

OUTLINE

CHAPTER 6

Variations in Consciousness

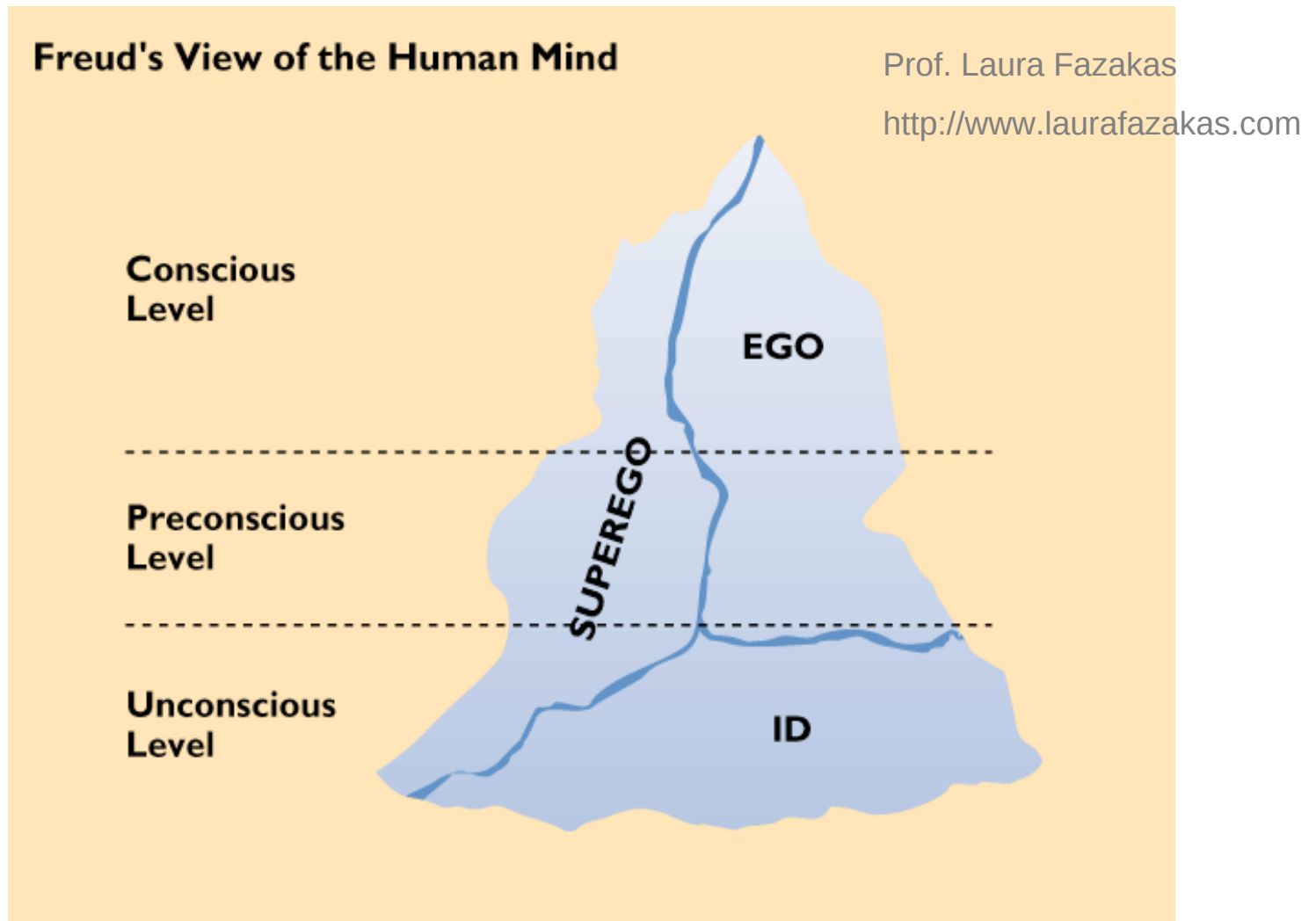
- Defining & Measuring Consciousness
- Circadian Rhythms
- Sleep
- Drugs and the Brain

~ Professor Fazakas-DeHoog
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LEVELS OF CONSCIOUSNESS

AND THE PERSONALITY

- **PSYCHODYNAMIC PERSPECTIVE**



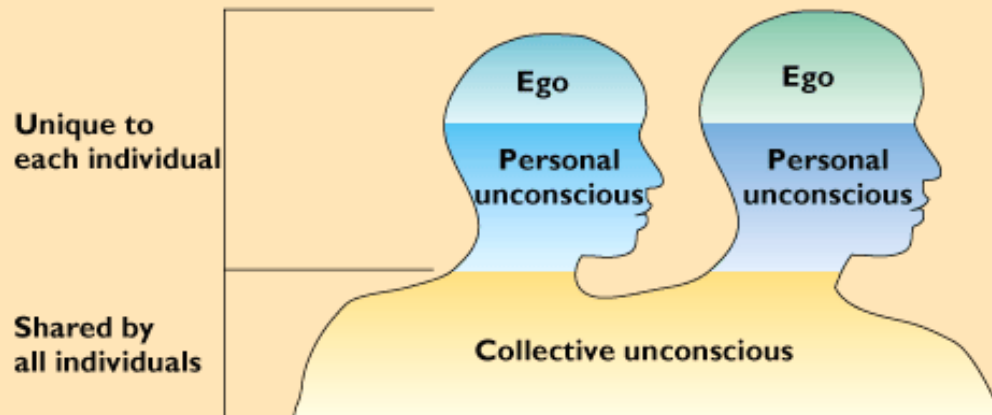
LEVELS OF CONSCIOUSNESS

- **CARL JUNG**

Prof. Laura Fazakas

<http://www.laurafazakas.com>

Jung's Conception of Personality

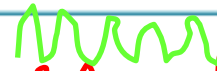
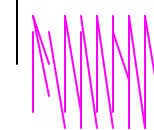


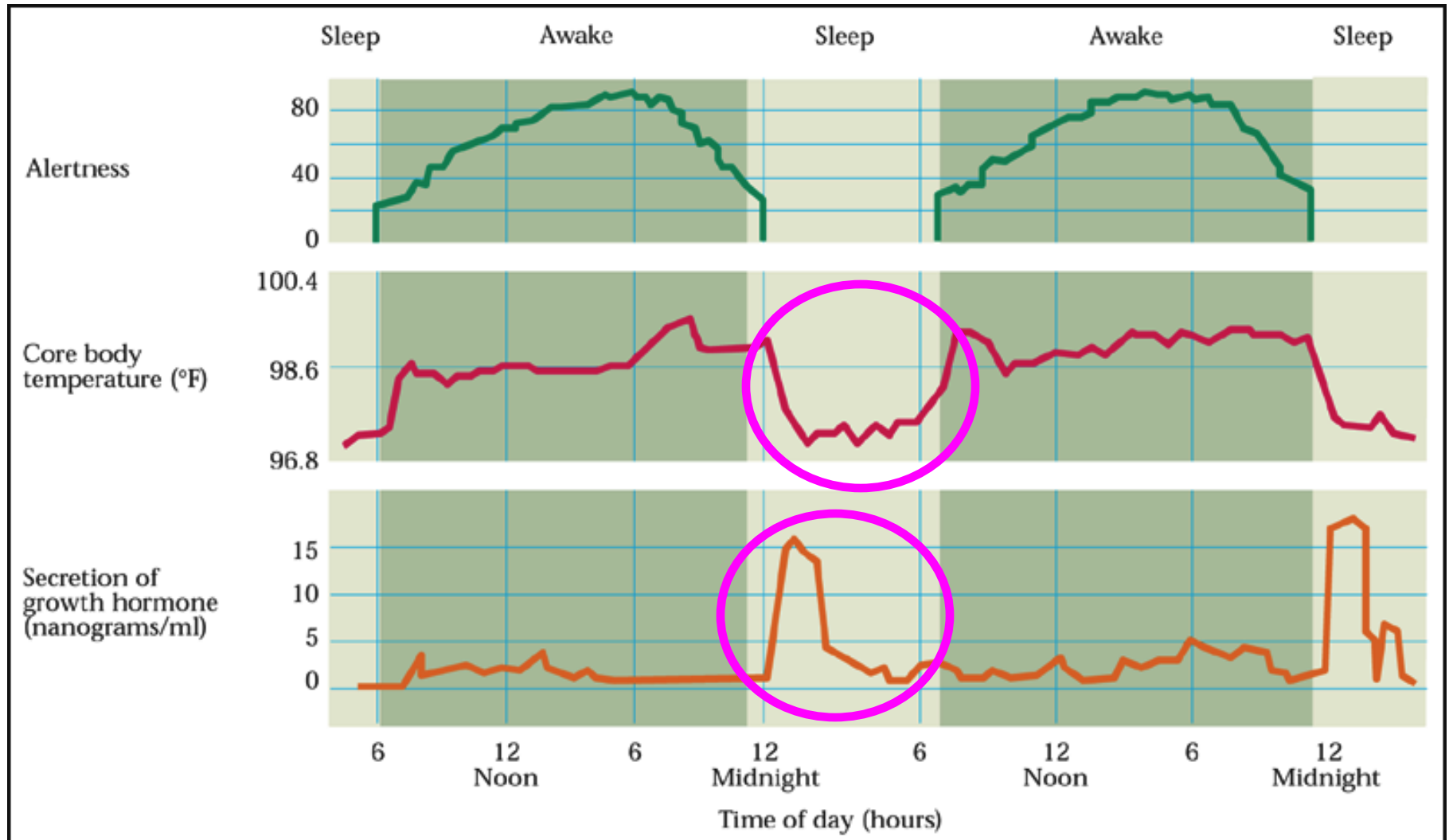
Structure	Characteristics
Ego	Conscious component; carries out normal daily activities.
Personal unconscious	Contains all accessible memories, thoughts, and feelings, and all repressed memories, wishes, and impulses.
Collective unconscious	The most inaccessible layer; shared by all people; contains universal experiences.

