

Міністерство охорони здоров'я
Запорізький державний медичний університет

АНГЛІЙСЬКА МОВА

Практикум з реферування текстів

**для студентів I курсу медичних факультетів
спеціальності “Медицина – 222”**

Запоріжжя

2017

УДК 811.111:61(076.5)

П 69

*Навчально-методичний посібник рекомендований до видання
Центральною методичною радою Запорізького державного медичного університету
(протокол № 2 від 30 листопада 2017 р.)*

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П 69 **Англійська мова. Практикум з реферування текстів для студентів I курсу
медичних факультетів спеціальності “Медицина – 222” / уклад. Л.В.
Сазанович. – Запоріжжя, 2017. – 74 с.**

*У практикумі підібрано тексти до реферування англійською мовою, тематика яких
відповідає програмі викладання дисципліни «Іноземна мова» для студентів першого курсу
вищих навчальних закладів III-IV рівнів акредитації.*

Рекомендовано у навчальний процес:

*Кафедрою іноземних мов Запорізького державного медичного університету
Протокол № 11 від 22 червня 2017р.*

*Цикловою методичною комісією з гуманітарних дисциплін Запорізького державного
медичного університету*

Протокол № 2 від 21 вересня 2017р.

УДК 811.111:61(076.5)

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ПЕРЕДМОВА

Однією з основних цілей навчання іноземній мові у вищій школі є навчити студента читати тексти зі спеціальності, щоб отримати повноцінну інформацію та вміння обробити її (анотування, реферування та конспект). По закінченні курсу іноземної мови, студент повинен володіти професійно-орієнтованими навичками та вміннями, всіма видами наукової обробки тексту для самостійної роботи.

Навчальний посібник призначено для студентів першого курсу медичних факультетів, спеціальності 222 «Медицина», що цікавляться механізмами функціонування сучасної наукової мови та прагнуть сформувати й вдосконалити індивідуальну програму пізнавальної діяльності через самостійну роботу з різними джерелами наукової інформації.

Посібник складено з урахуванням вимог Примірної програми підготовки фахівців другого (магістерського) рівня вищої освіти, кваліфікації освітньої “Магістр медицини”, кваліфікації професійної “Лікар”, галузі знань 22 “Охорона здоров'я”, спеціальності 222 “Медицина”. Примірна програма дисципліни “Іноземна мова (англійська, німецька, французька)” затверженої МОЗ України 5 жовтня 2016 р.

Матеріал посібника містить зразки автентичних англомовних статей загально медичної тематики для перекладу та реферування англійською мовою. Головна увага приділена у посібнику організації самостійної роботи, що забезпечується запропонованими алгоритмічними приписами, які раціонально й оптимально скеровують мисленнєво-мовленнєву діяльність при опрацюванні різноманітних наукових джерел як з метою «згортання» їх

змісту до рівня конспекту, анотації, реферату, так і для підготовки англійською мовою наукової доповіді, виступу в дискусії, статті. За такого підходу суттєво підвищується ефективність інтелектуальної праці та забезпечуються перспективи самоосвіти у подальшому професійному зростанні.

Зміст практикуму складають *Передмова, Методичні рекомендації, 4 Текстові Розділи, Додаток та Список літератури*. Загальний обсяг практикуму складає 73 сторінки.

Розділ “Методичні рекомендації” присвячено визначенню особливостей реферування текстів наукового характеру англійською мовою, визначено композиції та типам рефератів. Також наведено мовні стандарти-кліше необхідні для реферування наукового джерела. Методичні рекомендації містять короткі плани та пам’ятки реферування тексту українською та англійською мовами.

4 Текстові Розділи містять 56 текстів для реферування наукової та науково-популярної направленості за програмою навчальної дисципліни “Іноземна мова”: Тексти для змістовного модулю I “Студент медичного вузу”, Тексти для змістовного модулю II “Робочий день студента”, Тексти для змістовного модулю III “Вища освіта в Україні”, Тексти для змістовного модулю IV “Вища освіта в Україні”, Тексти для змістовного модулю V “Вища освіта у США”.

У Додатку наведено найбільш вживані лексичні одиниці та фрази необхідних під час роботи над рефератом. *У Списку літератури* вказано інформаційні джерела використані під час роботи над практикумом.

Методичні рекомендації. Посібник розраховано на студентів I курсу, як завдання для підсумкового модуля та самостійної роботи за темами Модулю I «Медична освіта в Україні». Рівень складності текстів пропонується

студенту викладачем. Порядок опрацювання текстів може бути послідовним або вільним залежно від планів та цілей викладача, що виходять з вимог навчальної програми: ввести, актуалізувати або проконтролювати засвоєння лексики за окремою темою модуля.

Методичні рекомендації до анотування і реферування наукових текстів

Анотування – процес аналітично-синтетичного опрацювання інформації, мета якого – отримання узагальненої характеристики документа, що розкриває логічну структуру і зміст. Анотації використовуються для стислої характеристики наукової статті, монографії, дисертації тощо, а також у видавничій, інформаційній та бібліографічній діяльності.

Анотації виконують дві основні функції:

1) *сигнальну* (подається важлива інформація про документ, що дає можливість встановити основний його зміст і призначення, вирішити, чи варто звертатися до повного тексту праці);

2) *пошукову* (анотація використовується в інформаційно-пошукових, зокрема, автоматизованих системах, для пошуку конкретних документів).

Анотація складається з двох частин: бібліографічного опису і власне тексту. Анотація не розкриває зміст наукового джерела, а лише інформує про наукове джерело певного змісту й характеру. Анотація дозволяє користувачеві скласти достатнє й об'єктивне попереднє уявлення про незнайому для нього наукову публікацію і тим самим допомагає в пошуку, відборі та систематизації потрібної інформації.

За функціональним призначенням анотації бувають довідкові та рекомендаційні. *Довідкова анотація* уточнює заголовок і повідомляє відомості про автора, зміст, жанр та інші особливості документа, що

відсутні в бібліографічному описі. Рекомендаційна анотація покликана активно пропагувати, зацікавлювати, переконувати в доцільності прочитання документа, тому в рекомендаційних анотаціях є дидактична спрямованість, педагогічні рекомендації, методичні поради тощо, за обсягом вони ширші, аніж довідкові.

