

---

# Chapter 5: States of Consciousness

---

# Lecture Overview

- Understanding Consciousness
- Sleep and Dreams
- Healthier Ways to Alter Consciousness



---

# Understanding Consciousness

- **Consciousness** (an organism's awareness of its own self and surroundings)



# Understanding Consciousness

- Alternate States of Consciousness (ASCs): mental states, other than ordinary waking consciousness, found during sleep, dreaming, psychoactive drug use, hypnosis, etc.



---

# Sleep and Dreams:

## Circadian Rhythms

- **Circadian Rhythms** (biological changes occurring on a 24-hour cycle)
    - ❑ Our energy level, mood, learning, and alertness all vary throughout the day.
    - ❑ Sections of the **hypothalamus** called the **suprachiasmatic nucleus (SCN)** and the **pineal gland** regulate these changes.
-

---

# Sleep and Dreams:

## Circadian Rhythms (Continued)



- Disrupted circadian rhythms, through **shift work**, **jet lag**, and **sleep deprivation** may cause mood alterations, reduced concentration and motivation, increased irritability, lapses in attention, and reduced motor skills.
-

# Sleep and Dreams

- What happens to humans and other animals while we sleep and dream?



---

# Sleep and Dreams: Stages of Sleep

- **NREM (Non-Rapid-Eye-Movement) Sleep:**
    - Stage 1 (lightest sleep)
    - Stage 2 (deeper sleep)
    - Stages 3 and 4 (deepest sleep)
  - **REM (Rapid-Eye-Movement) Sleep:**
    - Light sleep--also called paradoxical sleep
-



---

# Sleep and Dreams: Stages of Sleep (Continued)

## ■ NREM (non-REM) sleep

- ❑ Includes Stages 1 through 4
  - ❑ Lower-frequency brain waves, decreased pulse and breathing, and occasional, simple dreams
  - ❑ Serves a biological need (NREM needs met before REM needs)
-

---

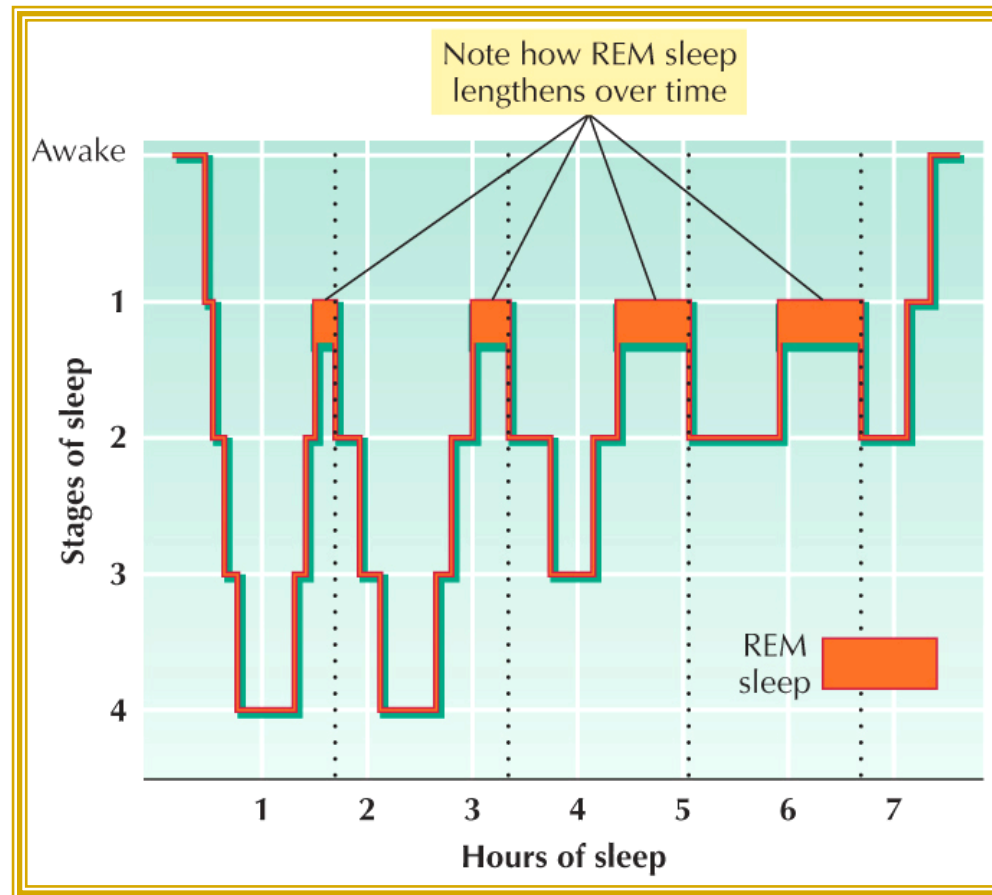
# Sleep and Dreams:

## Stages of Sleep (Continued)

- REM (Rapid-Eye-Movement) sleep
    - Also called paradoxical sleep
    - High-frequency brain waves, increased pulse and breathing, paralysis of the large muscles, and dreaming
    - Serves a biological need and may help with learning and consolidating new memories
-

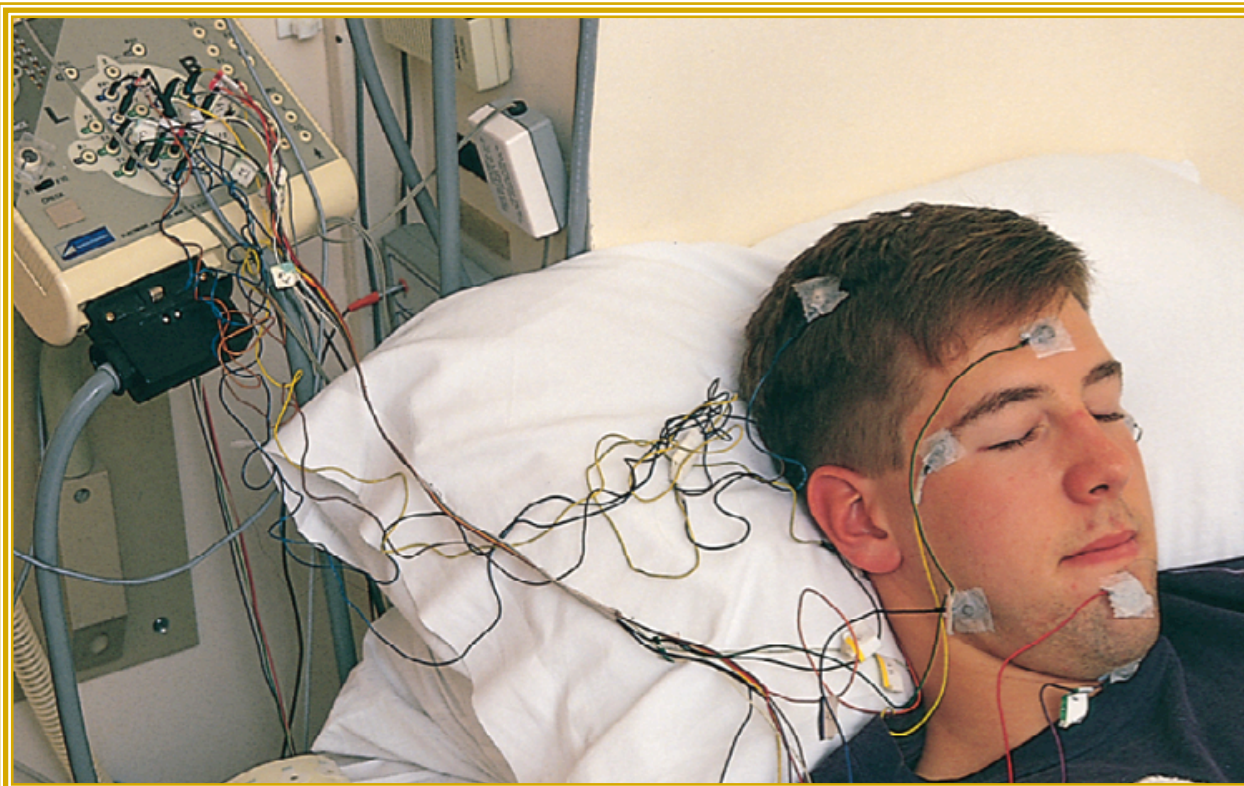
# Sleep and Dreams:

## Stages of Sleep in a Typical Night



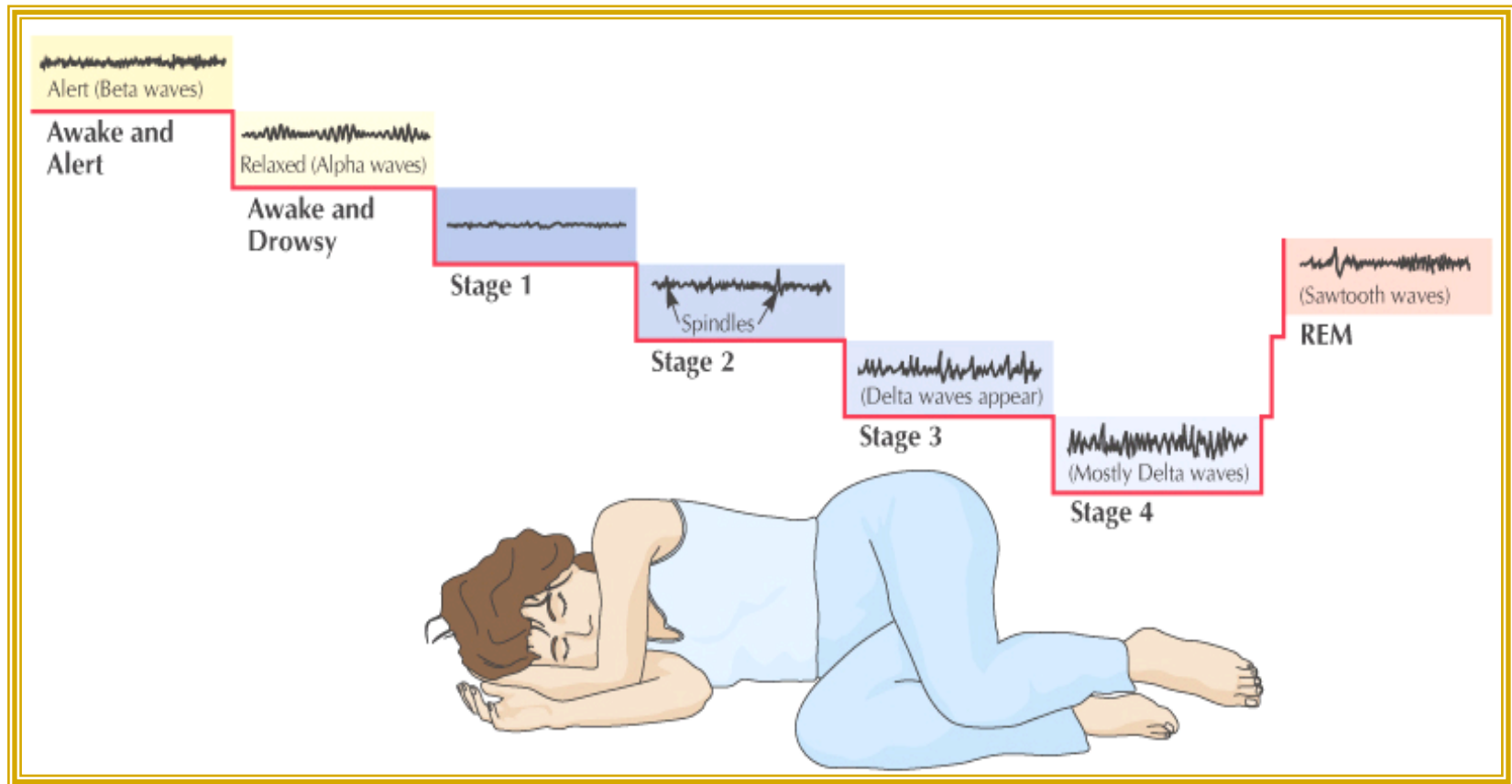
# Sleep and Dreams: Research

- How scientists study sleep (note the EEG, EOG, and EMG measuring devices)