EEG PATTERNS & STATES OF CONSCIOUSNESS

Table 5.1 EEG Patterns Associated with States of Consciousness

EEG pattern	Frequency (cps)	Typical States of Consciousness
Beta (b)	13–24	Normal waking thought, alert problem solving
Alpha (a)	8–12	Deep relaxation, blank mind, meditation
Theta (q)	4–7	Light sleep
Delta (D)	less than 4	Deep sleep



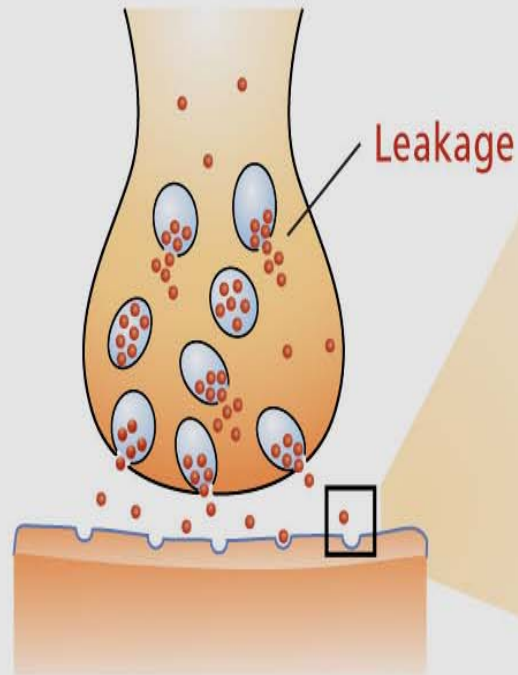


Examples of circadian rhythms.

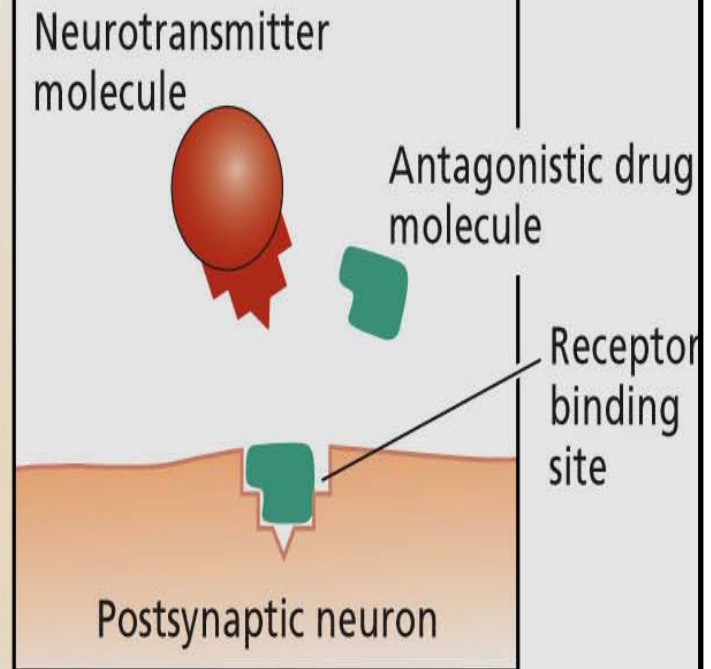
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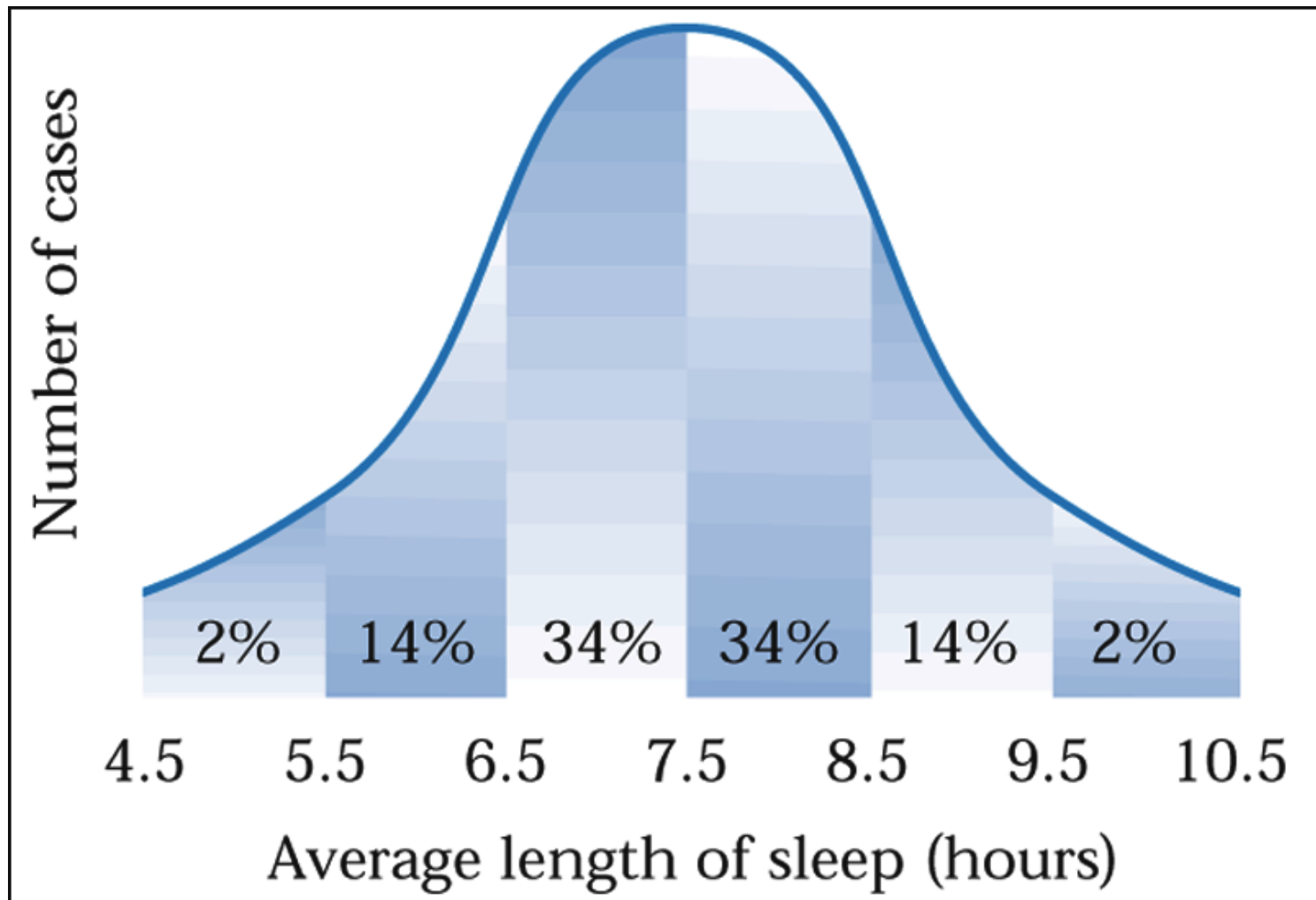
Antagonistic drugs



Drug impairs neuron's ability to synthesize, store, or release transmitter. Molecules may leak and degrade prematurely.



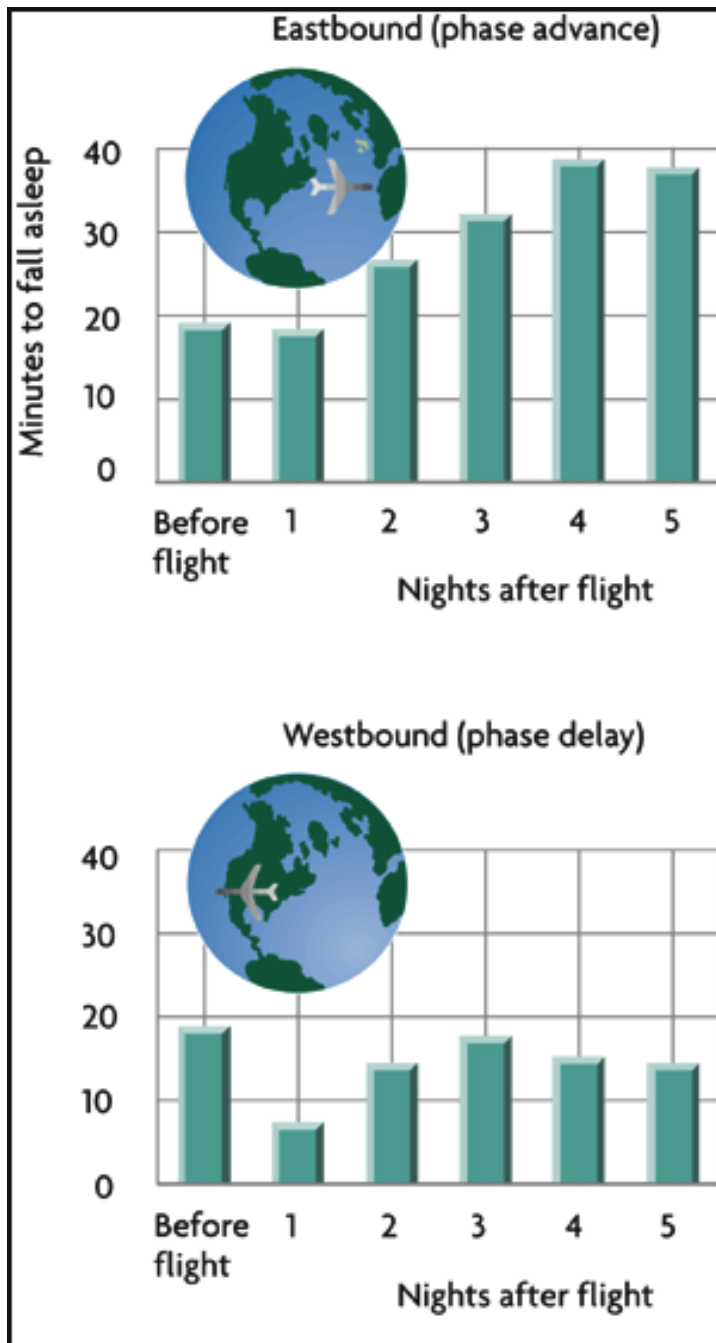
Drug binds with receptor site but is not similar enough to transmitter to activate site. Blocks transmitter from activating site.



