

## Psychological, Social, and Biological Foundations of Behavior

### What Will the Psychological, Social, and Biological Foundations of Behavior Section Test?

The Psychological, Social, and Biological Foundations of Behavior section asks you to solve problems by combining your knowledge of foundational concepts with your scientific inquiry and reasoning skills. This section tests your understanding of the ways psychological, social, and biological factors influence perceptions and reactions to the world; behavior and behavior change; what people think about themselves and others; the cultural and social differences that influence well-being; and the relationships between social stratification, access to resources, and well-being.

The Psychological, Social, and Biological Foundations of Behavior section emphasizes concepts that tomorrow's doctors need to know in order to serve an increasingly diverse population and have a clear understanding of the impact of behavior on health. Further, it communicates the need for future physicians to be prepared to deal with the human and social issues of medicine.

This section is designed to:

- Test psychology, sociology, and biology concepts that provide a solid foundation for learning in medical school about the behavioral and sociocultural determinants of health.
- Test concepts taught at many colleges and universities in first-semester psychology and sociology courses.
- Test biology concepts that relate to mental processes and behavior taught at many colleges and universities in introductory biology.
- Test basic research methods and statistics concepts described by many baccalaureate faculty as important to success in introductory science courses.
- Require you to demonstrate your scientific inquiry and reasoning, research methods, and statistics skills as applied to the social and behavioral sciences.

Test Section	Number of Questions	Time
Psychological, Social, and Biological Foundations of Behavior	59 (note that questions are a combination of passage-based and discrete questions)	95 minutes

## Scientific Inquiry and Reasoning Skills

As a reminder, the scientific inquiry and reasoning skills you will be asked to demonstrate on this section of the exam are:

### Knowledge of Scientific Concepts and Principles

- Demonstrating understanding of scientific concepts and principles.
- Identifying the relationships between closely related concepts.

### Scientific Reasoning and Problem-Solving

- Reasoning about scientific principles, theories, and models.
- Analyzing and evaluating scientific explanations and predictions.

### Reasoning About the Design and Execution of Research

- Demonstrating understanding of important components of scientific research.
- Reasoning about ethical issues in research.

### Data-Based and Statistical Reasoning

- Interpreting patterns in data presented in tables, figures, and graphs.
- Reasoning about data and drawing conclusions from them.

## General Mathematical Concepts and Techniques

It's important for you to know that questions on the natural, behavioral, and social sciences sections will ask you to use certain mathematical concepts and techniques. As the descriptions of the scientific inquiry and reasoning skills suggest, some questions will ask you to analyze and manipulate scientific data to show you can:

- Recognize and interpret linear, semilog, and log-log scales and calculate slopes from data found in figures, graphs, and tables.
- Demonstrate a general understanding of significant digits and the use of reasonable numerical estimates in performing measurements and calculations.
- Use metric units, including converting units within the metric system and between metric and English units (conversion factors will be provided when needed), and dimensional analysis (using units to balance equations).
- Perform arithmetic calculations involving the following: probability, proportion, ratio, percentage, and square-root estimations.
- Demonstrate a general understanding (Algebra II-level) of exponentials and logarithms (natural and base 10), scientific notation, and solving simultaneous equations.
- Demonstrate a general understanding of the following trigonometric concepts: definitions of basic (sine, cosine, tangent) and inverse ( $\sin^{-1}$ ,  $\cos^{-1}$ ,  $\tan^{-1}$ ) functions;  $\sin$  and  $\cos$  values of  $0^\circ$ ,  $90^\circ$ , and  $180^\circ$ ; relationships between the lengths of sides of right triangles containing angles of  $30^\circ$ ,  $45^\circ$ , and  $60^\circ$ .
- Demonstrate a general understanding of vector addition and subtraction and the right-hand rule (knowledge of dot and cross products is not required)

Note also that an understanding of calculus is *not* required, and a periodic table will be provided during the exam.

## Psychological, Social, and Biological Foundations of Behavior Distribution of Questions by Discipline, Foundational Concept, and Scientific Inquiry and Reasoning Skill

You may wonder how much psychology, sociology, and biology you'll see on this section of the MCAT exam, how many questions you'll get about a particular foundational concept, or how the scientific inquiry and reasoning skills will be distributed on your exam. The questions you see are likely to be distributed in the ways described below. These are the approximate percentages of questions you'll see on a test for each discipline, foundational concept, and scientific inquiry and reasoning skill.\*

---

\* Please note that about 5% of this test section will include psychology questions that are biologically relevant. This is in addition to the discipline target of 5% for introductory biology specified for this section.

(These percentages have been approximated to the nearest 5% and will vary from one test to another for a variety of reasons, including, but not limited to, controlling for question difficulty, using groups of questions that depend on a single passage, and using unscored field-test questions on each test form.)

Discipline:

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

Foundational Concept:

- Foundational Concept 6, 25%
- Foundational Concept 7, 35%
- Foundational Concept 8, 20%
- Foundational Concept 9, 15%
- Foundational Concept 10, 5%

Scientific Inquiry and Reasoning Skill:

- Skill 1, 35%
- Skill 2, 45%
- Skill 3, 10%
- Skill 4: 10%

### **Psychological, Social, and Biological Foundations of Behavior Framework of Foundational Concepts and Content Categories**

**Foundational Concept 6:** Biological, psychological, and sociocultural factors influence the ways that individuals perceive, think about, and react to the world.

