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Next  
Step  
TEST PREP

**Psychology and Sociology Public  
Office hours**

# Today's Info Session

- ▶ **Welcome to this Info Session!**
- ▶ **Introduction**
- ▶ **Subjects Tested on the MCAT**
- ▶ **Psychology and Sociology**
- ▶ **Practice Passage**
- ▶ **How Can Next Step Help?**
- ▶ **Questions?**

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**MCAT**  
Medical College  
Admission Test

WHAT IS YOUR NEXT STEP?

# Introduction

**Hi, I'm Phil!**

- ▶ **MCAT Content writer**
  - ▶ **Tutored and taught for 9+ years**
  - ▶ **Attended University of Nebraska Medical Center as an MD/PhD student.**
- ✓ **Next Step is a team of test prep and educational experts committed to excellence.**



# Who Is Next Step?

- Began in 2009 as a tutoring company
- Focus on graduate admissions tests only
- Team of educational experts
- First company to have materials built from ground up for 2015 MCAT format
- Now the first company to have new 2018 MCAT Interface

✓ **We never stop improving our materials!**

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# Exam Overview

- ▶ **Four sections – three science, one verbal (CARS)**
- ▶ **Science sections all have same format/time constraints**
- ▶ **Passages and discrete questions alternate**
- ▶ **Some math required, but no calculator is provided**

Section	Time Allowed	Number of Questions	Question Format
Chemical and Physical Foundations	95 min	59	10 passages, 15 discretives
Critical Analysis and Reasoning Skills	90 min	53	9 passages
Biological and Biochemical Foundations	95 min	59	10 passages, 15 discretives
Psychological and Sociological Foundations	95 min	59	10 passages, 15 discretives

# Subjects Tested

## Chemical and Physical Foundations

- 30% general chemistry
- 25% physics
- 25% biochemistry
- 15% organic chemistry
- 5% biology

## Bio and Biochemical Foundations

- 65% biology
- 25% biochemistry
- 5% organic chemistry
- 5% general chemistry

## Psychological and Sociological Foundations

- 65% psychology
- 30% sociology
- 5% biology

# Psych/Soc Content Review

Congrats on making progress through our MCAT course! Today let's focus on psych and soc:

