MEDICAL TERMINOLOGY

Self-study guide
for English medium students

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**Foreword**

The language of medicine, historically established on the basis of Latin, along with national medical vocabulary contains great number of Latin loanwords. Word formation and specifically medical terminology of Latin origin is of the crucial importance for medical students. When you work in health care, it is important to know the language of medicine. Doing so is vital to become an integral part of the team and is necessary to follow through on your job responsibility. Being able to speak and understand this language enables you to do your job quickly and efficiently.

The content of the guide is logically organized in three blocks (or modules). The general plan of the guide is as follows: the first four units (module 1) constitute the foundation of the course and introduce the overall approach to understanding the medical language. These units cover basic suffixes, prefixes, and combining forms, as well as terms involving the human body as a whole.

Module 2 (units 5 through 16) focuses on terminology related to the structure and functions of specific body systems (digestive, respiratory systems etc) on the ground of known and new combining forms, providing definitions that help connect words to their meanings. Several learning aids are included in this workbook, such as simple anatomical diagrams and figures representing body parts or systems. Each unit ends with self-check exercises and keys to them aimed to induce you to compare, analyze and realize your knowledge by the fulfillment of these tasks.

Chapters 17 through 20 deal with specialized areas of medicine – cancer medicine, medical imaging, pharmacology and microbiology. At the end of the book you will find the dictionary of combining forms and their meanings.

Every professional working in the health care industry – from first-year medical students to physicians – requires knowledge of the language of the medical terminology. Using the features of this guide you will be able to quickly and effectively perform your job and communicate with other health care professionals.

**How to work with the guide**

The book begins with two charts demonstrating the course content for the students of medicine and dentistry. Choose your chart. It shows all the topics studied and tests you are to pass. It also contains spaces for your notes.

Units 1 – 4 cover general rules of term analysis. They open with explanation of the rules followed by the list of prefixes, suffices, combining forms. Each unit contains exercises which will help you to get the experience of understanding and building new medical words. Working with these units you will build a medical language vocabulary.

Units 5 – 16 discuss the terminology of the body systems.

Units 17-20 concentrate on special areas of medicine. They continue the general format of the previous units.

Each unit contains a list of combining forms and their meaning. The exercises with keys will give you the opportunity to master and review the material of the unit. They will help you to prepare for the tests which are written after mastering the material of each unit.
# Course content (medicine)

<table>
<thead>
<tr>
<th>Module</th>
<th>Subject</th>
<th>Unit</th>
<th>Notes</th>
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</thead>
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<td>1. Orientation to medical terminology</td>
<td>Basic word structure</td>
<td>1</td>
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<td></td>
<td>Terms pertaining to the body as a whole</td>
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<td>2. Body systems</td>
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<td>Urinary system</td>
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<td>Cardiovascular system</td>
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<td>Respiratory system</td>
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<td>Blood and lymphatic system</td>
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<td>Musculoskeletal system</td>
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<td>Sense organs</td>
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<td>3. Diseases, their causes, and treatment</td>
<td>Cancer</td>
<td>17</td>
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<td></td>
<td>Medical imaging</td>
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<td>Pharmacology</td>
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<td>Microbiology</td>
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<td>Final test 3</td>
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<td>Teeth and oral facial region</td>
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<td>Urinary system</td>
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<td></td>
<td>Final test 3</td>
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</tbody>
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**Recommended literature and sources of information:**


Medical terminology and clinical procedures / Mary Bird. London: National Services for Health Improvement, c2008.


Assessment

The students’ knowledge is assessed by means of tests (regular tests, combined tests and module tests). Twenty regular tests are done after each unit. A regular test contains 10 tasks to build a medical word and 10 tasks to analyze a medical word. The students are given 20 minutes to right this test. The works are assessed by the percent of correct answers: 90-100% - 5; 75-89% – 4, 60-74% – 3; >60 – 2.

A combined test contains 20 tasks to analyze a medical word and 20 tasks tp build a medical word. They are assessed in the similar way: 90-100% - 5; 75-89% – 4, 60-74% – 3; >60 – 2.

A module test has three levels. Level one measures understanding. This is a multiple choice test containing 20 tasks to be done in 10 minutes. The works are assessed by the percent of correct answers: 20 answers (100% ) – 59 points, 19 answers (97%) - 57 points, 18 answers (93%) - 55 points, 17 answers (90%) - 53 points, 16 answers (87%) - 51 points, 15 answers (83%) – 50 points. The student who has made zero, one, or two mistakes can go to level two.

At level two the students are to do 10 tasks to build a medical word and 10 tasks to analyze a medical word. The works are assessed by the percent of correct answers: 20 answers (100% ) – 71 points, 19 answers (97%) - 69 points, 18 answers (93%) - 67 points, 17 answers (90%) - 65 points, 16 answers (87%) - 63 points, 15 answers (83%) – 61 points. The student who has made zero, one or two mistakes can go to level three.

Level three is interview with the head of department or an associate professor. By the results of the interview up to 9 points can be added to the student’s mark.

Module test assessment

<table>
<thead>
<tr>
<th>% of correct answers</th>
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<th>Level 1 points</th>
<th>Level 2 points</th>
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<td>87</td>
<td>16</td>
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<td>63</td>
</tr>
<tr>
<td>83</td>
<td>15</td>
<td>50</td>
<td>61</td>
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</table>

The students who transfer from the Russian medium to the English medium or from the medical school where this subject was not taught do a transfer test.

This test consists of three levels. Level one measures understanding. This is a multiple choice test containing 30 tasks to be done in 10 minutes. The works are assessed by the percent of correct answers: 30 answers (100% ) – 59 points, 29 answers (97%) - 57 points, 28 answers (93%) - 55 points, 27 answers (90%) - 53 points, 26 answers (87%) - 51 points, 25 answers (83%) – 50 points. The student who has made zero, one, or two mistakes can go to level two.

At level two the students are to do 10 tasks to build a medical word and 10 tasks to analyze a medical word. The works are assessed by the percent of correct answers: 20 answers (100% ) – 71 points, 19 answers (97%) - 69 points, 18 answers (93%) - 67 points, 17 answers (90%) - 65 points, 16 answers (87%) - 63 points, 15 answers (83%) – 61 points. The student who has made zero, one or two mistakes can go to level three.

Level three is interview with the head of department or an associate professor. If the student passes this stage, he gets 180 points (an excellent mark).
Transfer test assessment

<table>
<thead>
<tr>
<th>% of correct answers</th>
<th>Number of correct answers</th>
<th>Points</th>
<th>Points</th>
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<tr>
<td>83</td>
<td>25</td>
<td>120</td>
<td>150</td>
</tr>
</tbody>
</table>
Module 1  
Orientation to medical terminology  
Unit 1  
Basic word structure

Unit outline  
I. Objectives of studying medical language  
II. Word elements and word structure  
III. Medical term analysis using basic word elements  
IV. Combining forms, prefixes and suffixes  
V. Consolidation and self-check

Unit objectives:  
- define the basic parts of a medical term (root, suffix, prefix, combining form, combining vowel)  
- learn to divide medical words into their component parts;  
- identify the basic parts of a medical term;  
- learn basic combining forms, prefixes;  
- use these combining forms, prefixes and suffixes to build and analyze medical words;

I. Objectives of studying medical language:  
1). To analyze words structurally  
2). To correlate an understanding of words elements with the basic anatomy, physiology, and disease processes of the human body  
3). To be aware of spelling and pronunciation problems

MEDICAL WORDS  
About 90 % of medical words are of Ancient Greek and Latin origin. It is not difficult to understand them. Study the structure of a medical word cardiologist (a doctor who treats the heart):  
cardi/o / log / ist  
Cardi is a root, o – a combining vowel (these two together are a combining form), log is another root, ist is a suffix. Some combining forms can be used only at the end of the word (they resemble suffixes and are often called suffixes). For example,  
-logist - specialist  
-logy - science  
Combining forms which can be used at the beginning or in the middle of the word:  
cardio - heart  
hepato - liver  
gastro - stomach  
entero - intestine  
ophthalmo - eye  
oto - ear  
dermato - skin  
stomato - mouth  
neuro - nervous system  
uro - urinary system  
gyneco - woman  
histo – tissue  
radio - rays  
onco - tumor  
bio – life

10
BASIC RULES

1. A WORD ROOT PROVIDES THE BASIC MEANING OF THE TERM.  
   **EXAMPLE:** HEPAT MEANS LIVER IN THE TERM HEPATITIS (INFLAMMATION OF THE LIVER)

2. A PREFIX APPEARS BEFORE THE WORD ROOT TO CHANGE THE MEANING.  
   **EXAMPLE:** ADDING OF PREFIX HYPO TO THE TERM DERMIC CHANGES THE MEANING FROM PERTAINING TO THE SKIN TO PERTAINING TO BELOW THE SKIN

3. A SUFFIX APPEARS AT THE END OF THE WORD.  
   **EXAMPLE:** IN THE TERM HEPATITIS SUFFIX ITIS WHICH MEANS INFLAMMATION IS ADDED TO THE ROOT CARDI.

4. A COMBINING VOWEL CONNECTS WORD ROOTS.  
   **EXAMPLE:** LARYNGOSCOPE – O CONNECTS TWO ROOTS: LARYNG AND SCOPE IN THE WORD MEANING INSTRUMENT FOR VISUAL EXAMINATION OF THE LARYNX (VOICE BOX)

5. A COMBINING FORM CONSISTS OF A WORD ROOT AND A COMBINING VOWEL.  
   **EXAMPLE:** HEPAT + O = HEPATO (A COMBINING FORM MEANING LIVER)

6. A COMBINING VOWEL IS NOT USED BEFORE SUFFIXES AND ROOTS BEGINNING WITH A VOWEL, BUT IS USED BETWEEN TWO ROOTS IN A COMPOUND WORD.