За обсягом та глибиною розрізняють анотації описові та реферативні. *Описові анотації*, узагальнено характеризуючи зміст первинного документа і подаючи перелік основних тем, що в ньому відображені, відповідають на питання: про що повідомляється у документі? *Реферативні анотації* не тільки подають перелік основних тем, а й розкривають їх зміст. Вони відповідають на два питання: про що повідомляється в основному документі? що саме з цього приводу повідомляється?

Текст анотації вирізняється лаконічністю, високим рівнем узагальнення інформації, що представлена в первинному документі. У тексті анотації не варто використовувати складні синтаксичні конструкції, що перешкоджають сприйняттю тексту

Написання анотації має чітку та логічну структуру, що варіюється залежно від мети та змісту дослідження. Однак, спільні елементи підпорядковуються чітким законам написання наукового стилю. Наприклад, про предмет наукового дослідження можна повідомити використовуючи наступний ряд синонімічних дієслів: *to study, to investigate, to examine, to consider, to analyze, to obtain, to determine, to establish.*

- *A new problem is studied.* – Вивчається нова проблема.
- *The properties of matter have been investigated.* – Були досліджені властивості матерії.
- *The application of heart pacemakers was analyzed.* – Дослідили застосування ритмізаторів биття серця.

- *The process of absorption is considered.* – Розглядається процес абсорбції.

Крім того, академічному стилю анотації притаманне використання наукових кліше, вставних слів та словосполучень. Під час написання анотації з метою виділити необхідну інформацію використовуються такі словосполучення, як *to pay(give) attention, to give emphasis to, to place emphasis on*, які у поєднанні із прикметниками *particular, special, primer, especially, particularly, specially, specifically* надають словосполученням певного конотативного значення. Наприклад,

- *Special attention was paid to the methods of water purification.* – Особлива увага приділена методам очищення води.

- *The corrosive properties were described with particular attention.* – Окрему увагу було звернено на властивості корозії.

В заключній частині анотації для логічного завершення роботи використовуються наступні словосполучення – *to conclude, to make (draw, reach) a conclusion, to come to a conclusion that, it is concluded that, to lead to a conclusion, it may be noted that, thus, therefore, consequently*.

Наприклад, *A general conclusion is made concerning the exchange of gases in the blood.* – Робиться загальний висновок відносно обміну газів у крові.

Граматичні навички включають в себе навички:

- вживати повні дієслівні форми замість скорочених, відповідно до вимог академічного стилю;
- вживати умовний спосіб;
- вживати модальні дієслова,
- вживати дієприкметникові, герундіальні звороти;
- вживати пасивний стан;
- вживати узгодження часів.

Граматична система англійської мови, на відміну від лексичної, характеризується відносно сталою структурою та сформованими законами будови. Порівнюючи граматичної будови мов – української та англійської – варто враховувати, що вони належать до різних типів. Англійська мова за своєю структурою аналітична, в той час як українська – синтетична. Така структурна відмінність спричиняє труднощі у студентів під час написання іношомовного наукового тексту.

Англійській науковій мові притаманні конструкції з присудком в *пасивному* стані з прямим порядком слів (підмет стоїть перед присудком), в той час як в українській мові такі речення характеризуються непрямым порядком слів представлені присудком у пасивному стані теперішнього і минулого часу. Наприклад,

- *Досліджувалися хімічні властивості елементів.* – *The chemical properties of elements were studied.*

Вживання форм теперішнього часу *Present Simple* та *Present Perfect* на позначення завершеності дії в значній мірі притаманно науковому стилю анотації. Форми минулого часу *Past Simple* використовуються при описі виконаної роботи.

· *Досліджується важливість процесу дифузії.* – *The importance of diffusion is analyzed.*

· *Вивчено кристалізацію різних....* – *The crystallization of the various... has been studied.*

Варто зауважити, використання *безособових та пасивних конструкцій* властива науковому стилю як англійської так і української мов, на відміну від особових речень, виражених займенником або іменником *the author* (*authors*). В таких випадках типовим являється використання наступних конструкцій.

The project consists of an introduction,... chapters, conclusions....

The total volume is.....

The paper studies.....

The paper deals with.....

It (the article) gives a detailed analysis of

This paper proposes a new approach to.....

The objective of this paper is.....

The present paper concentrates on analyzing

The paper examines the problem...

The results of the calculation are given in the calculation and explanatory note....

Нерідко після повідомлення отриманих результатів необхідно дати *рекомендації, поради або висловити пропозиції* щодо можливого використання отриманих результатів, нових методів та ін. Для цього прийнято користуватися такими словами і сполученнями слів: *to propose, to suggest, to recommend* – пропонувати, вносити пропозицію; *recommend*, *it is necessary to do sth.* необхідно зробити таким чином.

Наприклад,

· *Another method of surgery is proposed (suggested, recommended).* – *Пропонується (рекомендується) інший метод проведення операції.*

· *A new way of purification is recommended (suggested).* – *Рекомендовано новий метод очищення.*

· *It is necessary that a more thorough study of the adsorption should be performed.* – *Необхідно вивчити явище адсорбції більш детально.*

Одним із актуальних питань в системі граматики є вживання англійських *інфінітивних та герундіальних* зворотів. Граматичне поняття герундія в англійській мові спричиняє труднощі у студентів при виборі

українських еквівалентів та адекватного перекладу. Відсутність явного відповідника англійським герундіальним конструкціям стає перешкодою правильного перекладу та побудови речення. Їх переклад та вживання в основному залежить від функції та конструкції в реченні.

В анотаціях інфінітивів найчастіше зустрічається у функції підмета або присудка.

Наприклад,

The aim of this experiment is to raise the efficiency of production. - Мета цього експерименту – підвищити якість продукції.

Абстрактні іменники, такі як *opportunity (of), idea (of), habit (of), hope (of)* вживаються у герундіальних конструкціях. Наприклад:

Studying the properties of electrons gave the possibility of constructing a very powerful microscope. – Вивчення властивостей електронів дало можливість (яку?) розробити дуже потужний мікроскоп.

План аналізу документа

В якості висновку додамо, що *План аналізу документа* під час складання довідкової анотації має наступні етапи:

1. Відомості про автора.
2. Відомості про форму (жанр) тексту.
3. Предмет, об'єкт або тема.
4. Характеристика змісту анотованого документа.
5. Характеристика довідкового апарату видання.
6. Цільове й читацьке призначення документа.