- **Overall study strategies**

  - Active learning*

  - Big-picture perspective*

  - Test-like thinking*

- **High-yield topics**

  - Perception*

  - Memory*

  - Emotions*

  - Bias, prejudice, and discrimination*

  - Social inequality*

  - Experimental design*

# Psych/Soc Study Strategies

**Keep in the back of your mind:**

*How does this knowledge apply to future clinicians?*

*How is this knowledge testable?*

**When studying, ask yourself:**

*Why does this work the way it does? What absolutely must be memorized?*

**Use active learning strategies**

*Study sheets, Venn diagrams, explain to others...*



# Perception

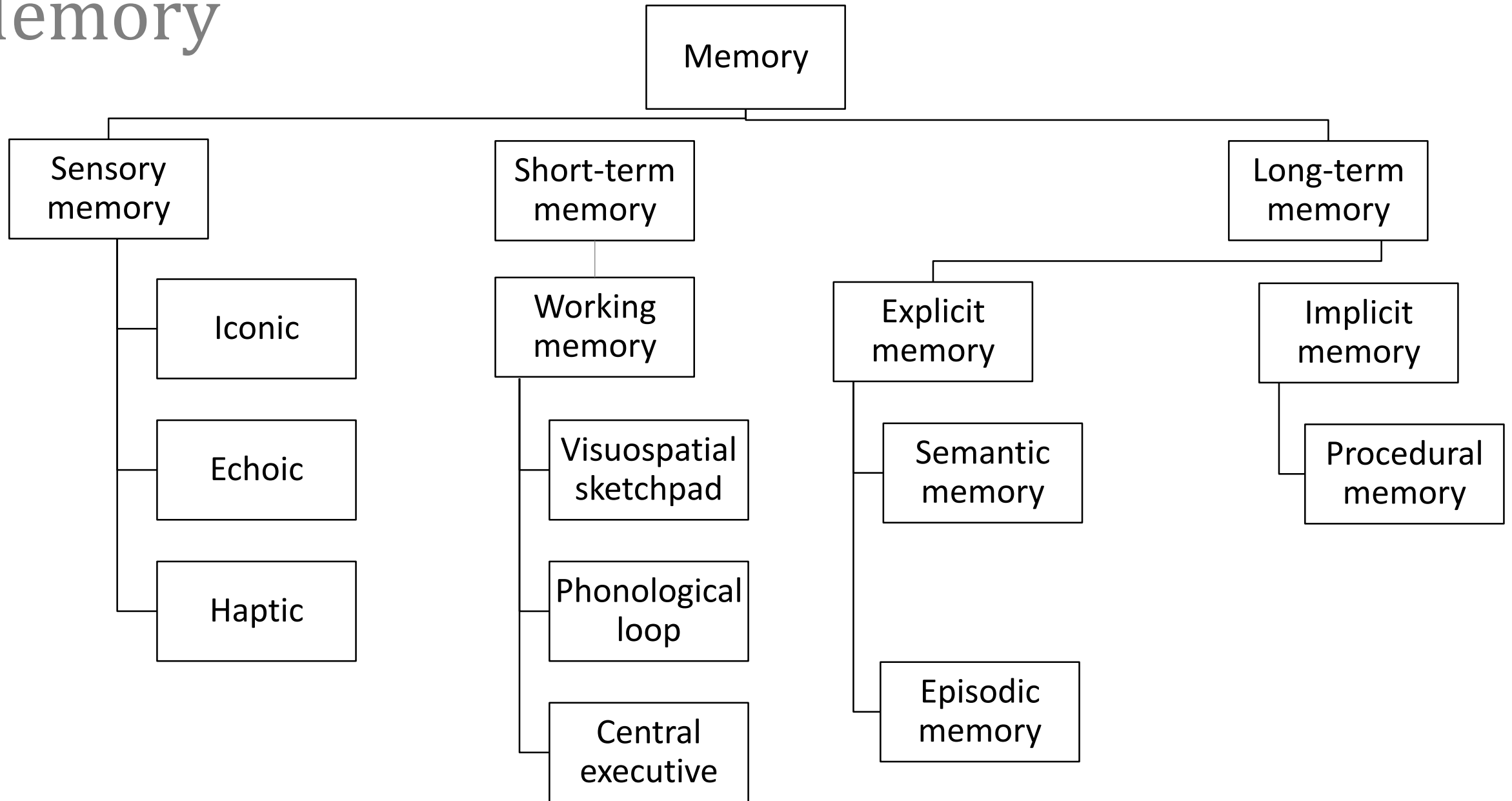
- **Perception: interpretation/organization of sensory info**
  - *Perception ≠ sensation*
- **Types of thresholds**
  - *Absolute*
  - *Threshold of conscious perception*
  - *Difference (just-noticeable difference)*
- **Signal detection theory**
  - *Detecting a stimulus depends on both sensory and non-sensory factors*
  - *Can you come up with some examples?*