7. THE MEANING OF A MEDICAL TERM CAN BE DETERMINED BY STARTING WITH THE SUFFIX AND MOVING BACK TO THE BEGINNING OF THE WORD;  
   **EXAMPLE:** HEPATITIS MEANS INFLAMMATION (ITIS) OF THE LIVER (HEPAT)

Remember that each term means more than you can learn from its literary meaning but word analysis will help you to understand complex terminology easier.

Compare the meanings of the terms derived from the word building elements and those described in *Mosby’s Medical Encyclopedia for Health Professionals*

<table>
<thead>
<tr>
<th>TERM</th>
<th>LITERARY MEANING</th>
<th>ENCYCLOPEDIA DEFINITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arthritis</td>
<td>Inflammation of the joint</td>
<td>any inflammatory condition of the joints, characterized by pain and swelling</td>
</tr>
<tr>
<td>Cardiology</td>
<td>Study of the heart</td>
<td>the study of the anatomy, normal functions, and disorders of the heart</td>
</tr>
<tr>
<td>Rhinitis</td>
<td>Inflammation of the nose</td>
<td>inflammation of the mucous membranes of the nose, usually accompanied by swelling of the mucosa and a nasal discharge. It may be complicated by sinusitis. Rhinitis may be acute, allergic, atrophic, or vasomotor</td>
</tr>
</tbody>
</table>
Study the combining forms and their meaning:

**COMBINING FORMS**

adeno - gland; arthro - joint; bio - ife; carcino - cancerous; cardio - heart; cephalo - head; cerebro - brain; ciso - to cut; crino - to secrete; cyto - cell; dermo - skin, dermato - skin; electro - electricity; encephalo - brain; entero – intestines (usually small intestines); erythro - red; gastro - stomach; geno - producing; gnoso - knowledge; gyneco - woman; hemo - blood; hemato - blood; leuko (leuco) - white; nephro - kidney; neuro - nerve; onco – tumor; ophthalmo - eye; osteo - bone; patho - disease; physio - nature; psycho - mind; radio - rays; rhino - nose; scopo - visual examination; sectio - to cut; thrombo - clot; tomo - to cut; uro - urine; algia - pain; cyte - cell; ectomy - surgical removal; emia - blood condition; gram - record; logy - science; oma - tumor; opsy - to view; scope - instrument for visual examination; tome - instrument for cutting; tomy - process of cutting

**SUFFIX ES**

-ac - pertaining to; -al - pertaining to; -ia - condition; -ic - pertaining to; -ist - specialist; -itis - inflammation; -osis - condition;

**PREFIXES**

a - no; an - no; auto - self; ana - up; dia - complete; endo - within; epi - above; ex - out; exo - outside; hyper - above, excessive; hypo - under; re - back; retro - behind; peri - surrounding; pro - before; trans - across;

**Consolidation and self-check**

**Build medical words:**
1. surgical cutting of the gland, 2. science about glands, 3. surgical cutting of the joint, 4. condition of absence of the brain, 5. pertaining to inside the heart, 6. pertaining to developing inside, 7. record of the heart, 8. science about the cells, 9. inflammation of the heart, 10. surgical cutting of the head;

**Analyze the words:**

**Keys:**
Unit 2
Terms pertaining to the body as a whole

Unit outline
I. Levels of organism organization (cell, tissue, organ, system)
II. Positional and directional terms
III. Combining forms, prefixes and suffixes
IV. Consolidation and self-check

Unit objectives:
- to learn the terms which apply to the structural organization of the body;
- to become acquainted with the terms which describe positions, directions and planes of the body;
- to learn new word elements and use them to build and understand the meaning of medical terms

Positional and directional terms

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anterior</td>
<td>In front of the body</td>
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<tr>
<td>Central</td>
<td>Pertaining to the center</td>
</tr>
<tr>
<td>Deep</td>
<td>Away from the surface</td>
</tr>
<tr>
<td>Distal</td>
<td>Away from the beginning of the structure</td>
</tr>
<tr>
<td>Afferent</td>
<td>Conducting toward a structure</td>
</tr>
<tr>
<td>Superior</td>
<td>Pertaining to the head, situated above another structure</td>
</tr>
<tr>
<td>Medial</td>
<td>Pertaining to the middle</td>
</tr>
<tr>
<td>Inferior</td>
<td>Away from the head, situated below another structure</td>
</tr>
<tr>
<td>Proximal,</td>
<td>Pertaining to the beginning of the structure</td>
</tr>
<tr>
<td>Efferent</td>
<td>Conduction away from the structure</td>
</tr>
<tr>
<td>Lateral</td>
<td>Pertaining to the side</td>
</tr>
<tr>
<td>Superficial</td>
<td>Near the surface</td>
</tr>
<tr>
<td>Posterior</td>
<td>Back of the body</td>
</tr>
</tbody>
</table>

Study the combining forms and their meaning:

COMBINING FORMS
adipo - fat; antero - front; bolo-throw; caudo - tail; cervico - neck; chondro - cartilage; chromo - colour; coccygo - coccyx; cranio - skull; disto - tar; dorso – back; histo - tissue; ilio - ilium; inguino - groin; karyo - nucleus; latero - side; lumbo - lower back; medio - middle; myo - muscle; pelvo (pelvi) - pelvic cavity; postero - back; proto - first; proximo - near; sacro - sacrum; spino - spine; spondylo - vertebra; thelo - nipple; thoraco - chest; ventro - belly; vertebro - vertebra; viscero - internal organs

PREFIXES
ana - up; cata - down; epi - above; inter - between; meta - change;
Consolidation and self-check

Build medical words:
1. tumor of fatty tissue, 2. surgical cutting of the cartilage, 3. pertaining to the back, 4. pertaining to tissue development, 5. pertaining to lower back, 6. disease of the heart muscle, 7. pertaining to the sacrum and ilium, 8. surgical cutting of the sacrum, 9. inflammation of joints of the spine, 10. pertaining to the chest

Analyze the words:

Keys
1. adipoma, 2. chondrotomy, 3. dorsal, 4. histogenous, 5. lumbar, 6. myocardopathy, 7. sacroiliac, 8. sacrotomy, 9. spondyloarthritis, 10. thoracic, 11. pertaining to across the chest, 12. surgical cutting of the abdomen, 13. originating from the internal organs, 14. disease of the muscles, 15. pertaining to the middle, 16. pertaining to the side, 17. pertaining to the neck, 18. pertaining to near the surface, 19. pertaining to the front, 20. pertaining to the back
Unit 3
Suffixes and final combining forms

Unit outline
I. Combining forms, prefixes and suffixes
II. Plural forms of medical words
III. Combining forms, prefixes and suffixes
IV. Consolidation and self-check

Unit objectives:
- to learn new medical words;
- to learn new word building elements;
- to become acquainted with plural forms of medical words.

Study the combining forms and their meaning:

COMBINING FORMS
abdomino - abdomen; acro - extremities; acuo - sharp; arterio - artery; carcino - cancer; chiro - band; chondro - cartilage; chrono - time; colo - colon; dactylo - finger (toe); eosino - rosy; gono - seed; granulo - granules; hepato - liver; hydro - water; ischo - to hold back; laparo - abdomen; laryngo - larynx; litho - stone; maxillo - upper jaw; morpho - shape; muco - mucus; myelo - bone marrow; necro - death; oto - ear; peritoneo - peritoneum; phago to eat; philo - like; phobo - fear; plaso - development; pneumo - lungs; recto - rectum; staphylo - clusters; strepto - twisted chains; thoraco - chest; tonsillo - tonsils; tracheo - trachea; veno - vein; algia - pain; cele - hernia; centesis - surgical puncture; coccus - berry shaped; cyte - cell; centesis - surgical puncture; -itis - inflammation; -lysis - breakdown; -osis - abnormal condition; -ia - condition; -y - condition; ole - small; -ule - small; -or - one who; -er - one who; -ist - one who; -ic - pertaining to; -al - pertaining to; -ac - pertaining to; -ar - pertaining to; -ary - pertaining to; -ous - pertaining to; -oid - resembling

SUFFIXFS
-itis - inflammation; -lysis - breakdown; -osis - abnormal condition; -ia - condition; -y - condition; -ole - small; -ule - small; -or - one who; -er - one who; -ist - one who; -ic - pertaining to; -al - pertaining to; -ac - pertaining to; -ar - pertaining to; -ary - pertaining to; -ous - pertaining to; -oid - resembling
### Plural forms of medical words

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**BUT:** CORPUS – CORPORA, VIRUS – VIRUSES, ARCUS – ARCUS, IRIS – IRIDES, SINUS-SINUSES, APPARATUS-APPARATUS

### Consolidation and self-check

**Build medical words:**
1. small artery, 2. visual examination of the abdomen, 3. cancerous tumor, 4. new opening in the colon, 5. enlargement of fingers, 6. liver cell, 7. hernia of the liver, 8. fixation of the internal organs, 9. pain in the liver, 10. condition of low amount of water,

**Analyze the words:**

**Keys:**
Unit outline
I. Combining forms, prefixes and suffixes
II. Consolidation and self-check

Unit objectives:
- to learn basic prefixes used in the medical language;
- analyze medical terms which combine prefixes and other word elements.