The content categories for this foundational concept include

6A. Sensing the environment

6B. Making sense of the environment

6C. Responding to the world

**Foundational Concept 7:** Biological, psychological, and sociocultural factors influence behavior and behavior change.

The content categories for this foundational concept include

7A. Individual influences on behavior

7B. Social processes that influence human behavior

7C. Attitude and behavior change

**Foundational Concept 8:** Psychological, sociocultural, and biological factors influence the way we think about ourselves and others, as well as how we interact with others.

The content categories for this foundational concept include

8A. Self-identity

8B. Social thinking

8C. Social interactions

**Foundational Concept 9:** Cultural and social differences influence well-being.

The content categories for this foundational concept include

9A. Understanding social structure

9B. Demographic characteristics and processes

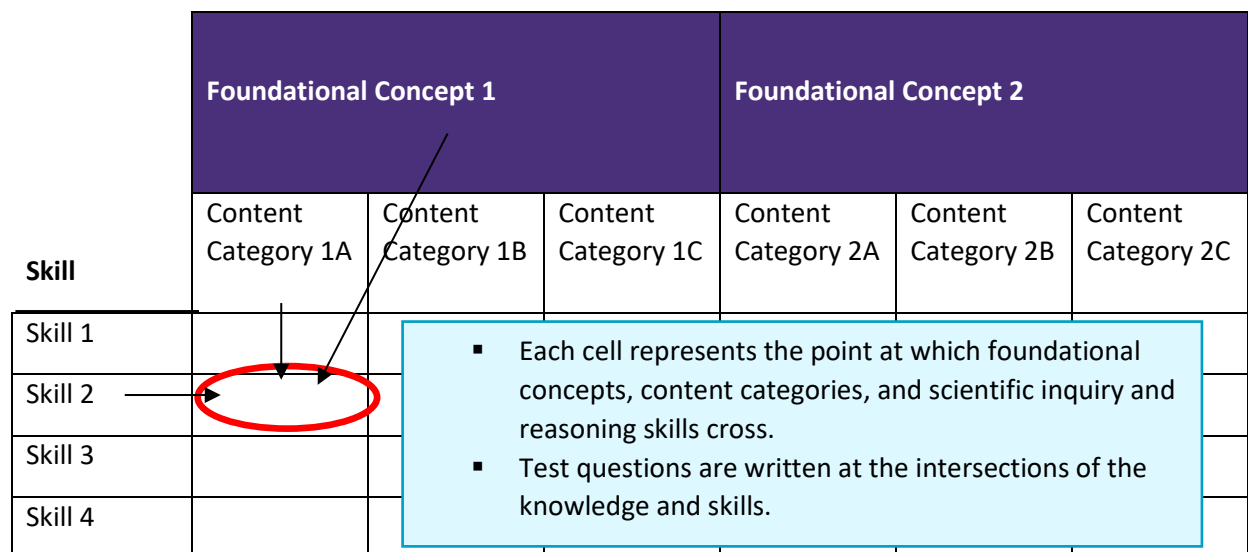
**Foundational Concept 10:** Social stratification and access to resources influence well-being.

The content category for this foundational concept is

10A. Social inequality

How Foundational Concepts and Content Categories Fit Together

The MCAT exam asks you to solve problems by combining your knowledge of concepts with your scientific inquiry and reasoning skills. The figure below illustrates how foundational concepts, content categories, and scientific inquiry and reasoning skills intersect to create test questions.



## Understanding the Foundational Concepts and Content Categories in the Psychological, Social, and Biological Foundations of Behavior Section

The following are detailed explanations of each foundational concept and related content category tested by the Psychological, Social, and Biological Foundations of Behavior section. As with the natural sciences sections, content lists describing specific topics and subtopics that define each content category are provided. The same content list is provided to the writers who develop the content of the exam. Here is an excerpt from the content list.

### EXCERPT FROM THE PSYCHOLOGICAL, SOCIAL, AND BIOLOGICAL FOUNDATIONS OF BEHAVIOR OUTLINE

- |   |
|---|
| <p><b>Self-Presentation and Interacting With Others (PSY, SOC) ← Topic</b></p> <ul style="list-style-type: none"> <li>▪ Expressing and detecting emotion ← Subtopic           <ul style="list-style-type: none"> <li>○ The role of gender in the expression and detection of emotion</li> <li>○ The role of culture in the expression and detection of emotion</li> </ul> </li> <li>▪ Presentation of self           <ul style="list-style-type: none"> <li>○ Impression management</li> <li>○ Front-stage vs. back-stage self (dramaturgical approach) (SOC)</li> </ul> </li> <li>▪ Verbal and nonverbal communication</li> <li>▪ Animal signals and communication (PSY, BIO)</li> </ul> |
|---|

The abbreviations found in parentheses indicate the course(s) in which undergraduate students at many colleges and universities learn about the topics and associated subtopics. The course abbreviations are:

- PSY: one semester of introductory psychology
- SOC: one semester of introductory sociology
- BIO: two-semester sequence of introductory biology

In preparing for the MCAT exam, you will be responsible for learning the topics and associated subtopics at the levels taught in the courses listed in parentheses. A small number of subtopics have course abbreviations indicated in parentheses. In those cases, you are responsible *only* for learning the subtopics as they are taught in the course(s) indicated.

Using the excerpt above as an example:

- You are responsible for learning about the topic Self-Presentation and Interacting With Others at the level taught in a typical introductory psychology course *and* in a typical introductory sociology course.
- You are responsible for learning about the sub-subtopic Front-stage vs. back-stage self (dramaturgical approach) *only* at the level taught in a typical introductory sociology course.

- You are responsible for learning about the subtopic Animal signals and communication at the level taught in a typical introductory psychology course *and* in a typical introductory biology course.