Variation in sleep needs

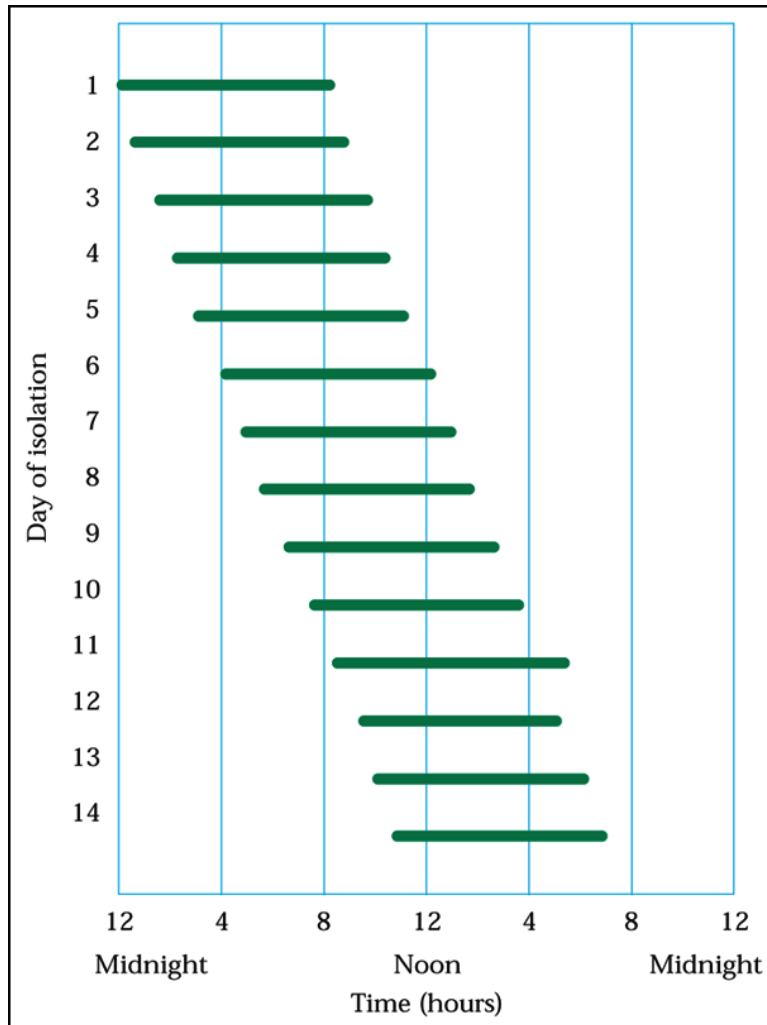
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**WHAT HAPPENS WHEN WE
SUDDENLY ALTER OUR
TIME SCHEDULE ?**

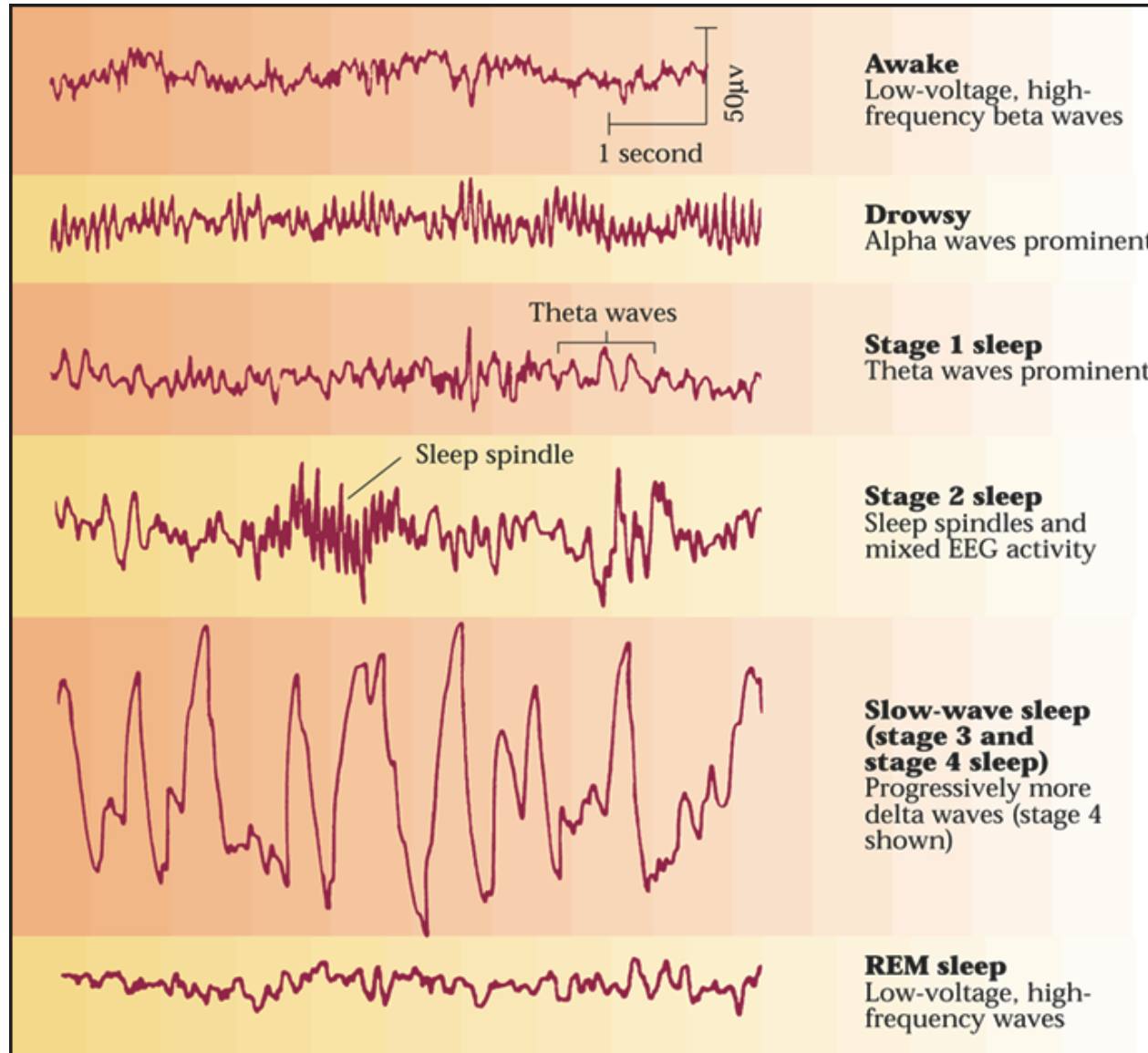
**Circadian rhythms
and jet lag**



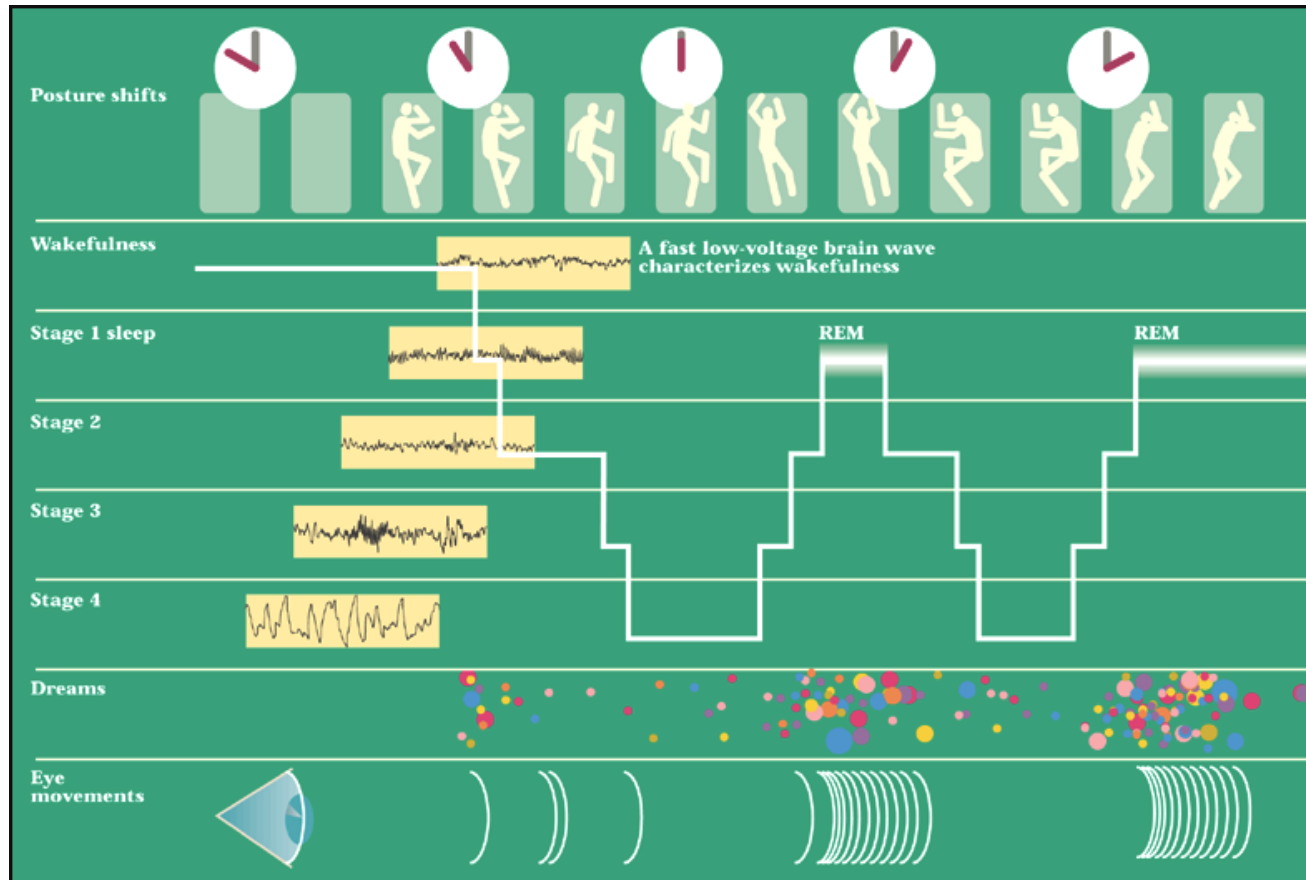
Changes in sleep periods of a subject isolated from the day-night cycle.

