ACADEMIC SUPPORT
OVERVIEW

Academic support services are available to all medical students through the Office of Student Affairs & Admissions and through the individual campuses to help students understand their strengths and improve skills for academic success. Faculty and campus deans are available for academic assistance for individual courses and clerkships. The Office of Student Affairs & Admissions offers presentations, workshops and resources to help students develop optimal time management, study and test preparation skills.

Strategies for Success

Active Reading Strategies
Advice from Former Year 1 Students
Concept Mapping
Critical Thinking
Effective Learning Techniques
Five Day Study Plan (Time Management)
Learning Styles
Managing Test Anxiety
MCQ Test Taking Strategies
Study Group Strategies
Test Preparation
USMLE Step 1 Information

Academic Success Program (ASP)

ASP is a support program implemented by Education Resources and the Office of Student Affairs & Admissions designed to provide select students with the skills to succeed in the medical curriculum. Students are placed into the program and mandated to participate in additional learning activities based on their performance on exams in Block 1.

Library Resources

Library Resources offers access to journals, books, exam banks, research guides and other resources on-site or online at med.UND.edu/library. For a guide designed to help Year 1 medical students find resources to help prepare learning objectives, see libguides.UND.edu/medical-students.

Schedule an Appointment

For individualized conversations to identify issues impacting learning and develop effective learning and study strategies, set up an appointment with your campus dean or with the Office of Student Affairs & Admissions, 701.777.4221, saa@med.UND.edu.

ACTIVE READING
STRATEGIES

Reading is a form of thinking, not a passive activity. The more you actively engage in the material you are reading, the easier it will be to master the material, retain it in your long-term memory and apply it. Use the following four steps each time you read for efficient and effective reading sessions.

1. Preview

Ease yourself into the reading assignment by spending a few minutes previewing the material. Glance through topic headings and skim introductory and summary paragraphs to get an overview of the reading. This warms your brain up and gets it ready to construct knowledge from the reading.

2. Intense Reading

Now that you have a sense of what to expect from the reading, begin reading the material carefully for ideas. Convert small units of information into questions and explanations (What is being said? Why is this important? How does this relate to ...? How does this connect to or expand on what I already know? What else do I need to know?). This will help in remembering and applying the information. Stop periodically to recall what you have read. Say to yourself out loud or write down a key phrase that sums up the major point of the section. Use your own words–don't just copy a phrase from the book. Intensive reading demands total concentration and is best done at short intervals, not in one long grueling session.

3. Review

Take a short (5-10 minute) break to give your brain and eyes a rest (stand up and stretch, breathe deeply or get a snack). Then skim the material you just read. At each section heading, test yourself by summarizing the information or briefly explaining the material's significance. If you come to a part you don't immediately recall or understand, return to intense reading. Continue this process until you feel you have a good mastery of the entire reading.

4. Summarize

Create a written summary, outline or concept map to briefly summarize the material. Do as much as you can from short-term memory but check against the text to ensure that you didn't miss anything important. As you summarize, consider: How does the material fit with the patient case you're studying, what you've learned during this or past blocks, or know from other classes or experiences? What are the implications or applications of this material? What questions are you left with? You can use these summaries for review or to test yourself throughout the block.

ADVICE FROM FORMER YEAR 1 STUDENTS

1. Use block and lecture objectives as guidelines to learning.
2. Use PCL cases as a guideline for studying.
   - Know why you order the tests you are ordering.
   - Go through pertinent positive findings that confirm your diagnosis.
   - Know pertinent negative findings that eliminate other differentials.
3. When reviewing the day's materials, glance over the notes to get an idea of the content and then read the assigned chapters in the texts. Review the notes once more in greater detail, using the knowledge from the texts to fill in the gaps.
   - This helps in changing focus from trying to memorize everything to understanding the "big picture."
4. Make notes or notecards to look back at later in the block.
5. Stay up-to-date on going through the lectures and work to integrate knowledge between lectures.
6. Don't get bogged down in too much information. I study mainly from my notes from lecture, but if I feel as though I'm just memorizing facts, I will use other resources to obtain more information on the topic. This helps me fully understanding why things are happening.
7. Don't be afraid to contact faculty members. It is much easier to contact them and clarify a question you have than to spend hours researching your question. But try to find information on your own first.
8. During weeks 7 and 8, review notecards and the ones that you know well enough to answer on case can be eliminated from your stack.
9. You can purchase test books from Guyton and Hall (among others) or use ExamMaster (SMHS library) to test knowledge on material taught up to that point (start in weeks 3 or 4). Continue to use the questions for the remainder of the block and even redo the test in order to make sure the information was retained (400-500 questions prior to test week).
   - Some students use practice test questions more than reviewing the lecture notes.
10. Repetition is key!

CONCEPT MAPPING

What is Concept Mapping?