Summary OUTLINE

Title: “_____”

Author: Mr/ Miss/ Doctor/ Professor / not given_____

Thesis (main idea):_____

Major Supporting Details:

1. _____

2. _____

3. _____

Conclusion: Summing up the author/ Professor/ Editor/ writer maintains / states/ argues that_____

Схема написання анотації

STEPS OF FURNISHING INFORMATION

INTRODUCTION

The heading (title) of the text is

DESCRIPTIVE PARTS

- The text provides the reader with some information / material /details / data on ...

- The author touches upon / deals with / considers / describes / studies / investigates / presents the problem of

- Special attention is devoted to

CONCLUSION

- To sum it up, I'd like to say that ...

- My opinion is based on ...

Модуль І “Вища освіта в Україні”

Змістовий модуль 1. Студент медичного вузу

Тема 1. I am a Medical student

Тема 2. My Future Profession. Hippocratic Oath

Тема 3. A Patient and His Family. My Family

Тема 4. We Study Anatomy. The Skeleton

1. Essay on Student Life: Nature, Duties, Responsibilities and Enjoyment

“Student Life” refers to the life of students who receive systematic education in an educational organization (schools, colleges, universities, etc).

Student life is neither full of joy nor full of sorrow. It is a mixture of both. It is a blessing that parents come forward to bear all the expenses incurred by a student. This indicates that they place much hope on him/ her and that he/she must make himself/ herself worthy of their hope.

It has been rightly said that student life is the seed time of life. It is a period during which one will reap later what one sows now. If his time is wasted in futilities, a student will have to lament forever.

On the other hand, if he utilizes it he will receive rich dividends for his labor. In whatever fields he may shine at this time, if he neglects his studies, his action can never be excused.

By Pooja Mishra

On September, 2014

From: <http://www.importantindia.com/14363/essay-on-student-life/articles>

2. Student's Duties and Responsibilities

A student cannot avoid his duties. He owes duty to himself. He should get up early from bed, do some light physical exercise, read his books properly, do his homework, attend his classes regularly, pay respect to teachers and elders, love younger ones, and take part in a play or some form of recreation.

He has his duties towards his parents above everything else. He must never forget their love and encouragement, their hardship and sacrifice that lie behind his success. Moreover, a good student should perform his duties to his parents.

He also has his duties towards his brothers and sisters and his friends. They demand from him no more than love and some occasional presents.

A student is the future citizen of the country. He must educate himself and be ready to take up his duties.

By Vikash Chamaria

On June 12, 2015

From: <http://www.importantindia.com/14363/essay>

3. Student Life

Student life is the happiest period in the life of a person. It is a life, free from all anxieties of the tough world. The mind of the student is full of noble ideas and his eyes are full of dreams.

His studies are his preparation for the coming struggle of life. If properly utilized, student life lays the foundation of future its success and achievements. If misused, defeat is sure however earned may out future efforts be.

Student life is the most crucial period in the life of a person. The impressions he will gather at this period will determine his future conduct.

Student life is the period of education. Education is the all round development of an individual into a useful member of society. We must see that student life is full-filling this aim.

On June 12, 2015 By Vikash Chamaria

From: <http://www.importantindia.com/14363/essay>

4. Choosing a Career

Choosing a career is one of the most important decisions you will make in life. It's about so much more than deciding what you will do to make a living. To start with, think about the amount of time we spend at work. We are on the job approximately 71% of every year. Over our lifetimes, this comes to roughly 31½ years out of the 45 years most of us spend working, from the beginning of our careers until retirement. The importance of selecting a career with which we are satisfied cannot be overemphasized.

Many people don't put enough effort into choosing occupations or pick them for the wrong reasons. Maybe they choose careers that seem secure or pay well. They then end up unhappy. The best way to make sure that doesn't happen to you is to make a well-thought out decision.

Career planning involves 4 step planning process: 1) Knowing Yourself (Skills, likes/dislikes and values); 2) Finding Out (Exploring what is out there): 3) Making Decisions (Comparing options); Taking Action (Working towards your goals).

From: Qualifax - Ireland's National Learners' Database

<http://www.qualifax.ie>

5. Why Choose Medicine as a Career

Choosing a career is one of the more difficult choices any student can make. The important thing is to have a firm idea of what it takes to enter the profession you desire. For many students with the dream of becoming a physician, most only see that title at its base value. So what truly goes into achieving a career in medicine and why is it the right choice for you?

Do you want to make a difference in people's lives? Does having a positive impact and the ability to help others drive you? If you answered "Yes," then you are probably on the right track; but there are also other factors to consider before committing to such a field.

Medicine is a career driven by service. As such, you are tasked with putting others first. Yet it also allows you to be a life-long learner. It is an occupation where your field of expertise continually expands. As a result, your knowledge base must follow suit. It is a profession that requires quick thinking and decision-making. People will look to you for answers, and it is up to you to provide them. Although

this may sound daunting, it puts you in a position where your actions matter. Foremost though, a career in medicine is one of respect. The work you do is important to both the individual and community.

From: College of Medicine Phoenix website

<http://phoenixmed.arizona.edu/why-choose-medicine-career>

6. Preparing for a Career in Medicine

If you are interested in pursuing a career in medicine, you need to build a strong foundation in the sciences and intellectual skills in a number of other areas as an undergraduate student. You should plan your college education with the goal of building a diverse set of skills, and select a major that challenges and interests you.

A good physician must be adept at using language. The process of diagnosis and treatment is highly dependent on language use. If you want to become a good physician one day you will need to pursue an education that will help you build strong communication skills.

Students majoring in the sciences should include in their course plans some advanced-level coursework in the humanities and the social sciences, in order to stretch their verbal reasoning and analytical skills. Thus, gaining admission to medical school requires the development of a sharp scientific mind, good interpersonal sensibilities, and extraordinary dedication.

From: Indiana University Bloomington Website

<http://hpplc.indiana.edu/medicine/med-prep.shtml>

7. Relevance of the Hippocratic Oath in the 21st Century

The Oath is an ancient pledge of medical ethical conduct. It addresses two important tenets: benefitting the ill and protecting patients against personal and social harm and injustice.

There are many translations of the Oath, but the essential meaning remains the same. It prohibits giving a lethal drug or using “a pessary to cause an abortion,” encourages practicing “in purity and according to divine law” and admonishes physicians not to “use the knife,” but rather, to “leave this to those who are trained in this craft.” It prohibits acts “of impropriety or corruption, including the seduction of women or men.” It advocates for patient privacy and concludes with the oath-taker’s need to strive for respect. Many of these ancient pledges are highly relevant to our modern practice of medicine.