Remember that course content at your school may differ from course content at other colleges and universities. The topics and subtopics described in this chapter may be covered in courses with titles that are different from those listed here. Your prehealth advisor and faculty are important resources for your questions about course content.

**Psychological, Social, and Biological Foundations of Behavior**

**Foundational Concept 6**

Biological, psychological, and sociocultural factors influence the ways that individuals perceive, think about, and react to the world.

The way we sense, perceive, think about, and react to stimuli affects our experiences. Foundational Concept 6 focuses on these components of experience, starting with the initial detection and perception of stimuli through cognition and continuing to emotion and stress.

**6A: Sensing the environment**

Psychological, sociocultural, and biological factors affect how we sense and perceive the world. All sensory processing begins with first detecting a stimulus in the environment through sensory cells, receptors, and biological pathways.

After collecting sensory information, we then interpret and make sense of it. Although sensation and perception are distinct functions, they are both influenced by psychological, social, and biological factors and thus become almost indistinguishable in practice. This complexity is illuminated by examining human sight, hearing, touch, taste, and smell.

The content in this category covers sensation and perception across all human senses.

**Sensory Processing (PSY, BIO)**

- Sensation
  - Threshold
  - Weber’s Law (PSY)
  - Signal detection theory (PSY)
  - Sensory adaptation
  - Psychophysics
- Sensory receptors
  - Sensory pathways
  - Types of sensory receptors

**Vision (PSY, BIO)**

- Structure and function of the eye
- Visual processing
  - Visual pathways in the brain
  - Parallel processing (PSY)
  - Feature detection (PSY)

**Hearing (PSY, BIO)**

- Structure and function of the ear
- Auditory processing (e.g., auditory pathways in the brain)
- Sensory reception by hair cells

**Other Senses (PSY, BIO)**

- Somatosensation (e.g., pain perception)
- Taste (e.g., taste buds (chemoreceptors) that detect specific chemicals)



	<ul style="list-style-type: none"> <li>▪ Smell             <ul style="list-style-type: none"> <li>○ Olfactory cells (chemoreceptors) that detect specific chemicals</li> <li>○ Pheromones (BIO)</li> <li>○ Olfactory pathways in the brain (BIO)</li> </ul> </li> <li>▪ Kinesthetic sense (PSY)</li> <li>▪ Vestibular sense</li> </ul> <p><b>Perception (PSY)</b></p> <ul style="list-style-type: none"> <li>▪ Bottom-up/top-down processing</li> <li>▪ Perceptual organization (e.g., depth, form, motion, constancy)</li> <li>▪ Gestalt principles</li> </ul>
<p><b>6B: Making sense of the environment</b></p> <p>The way we think about the world depends on our awareness, thoughts, knowledge, and memories. It is also influenced by our ability to solve problems, make decisions, form judgments, and communicate. Psychological, sociocultural, and biological influences determine the development and use of these different yet convergent processes.</p> <p>Biological factors underlie the mental processes that create our reality, shape our perception of the world, and influence the way we perceive and react to every aspect of our lives.</p> <p>The content in this category covers critical aspects of cognition — including consciousness, cognitive development, problem-solving and decision-making, intelligence, memory, and language.</p>	<p><b>Attention (PSY)</b></p> <ul style="list-style-type: none"> <li>▪ Selective attention</li> <li>▪ Divided attention</li> </ul> <p><b>Cognition (PSY)</b></p> <ul style="list-style-type: none"> <li>▪ Information-processing model</li> <li>▪ Cognitive development             <ul style="list-style-type: none"> <li>○ Piaget’s stages of cognitive development</li> <li>○ Cognitive changes in late adulthood</li> <li>○ Role of culture in cognitive development</li> <li>○ Influence of heredity and environment on cognitive development</li> </ul> </li> <li>▪ Biological factors that affect cognition (PSY, BIO)</li> <li>▪ Problem-solving and decision-making             <ul style="list-style-type: none"> <li>○ Types of problem-solving</li> <li>○ Barriers to effective problem-solving</li> <li>○ Approaches to problem-solving</li> <li>○ Heuristics and biases (e.g., overconfidence, belief perseverance)</li> </ul> </li> <li>▪ Intellectual functioning             <ul style="list-style-type: none"> <li>○ Theories of intelligence</li> <li>○ Influence of heredity and environment on intelligence</li> <li>○ Variations in intellectual ability</li> </ul> </li> </ul>

	<p><b>Consciousness (PSY)</b></p> <ul style="list-style-type: none"> <li>▪ States of consciousness             <ul style="list-style-type: none"> <li>○ Alertness (PSY, BIO)</li> <li>○ Sleep                 <ul style="list-style-type: none"> <li>▪ Stages of sleep</li> <li>▪ Sleep cycles and changes to sleep cycles</li> <li>▪ Sleep and circadian rhythms (PSY, BIO)</li> <li>▪ Dreaming</li> <li>▪ Sleep-wake disorders</li> </ul> </li> <li>○ Hypnosis and meditation</li> </ul> </li> <li>▪ Consciousness-altering drugs             <ul style="list-style-type: none"> <li>○ Types of consciousness-altering drugs and their effects on the nervous system and behavior</li> <li>○ Drug addiction and the reward pathway in the brain</li> </ul> </li> </ul> <p><b>Memory (PSY)</b></p> <ul style="list-style-type: none"> <li>▪ Encoding             <ul style="list-style-type: none"> <li>○ Process of encoding information</li> <li>○ Processes that aid in encoding memories</li> </ul> </li> <li>▪ Storage             <ul style="list-style-type: none"> <li>○ Types of memory storage (e.g., sensory, working, long-term)</li> <li>○ Semantic networks and spreading activation</li> </ul> </li> <li>▪ Retrieval             <ul style="list-style-type: none"> <li>○ Recall, recognition, and relearning</li> <li>○ Retrieval cues</li> <li>○ The role of emotion in retrieving memories (PSY, BIO)</li> <li>○ Processes that aid retrieval</li> </ul> </li> <li>▪ Forgetting             <ul style="list-style-type: none"> <li>○ Aging and memory</li> <li>○ Memory dysfunctions (e.g., Alzheimer's disease, Korsakoff's syndrome)</li> <li>○ Decay</li> <li>○ Interference</li> <li>○ Memory construction and source monitoring</li> </ul> </li> <li>▪ Changes in synaptic connections underlie memory and learning (PSY, BIO)             <ul style="list-style-type: none"> <li>○ Neural plasticity</li> </ul> </li> </ul>
--	--

