

# **Medical Terminology Pearls of Wisdom**

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Prentice Hall is committed to creating tools to help instructors and students succeed in the classroom and beyond. Along these lines, *Medical Terminology Pearls of Wisdom* is a treasure chest of ideas to help infuse a new spark into your classroom. This manual is organized topically and provides a collection of best practices from a nationwide panel of master teachers who agreed to share tips and ideas for teaching medical terminology. We hope that this serves as a valuable resource and helps you and your students to shine brightly.



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# 1

## General Teaching Ideas Related to Medical Terminology



In this section of the book, various ideas for teaching medical terminology will be introduced. Varying teaching styles help keep the attention and involvement of the students. By keeping them actively involved, the instructor will be able to ascertain their level of understanding. It will follow that the more completely a student understands, the more smoothly the learning process will proceed.

Language, by its definition, is fluid and always changing. English dictionaries must constantly be updated to reflect the changes in the manner in which we express ourselves. New words evolve from many sources—technology to street lingo. That evolution allows our language to keep pace with changes in society. Medical terminology is the same. If you were to take a look at an older version of a medical dictionary, many words used today would be missing. For example, Human Immunodeficiency Virus, Acquired Immunodeficiency Syndrome, Magnetic Resonance Imaging, Computed Tomography, and many more are not in the dictionaries that were used 30 years ago. Either the technology had not been invented or the disease had not yet been discovered. This keeps medical language as flexible and ever changing as any other language. The instructor must keep up with those changes.

Successful teaching of medical terminology should include understanding the rules of building a term, memorization (for word elements), and, finally, a connection between the term and its relationship to anatomy and physiology.

The authors hope that by using the ideas in this guide instructors will find that they can add enthusiasm and eagerness to the classroom teaching process.

### SECTION 1: STUDENT MOTIVATION ISSUES

Each student will enter the class with his or her own purpose for taking the course. Each will have a personal perspective on what he or she intends to achieve by learning medical terminology. In addition, the instructor may have a combination of continuing learners and new adult learners. This adds another dimension to the classroom.

For some students, it may be a mandatory course for further studies. Others may be just returning to the classroom and consider medical terminology a good place to start. These adult students may be wondering if they can learn after being out of school for many years. Still others may have had a basic understanding of medical terms from previous experience but have decided to take that learning a step further. Motivation for each will be different. Meeting the needs of each student can be daunting but possible. Let's start out by looking at the specific needs of each of these students.

#### Terminology as a Prerequisite Course

The student interested in nursing, medical assisting, radiology, or any other clinical aspect of medicine will need a good basic understanding of medical terminology early in his or her program. In these cases, further, more intensive studies of anatomy and physiology will be needed. However, giving the student an early connection with the terminology and anatomy and physiology will allow the student to get a jump start on those courses. The motivation of this student may be to get through the course and on to more “exciting” classes. The instructor must be able to help the student understand that terminology is a necessity for additional learning. To accom-

plish this, an instructor must use teaching skills that emphasize the connection between terminology and clinical medicine. Keeping the attention of this particular student can be difficult. That is why varying one's style of instruction becomes critical. Imagination plays a major role in keeping the interest of the student.

A student who is pursuing a clinical medical education may have a long road of learning ahead. The task may even be somewhat intimidating at first. Since terminology is usually taken early in a program, the student may also need to polish study skills. The instructor who understands this and makes room for it in the curriculum will have a far better chance of reaching the student. If the student recognizes the correlation between the terminology course and further learning, he or she will be more interested in truly acquiring a strong knowledge of the language of medicine.

Nonclinical students who need medical terminology may have a stronger interest in the course. Their hope is to use terminology in a more immediate way, such as for transcription or medical coding. This student will need to be more aware of the need for accurate spelling and correct usage in context. It is somewhat easier to keep this type of student involved in class participation.

## **The Adult Student**

Returning to the classroom environment can be stressful and intimidating for adult learners. They may feel insecure and doubt their ability to understand and retain what they have learned. Up front, let them know they bring a great deal of knowledge to the class, regardless of whether they recognize it. Emphasize the value of lifelong learning. This will lessen the anxiety and give the student a much needed boost. If the class is primarily comprised of adult returning students (and even if it isn't), begin the course with a list of general study tips. Let the students know that everyone can continue to learn throughout their lifetimes. Dedication to study is paramount to learning. Older, returning students generally have a strong desire to learn. They are attempting to carve out a new direction for their lives. As a result, they generally ask more questions than the younger students. Instructors can use this to the advantage of all the students. Students without any interruption in their education may feel that they should know more about how to study, what to study, etc. By emphasizing the structure of the class early on, the instructor can help both types of students.

## **Students with Some Medical Background**

This last category may be the most difficult student with which to work. Some students may arrive in class with the attitude that they all ready know everything and just need the course to continue. These students may have learned on the job, be self-taught, taken a correspondence (or online) class, or learned in some other manner. The key to this student is for the instructor to recognize the potential of this knowledge and use it to the advantage of all the students. This has to be well controlled. A student with a strong medical background can easily overwhelm and take over a class. The instructor needs to be able to continue to be the leader of the class and keep classroom disruption to a minimum.

In summary, the motivation of each student will be different. How to keep the interest of the whole class depends on using humor and imagination, while recognizing the need to keep structure in the classroom. A seasoned instructor will recognize the desire to learn and use methods that enhance that process. Ways in which to accomplish that will be presented in following sections.

## **SECTION 2: GAMES AND ACTIVITIES**

Games and activities can be created by the instructor and the class. Some forms of *Jeopardy*, *Bingo*, *Family Feud*, and other TV game shows can be modified to work with medical terms in the classroom.

## **SECTION 3: CLASSROOM MANAGEMENT**

The instructor's approach to managing the classroom environment is paramount for effective learning to take place. Just as there are various learning styles, so are there different teaching styles.

One of the most important aspects of the class is that the students should feel welcomed and relaxed. The instructor should make it clear that no question will go unanswered. The instructor should know the names of the students and call them by name.

Let's begin with the physical layout of the classroom. If the classroom is a large room with standard lecture chairs, little can be done to change this configuration. The mere size of the class can intimidate even the most experienced instructor. However, there are ways to overcome the vastness of this style classroom. Using presentation software or overheads can bring the material closer to the students; using video or audio supplements can add a new dimension to the lecture. Keeping eye contact with the class will also offer the students a connection with the instructor.

A smaller space can often be awkward to work in. The physical closeness of the students can work to the instructor's advantage if managed well. If the room has lecture chairs, the instructor might want to arrange them in a "U" shape to allow the students to see each other. This creates a more intimate setting where the students feel they can more easily offer and receive assistance to and from each other. Activities are also easier to implement with this configuration. If the room has tables, a similar arrangement can be achieved by placing the table in a square with the instructor on one side. This gives the instructor the ability to work within in the group.

Both of these arrangements offer the instructor a good view of the students' faces. Looking at them while teaching has a two-fold value. It is easier to assess whether learning is occurring when the instructor is able to "read" the expressions of the students. Confusion or lack of understanding can be seen and the instructor has the opportunity to restate or reiterate the material. Catching this kind of problem early prevents students from becoming "lost" or frustrated. In addition, the physical accessibility of each student allows the instructor to give more one on one attention to the class.

Other physical aspects of the classroom must be controlled as well. Distractions such as outside noise should be kept to a minimum; the room should be a comfortable temperature, and lighting should be sufficient.

Next, the teaching style of the instructor should make learning interesting and enjoyable. Instructors should make clear at the beginning of the course that medical terminology cannot be learned by memorization alone. Using the terms in context will increase a student's complete understanding of the language. Just as students cannot learn English strictly from reading a dictionary, neither can they learn medical terms just by seeing them on a page with a definition.

The instructor needs to make sure that every student has access to a medical dictionary from the start of the class. These may be purchased by the student or made available in the library and classroom. Regular use of the dictionary during class and lecture will help the students recognize the value of looking up definitions. Not all terms can easily be broken down and defined. A dictionary clarifies the meaning, gives the etymology of the word, and may list synonyms and antonyms.

The instructor should introduce terms in context by having the students decipher a medical record such as a radiology report, discharge summary, or pathology report. This exercise requires the student to show not only knowledge of the terms but an understanding of the manner in which terms are incorporated into the English language. Grammar, punctuation, and spelling must be understood in order for a report to make sense. The student who struggles with this exercise may need some tutoring in basic English.

In addition to using the printed word, students should use other visual and auditory means to help them understand. Verbally pronouncing the word, both in context and by itself; writing the term and its definition many times as an exercise; seeing the word used on the blackboard; using visual images relating to the term; and listening to the other students say the term all add dimension to the learning process.

Activities should be included that bring the class together, either as teams or groups. Games can be played that entertain as well as teach. Working together in small groups can bring out the reticent student who may not be as willing to participate in larger discussions. The student who learns more quickly may be able to coach slower students. Interaction between the students can be as valuable as any other study technique.

An instructor should strive to make a class enjoyable, informative, and relatively painless. Learning should be a pleasant task, not tedious. The more interest the instructor shows in the subject being taught, the more the students will want to learn.

#### **SECTION 4: TESTING/QUIZZING/HOMEWORK/GRADING POLICIES**

Each institution will have its own grading policy but the instructor will most likely have flexibility in how and when to test and evaluate students. Achieving fairness and yet making sure that the students are not just memorizing but also truly understanding the concepts presented can be bewildering for an instructor.

Homework should be assigned on a regular basis. Worksheets, review sections of the textbook, written reports, and Internet research projects all make great homework. Some instructors assign a poster to be designed. Grading of homework may be on a completion basis or be checked according to the instructor and/or the policy of the school. Using the homework as a review is helpful to the student. Give the students constant input and feedback. Be involved with them.

Quizzes should be given no less than once per chapter or system. They can include matching, multiple choice, fill-in-the-blank, and deconstructing terms. Combining several of these styles of questions keeps the student interested in the test. If he or she does poorly on one style of question, he or she may do well on another.

Spelling tests may also be given. The instructor can dictate the terms or a list of correctly spelled or misspelled words can be used on a written test.

Tests at mid-term and a final exam are valuable to evaluate how well a student has assimilated the material. The abovementioned styles of questions can be used along with a medical report to be reviewed and “translated.”