- **Weber's Law**

$$\frac{\Delta I}{I} = \text{constant}$$

*Can you come up with examples of Weber's Law in action?*

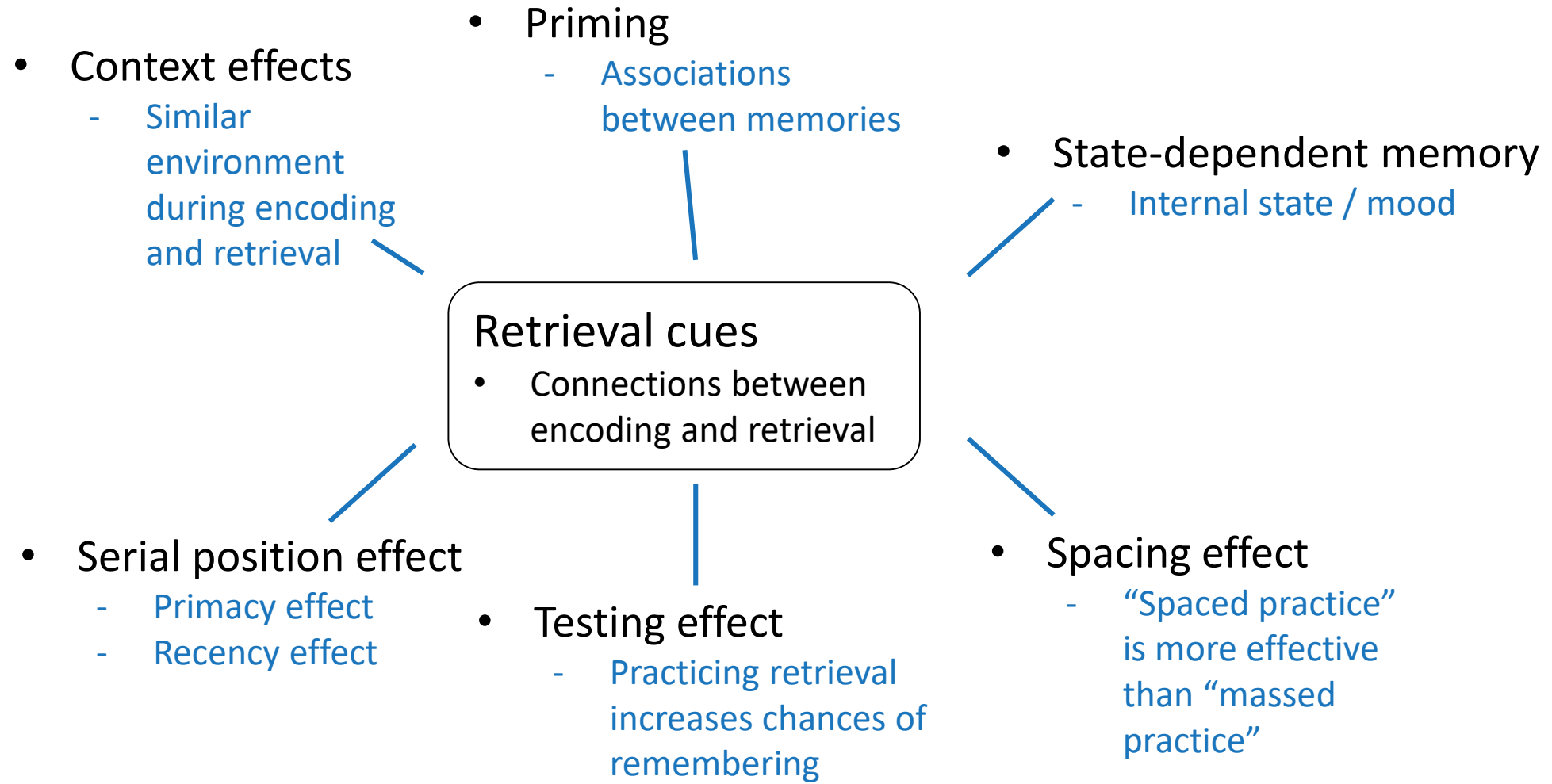
# Memory



# Memory

## Recall vs. recognition

- *Free recall*
- *Cued recall*
- *Serial recall*



# Memory

## Proactive vs. retroactive interference

- *Proactive: old info interferes with new*
- *Retroactive: new info interferes with recall of old info*
- *Examples?*

## Anterograde vs. retrograde amnesia

- *Anterograde: inability to form new memories*
- *Retrograde: inability to recall old memories*

## Aging and memory:

### What declines?

- Free recall
- Ability to form new episodic memories
- Processing speed
- Divided attention