# Sleep and Dreams:

## Stages of Sleep & Brain Waves



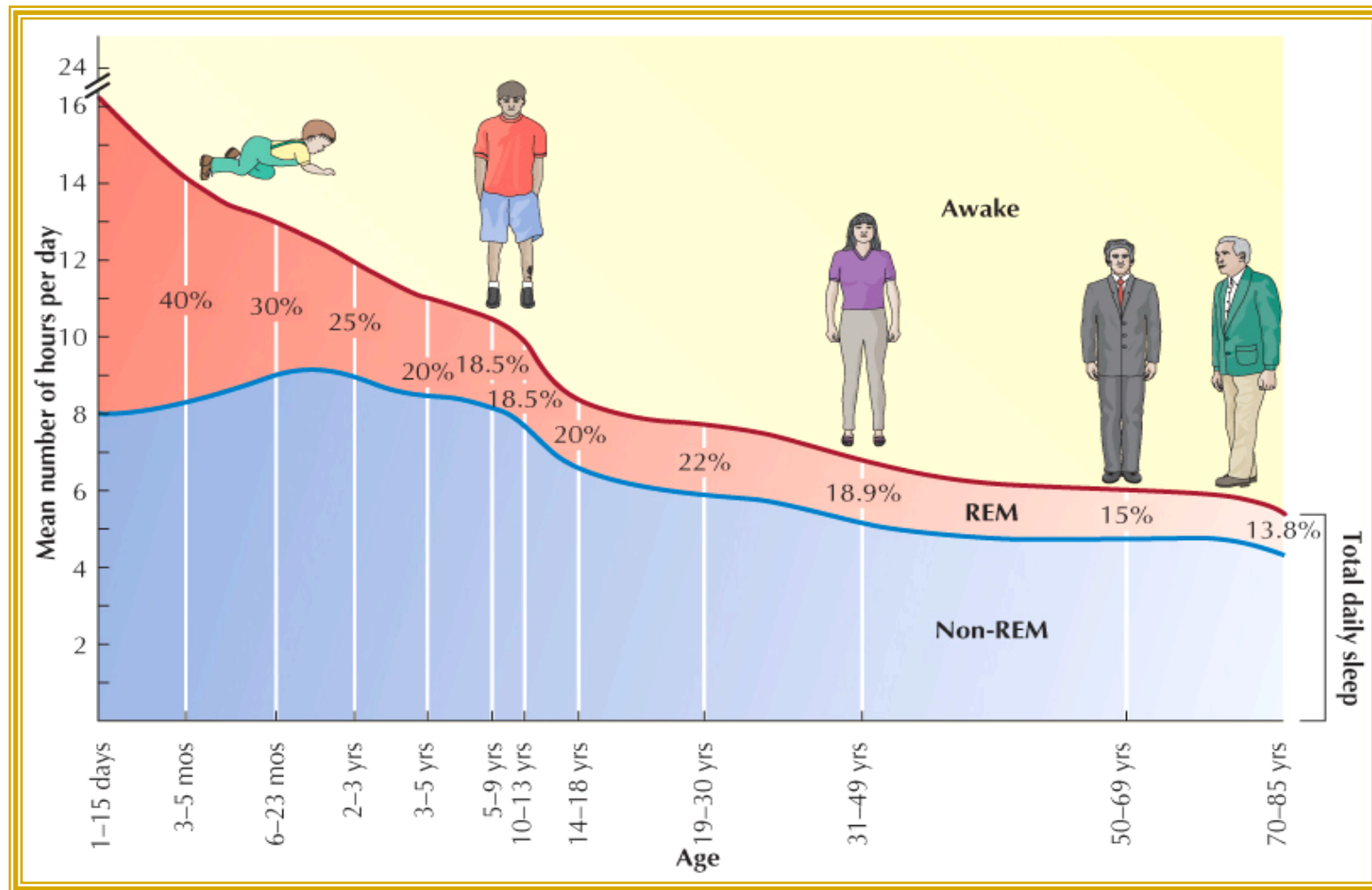
# NREM and REM Sleep in Cats

- Can you identify which photo was taken while this cat was in REM sleep?