Keeping tabs on the level of learning that students are achieving is important, as is feedback to them. If they are not evaluated regularly, students can become frustrated or not sure of their skill level. Students like to find out how well they are doing. They may not be thrilled with the grade received, but they know where they stand.

Students will look to the instructor to tell them if they are excelling or failing. Quizzes and tests are effective ways to assess them.

#### **SECTION 5: TEACHING ONLINE**

Online classes are a fairly new concept. Some instructors have not had any experience with this form of teaching. There are definite advantages and disadvantages to online classes.

One of the obvious advantages is to make the course accessible to students who might otherwise be unable to attend a regular class. In addition, the students can work on the course at their own convenience.

The disadvantages are lack of test security, lack of personal connections, and the inability to control the level of study. These can be overcome by using the technology available. Unfortunately, the instructor can never know whether the student is getting more “help” than they should.

It is important for the instructor of a distance learning course to be actively involved with the students. Having regular chat sessions, emailing feedback, and offering assistance to those who ask for it are ways to stay actively involved.

Teaching correct pronunciation is of particular concern when teaching an online course. The software should have audio so that the student can hear the words pronounced. Encourage the students to say the words out loud regularly. You may want to have the students send a tape or other media with examples of them pronouncing the words.

Keep up with the newest technology available. Network with other seasoned instructors of online courses. Connect with publishers to see if they have materials that would adapt well to distance learning classes. Keep in touch with the students! Don’t ever let them feel they are out in cyberspace alone.

## SECTION 6: USING PRESENTATION SOFTWARE (POWERPOINT™)

Slide presentation software is becoming increasingly more available. Most textbooks will now come with these presentations already created for the instructor. These materials are great ways of showing new information to the students. They allow information to be seen as well as heard, and it will reinforce the information that the instructor is trying to get across.

All instructors will find their own comfort level with this software. Some will be very comfortable and will want to create their own presentations. Others will be new to the technology and will tend to rely more on prepared material. Either way works if the instructor uses it efficiently.

For those instructors that would like to create their own presentations, there are some guidelines that should be kept in mind. For those that are new to creating their own slides, there are some pitfalls that are easily fallen into.

The first thing to watch for is including too much information on a slide. There is a general rule that states that you should not have more than seven words on a line and no more than seven lines on a page. This will help not to overwhelm the student when looking at the slide. The information also becomes very difficult to read when there are too many lines on a slide.

The next guideline that should be kept in mind is to keep the slides simple. Do not go overboard with pictures and sound effects. They are fun but only in moderation. Too much will become distracting to the students. On the same note, it is important to keep the presentations interesting. It is possible to have too little on the slides. Give them some motion and pictures to draw their attention to the information being presented. In particular, when teaching medical terminology, pictures and diagrams can really help to create a connection for the students.

One last note to keep in mind is that the presentation should be unified. Keep the same background or theme throughout. Be careful not to change every slide. The best slide shows will have smooth transitions throughout.

Once you have your presentation, whether you created it yourself or are using one from a publisher, how you present it becomes key. Slide presentations can be very boring if not used correctly. They are meant to be interactive. Too many believe that all they need to do is stand there and read the slides, but that will have your students asleep in no time. The best instructors will understand that you must work with the presentation, and even have the students work with the material to create a learning environment.

## SECTION 7: VANGONOTES AND MYMEDTERMLAB



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Students can study on the go with VangoNotes. Students download chapter reviews from the text and listen to them on any mp3 player. Now wherever they are—whatever they are doing—students can study by listening to the following for each chapter of the textbook.

- **Big Ideas:** The “need to know” for each chapter
- **Practice Test:** A gut check for The Big Ideas—tells students if they need to keep studying
- **Key Terms:** Audio “flashcards” to help students review key concepts and terms

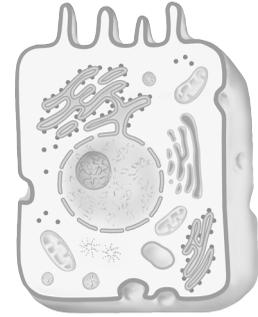
VangoNotes are flexible, students can download all the materials directly to their player, or only the chapters they need.



MyMedTermLab provides students with a personalized learning environment, where they can learn at their own pace and measure their progress. Exercises are correlated to the textbook to give students opportunities for practice and mastery. Courses include a full eBook with a variety of multimedia resources such as video clips and animations to improve students’ understanding of key concepts.

# 2

## Teaching Word Structure and Word Parts



### GENERAL TIPS FOR TEACHING

Medical terminology can be quite an intimidating language for students who are being introduced to it for the first time. It is the “new” language that must be mastered to communicate successfully with other health care professionals. By first laying a solid foundation, the instructor can take students through this learning process more easily. Approach this task as if constructing a building. Begin first by laying that solid foundation and building each level on top of the previous one.

First of all, you might ask the students to suggest some learning methods that have been successful in the past. Allow them to tell you how they would like to begin learning word parts and word building. Ask them to relate both their life and employment experiences, as these may often help with the learning process.

Begin by reviewing basic language skills go over nouns, verbs, pronouns, adverbs, and adjectives. Inform the students that many medical terms are constructed from word parts. Introduce the word parts (prefixes, suffixes, roots, and combining forms) and explain how each is used. Since students often struggle with which word part to use and when, strongly stress the rules of word building. Understanding the rules is as important as memorizing the terminology. Other suggestions for approaching word building follow.

- Go over basic study skills, especially with adult students who have been out of the learning arena for some time.
- Write the four word parts as headings on the board. Under each heading, make a list of the most common word parts in that category. Stress the definition of the word part, as well as the correct pronunciation.
- Stress the importance of learning by memorization and repetition.
- Use different colors for each word part. For example, use red for prefixes, blue for suffixes, green for word roots, and black for combining forms. Each time the student sees a color, he or she will associate that color with a particular word part.
- Demonstrate how to use all the resources found in a medical dictionary.

### TEACHING USING DIFFERENT FORMATS

To keep the learning process interesting, teach using different formats. Catch the students by surprise! Do something different, something they are not accustomed to.

- Use visual images like PowerPoint™ presentations, overheads, and three-dimensional props. Often, a visual image will stick with the students more than a verbal one.
- Share real-life scenarios that you have experienced as a teacher and in the work force. Try to relate to the students by sharing similar experiences you have been involved in during procedures. Talk about any situations that were connected to a particular disease they may be studying. Students often find the material more relevant when it can be related to a real situation.

- Approach word building from as many directions as possible. Ask the students to sound out and pronounce the terms before you give them the correct pronunciation. Have the students write the definitions as they are explained.
- Stress correct spelling of the word parts and make sure the students are using the correct spelling.
- Face-to-face teaching can be coupled with online courses. This format gives the students a chance to review in-class material and to obtain the lecture when they can't attend class.
- An independent study format can allow students to learn at their own rate. Continue to lecture, but allow the students to advance through the lessons at their own individual level of ability. With this type of format, the students must end their independent study at the same time as the lectures.
- Case studies and actual medical records are a great way to expose students to terminology. Have the students find the terms within the document and break them down into their individual components.
- Once different word parts are on the way to being mastered, instruct the students to choose one root and add prefixes and suffixes to make as many different words as possible. Stress how the parts can be mixed and matched.

It is the opinion of some instructors that A&P and terminology should be taught during the same time period. Because a different instructor will probably teach each course, this would require the instructors to work together very closely to cover the same body system at the same time.

The atmosphere in which terminology is taught can also make a difference. Different seating arrangements may be more conducive to learning depending on the students' needs. However, some students may feel as if they are in the spotlight if seated in a circle or other less conventional method.

A structured, yet relaxed and somewhat informal atmosphere can be very valuable. Many students are intimidated if the atmosphere is too structured and formal.

Testing is almost always a source of anxiety for students. A variety of practice tests and quizzes can help the student feel confident about taking the "big" test, which counts for a grade. Depending on how often your class meets, the following suggestions for testing formats may be considered.

- Give several small quizzes throughout the unit or chapter instead of one large test.
- Give the definition and have the students create the term.
- Use case studies and ask the students to pick out the terms and divide them into their parts.
- Multiple choice and matching formats give the students a chance to pick from a group of words rather than having to come up with the correct answer on their own.
- Give just spelling tests.
- Give the students a paragraph and have them proofread it for terms and correct any that are incorrect.
- Give one large test at the end of each chapter.

## **GROUP ACTIVITY SUGGESTIONS FOR TEACHING**

Most students, especially the introverted ones, benefit by taking part in group activities. Let your imagination and creativity guide you. There are endless possibilities. Suggestions for group activities follow.

- Of course, flash cards containing the different word parts are always a great way to facilitate word building. Students can use the cards for mix and match exercises to construct as many words as possible.

- Break the class up into groups and set a time limit. Have each group use the same word parts and build the longest word they can come up with. Offer bonus points to the group with the largest word.
- Use worksheets with one word root on them and have the students build as many words as possible by adding prefixes and suffixes.
- Using the class as a whole, write a short root on the board and have the students build a long word, maybe even one that stretches all the way across the board. Stress to the students how they can define even the longest word by breaking it down and defining each part.
- Divide the class into groups and give each group a list of terms. Have the students dissect the terms into prefixes, suffixes, roots, and combining forms and define each part. Allow the students to make this activity a group effort.
- Break down words and construct a list of prefixes, suffixes, and roots and create new words from the lists without repeating the original terms.

Activities are a great way to stimulate the students and to keep word building from becoming routine and boring.

## GAME SUGGESTIONS FOR TEACHING

The use of games in teaching has become very popular. A fast-paced, fun game can make word building exciting and interesting instead of boring and repetitious. A game can stimulate a student who is having problems learning the new language of medical terminology. Most terminology books include a student CD-ROM with great activities and games that the student can use outside of class time. The CD-ROM can also be implemented within the classroom. Set aside some time during every class period, perhaps at the end, for games. This activity can be used to recap the lecture material and review material from previous chapters.