*** Shift to 25 hour cycle.
Retire for sleep later & later with each in isolation.**

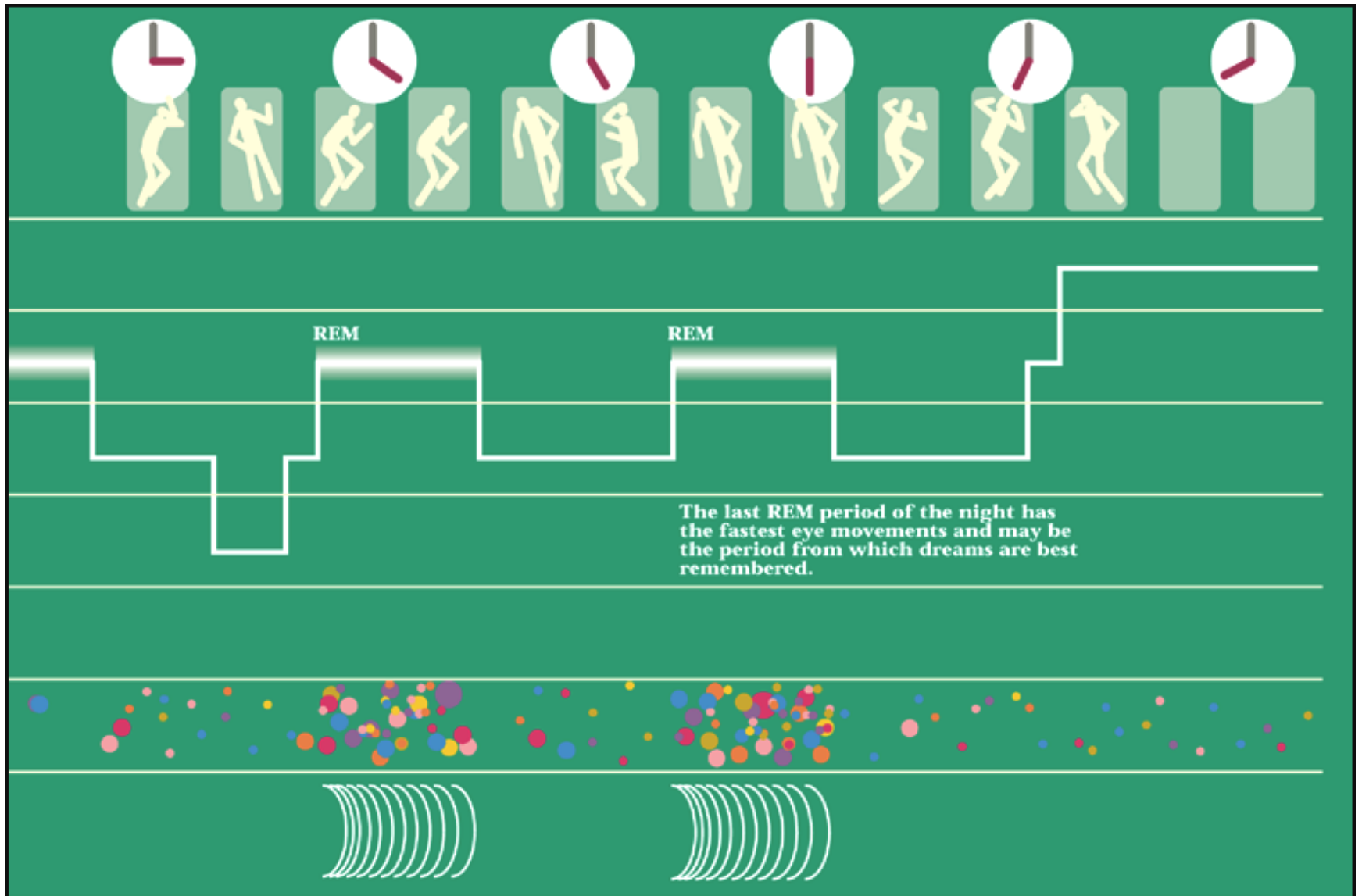
Sleep Stages: Cycling Through Sleep



INS & WAKEFULNESS



An overview of the cycle of sleep.