### What remains stable?

- Procedural memory
- Implicit memory
- Recognition

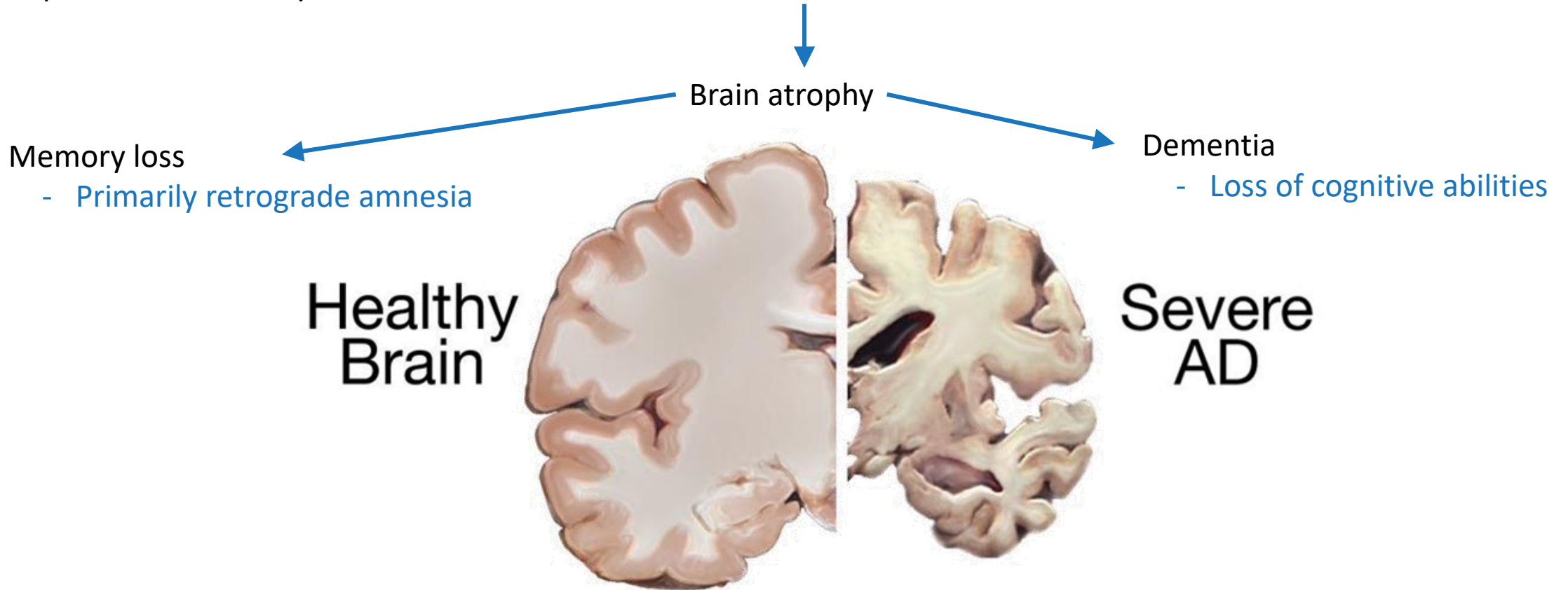
### What can improve?

- Semantic memory
- Ability to use knowledge and experience
- Emotional reasoning

# Memory

## Alzheimer's disease

- Chronic degeneration
- ↓ production of acetylcholine → ↓ function of **hippocampus**



# Memory

3. Which of the following accurately depict(s) the order in which a fragment of information might progress through various types of memory during storage?

I. Echoic memory → short-term memory → long-term memory

II. Iconic memory → short-term memory

III. Sensory memory → iconic memory → short-term memory → long-term memory

IV. Working memory → sensory memory → short-term memory

A) I only

B) I and II only

C) I and III only

D) II, III, and IV only

4. To choose the correct answer on a multiple-choice exam like the MCAT, students use:

A) recognition.

B) maintenance rehearsal.

C) recall.

D) procedural memory

5. Recalling that lysine is a basic amino acid involves which division(s) of long-term memory?

I. Semantic memory

II. Declarative memory

III. Episodic memory

IV. Explicit memory

A) I only

B) I and IV only

C) I, II, and IV only

D) II, III, and IV only

# Memory

6. After damage to his prefrontal cortex, Philip's working memory started to show serious deficits. Which of these tasks would Philip have the LEAST trouble completing?