By Hagop Kantarjian, MD, and David P. Steensma, MD
From: <http://www.ascopost.com/issues/october-15,-2014/relevance-of-the-hippocratic-oath-in-the-21st-century.aspx>

8. Why Is the Hippocratic Oath Important Today?

New doctors have delivered the Hippocratic Oath since ancient times, and many of its concepts and pledges are as relevant today as they were centuries ago. The oath was named for the Greek philosopher Hippocrates, who is called the father of modern medicine. Many believe he also wrote it, but others believe that it was the work of his contemporary, Pythagoras. Although the Hippocratic Oath has been revised throughout the years, it still retains its original intent.

While many believe the oath contains the words "First, do no harm," that quote comes from another work of Hippocrates. The actual original oath says, "I will abstain from harming or wronging any man by it."

Despite the fact that Hippocrates wrote the oath around 400 BC, its use was not common practice until the 20th century. As medicine has become more relevant, the oath has followed. As late as the 18th and 19th centuries, just a handful of doctors in the U.S. took the Hippocratic Oath. Today, practically all graduating medical students repeat some form of it.

By Hope Cambell

From: http://www.ehow.com/info_8691470_hippocratic-oath-important-today.html

9. Why is it important to know my family medical history?

Part I

A family medical history is a record of health information about a person and his or her close relatives. A complete record includes information from three generations of relatives, including children, brothers and sisters, parents, aunts and uncles, nieces and nephews, grandparents, and cousins.

Families have many factors in common, including their genes, environment, and lifestyle. Together, these factors can give clues to medical conditions that may run in a family. By noticing patterns of disorders among relatives, healthcare

professionals can determine whether an individual, other family members, or future generations may be at an increased risk of developing a particular condition.

A family medical history can identify people with a higher-than-usual chance of having common disorders, such as heart disease, high blood pressure, stroke, certain cancers, and diabetes. These complex disorders are influenced by a combination of genetic factors, environmental conditions, and lifestyle choices. A family history also can provide information about the risk of rarer conditions caused by mutations in a single gene.

From: <http://ghr.nlm.nih.gov/handbook/inheritance/familyhistory>

10. Why is it important to know my family medical history?

Part II

Gathering a complete and accurate family medical history is extremely important as genetic medicine explains more diseases. A family medical history provides information about the risk of specific health concerns. Knowing one's family medical history allows a person to take steps to reduce his or her risk. For people at an increased risk of certain cancers, healthcare professionals may recommend more frequent screening (such as mammography or colonoscopy) starting at an earlier age. Healthcare providers may also encourage regular checkups or testing for people with a medical condition that runs in their family. Additionally, lifestyle changes such as adopting a healthier diet, getting regular exercise, and quitting smoking help many people lower their chances of developing heart disease and other common illnesses.

The easiest way to get information about family medical history is to talk to relatives about their health. Have they had any medical problems, and when did they occur? A family gathering could be a good time to discuss these issues.

From: <http://ghr.nlm.nih.gov/handbook/inheritance/familyhistory>

11. Family Health History

Family members share genes, behaviors, lifestyles, and environments that together may influence their health and their risk of chronic disease. Most people have a family health history of some chronic diseases (e.g., cancer, coronary heart disease, and diabetes) and health conditions (e.g., high blood pressure). People who have a close family member with a chronic disease may have a higher risk of developing that disease than those without such a family member.

Family health history is a written or graphic record of the diseases and health conditions present in your family. A useful family health history shows three generations of your biological relatives, the age at diagnosis, and the age and cause of death of deceased family members. Family health history is a useful tool for understanding health risks and preventing disease in individuals and their close relatives.

It is helpful to talk with family members about your health history, write this information down, and update it from time to time. This way family members will

have organized and accurate information ready to share with their health care provider.

From: <http://www.cdc.gov/genomics/famhistory/>

12. Human Anatomy

The word anatomy comes from the Greek ana- meaning "up", and tome- meaning "a cutting". Anatomy, especially in the past, has depended heavily on dissection. In Greek and Latin the words "anatomy" and "dissection" have virtually the same meanings. Although both words have similar origins, anatomy has evolved to become a broad discipline of its own, while dissection remains a technique of anatomical science.

Human anatomy is subdivided into macroscopic (or gross) and microscopic anatomy.

Macroscopic anatomy describes structures, organs, muscles, bone etc. which are visible to the naked eye, that is macroscopic. In order to establish a certain order they are divided topographically and systematically.

Microscopic human anatomy is the „study of tissues“, that is histology. It may be further separated into cytology, the pure study of cells. In contrast to macroscopic anatomy you require – as the name suggests - an optical magnification in order to evaluate microscopic (e.g. cellular) structures.

Embryology needs to be considered as part of human anatomy as well. It is the study of the development of the human body beginning from fertilization of the ovum until birth.

From: <https://www.kenhub.com/en/library/anatomy/the-human-anatomy>

13. What is Gross Anatomy?

In medicine, gross anatomy, also known as topographical anatomy or macro anatomy, refers to the study of the biological structures that may be seen with the naked eye.

Gross anatomy may involve dissection or noninvasive methods; the aim is to acquire data about the larger structures of organs and organ systems.

In dissection, the human or animal cadaver is cut open and its organs are studied. Endoscopy, inserting a tube with a camera at the end, might be used to study structures within.

There are non-invasive way of studying, for example, the blood vessels of living humans; an opaque dye may be used to observe the circulatory system (angiography). Live beings may also be studied using MRI (magnetic resonance imaging) or X-ray.

Medical and dental students, as part of their course, will have to perform some kind of practical work in gross human anatomy, this will involve dissection. In many cases, the students dissect human corpses (cadavers).

From: Medical News Today
<http://www.medicalnewstoday.com/articles/248743.php>

14. Anatomy

The term anatomy refers to a series of related disciplines which examine the macroscopic (gross anatomy) and microscopic (histology and cell biology) structure of the body. This includes the anatomy of the developing body (developmental anatomy or embryology) and evolutionary or comparative anatomy including biological anthropology.

Anatomy can be categorized in two, which are the human anatomy and the comparative anatomy. Human anatomy is the study of human body and its structure. Comparative anatomy on the other hand is the study of the resemblance and diversity of living organisms.