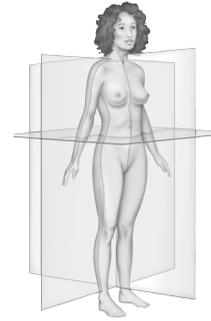
Some additional suggestions for games are:

- A game similar to *Jeopardy*, in which the definition is given and the student must answer with the category and word part. For example, the game facilitator will say “inflammation,” and the student will answer, “What is the suffix -itis?”
- Create a *Wheel of Fortune* type game, in which letters are filled in one at a time until the word part or term is guessed or totally revealed.
- Crossword puzzles can be created using word parts.
- Create a game like *Family Feud* and divide the class into two opposing teams to play against one another.
- Have the students create their own “bingo” cards with different prefixes, suffixes, and roots listed beneath the letters B-I-N-G-O. Call out the word parts and have the students locate them on their cards until someone has a “bingo” vertically, horizontally, or diagonally.

Establishing a routine and guidelines from the start will help to maintain structure in your class. Learning the rules of word building is essential from the beginning to eliminate problems later on. The foundation must be strong to support the different levels of medical terminology as the students work their way through each body system. Keep it fun and stimulating and enjoy teaching word building and watching a whole new language open up for your students.

# 3

## Teaching the Terminology of the Whole Body



After the students have been introduced to the concept of prefixes, suffixes, and word roots, they will begin the anatomy and physiology portion of the course. The depth of anatomy and physiology to be taught will depend on the overall purpose of the terminology course. This topic is discussed in the general tips section.

Bringing together all of the word parts into logical medical terms can be daunting to the student. The idea of which word parts to use and the order to use them can confuse students. Also, learning anatomy and physiology may seem unnecessary to some students. Reinforce the point that even administrative employees need to understand how the body works. Medical coding and billing accuracy relies on the knowledge of the structures of the body and how they all work together.

The best way to begin this part of the course is to start at the beginning. The cell is the simplest form of life that should be discussed; then move on to the bio-organization of life, i.e., cells, tissues, organs, systems. By viewing diagrams, photos, and models on an overhead projector or presentation software, the students will be able to understand how all of these structures work together to form a functioning human body.

Usually anatomical planes, quadrants, positions, and directions are taught in this section. Make sure the students are aware that two-dimensional drawings are reversed on the page so that the right side of the body will look like the left side on a page. They might imagine their body lying on the page to understand this concept. If they don't "get it," they will tend to label diagrams backwards.

The students will appreciate being able to actively participate in the class at this point. They have been in class long enough to feel more comfortable with open discussions and interactive opportunities.

### GROUP ACTIVITIES

- Make a model of a cell using household items. This allows the creativity of students to be brought out. Explain that they shouldn't go out and purchase items. Instead, have them look at home for things like buttons, pasta, paper clips, etc. Discuss what cellular component each item resembles. The more they use their imaginations, the more fun this assignment becomes. The truly artistic students will be able to use the concepts that will encourage others to look for ways to express their thoughts about the structures of the body and their relationships. Have the students label each item with the proper term for that cellular component. Again, let them use imagination for the labels. The idea is to make this introduction to anatomy fun and draw in the more reticent students.
- There are excellent videos and slide presentations available to illustrate the functions of the body systems. Students could check out Internet sites such as WebMD, PBS (NOVA), or Discovery Health and report on appropriate shows. The students should take note of whether the shows use layman's terms or the correct medical terminology. Why would the terminology make a show less understandable to the general population?

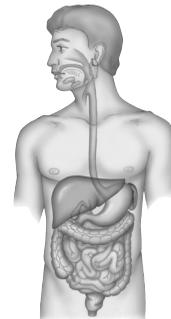
- On the Internet, by searching for images, the students will find unusual images—particularly ideas of how the body worked in ancient times. Have them do research on how science has progressed in its understanding of anatomy and physiology.
- Team up students and have them do a presentation showing the manner in which body systems coordinate with each other. It could be done in the form of a skit, posters, or slide show presentation. The point is to show that various systems depend on each other to function correctly.

## GAMES

See the list of games and descriptions of each in the general section. Any game can be adapted to correlate to a specific body system or specialty.

# 4

## Teaching the Terminology of Gastroenterology/ Gastrointestinal System



Gastroenterology is the study of the entire digestive system and metabolism of nutrients. Nutrition is usually included as a portion of this chapter.

A good place to begin teaching any body system is to differentiate between the specialists that treat the structures related to the system. For instance, gastroenterology is a general specialty that treats all organs. That can be seen by deconstructing the term: “gastr” means stomach, “enter” means intestine, and “ology” means the study of. Beginning with the suffix “-ology,” the student can readily define the term as study of the stomach and intestines. Obviously, this a broad definition of a complex specialty.

Subspecialties include proctology, bariatrics, and colorectal surgeons. Dentistry can also be considered a specialty for the digestive system, since the alimentary canal begins with the mouth and teeth. Descriptions of each of these specialties will introduce the student to the basic terminology of this system.

Diagnostic techniques for the gastrointestinal system involve the use of contrast materials, radiology, scopes, MRI and CT scans. The terminology of such methods should be begin by emphasizing the differences between such suffixes as -scope and -scopy, -stomy and -tomy, and ectomy.

Another area to discuss is the accessory organs that are not naturally thought of as part of the digestive system. The alimentary canal is only part of the system. The liver, gallbladder, and pancreas are organs that secrete enzymes to assist in digestion and absorption of nutrients.

The digestive system is also a system of elimination. Sometimes students will enter the course with little to no knowledge of anatomy. They may not realize that the human body has two systems by which it gets rid of waste products. A brief introduction into the difference between solid waste and liquid waste elimination can help. Explain that the body eliminates liquid waste through the urinary system and solid waste through the intestinal system.

Needless to say, spelling should be of major concern to the instructor and students. Recognition of the terms used in context can be accomplished by having the students read operative reports, imaging reports, and scope reports. These reports can be complex but do offer excellent opportunities for learning spelling and contextual use of terms.

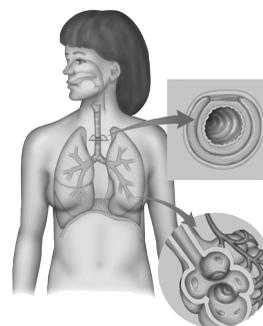
## GROUP ACTIVITIES

As with all group activities, insist that the students use the correct medical terminology and avoid the use of layman's terms. Verbal discussion, along with written reports, provides the instructor with a way to evaluate the pronunciation and true understanding of the terms.

- An interesting way to illustrate the manner in which saliva begins the breakdown of carbohydrates is the “saltine” test. Chew on a saltine cracker. At first, the taste is one of salt and starch. The longer one chews, the sweeter the flavor. This is due to the enzymes in saliva starting to change the complex carbohydrates into simple sugars.
- Discuss the innovations in abdominal surgery such as laparoscopic appendectomies, cholecystectomies and exploratory surgeries. Surgery no longer needs to be invasive and is often done on an outpatient basis.
- Use of anatomical models, diagrams and pictures help the students see in three dimensions, which makes the system easier to understand.
- If students are comfortable and willing, ask them about surgeries they, or someone they know, have undergone.
- Obtain information from the American Cancer Society regarding cancers that affect the gastrointestinal organs such as colon cancer, stomach cancer, and pancreatic cancer.

# 5

## Teaching the Terminology of Pulmonology/Respiratory System



The function of the respiratory system is to provide the body with oxygen and eliminate carbon dioxide. It is a rather straightforward system to teach. The terminology consists of basic word roots, suffixes, and prefixes.

Begin this chapter by describing the flow of air through the nose, sinuses, and trachea into the lungs using medical language instead of layman's terms. This provides a quick introduction to the terminology and helps make it real to the student. Since the respiratory system is generally one with which most people are familiar, it is not as intimidating and the class may be more willing to openly participate. It is a good idea to present this system early in the course.

The recent emphasis on stopping/preventing smoking is an excellent way to capture the interest of the students. The public is constantly made aware of the environmental issues that relate to the respiratory system. Some are controllable (stop smoking), while others are not (smog). Students may not realize that there can be unseen pollutants in the air we breathe. Damage to the respiratory system is not a rare occurrence. Research the recent increase in tuberculosis and the dramatic changes in treatment since the 1920s. Asthma, emphysema, and COPD are other relatively common disorders that can be researched by students. Encourage the use of the proper medical terms when having discussions regarding the above issues.

Presentations can include models, diagrams, and anatomical drawings. The instructor should make sure that the students are able to recognize the structures and the correct pronunciation of the medical names. One may find regional and dialectic differences in pronunciation of terms.

Explain the disparities in language itself. Using the potato/tomato analogy will help assure the students that sometimes neither is wrong.

Describe the various diagnostic and imaging techniques used in the treatment of pulmonary diseases. Use an operative report along with a pre-op imaging report. This will illustrate the need for accurate reports. Ask what would have happened if the typist had inadvertently typed “right” instead of “left” lung.

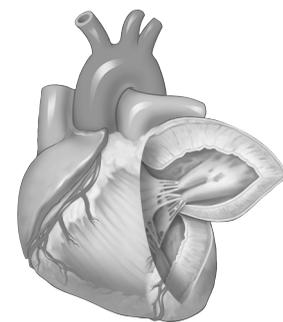
## GROUP ACTIVITIES

As with all group activities, insist that the students use the correct medical terminology and avoid the use of layman’s terms. Verbal discussion, along with written reports, provides the instructor with a way to evaluate the pronunciation and true understanding of the terms.

- The simple act of blowing up a balloon can explain the act of exhalation. The concept of atmospheric pressure can also be illustrated using this approach.
- Have the students build a “lung” using a two-liter soda bottle, a regular balloon, a section of thick balloon material, and several rubber bands. Cut the bottom off of the bottle. Place the regular balloon inside the top of the bottle wrapped around the lip of the opening. Place the thick rubber on the cut-off bottom of the bottle and attach it with a rubber band. When you pull down on the rubber on the bottom, it acts as the diaphragm does in the body. The balloon inside the bottle will inflate due to the atmospheric pressure change.
- Use materials from the American Cancer Society that show the effect that smoking has on the lungs. Research recent statistics and compare them with numbers from years ago.
- Relate the difference between living and working in an urban vs. rural environment, again comparing the agricultural vs. industrial ages.
- If available, show the students how lung volume can vary by using a basic spirometer.
- Use a large bunch of grapes to demonstrate how the alveoli can have a large surface area within a smaller structure.
- Have the students use a stethoscope to listen to lung sounds or use an audio CD that allows the students to hear normal and abnormal breath sounds such as rales, rhonchi, and wheezing.
- If appropriate for the course, introduce the mechanics of CPR.