- A) Playing a "concentration" game in which he must remember the identities of multiple playing cards at once
- B) Multiplying seven and twelve in his head, then dividing the product by three
- C) Closing his eyes and navigating through a room that he had only been present in for ten minutes
- D) Reciting the names of the fifty states by singing them in tune with a previously-learned song

7. Jade, a law student, successfully remembers all of the civil tax codes required for her morning exam. She then jumps on her motorcycle and rides home, where she relaxes by playing a video game in which she wins small tokens. Which choice correctly pairs each action with the type of memory or process involved?

- A) Remembering tax codes – semantic; riding her motorcycle – explicit; playing the video game – procedural
- B) Remembering tax codes – declarative; riding her motorcycle – procedural; playing the video game – operant conditioning
- C) Remembering tax codes – episodic; riding her motorcycle – procedural; playing the video game – explicit
- D) Remembering tax codes – semantic; riding her motorcycle – working; playing the video game – classical conditioning

# Memory

8. A young child meets nearly every academic standard for her age, but cannot seem to learn how to hold a pencil. Though she practices every morning, her writing does not improve at all. This girl may be suffering from:

- A) genetic damage to part of her hippocampus.
- B) a viral infection that is impairing her declarative memory.
- C) a moderately underdeveloped cerebellum.
- D) a lesion on her auditory cortex.

9. With regard to memory, the two main types of interference are:

- A) proactive and retrograde.
- B) retroactive and proactive.
- C) reactive and proactive.
- D) retrograde and anterograde.

10. An elderly man has no trouble remembering how to play bridge and drive his car, but cannot remember his new nurse's name, no matter how many times she tells him. This man likely suffers from:

- A) anterograde amnesia.
- B) dissociative fugue.
- C) a defect in his procedural memory.
- D) retrograde amnesia.

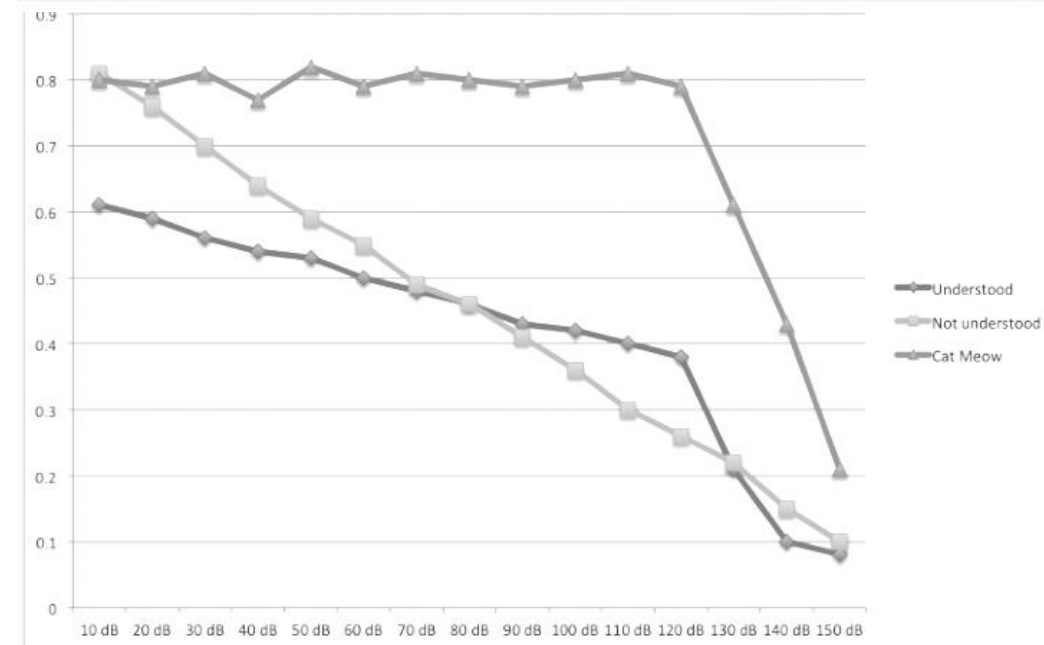
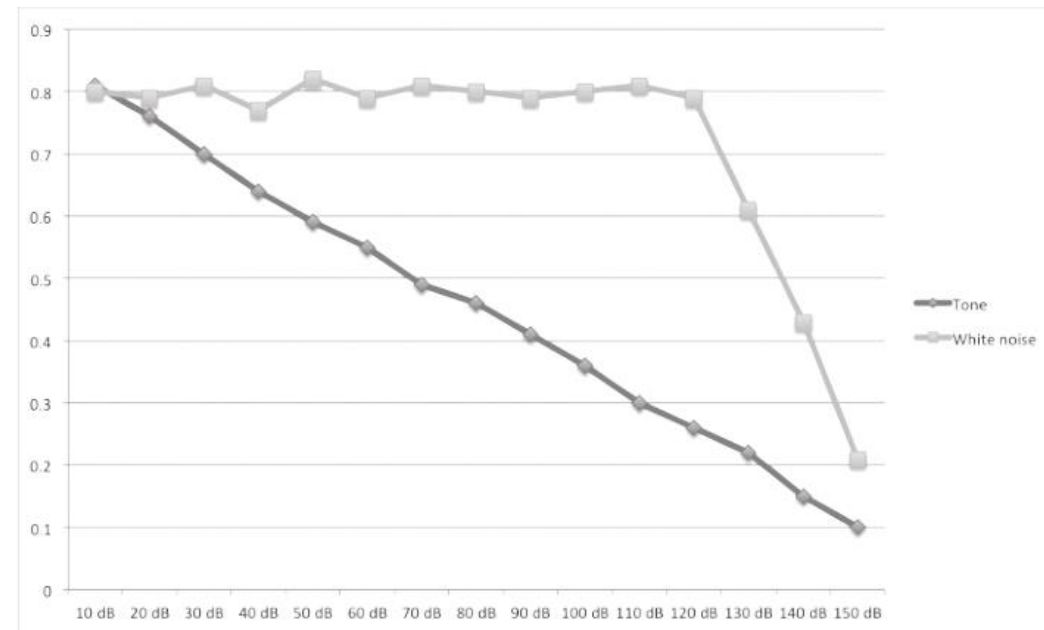