	<ul style="list-style-type: none"> <li>○ Memory and learning</li> <li>○ Long-term potentiation</li> </ul> <p><b>Language (PSY)</b></p> <ul style="list-style-type: none"> <li>▪ Theories of language development (e.g., learning, nativist, interactionist)</li> <li>▪ Influence of language on cognition</li> <li>▪ Brain areas that control language and speech (PSY, BIO)</li> </ul>
<p><b>6C: Responding to the world</b></p> <p>We experience a barrage of environmental stimuli throughout the course of our lives. In many cases, environmental stimuli trigger physiological responses, such as an elevated heart rate, increased perspiration, or heightened feelings of anxiety. How we perceive and interpret these physiological responses is complex and influenced by psychological, sociocultural, and biological factors.</p> <p>Emotional responses, such as feelings of happiness, sadness, anger, or stress, are often born out of our interpretation of this interplay of physiological responses. Our experience with emotions and stress not only affects our behavior, but also shapes our interactions with others.</p> <p>The content in this category covers the basic components and theories of emotion and their underlying psychological, sociocultural, and biological factors. It also addresses stress, stress outcomes, and stress management.</p>	<p><b>Emotion (PSY)</b></p> <ul style="list-style-type: none"> <li>▪ Three components of emotion (i.e., cognitive, physiological, behavioral)</li> <li>▪ Universal emotions (i.e., fear, anger, happiness, surprise, joy, disgust, sadness)</li> <li>▪ Adaptive role of emotion</li> <li>▪ Theories of emotion             <ul style="list-style-type: none"> <li>○ James-Lange theory</li> <li>○ Cannon-Bard theory</li> <li>○ Schachter-Singer theory</li> </ul> </li> <li>▪ The role of biological processes in perceiving emotion (PSY, BIO)             <ul style="list-style-type: none"> <li>○ Brain regions involved in the generation and experience of emotions</li> <li>○ The role of the limbic system in emotion</li> <li>○ Emotion and the autonomic nervous system</li> <li>○ Physiological markers of emotion (signatures of emotion)</li> </ul> </li> </ul> <p><b>Stress (PSY)</b></p> <ul style="list-style-type: none"> <li>▪ The nature of stress             <ul style="list-style-type: none"> <li>○ Appraisal</li> <li>○ Different types of stressors (e.g., cataclysmic events, personal)</li> <li>○ Effects of stress on psychological functions</li> </ul> </li> </ul>

	<ul style="list-style-type: none"><li>▪ Stress outcomes, response to stressors<ul style="list-style-type: none"><li>○ Physiological (PSY, BIO)</li><li>○ Emotional</li><li>○ Behavioral</li></ul></li><li>▪ Managing stress (e.g., exercise, relaxation, spirituality)</li></ul>
--	--

**Psychological, Social, and Biological Foundations of Behavior**

**Foundational Concept 7**

Biological, psychological, and sociocultural factors influence behavior and behavior change.

Human behavior is complex and often surprising, differing across individuals in the same situation and within an individual across different situations. A full understanding of human behavior requires knowledge of the interplay between psychological, sociocultural, and biological factors related to behavior. This interplay has important implications for the way we behave and the likelihood of behavior change.

Foundational Concept 7 focuses on individual and social determinants of behavior and behavior change.

**Content Categories**

- *Category 7A* focuses on the individual psychological and biological factors that affect behavior.
- *Category 7B* focuses on how social factors, such as groups and social norms, affect behavior.
- *Category 7C* focuses on how learning affects behavior, as well as the role of attitude theories in behavior and behavior change.

With these building blocks, medical students will be able to learn how behavior can either support health or increase risk for disease.

**7A: Individual influences on behavior**

A complex interplay of psychological and biological factors shapes behavior. Biological structures and processes serve as the pathways by which bodies carry out activities. They also affect predispositions to behave in certain ways, shape personalities, and influence the likelihood of developing psychological disorders. Psychological factors also affect behavior and, consequently, health and well-being.

The content in this category covers biological bases of behavior, including the effect of genetics and how the nervous and endocrine systems affect behavior. It also addresses how personality, psychological disorders, motivation, and attitudes affect behavior. Some of these topics are learned in the context of nonhuman animal species.