# 6

## Teaching the Terminology of Cardiology/ Cardiovascular System



Begin this section with a discussion of the importance of the heart’s function in circulating the blood throughout the body. This circulation of blood delivers oxygen to the cells and transports carbon dioxide away from the cells.

Use an anatomy and physiology model or diagram to explain the structure of the heart, including the chambers and valves. Check with a local butcher shop to see if a beef heart can be obtained and dissect it to reveal a cross section, which will allow the students to actually see the

appearance of the structures they are learning the terminology for. Other teaching suggestions include:

- Create a list of the different vessels in the circulatory system and the word roots and combining forms for each. Stress the importance of the aorta as the largest artery in the body. Show the students a rubber hose that is 1 in. in diameter, the same diameter as the aorta. This type of visual aid will impress upon the students how large 1 in. really is.
- Trace a drop of blood through the entire system. Stress the difference between arteries and veins and point out which type of blood each vessel carries. Name the branches of the veins and arteries.
- Review the conduction system of the heart.
- Explain that the meaning of prefixes or suffixes usually will not change. It is by combining them with a root or combining form that the meanings of the terms are created.
- Create a list on the board of the new combining forms and roots that pertain to the heart and vessels and allow the students to construct and define the new terms of the cardiovascular system.
- List some prefixes that can be used by more than one system, like epi-, peri-, myo-, and endo-.
- Have a discussion about the different subspecialists that are involved in treating the cardiovascular system: cardiologist, cardiac surgeon, vascular surgeon.
- Illustrate the connection between the anatomy and physiology terms and the medical terms.
- Give examples of terms that are not built using roots, prefixes, and suffixes.
- List the abbreviations for the cardiovascular system and their definitions.
- With the students' help, build a list of abbreviations of the cardiovascular system that could have two meanings.
- Discuss diseases and disorders of the cardiovascular system along with special medications used and other treatment options.
- Use visual images. Whenever possible, obtain actual photos of disorders and diseases of the vessels. Obtain a photo of the inside of a normal artery and one that is occluded with plaque.
- Show a video of an open-heart surgery or cardiac catheterization and ask the students to list the related terms in the video.
- Write a list of terms on the board that are related to a cardiovascular surgery or diagnostic procedure. Have the students dissect the words into their parts: for example, *aneurysmectomy*.
- Invite a health care provider who is currently working in a cardiology practice to speak to the class about different diseases and disorders of the system that they have worked with directly.
- Ask an EKG technician to speak to the class and show tracings of abnormal heart rhythms. Have the students make a list of the terms and then divide them into their parts: for example, *ventricular tachycardia*.
- Ask a cardiac stress test technician to speak to the class and explain the mechanisms related to a stress test and the use of the correct terminology.
- Obtain a page from the medical record of a hospital patient in the CCU. Ask the students to read the record and translate it into lay terms.
- Explain the connection between certain dental procedures and how the heart can be affected following the procedure or because of a dental abscess.

## GROUP/INDIVIDUAL ACTIVITIES

- Give the students a blank diagram of the major arteries and veins and ask them to label it.
- Ask the students to relate common cardiovascular terms to the correct medical term. For example, heart attack = myocardial infarction, high blood pressure = hypertension, clot = embolus, or stroke = CVA.
- Divide the students into two groups. Have one group research arteriosclerosis and the other atherosclerosis, and then have a discussion to compare and contrast the two.
- Have the class compare the differences and similarities between an EKG and a Holter monitor.
- Ask the students to surf the Internet and create a list of different health care professions that relate to cardiology.
- Ask the students to visit the American Heart Association's Web site and gather the latest statistics on heart disease and cardiac deaths in the United States.
- Give the students an enjoyable assignment like watching a medical documentary or television episode of a medical drama and list any procedures performed that relate to the cardiovascular system.
- Ask the students to write a patient education scenario in lay terms with the medical terms in parentheses.
- Give the students a case study in lay terms and have them translate it into medical terms.
- Have a class discussion about the differences between echocardiography, electrocardiography, and Doppler ultrasound.
- With the students' help, make a list on the board of factors that can and cannot be changed to help prevent heart disease.

# 7

## Teaching the Terminology of Hematology and Immunology/Blood, Lymphatic, and Immune Systems



The students may find it odd to see these systems grouped together. An explanation of the connection between them is essential. Explain that blood and lymph are both body fluids that have a function within the immune system. A discussion of the different elements found in the blood and the function of each element as part of the immune response can come alive with actual pictures of the different types of blood cells.

Use anatomy and physiology diagrams and visual aids to review the placement and location of lymph nodes and the circulation of the lymph fluid. Keep the anatomy basic, as some students may not have had anatomy and physiology or are taking it simultaneously with terminology.

Once the foundation of the blood and lymphatic systems has been laid, a presentation of the prefixes, suffixes, and roots that relate to them can be introduced. When the word parts have been presented, give a pretest to see how many terms the students know by simply defining the different parts. Assuring the students that this pretest will not count for a grade will help them to perform better. Students can prove to themselves how much they know from the basics and then see how much they have improved when a post-test is given. Other suggestions for teaching the system are as follows:

- An audio glossary or PowerPoint™ presentation of the correct pronunciation of related terms may be used if available. It is very helpful for the students to hear the correct pronunciation repeatedly.
- Have the students repeat the word parts as you pronounce them to ensure that they are pronouncing them correctly.
- Discuss some of the more common disorders of these systems and the terminology related to each.
- List and discuss the diagnostic and laboratory tests associated with these systems.
- Review an actual lab report, such as a CBC, and have the students identify and define the terms and abbreviations listed on the report form.
- Explain the different medical specialists associated with these body systems, such as hematologist, allergist, and immunologist.
- Use a video with related subject matter and have students list terms and break them down into parts.
- Spend 5 to 10 minutes reviewing terms from previous chapters to help refresh the terms the students already know.
- Stress correct spelling and pronunciation.
- If students are learning online, be sure they have access to support and automatic feedback of their progress.
- Have students make a list of new words at home and give bonus or extra credit points for the funniest, longest, most creative, etc.
- Relate the word parts to an anatomical drawing or to photos of some diseases and disorders associated with these systems.

## **GROUP/INDIVIDUAL ACTIVITIES**

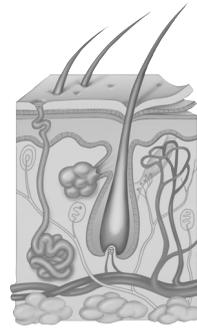
Use or create activities that directly relate to these body systems.

- Invite a laboratory technician to speak to the class about hematology and immunology tests or take the class on a field trip to these departments within the lab.
- Encourage the students to surf the Web for articles or papers on blood disorders and to circle the medical terms within the article.
- Have each student pick a type of blood or immunological disorder and prepare a short paper to present to the class. During the presentation, have the other students jot down the terms related to these systems.
- Introduce drugs used to treat disorders of the blood or immune system.
- Find a magazine article and give the students a copy and ask them to circle the medical terms.
- Give the students a diagnostic test report and have them translate the results into “plain English.”

- Have the students complete and turn in any worksheets included in the text.
- Allow the students to suggest any activities or to create original games.
- Have the students research procedures or surgeries related to the blood or the lymphatic or immune systems.
- Introduce the term “immunosuppressed” and ask the students to list the types of patients who may fall into this category. Ask the students to come up with situations in which the physician would want to suppress a patient’s immune system.

## 8

# Teaching the Terminology of Dermatology/Integumentary System



Dermatology is the study of the skin and its diseases. The name of the system that includes the skin is the integumentary system. The term comes from the Latin word *integumentum*, which means covering. In addition to the skin, this system includes the hair, nails, and the underlying subcutaneous tissues and glands.

The primary practitioner for the skin is the dermatologist. There are several subspecialties within this group such as reconstructive surgeons, burn specialists, and oncologists.

The integumentary system is usually taught at the beginning of the course. Most of the word roots involved are basic terminology and will be used in other body systems. The study of the skin and the medical terms is made easier by the fact that the system can actually be seen. It isn’t hidden like the heart or nervous system. We are able to feel and touch the skin. Students can relate the terms directly to themselves.

Begin by explaining that the skin and its structure form the largest organ in the body. This helps build the concept of skin as a system in and of itself, not just a covering to keep the rest of the body intact. The skin has physiological functions such as temperature control, protection against invading organisms, and elimination of waste. It is the organ for our sense of touch, pressure, pain, and temperature. The body needs the skin to remain intact to allow it to function completely.

Students should be made aware that skin cancers have been on the rise for many years. This may be due to several factors. One of these factors is that people live longer. Some scientists also believe that there is a correlation between the increase of skin cancers and the depletion of the earth’s ozone layer. Regardless of the cause, the effect is that physicians who specialize in dermatology have to be on the lookout for suspicious lesions that may or may not be malignant. Much research involving skin cancers is being done to improve that outcome of such a diagnosis.

The science and practice of plastic surgery is always changing and improving as it relates to the aging of the skin. With surgeries and less invasive techniques such as laser, the condition of the skin can be improved to avoid the telltale signs of age such as wrinkles, sagging, thinning, and discolorations.

Relate the integumentary system to the other body systems that affect or may be affected by its injury or disease, such as the nervous system and the immune system. Give the students an opportunity to look ahead to learning these other systems and their terms by introducing them in the chapter.

Relate the pertinent word parts to anatomical structures via presentation software, handouts and overheads to allow the student to recognize the structures of the skin. Emphasize correct pronunciation early, so that the student doesn't acquire any bad habits by mispronouncing a term.

## GROUP ACTIVITIES

The advantage of this particular body system is its availability to be studied visually. As with all group activities, insist that the students use the correct medical terminology and avoid the use of layman's terms. Verbal discussion, along with written reports, provides the instructor with a way to evaluate the pronunciation and true understanding of the terms.

- Have the students visually examine their own skin to recognize the structure on the surface such as pores, hair, and visible blood vessels.
- Have the students do research on the prevalence of skin cancers in their geographical area and compare this to other areas of the world.
- Discuss the practice of plastic surgery and the evolving techniques for preventing or repair of the aging of the skin.
- Have students research the local "spas" and other businesses that relate to skin care. Compare the promises to the actual outcome of a particular procedure. Are the ads reliable?
- Have a cosmetologist do a demonstration explaining hair and nail care.