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Stages of Sleep

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EEG CYCLES



90 MIN.

90 MIN.

90 MIN.

90 MIN.

90 MIN.

90 MIN. waves

1

REM REM REM REM REM

theta waves

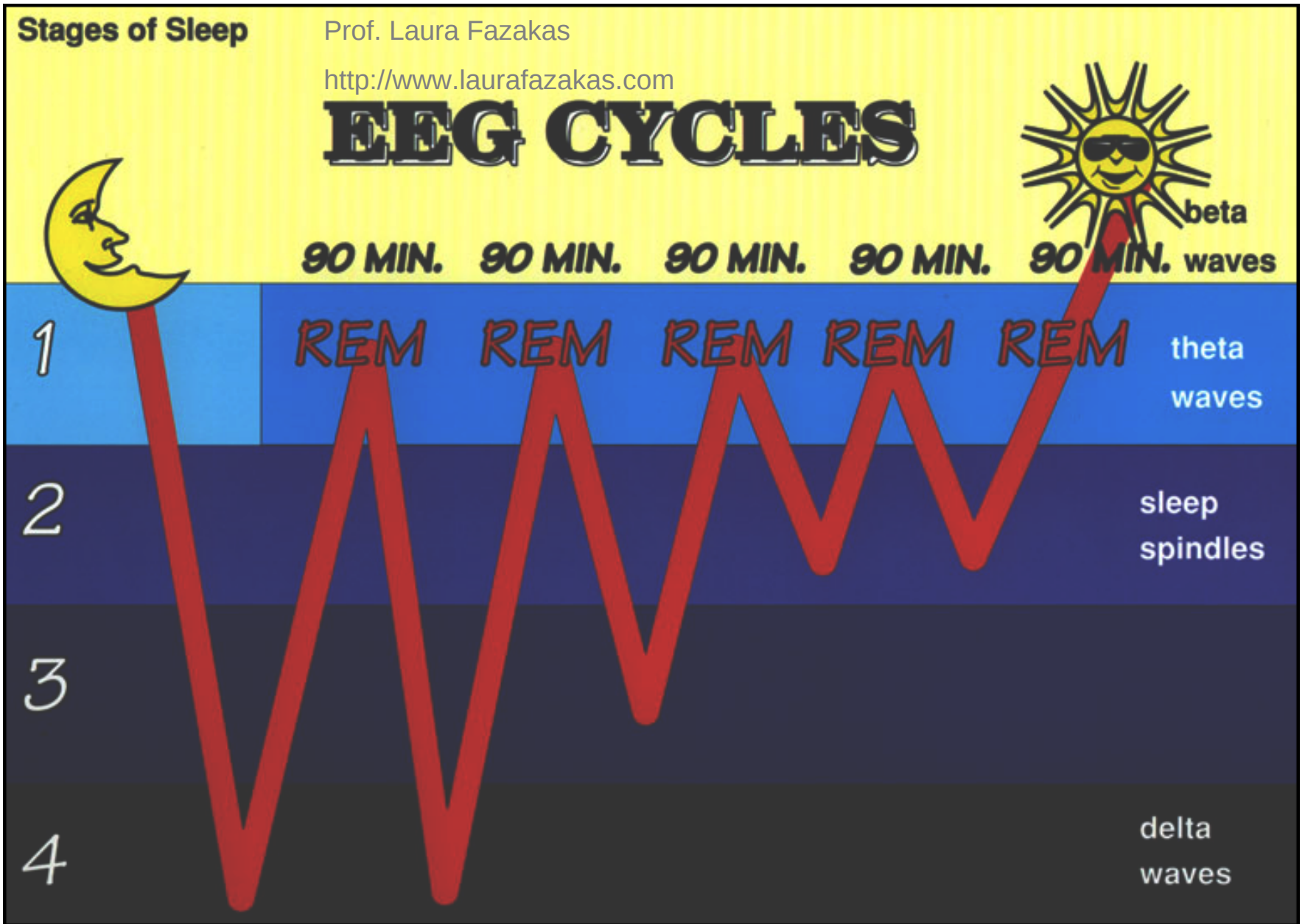
2

sleep spindles

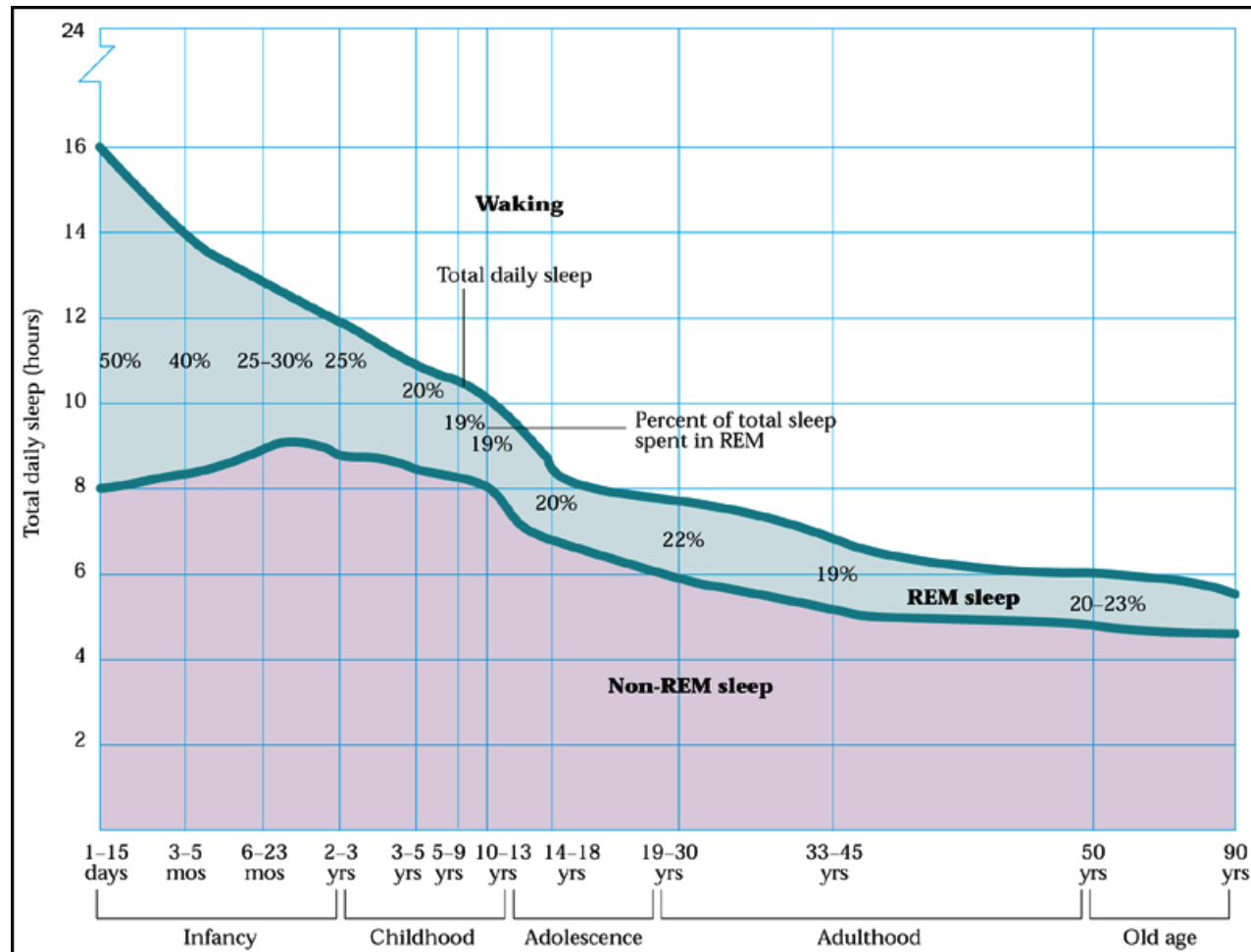
3

4

delta waves



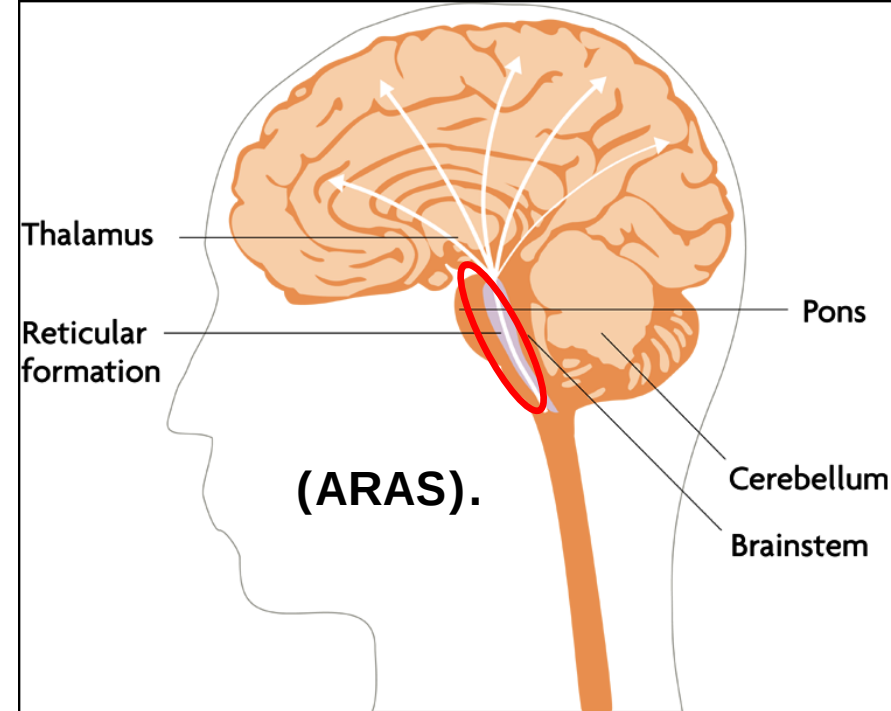
Changes in sleep patterns over the life span.



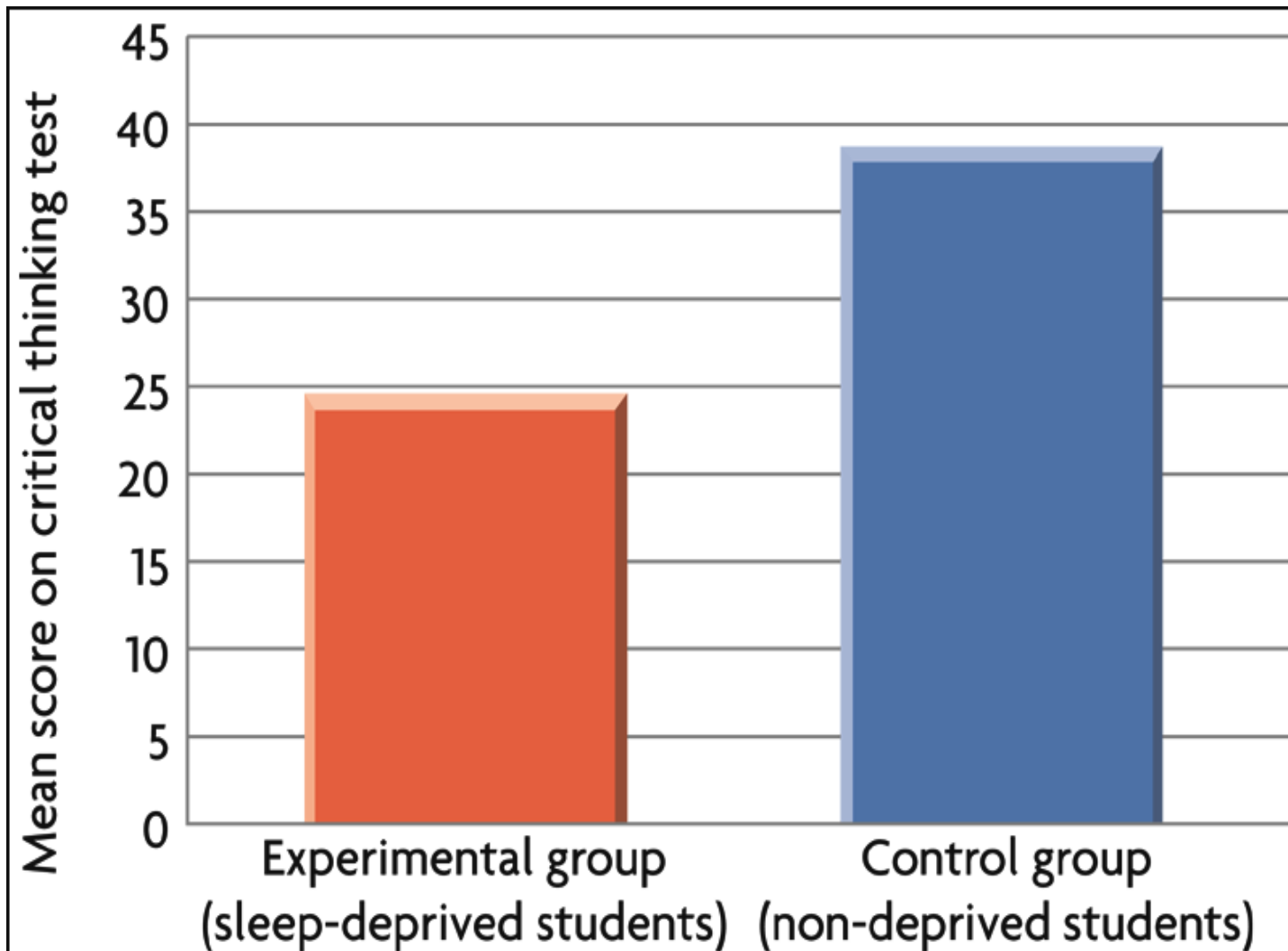
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Brain Structures:



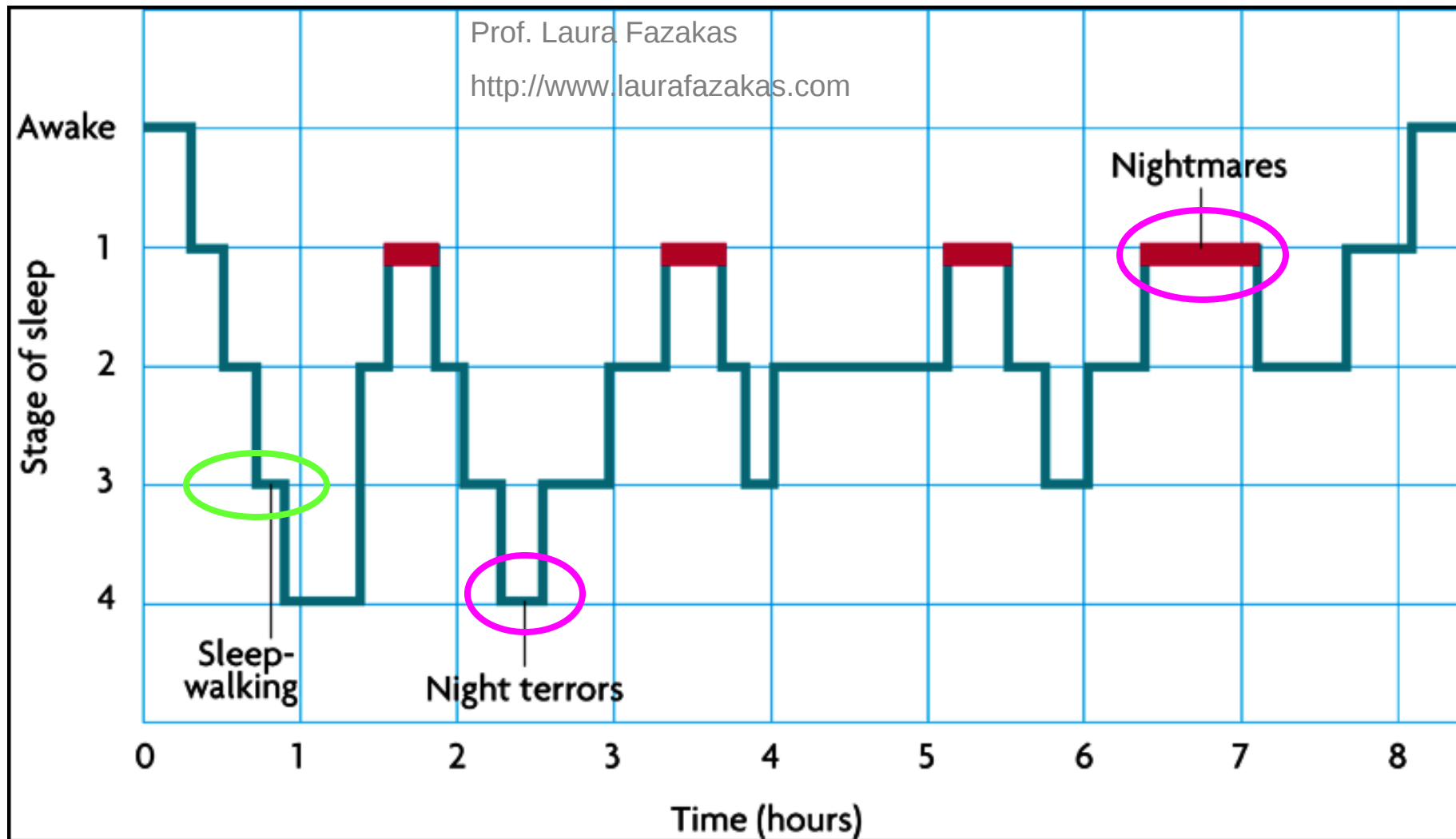
- **Ascending reticular activating system (arousal system)**
- **Pons, medulla (hypnogenic system),**
- **thalamus, hypothalamus, limbic system**



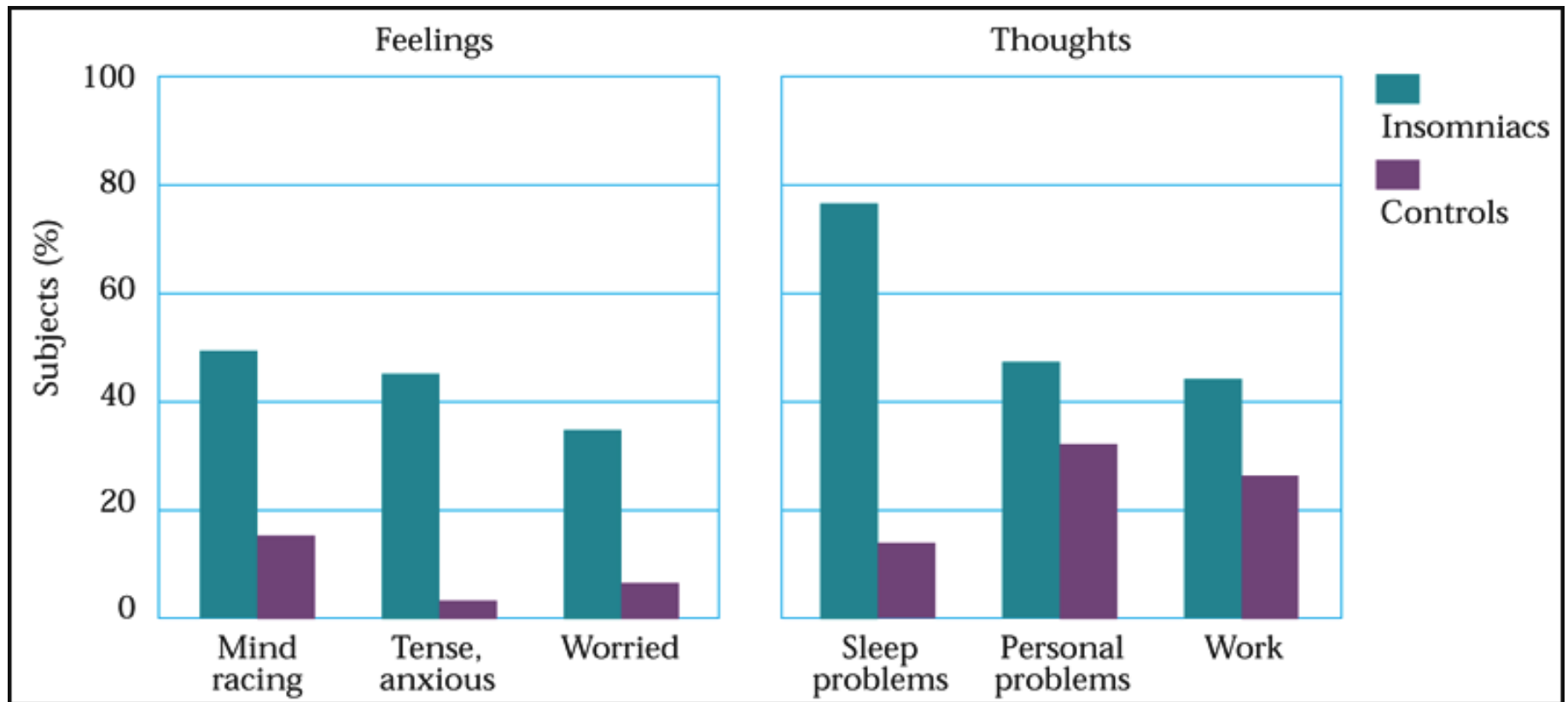
Effect of sleep deprivation on cognitive performance

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Sleep problems and the cycle of sleep.