Study the combining forms and their meaning:

COMBINING FORMS
amnio - amnion; bolo - to throw; cibo - meals; ciso - to cut; ducto - to lead; furco - branching; glosso - tongue; glyco - sugar; gnoso - knowledge; morpho - shape; morto - death; nati - birth; necto - to cut; sepso - infection; somno - sleep; sono - sound; -theo - to place; thelo - nipple; thyro - thyroid; topo - place; toxo - poison; veno - vein; -blast - immature; -crine - secrete; -cyesis - pregnancy; -drome - to run; -fusion - to pour; -grade - to go; -lysis - to break; -meter - to measure; -orrhea - flow; -partum - birth; -plasia - formation; -physis - to grow; -stasis - to stop; -trophy - development

PREFIXES
a, an - without; ab - away from; ad - toward; ana - up; ante - before; anti - against; auto - self; bi - two; brady - slow; cata - down; con - with; contra - against; dia - complete; dys - bad; ec, ecto - outside; en, endo - within; epi - above; eu - good; ex - away from; hemi - half; hyper - excessive; hypo - under; in - not; in - in; infra - below; inter - between; intra - within; macro - large; mal - bad; meso - middle; meta - between; micro - small; pan - all; para - near; per - through; peri - surrounding; poly - many; post - alter; pre - before; pro - before; pseudo - false; retro - back; semi - half; sub - under; supra - above; sym, syn - together; trans - across; ultra - beyond

Consolidation and self-check

Build medical words:
1. condition of no skin, 2. pertaining to the opposite side, 3. bad nourishment, 4. pertaining to a half of the tongue, 5. condition of many fingers, 6. condition of small heart, 7. bad formation, 8. instrument to view small things, 9. condition of small fingers, 10. complete atrophy,

Analyze the words:

Keys:
1. adermia, 2. contralateral, 3. dystrophy, 4. hemiglossal, 5. polydactyly, 6. microcardia, 7. malformation, 8. microscope, 9. microdactyly, 10. panatrophy, 11. insufficiency of all cells, 12. inflammation of many joints, 13. no capacity, 14. pertaining to after the inflammation of the brain, 15. false anemia, 16. secreting inside, 17. pertaining to under the tongue, 18. pertaining to above the kidneys, 19. pertaining to high sound, 20. condition of bones together (fusion of bones).
Module 2
Body systems
Unit 5
Digestive system

Unit outline
I. Anatomy of the digestive system
II. Pronunciation clues
III. Combining forms and related terminology
IV. Combining forms, prefixes and suffixes
V. Consolidation and self-check

Unit objectives:
- learn the names, location, and functions of the major organs of the digestive system;
- understand the terms used to describe the major disease processes which affect these organs;
- learn the combining forms for the organs and structures of the digestive system.

Pronunciation clues
Here are some tips for pronunciation:
- Only the s sound in ps is pronounced, as in pseudocarcinoma
- Only the n sound in pn is pronounced, as in pneumococcal
- G and c assume the soft sound of j and s, respectively, when used before e, i and y; examples are gene, gingivitis, cytology
- G and c have hard sounds in front of other letters, such as gastritis, cardiomegaly
- Ph sounds like f, as in phlegm
- X sounds like z, as in xeroderma
- Ae and oe are pronounced ee, as in fasciae
- I at the end of a word usually denotes a plural and is pronounced eye, as in bronchi
- Es at the end of a word may be pronounced as a separate syllable, as in metastases
- P when followed by a consonant (t, n, etc) in the beginning of a word is silent (pneumonia, ptosis); however, when the p is in the middle of the word it is pronounced (gastroptosis).

Because phonetic spelling isn’t used in medicine, it’s important to consult a dictionary when in doubt about pronunciation. Also some terms sound the same but are spelled differently and refer to different things. For example, ileum and ilium are pronounced alike, but the first term is part of the intestinal tract and the second one is a pelvic bone.

Study the combining forms and their meaning:

COMBINING FORMS
oro - mouth; stoma - mouth; bucco - cheek; lablo - lip; cheilo - lip; denti - tooth; odonto - tooth; gingivo - gum; linguo - tongue; qlosso - tongue; palato - palate; tonsillo - tonsil; sialo - saliva; sialadeno - salivary glands; pharyngo - pharynx; esophago - esophagus; gasto - stomach; celio - abdomen; entero - small intestine; duodeno - duodenum; jejuno - jejunum; ileo - ileum; cece - cecum; appendico - appendix; appendo - appendix; colo - colon; sigmido - sigmoid colon; recto - rectum; ano - anus; procto - anus; hepato - liver; chole - bile; bili - bile; cholecysto - gallbladder; choledocho - common bile duct; bilirubino - bilirubin; pancreato - pancreas; peritoneo - peritoneum; spleno - spleen; hernio - hernia; amylo - starch; qlyco - sugar; glyco - sugar; glycogeno - glycogen; lipo - fat; steato - fat; litho - stone; ase - enzyme; -iasis - condition; -prandial – meal-clysis -
Consolidation and self-check

_Analyze the words:_
1) Anorexia; 2) amylase; 3) hyperglycemia; 4) sialadenolith; 5) oral; 6) cholestasis; 7) periesophageal; 8) dysentery; 9) peristalsis; 10) periodontist.

_Build medical words:_
11) Pertaining to the throat; 12) production of bile; 13) no nourishment of fat; 14) recording of gallbladder; 15) pain in teeth; 16) prolapse of the stomach and colon; 17) specialist in the stomach and intestine; 18) removal of the appendix; 19) inflammation of the liver; 20) involuntary contraction of the tongue.

_Keys:_
1) Condition of no appetite; 2) starch enzyme; 3) excessive sugar in blood; 4) stones in salivary glands; 5) pertaining to the mouth; 6) stoppage of bile; 7) pertaining to surrounding the esophagus; 8) bad condition of intestine; 9) surrounding contraction; 10) a specialist in the surrounding structures of teeth; 11) pharyngeal; 12) biligenesis; 13) lipoatrophy; 14) cholecystography; 15) odontalgia (dentalgia; odontodynia); 16) gastrocoloptosis; 17) gastroenterologist; 18) appendectomy; 19) hepatitis; 20) glossospasm
Unit outline
I. Anatomy of the oral cavity and facial region
II. Terms pertaining to the teeth and facial region
III. Combining forms, prefixes and suffixes
IV. Consolidation and self-check

Unit objectives:
- to learn the names, location, and functions of the major structures of the face and oral cavity;
- to understand the terms used to describe the teeth, facial region, and major diseases of these structures;
- to learn the combining forms for the structures of the face and oral cavity.

Study the combining forms and their meaning:

COMBINING FORMS
Adamanto – enamel; alveolo – alveolus; bucco – cheek; cheilo – lip; denti – tooth; dentino – dentin;
Enamelo – enamel; gingivo – gum; glosso – tongue; labio – lip; gnatho – jaw; linguo – tongue;
mandibulo – lower jaw; maxillo – upper jaw; odonto – tooth; oro – mouth, palato – palate;
pharyngo – throat; pulpo – pulp; sialo – saliva; stomato – mouth; tonsillo – tonsil; radi – root;
mento – chin; cario – caries; cemento – cementum

SUFFIXES
-schisis – cleft; -lith – stone; -cele – hernia;

Consolidation and self-check

Build medical words:
1. surgical cutting of the lip, 2. inflammation of the tooth socket, 3. pertaining to tooth development, 4. breakdown of the tooth socket, 5. absence of some teeth (decreased number of teeth), 6. tooth breakdown, 7. pertaining to under the tongue, 8. pertaining to the chin, 9. tooth cutting, 10. cleft lip,

Analyze the words:

Keys:
Unit 7
Urinary system

Unit outline
I. Anatomy of major organs of the urinary system.
II. Urine production.
III. Combining forms, prefixes and suffixes
IV. Consolidation and self-check

Unit objectives:
- learn the location and the function of the organs in the urinary system
- understand the terms used to describe the major disease processes which affect these organs
- be able to use and recognize the combining forms, prefixes and suffixes of the system

Study the combining forms and their meaning:

COMBINING FORMS
cortico - cortex; glomerulo - glomerulus; medullo - medullar; nephro - kidney; reno - kidney; pyelo - renal pelvis; calio - calyx; uro - urine, urea; azoto - urea, nitrogen; uretero - ureter; cysto - urinary bladder, vesico - urinary bladder; urethro - urethra; dipso - thirst; uria - urination, urine; albumino - protein; pyo - pus; nocti - night; oligo - scanty; bacterio - bacteria

Consolidation and self-check

Analyze the words:
1) Polycystic; 2) cystomorphous; 3) dialysis; 4) cystourethrogram; 5) pyelonephritic; 6) cystoscopic; 7) pyelography; 8) glomerular; 9) nephrohydrosis; 10) urethrodynia.

Build medical words:
11) Pertaining to the meatus; 12) an X-ray record of any portion of the urinary tract; 13) formation of ketones; 14) pertaining to the formation of pus; 15) absence of urine formation (without urine); 16) bile in urine; 17) inflammation of the urinary bladder; 18) pertaining to the glomeruli; 19) cutting of stones in the kidneys; 20) painful urination.

