

States of Consciousness

---

---

---

---

---

---

---

---

On the Nature of Consciousness

- Awareness of \_\_\_\_\_ and \_\_\_\_\_ Stimuli
  - Variations on levels of \_\_\_\_\_
    - \_\_\_\_\_ – stream of consciousness
    - \_\_\_\_\_ – unconscious
    - Sleep/dreaming research

---

---

---

---

---

---

---

---

\_\_\_\_\_

- A family of practices that train \_\_\_\_\_ to heighten awareness and bring \_\_\_\_\_ processes under greater \_\_\_\_\_ control
- \_\_\_\_\_ & \_\_\_\_\_ waves become more prominent
- \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, oxygen consumption, & carbon dioxide elimination \_\_\_\_\_
- Possible \_\_\_\_\_ long-term effects (but more research is needed!)

---

---

---

---

---

---

---

---

### Sleep

#### The Sleep-Wake Cycle

- \_\_\_\_\_ Rhythm
  - Any periodic fluctuation in a \_\_\_\_\_ organism.
- \_\_\_\_\_ Rhythm
  - A biological cycle that occurs approximately every \_\_\_\_\_ hours, e.g., sleeping and waking.

---

---

---

---

---

---

---

---

### Biological Rhythms and Sleep

- \_\_\_\_\_ **Rhythms** – 24 hr biological cycles
  - Regulation of sleep/other body functions
- \_\_\_\_\_ pathway of the biological clock:
  - Light levels → retina → \_\_\_\_\_ of hypothalamus → \_\_\_\_\_ gland → secretion of \_\_\_\_\_
- Ignoring circadian rhythms
- Realigning circadian rhythms

---

---

---

---

---

---

---

---

### Sleep

#### \_\_\_\_\_ rhythm

- \_\_\_\_\_ from the suprachiasmatic nucleus of the \_\_\_\_\_
- Jet lag
- Shift work

---

---

---

---

---

---

---

---

Your \_\_\_\_\_ Rhythm

- Your body roughly synchronizes with the 24-hour cycle of day and night through a biological clock called the \_\_\_\_\_ rhythm.
- What is your \_\_\_\_\_ rhythm?

---

---

---

---

---

---

---

---

The \_\_\_\_\_ :  
A Physiological Index of Consciousness

- \_\_\_\_\_ – monitoring of brain \_\_\_\_\_ activity
- Brain-waves
  - \_\_\_\_\_ (height)
  - \_\_\_\_\_ (cycles per second)
    - \_\_\_\_\_ (13-24 cps)
    - \_\_\_\_\_ (8-12 cps)
    - \_\_\_\_\_ (4-7 cps)
    - \_\_\_\_\_ (<4 cps)

---

---

---


---

---

---

---

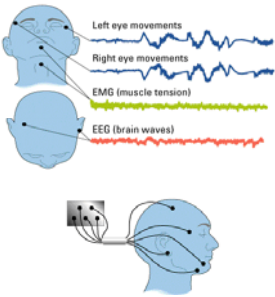
---



**Sleep**

Measuring Sleep

- Electrodes measure \_\_\_\_\_
- EMG measures \_\_\_\_\_
- EEG measures \_\_\_\_\_
- \_\_\_\_\_
- A camera may also record \_\_\_\_\_.



---

---

---

---

---

---

---

---

### Sleep

#### Stages of Sleep

**Presleep**

Awake, alert  
Beta waves

Awake, relaxed (hypnagogic state)  
Alpha waves

**Non-REM**

Sleep stage 1  
Theta waves

Sleep stage 2  
Spindle (burst of activity)

Sleep stage 3

Sleep stage 4  
Delta waves

**REM**

REM stage

---

---

---

---

---

---

---

---

### Sleep

#### A Typical Night's Sleep

- Typically 4-5 episodes of \_\_\_\_\_ (\_\_\_\_\_) sleep per night occur.
  - Later episodes are longer and farther apart.
- Most "\_\_\_\_\_" (\_\_\_\_\_) occurs early in the night.

---

---

---

---

---

---

---

---

### Sleep

#### Night Work, Sleeping, and Health

- \_\_\_\_\_ (rotating day and night shifts) is more dangerous than night work.
- About \_\_\_\_\_ traffic accidents a year are \_\_\_\_\_ related.
- Those who drive in the middle of the night take \_\_\_\_\_.
  - **Brief episodes of sleep that occur in the midst of a \_\_\_\_\_ activity.**

---

---

---

---

---

---

---

---

Sleep Deprivation

- **Complete** \_\_\_\_\_  
– 3 or 4 days max
- **Partial** \_\_\_\_\_ **or sleep** \_\_\_\_\_  
– impaired attention, reaction time, coordination, and decision making  
– accidents: Chernobyl, Exxon Valdez
- **Selective** \_\_\_\_\_  
– REM and slow-wave sleep: rebound effect

---

---

---

---

---

---

---

---

Sleep

How to Stay Awake  
When Driving

- Participants drove two hours in a \_\_\_\_\_.
- During a \_\_\_\_\_, they drank caffeine, or a placebo, or took a nap.
- Both caffeine and nap \_\_\_\_\_ the number of traffic incidents during the \_\_\_\_\_ hour.