# Sleep and Dreams: Over the Life Span



# Sleep and Dreams: Why Do We *Sleep*?



- **Repair/restoration theory:**  
sleep helps us recuperate from daily activities
- **Evolutionary/circadian theory:**  
sleep evolved to conserve energy and as protection from predators
- **Cognitive theory:**  
dreams are an important part of information processing of everyday experiences



# Sleep and Dreams:

## Why Do We *Dream*?

- **Psychoanalytic theory:**  
dreams are disguised symbols  
(**manifest** versus **latent content**)  
of repressed desires and anxieties
- **Biological theory:**  
(**activation-synthesis hypothesis**)  
dreams are simple by-products of random  
stimulation of brain cells



---

# Sleep and Dreams: Sleep Disorders

Two major categories:

1. **Dyssomnias**

(problems in amount, timing, and quality of sleep)

2. **Parasomnias**

(abnormal disturbances during sleep)

---



---

# Sleep and Dreams:

## Three Forms of Dyssomnias

- **Insomnia:** persistent problems in falling asleep, staying asleep, or awakening too early
- **Sleep apnea:** repeated interruption of breathing during sleep
- **Narcolepsy:** sudden and irresistible onsets of sleep during normal waking hours



# Sleep and Dreams: Narcolepsy in Dogs



# Sleep and Dreams:

## Two Forms of Parasomnias



### ■ Nightmares:

anxiety-arousing dreams occurring near the end of sleep, during REM sleep

### ■ Night terrors:

abrupt awakenings from NREM sleep accompanied by intense physiological arousal and feelings of panic



---

# Healthier Ways to Alter Consciousness



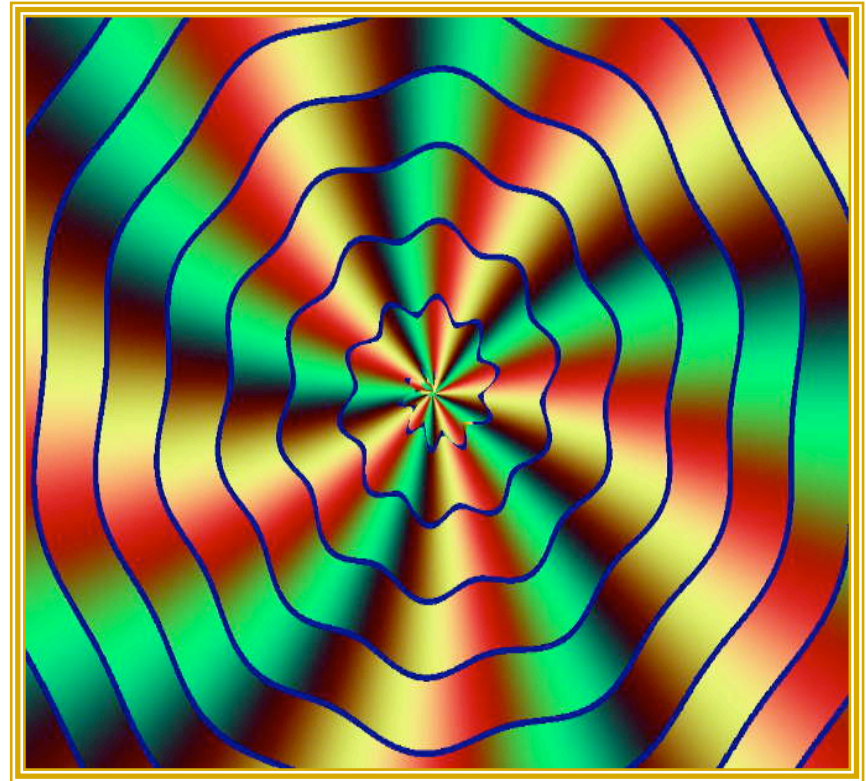
## ■ **Meditation**

(group of techniques designed to refocus attention, block out all distractions, and produce an ASC)

---

# Healthier Ways to Alter Consciousness

- **Hypnosis**  
(trancelike state of heightened suggestibility, deep relaxation, and intense focus)





# Healthier Ways to Alter Consciousness

- Therapeutic uses of hypnosis:

treatment of  
chronic pain,  
severe burns,  
dentistry,  
childbirth,  
psychotherapy.





# Healthier Ways to Alter Consciousness

## ■ Hypnosis: Myths and Controversies

1. Forced hypnosis
2. Unethical behavior
3. Exceptional memory
4. Superhuman strength
5. Fakery

