaknesses of the state politician's statement.**

# Sleep Cycles

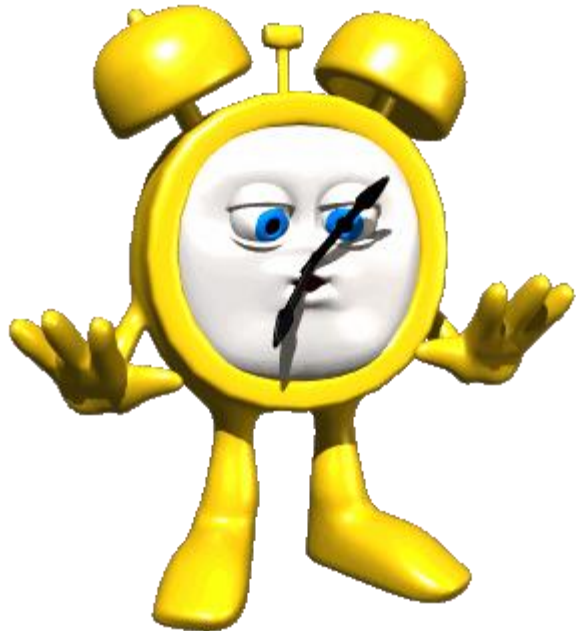


# Levels of Consciousness

- Conscious Level
- Nonconscious Level
- Preconscious Level
- Subconscious Level
- Unconscious Level

# Sleep

- Sleep is a state of consciousness.
- We are less aware of our surroundings.
- Circadian Rhythm

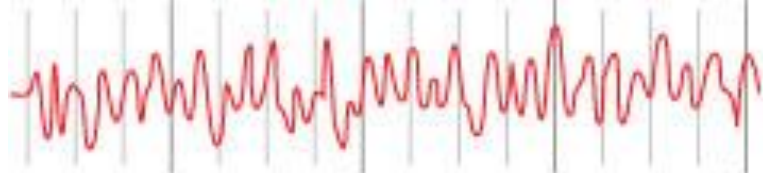


# Sleep Cycle



- Use an EEG machine to measure stages of sleep.
- When you are awake you experience both Alpha and Beta Waves.
- Beta Waves are associated with day to day wakefulness.
- Alpha Waves are associated with states of relaxation and peacefulness during meditation and biofeedback.
- The onset of sleep you experience Alpha Waves.
- Produces mild hallucinations, like a feeling of falling.





### **Beta (14-30 Hz)**

Concentration, arousal, alertness, cognition

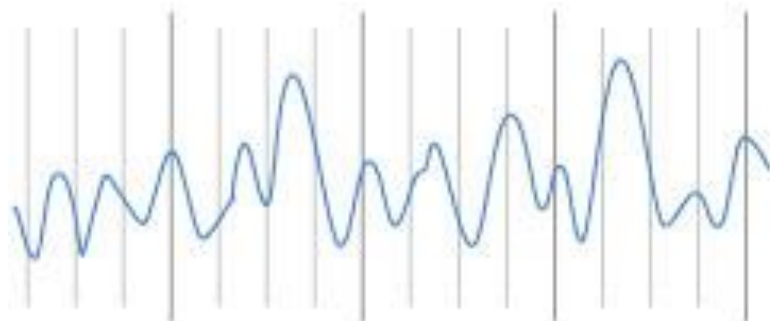
Higher levels associated with Anxiety, disease, feelings of separation, fight or flight



### **Alpha (8 - 13.9 Hz)**

Relaxation, superlearning, relaxed focus, light trance, increased serotonin production

Pre-sleep, pre-waking drowsiness, meditation, beginning of access to unconscious mind

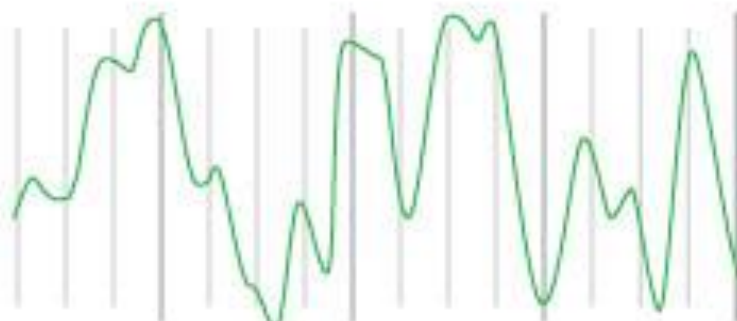


### **Theta (4-7.9 Hz)**

Dreaming sleep (REM sleep)  
Increased production of catecholamines (vital for learning and memory), increased creativity