**Biological Bases of Behavior (PSY, BIO)**

- The nervous system
  - Neurons (e.g., the reflex arc)
  - Neurotransmitters
  - Structure and function of the peripheral nervous system
  - Structure and function of the central nervous system
    - The brain
      - Forebrain
      - Midbrain
      - Hindbrain
      - Lateralization of cortical functions
      - Methods used in studying the brain
    - The spinal cord
- Neuronal communication and its influence on behavior (PSY)
- Influence of neurotransmitters on behavior (PSY)

	<ul style="list-style-type: none"> <li>▪ The endocrine system             <ul style="list-style-type: none"> <li>○ Components of the endocrine system</li> <li>○ Effects of the endocrine system on behavior</li> </ul> </li> <li>▪ Behavioral genetics             <ul style="list-style-type: none"> <li>○ Genes, temperament, and heredity</li> <li>○ Adaptive value of traits and behaviors</li> <li>○ Interaction between heredity and environmental influences</li> </ul> </li> <li>▪ Influence of genetic and environmental factors on the development of behaviors             <ul style="list-style-type: none"> <li>○ Experience and behavior (PSY)</li> <li>○ Regulatory genes and behavior (BIO)</li> <li>○ Genetically based behavioral variation in natural populations</li> </ul> </li> <li>▪ Human physiological development (PSY)             <ul style="list-style-type: none"> <li>○ Prenatal development</li> <li>○ Motor development</li> <li>○ Developmental changes in adolescence</li> </ul> </li> </ul> <p><b>Personality (PSY)</b></p> <ul style="list-style-type: none"> <li>▪ Theories of personality             <ul style="list-style-type: none"> <li>○ Psychoanalytic perspective</li> <li>○ Humanistic perspective</li> <li>○ Trait perspective</li> <li>○ Social cognitive perspective</li> <li>○ Biological perspective</li> <li>○ Behaviorist perspective</li> </ul> </li> <li>▪ Situational approach to explaining behavior</li> </ul> <p><b>Psychological Disorders (PSY)</b></p> <ul style="list-style-type: none"> <li>▪ Understanding psychological disorders             <ul style="list-style-type: none"> <li>○ Biomedical vs. biopsychosocial approaches</li> <li>○ Classifying psychological disorders</li> <li>○ Rates of psychological disorders</li> </ul> </li> <li>▪ Types of psychological disorders             <ul style="list-style-type: none"> <li>○ Anxiety disorders</li> <li>○ Obsessive-compulsive disorder</li> <li>○ Trauma- and stressor-related disorders</li> <li>○ Somatic symptom and related disorders</li> <li>○ Bipolar and related disorders</li> </ul> </li> </ul>
--	---

	<ul style="list-style-type: none"> <li>○ Depressive disorders</li> <li>○ Schizophrenia</li> <li>○ Dissociative disorders</li> <li>○ Personality disorders</li> <li>▪ Biological bases of nervous system disorders (PSY, BIO)             <ul style="list-style-type: none"> <li>○ Schizophrenia</li> <li>○ Depression</li> <li>○ Alzheimer's disease</li> <li>○ Parkinson's disease</li> <li>○ Stem cell-based therapy to regenerate neurons in the central nervous system (BIO)</li> </ul> </li> </ul> <p><b>Motivation (PSY)</b></p> <ul style="list-style-type: none"> <li>▪ Factors that influence motivation             <ul style="list-style-type: none"> <li>○ Instinct</li> <li>○ Arousal</li> <li>○ Drives (e.g., negative-feedback systems) (PSY, BIO)</li> <li>○ Needs</li> </ul> </li> <li>▪ Theories that explain how motivation affects human behavior             <ul style="list-style-type: none"> <li>○ Drive reduction theory</li> <li>○ Incentive theory</li> <li>○ Other theories (e.g., cognitive, need-based)</li> </ul> </li> <li>▪ Biological and sociocultural motivators that regulate behavior (e.g., hunger, sex drive, substance addiction)</li> </ul> <p><b>Attitudes (PSY)</b></p> <ul style="list-style-type: none"> <li>▪ Components of attitudes (i.e., cognitive, affective, behavioral)</li> <li>▪ The link between attitudes and behavior             <ul style="list-style-type: none"> <li>○ Processes by which behavior influences attitudes (e.g., foot-in-the door phenomenon, role-playing effects)</li> <li>○ Processes by which attitudes influence behavior</li> <li>○ Cognitive dissonance theory</li> </ul> </li> </ul>
--	---

<p><b>7B: Social processes that influence human behavior</b></p> <p>Many social processes influence human behavior; in fact, the mere presence of other individuals can influence our behavior. Groups and social norms also exert influence over our behavior. Oftentimes, social processes influence our behavior through unwritten rules that define acceptable and unacceptable behavior in society.</p> <p>Our understanding of groups and social norms is learned through the process of socialization. What we learn about the groups and society to which we belong affects our behavior and influences our perceptions and interactions with others.</p> <p>The content in this category covers how the presence of others, group decision-making processes, social norms, and socialization shape our behavior.</p>	<p><b>How the Presence of Others Affects Individual Behavior (PSY)</b></p> <ul style="list-style-type: none"> <li>▪ Social facilitation</li> <li>▪ Deindividuation</li> <li>▪ Bystander effect</li> <li>▪ Social loafing</li> <li>▪ Social control (SOC)</li> <li>▪ Peer pressure (PSY, SOC)</li> <li>▪ Conformity (PSY, SOC)</li> <li>▪ Obedience (PSY, SOC)</li> </ul> <p><b>Group Decision-Making Processes (PSY, SOC)</b></p> <ul style="list-style-type: none"> <li>▪ Group polarization (PSY)</li> <li>▪ Groupthink</li> </ul> <p><b>Normative and Nonnormative Behavior (SOC)</b></p> <ul style="list-style-type: none"> <li>▪ Social norms (PSY, SOC) <ul style="list-style-type: none"> <li>○ Sanctions (SOC)</li> <li>○ Folkways, mores, and taboos (SOC)</li> <li>○ Anomie (SOC)</li> </ul> </li> <li>▪ Deviance <ul style="list-style-type: none"> <li>○ Perspectives on deviance (e.g., differential association, labeling theory, strain theory)</li> </ul> </li> <li>▪ Aspects of collective behavior (e.g., fads, mass hysteria, riots)</li> </ul> <p><b>Socialization (PSY, SOC)</b></p> <ul style="list-style-type: none"> <li>▪ Agents of socialization (e.g., the family, mass media, peers, workplace)</li> </ul>
<p><b>7C: Attitude and behavior change</b></p> <p>Learning is a relatively permanent change in behavior brought about by experience. There are a number of different types of learning, which include habituation as well as associative, observational, and social learning.</p> <p>Although people can learn new behaviors and change their attitudes, psychological, environmental, and</p>	<p><b>Habituation and Dishabituation (PSY)</b></p> <p><b>Associative Learning (PSY)</b></p> <ul style="list-style-type: none"> <li>▪ Classical conditioning (PSY, BIO) <ul style="list-style-type: none"> <li>○ Neutral, conditioned, and unconditioned stimuli</li> <li>○ Conditioned and unconditioned response</li> <li>○ Processes: acquisition, extinction, spontaneous recovery, generalization, discrimination</li> </ul> </li> </ul>