Anatomy is an essential component of all undergraduate medicine programs. Anatomy is generally taken by students who want to gain an understanding of the structure and function of the human body. Studying anatomy can prepare candidates for careers in medicine and surgery. Anatomy can be combined with units of study from other disciplines such as biochemistry, physiology, microbiology, pathology or psychology to further enhance career options.

From: Medical News Today
<http://www.medicalnewstoday.com/articles/248743.php>

15. Bones and the Human Skeleton

All the bones in the human body together are called the skeleton. The skeleton provides strength and rigidity to our body. We have 206 bones in our body. Each bone has a function. Some bones offer protection to softer more fragile parts of body. For example, the skull protects the brain and the rib cage protects our heart and lungs. Other bones, like bones in our legs and arms, help us to move around by providing support for our muscles.

Around 70 percent of your bones are not living tissue, but hard minerals like calcium. The outside of the bone is called the cortical bone. It's hard, smooth, and solid. Inside the cortical bone is a porous, spongy bone material called the trabecular or cancellous bone. This bone is lighter allowing for the bone itself to be lighter and easier for us to move around. It also allows room for blood vessels and makes our bones slightly bendable. This way our bones won't break so easily. At the center of bones is a softer substance called marrow.

From: Ducksters.Science for Kids
<http://www.ducksters.com/science/bones.php>

16. Introduction to Skeleton

The skeleton provides the structural framework for the body. Brilliantly engineered, the skeletal system enables movement, stores minerals, protects internal organs, bears the body's weight, and distribute forces. In its spongy interiors it houses the mechanisms for storing and creating blood cells.

But most amazing of all, it lives. As with other parts of the body, it continually breaks down and renews itself. And when bones break, they mend themselves.

The skeleton has 206 bones, of which 29 make up the skull, 26 make up the spinal column, 25 make up the thorax, 64 make up the upper limbs, and 62 make up the lower limbs.

The different shapes and sizes of bones are dictated by their individual function. Long bones act as levers (as in the arms and legs), flat bones shield and protect (as in the sternum), short bones span spaces and give added flexibility (as in the small bones in the wrist and ankle).

From: AboutKidsHealth. Trusted answers from the Hospital for Sick Children
<http://www.aboutkidshealth.ca/en/howthebodyworks/introductiontotheskeleton/pages/default.aspx>

17. Skeletal System

The skeletal system includes all of the bones and joints in the body. Each bone is a complex living organ that is made up of many cells, protein fibers, and minerals. The skeleton acts as a scaffold by providing support and protection for the soft tissues that make up the rest of the body. The skeletal system also provides attachment points for muscles to allow movements at the joints. New blood cells are produced by the red bone marrow inside of our bones. Bones act as the body's warehouse for calcium, iron, and energy in the form of fat. Finally, the skeleton grows throughout childhood and provides a framework for the rest of the body to grow along with it.

The skeletal system in an adult body is made up of 206 individual bones. These bones are arranged into two major divisions: the axial skeleton and the appendicular skeleton. The axial skeleton runs along the body's midline axis and is made up of 80 bones.

From: InnerBody
<http://www.innerbody.com/image/skelfov.html>

18. Ribs and Sternum

The sternum, or breastbone, is a thin, knife-shaped bone located along the midline of the anterior side of the thoracic region of the skeleton. The sternum connects to the ribs by thin bands of cartilage called the costal cartilage.

There are 12 pairs of ribs that together with the sternum form the ribcage of the thoracic region. The first seven ribs are known as "true ribs" because they connect the thoracic vertebrae directly to the sternum through their own band of costal cartilage. Ribs 8, 9, and 10 all connect to the sternum through cartilage that is connected to the cartilage of the seventh rib, so we consider these to be "false ribs." Ribs 11 and 12 are also false ribs, but are also considered to be "floating ribs" because they do not have any cartilage attachment to the sternum at all.

19. Skeleton Functions: Support and Protection. The skeletal system's primary function is to form a solid framework that supports and protects the body's organs and anchors the skeletal muscles.

From: InnerBody
<http://www.innerbody.com/image/skelfov.html>

19. Skeleton Functions: Hematopoiesis and Storage

Red bone marrow produces red and white blood cells in a process known as hematopoiesis. Red bone marrow is found in the hollow space inside of bones. Children tend to have more red bone marrow compared to their body size than adults do, due to their body's constant growth and development. The amount of red bone marrow drops off at the end of puberty, replaced by yellow bone marrow.

Storage. The skeletal system stores many different types of essential substances to facilitate growth and repair of the body. The skeletal system's cell matrix acts as our calcium bank by storing and releasing calcium ions into the blood as needed. Proper levels of calcium ions in the blood are essential to the proper function of the nervous and muscular systems. Bone cells also release osteocalcin, a hormone that helps regulate blood sugar and fat deposition. The yellow bone marrow inside of our hollow long bones is used to store energy in the form of lipids. Finally, red bone marrow stores some iron in the form of the molecule ferritin and uses this iron to form hemoglobin in red blood cells.

From: InnerBody
<http://www.innerbody.com/image/skelfov.html>

Змістовий модуль 2. Робочий день студента

Тема 1. A new Hospital. Our Student's Hostel

Тема 2. A Doctor's Working Day

Тема 3. Skin and muscles

Тема 4. A Student's Working Day

20. Student Accommodation: Swinnerton House

Swinnerton House is one of Melbourne's finest student accommodation. This new stylish furnished building offers a choice of single room and ensuite room. The clean and comfortable surroundings offer and provide the perfect environment for students to live and study.

Rooms come fully furnished with heater, bed, study desk and wardrobe. Common facilities include living area, kitchen, dining, TV, fridge, washing machine and dryer. Rent includes water, gas and electricity.

Minutes walk to many city Colleges and Language schools. Living at Swinnerton House means you are in the centre of Melbourne.

With its stylish atmosphere, convenient location, easy access to public transport and opportunity to make new friends, Swinnerton House offers an exciting way to begin your stay in Melbourne!

From: studenthostel.net

<http://www.studenthostel.net/hostel.php?id=BAL#.WELJS9SLS9I>

21. Student Accommodation: Balmoral House

Balmoral House is a newly refurbished Victorian building situated in East Melbourne. 10 minutes from the central colleges, shops, restaurants. Transport at your doorstep.

Balmoral House offers many types of accommodation which includes single bedrooms, one bedroom with ensuite, 1 Bedroom Studio Apartments and 2 & 3 Bedroom Apartments. It also has 5 car parking spaces available for rent.