Integrative, emotional experiences, potential change in behavior, increased retention of learned material

Hypnagogic imagery, trance, deep meditation, access to unconscious mind



### **Delta (0.1-3.9 Hz)**

Dreamless sleep  
Human growth hormone released

Deep, trance-like, non-physical state, loss of body awareness

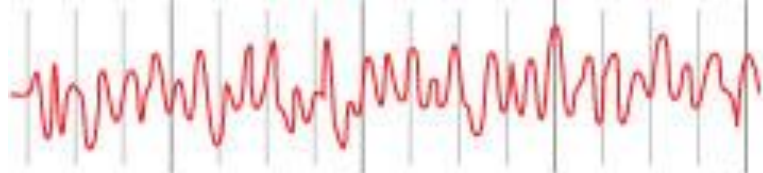
Access to unconscious and "collective unconscious" mind,

# Stage 1

- Kind of awake and kind of asleep.
- Only lasts a few minutes (30 sec-10 mins), and you usually only experience it once a night.
- Your brain produces Alpha Waves.
- Can experience hallucinations / hypnic jerks



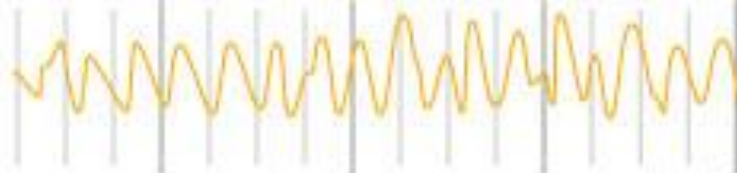




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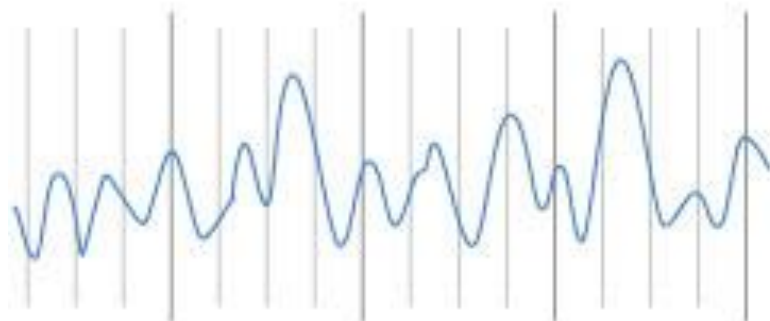
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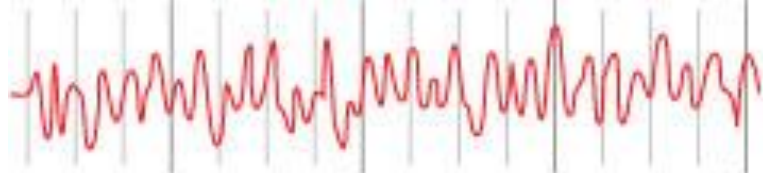
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# Stage 2



- Theta Waves that get progressively slower.
- Begin to show **sleep spindles**...short bursts of rapid brain waves.
- 20 mins