# 9

## Teaching the Terminology of Orthopedics/Skeletal System



Tackling the terminology related to the 206 bones in the adult skeleton can be an insurmountable task to many students. Reassurance that words for this system are built in the same manner as all other body systems will help most students to relax. Start by explaining the term *orthopedics*, review the parts of a long bone, and on an anatomy and physiology model or diagram, point out some of the *major* bones of the skeleton.

Allow the students to relate their own experiences with orthopedics, such as broken bones or sports injuries. Explain to the class about the belief that many disease states of the body can be caused by a misalignment of the spinal column. The practice of chiropractics was founded on this belief.

After reviewing the bones, again lay the foundation by introducing the prefixes, suffixes, roots, and combining forms that relate to the bones. Have the students write the word parts on flash cards. Stress the importance of correct pronunciation of the word parts and ask the students to repeat them after you pronounce them. Explain that sometimes terms related to the bones/skeleton can have two different combining forms, one from Greek and one from Latin.

Divide the skeleton into the two parts, appendicular and axial, and review the bones in each part. Other teaching suggestions include:

- Relate English words to medical terms. For example, thigh bone = femur, funny bone = humerus.
- Conduct a class discussion about sports or other types of exercise and have the students talk about the movements involved in each and the possible injuries that could occur. List the correct terminology for those injuries.
- Once the terminology of the bones has been introduced, use visual aids to explain the different types of fractures and diseases.
- Discuss different diagnostic procedures like MRIs, scans, scopes, and x-rays. If possible, obtain an arthroscope to show the class or an x-ray film that clearly shows a fracture.
- Include the pharmaceutical terms related to the treatment of skeletal disorders and diseases.
- Use large flash cards showing a bone on each card and ask the students to list the related terms.
- Use word association when possible to make learning the terms easier.
- Give practice word sheets with fill-in-the-blank sentences and several terms from which to choose.
- Introduce current surgical and therapeutic procedures used for the treatment of injuries, birth defects, and diseases.

## **GROUP/INDIVIDUAL ACTIVITIES**

Activities, whether individual or group, are fun and a stimulating method of teaching. An activity produces a more relaxed atmosphere than a graded test. Once the students appear to have a solid grasp on the terminology of the bones, integrate some fun activities.

- Divide the class into two groups and assign each group a division of the skeleton, appendicular or axial. As a group, have the students identify the bones on a diagram.
- Visit an orthopedics office and arrange for the office manager or one of the other office assistants to give a presentation about the practice and to show the different instruments and scopes used. Ask the presenter to explain the different types of casting materials, splints, and any other immobilization devices.
- Talk about osteoarthritis and how common it is. Ask the students to go online and research the latest information about joint replacement surgery.
- Instead of a spelling bee, have a pronunciation bee. Show the term or word part on a flash card and have the students pronounce it. If it is not pronounced correctly, the player is eliminated.
- Have the students read an actual ER report of an injury to the skeletal system and circle and translate the medical terms.
- Divide the class into two groups and assign the topic of rheumatoid arthritis to one group and the topic of osteoarthritis to the other. Ask them to research the disorders and then have a discussion to compare and contrast the two.

# 10

## Teaching the Terminology of Orthopedics/Muscular System



With 700+ muscles in the human body, deciding which ones to teach can be daunting. A review of the major muscles on an anatomical diagram may be the best way to begin. The difference among tendons, ligaments, and cartilage should also be explained.

The next step might be to divide the body into sections, like the head, chest, arms, legs, etc., and review or introduce the muscles in each body part. Once a good anatomy and physiology review has been completed, introduce the terms relative to the muscles. Divide the terms into their word parts and define each part. Some instructors prefer to introduce roots and combining forms first and then add the prefixes and suffixes. Other methods include:

- If possible, allow students to observe in an anatomy lab that uses cadavers or animals so they can actually see the muscles, tendons, ligaments, and cartilage.

- Explain how many muscles get their names.

*Size = maximus, medius*

*Where they originate*

*Where they are inserted*

*By their action = flexor, extensor*

*Location = latissimus dorsi*

- Discuss the relationship between the bones and muscles and the rehabilitation required to strengthen muscles following an injury or surgery. Students should have a basic understanding of why strengthening the muscles helps with the support and function of the bones. Explain terms related to rehabilitation.
- Have an open discussion with the class about the difference between a strain and a sprain. Have the students talk about their own experiences with the two and list the terminology for both.
- Introduce the laboratory and diagnostic tests related to the muscles and have the students build a list of the abbreviations for each. Discuss why x-rays cannot be used to view muscles as they can be for viewing bones.
- Discuss the difference between the treatment options for muscle injuries and bone injuries. Discuss physical therapy vs. surgical intervention.
- When the students are comfortable with the terms related to the muscles, introduce the terminology of movement, like abduction, adduction, flexion, extension, etc. While reviewing these terms, have the students perform each movement.
- Discuss the difference between muscle relaxants and muscle stimulants. The students could also list the brand or generic names under the correct heading.
- Bring in a newspaper/magazine article related to the muscles, such as one on injuries, any new neuromuscular disorders, or other related diseases. Ask the students to make a list of the medical terms contained in the article and to define each.

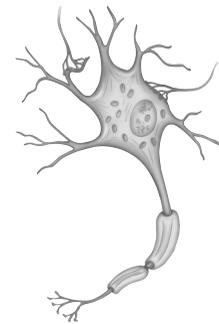
- Review a lab or diagnostic report and have a discussion about the implication of the results. Ask the students to identify the medical terms contained within.
- Encourage the students to form study groups to help each other learn and review.
- Point out the exercises and games related to the muscles on the student CD-ROM. Assign some pages from the CD-ROM for homework and bonus points.

## GROUP/INDIVIDUAL ACTIVITIES

- Take the class to a rehabilitation facility. Ask the physical therapist to explain the different equipment and modalities used in physical therapy. Relate the movement terms to certain injuries and rehabilitation and stress the importance of range of motion (ROM) exercises.
- Ask the students to do some research and find the smallest and largest muscle in the body and the shortest and longest.
- Divide the class into two groups and ask the students to research the diseases muscular dystrophy and myasthenia gravis. Students should compare and contrast the information found and make a list of the medical terms related to each disease. Have the students research the different types of paralysis: hemiplegia, paraplegia, and quadraplegia.
- Ask the students to look up information about work-related injuries such as repetitive motion disorders, like carpal tunnel syndrome, and include any statistics about the frequency and commonality of certain work-related injuries.
- Encourage the students to make a list of those words they are having problems spelling and to write each word 15 times.
- Ask the students to list the medical terms related to the common terms for disorders like tennis elbow, golf elbow, tennis shoulder, pitcher's shoulder, etc.

# 11

## Teaching the Terminology of Neurology/Nervous System



Neurology is the study of the nervous system and related diseases and disorders. It includes the central nervous system and the peripheral nervous system.

It is important to begin this subject with a discussion of the relationships of all body function to the nervous system. Without an intact nervous system, the body will not be able to function normally. The brain and spinal cord are the primary structures that permit the actions of all of the peripheral nerves.

The brain is the principal organ of the nervous system. If it cannot function, neither will any other system. Without sufficient oxygenation, brain tissue will quickly die; this death is irreversible. Therefore, the proper function of the body is dependent on the brain's working correctly.

Unfortunately, brain damage can affect the physical and/or mental capabilities of a person. The study of neurology should closely relate to the study of mental impairment. Some medical

terminology textbooks do not cover the psychology issues of injury to the nervous system. It may be up to the instructor to include information regarding the mental processes and how they relate to the nervous system.

Most terminology courses aren't long enough to devote time to understanding the nervous system in detail. It is a complicated, involved process to explain. Therefore, the instructor should emphasize the terms that are basic to the workings of the nervous system.

Physicians who specialize in neurology usually have a subspecialty such as surgery, physical therapy (including physiatrists), reconstruction (plastic surgery for reattachment of an amputated body part), and neurobiology (study of the chemical aspect of the nervous system).

Recent studies have shown the close relationship between neurotransmitters and mental health, particularly regarding depression, obsessive-compulsive disorders, and bipolar illness. The nervous system relies on these chemicals to maintain a balance among the neurons. New medications affect these neurotransmitters, allowing a more normal reaction.

Discussion of the effects that a spinal cord injury can have and how dependent the outcome is on the level of injury should address the current studies of stem cell research. Be careful not to allow this to become a political issue; stay on the science. Students may have very strong feelings regarding stem cell research.

Neurological oncology is the study of malignancies that attack structures of the nervous system. Surgery, chemotherapy, and radiology are the methods most commonly used to treat cancers of the nervous system.

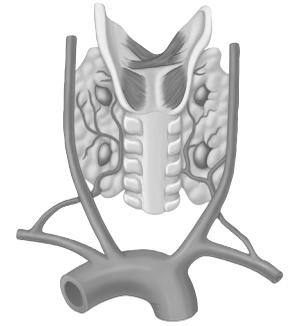
## **GROUP ACTIVITIES**

As with all group activities, insist that the students use the correct medical terminology and avoid the use of layman's terms. Verbal discussion, along with written reports, provides the instructor with a way to evaluate the pronunciation and true understanding of the terms.

- Research the most recent advances in the treatment of spinal cord injuries.
- Have students compare the differences between paraplegia and quadriplegia.
- Have the students research the increase in late effects of poliomyelitis and the effect it is having on victims.
- Have a wheelchair-bound person speak with the students regarding the stigma that society has placed on the disabled.
- Discuss the American Disabilities Act and the positive effect it has had for disabled persons.
- Research the recent improvements in microsurgery that allow the reattachment and full use of an amputated limb.

# 12

## Teaching the Terminology of Endocrinology/Endocrine System



The endocrine system is a system of ductless glands and glands that secrete internally. One way to describe the endocrine system to your students is to describe it as being similar to the nervous system. The nervous system is used to transport messages throughout the body to control function. The endocrine system is similar in that it also sends messages throughout the body to control functions, just with different means. The nervous system uses electric impulses, and the endocrine system uses chemicals.

The reason why your students are taking medical terminology will have an effect on how you teach the terminology of the endocrine system. This system is very complicated and intricate. It can be very intimidating to your students. Try taking it slow in this system if your program allows.