A concept map is a graphical tool for organizing and representing knowledge. It uses circles (or other shapes) to enclose key concepts. The shapes, or concepts, are linked with lines and words showing the connections. As part of the process, you must precisely articulate those relationships. A concept map turns a collection of information into working knowledge that you can apply to a problem or situation. It also allows you to see where the gaps in concepts and relationships are and which ones need to be strengthened. This is a tool for developing thinking skills and organizing information that will be useful to you, both as a student and as a physician.

How do I Construct a Concept Map?

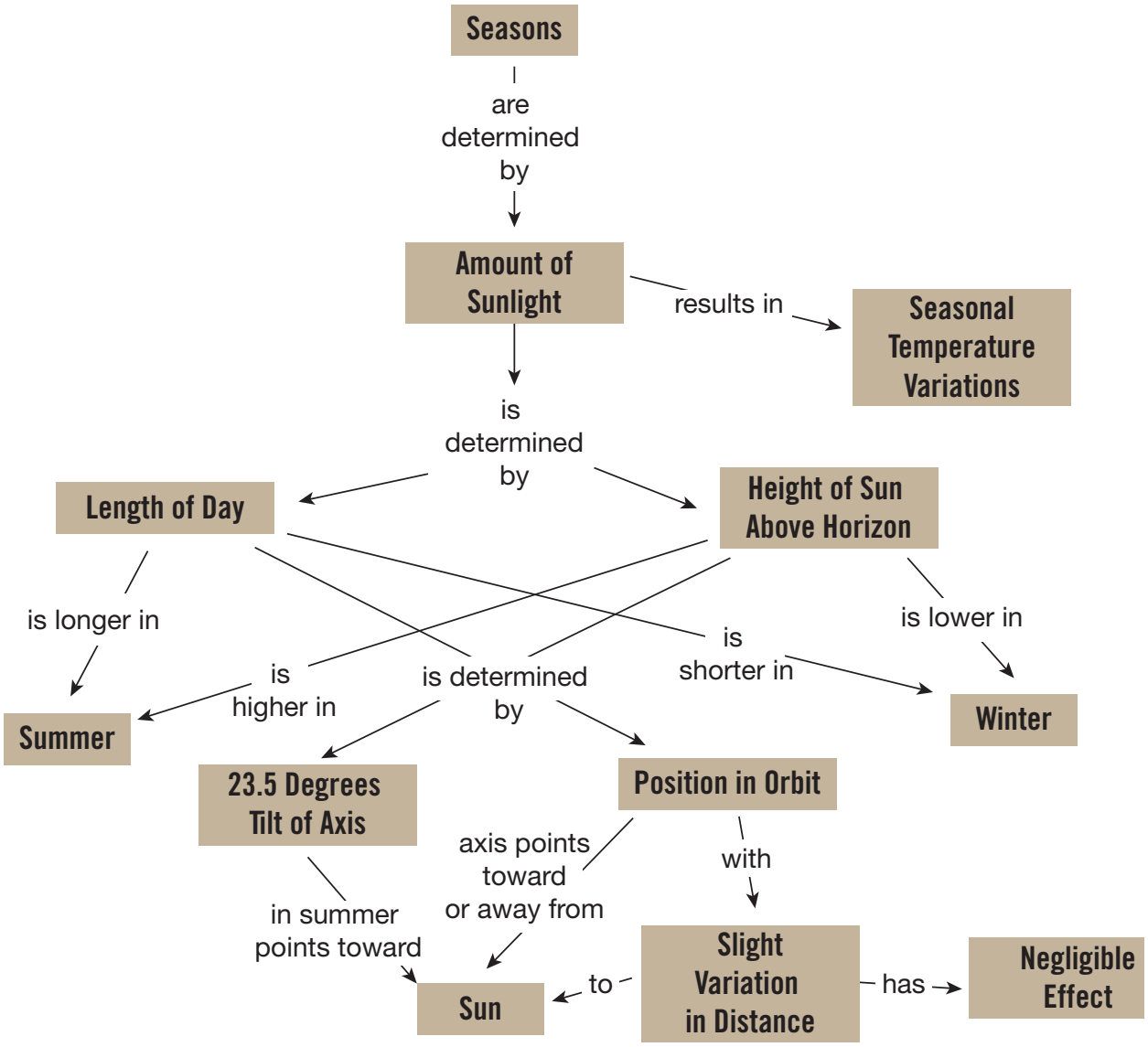
You can create a concept map on a piece of paper, Post-it notes or a whiteboard, or download free software to create maps. With the software, you can link resources (photos, images, graphs, videos, URLs, etc.) to your map. You can work on your map independently or collaborate with other students. Discussing concepts and connections, and sharing ideas with others, can positively impact learning outcomes.