biological factors influence whether those changes will be short-term or long-term. Understanding how people learn new behaviors and change their attitudes and which conditions affect learning helps us understand behavior and our interactions with others.

The content in this category covers learning and theories of attitude and behavior change. This includes the elaboration likelihood model and social cognitive theory.

- Operant conditioning (PSY, BIO)
  - Processes of shaping and extinction
  - Types of reinforcement: positive, negative, primary, conditional
  - Reinforcement schedules: fixed-ratio, variable-ratio, fixed-interval, variable-interval
  - Punishment
  - Escape and avoidance learning
- The role of cognitive processes in associative learning
- Biological processes that affect associative learning (e.g., biological predispositions, instinctive drift) (PSY, BIO)

**Observational Learning (PSY)**

- Modeling
- Biological processes that affect observational learning
  - Mirror neurons
  - Role of the brain in experiencing vicarious emotions
- Applications of observational learning to explain individual behavior

**Theories of Attitude and Behavior Change (PSY)**

- Elaboration likelihood model
- Social cognitive theory
- Factors that affect attitude change (e.g., changing behavior, characteristics of the message and target, social factors)

**Psychological, Social, and Biological Foundations of Behavior**

**Foundational Concept 8**

Psychological, sociocultural, and biological factors influence the way we think about ourselves and others, as well as how we interact with others.

The connection between how people think about themselves and others is complex and affects social interactions. The interplay between thoughts about ourselves, thoughts about others, and our biology has important implications for our sense of self and interpersonal relationships.

Foundational Concept 8 focuses on the physical, cognitive, and social components of our identity, as well as how these components influence the way we think about and interact with others.

**Content Categories**

- *Category 8A* focuses on the notion of self and identity formation.
- *Category 8B* focuses on the attitudes and beliefs that affect social interaction.
- *Category 8C* focuses on the actions and processes underlying social interactions.

With these building blocks, medical students will be able to learn how to communicate and collaborate with patients and other members of the health care team.

**8A: Self-identity**

*The self* refers to the thoughts and beliefs we have about ourselves. Our notion of the self is complex and multifaceted. It includes gender, racial, and ethnic identities, as well as beliefs about our ability to accomplish tasks and exert control over different situations.

Our notion of the self develops over time and is shaped by a variety of factors, including society, culture, individuals and groups, and our unique experiences. How we view ourselves influences our perceptions of others and, by extension, our interactions with them.

The content in this category covers the notions of self-concept and identity, along with the role of self-esteem, self-efficacy, and locus of control in the development of self-concept. Identity formation,

**Self-Concept, Self-Identity, and Social Identity (PSY, SOC)**

- The role of self-esteem, self-efficacy, and locus of control in self-concept and self-identity (PSY)
- Different types of identities (e.g., race/ethnicity, gender, age, sexual orientation, class)

**Formation of Identity (PSY, SOC)**

- Theories of identity development (e.g., gender, moral, psychosexual, social)
- Influence of social factors on identity formation
  - Influence of individuals (e.g., imitation, looking-glass self, role-taking)
  - Influence of groups (e.g., reference group)
- Influence of culture and socialization on identity formation