One of the first things that you will want to explain to students is the difference between exocrine and endocrine. The terms are very similar, so it will be easy for students to confuse them. Talk about the idea that the prefix *exo-* means outside; exocrine glands secrete to the outside of the body. The prefix *endo-* means within; the endocrine glands secrete within the body. With this initial confusion out of the way it will help to start asking the students about different glands they already know. Then follow that by having them determine whether those glands are endocrine or exocrine.

Now that the students have a good idea what the system includes, you can begin introducing the different organs. The students will need to have an understanding of each gland and which hormones are secreted. Many students will just try to memorize this information. However, it is much better if connections are made. For example, the location of the parathyroid gland can be revealed just by breaking down the word. The same approach will help with hormones. Breaking down the word *antidiuretic* makes it easier to understand what job it performs.

The concept of feedback as it relates to the endocrine system may help the students understand how the hormones actually need each other in order to perform correctly. The pituitary gland secretes many hormones that act on other endocrine glands such as the thyroid, ovaries, and testes. It acts as a “master gland” controlling functions of the body. Using diagrams and tables explaining these connections will simplify this system for the students.

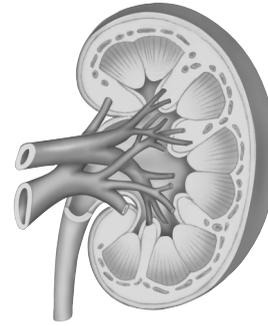
### GROUP ACTIVITIES

You may find that this is one of the more difficult systems to create group activities. Here are a few to get you started.

- Create cards with the different glands and the different hormones. Have the students match up the hormones to the glands. This will work with large groups—or split the students into teams—and make a game out of it.
- Have a class discussion regarding diabetes. What are common beliefs and myths surrounding this disease? Many will know someone who suffers from the disease. Have students look up new medications and technology updates such as insulin pumps.
- Have students research the controversy surrounding HRT. What did we believe before about HRT? What do we know now and how has it changed the use of HRT?

# 13

## Teaching the Terminology of Urology/Urinary System



Personal preference will often dictate how an instructor begins to teach the terminology of each body system. Some prefer to introduce the anatomy first and then proceed to the word parts and word building, or vice versa.

Visual aids are very important and make learning easier and make the language come alive. For instance, a picture of a polycystic kidney makes a much larger impact than just the term itself. Other teaching suggestions follow.

- Relate to the students the history of urinalysis.
- Introduce the terminology of the urinary tract and urinalysis and ask the students to repeat the pronunciation of each term.
- Explain the composition of urine and discuss how much information can be gained about a patient's state of health by performing a simple urinalysis.
- Explain that an urologist treats both the male and female urinary tract and the male reproductive system.
- Demonstrate how many of the urinary tract terms are constructed from word parts.
- Introduce abbreviations related to the urinary system and the abbreviations of the diagnostic and laboratory tests. Stress the importance of learning the full meaning of the abbreviations.
- Start with a blank diagram and relate the terms to the structures.
- Create a word scramble game.
- When introducing the diseases and disorders of this system, read an actual medical record or case study to the class and ask them to listen for the medical terms.
- When discussing the anatomy and physiology of the urinary system, try to obtain a beef kidney to dissect so the internal structures can be revealed and studied.
- Explain how the kidneys not only filter the blood and create urine, but secrete a hormone—erythropoietin—which signals the bone marrow to make more red blood cells when their level becomes low.
- Explain the difference between the male and female urinary system. Explain how the male shares structures with both the reproductive system and the urinary tract. In the male the system is referred to as the *genitourinary* system or the *urogenital* system.
- Introduce the different medications of the urinary system: diuretics, antibiotics, drugs that improve bladder function, and urinary tract analgesics.
- Since visual aids really reinforce the learning process, when discussing kidney stones or renal calculi, show an actual x-ray film, which clearly shows a stone. A KUB would be interesting to show the outline of the kidneys, ureters, and bladder.

Try to obtain an actual kidney stone and pass it around for the students to examine. Point out the sharp edges and the shape, which is what causes the pain as it is being passed.

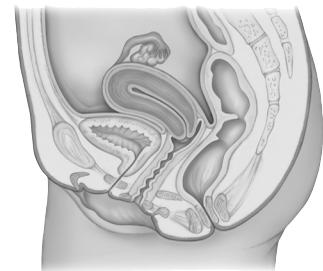
- Another interesting visual aid would be a video of an actual cystoscopy or transurethral prostate surgery.
- Discuss the two laboratory tests, urinalysis and culture and sensitivity.
- Talk about renal failure, dialysis, and transplant.
- Invite a dialysis nurse to speak to the class about hemodialysis and peritoneal dialysis or take the class to a dialysis center to see the process in person.

### **GROUP/INDIVIDUAL ACTIVITIES**

- Give the students lists of word parts related to the urinary system and have them create new terms.
- Ask the students to choose two words that have the same meaning.
- Ask for volunteers to research a disease of the urinary system and any current or new treatment options.
- Give the students an IVP report and have them circle the medical terms contained in the report and translate them into lay terms.
- Have the students research the process of lithotripsy and then have a class discussion on the subject.
- Obtain a urinalysis report and ask the students to interpret and define the results.
- Give the students a list of misspelled words and have them correctly spell the terms.
- Ask the students to create a concentration game from urinary system terms and abbreviations.
- Assign the students to give a presentation with visual aids.
- Alter a page from a medical record, and ask the students to correct it.
- Divide the students into two groups and assign one group the topic of hemodialysis and the other group peritoneal dialysis.

# 14

## **Teaching the Terminology of Gynecology and Obstetrics/Female Reproductive System**



When teaching the terminology of OB-GYN and the female reproductive system, the structures of the system may be a good place to begin, since they are all involved in both branches of the specialty.

Introducing the terminology of the anatomy and physiology first—before tackling the subjects of pregnancy, labor and delivery, and diseases and disorders of the system—is a logical way to approach the subject. Relay the terminology related to each suggestion below.

- Use anatomy and physiology models and diagrams and review the structures of the system.
- Introduce the roots and combining forms to be coupled with prefixes and suffixes to create the terminology of obstetrics and gynecology.
- Divide terms into the separate categories of obstetrics and gynecology. Place each term under the correct heading. Relate the terms to anatomical structures, diagnostic and laboratory tests, medications for treating gynecological patients, medications for treating obstetrical patients, surgical procedures, diseases, and disorders.
- When teaching the GYN section, invite a speaker from the local health department to talk about STDs and AIDS. Have the students note any terms they are familiar with.
- Explain the different stages of breast cancer.
- Introduce the terminology for different surgical procedures of the breast.
- Invite a cytotechnologist to talk about PAP smears and how they are graded. Also ask the tech to explain the special training they are required to have in order to read the PAP slides and the fact that they are limited to reading a certain number of slides per shift.
- Obtain a video of a pelvic laparoscopy and point out the uterus, ovaries, and tubes. While pointing out the structures, discuss the function of each.
- Review the menstrual cycle, along with the terminology associated with each phase.
- Discuss the relationship between problems like endometriosis and some autoimmune diseases like lupus.
- Explain the development of the fetus using anatomy and physiology diagrams, videos, or actual photos.
- Explain the trimesters of pregnancy and the complications that may arise.
- Obtain a sonogram of a fetus and point out the visible structures.
- Discuss the use of ultrasound in obstetrics and gynecology.
- Using visual aids, introduce and define the terms *zygote*, *embryo*, *fetus*, *neonate*, and *newborn*.
- Show a video of a vaginal delivery and a C-section delivery.
- Invite a labor and delivery nurse to speak to the class and to compare and contrast the difference between assisting with each type of delivery.
- When teaching the medications and laboratory and diagnostic tests, it may be easier to separate the terms into two categories.

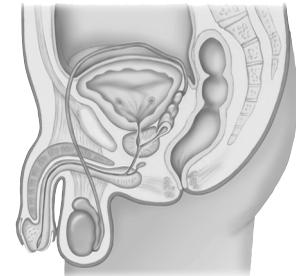
## GROUP/INDIVIDUAL ACTIVITIES

- Divide the class into two groups and have each group create its own words and then quiz each other by giving a definition and guessing the term.
- Have the students watch a TV show such as *Maternity Ward* and make a list of all OB-GYN terms used in the episode.
- Instead of a spelling bee, have an abbreviation bee.
- Divide the class into two groups. Give one group an actual hospital report of a C-section delivery and the other group a hospital report of a vaginal delivery. Have the students circle the medical terms and then compare the differences and similarities between the two deliveries.
- Ask the students to break down and explain the terms *hysterectomy*, *salpingectomy*, *oophorectomy*, and *hysterosalpingo-oophorectomy*.
- Ask the students to do research on amniocentesis and list the information that can be gained from analyzing the amniotic fluid.

- Ask for volunteers to do a short presentation on in-vitro and assisted fertilization. Ask the rest of the class to write down any OB-GYN terms included in the presentation.
- Divide the class into the appropriate number of groups and have each group do a report on one of the stages of breast cancer and the treatment options for each.
- Have one or two students prepare a short presentation on the pros and cons of HRT.

# 15

## Teaching the Terminology of Male Reproductive Medicine/Male Reproductive System



Urology and andrology are the two specialties for diseases and disorders of the male reproductive system. Urology studies the structure and function of the testes and penis along with related organs. Andrology is the study of male hormones and their effect on aging, body structure, psychology and sexual behavior.

The study of the urinary system should precede this subject since they are integral. The male reproductive system should be studied as an adjunct to the urinary system and female reproductive system. It is necessary to teach in this order so that the correlations between the systems can be understood. In addition, students should have a basic understanding of the endocrine system to be able to understand the male hormones and how they work in the body.

Many of the prefixes and suffixes of this system will be the same as in most other chapters. Also, if the student has already studied the process of reproduction, many of the word roots will be recognized.

Begin teaching the chapter by discussing the connection to the urinary system and the structures that both systems have in common. As a result of this introduction, the students will realize that they have already learned a great deal about the subject within the study of other chapters. Much of the terminology for this system will be redundant. That should be looked upon as a positive aspect since it allows for the review of familiar terms.

Use presentation software, anatomical models, and drawings to explain the manner in which sperm are developed, mature, and fertilize an ovum. There are several excellent videos available that show the physiological action of the male and female reproductive systems. Care should be used in their use since they are graphic in nature. However, the instructor shouldn't shy away from discussion of the subject. As a matter of fact, the more comfortable the instructor is, the more comfortable the students will be.