Here are some steps that may help you create a concept map:

1. Specify the focusing question, problem or issue the concept map should help to resolve.
2. List the key concepts that apply to this topic or domain. Then order this list from the most general or inclusive concept at the top to the most specific or least general concept at the bottom. This list may be approximate.
3. Construct a preliminary concept map, arranging the concepts in a way that makes sense to you. This is where Post-it notes or a computer program comes in handy. You may find that you delete or add concepts as you arrange your map.
4. When you have a preliminary map arranged, begin working on the connections between concepts. Be as precise as possible in identifying linking words that describe the relationships between concepts. If you find that your connection takes a lot of explaining, it may be that either you don't fully understand the connection or that that connection needs to be restructured. When you are finished, every concept should be related to every other concept.
5. Revise concept, re-arranging concepts and refining connections for better clarity.

The website cmap.ihmc.us has more information on constructing concept maps.

See next page for a sample concept map.



Novak, J.D. & A.J. Canas, The Theory Underlying Concept Maps and How to Construct and Use Them, Technical Report IHMC CmapTools 2006-01 Rev 01-2008, Florida Institute for Human and Machine Cognition, 2008.

CRITICAL THINKING

What is Critical Thinking?

According to Bloom's Taxonomy, human thinking skills can be broken down into six categories: 1) knowledge, 2) comprehension, 3) application, 4) analysis 5) synthesis and 6) evaluation. Critical or "higher-order" thinking is generally defined as the top four. However, you can't think critically about a topic you know little about or don't fully understand. Decades of cognitive research suggest that critical thinking is less a set of skills that can be taught and more a type of thought process that you can train yourself to employ.

So, in short, critical thinking is very much dependent on two things: content knowledge and practice.

Each time you read new material or review old material, practice thinking critically about the material. Constantly ask yourself probing questions (How? Why?); look at the information from multiple perspectives (translate the information into a summary, table, graph, concept map, illustration, etc.); integrate the information into your previously existing knowledge; and apply it to new or different situations (how does this relate to or further explain X? How is this the same/different?).

Test Preparation

As you prepare material for an exam, lead your thinking through the six categories:

1. **Knowledge:** remembering or recalling information. Summarize or explain information without relying on the text. Use flashcards, self-tests, quizzes, etc., to test your recall. List, define, describe, identify information.

2. **Comprehension:** grasping or understanding the meaning of information materials. As you read/review material, explain key concepts in your own words. Ask probing questions of the material (How? Why? How is this the same/different? Why is this important?) Translate the information into different formats to see it from new perspectives (summary, table, graph, concept map, illustration, etc.) Describe, explain, estimate, predict, differentiate and interpret the information.

3. **Application:** applying previously learned information (or knowledge) to new and unfamiliar situations. Ask yourself what if? What would happen if? How would it change or behave if? Demonstrate, apply, illustrate, show, classify and experiment with the information. This is basically problem solving. Use the information to solve a new problem.

4. **Analysis:** breaking down information into parts, or examining (and trying to understand the organizational structure of) information. Use concept maps, tables, graphs, illustrations, etc., to break down the information. Ask how are these parts the same? How are they different? How do they relate? Analyze, explain, compare, separate, classify and arrange the information.

5. **Synthesis:** applying prior knowledge and skills to combine elements into a pattern not clearly there before. Integrate new information into your previously existing knowledge. Use concept maps, flow charts, illustrations, tables, etc., to combine the parts of new information or new and old information into new patterns and explain the connections. Force new or unexpected connections by writing key concepts on cards, shuffling them and finding ways to explain the new organization or relate two randomly chosen concepts. Connect information across chapters or units of study and even across courses. Combine, rearrange, substitute, create and redesign the information.

6. **Evaluation:** using evidence to explain opinions, judgments or decisions. Ask what is most important and why? How could X be improved? Do you agree with the decision or outcome and why? How can you support your answer or viewpoint? Assess, decide, measure, select, explain, conclude, compare and summarize the information.

Group Work

Working in a group or team is a great way to facilitate higher-order thinking. Discussing material in a group or working in a team to solve a problem challenges your thinking, allows you to see different approaches to thinking about material or solving a problem and forces you to carefully explain or defend your position or decision.

EFFECTIVE
LEARNING TECHNIQUES

For more than 100 years, cognitive and educational psychologists have been developing and evaluating learning techniques used by students. The following techniques are designed to help organize high volumes of materials and assimilate them into long-term memory. The efficacy of the techniques for you will depend on many factors, including your learning style and the content to be mastered. To maximize your learning, try choosing one or two techniques from each of the cognitive skill domains (spaced review, deep learning and active learning). All of the following techniques are easy to use and shouldn't greatly extend study time.

SPACED REVIEW

Distributed Practice

Though cramming (or massed review) is better than not studying at all, studies show that distributing learning over time (either within a single study session or across sessions) typically benefits long-term retention more than massing study back-to-back or in relatively close succession. According to research, spaced practice (one day or 30 days) was superior to massed practice (0 days), and the benefit was greater following a longer lag (30 days) than a shorter lag (one day). The theory behind the gains in learning is that students do not have to work very hard to reread notes or retrieve something from memory when they have just completed this same activity. Furthermore, they may be misled by the ease of this second task and think that they know the information better than they really do. The second presentation of to-be-learned material serves to remind the student of the first learning activity, leading it to be retrieved, a process well-known to enhance memory.