# Practice Passage

Weber's law presents an interesting exception in the case of sound. While other sorts of stimuli will have a constant just-noticeable difference (jnd) across the full range of perceptible stimuli (the change in stimulus intensity as a fraction of the original intensity is a constant), for sound this does not always hold true.

Figure 1 The jnd as a function of intensity for a single pure tone and for white noise.

Figure 2 The jnd as a function of intensity for a recording of speech in a language understood by the listener, one not understood by the listener, and a recognizable non-speech sound (a cat's meow)



# Practice Passage

22. In studies of the just-noticeable difference, perception is measured in what way?

- A) Sensation
- B) Discrimination
- C) Magnitude estimation
- D) Signal transduction

23. For the especially loud noises, subjects often report negative emotions such as anger after hearing several of the loud sounds. The James-Lange theory would posit that this emotional response:

- A) precedes and causes a person to experience physiological arousal which then contributes to further unpleasant affect.
- B) occurs simultaneously and independently of the physiological arousal stimulated by the loud sounds.
- C) is a result of both physiological arousal and a cognitive appraisal of that arousal.
- D) follows from and is caused by the physiological arousal experienced as a result of the loud sounds.

# Practice Passage

24. For nearly every type of sound played, the just-noticeable difference dropped significantly near or above 130 dB. Which of the following is the most likely reason?

A) Above a certain intensity level, sound perception also occurs as a result of signal transduction directly through the skull rather than solely through the ossicles and organ of Corti.

B) The threshold of pain is near or above 130 dB and the jnd for pain is much lower than for many other types of stimuli.

C) Study participants were more attentive to the especially loud sounds as a result of the physiological arousal those sounds created.

D) The distracting nature of the especially loud sounds made it more difficult for study participants to detect changes in stimulus intensity.