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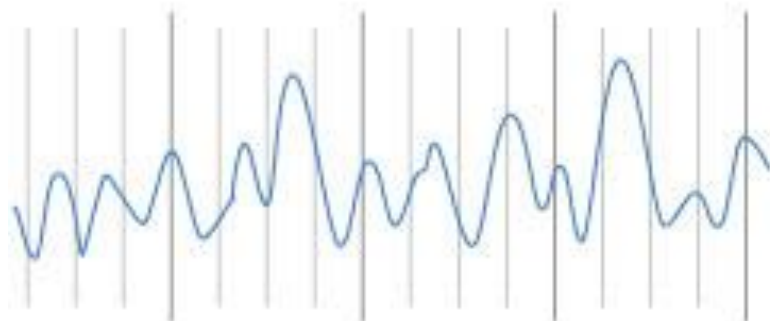
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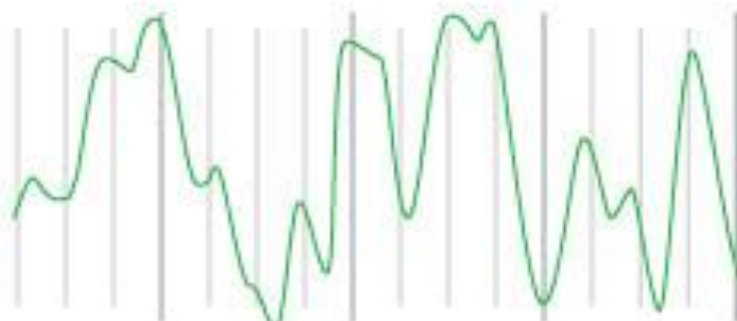


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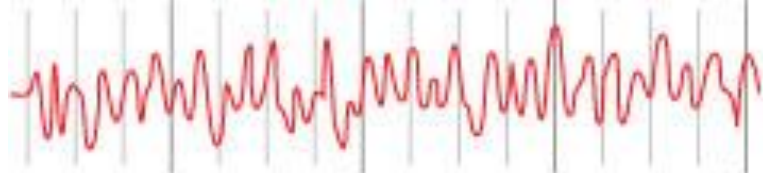
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# Stages 3 and 4

- Slow wave sleep.
- You produce Delta waves.
- If awoken you will be very groggy.
- Vital for restoring body's growth hormones and good overall health.
- Stage 4 - 30 mins, decreases as night goes on (Bed wetting / Sleep Walking)



**From stage 4, your brain begins to speed up and you go to stage 3, then 2....then .....**



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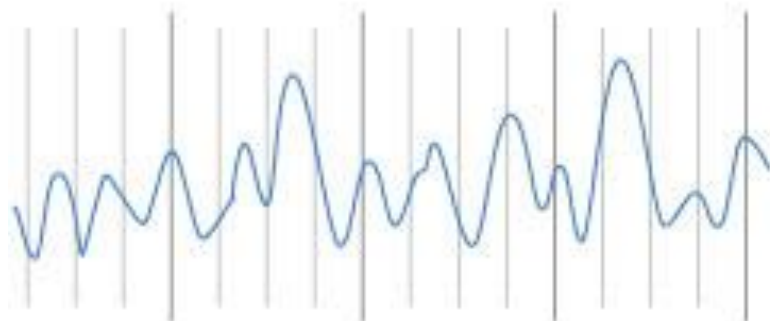
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# REM Sleep



- Rapid Eye Movement
- Often called paradoxical sleep.
- Brain is very active.
- Dreams usually occur in REM.
- 25% of nights sleep
- Sexual arousal
- Body is essentially paralyzed called Atonia.
- REM Rebound

# 100% Sleep Cycle

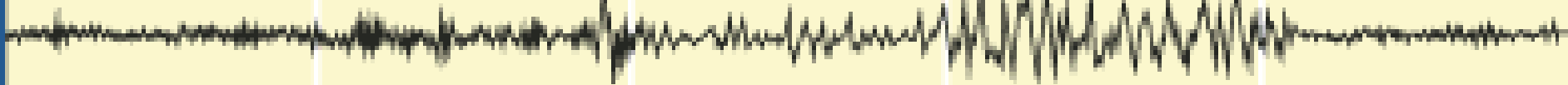
## Stage 1

## Stage 2

## Stage 3

## Stage 4

## Stage 5



4-5%

45-55%

4-6%

12-15%

20-25%

Light sleep. Muscle activity slows down. Occasional muscle twitching.

Breathing pattern and heart rate slows. Slight decrease in body temperature.

Deep sleep begins. Brain begins to generate slow delta waves.

Very deep sleep. Rhythmic breathing. Limited muscle activity. Brain produces delta waves.

Rapid eye movement. Brainwaves speed up and dreaming occurs. Muscles relax and heart rate increases. Breathing is rapid and shallow.