Single rooms have become very popular and will suit students who prefer to have private fully furnished rooms, but share common areas and facilities such as the kitchen and meals area, where there is an opportunity to make new friends and socialise.

Rooms come fully furnished with bed, study desk and wardrobe. Common facilities include living area, dining set, fridge, kitchen, TV, washing machine and dryer.

Single room Rent includes water, gas and electricity.

From: studenthostel.net

<http://www.studenthostel.net/hostel.php?id=BAL#.WELJS9SLS9I>

22. Student Accommodation: Rurona Apartments

Rurona Apartments are six fantastically located apartments situated in East Melbourne which is within 10 to 15 minutes' to all of the best spots in Melbourne colleges, shops, restaurants. Tram line is just on your doorstep and Parliament Train Station is less than a 10 minute walk away.

Rurona Apartments offers many types of configurations which includes 1 Bedroom Studio Apartments and 2 & 3 Bedroom Apartments. It also has 5 car parking spaces available for rent.

All the apartments are fully furnished with Bed, Study desk, Wardrobe, Kitchen, TV, Fridge, Microwave and Laundry Machine.

From: studenthostel.net

<http://www.studenthostel.net/hostel.php?id=BAL#.WELJS9SLS9I>

23. The Doctor's working day: GP

Most doctors work long hours. Whether in a GP practice, in a hospital clinic or ward setting doctors tend to be on their feet a lot and required to carry out a wide variety of tasks. Some doctors work in more technical areas such as Xray, scanning or pathology departments and each of these has its demands and pressures.

Understanding what a doctor's day can entail makes the system more understandable and helps you learn how to get the best out of it.

There is no point for example going to a clinic early if the doctors are looking at patients on the ward for this designated time. There is no point expecting to see a doctor one day if that is his/her day to do a clinic in a neighboring town.

By: Dr Liza Macdonald FRCR MA

From: Dealing With Your Doctor

http://www.dealingwithyourdoctor.co.uk/The_Doctors_working_day_GP.html

24. A General Practitioners Working Day

A typical GP's day will encompass all or most of the following.

The working day extends from about 8am to 6.30pm which means 10 and a half hours.

The day starts on arrival at the Practice with the information about patients who have been seen during the previous evening or night by other doctors. Information needs to be entered into the relevant patient's notes concerning what happened, were they admitted to hospital. Test results, x-ray reports, blood test results need to be noted in the patient's dossier.

All that usually takes the first hour and then from about 9am to 12 noon there are the routine appointments: ten minutes per patient if possible.

Then there is the "emergency" clinic. Patients who need to be seen because they are acutely unwell.

12-1pm. Then a sandwich working lunch with colleagues to discuss the morning home visits, a particularly difficult patient problem or an administrative issue.

Afternoon surgery means another 20-25 patients.

Around 5pm the hospital lab will send over the day's results for patients on anti-coagulants. This an important but time-consuming part of any GP's day.

By about 6.30 pm the main work of the day is over but some paper work may be outstanding and need to be finished at home.

Most of the day has been filled with decisions: many of them small but some of them rather important.

By: Dr Liza Macdonald FRCR MA

From: Dealing With Your Doctor

http://www.dealingwithyourdoctor.co.uk/The_Doctors_working_day_GP.html

25. Hospital doctor

Hospital doctors examine, diagnose and treat patients who have been referred to the hospital by GPs and other health professionals. They apply medical knowledge and skills to the diagnosis, prevention and management of disease.

Hospital doctors work in wards and outpatient clinics, predominantly in the public sector, but also in the private sector.

As well as treating patients, they refer them to a range of other healthcare professionals including nurses, radiographers, pharmacists and physiotherapists.

Hospital doctors work within a number of specialties. Some of the more common areas include: anaesthetics; emergency medicine; general medicine; general surgery; obstetrics and gynaecology; paediatrics; psychiatry; trauma and orthopaedics.

From: Job profile

<https://www.prospects.ac.uk/job-profiles/hospital-doctor>

26. Hospital doctor: Responsibilities

Specific tasks depend on the specialty - a surgeon's daily tasks are significantly different from those of a doctor working in accident and emergency (A&E) or a general physician.

However, the following responsibilities are likely to be carried out on a daily or weekly basis, regardless of the doctor's specialty:

- monitoring and providing general care to patients on hospital wards and in outpatient clinics;
- admitting patients requiring special care, followed by investigations and treatment;
- examining and talking to patients to diagnose their medical conditions;
- carrying out specific procedures, e.g. performing operations and specialist investigations;
- making notes and preparing paperwork, both as a legal record of treatment and for the benefit of other healthcare professionals;
- working with other doctors as part of a team, either in the same department or within other specialties;
- liaising with other medical and non-medical staff in the hospital to ensure quality treatment;
- promoting health education;
- undertaking managerial responsibilities such as planning the workload and staffing of the department, especially at more senior levels;
- teaching and supervising junior doctors and medical students;
- carrying out auditing and research.

From: Job profile

<https://www.prospects.ac.uk/job-profiles/hospital-doctor>

27. A day in the life of a junior doctor (1)

Over a year after graduating from medical school, Dr. Vicky Donkin talks about the realities of working as a junior doctor.

August 2nd 2010 was the day I walked onto a ward in my scrubs with a Dr. before my name. I spent my F1 year (foundation year one, also known as preregistration year) working in Exeter. Then, after becoming fully registered with the General Medical Council (GMC), I moved to Torbay hospital in South Devon.

It's been a whirlwind, and nothing you learn at medical school really prepares you for the transition. However, it's not all bright lights and dramatic operations as shows like Casualty would have you believe.

The vast majority of your job for the first year or two will be paperwork and practical procedures such as taking blood and inserting cannulas (drips). But you play a key part in the running of your team and it is usually you that knows the patients best.

By Dr. Vicky Donkin

From: Brightside. Bright

Knowledge. <https://www.brightknowledge.org/knowledge-bank/medicine-and-healthcare/careers-and-courses/a-day-in-the-life-of-a-junior-doctor>

28. A day in the life of a junior doctor (2)

Over a year after graduating from medical school, Dr. Vicky Donkin talks about the realities of working as a junior doctor.

Throughout the winter I worked on a ward caring for the elderly, one of the busiest departments given bed pressures and winter outbreaks of flu, pneumonia and

vomiting bugs. Much of our work was centred on rehabilitation and ensuring safe discharge for vulnerable elderly patients.