Keys:
1) Pertaining to many sacs containing fluid; 2) relating to the shape of bladder or cyst; 3) complete separation; 4) a record of the bladder and the urethra; 5) pertaining to inflammation of kidneys and renal pelvis; 6) pertaining to the visual examination of the bladder; 7) recording of the renal pelvis; 8) pertaining to glomeruli; 9) condition of water in kidneys; 10) pain in urethra; 11) meatal; 12) uroradiogram; 13) ketogenesis; 14) pyogenic; 15) anuria; 16) biliuria; 17) cystitis; 18) glomerular; 19) nephrolithotomy; 20) dysuria.
Unit outline
I. Major organs of the female reproductive system. Anatomy of the male reproductive system.
II. Combining forms, prefixes and suffixes
III. Consolidation and self-check

Unit objectives:
- to learn the terms which describe the anatomical structure of female reproductive system
- to learn the terms which describe the anatomical structure of male reproductive system
- to study combining forms and terminology of male and female reproductive systems

Study the combining forms and their meaning:

COMBINING FORMS
- oophoro - ovary; ovario - ovary; ovo - egg; salpingo - fallopian tubes; -salpinx - fallopian tubes;
hystero - uterus; utero - uterus; metro, metrio - uterus; myo - muscle; cervico - cervix; Bartholino -Bartholin's gland; vagino - vagina; colpo - vagina; culdo - cul-de-sac; perineo - perineum; episio -vulva; vulvo - vulva; meno - menses; chorio - chorion; annio - amnion; mammo - breast; masto -breast; lacto - milk; gravid - pregnancy; para - live births; -tocia - birth; -cyesis - pregnancy; -arde - beginning, testo - testis; orchido, orchio, orcho - testis; vaso - vessel; prostatoprostato gland; vesiculo - seminal vessels; epididymo - epididymis; spermo, spermato - spermatozoa; zoo -animal life; andro - male; cryo - cold; crypto - hidden

1. Analyze the words:
   1. metrorrhagia; 2. culdorrhexis; 3. cryptomenorrhea; 4. pyometritis 5. hypo-ovarionism;
   6. hyperorchidism; 7. vesiculoprostatitis; 8. spermocytoma; 9. ovariohysterectomy; 10 salpingo-
oophorectomy

2. Build medical words
   11. sperm in urine; 12. Inflammation of seminal vesicles; 13. muscular layer of the uterus; 14.
   inflammation of cervix and vagina; 15. narrowing of the vulvar orifice; 16. fear of male 17. tumor
   of the testis; 18. scanty discharge during menses; 19. suturing of the fallopian tubes; 20. surgical
   puncture of cul-de-sac

Keys:
1. Bursting forth of blood from the uterus, 2. rupture of the cul-de-sac, 3. hidden menstruation, 4.
inflammation with pus in the uterus, 5. condition of low function of the ovaries, 6. excessive
function of the testis, 7. inflammation of vesicles and the prostate, 8. tumor of sperm cell, 9.
removal of the ovaries and the uterus, 10. removal of the fallopian tubes and ovaries. 11.
spermaturia, 12. vesiculitis, 13. myometrium, 14. cervicovaginitis, 15. vulvostenosis, 16.
androphobia, 17. orchioma, 18. hypomenorrhea, 19. salpingorrhaphy, 20. culdocentes
Unit 9
Nervous system

Unit outline
I. General anatomical structure of the nervous system.
II. Physiology of the nervous system
III. Combining forms, prefixes and suffixes
IV. Consolidation and self-check

Unit objectives:
- to get acquainted with the structure of the nervous system;
- to learn the terms determining the structure of the nervous system;
- to study combining forms.

Study the combining forms and their meaning:

COMBINING FORMS
neuro - nerve; ganglio, ganglión - ganglion; plexo - network; cerebro - brain; encephalo - brain; cerebello - cerebellum; ponto - pons; thalamo - thalamus; ventriculo - ventricles of the brain; myelo - spinal cord; meningo, meningio - meninges; duro - dura mater; algesio - excessive sensitivity to pain; atelio - incomplete; brachio - arm; coccygo - coccyx.; esthesio - sensation; phaso - speech; polio - gray; asthenia - lack of strength; paresis - slight paralysis; plegia - paralysis; taxo - coordination; kinesio - movement

Consolidation and self-check

1. Analyze the words:
1. pontomedullary; 2. kinesthesia; 3. ventriculoscopy; 4. angioparesis; 5. brachiocephalic; 6. atelomyelia; 7. cerebroma; 8. neurotomy; 9. epidural.

2. Build medical words
10. inflammation of the skin and nerves; 11. production of nerve diseases; 12. reduced sensitivity; 13. pain during movements; 14. inflammation of the brain and heart muscle 15. pertaining to the meninges and cortex 16. pertaining to the production of pain 17. pertaining the cortex and thalamus; 18. tumor of ganglion and nerves

Keys:
Unit outline
I. General structure of the cardiovascular system
II. Anatomy of the heart.
III. Combining forms, prefixes and suffixes
IV. Consolidation and self-check

Unit objectives:
- to learn the structure of the nervous system
- to get acquainted with the function of its constituent parts.
- to study the combining forms and terminology
- to learn to analyze and make up medical terms relating to the structure of the cardiovascular system

Study the combining forms and their meaning:

COMBINING FORMS AND PREFIXES
cardio - heart; corono - heart; aorto - aorta; angio - vessel; vaso - vessel; arterio - artery; arteriolo - arteriole; phlebo - vein; veno - vein; venulo - venule; atrio - atrium; ventriculo - ventricle; valvo - valve; stetho - chest; sphygmo - pulse; oxo - oxygen; athero - yellowish plaque; aneurysmo - aneurysm; de - lack of

Consolidation and self-check

1. Analyze the words:
1. phlebolith; 2. cardiodystrophy; 3. aneurysmoplasty; 4. coronary; 5. ventriculography; 6. phlebotomy 7. cardiomyoliposis; 8. hyperoxia; 9. cardiodynia; 10. atriomegaly.

2. Build medical words
11. high blood pressure; 12. narrowing of the valve; 13. heart muscle; 14. inflammation of a vein; 15. rapid heartbeat; 16. hardening of arteries; 17. lack of oxygen; 18. visual examination of a ventricle; 19. pertaining to the production of yellowish plaques; 20. resembling a vessel

Keys:
1. stone in the vein; 2. bad nourishment of the heart; 3 surgical repair of the aneurysm; 4. pertaining to the heart; 5 process of recording heart ventricles; 6. surgical cutting of veins; 7. condition of fat in the heart muscle; 8. excessive oxygen 9. pain in heart; 10. enlargement of the atrium, 11. hypertension; 12. valvostenosis; 13. myocardium, 14. phlebitis; 15. tachycardia; 16 arteriosclerosis; 17. hypoxia, 18. ventriculoscopy, 19. atherogenic; 20 vasoid
Unit 11
Respiratory system

Unit outline
I. Anatomy of respiration.
II. Physiology of respiration
III. Combining forms, prefixes and suffixes
IV. Consolidation and self-check

Unit objectives:
- to get acquainted with the anatomy and physiology of respiration.
- to learn terminology combining forms and suffixes.
- to learn to analyze and make up medical terms relating to respiratory system

Study the combining forms and their meaning:

COMBINING FORMS
naso - nose; rhino - nose; adenoido - adenoids; tonsillo - tonsils; pharyngo - throat; laryngo - voice box; epiglottot - epiglottis; tracheo - trachea; broncho, bronchio - bronchial tube; bronchiolo - bronchiole; pulmono - lung; pneumono, pneumo - lung, air; lobo - lobe; phreno - diaphragm; pectoro - chest; pleuro - pleura; spiro - to breathe; sinuso - sinus, cavity; conio - dust; anthracio - coal dust; alveolo - air sac; oxo - oxygen; cyano - blue; osmo, osmia - smell; capnia - carbon dioxide; phonia - voice; ptysis - spitting; pnea - breathing; ortho - straight; thorax - chest; em - in

Consolidation and self-check

1. Analyze the words:
1. pulmonar y; 2. pleurolysis; 3. anosmia; 4. anoxia; 5. cyanopsia; 6. dysphasia; 7. dysphagia; 8. hemoptysis; 9 bronchiolitis; 10. pharyngostenosis

2. Build medical words:
11. pertaining to bronchi and lungs, 12. instrument to visually examine the bronchi 13. removal of a lobe of lung; 14. increased (expressive) breathing; 15. inflammation of the voice box, 16. abnormal condition of dust in the lungs; 17. lack of sense of smell; 18. inflammation of small branches of bronchi; 19. difficult breathing; 20. blood in the thoracic cavity

Keys:
1. pertaining to the lungs, 2. destruction of the pleura, 3. no sense of smell, 4. no oxygen, 5 seeing everything in blue, 6. difficult speech, 7. difficult eating, 8. spitting up blood, 9. inflammation of bronchioles, 10. narrowing of pharynx; 11. bronchopulmonary; 12. bronchoscope, 13. lobectomy, 14. lobectomy, 15. laryngitis, 16. pulmonoconiosis, 17. hyposmia, 18. bronchiolitis, 19. dyspnea, 20. hemothorax
Unit 12
Blood and lymphatic systems

Unit outline
I. Blood and lymphatic systems (composition, anatomy, functions).
II. Combining forms, prefixs and suffixes
III. Consolidation and self-check

Unit objectives:
- to acquire basic knowledge about blood and lymph;
- to learn the terms denoting the components of blood and lymphatic system;
- to study combining forms and suffixes;
- to build medical terms related to blood and lymphatic systems.