Condition	Pretreatment (Hour 1)	Posttreatment (Hour 2)
Caffeine	~11	~4
Nap	~13	~6
Placebo	~11	~15

---

---

---

---

---

---

---

---

Sleep Problems

- \_\_\_\_\_ – difficulty falling or staying asleep
- \_\_\_\_\_ – falling asleep uncontrollably  
– Affects **animals** and **humans**
- \_\_\_\_\_ – reflexive gasping for air that awakens person
- \_\_\_\_\_ – sleepwalking

---

---

---

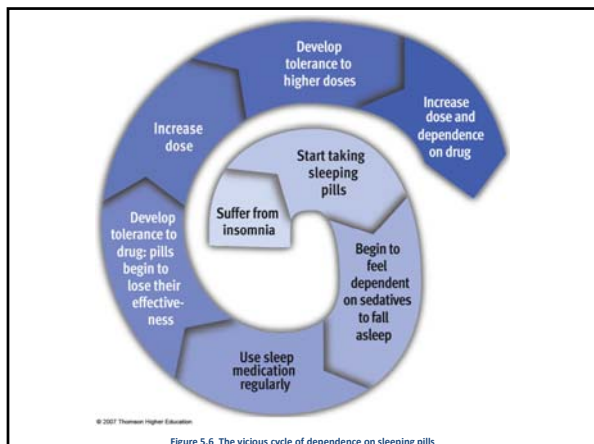
---

---

---

---

---



---

---

---

---

---

---

---

---

The Nature and Contents of Dreams

- \_\_\_\_\_ – mental experiences during sleep
  - Content usually \_\_\_\_\_
  - Common themes
  - Waking life spillover – day residue
- Western vs. Non-Western interpretations

---

---

---

---

---

---

---

---

**Research on Dreaming**

---

---

---

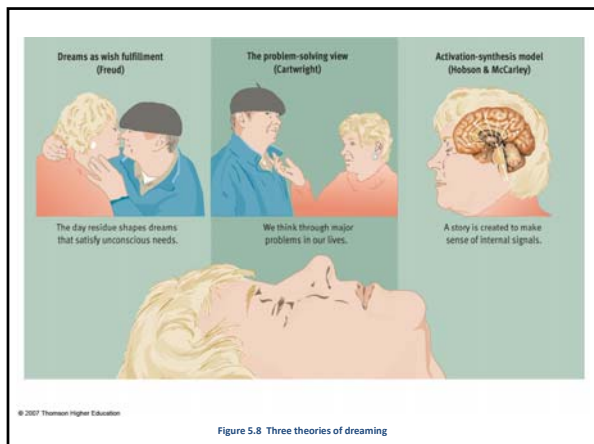
---

---

---

---

---



---

---

---

---

---

---

---

---

\_\_\_\_\_ : Altered State of Consciousness or Role Playing?

- \_\_\_\_\_ = a systematic procedure that increases suggestibility
- **Hypnotic** \_\_\_\_\_ : individual differences
- **Effects produced through** \_\_\_\_\_ :
  - \_\_\_\_\_
  - Sensory \_\_\_\_\_ and \_\_\_\_\_
  - \_\_\_\_\_
  - \_\_\_\_\_ suggestions and amnesia

---

---

---

---

---

---

---

---

Drugs & Behavior

---

---

---

---

---

---

---

---

- \_\_\_\_\_
- The study of psychoactive drugs
- \_\_\_\_\_ drugs – Drugs that affect the \_\_\_\_\_, and bring changes in \_\_\_\_\_ and other \_\_\_\_\_ processes
- A “drug” is a chemical not normally needed for physiological activity that can affect a body upon entering it

---

---

---

---

---

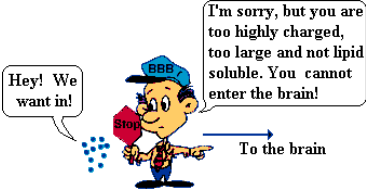
---

---

---

### Psychopharmacology

- \_\_\_\_\_
  - Drugs must cross a \_\_\_\_\_ in the brain's \_\_\_\_\_ that limits which substances can enter the brain from the bloodstream



A cartoon illustration of a guard wearing a blue cap with 'BBB' on it and a red sign that says 'STOP'. The guard is pointing towards a blue arrow labeled 'To the brain'. A speech bubble from the guard says, 'I'm sorry, but you are too highly charged, too large and not lipid soluble. You cannot enter the brain!'. Another speech bubble from a group of blue dots says, 'Hey! We want in!'.