Due to the evolution of infertility treatments, the science has changed our way of thinking about reproduction. Sterility and erectile disorders are openly discussed and treated. Society has become more open regarding sexuality in general. This should make it easier for the instructor to keep the students on task.

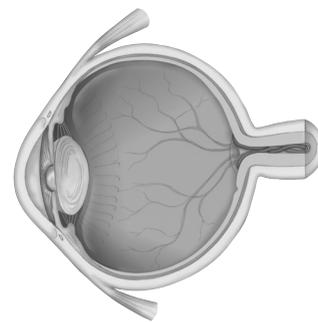
## GROUP ACTIVITIES

As with all group activities, insist that the students use the correct medical terminology and avoid the use of layman's terms. Verbal discussion, along with written reports, provides the instructor with a way to evaluate the pronunciation and true understanding of the terms. Because the subject may make some students uncomfortable, emphasize the use of medical terms instead of euphemisms and slang.

- Research new treatments for infertility and sterility.
- Discuss the difference between female menopause and male andropause.
- Discuss genetic issues and how they relate to the reproductive systems of both males and females.
- Research the issue of erectile dysfunction and the pharmaceutical industry's approach to it.

# 16

## Teaching the Terminology of Ophthalmology/Eyes



Ophthalmology is the study of the eye structures and the sense of sight. When teaching this section, there are several areas in particular to emphasize.

There are three primary specialists in this field of medicine: ophthalmologists, optometrists, and opticians. There are also subspecialties such as cosmetic, reconstructive plastic, refractive (LASIK), glaucoma, and cataract surgeons. The instructor should start out with defining each and describing the differences between each discipline. In addition, stress the differences in spelling. In this instance, pronunciation is key to the correct spelling. There should be no regional differences in pronunciation of these specialties.

The students should be able to relate the terminology to the structures of the eye, sense of vision, and related nervous system connections. Begin by listing pertinent word parts, and then relate them to anatomical drawings. This can be done via presentation software, handouts, and overheads. Do not rely on students to understand the drawings in their textbook without input from the instructor. Move on to adding prefixes and suffixes that relate to procedures that are performed on the eye.

Correct spelling cannot be emphasized enough. Since many terms are similar but have very different meanings in the field of ophthalmology, the accurate spelling may make a difference within the context of the material.

Make known that constant improvements and new procedures are being developed but, in general, the terminology will contain the same basic word parts. Since surgical procedures are quite often acronyms or eponyms, giving a background explanation will help the students understand. Explain the particular procedures that may be eponyms and the process through which they were named. Understanding the basis for a term enables the student to have a different viewpoint from which to grasp the concept.

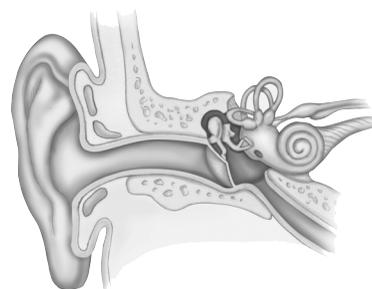
## GROUP ACTIVITIES

Ophthalmology is one of the less common specialties. As a result, students are likely to have less knowledge of the specialty. Introducing them to the activities of this type of practice will help reinforce the terminology. As with all group activities, insist that the students use the correct medical terminology and avoid the use of layman's terms. Verbal discussion, along with written reports, provides the instructor with a way to evaluate the pronunciation and true understanding of the terms.

- Have students relate their own experiences with ophthalmologists, optometrists, and opticians. Have them discuss the training and the limitations of each practice.
- Have the students do “eye exams” on each other. These should be as simple as noting the difference of the iris color, PERRLA, eye movement. These are noninvasive and do not invade the privacy of the person. Have the students use the correct terms as they discuss the exam. This will also allow the student to involve him- or herself with the hands-on concept of the exam.
- Have students do research on various practices in the area that perform refractive surgeries. This can be done with television and radio advertisements, telephone book listings, and Web pages for practices in their geographical area. Have them compare these to information on practices outside their general area. Discuss the various types of advertising and the value to the consumer. Are the terms used in the ads correct or do the advertisers not expect a consumer to understand the medical jargon? Do they notice any misspellings or incorrect grammar?
- Have students visit an optician and report on the limitations of this specialist, the various types of correction lenses available, and the manner in which lenses are made. This gives the students a real-world experience with the terminology they have been learning. Do the opticians use layman's terms? Did the students make the connection to the correct medical term?
- This last suggestion is not for the faint of heart. Cow eyes are readily available from local butchers. Using one to show the structure of the eyes is fascinating to many and “gross” to others. Poll your students before doing the demonstration to get an idea of their reactions. Medical assisting and other clinical students will probably have a more positive response than purely administrative students.

# 17

## Teaching the Terminology of Otolaryngology/Ears, Nose, and Throat



The specialty of ENT encompasses the ears, nose, and throat. The nose and throat are part of the respiratory system and the ears and the nose are part of the sensory system. For this reason, it may be easiest to examine each component individually. When using any of the following suggestions, incorporate all related terminology.

- Ask the students to try pronouncing the terms before you present them to the class.

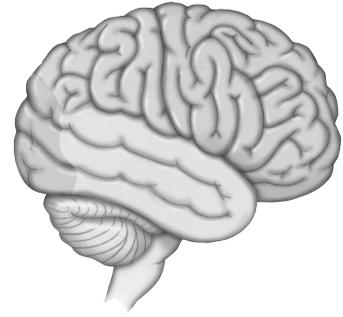
- Using anatomy and physiology models, diagrams, or actual photos, point out the external and internal structures of each component.
- On the board, create three columns and list the prefixes, suffixes, roots, and combining forms for the ears, nose, and throat. Do the same with diagnostic tests, diseases and disorders, and surgical procedures.
- Since the oral cavity is also part of this system, examine the tonsils and adenoids and relate the terminology of the tonsillectomy and adenoidectomy.
- List any abbreviations that could have two meanings and show any combining forms that may be of both Greek and Latin origin.
- Invite an audiologist to speak to the class about hearing tests and the different types of hearing loss.
- Trace the pathway of sound through the structures of the ear while pointing out all terms.
- Discuss the dual role of the nose in both the sensory and respiratory systems. Explain the function of each structure as it pertains to both systems.
- When discussing the medications used to treat this system, point out that some come in more than one form. For example, a medication may be used both externally and internally.
- Ask for a student volunteer and demonstrate how we are able to smell.
- Discuss the function of the nose, pharynx, and larynx and any diseases and disorders of each.

## GROUP/INDIVIDUAL ACTIVITIES

- Bring a tympanic thermometer to class and demonstrate an aural temperature and allow the students to practice this method.
- Ask students to label separate anatomy and physiology diagrams of the ear, nose, and throat.
- Assign research on the different types of hearing loss and choose several students to present their information to the class while making a list of the terms included.
- Ask the students to watch a TV medical show and write down words pertaining to the ears, nose, and throat. Give a prize or bonus points for the most correct terms.
- Ask the students to surf the Internet and gather information and statistics on smokeless tobacco and oral cancer.
- Ask the students to gather information on hearing loss caused by exposure to noise. Make a list of common noises and the decibel level of each.
- Write statements on the board using ENT terminology and have the students give the common term for each medical term.
- Give the symptoms of a disease to the class and ask them to give the medical term for the disorder. This can also be done with treatment methods.
- Ask for a volunteer to do research and give a short presentation on the three different ways that sound is conducted, using the correct medical terminology.
- Create a crossword puzzle using ENT terms and word parts.
- On the board, write the two terms *labyrinthectomy* and *labyrinthotomy*. Have the students divide the words into parts and define each part.
- Divide the ear into outer, middle, and inner sections and ask the students to name and correctly spell the structures in each area.
- Ask the students to bring in an article on the ENT specialty.
- Ask if anyone in the class knows American Sign Language and if he or she would mind demonstrating some signs to the class. If not, give a handout of some of the common signs and have the students practice them.

# 18

## Teaching the Terminology of Psychiatry



Psychiatry is the study and treatment of mental illness. The term is based on the word form *psyche*, the Greek word for the mind and its processes.

Psychiatrists are medical doctors who specialize in researching, treating, and preventing mental illnesses. They may prescribe medications or use psychotherapy or other methods of mental therapy. Psychologists are trained in the analysis and therapy of the mentally ill; they cannot prescribe drugs. Psychiatric technicians work in psychiatric care facilities, assisting the patient with various therapies and activities. In addition, there are other levels of counselors, such as licensed social workers, who work with substance abusers, sex offenders, and others who are mentally or emotionally challenged. The instructor should start out with defining each and describing the differences among the disciplines.

The basic word form, *psych/o*, is used in many terms regarding this science. Since it is not possible to relate these terms to a body system, the student needs to start with understanding the direction of current medicine regarding mental illness. Patients with mental illness had a stigma attached to their diagnosis; they were thought to be “weak” or simply resistant to “normal” behaviors. Today’s psychology recognizes the effects that the imbalance of certain neurotransmitters that may be the cause of mental illnesses. As a result, patients are less likely to face the indignity that once was attached to mental illness.

Since the student will not be able to associate the terminology with specific anatomical structures, emphasis should be placed on the relationship of the brain and nervous systems to the psyche. Discussion should involve the concept of an imbalance in neurotransmitters directly linked to mental illness.

The terms within this particular section may be difficult to connect to a tangible concept and will be of a more indefinable nature. The instructor needs to be aware of the possible preconceptions that students will bring to the classroom. In addition, cultural differences and bias may cause the student to interpret some terminology in diverse ways. It is up to the instructor to be able to discern when this occurs and attempt to overcome any inaccuracies.

Correct spelling cannot be emphasized enough. Since many terms are similar but have very different meanings in the field of psychiatry—i.e., psychology vs. psychiatry—the accurate spelling may make a difference within the context of the material.

Emphasize that psychiatry is an evolving science, and improvements in treatment are often and many. Even so, the terminology will contain the same basic word elements. A comprehensive medical dictionary is very important to allow the student to check the specific definition of a psychiatric term, but it may not be as current as one would like. The Internet is a valuable resource to keep up to date on therapies and drug modalities for the treatment of mental illness.