It's likely that your time spent studying increases as exams approach. Try rearranging your study practice to distribute study over the block rather than massing at the end of the block.

Interleaved Practice

Most students intuitively study in blocks, focusing on mastering one topic or subtopic before moving on to the next set of material. Recent research suggests that interleaved practice, in which students alternate their study of different topics, better prepares students for exams covering a large amount of information. It appears that interleaved practice promotes organizational processing and integration of information. In addition, in blocked practice, the relevant information resides in working memory so your brain can easily retrieve the information. By contrast, interleaved practice requires retrieving information from long-term memory, which boosts memory.

DEEP LEARNING

Elaborative Interrogation

The key to this technique is to generate an explanation for an explicitly stated fact to facilitate learning. As you read, ask yourself, "Why does it make sense that...?," "Why is this true?," "Why would this fact be true of X and not Y?," or simply "Why?" Educational experts theorize that elaborative-interrogation enhances learning by supporting the integration of new information with existing prior knowledge.

Self-Explanation

A similar approach to the one above is to explain what each sentence or paragraph means to you as you read. You might explain a difficult concept in your own words or explain how the new information relates to or expands upon what you already know. To be effective, make sure that you are providing explanations and not summaries or paraphrases of information (see below). Studies have shown self-explanation has positive effects on comprehension and memory, including free recall, fill-in-the-blank tests and multiple-choice tests.

Summarization

When you have to learn large amounts of information which requires you to identify what is important and how different ideas connect to one another, a popular technique is to write summaries of texts. Successful summaries give in condensed form the main ideas of a body of material and contain only vital information and the facts that assist or complement the main points. The highest quality summaries link new material to prior knowledge. Studies show that summarizing and taking notes on to-be-learned texts were both more beneficial than verbatim copying of text for test performance because it requires selecting and distinguishing between the important and the unimportant. As you

summarize, reduce sentences to phrases and phrases to meaningful words that will be more easily remembered.

There is conflicting evidence on the best approach to creating summaries, so experiment with what works best for you. You can summarize smaller pieces of a text (more frequent summarizing) or capture more of the text in a larger summary (less frequent). Having the text present might help you prepare a better summary. Summarizing a text without having it present involves retrieval, which is known to benefit memory and prevents student from engaging in verbatim copying.

ACTIVE LEARNING

Imagery Use

This technique targets visual learning and right-brain processing. As you read, mentally imagine the content of each paragraph using simple and clear mental images. You can also draw pictures that represent the content of each paragraph. In a study, mentally imagining the content of each paragraph significantly boosted the MCQ test performance. The theory behind this technique is that developing images can enhance your mental organization or integration of information in the text, and that the images of particular referents in the text that you create can help you retrieve the information from long-term memory.

Graphic Organizers

Create tables, charts, concept maps and other graphic tools for organizing and representing knowledge. The most useful graphic organizers allow you to visually display and emphasize the relationships between facts and concepts. The process of creating the maps or diagrams requires you to analyze and synthesize material and articulate connections, allowing for in-depth learning, moving information into your long-term memory and forging multiple pathways to retrieve the information for later use.

Practice Testing

More than 100 years of research involving hundreds of experiments has shown that practice testing is one of the most effective ways to enhance learning and testing. Practice testing is defined as low-stakes or no-stakes practice or leaning activity outside of class that students can engage in on their own. Types of practice tests include flashcards, completing pre-created practice tests or taking a test that you created on your own. One approach is the Cornell note-taking system, where you leave a blank column when taking notes in class. Enter key terms or questions in the column shortly after taking notes to use for self-testing when you review notes at a later time.

For the most effective practice testing, consider the following:

- *Format:* Studies suggest that short-answer practice tests are more effective than practice tests that fill in the blank or multiple choice. It's important to note that practice tests can benefit learning even when the format of the practice test does not match the format of the criterion test.
- *Frequency:* Basically, more is better. Studies show that final-test performance has consistently been better following multiple practice tests than following a single practice test.
- *Timing:* Studies have shown more benefits when practice tests are spaced apart rather than back-to-back, and that repeated practice testing produces greater benefits when lags between practice sessions are longer rather than shorter.

There are two theories as to why practice testing improves learning:

- Direct effects: Practice testing can enhance retention by triggering elaborative retrieval processes. Attempting to retrieve target information involves a search of long-term memory that activates related information, and this activated information may then be encoded along with the retrieved target, forming an elaborated trace that affords multiple pathways to help you access that information later.
- Mediated effects: Practice testing facilitates the encoding of more effective recall cues, enhances how well students mentally organize information and how well they process idiosyncratic aspects of individual items, which can support better retention and test performance.