---

---

---

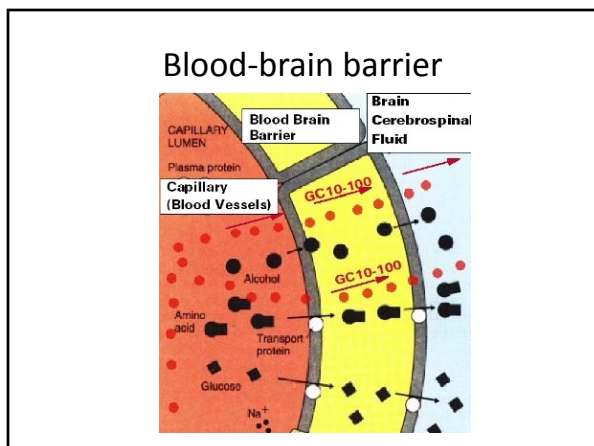
---

---

---

---

---



---

---

---

---

---

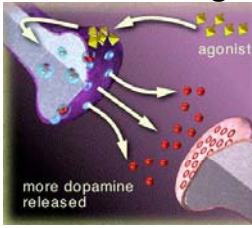
---

---

---

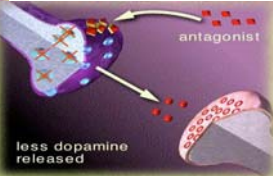


### How drugs interact with the brain...



agonist

more dopamine released



antagonist

less dopamine released

- \_\_\_\_\_ drugs alter \_\_\_\_\_ interactions.
- \_\_\_\_\_ block normal neurotransmitter-receptor binding without stimulating the receptors.

---

---

---

---

---

---

---

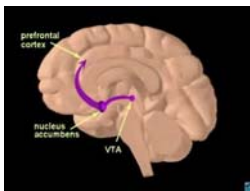
---

---

---

### The "Reward Pathway"

- Three brain components:
  - \_\_\_\_\_
  - \_\_\_\_\_
  - \_\_\_\_\_



---

---

---

---

---

---

---

---

---

---

### Substance Abuse

- The use of psychoactive drugs in ways that deviate from \_\_\_\_\_
- Psychological \_\_\_\_\_
  - When a person uses a drug \_\_\_\_\_
  - Need the drug for a sense of \_\_\_\_\_ and is preoccupied with \_\_\_\_\_ of the drug it becomes unavailable
  - May occur with out without \_\_\_\_\_
- \_\_\_\_\_ (addiction)
  - A \_\_\_\_\_ state in which continued drug use is needed to prevent a \_\_\_\_\_ syndrome

---

---

---

---

---

---

---

---

---

---

### Substance Abuse

- The use of psychoactive drugs in ways that deviate from cultural norms.
- Psychological dependence
- Physical dependence (addiction)

---

---

---

---

---


---

---

---

### Physical Dependence

- \_\_\_\_\_ Syndrome – Physiological and psychological disturbances resulting from a \_\_\_\_\_ of drugs
  - Include \_\_\_\_\_ for the drug and effects generally \_\_\_\_\_ those of the drug.
- \_\_\_\_\_ – Larger doses are needed to produce the same effect.



---

---

---

---

---


---

---

---

### Expectations & Effects

- The effects of drugs on behavior can be \_\_\_\_\_.
  - \_\_\_\_\_ can form by watching \_\_\_\_\_ react to drugs.
  - Drug effects \_\_\_\_\_ from one \_\_\_\_\_ to another.



©.Original Artist  
Reproduction rights obtainable from  
www.CartoonStock.com

"He's at a very impressionable age."

---

---

---

---

---




---

---

---

### Types of Drugs

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

---

---

---

---

---

---

---



---

---

---

### Types of Drugs

- \_\_\_\_\_
- Alcohol
- Barbiturates
- \_\_\_\_\_
- \_\_\_\_\_
- Cocaine
- \_\_\_\_\_
- Nicotine
- \_\_\_\_\_

---

---

---

---

---

---

---

---

---

---

### Types of Drugs

- \_\_\_\_\_
- \_\_\_\_\_ activity of the CNS
- \_\_\_\_\_ activity of GABA (\_\_\_\_\_ postsynaptic neuron activity)
- \_\_\_\_\_ (i.e. Amytal)
  - "Downers" like sleeping pills cause sleepiness, mild pleasure, poor muscle coordination, and lowered mental concentration
- \_\_\_\_\_
- \_\_\_\_\_ behavioral or mental activity (i.e. Ritalin)
- \_\_\_\_\_ ("uppers" increase the release and decrease the removal of norepinephrine and dopamine at synapses)

---

---

---

---

---

---

---

---

---

---

### Drug Classes, cont'd...

- \_\_\_\_\_
  - Induce sleep and relieve pain
  - \_\_\_\_\_ is an active ingredient in opium and is used in pain relief
    - \_\_\_\_\_ is derived from morphine but is 3 times more potent
    - Stimulate receptors normally stimulated by \_\_\_\_\_, the body's naturally occurring painkillers
- \_\_\_\_\_
  - Produce a temporary loss of contact with reality and changes in emotion, perception, and thought
- \_\_\_\_\_
  - Reduce physiological symptoms associated with \_\_\_\_\_
  - \_\_\_\_\_ are the most typical \_\_\_\_\_, although alcohol (a depressant) can have similar effects

---

---

---

---

---

---

---

---

### The Addicted Brain

---

---

---

---

---

---

---

---