Study the combining forms and their meaning:

**COMBINING FORMS**
hemo, hemato - blood; erythro - red; iso - same; chromo - color; poikilo - irregular; spheri - globe; leuko - white; eosino - red; baso - base; neutro - neutral; granulo - granules; myelo - bone marrow; phago - to eat; mono - one; thrombo - clot; fibrino - fibrin; nucleo - nucleus; karyo - nucleus; morpho - shape; reticulo - network; normo - normal; agglutino - clumping; immuno - safe; sidero - iron; -globin - protein; globulin - protein; -blast - immature; -emia - blood condition; -cytosis - condition of cell; -phago - attraction for; -poiesis - formation; -stasis - stop; -pheresis - removal; -phoresis - transmission; lympho - lymph; lymphadeno - lymph gland; lymphangio - lymph vessel; spleno - spleen; thymo - thymus gland

Consolidation and self-check

**Build medical words:**
1. lack of round cells; 2. no formation of granule cells; 3. cell which eats; 4. destruction of fibrin; 5. pertaining to nuclei of many shapes; 6. lack of iron; 7. pertaining to surrounding the thymus gland; 8. blood protein; 9. surgical removal of the lymph gland; 10. surgical puncture of the bone marrow

**Analyze the words:**

**Keys:**
1. spherocytopenia; 2. agranulocytopenia; 3. phagocyte; 4. fibrinolysis; 5. polymorphonuclear; 6. sideropenia; 7. perithymic; 8. hemoglobin; 9. lymphadenectomy; 10. myelocentesis; 11. immature platelet; 12. network cell; 13. cell condition of before bone marrow; 14. pertaining to small nucleus; 15. deficiency of all cells; 16. condition of single nucleus; 17. removal of plasma; 18. condition of deficient color; 19. condition of irregular cells; 20. pertaining to poison in WBC.
Unit 13
Musculoskeletal system

Unit outline
I. Organization of the musculoskeletal system.
III. Combining forms, prefixes and suffixes
IV. Consolidation and self-check

Unit objectives:
- learn the terms relating to the structure and function of bones, joints, and muscles;
- locate and name the major bones of the body;
- make words with and analyze the combining forms, prefixes, and suffixes; and
- learn the terminology relating to the major types of musculoskeletal disease conditions.

Study the combining forms and their meaning:

COMBINING FORMS
osteo - bone; calcio - calcium; -physis - to grow; vertebro - vertebra; spondylo - vertebra; rachio - spinal column; lamino - lamin; kypho - humpback; lordo - swayback; scolio - crooked; myelo - bone marrow; cervico - neck; thoraco - chest.; lumbo - lower back; -blast - immature cell; -clast - to break; -desis - to bind; -malacia - softening; -porosis - passage; cranio - skull; maxillo - upper jaw; submaxillo - lower jaw; mandibulo - lower jaw; claviculo - clavicle; scapulo - shoulder blade; costo - rib; sterno - sternum; humero - humerus; ulno - ulna; olecrano - elbow; radio - radius; carpo - carpus; metacarpo - metacarpals; phalango - phalanges; pelvi - pelvis; ilio - ilium; ischio - ischium; pubo - pubis; acetabulo - acetabulum; femoro - femur; patello - patella; tibio - tibia; fibulo - fibula; peroneo - fibula; calcaneo - calcaneus; arthro - joint; articulo - joint; synovio - synovia; burso - bursa; chondro - cartilage; fibroso - fibrous connective tissue; teno, tendo, tendino - tendons; ligamento - ligament; syndesmo - ligament; ankylo - crooked; amphio - on both sides; syn - together; di, dia - complete; myo - muscle; myoso - muscle; leiomyo - smooth muscle; rhabdomyo - striated muscle; sarco - flesh; myocardio - heart muscle; fascio - fascia; aponeuro - aponeurosis; -sthenia - strength; -trophy - development

Consolidation and self-check

Analyze the words:
1) Chondrogenesis; 2) spondylodynia; 3) patellar; 4) pubic; 5) kyphoscoliosis; 6) tenomyotomy; 7) muscular biopsy; 8) myokinetic; 9) periostitis; 10) osteocyte.

Build medical words:
11) Pertaining to the lower back; 12) lateral curvature of the spine; 13) relating to two joints; 14) pertaining to the tibia and femur; 15) bad sensation; 16) pertaining to the production of the connective tissue; 17) inflammation of many muscles; 18) pertaining to death of bones; 19) specialist in the study of bones; 20) an immature bone cell.

Keys:
1) Formation of the cartilage; 2) pain in the vertebrae; 3) relating to the kneecap; 4) pertaining to the pubis; 5) abnormal condition of crooked humpback; 6) cutting of the tendon of a muscle; 7) process
of diagnostic examination of a removed muscular tissue; 8) pertaining to the movement of muscles; 9) inflammation of surrounding bones (periosteum); 10) a cell of bones; 11) lumbar; 12) scoliosis; 13) diarticular (diarthric); 14) femorotibial; 15) dysesthesia; 16) sarcogenic; 17) polymyositis; 18) osteonecrotic; 19) osteologist; 20) osteoblast.
Unit outline
I. Structure of the skin.
II. Combining forms, prefixes and suffixes
III. Consolidation and self-check

Unit objectives:
- identify the layers of the skin and the accessory structures which are associated with the skin;
- build medical terms using the combining forms which are related to the specialty of dermatology
- become familiar with terms used to describe lesions, symptoms, and pathological conditions which
  relate to the skin

Study the combining forms and their meaning:

COMBINING FORMS
dermo, dermato - skin; cutaneo – skin; xero – dry; pachyo - thick; xantho - yellow; melano - black;
leuko - white; albo - white; erythemo - flushed, redness; kerato - horny; acanutho - thorny; onycho -
nail; unguo - nail; myco - funquus; sebo - sebum; diaphoro - sweat; hidro - sweat.; squamo - scale;
histio - tissue; adipo - fat; lipo - fat; tricho - hair; causo - burn

Consolidation and self-check

Analyze the words:
1) Pyoderma; 2) epidermoid; 3) keratosis; 4) squamous; 5) mycotoxicosis; 6) dermatoconiosis; 7)
seborrhea; 8) hidrotic; 9) onychomycosis; 10) causalgia.

Build medical words:
11) Bad nourishment of nails; 12) inflammation of sweat gland; 13) formation of sweat; 14) 
inflammation of skin and joints; 15) pertaining to the nail; 16) an instrument to cut the skin; 17) 
abnormal thickness of the fingernails or toenails; 18) inflammation of muscles and skin; 19) 
pertaining to inside skin; 20) red skin.

Keys:
1) pus in the skin; 2) resembling epidermis; 3) abnormal condition of the horny layer; 4) pertaining 
to scales; 5) poisoning due to the ingestion of fungi; 6) abnormal condition of skin caused by dust; 
7) flow of sebum; 8) pertaining to the condition of sweat; 9) fungi on the skin; 10) pain caused by a 
burn; 11) onychodystrophy; 12) hidradenitis; 13) hidropoiesis; 14) dermatoarthritis; 15) ungual; 16) 
dermatotome; 17). pachyonychia; 18) adipoplasty; 19) dermatomyositis; 20) erythroderma.
Unit 15
Sense organs

Unit outline
I. The eye (anatomy and physiology).
II. The ear (anatomy and physiology).
III. Combining forms and suffixes.
IV. Consolidation and self-check

Unit objectives:
– to learn the terms which describe the anatomical structure and physiology of the eye;
– to learn the terms which describe the anatomical structure and physiology of the ear;
– to study combining forms and terminology;
– to build medical terms related to sense organs.

Study the combining forms and their meaning:

COMBINING FORMS
ophthalo - eye; oculo - eye; coreo, coro - pupil; pupillo - pupil; kerato - cornea; corneo - cornea; sclero - sclera; iro, irido - iris; retino - retina; cyclo - ciliary body of the eye; uveo - vascular layer of the eye; lacrino - tear; dacryo - tear; dacryoadeno - tear gland; dacryocysto - tear sac; conjunctivo - conjunctiva; blepharo - eyelid; aqueo - water; vitreo - glassy; xero - dry; photo - light; iso - equal; mio - less, smaller; myco - fungus; glauco - gray; amblyo - dull; presbyo - old age; emmetro - in due measure; opla - vision; -tropia - to turn; audio - hearing; acouo - hearing; oto - ear; auro, auri - ear; cerumino - cerumen; stapedo - stapes; myringo - eardrum; tympano - eardrum; salpingo - eustachian tube; mastoido - mastoid process; -emphraxis - obstruction; -cusis - hearing; phonia - sound

Consolidation and self-check

Build medical words:
1. pertaining to dull sensation; 2. condition of stones in the tear gland; 3. dull hearing; 4. slight paralysis of the eyelid; 5. pertaining to the movement of the ciliary body; 6. loss of hearing in old age; 7. excessive softening of the cornea; 8. bypass between the throat and Eustachian tube; 9. surgical repair of the eardrum and stapes; 10. abnormal condition of dry sclera

Analyze the words:

Keys:
1. amblyesthesia, 2. dacryoadenolithiasis, 3. amblyocusis, 4. blepharoparesis, 5. cyclokinetic, 6. presbyacusis, 7. hyperkeratomalacia, 8. pharyngosalpingostomy, 9. tympanostapedoplasty, 10. xerosclerosis; 11. to turn outside, 12. pertaining to under the conjunctiva, 13. fear of light, 14. pertaining to inside the eye, 15. instrument for visual examination of the eye, 16. pertaining to hearing, 17. visual examination of the Eustachian tube, 18. instrument to measure the pupil, 19. record of hearing, 20. bad sound.
Unit 16
Endocrine system

Unit outline
I. The endocrine system.
II. Combining forms, prefixes and suffixes
III. Consolidation and self-check

Unit objectives:
- to distinguish between an endocrine and an exocrine gland;
- to name the major endocrine organs and list the hormones they secrete;
- to locate and identify by labeling diagrams the endocrine glands of the human body;
- to analyze and apply the combining forms associated with the endocrine system.