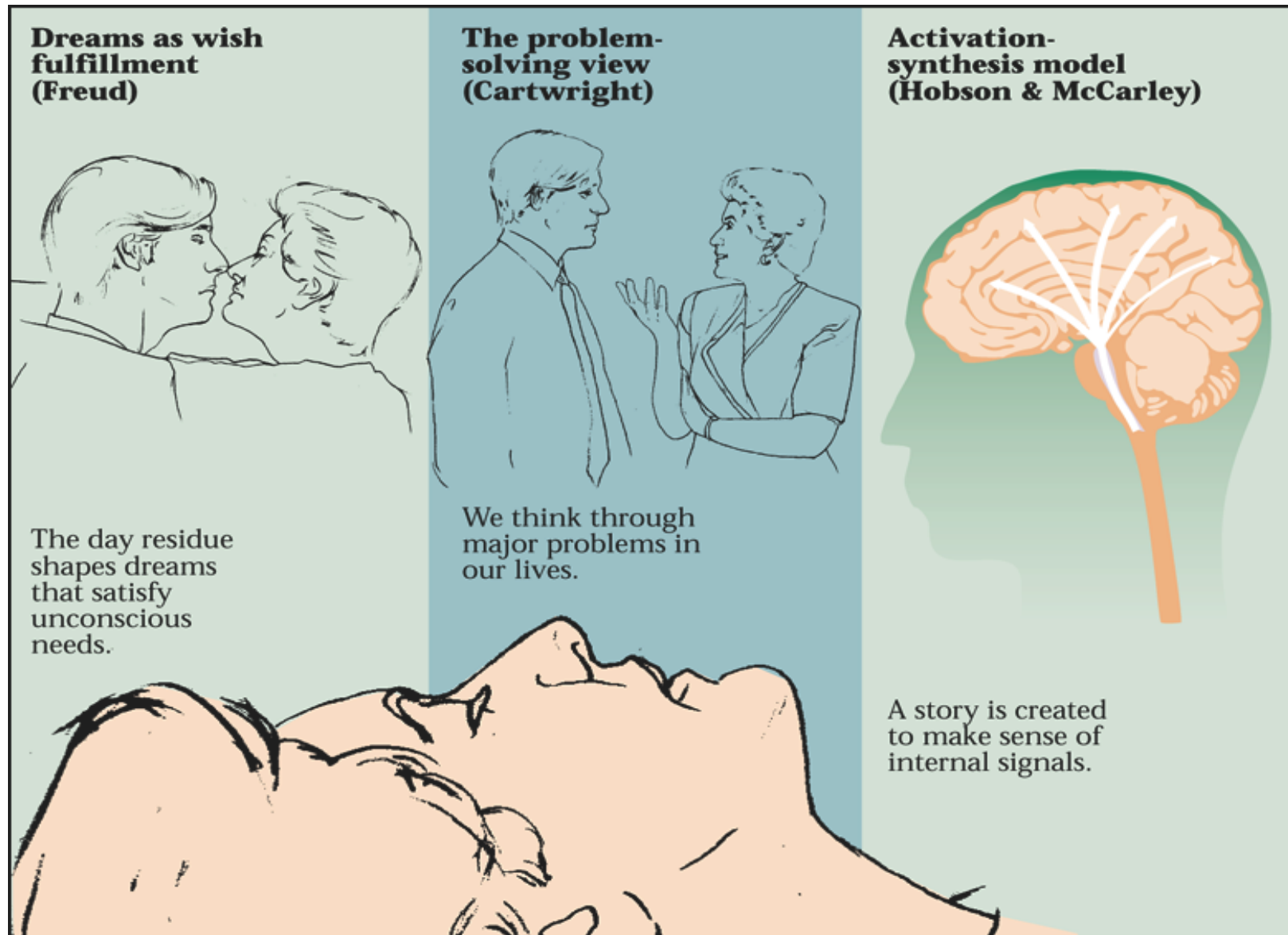


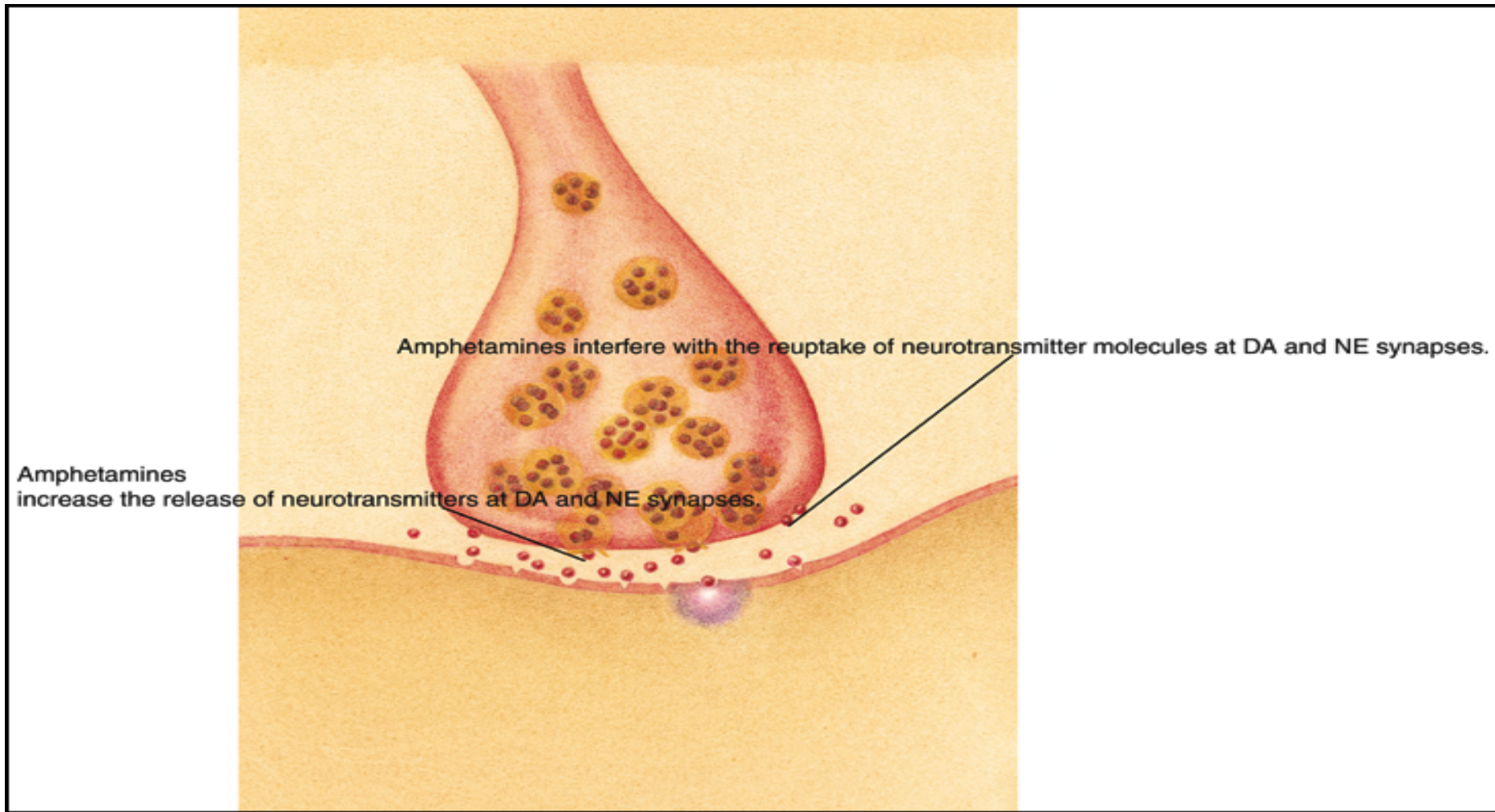
Thoughts & emotions associated with insomnia.

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3 THEORIES OF DREAMING



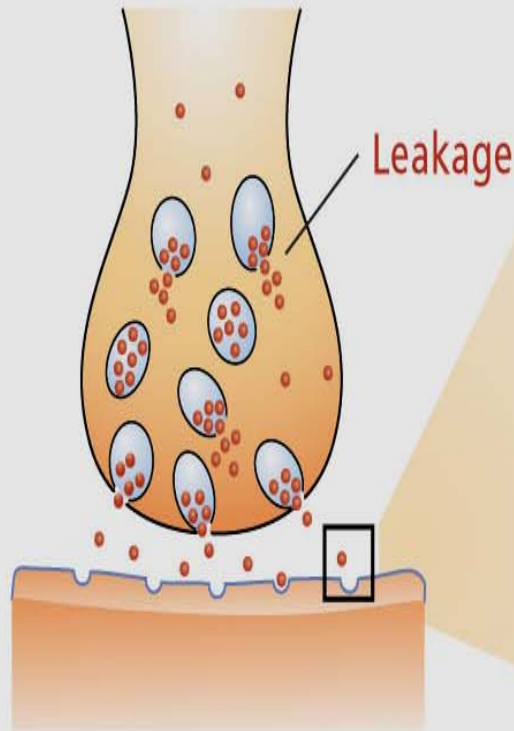


Amphetamines and neurotransmitters

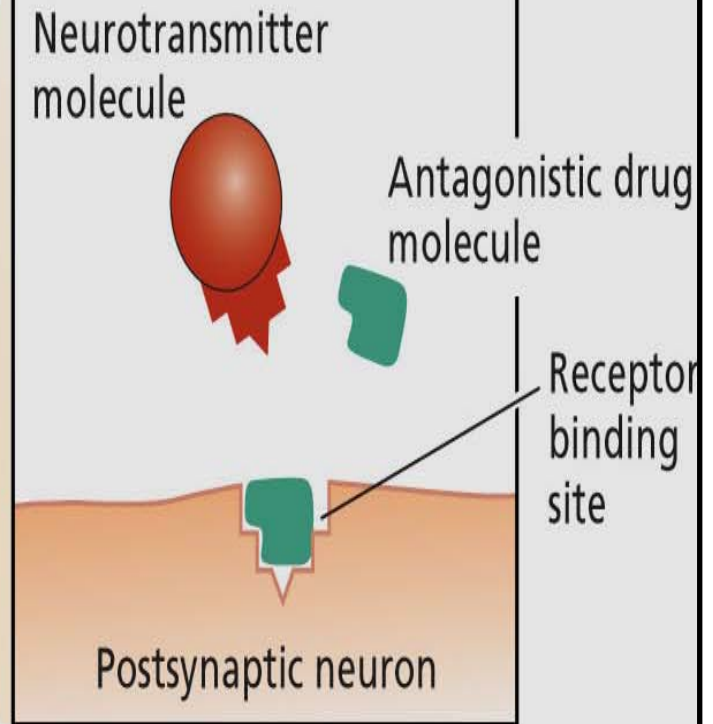
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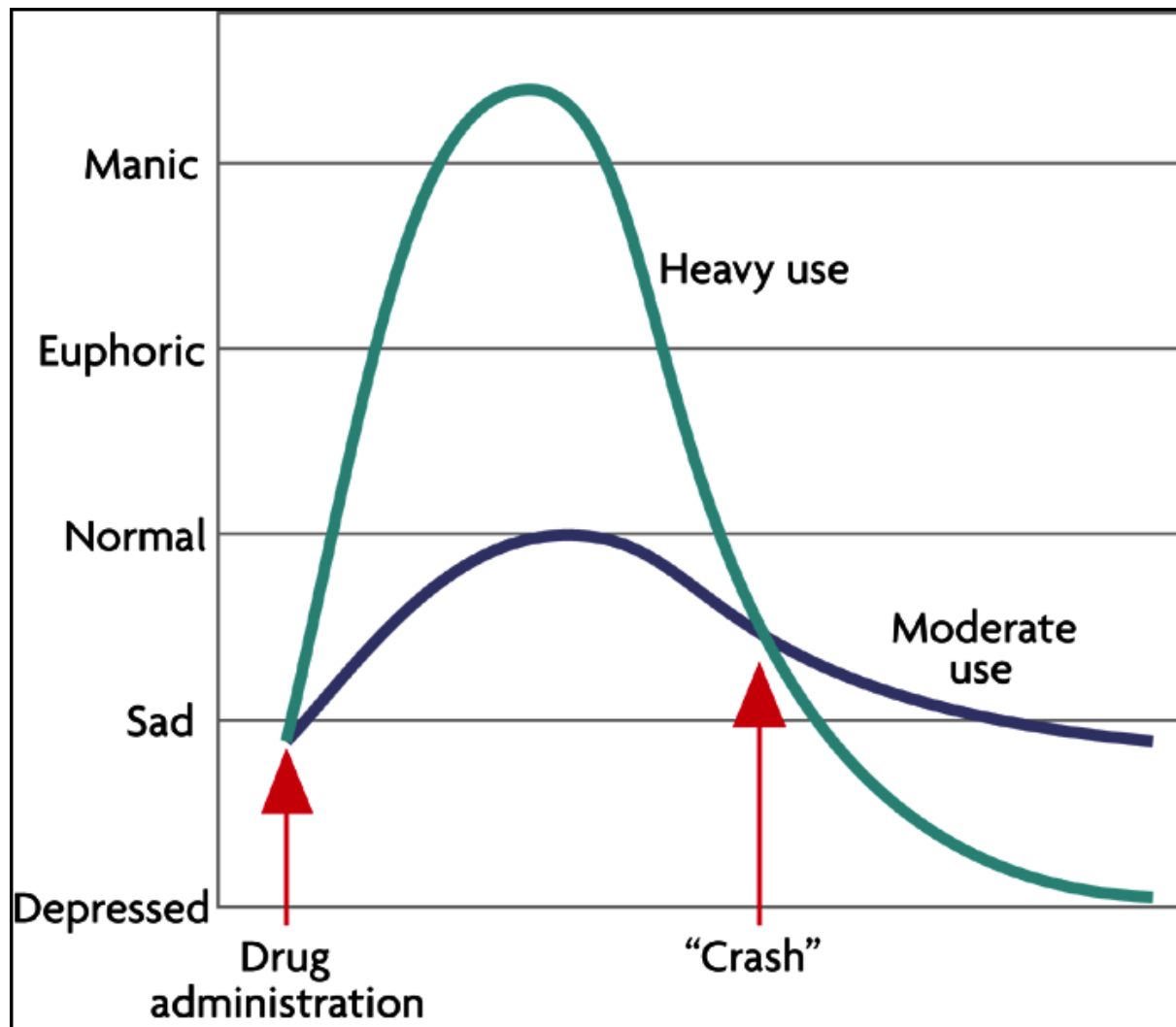
Antagonistic drugs