<p>including developmental stages and the social factors that affect identity formation, is also covered here. Theories are included to provide historical context for the field of identity formation.</p>	
<p><b>8B: Social thinking</b></p> <p><i>Social thinking</i> refers to the ways we view others and our environment, as well as how we interpret others' behaviors. A variety of factors — personality, environment, and culture — factor into the beliefs and attitudes we develop.</p> <p>Our beliefs and attitudes about others and the environment also shape the way we interact with each other. To interact with others, we need to interpret different aspects of a situation, including our perception of ourselves, the behavior of others, and the environment.</p> <p>The content in this category covers our attitudes about others and how those attitudes develop, including how perceptions of culture and environment affect attributions of behavior. It also covers how our attitudes about different groups — prejudice, stereotypes, stigma, and ethnocentrism — may influence our interactions with group members.</p>	<p><b>Attributing Behavior to Persons or Situations (PSY)</b></p> <ul style="list-style-type: none"> <li>▪ Attributional processes (e.g., fundamental attribution error, role of culture in attributions)</li> <li>▪ How self-perceptions shape our perceptions of others</li> <li>▪ How perceptions of the environment shape our perceptions of others</li> </ul> <p><b>Prejudice and Bias (PSY, SOC)</b></p> <ul style="list-style-type: none"> <li>▪ Processes that contribute to prejudice             <ul style="list-style-type: none"> <li>○ Power, prestige, and class (SOC)</li> <li>○ The role of emotion in prejudice (PSY)</li> <li>○ The role of cognition in prejudice (PSY)</li> </ul> </li> <li>▪ Stereotypes</li> <li>▪ Stigma (SOC)</li> <li>▪ Ethnocentrism (SOC)             <ul style="list-style-type: none"> <li>○ Ethnocentrism vs. cultural relativism</li> </ul> </li> </ul> <p><b>Processes Related to Stereotypes (PSY)</b></p> <ul style="list-style-type: none"> <li>▪ Self-fulfilling prophecy</li> <li>▪ Stereotype threat</li> </ul>
<p><b>8C: Social interactions</b></p> <p>Humans are social beings by nature. Though the sentiment is simple, the actions and processes underlying and shaping our social interactions are not.</p> <p>The changing nature of social interaction is important for understanding the mechanisms and processes through which people interact with each other, both individually and within groups. A variety of factors —</p>	<p><b>Elements of Social Interaction (PSY, SOC)</b></p> <ul style="list-style-type: none"> <li>▪ Status (SOC)             <ul style="list-style-type: none"> <li>○ Types of status (e.g., achieved, ascribed)</li> </ul> </li> <li>▪ Role             <ul style="list-style-type: none"> <li>○ Role conflict and role strain (SOC)</li> <li>○ Role exit (SOC)</li> </ul> </li> <li>▪ Groups             <ul style="list-style-type: none"> <li>○ Primary and secondary groups (SOC)</li> <li>○ In-group vs. out-group</li> </ul> </li> </ul>

<p>environment, culture, and biology — affect how we present ourselves to others and how we treat others. For example, perceptions of prejudice and stereotypes can lead to acts of discrimination, whereas positive attitudes about others can lead to the provision of help and social support.</p> <p>The content in this category covers the mechanisms of self-presentation and social interaction including expressing and detecting emotion, impression management, communication, the biological underpinning of social behavior, and discrimination.</p>	<ul style="list-style-type: none"> <li>○ Group size (e.g., dyads, triads) (SOC)</li> <li>▪ Networks (SOC)</li> <li>▪ Organizations (SOC)             <ul style="list-style-type: none"> <li>○ Formal organization</li> <li>○ Bureaucracy                 <ul style="list-style-type: none"> <li>▪ Characteristics of an ideal bureaucracy</li> <li>▪ Perspectives on bureaucracy (e.g., iron law of oligarchy, McDonalidization)</li> </ul> </li> </ul> </li> </ul> <p><b>Self-Presentation and Interacting With Others (PSY, SOC)</b></p> <ul style="list-style-type: none"> <li>▪ Expressing and detecting emotion             <ul style="list-style-type: none"> <li>○ The role of gender in the expression and detection of emotion</li> <li>○ The role of culture in the expression and detection of emotion</li> </ul> </li> <li>▪ Presentation of self             <ul style="list-style-type: none"> <li>○ Impression management</li> <li>○ Front-stage vs. back-stage self (dramaturgical approach) (SOC)</li> </ul> </li> <li>▪ Verbal and nonverbal communication</li> <li>▪ Animal signals and communication (PSY, BIO)</li> </ul> <p><b>Social Behavior (PSY)</b></p> <ul style="list-style-type: none"> <li>▪ Attraction</li> <li>▪ Aggression</li> <li>▪ Attachment</li> <li>▪ Altruism</li> <li>▪ Social support (PSY, SOC)</li> <li>▪ Biological explanations of social behavior in animals (PSY, BIO)             <ul style="list-style-type: none"> <li>○ Foraging behavior (BIO)</li> <li>○ Mating behavior and mate choice</li> <li>○ Applying game theory (BIO)</li> <li>○ Altruism</li> <li>○ Inclusive fitness (BIO)</li> </ul> </li> </ul>
---	---

	<p><b>Discrimination (PSY, SOC)</b></p> <ul style="list-style-type: none"><li>▪ Individual vs. institutional discrimination (SOC)</li><li>▪ The relationship between prejudice and discrimination</li><li>▪ How power, prestige, and class facilitate discrimination (SOC)</li></ul>
--	--

**Psychological, Social, and Biological Foundations of Behavior**

**Foundational Concept 9**

Cultural and social differences influence well-being.

Social structure and demographic factors influence people’s health and well-being. Knowledge about basic sociological theories, social institutions, culture, and demographic characteristics of societies is important to understand how these factors shape people’s lives and their daily interactions.

Foundational Concept 9 focuses on social variables and processes that influence our lives.

**Content Categories**

- *Category 9A* focuses on the link between social structures and human interactions.
- *Category 9B* focuses on the demographic characteristics and processes that define a society.

With these building blocks, medical students will be able to learn about the ways patients’ social and demographic backgrounds influence their perception of health and disease, the health care team, and therapeutic interventions.

**9A: Understanding social structure**

Social structure organizes all human societies. Elements of social structure include social institutions and culture. These elements are linked in a variety of ways and shape our experiences and interactions with others — a process that is reciprocal.

The content in this category provides a foundation for understanding social structure and the various forms of interactions within and among societies. It includes theoretical approaches to studying society and social groups, specific social institutions relevant to student preparation for medical school, and the construct of culture.