Some of the information in this handout was adapted from Dunlosky, J. et. Al (2013). Improving Students' Learning With Effective Learning Techniques: Promising Directions From Cognitive and Educational Psychology. Psychological Science in the Public Interest, 14(1), 4-58.

FIVE-DAY STUDY PLAN

HOW TO MAKE A FIVE-DAY STUDY PLAN FOR TIME MANAGEMENT

Distributed Practice

1. Break the material into chunks.
   - If it can be divided by chapter, use that.
   - If not, make up your own chunks based on the structure of the material.
2. Plan to spend about two hours studying on each of the five days.
3. Work on the material in two ways:
   - Prepare
   - Review

The keys to a five-day study plan include:

1. Start early.
2. Use short, frequent study sessions.
3. Space out your learning over a period of five days.
4. During each day:
   - Prepare a new chapter or chunk of information.
   - Review previous material.
5. Use active learning strategies (writing and reciting to study the material).
6. Use self-testing techniques to monitor your learning.

Example of a Five-Day Study Plan

Tuesday		
Prepare	1st chunk	2 hours
Wednesday		
Prepare	2nd chunk	2 hours
Review	1st chunk	30 minutes
Thursday		
Prepare	3rd chunk	1-1/2 hours
Review	2nd chunk	30 minutes
Review	1st chunk	15 minutes
Friday		
Prepare	4th chunk	1 hour
Review	3rd chunk	30 minutes
Review	2nd chunk	15 minutes
Review	1st chunk	10 minutes
Saturday		
Review	4th chunk	30 minutes
Review	3rd chunk	20 minutes
Review	2nd chunk	10 minutes
Review	1st chunk	10 minutes
Self-Test		1 hour

"Essential Study Skills" (5th Edition), Linda Wong
From: The Student Success Center Resource File
SSC2009

You will perform better on an exam if you spend one hour studying each day for 20 days than if you spend 10 hours studying for two days before an exam.

Preparation Strategies	Review Strategies
Develop study sheets.	Recite study sheets.
Develop concept maps.	Replicate concept maps.
Make word cards.	Recite word cards.
Make question cards.	Recite question cards.
Make problem cards.	Practice writing formulas.
Make self-tests.	Take self-tests.
Do study guides.	Practice main points from outline.
Outline.	Recite notes.
Summarize material.	Answer essay questions.
Predict essay questions.	Practice reciting main points.
Answer end-of-the-chapter questions.	Explain material to study group.
Prepare material for study group.	Take notes on re-marked test material.
Re-mark text material.	Do “missed” problems.
Do sample problems.	Review online reviews.
Complete online reviews.	Recreate charted material.
Chart related material.	Recite steps from memory.
List steps in the process.	Recite list of 20 topics that would be on the exam.
Make a list of 20 topics that would be on the exam.	

LEARNING STYLES

What are Learning Styles?

A learning style is the process by which a person understands and retains information, thereby gaining knowledge or skills. Of course, students perceive and manage information differently. Knowing which learning styles best describe you allows you to use your strengths as you study and prepare for exams. There are various ways to classify and label learning styles. The VARK system divides learners into four styles: visual, kinesthetic, reading/writing and auditory. Visit vark-learn.com to learn about the learning styles and to take an online questionnaire to discover how you learn best. Below are study tips and strategies tailored to the four learning styles. Keep in mind that students generally need to employ multiple study strategies for optimum learning.

Visual

- Take detailed, colorful notes.
- Use a lot of colors when you rewrite notes, create notecards, highlight texts, etc.
- Doodle diagrams or illustrations of your written information in the margins.
- Make concept maps, illustrations, graphs, tables, charts, etc., of your written material.
- Do the above on a whiteboard. Erase and repeat until you can redraw from memory.
- Make notecards with visual elements.
- Anki is a free, highly customizable flashcard software that's great for visual learners.

Kinesthetic

- Manually write out notes. Copy, underline and highlight in bright colors.
- Reduce the notes for one lecture into one page or notecard.
- Create charts, tables, graphs and concept maps from lecture notes.
- Review notecards while walking, at the gym or moving in some way.
- Spread out notes or notecards on a big table or floor. Rearrange notes, and look for new relationships or patterns. Or shuffle notecards, pull two or three at random, and look for connections.
- Write or draw a story for each concept or linking concepts. Write, erase and redraw on a whiteboard until you can do so from memory.
- Create memory games to reinforce material learned.
- Take practice tests and quizzes.
- Try listening to non-distracting music while studying.
- Study in different places.
- Study with a group or friend, and discuss concepts.
- Take frequent study breaks.

Reading/Writing

- Take detailed lecture notes. Write down specific examples and explanations.
- Rewrite or type your notes after class. Use colored pens and highlighters to focus on key ideas.
- Write notes to yourself in the margins of written material.
- Rewrite concepts in your own words.