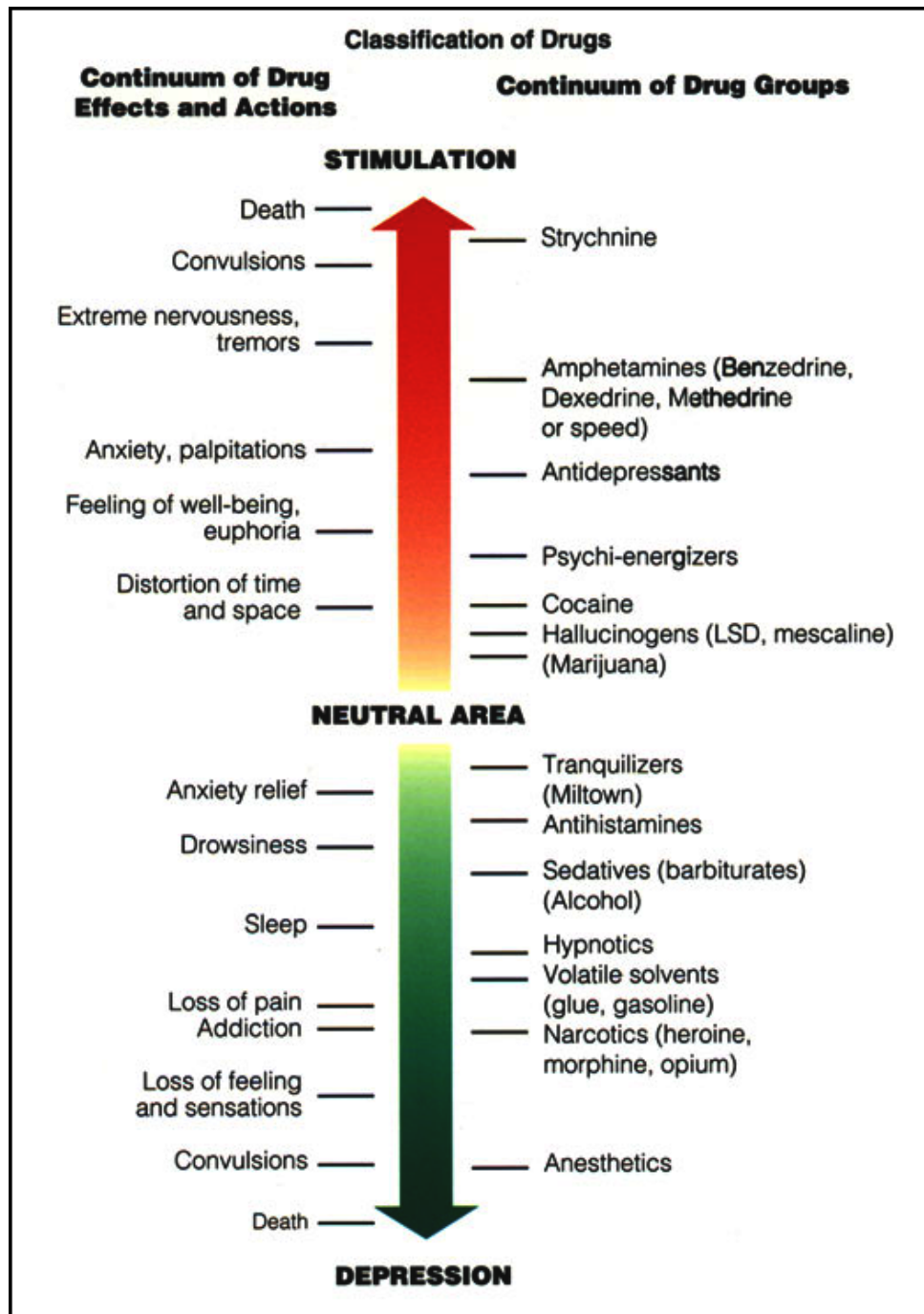
Drug impairs neuron's ability to synthesize, store, or release transmitter. Molecules may leak and degrade prematurely.



Drug binds with receptor site but is not similar enough to transmitter to activate site. Blocks transmitter from activating site.



The “crash” after use of cocaine or amphetamines



**Neutral Area =
Bodily homeostasis**

NORTH AMERICAN NON-PRESCRIPTION DRUG USE

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Inhalants - highest use in 8th Grade

~ 20 % have used an inhalant previous year

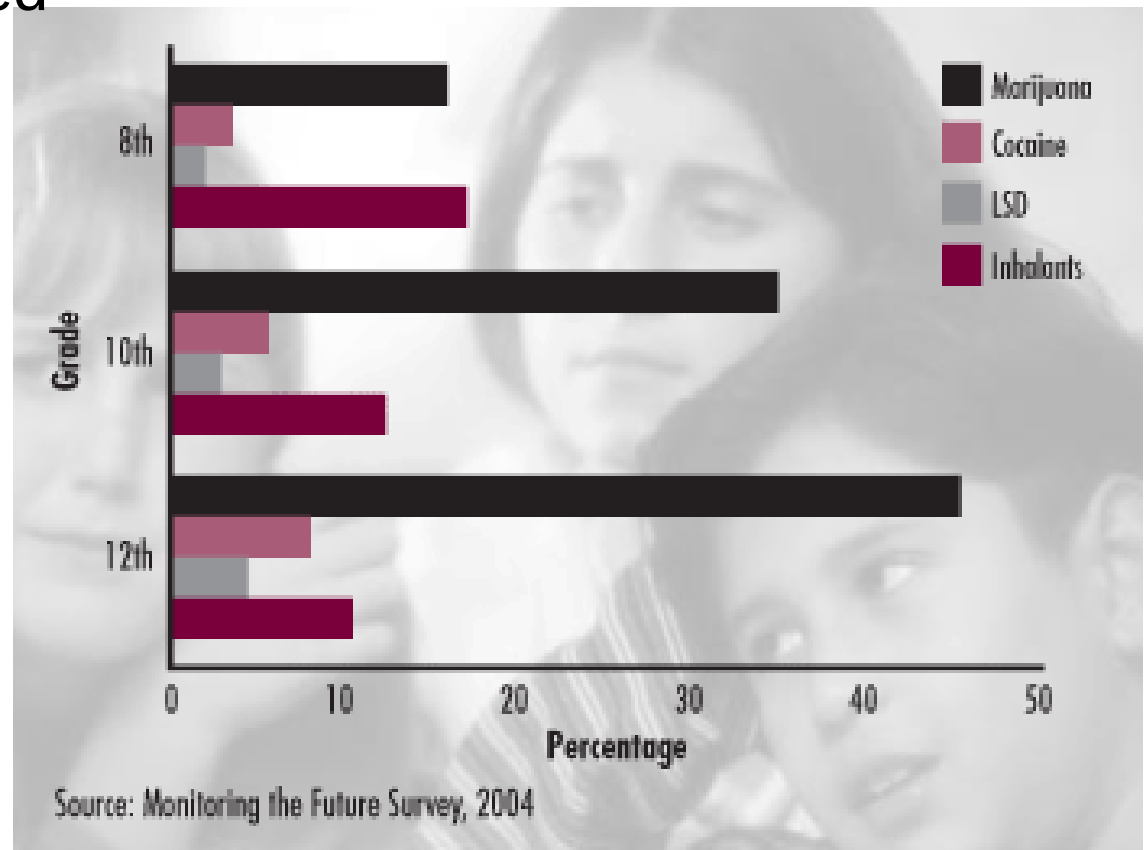
By Grade 12, reported
Use in past year:

Marijuana 48%

Inhalant 11%

Cocaine 9%

LSD 5%



Long Term Effects of Ecstasy: Animals Studies Indicate Neurotoxicity

Brain chemistry changes

- serotonin metabolites reduced
- serotonin reduced



Brain structure changes

- serotonin transporters reduced
- serotonin terminals degenerate



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