Study the combining forms and their meaning:

COMBINING FORMS
thyroido, thyro - thyroid gland; toxico - poison; homeo - sameness; calco - calcium; parathyroido - parathyroid glands; stero - solid structure; adreno, adrenalo - adrenal glands; cortico - cortex; kali - potassium; natro - sodium; gluco - sugar; glyco - sugar; thyrno - thymus gland; somato - body; gonado - sex glands; lacto - milk; andro - male; pancreato - pancreas; estro - female; testo - testes; dipso - thirst; uro - urine; physis - growth; tocin - delivery

Consolidation and self-check

Analyze the words:
1) Gluconeogenesis; 2) decalcification; 3) adrenocortical; 4) hypogonadism; 5) thyroaplasia; 6) homeotherapeutic; 7) hypoparathyroidism; 8) hyponatremia; 9) pineoblastoma; 10) adrenocarcinoma.

Build medical words:
11) Removal of the adrenal gland(s); 12) excessive sugar in blood; 13) tumor of the thymus gland; 14) pertaining to the cortex; 15) one who produces male; 16) pertaining to above kidneys (x2); 17) no strength in the body; 18) pertaining to the bodily sensation (conscious awareness of the body); 19) pertaining to the study of the causes; 20) excision of sex glands (ovary or testis).

Keys:
1) New formation of glucose; 2) getting rid of calcium; 3) pertaining to suprarenal cortex; 4) low function of sex glands; 5) no development of the thyroid gland; 6) relating to the treatment with sameness; 7) low function of the parathyroid glands; 8) low sodium in blood; 9) a tumor arising from immature cells in the pineal gland; 10) a cancerous tumor of adrenal glands; 11) adrenalectomy; 12) hyperglycemia; 13) thymoma; 14) cortical; 15) androgen; 16) adrenal (suprarenal); 17) somasthenia; 18) somatesthetic; 19) etiology; 20) gonadectomy.
Unit 17
Cancer

Unit outline
I. Cancer (etiology, cancerous tumors, heredity, treatment)
II. Combining forms, prefixes and suffixes
III. Consolidation and self-check

Unit objectives:
- to get acquainted with cancer medicine (etiology, heredity, cancerous tumors, treatment);
- to learn the terms determining cancer medicine;
- to study combining forms and suffixes;
- to build medical terms related to cancer medicine.

Study the combining forms and their meaning:

**COMBINING FOPMS**
onco - tumor; carcino - cancer; sarco - flesh; adeno - gland; leiomyo - smooth muscle; rhabdomyo - striated muscle; lipo - fat; osteo - bone; scirrho - hard; medullo - soft; papillo - nipple-like; polypo - polyp; cysto - sac of fluid; alveolo - small sac; folliculo - small sac; pleo - more; terato - monster; -plasia - formation; -plasm – formation, karyo - nucleus; nucleo - nucleus; muto - mutation; bolo - to cast; somo - body; ribo - sugar; chromo - color; mito - thread; proteo - first; zymo - catalyst, muta - change; retino - retina of the eye; germo - seed; carcino - cancer; onco - tumor; iono - ions; radio - rays, x-rays; viro - virus; chemo - drug; pharmaco - drug; toxo - poison; loxico - poison; cryo - cold; cautero - heat; mito - thread; xero - dry; polypo - polyp; -cidal - pertaining to killing

**SUFFIXES**
-oid - resembling; -oma - tumor

**PREFIXES**
ana - up; epi - upon; meta – change, near, beyond

Consolidation and self-check

**Build medical words:**
1. body of fat; 2. destruction of a nucleus; 3. production of catalysts; 4. pertaining to excessive color; 5. immature tumor of the retina brain; 6. process of “throwing down”; 7. pertaining to attraction for sugar; 8. fear of drugs; 9. process of “casting up”; 10. incision into the tumor of the thymus gland

**Analyze the words:**

**Keys:**
1. liposome; 2. karyolysis; 3. zymogenesis; 4. hyperchromatic; 5. retinoblastoma; 6. catabolism; 7. ribophilic; 8. pharmacophobia / chemophobia; 9. anabolism; 10. thymoncotomy; 11. pertaining to disease due to poison, 12. production of threads, 13. no sensation of cold, 14. cutting of tumour, 15. pertaining to killing seeds, 16. recording of poisons, 17. resembling cancer, 18. complete knowledge using rays, 19. pertaining to destruction of cancer; 20. disease caused by cold.
Unit outline
I. Medical imaging.
II. Combining forms, prefixes and suffixes.
III. Consolidation and self-check

Unit objectives:
- to get acquainted with radiography, radiology, X-ray examination;
- to learn the terms connected with medical imaging;
- to study combining forms and suffixes;
- to build medical terms related to medical imaging.

Study the combining forms and their meaning:

COMBINING FORMS
radio - rays; roentgeno - x-rays; tele - distant; iso - same; ioni - wander; thermo - heat; xero - dry;
sono - sound; echo - sound; luco - light; -opaque - dark; opaco - to light rays; fluoro - luminous;
cine - movement; stereo - solid, 3-dimensional; tomo - to cut; scinti - spark; -graphy – process of
recording; graph - instrument for recording; -gram - record

PREFIXES
intra - within; inter - between

Consolidation and self-check

Build medical words:
1. recording of sparks; 2. pertaining to visual examination of heat; 3. abnormal condition of
   excessive luminosity; 4. study of the urine with x-rays; 5. process of recording of the ventricles of
   the brain; 6. pertaining to ions; 7. sound recording with movement; 8. abnormal condition of
   unequal dryness; 9. inflammation of the region between the kidneys; 10. pertaining to inside the
   artery

Analyze the words:
    echogram; 17. thermograph; 18 fluoroscopy; 19. lymphangiogram; 20 lucotherapy

Keys:
1. scintigraphy; 2. thermoscopic; 3. hyperfluorosis; 4. radiourology; 5. ventriculography; 6. ionic;
7. cineosonography; 8. anisoxerosis; 9. internephritis; 10. intraarterial; 11. specialist in rays, 12.
   pertaining to inside the vein, 13. dark rays, 14. process of recording of dryness, 15. treatment with
   movement, 16. record of sound, 17. instrument to record heat, 18. visual examination of luminosity,
   19. record of lymph vessels; 20. treatment with light.
Unit 19
Pharmacology

Unit outline
I. Pharmacology (drug names, administration of drugs, drug classes)
II. Combining forms, prefixes and suffixes
III. Consolidation and self-check

Unit objectives:
- to get acquainted with pharmacology (drug names, administration of drugs, drug classes);
- recognize the terms which describe different types of drug actions and drug toxicities;
- to study combining forms and suffixes;
- to build medical terms related to pharmacology.

Study the combining forms and their meaning:

COMBINING FORMS
pharmaco - drug; chemo - drug; toxo, toxico - poison; linguo - tongue; dermo - skin; entero - intestine; veno - vein; theco - sheath; aero - air; ergo - work; idio - individual, distinct, own; iatro - physician; craso - disease; phylaxis - protection; narco - numbness; pyro - fever; hypno - sleep; esthesio - feeling; algesio - sensitivity to pain; histo - tissue; vaso - vessel; ergo - work; myco - mold; vito, vita - life; -cidal - killing; -static - stopping; -phoria - feeling; -phylaxis - protection; -mimetic - to copy; -lytic - destruction

PREFIXES
anti – against; intra - within; contra - against

Consolidation and self-check

Build medical words:
1. condition of work together; 2. poisons in blood; 3. pertaining to against infection; 4. pertaining to inside muscles; 5. pertaining to against fever; 6. no sensation of pain; 7. good feeling; 8. pertaining to killing viruses; 9. pertaining to work of adrenal gland; 10. pertaining to no sensation.

Analyze the words:

Keys:
1. synergism; 2. toxemia; 3. antiseptic; 4. intramuscular; 5. antipyretic; 6. analgesia; 7. euphoria; 8. viricidal; 9. adrenergic; 10. anesthetic; 11. pertaining to numbness, 12. pertaining to sleep, 13. pertaining to against life, 14. pertaining to stopping of bacteria, 15. pertaining to destruction of disease together, 16. pertaining to copy disease together, 17. before protection, 18. condition of bad mixture, 19. pertaining to under skin; 20. study of drugs.
Unit outline
I. An introduction to the microbial world.
II. Combining forms, prefixes and suffixes
III. Consolidation and self-check

Unit objectives:
- to learn the medical terms related to the general characteristics of microorganisms;
- to understand the basis for classification of microorganisms
- to learn combining forms related to the specialty of microbiology.

Study the combining forms and their meaning:

COMBINING FORMS
amebo-ameba; diplo-double; etio-cause; onto-being; staphylo-clusters; strepto-twisted chains; xeno-foreign

SUFFIXES AND FINAL COMBINING FORMS
-amine-acid; -coccus-berry-shaped; -iasis-condition; -static-pertaining to; -phyte-plant

Consolidation and self-check

Analyze the words:
1) Oncogenic; 2) antiseptic; 3) antibiotic; 4) microbiology; 5) xenophobia; 6) bacterioid; 7) pyrogenic; 8) bacteriosis; 9) protozoology; 10) pyemia.