- Summarize graphs, diagrams and illustrations into words.
- Create a study guide that reduces your notes to a 3:1 ratio.
- Read you notes frequently.
- Write high-yield or hard-to-remember information on a whiteboard. Erase and rewrite until you can do so from memory.
- Post note cards or Post-it notes of high-yield or difficult-to-remember information in visible places around your home.
- Make lists or charts summarizing similarities and differences between concepts.
- Anki is a free, highly customizable flashcard software that's great for reading/writing learners.

Auditory

- Read your notes aloud when studying. Or use a computer or other device to record your notes for frequent listening.
- Create an auditory study guide by summarizing your lecture notes in your own words and recording them. Aim for reducing your notes to a 3:1 ratio.
- Summarize graphs, diagrams and illustrations into words out loud.
- When taking practice quizzes and tests, read questions, recite answers and work out problems out loud.
- Work with a study partner or group to review material out loud. Explain notes or concepts to each other.
- Create mnemonics, stories or songs to help with memorization.
- Dictamus App for iPhone, iPad or Android devices allows you to dictate study guides and flashcards, summarize textbook readings, and explain lecture slides.

MANAGING
TEST ANXIETY

Note that the title of this section is about *managing* test anxiety, not eliminating it. Anxiety is a natural reaction to an important test and can help you feel "up" for an exam so that you have more energy and focus. Some students, however, prepare well for a test but still experience levels of anxiety that interfere with learning and test taking. There is a great deal you can do—from positive self-talk to relaxation to visualizing test success—to reduce test anxiety to a manageable level.

Positive Thinking

Research shows that the self-talk of test-anxious students almost always tends to be negative and self-defeating. Program your mind for test success with positive self-talk and visualization.

- Pay attention to what you say to yourself. If you have negative thoughts, write them down and then dispute each one with a positive statement. In general, be as supportive of yourself as you would be of a friend.
- Create positive associations with tests by visualizing yourself doing well on an exam.
- Detach your self-esteem from your academic performance by reminding yourself that you are much more than a medical student. Think about your unique talents and what is special about you as a person.

During the Test

- Walk into the test with confidence. If you find yourself having negative thoughts, replace them with positive ones that you have practiced.
- Read the directions calmly to settle your mind and get your thinking going.
- Focus on one question at a time. Don't let yourself assess how you are doing or compare yourself to other students.
- If you don't know an answer, mark the question. Tell yourself that you studied it and the answer will come to you when you get back to it.
- Give yourself small breaks to shift your position, stretch out your muscles and take a few deep breaths.
- If you feel yourself beginning to panic, use one of the calming strategies that you have been practicing (see below). Remind yourself that you know how to deal with the panic.
- If you freeze up, get up and go to the bathroom, wash your face and refresh yourself.

Relaxation Techniques

- There are many techniques for calming down before or during a test using meditation, relaxation, deep breathing and visualization. Find one or two techniques that work for you and practice them so that they become second nature. The following are a few simple relaxation techniques. For more ways to stay calm and focused during a test, search the internet or make an appointment with the Office of Student Affairs & Admissions.
    - Take a few minutes a day to practice deep breathing when you are driving, going to bed, in class or wherever. For five counts each, breathe in through your nose and expand your lower diaphragm, hold your breath and pause, exhale through your mouth and imagine releasing the tension from your body.
    - Take time to do a body inventory and notice where you hold your stress. Stretch it out and release the tension.
    - Practice visualizing scenarios where you feel confident and calm. Remember occasions when you worked hard, challenged yourself and succeeded—like getting into medical school.
    - Stop for a minute and pay attention to your five senses. What do you hear, smell, taste, see and feel? This takes you out of your head and puts you in the present.

Test Panic

If the above techniques don't resolve episodes of extreme anxiety leading to test panic, make an appointment with the Office of Student Affairs Office & Admissions to discuss a method of systematic desensitization of test panic.

Sometimes these strategies are not enough. If your anxiety is really getting in the way, you may need to talk to a therapist or doctor. There are many effective techniques that a therapist can teach you and useful medications to lower your anxiety. Staff in the Office of Student Affairs & Admissions are always available to talk or suggest referrals.

MCQ TEST TAKING STRATEGIES

Positive Approach to Test-Taking

If you approach tests with fear, trepidation or other negative attitudes, you may be conditioning yourself for defeat. It's time to change your mindset. First, remember that tests are useful tools for instructors to measure your mastery of content and skills, but they also are beneficial to students. Tests motivate you to learn, allow you to see both the extent and the shortcomings of your progress so you can adjust your preparation as needed and allow you the opportunity to demonstrate your ability to analyze, synthesize and apply large volumes of information. Next, don't think of tests as a personal battle with the instructor or as something to be feared. Instead, think of an exam as a challenge and an opportunity to show the instructor the extent of your knowledge and abilities. Then you will be motivated to approach your preparation and test-taking with energy and self-confidence rather than fear and tension. Remember that stress is normal and can even be helpful—it is your body's way of preparing you for a challenge. But if stress is interfering with your performance on tests or in other aspects of your life, see the Managing Test Anxiety section.