A morning as an F1(foundation year one, also known as preregistration year) doctor in care of the elderly would often run like this:

- Arrive at work to add new patients to the list and discuss any issues that have arisen overnight with the nurses.
- Board round led by myself and an F2 (foundation year two doctor) taking it in turns to discuss each patient with the rest of the ward team (made up of nurses, occupational therapists, physiotherapists and pharmacists) and make plans for the day. Board round is a key time to allow everyone to have an opportunity to speak and to prioritise particularly unwell patients and urgent jobs.

By Dr. Vicky Donkin

<https://www.brightknowledge.org/knowledge-bank/medicine-and-healthcare/careers-and-courses/a-day-in-the-life-of-a-junior-doctor>

29. A day in the life of a junior doctor (3)

Over a year after graduating from medical school, Dr. Vicky Donkin talks about the realities of working as a junior doctor.

8:30-9:30. Ward round: twice weekly consultant led rounds where it was my job to tell the consultant about each patient, to ensure unwell patients were seen first and no one missed. Hopefully the round would be finished by midday to give time for lunch. On days with no consultant the F2 (foundation year two doctor) and I

conducted our own ward round ensuring that all patients - especially new patients – were seen. This gave us the opportunity to develop clinical assessment and decision-making skills.

13:00 Catching up with jobs from the ward round, writing discharge letters to GPs and prescriptions for patients.

14:30 Visiting time, mostly spent speaking to patients and relatives about their condition, care and discharge planning.

16:30 End of visiting time, review of documentation.

17:30. The end of the working day.

Although this is how a ward works during a normal day, weekends and nights have much less staff on duty and patients are only seen when required and only urgent jobs are done. This is the time when skills in triage, prioritisation and efficiency are important.

By Dr. Vicky Donkin

From: Medical Blog

<https://www.brightknowledge.org/knowledge-bank/medicine-and-healthcare/careers-and-courses/a-day-in-the-life-of-a-junior-doctor>

30. A Day in the Life of a First Year Medical Student (7am-1pm)

Akash Parekh, a first year medical student at the University of Chicago, was gracious enough to give a window into a day in the life of a medical student.

7:00 a.m. – Time to wake up! Make breakfast and tea. Studying before heading to class.

8:10 a.m. – Running to catch the bus to get to school!

8:30 a.m. – First lecture of the day – today it's cell pathology and immunology.

9:30 a.m. – Second lecture of the day – usually it's a different topic, but today it's another hour of cell pathology and immunology.

10:30 a.m. – Third lecture of the day. This morning we started a microbiology small group discussion class. Each week, one of us will have to present a different bacterial illness, lead a discussion on the diagnosis, and answer questions from the professor.

11:30 a.m. – Lunch! This is usually the time for socializing. This also means free food! Today, it's a REMEDY coordination meeting for me – we're a group that collects donated medical supplies and distributes them in Central American countries. This year, we're raising money to travel to Peru.

By Veritas Prep

From: Medical Blog

<http://www.usnews.com/education/blogs/medical-school-admissions-doctor/2011/07/04/a-day-in-the-life-of-a-first-year-medical-student>

31. A Day in the Life of a First Year Medical Student (1pm-12pm)

1:00 p.m. – Afternoon lectures start. It's the first day of the third part of our clinical skills course, where they try to introduce us to actual patient contact in the first

year. We found out today that the third part is all about getting very personal information from patients without feeling awkward (which most of us do!).

3:00 p.m. – Second afternoon lecture.

4:00 p.m. – End of classes. Usually organizations also hold meetings at around this time, or there are speakers holding talks on various different topics around campus.

5:30 p.m. – Arrive home. Time for me to grab a bite to eat and catch up on some news online. Also time to return calls from family and friends.

6:00 p.m. – Studying. Reviewing today's material!

7:30 p.m. – Gym time.

8:30 p.m. – Home. Time to shower, eat, and get settled.

9:00 p.m. – More studying. I usually like to review tomorrow's material for class during this time, but tomorrow we have a microbiology lab quiz, so that's topping tonight's agenda.

11:30 p.m. to 12:00 a.m. – Bedtime!

By Veritas Prep

From: Medical Blog

<http://www.usnews.com/education/blogs/medical-school-admissions-doctor/2011/07/04/a-day-in-the-life-of-a-first-year-medical-student>

32. Med school Mondays

Much like working people Mondays, or any-other-type-of-school Mondays, these tend to be decently rough for medical students.

Usually, you'll start with lecture from 8-10 am, followed by lab (histology or anatomy) or small groups (usually team based learning) from 10-12 pm.

Also, our block exams almost invariably land on Mondays, resulting in a sometimes extra-rough start to the week. On these days, our 8-10 am final exam is immediately followed by a two-hour lecture of the next block. Ouch!

At the beginning of the year, Monday evenings were prime time to cash in on the student discount at our local rock climbing gym. However, I've become more involved in the student-run free clinic, and now I work as a manager of the downtown site from 5-10pm each week. After that, it's time for tacos at one of many hole-in-the-wall Mexican spots, then straight home and straight into bed.

By Kevin Yang

November , 2016

From: Med School Insight

<http://www.kaptest.com/blog/med-school-insight/2016/11/02/a-typical-week-for-first-year-medical-students-2/>

33. Typical Tuesdays and Wednesdays for First-Year Medical Students

Unlike Mondays, Tuesdays aren't typically a go-all-day affair.

8-10 am is lecture time, followed by day one of our weekly problem-based learning (PBL) case. This consists of attempting to diagnose a hypothetical patient based on provided signs, symptoms, and labs, and concludes with the assignment of look-ups based on the case.

Work together Wednesdays.

Mid-week mornings start the same way as every other day, with lecture and small group or lab occupying the 8-12 pm time slot. Every other week, we meet for Practice of Medicine (POM) sessions from 1-5 pm. In these groups, led by a dynamic psychologist and physician duo, we learn patient interviewing techniques and practice our physical exam skills.

If we happen to get out of POM early, it makes for a prime opportunity to get in a nice sunset beach run; I'm decently caught up on the week's academics, and my brain usually isn't functioning at 100% after eight hours of class. After that, evenings are spent, as you could probably guess, studying!