**Theoretical Approaches (SOC)**

- Microsociology vs. macrosociology
- Functionalism
- Conflict theory
- Symbolic interactionism
- Social constructionism
- Exchange-rational choice
- Feminist theory

**Social Institutions (SOC)**

- Education
  - Hidden curriculum
  - Teacher expectancy
  - Educational segregation and stratification
- Family (PSY, SOC)
  - Forms of kinship (SOC)
  - Diversity in family forms
  - Marriage and divorce
  - Violence in the family (e.g., child abuse, elder abuse, spousal abuse) (SOC)

	<ul style="list-style-type: none"> <li>▪ Religion             <ul style="list-style-type: none"> <li>○ Religiosity</li> <li>○ Types of religious organizations (e.g., churches, sects, cults)</li> <li>○ Religion and social change (e.g., modernization, secularization, fundamentalism)</li> </ul> </li> <li>▪ Government and economy             <ul style="list-style-type: none"> <li>○ Power and authority</li> <li>○ Comparative economic and political systems</li> <li>○ Division of labor</li> </ul> </li> <li>▪ Health and medicine             <ul style="list-style-type: none"> <li>○ Medicalization</li> <li>○ The sick role</li> <li>○ Delivery of health care</li> <li>○ Illness experience</li> <li>○ Social epidemiology</li> </ul> </li> </ul> <p><b>Culture (PSY, SOC)</b></p> <ul style="list-style-type: none"> <li>▪ Elements of culture (e.g., beliefs, language, rituals, symbols, values)</li> <li>▪ Material vs. symbolic culture (SOC)</li> <li>▪ Culture lag (SOC)</li> <li>▪ Culture shock (SOC)</li> <li>▪ Assimilation (SOC)</li> <li>▪ Multiculturalism (SOC)</li> <li>▪ Subcultures and countercultures (SOC)</li> <li>▪ Mass media and popular culture (SOC)</li> <li>▪ Evolution and human culture (PSY, BIO)</li> <li>▪ Transmission and diffusion (SOC)</li> </ul>
<p><b>9B: Demographic characteristics and processes</b></p> <p>To understand the structure of a society, it is important to understand the demographic characteristics and processes that define it. Knowledge of the demographic structure of societies and an understanding of how societies change help us comprehend the distinct processes and mechanisms through which social interaction occurs.</p>	<p><b>Demographic Structure of Society (PSY, SOC)</b></p> <ul style="list-style-type: none"> <li>▪ Age             <ul style="list-style-type: none"> <li>○ Aging and the life course</li> <li>○ Age cohorts (SOC)</li> <li>○ Social significance of aging</li> </ul> </li> <li>▪ Gender             <ul style="list-style-type: none"> <li>○ Sex vs. gender</li> <li>○ The social construction of gender (SOC)</li> <li>○ Gender segregation (SOC)</li> </ul> </li> </ul>

The content in this category covers the important demographic variables at the core of understanding societies and includes concepts related to demographic shifts and social change.

- Race and ethnicity (SOC)
  - The social construction of race
  - Racialization
  - Racial formation
- Immigration status (SOC)
  - Patterns of immigration
  - Intersections with race and ethnicity
- Sexual orientation

**Demographic Shifts and Social Change (SOC)**

- Theories of demographic change (e.g., Malthusian theory and demographic transition)
- Population growth and decline (e.g., population projections, population pyramids)
- Fertility, migration, and mortality
  - Fertility and mortality rates (e.g., total, crude, age-specific)
  - Patterns in fertility and mortality
  - Push and pull factors in migration
- Social movements
  - Relative deprivation
  - Organization of social movements
  - Movement strategies and tactics
- Globalization
  - Factors contributing to globalization (e.g., communication technology, economic interdependence)
  - Perspectives on globalization
  - Social changes in globalization (e.g., civil unrest, terrorism)
- Urbanization
  - Industrialization and urban growth
  - Suburbanization and urban decline
  - Gentrification and urban renewal



**Psychological, Social, and Biological Foundations of Behavior**

**Foundational Concept 10**

Social stratification and access to resources influence well-being.

Social stratification and inequality affect all human societies and shape the lives of all individuals by affording privileges to some and positioning others at a disadvantage.

Foundational Concept 10 focuses on the aspects of social inequality that influence how we interact with one another, as well as how we approach our health and the health care system.

**Content Category**

- *Category 10A* focuses on a broad understanding of social class, including theories of stratification, social mobility, and poverty.

With these building blocks, medical students will be able to learn about the ways social and economic factors can affect access to care and the probability of maintaining health and recovering from disease.

**10A: Social inequality**

Barriers to access to institutional resources exist for the segment of the population that is disenfranchised or lacks power within a given society. Barriers to access might include language, geographic location, socioeconomic status, immigration status, and racial/ethnic identity. Institutionalized racism and discrimination are also factors that prevent some groups from obtaining equal access to resources. An understanding of the barriers to access to institutional resources, informed by perspectives such as social justice, is essential to address health and health care disparities.

The content in this category covers spatial inequality, the structure and patterns of social class, and health disparities in relation to class, race/ethnicity, and gender.

**Spatial Inequality (SOC)**

- Residential segregation
- Neighborhood safety and violence
- Environmental justice (location and exposure to health risks)

**Social Class (SOC)**

- Aspects of social stratification
  - Social class and socioeconomic status
  - Class consciousness and false consciousness
  - Cultural capital and social capital
  - Social reproduction
  - Power, privilege, and prestige
  - Intersectionality (e.g., race, gender, age)
  - Socioeconomic gradient in health
  - Global inequalities
- Patterns of social mobility
  - Intergenerational and intragenerational mobility
  - Vertical and horizontal mobility
  - Meritocracy