The Day Before the Test

- Take a practice test with conditions as much like the test as possible.
- Avoid anxious fellow students who are talking about the exam.
- Practice deep breathing and other relaxation techniques.
- Eat well and get enough sleep. Avoid too much caffeine, which increases anxiety.

During the Test

- Walk into the test knowing you have studied the material well and are ready.
- Quickly note the number of questions and calculate the time available for each question, or divide the allotted time into quarters or halves and determine which number of questions should be reached when. That will help you pace yourself and increase your chance of answering all or at least most of the questions.
- Read the question and options carefully. If allowed, underline the critical words in the question to help you focus precisely on what is being asked and reduce the chance of making a careless mistake.
- Answer the question in your head first without looking at the list of options.
- Always read all answer options. Don't stop at the first one that seems right; another one may be more correct.
- Read the question along with each of the options one at a time, as if the combination of question and option is a true/false statement. If doing so makes the statement false, reject the option. If it seems to be true, consider the option as a possible correct answer.
- If you are not sure of the answer, you may be able to eliminate clearly wrong answers and hence make an educated guess. Statistically, it is advantageous to guess when at least one option can be eliminated.
- Don't get delayed by a single question. Instead, answer the question using your first impression and mark it so you can return to it.
- When you're finished answering all questions, go back to questions you've marked and give further consideration as time allows.
- If time remains, review the entire test but do not change any answers without a really good reason, such as you determine that you have misread the question or some of the options. Your first answer is generally the most reliable.
- Focus your attention on the test. Don't waste mental energy worrying about the results of the test or wondering how others are doing.
- If you start to feel anxious, close your eyes, take three deep breaths and return to the test.

After the Test

- Reward yourself for doing your best on the test.

STUDY GROUP STRATEGIES

Studying with other people can help you interact with the material for better comprehension and retention. But study groups that are not structured, organized and focused can end up wasting precious time. Here are some suggestions to consider for optimizing your study group sessions.

Agenda

Decide on a realistic and achievable agenda in advance of the meeting. The agenda should include content and time limits for various parts of the meeting or the whole session. Do your best as a group to stick to the agenda and the times.

Ticket of Admission

As you know from PCL, study groups function most effectively when every member is prepared and ready to contribute. To encourage that, each member is assigned questions, a problem or some other written proof of critical preparation of the material to be studied and discussed (think LO). Bring it as a ticket for admission to the study group.

Designated Listener

Assign a “designated listener” for each study group session. At various points during the study session, the DL summarizes the main points and poses follow-up questions or calls for further clarification. The DL also can take and distribute notes, and help keep the group focused and on track.

Round Robin

Go around the table taking turns explaining different aspects of each topic or concept. Correct, clarify or talk about conflicting information. Or each member identifies the “muddiest point” for them in a lecture/reading/system/topic. Other group members help clarify the muddy point.

Hypotheticals

Hypothetical questions ask group members to consider how changing the circumstances of a case might alter the outcome. It requires students to apply their knowledge to a new situation.

Rotating Record

Break a large study group into group of two or three. Place each small group at a station around the room where members have five or 10 minutes to discuss/explain/graph/illustrate/concept map/etc. a topic or problem and record their answers on a whiteboard or large piece of newsprint. When time is up, each small group rotates to a new station and continues the conversation by reading, responding to and adding to the previous groups’ information. Continue rotating until each group has left remarks at each station.

TEST PREPARATION

STRATEGIES

Focused study: You will study more effectively and efficiently without distractors. Remove external distractors (turn off TV, music, phone, etc.) and internal distractors (worries, complaints or daydreams). Make a conscious decision to focus.

Cramming: If you want to remember a large volume of very detailed information (such as all the bones in the body), it can help to review intensely the night before to keep the information in your memory long enough to take the test. It will not, however, remain in long-term memory well. If you are studying for an exam that requires more conceptual understanding and not just sheer memory of facts, continuous preparation rather than cramming will be more effective.

Left Brain/Right Brain: Each side of the brain processes information differently. The left brain processes in a more logical, step-by-step way with emphasis on details and information organized in words. The right brain focuses more on the "big picture." It is more visual and intuitive. Most of us favor one side versus another, but you can maximize your learning by using tools from both sides.

- Left Brain Tools: Outline, lecture notes, lists and flash cards
- Right Brain Tools: Charts, maps, time lines, concept maps and visuals

MASTERING MATERIAL

Learning should be a continuous process; the test is just the final phase in the process.