### GROUP ACTIVITIES

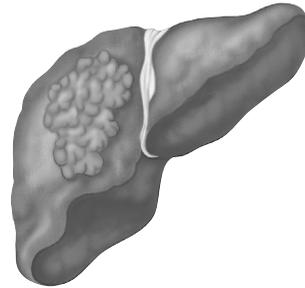
Due to the very personal nature of the discussion of mental illness, the instructor must use tact and insight into the personality of the class. It is easy to overlook the societal taboos that are affiliated with the brain and its processes. Care must be taken when using humor when teaching this subject. In addition, do not expect students to openly discuss any personal or familial expe-

periences with psychiatry. The students will probably not be willing to participate in class discussion as readily as they would with other subjects. The instructor should respect the privacy of students and not exert pressure on any student to share.

Quizzes such as depression indicators or mini-mental assessments may be used to familiarize the students with the language used in this specialty.

# 19

## Teaching the Terminology of Oncology



Oncology is the study of tumors, particularly malignant neoplasms (cancers) and the treatments available. It is constantly evolving branch of science, with new methods of therapy being discovered frequently. As a result, the terminology is changing with each new form of treatment.

When teaching this specialty, the instructor must be careful to differentiate between benign and malignant neoplasms. These differences are of particular importance in diagnosis coding.

Cancer can strike any body system. Most terms combine a suffix that describes the neoplasm with a combining form that relates to the body system affected. Thus, the student needs a strong knowledge of the body as a whole and the terms that concern each body system. However, since the change that indicates a malignancy begins at the cellular level, the instructor should review the cellular components and discuss the changes that occur in a cancerous cell.

Much statistical data is collected on the mortality and morbidity rates of various cancers. The use of such reports can be of great value when teaching this specialty. Current information can be found on the Internet. An assignment of a written report on a given type of cancer is an excellent way for the student to learn to recognize the suitable terms.

Since treatments for cancer are often new and complex, the terms involved may even be unfamiliar to the instructor. If this portion of the course is going to be comprehensive, be prepared. Read up on the most current treatments available.

Even though the therapies may change, the word roots contained within the names will be the same basic terms they have come to learn. Many surgeries and treatments are acronyms or eponyms; explaining the etymology of the name will help the student. Understanding the basis for a term enables the student to have a different viewpoint from which to grasp the concept.

Many treatments include chemotherapy and nuclear medicine components. Relating these to the specialty will give the student another view of the complexity of the science behind the medicine.

Correct spelling cannot be emphasized enough. If the student is going to use his or her newly gained knowledge in the form of diagnosis or procedure coding, the ability to spell accurately will facilitate the location of the proper code.

### GROUP ACTIVITIES

Due to the complexity of the science of oncology, it is one of the most difficult sections to teach. The evolving nature of the treatments available makes it even harder. As with all group activities, insist that the students use the correct medical terminology and avoid the use of layman's

terms. Verbal discussion, along with written reports, provides the instructor with a way to evaluate the pronunciation and true understanding of the terms.

- Have the students research a particular type of cancer. They should prepare a written report including appropriate terminology.
- Students could investigate the various types of therapies and the availability of them in a given geographical area. Of particular interest would be a hospital dedicated to the study and treatment of cancers. These cancer centers are becoming more common and therefore are more accessible.
- Since pathology is integral to the diagnosis of neoplasms, have students research the manner in which histological specimens are processed.

## 20

# Teaching the Terminology of Radiology and Nuclear Medicine



The instructor should differentiate between radiology and nuclear medicine. Radiology is the branch of medicine concerned with the study of anatomy and physiology, energy (x-rays, a magnetic field, sound waves), and radiation. It uses technology to create images of the internal structure of the body. Nuclear medicine is the medical specialty that uses radioactive substances to create images of internal structures of the body for the purpose of diagnosis.<sup>1</sup> When teaching this specialty, the instructor should start out with a discussion of the body as a whole and the difference between soft tissue, bones, and how different modalities can create an image precise enough for the diagnosis of a disease process.

Imaging has come a long way from the simple bone x-ray developed by the Curies at the turn of the twentieth century. Since then, science has discovered other “rays” and nuclear substances that can penetrate the body and give an image of soft tissue. The PET scan can go even further to produce images of the physiology and metabolism of an organ.

Since these techniques are based on science beyond simple anatomy and physiology, the terms used may not be derived from the basic word roots. Much of this science has been developed and named after researchers that were not necessarily from the field of medicine. Thus, many of the terms are acronyms of complicated expressions of nuclear science.

Having said that, the student should be able to break down and define a term by its roots, but with a twist. The anatomy (structure) of the body will be a standard term but the technological component may be unique to this science.

The easiest way to introduce and explain the process of radiology is to review the body planes, body regions and quadrants. Since most of the techniques used rely on the direction and angle of the penetrating ray, recognizing not only the anatomical part but its relationship to other surrounding structures is vital.

In addition to the various pieces of equipment involved, the techniques also utilize the infusion of many types of drugs or contrast materials. The students should be given a brief explanation of these substances and the response the body has to them.

<sup>1</sup>Definition from Susan Turley, *Medical Language*. Pearson/Prentice Hall, 2007.

Radiology reports can be long and complex. Using radiology reports to teach the terminology is very effective. The student not only learns the term, but discovers the connection between the anatomy and the technology.

## GROUP ACTIVITIES

The complexity of this science creates its own set of difficulties for learning. The evolving nature of the techniques makes it imperative that the instructor be current in her or his knowledge of radiology and nuclear medicine.

- Have the students research the history of radiology. They should prepare a written report including appropriate terminology.
- Students may contact an imaging center and take a tour. Seeing the equipment helps to understand the terms used; the technician would be using the very terms the student is attempting to learn.
- Have the students make a poster listing various structures and matching with which technique would be used to create an image most effectively.
- Students who have access to x-rays or other images could bring them into the class for viewing. Be sure, however, to obscure any manner of identification to prevent a breach of confidentiality.

# 21

## Teaching the Terminology of Dentistry



It is very rare to find a medical terminology textbook that includes a section on dentistry. The mouth and its components are most often covered in the gastroenterology/gastrointestinal section of most terminology texts.

Dentistry will include all components of the mouth and associated facial structures; following would be the different specialties associated with dentistry. Some students do not necessarily know the difference between general dentistry and endodontics. Some common specialties are pedodontics, endodontics, maxillofacial surgery, and orthodontics. It will help to break down the terms into word parts to teach the students the meaning behind the specialties. For example, *endodontics*: the suffix *-ics* means pertaining to; the prefix *endo-* means within, and the word root *dont* means tooth. So the meaning of endodontics is pertaining to within the tooth. You can then show the students how the meaning of the word connects to the specialty. Endodontics deals with the inside of the tooth (the root). You may ask your students what procedure(s) may be done by an endodontist.

A common problem when teaching the terminology of the mouth will be the surfaces of the teeth. There are many ways this can be approached, but with all of them it is vital to have some form of visual aid. The best will be a model of a tooth or mouth; diagrams will also be very valuable. As with all terminology, looking at the meaning will help the student to associate the term with its location, such as the buccal surface of the tooth. When the definition of buccal is es-

tablished as pertaining to the cheek, it will help the student remember that the buccal surface of the tooth is the one next to the cheek. This process can be used with almost all of the surfaces. Once they have been instructed, repetition of the terms and their locations will help to solidify the material for the student.

Reading a dental report will assist the student with using the terms in context. It may be difficult to obtain these kinds of reports, but don't overlook their value.

## GROUP ACTIVITIES

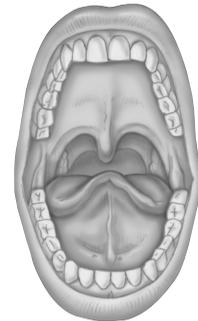
As with all group activities, insist that the students use the correct medical terminology and avoid the use of layman's terms. Verbal discussion, along with written reports, provides the instructor with a way to evaluate the pronunciation and true understanding of the terms.

Visuals are always one of the best ways to instruct. The mouth is one of the easiest parts of the body to visualize.

- Team students up to look at the structures of the mouth, and if students are comfortable, have them get up close with mirrors and look at the different shapes and name the tooth surfaces. Have students feel bones of the jaw and where they come together.
- Discussion of different dental maladies as a group can be fun for students and may help them to relate terms with the related problems. Most people have had some type of dental work done in their life, be it orthodonture or a root canal.
- If your students are going into the dental field, it may be helpful for them to spend some time in a dental office to hear the terms used in the actual setting. It will help to show the importance of using the correct terms.
- If the students are going to be billing for dental procedures, using the terms to find the appropriate billing codes can help them understand the material in context.

# 22

## Teaching the Terminology of Dietetics



Dietetics is science of applying nutritional data to the regulation of the diet of healthy and sick individuals.<sup>1</sup> Dietetics and nutrition issues are usually covered under the body system of gastroenterology.

Reference materials can be found on the Internet, through various agencies that are dedicated to teaching good nutrition, and even through dentists. Instructors of basic medical terminology courses will probably not spend much time on this subject.

<sup>1</sup>*Taber's Cyclopedic Medical Dictionary*, 20th Edition. F.A. Davis, 2001.

# 23

## Teaching the Terminology of Pharmacology



Pharmacology is the study of drugs, their origin, nature, properties, and effects upon living organisms.<sup>1</sup> The terminology of this science is complicated and involves many chemical expressions that can be quite intimidating to students.

In most medical terminology courses, pharmacology is not a major section to be covered. In fact, some medical terminology textbooks do not devote a separate section to it. The instructor will need to do some research to be able to present the information in any detail. Due to the lack of special chapters, material will have to be presented from other reference material.

Pharmacological terms are primarily presented with each of the body systems. To have a specific segment of the course dedicated to the science may be redundant.

The primary research book for pharmacology should be the *Physicians' Desk Reference*. Within its covers are the brand (trademarked) name, generic name, and chemical name of all medications currently available.

Other forms of reference can be found on the Internet and pharmaceutical representatives.

In addition, methods of administration terms would be offered. The prefixes intra-, inter-, sub-, and trans- are common in relation to methods of administration of drugs. Terms that relate to the reaction of the body to a drug, such as idiosyncratic, adverse, and allergic should be emphasized.

In summary, the terminology of pharmacology may not be a major section of the course but should be referred to throughout the appropriate body systems.

<sup>1</sup>*Taber's Cyclopedic Medical Dictionary*, 20th Edition. F.A. Davis, 2001.