Build medical words:
11) Pertaining to many forms; 12) the study of bacteria; 13) disease caused by poison; 14) double spherical-shaped bacteria; 15) pertaining to the production of individual (being); 16) resembling fungi; 17) bacteria in blood; 18) killing of fungi; 19) pertaining to the stopping of fever; 20) study of viruses.

Keys:
1) Relating to the production of tumors; 2) pertaining to against infection; 3) pertaining to against abnormal condition of life; 4) science about small lives; 5) fear of strangers; 6) resembling bacteria; 7) relating to the production of fever; 8) abnormal condition of bacteria; 9) the study of protozoa; 10) presence of pus in blood; 11) polymorphous; 12) bacteriology; 13) toxicopathy; 14) diplococci; 15) ontogenic; 16) mycid; 17) bacteriemia; 18) mycocidal; 19) pyrostatic; 20) virology.
COMBINING FORMS, PREFIXES, SUFFIXES
(combining form - meaning)
a - without
ab - away from
abdomino - abdomen
acouo - hearing
acro - extremities
-ac - pertaining to
ad - forward
adamanto- enamel
adeno - gland
adipo - fat
adrenalo - adrenal glands
adreno - adrenal glands
aero - air
algesio - ex-cessive sensitivity to pain
-al - pertaining to
albo - white
albino - white
-algia - pain
al-veolo - air sac, alveolus
amblyo- weak, dull
amnio- amnion
amylo - starch
an - no
andro - male
aneurysmo - aneurysm
angio - vessel
ano - anus
ante - befo-re
antero - front
anthraco - coal dust
anti - against
aorto - aorta
appendo - appendix
appendaco - appendix
aqueo- water
arteriolo - arteriole
arterio - artery
arthro - joint
articulo - joint
-ase - enzyme
atelo- incomplete
-asthenia - no strength
athero - yellowish plaque
atrio - atrium
audio - hearing
auri - ear
auro - ear
auto - self
azoto - nitrogen
bacterio – bacteria
bi - two
bili - bile
bilirubino - bilirubin
bio - life
-blast - immature cell
blepharo - eyelid
brachio - arm
brady - slow
bronchio - bronchial tube
bronchiolo- bronchiole
broncho - bronchial tube
bucco - cheek
burso - bursa
calcaneo - heel bone
calio - calyx
-capnia – carbon dioxide
calcio – calcium
calco - calcoum
carcino - cancer
cardio - heart
cario - caries
carlo - wrist
cata – down
caudo - tail
ceco - cecum
-cele- hernia
celio – abdomen
cemento - cement
-centesis - surgical puncture
cephalo - head
cerebro – brain
cerebello- cerebellum
cerumino - cerumen
cervico - neck
cheilo - lip
chemo - drug
cholo - bi-le
cholecysto – gallbladder
chromo- color
cineo- movement
colono – colon
colpo - vagina
chondro - cartilage
-cidal - killing
ciso - to cut
claviculou - clavicle
-clysis - washing
-coccus - berry-shaped
coccygo - coccyx
coccyx
colo - colon
don - with
conio – dust
conjunctivo - conjubctiva
contra – against
coreo- pupil
coro- pupil
corneo - cornea
corono - heart
cortico - cortex
costo - rib
cranio – skull
craso- disease
-crine - secrete
crino - to secrete
cryo – cold
crypto – hidden
cusis - hearing
cutaneo - skin
cyano – blue
cyclo- ciliary body
-eysis - pregnancy
cysto - urinary bladder
-cyte - cell
cyte - cell
cytosis - condition of cell
dacryo - tear
-empraxis – obstruction, blockage
enamelo - enamel
encephalo - brain
endo - within
entero - intestines
eosino - pink
epi - above
epididymo - epidi-dymus
epiglottio – epiglottis
ergo- work
erythemo- redness
erythro - red
esophago - esophagus
esthesio – feeling
estro- female
etio-cause
eu - good
ex - out
exo – outside
fascio - fascia
femoro - femur
fibulo – fibula
fibrino- fibrin
fluoro- luminous
folliculo - small sac
dactylo - finger (toe)
de - lack of
denti – tooth
dentino- dentin
-derma - skin
dermato - skin
dermo - skin
dia – complete
diplo- double
dipso - thirst
disto - far
dorso - back
ducto - to lead
duodeno - duodenum
duro - dura mater
dynia - pain
dys - bad
echo - sound
ectasia - stretching
-ectasis- stretching
ecto - outside
-ectomy - surgical removal
electro - electri-city
em - in
-emesis - vomitig
-emia - blood condition
emmetro- in due measure
furco - branching
gastro - stomach
-genesis – development, production, orogin
geno – producing
germo- seed
gingivo – gum
glauco- gray
-globin - protein
-globulin - protein
glomerulo - glomerulus
glosso - tongue
 gluco - sugar
glyco – sugar
 gnatho - jaw
 gonado - sex glands
gono - seed
-gram - record
 granulo - granules
-graph - instrument for recording
-graphy - process of recording
gravido- pregnancy
 gyneco - woman
hemato - blood
hemi - half
hemo - blood
<table>
<thead>
<tr>
<th>English Word</th>
<th>Medical Word</th>
</tr>
</thead>
<tbody>
<tr>
<td>hepato - liver</td>
<td>lumbo - lower back</td>
</tr>
<tr>
<td>hernio - hernia</td>
<td>lympho - lymph</td>
</tr>
<tr>
<td>hidro - sweat</td>
<td>-lysis – destruction</td>
</tr>
<tr>
<td>histio - tissue</td>
<td>-lytic – pertaining to destruction</td>
</tr>
<tr>
<td>homeo - constant</td>
<td>macro - large</td>
</tr>
<tr>
<td>humero - humerus</td>
<td>mal - bad</td>
</tr>
<tr>
<td>hydro - water</td>
<td>-malacia - softening</td>
</tr>
<tr>
<td>hyper - above</td>
<td>mammo - breast</td>
</tr>
<tr>
<td>hypno - sleep</td>
<td>mandibulo - lower jaw</td>
</tr>
<tr>
<td>hypo - under</td>
<td>masto - bre-ast</td>
</tr>
<tr>
<td>hystero - uterus</td>
<td>mastoido – mastoid process</td>
</tr>
<tr>
<td>-ia - condition</td>
<td>maxillo - upper jaw</td>
</tr>
<tr>
<td>-iasis - condition</td>
<td>medio – middle</td>
</tr>
<tr>
<td>iatro – physician</td>
<td>medullo - medullary</td>
</tr>
<tr>
<td>-ic – pertaining to</td>
<td>-megaly - enlargement</td>
</tr>
<tr>
<td>idio- individual</td>
<td>melano - black</td>
</tr>
<tr>
<td>ileo - ileum</td>
<td>meningio - meninges</td>
</tr>
<tr>
<td>ilio - ilium</td>
<td>meningos - meninges</td>
</tr>
<tr>
<td>immuno - safe</td>
<td>mento - chin</td>
</tr>
<tr>
<td>in – in; no</td>
<td>meso – middle</td>
</tr>
<tr>
<td>infra - below</td>
<td>meato - meatus</td>
</tr>
<tr>
<td>inter - between</td>
<td>meta – between</td>
</tr>
<tr>
<td>intra – within</td>
<td>metacarpo - metacarpus</td>
</tr>
<tr>
<td>ionic-charged particles</td>
<td>-meter - to measure</td>
</tr>
<tr>
<td>irido – iris</td>
<td>metro – uterus</td>
</tr>
<tr>
<td>iro - iris</td>
<td>micro – small</td>
</tr>
<tr>
<td>ischio - ischium</td>
<td>mimetic – mimic, copy</td>
</tr>
<tr>
<td>ischo - to hold back</td>
<td>mito- thread</td>
</tr>
<tr>
<td>iso - equal</td>
<td>mio- small</td>
</tr>
<tr>
<td>-ist - specialist</td>
<td>mono - one</td>
</tr>
<tr>
<td>-itis - inflammation</td>
<td>morpho - shape</td>
</tr>
<tr>
<td>jejuno - jejunum</td>
<td>muco - mucus</td>
</tr>
<tr>
<td>kali - potassium</td>
<td>muta - change</td>
</tr>
<tr>
<td>karyo - nucleus</td>
<td>myco - fungus</td>
</tr>
<tr>
<td>kerato - cornea</td>
<td>myelo - bone marrow</td>
</tr>
<tr>
<td>ki-nesio - movement</td>
<td>myelo - spinal cord</td>
</tr>
<tr>
<td>labio - lip</td>
<td>myo - muscle</td>
</tr>
<tr>
<td>lacrimeo - tear</td>
<td>myosoa - muscle</td>
</tr>
<tr>
<td>lacto - milk</td>
<td>myringo- eardrum</td>
</tr>
<tr>
<td>laparo - abdomen</td>
<td>narco - numbness</td>
</tr>
<tr>
<td>laryngo - larynx</td>
<td>naso - nose</td>
</tr>
<tr>
<td>latero - side</td>
<td>nati – birth</td>
</tr>
<tr>
<td>leiomyo - smooth muscle</td>
<td>natrom - sodium</td>
</tr>
<tr>
<td>leuko - white</td>
<td>necro - death</td>
</tr>
<tr>
<td>ligamento - ligament</td>
<td>nephro - kidney</td>
</tr>
<tr>
<td>linguo - tongue</td>
<td>neuro - nerve</td>
</tr>
<tr>
<td>lipo – fat</td>
<td>neutro – neutral</td>
</tr>
<tr>
<td>-lith - stone</td>
<td>nocti- night</td>
</tr>
<tr>
<td>litho - stone</td>
<td>normo - normal</td>
</tr>
<tr>
<td>lobo - lobe</td>
<td>nucleo - nucléus</td>
</tr>
<tr>
<td>-logy - science</td>
<td>oculo - eye</td>
</tr>
</tbody>
</table>
pupillo - pupil
pyelo - renal pelvis
pyloro - pylorus
pyo - pus
pyro - fever
radi - root
radio - rays, radius
recto - rectum
reno - kidney
reticulo - network
retino - retina
retro - back
rhabdomyo - striated muscle
rhino - nose
ribo - sugar
-rraphy - suture
-rhea - flow
-rhexis - rupture
salpingo - fallopian tube; eustachian tube
sacro - sacrum
sarco - flesh
scapulo - shoul-der blade
schisis - cleft
scinti - spark
scirrho - hard
sclero - sclera
-sclerosis - hardening
scope - instru-ment for visual examination
scopo - visual examination
sebo - sebum
sectio - to cut
semi - half
sepso - infection
sialo - saliva
sidero - iron
sigmoido - sigmoid colon
sinuso - sinus
somo - body
someto - body
some - body
squamo - scale
spasm - sudden contraction of muscles
spermato - spermatozoa
spermo - spermatozoa
sphero - globe-shaped
sphygmo - pulse
spino - spine
spiro - to bre-athe
spleno - spleen
spondylo - vertebra
-stalisis - contraction
stapedo - stapes
staphylo - grapes
-stasis - stop
-static - pertaining to stopping
-stenosis - tightening
sterno - sternum
stereo- three-dimensional
stero- solid
-stenia - strength
stomato - mouth
-stomy - to make a new opening
strepto- twisted chains
sub - under
submaxillo - lo-wer jaw
super - above
supra - above
sym - together
syn - together
syndesmo - ligament
synovio - synovia
tacy - fast
taxo- order
tele - distant
terato - monster
testo - testes
tha-lamo - thalamus
theco- sheath, meningeal covering
-therapy - treatment
thermo - heat
thoraco - chest
-thorax - chest
thrombo - clot
thymo - thy-mus gland
thyro - thyroid gland
tibio - tibia
-tome - instrument for cutting
tomo - to cut
-tomy - surgical cutting
tonsillo - tonsil
topo- place
tocia - delivery
toxico - poison
toxo - poison
tracheo - trachea
trans - across
-tresia - opening
tric-ho - hair
-trophy - development, nourishment
-tropia - turn
tympano - eardrum
- ule - small
ulno - ulna
ultra - be-yond
unguo - nail
uretero - ureter
urethro - urethra
-uria – urination, urine
uro – urine
uveo- vascular layer of the eye
utero – uterus
vagino - vagina
valvo - valve
vaso - vessel
veno - vein
ventriculo – ventricle
ventro – belly
venulo - venule
vertebro - vertebra
vesico - urinary bladder
viro - virus
viscero - internal organs
vita- life
vitreo-vitreous body
vulvo - vulva
xantho - yellow
xeno- foreign
xero – dry
-y - condition
zoo - animal life
zymo- catalyst
(meaning - combining form)