# Practice Passage

25. The experiment involved playing noises loud enough that some study participants may have experienced discomfort or even pain. For the experiment to be approved by the researchers' institutional review board, they must have done all of the following EXCEPT:

A) Keeping the sound intensity well below the level at which each individual study participant will experience discomfort

B) Determining the least harmful or invasive protocol to achieve the study's results

C) Obtaining informed consent from the study participants prior to beginning the study

D) Treating study participants equally regardless of factors such as socioeconomic status, race, or gender

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**Q&A**

# Next Step: Core Values

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**Educate Daily**



**Approachability**



**Authenticity**



**Professionalism**



**Ownership**

**We are dedicated to providing personalized support, advice and prep options that match each student's individual needs.**

# Students Have a Choice

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- ✓ **Over 50,000 students have used Next Step Test Prep in their MCAT Prep journey**
- **Always up-to-date content, strategy and tests**
- **Guaranteed Satisfaction**
- **Expert instructors on call for you**
- **No call center – instead, Academic Managers guide you all the way!**



4.7



# Personalized Options

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✓ No matter your study style, subject expertise, or MCAT goal, Next Step has an option for your personal needs and lifestyle.

- **Self-Prep Materials and Planning**
- **Guided Online Study with Free Extra Help**
- **Flexibility and Personalization**
- **One-on-One Tutoring**





# Next Step: Educate Every Day

- ✓ **Start your prep with high-value FREE practice to build a study plan suited to your goals, needs, and schedule.**

## **Industry's Best Free MCAT Practice Bundle**

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# Additional Free Resources

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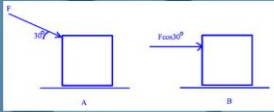
✓ Supplement your prep with additional support tools

- Question of the Day Quick Prep
- YouTube, Facebook and Instagram Content
- Ongoing Public Webinars and Q&A Sessions
- MCAT Blog: Content and Admissions
- Next Step MCAT Forum

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### Question of the Day

Two people push a box along a frictional surface. One pushes the box at an angle of  $30^\circ$  to horizontal with force  $F$  while the other pushes the box horizontally with force  $F\cos 30^\circ$ . Which person does the most work?



A) Person A  
B) Person B  
C) Person A and B do equal amounts of work  
D) cannot be determined

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Analyzing the Questions

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Analyzing the Questions

# New 2018 MCAT Interface

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- New highlighting features
- New strikethrough features
- New keyboard shortcuts
- New Navigation/Review Screens

Next Step is ready. Are you?

Medical College Admission Test - Clara Gillan Time Remaining: 01:21:34 18 of 59

Highlight Strikethrough Flag for Review

Remove Highlight

12 H

3 H

Figure 1 Eosinophil activation as measured by percent of CD69-positive cells after 3 and 12 hours of co-culture (\*p < 0.05, \*\*p < 0.01, \*\*\*p < 0.001)

Next, researchers aimed to assess the effect of NK co-culture on eosinophil degranulation. After 3 and 12 hours of co-culture, samples were centrifuged at 1500 rpm, and ECP levels were measured in the supernatants (Figure 2). No ECP was detected in supernatant culture of NK cells alone.

Question 18

Which of the statements below is supported by the experimental results, as shown in Figures 1 and 2?

- A. The duration of Eos co-culture with NK cells directly and linearly correlates to the amount of ECP found in the supernatant after centrifugation.
- B. Cells cultured with a 1:1 NK-to-Eos ratio displayed statistically similar levels of activation to cells cultured with a 5:1 NK-to-Eos ratio, as measured by CD69 expression.
- C. NK co-culture stimulates Eos activation while inhibiting degranulation.
- D. Co-culture with NK cells significantly increased Eos degranulation in all groups, as compared to Eos cells cultured alone.