1. *Preview before class:* Read or preview material to be covered in class before class. Create chapter maps or outlines. Note questions you'd like answered in class.
2. *Attend class:* Listen actively during class, takes notes and participate in discussions.
3. *Review after class:* Review and process notes within 24 hours. Annotate or organize notes (outlines, notecards, concept maps, binders, etc.), fill in gaps and note any questions.
4. *Study:* Repetition is key. Shoot for three to five short intense study sessions per day (see below). On weekends, review notes and material from the week to make connections.
5. *Assess your learning*: Periodically assess how well your study strategies are preparing you for LO presentations, exams, etc.

Intense Study Session

1. *Set a goal* (2-3 minutes). Decide what you want to accomplish in the study session.
2. *Study with focus* (20-40 minutes). Read text carefully. Interact with information—make notes in margins, outline text, summarize or make concept maps.
3. *Review* (5 minutes). Review what you have just studied.
4. *Take a break* (10 minutes): Get a snack, play a quick game or contact a friend.
5. *Repeat* (with same or new material).

NOTES REVIEW

At least once a week, get out your notes and look at them as a continuum (lay them out on a big table or on the floor, if necessary). Look at them in their entirety. How do they fit together? How do Monday's notes connect to Wednesday's? How do Tuesday's connect to Friday's? How do this week's notes connect to last week's? Look for patterns and connections. Create a concept map to visualize the "big picture" of concepts and connections. Look for holes in the connections that you need to fill in. Write main concepts from the weeks on note cards. Shuffle them and pull two or three cards at random. Explain how these concepts connect or explain how the concepts are similar and how they are different.

AFTER THE TEST

Use the exam and your performance on it as a learning tool for preparing for your next exam. First, evaluate your preparation. Did your study plan prepare you properly? What worked well for this test and why? What didn't work?

Next, review all the questions you missed. Why did you miss them? Did you not understand the concept? Did you not understand the question?

Reflect on the test-taking experience as a whole. How were you feeling? Relaxed, stressed, confident or worried? Did you have enough time or did you feel rushed? Did you need to skip many questions and return to them later? Did you leave any blank? Did you second-guess your answers or feel confident with your first choice?

The last step, after considering the above, is to create a plan to improve on your preparation for and performance on the next test.

Some of the information in this handout was adapted from Test Preparation and Test Taking SkillsoffThe Center for Academic Success, Louisiana State University.

USMLE STEP 1
STUDY PLAN

TIMELINE FOR STEP 1

December/early January

- Start the registration and application process.

January

- Schedule a test date at a Prometric Test Center.

February/March/April

- Start gathering your study resources and organize in one place.
- Start making a tentative study schedule.
- Read and make notation in First Aid book as you work through Blocks VII and VIII.
- Receive USMLE Comprehensive Basic Science Exam Voucher from Education Resources.
- Focus on your current studies and block exams.

Early May

- Finish assembling your study resources.
- Finalize your post-Block VIII study schedule.

May/June

- Study for Step 1!
- Continue to get plenty of rest and exercise. Keep up with friends and family.

June/ July

- Take Step 1. Plan a vacation or special celebration following the exam.
- Third-Year Clerkships Orientation.

STEP 1 REGISTRATION AND SCHEDULING

- Log on to nbme.org to start the registration and application process, which takes four to six weeks.
- Complete and sign the Certification of Identification and Authorization Form and take it to the Office of Student Affairs & Admissions Office. Student Affairs will affix your photo, have the associate dean sign and submit to the NBME. The office will receive notice of your application and authorize your enrollment.
- You will receive a Scheduling Permit via email from the NBME, which specifies a three-month window for your exam. Print the permit and put it in a safe place; you will need to bring it with you on test day.
- Schedule a test date at a Prometric Test Center through prometric.com.
- Prometric will charge a fee if you change your testing appointment 30 or fewer days before your scheduled test date.
- You must take USMLE Step 1 before beginning Year 3 clinical experiences. Students must pass USMLE Step 1 before beginning the second half of the third year.

UND SMHS RESOURCES

- Fellow third-year classmates who have successfully passed Step 1.
- Library Resources
  - Home page: med.UND.edu/library
  - How-To Guide on Exam Preparation: libguides.UND.edu/exam-prep
- Education Resources
  - ER will pay $100 toward any Q-bank. A comprehensive Basic Science Self-Assessment exam voucher is also available from ER.

Internet Resources

There are a lot; here are just a few. The USMLE website is a good place to start.

- usmle.org/step-1
- A Student Guidebook to the USMLE Step 1 Board Examination, Vanderbilt Student Wellness Committee: mededportal.org/icollaborative/resource/253

Preparing for Exam Day

- Review the tutorial at usmle.org/practice-materials.
- Resolve test-taking difficulties such as test anxiety prior to the exam.
- Schedule your break times.
- Plan what food and beverages you will be taking.
- Make sure you know exactly what you can and cannot bring with you.
- Call your Prometric test site to confirm your test date.
- Become familiar with the test site – drive there ahead of time.
- Set out your Scheduling Permit, picture ID with signature, car keys, etc., the night before the exam.
- Don’t panic if you do something wrong or if something goes wrong with the computer. Contact the proctor.