abdomen - abdomino
abdomen - celio
abdomen - laparo
above - epi
above - hyper
above - super
above - supra
across - trans
adius - radio
adrenal glands - adrenalo
adrenal glands - adreno
after - post
against - anti
against - contra
air - aero
air sac, alveolus - al-veolo
all - pan
amnion - amnio
aneurysm - aneurysmo
animal life - zoo
anus - ano
anus - procto
aorta - aorto
appendix - appendo
appendix - appendoco
arm - brachio
arteriole - arteriolo
artery - arterio
atrium - atrio
attraction for - -philia
away from - ab
back - dorso
back - postero
back - retro
bacteria - bacterio
bad - dys
bad - mal
befo-re - ante
before - pre
before - pro
belly - ventro
below - infra
berry-shaped -coccus
between - inter
between - meta
be-yond - ultra
bile - bile
cholé-bile
bilirubin - bilirubino
birth - nati
black - melano

blood - hemato
blood - hemo
blood condition - -emia
blue - cyano
body - somato
body - -some
body - somo
bone - osteo
bone marrow - myelo
brain - cerebro
branching - furelo
breast - mammo
bre-ast - masto
bre-athe - spiro
breathing - pineo
breat-hing - -pnea
breathing - pneo
bronchial tube - bronchio
bronchial tube - broncho
bronchiole - bronchiolo
bursa - burso
bursting forth of blood - -orrhagia
calcium - calcio
calcoum - calco
calyx - calio
cancer - carcino
carbon dioxide - -capnia
caries - cario
cartilage - chondro
catalyst - zymo
cause - etio
cecum - ceco
cell - cyte
cell - cyto
cement - cemento
cerebellum - cerebello
cerumen - cerumino
change - muta
cheek - bucco
chest - pectoro
chest - thoraco
chest - -thorax
chin - mento
ciliary body - cyclo
clavicle - claviculo
cleft - -schisis
clot - thrombo
coil dust - anthraco
coccyx - coccygo
cold - cryo
colon - colo
colon - colono
<table>
<thead>
<tr>
<th>Term</th>
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<tr>
<td>color - chromo</td>
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<td>growth - -plasm</td>
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<td>gum - gingivo</td>
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hair - tric-ho
half - hemi
half - semi
hard - scirrho
hardening - -sclerosis
head - cephalo
hearing - acouo
hearing - audio
hearing - cusi
heart - cardio
heart - corono
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heavy - pachy
heavy – pachyo
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hernia - cele
hernia - hernio
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hold back - ischo
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ileum - ileo
ilium - ilio
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in – in
in due measure - emmetro
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instrument for recording - -graph
instru-ment for visual examination - scope
internal organs - viscero
intestines - entero
iris - irido
iris - iro
iron - sidero
irregular - poikilo
ischium - ischio
jaw - gnatho
jejenum - jejunio
joint - arthro
joint - articulo
kidney - nephro
kidney - renio
killing - cidal
knee cap - patello
lack of - de
large - macro
larynx - laryngo
life - bio
life - vita
ligament - ligamento
ligament - syndesmo
light - luco
light - photo
lip - cheilo
lip - labio
liver - hepato
lobe - lobo
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lo-er jaw - -submaxillo
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lung - pneu
lung - pneumono
lung - pulmono
lymph - lympho
make a new opening - -stomy
male - andro
many - poly
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meal - -prandial
measure - -meter
meatus - meato
medullary - medullo
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meninges - meningo
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middle - medio
middle - meso
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mind - psycho
monster - terato-
more - pleo
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mouth - stomato
movement - cino
movement - ki-neso
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muscle - myoso
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near - proximo
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nerve - neuro
network - reticulo
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no strength - -asthenia
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nose - rhino
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outside - exo
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pain - -algia
pain - dynia
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pelvis - pelvi
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pertaining to - al
pertaining to stopping - -static
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pharynx - pharyngo
physician - iatro
pink - eosino
place - topo
pleura - pleuro
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poison - toxo
polyp - polypo
pons - ponto
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pregnancy - gravido
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protein - -globulin
pubic bone - pubo
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pulse - sphygmo
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pupil - coro
pupil - pupillo
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record - gram
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safe - immuno
saliva - sialo
scale - squamo
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sebum - sebo
secrete - -crine
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seed - gono
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sinus - sinuso
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skin - dermato
skin - dermo
skin - derma
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small - mio
small - ole
small - -ule
small sac - folliculo
smell - -osmia
smooth muscle - leiomyo
sodium - natro
softening - malacia
solid - stero
sound - echo
sound - -phonia
spark - scinti
specialist - -ist
speech - phaso
spermatozoa - spermato
spermatozoa - -spermo
spinal cord - myelo
spine - spino
spitting - -ptysis
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stapes - -stapedo
starch - -amylo
stomach - gastro
stone - -lith
stone - litho
stop - -stasis
straight - -ortho
strength - -stenia
stretching - ectasia
stretching - -ectasis
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sudden contraction of muscles - - spasm
sugar - -gluco
sugar - -glyco
sugar - -ribo
surgical cutting - -tomy
surgical puncture - -centesis
surgical removal - -ectomy
surgical repaire - -plasty
surrounding - -peri
suture - -rrhaphy
sweat - -hidro
synovia - -synovio
tail - caudo
tear - dacro
tear - lacrimo
testes - testo
testis - - orcho
testis - orchido
thalamus - -tha-lamo
thick - -pachy
vertebra - vertebro
vessel - angio
vessel - vaso
view - -opsy
virus - viro
vision - -opia
visual examination – scopo, scopy
vitreous body - vitreo
voice - -phonia
vomitig - -emesis
vulva - vulvo
washing - clysis
water - aqueo
water - hydro
weak, dull - amblyo-
white - albino
white - albo
white - leuko
with - con
within - endo
within - intra
without - a
woman - gyneco
work - ergo
wrist - carpo
yellow - xantho
yellowish plaque - athero
Навчальне видання

Методичні вказівки до самостійної роботи (для іноземних студентів)

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