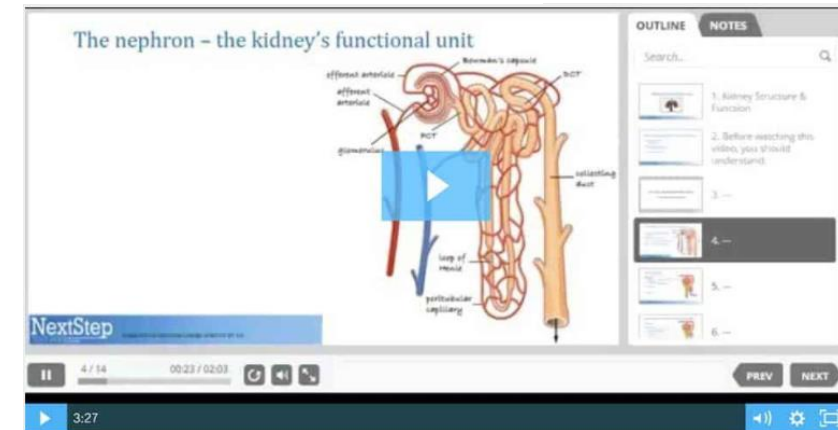
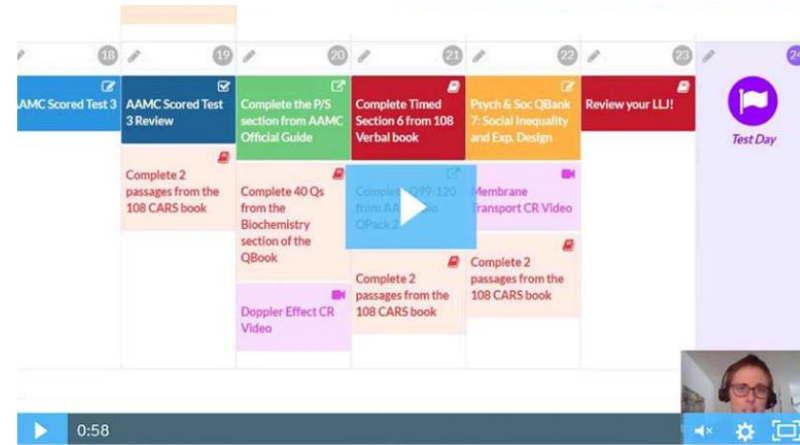
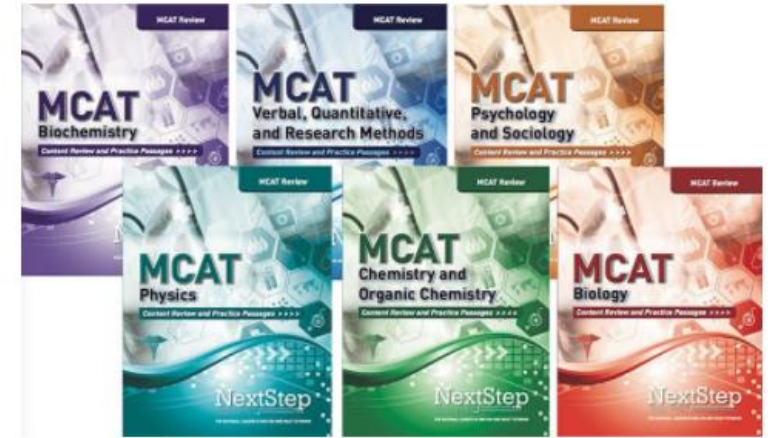
Periodic Table Review Screen Previous Next

✓ Your practice experience matters! Prep with the most realistic testing environment with Next Step.

# Take the Best Next Step

✓ Others say it. We deliver it.

- Most up-to-date Lesson Review Books in 4-color
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- Exclusive Study Plan Generator personalized for you
- Hundreds of hours of videos
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- Direct access to MCAT Content Team
- Affordable prep options: from books to tutoring




# MCAT Study Options

- **Best-in-Class MCAT Tutoring Packages**
  - Variety of packages: Crash Course to Elite
  - Choices include our MCAT Online Course
  - Personalized Study Plan for each student
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- **Most up-to-date MCAT Course**
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- **MCAT Practice Test Bundles**
  - Available in 4-, 6-, and 10-pack bundles

✓ **All aligned to new 2018 interface**

**Looking for free resources, or interested in signing up for future webinars?**

[nextsteptestprep.com/smith/](https://nextsteptestprep.com/smith/)

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