By Kevin Yang

November , 2016

From: Med School Insight

<http://www.kaptest.com/blog/med-school-insight/2016/11/02/a-typical-week-for-first-year-medical-students-2/>

34. Typical Thursdays and Fridays for First-Year Medical Students

Trial and error Thursdays

Thursday mornings start with lecture followed by lab/small groups ending at noon. During non-POM weeks (Practice of Medicine), I visit my Ambulatory Care Apprenticeship from 1- 6pm. There, I have a chance to practice my physical exam skills and work on patients' interviewing under the guidance of a primary care physician. On Thursday nights, we study.

Forget your troubles Fridays

Hallelujah! Almost there! 8-10 am is lecture time, followed by day two of PBL (problem-based learning). On day two, we each give short presentations of our lookups, covering topics from disease etiology to physicians' legal rights and obligations. If there's at least another week until our next test, Fridays are great for letting off steam at the beach, going for a run, grabbing drinks at a local bar, or vegging in the couch.

By Kevin Yang

November , 2016

From: Med School Insight

<http://www.kaptest.com/blog/med-school-insight/2016/11/02/a-typical-week-for-first-year-medical-students-2/>

35. Well-deserved weekends of First-Year Medical Students

If it's a pretest weekend, you can find me in our library or medical education building for the better part of 12 hours. If not, my weekends end up being surprisingly normal. Brunches, beach runs, and low-intensity catch-up studying dominate my two days off of campus.

There you have it, a week in the life of first-year medical students. Despite our relatively few in-class hours, medical school does take up a frighteningly large proportion of your time. That being said, between studying (about 30-40 hours per week), class, and clinical work, there are little pockets of completely free time to be discovered and treasured. It's arduous, but it's what we signed up for, and the lifelong benefits are well worth the temporary efforts.

By Kevin Yang

November , 2016

From: Med School Insight <http://www.kaptest.com/blog/med-school-insight/2016/11/02/a-typical-week-for-first-year-medical-students-2/>

Змістовий модуль 3. Вища освіта в Україні

Тема 1. Higher Education in Ukraine

Тема 2. The Heart and the Vascular System

Тема 3. Our institute. Zaporozhye State Medical University

36. Higher education system in Ukraine

Higher education is provided at universities, academies and institutes, technical schools, colleges, conservatories (i.e. musical academies). All of these institutions offer both professionally-oriented and academic programmes.

There are four levels of accreditation for higher education institutions in Ukraine which result in receiving the following degrees: 1) the qualification of Junior Specialist; 2) the qualification of Junior Specialist and /or Bachelor; 3) Bachelor's, Specialist and Master's qualifications; 4) Junior Specialist, Bachelor's, Specialist and Master's qualifications. Some fourth-level institutions also offer aspirantura (Kandidat Nauk).

The accreditation level of a higher education institution is determined by the types of programmes offered.

Ukraine currently has over 350 state-run higher education institutions. There are also many private institutions, where programmes in law, management and finance are strongly represented.

From: ECA <http://ecahe.eu/w/index.php/>

Higher_education_system_in_Ukraine

37. The Structure of higher education system in Ukraine

The structure of higher education system in Ukraine is based on the education systems of the developed nations of the world in accordance with recommendations from the UNESCO, UN and other international organizations. Higher education is an integral part of the Ukrainian education system as laid down in the Law of Ukraine “On Education”. The four-level system provides thorough academic, professional and practical training with the following degrees: Junior Specialist, Bachelor, Specialist, Master.

Higher education can be obtained in higher education establishments of a certain level of accreditation. The applicants must have either basic general secondary education, complete secondary education, or hold degrees of the Junior Specialist or Bachelor, as well as of the Specialist or Master if they apply for a postgraduate degree.

The students can take either the full-time courses (day), part-time courses (evening classes, distance learning), or take a combination of these. Sometimes they can do an external course.

Admission to higher educational establishments is selective and depends on the applicants' ability; it does not depend on the ownership type of the education establishment or the sources of money to pay tuition fees.

According to their status, all education establishments fall into four categories:

- First level – the technical school, vocational school, or other schools of the same level;
- Second level – the college, or other establishments of the same level;
- Third and fourth levels (according to their accreditation) – the institute, conservatory, academy, university.

Nowadays in Ukraine there 881 institutions of higher education of different accreditation levels.

The higher education establishments can award degrees:

- Junior Specialist (technical schools, vocational schools, and other education establishments of the first accreditation level);
- Bachelor (colleges and other education establishments of the second accreditation level);
- Specialist, Master (education establishments of the third and fourth accreditation level).

The multi-layer structure of the higher education system means that on completion of education on a given level, students obtain a corresponding degree and can move up from level to level.

According to the structure of the higher education system, the first level leads to Junior Specialist Diploma, the second level to Bachelor's Degree (basic higher education), the third to Specialist, Master's Degree (complete higher education).

Accredited education establishments provide instruction according to their accreditation level. However, the higher the accreditation level of an education

establishments is, the more options it can offer its students, who can graduate it with a diploma or degree of any chosen level.

Being a participant of the Bologna process, Ukraine joined common European education system, as well as European academic research community. A new set of requirements for obtaining the Bachelor's Degree has been adapted to meet European standards. Another important objective was to revise syllabuses and qualification requirements.

State education standards set qualification requirements in Ukraine. The state education standard is a collection of regulations that define requirements for qualification and degree levels.

State education standards are set for every education level and degree.

From: Bukovinian State Medical University. Official Website.

<http://applicant.bsmu.edu.ua/higher-education-in-ukraine>

38. Medical Education in Ukraine

Medical education in Ukraine is an integral part of national education system. Even after the collapse of the Soviet Union, medical education in Ukraine was considered one of world's best and its reputation was still strong enough to attract thousands of foreign students each year. Its students, graduates and academics have been known and appreciated worldwide.

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qualification requirements for medical education in Ukraine has been adapted to meet European standards.

Ukraine is one of the most preferred destinations in the world for medical education. Students from over 70 countries come to Ukraine every year to study medicine.

The medical universities under the Ministry of Health of Ukraine offer the best value for money in the sphere of medical education for students from around the world. Good facilities and a history of high quality medical education and care, provide the right environment for students to be moulded as accomplished doctors of International standards. The Universities are recognized by all Medical councils around the world.

Students obtaining medical education in Ukraine are eligible to apply for International Licensing exams like USMLE (USA), PLAB (UK), MCI Screening Test and all other licensing exams around the world.

From: Zaporizhzhia State Medical University. Official Website.

http://int.zsmu.edu.ua/p_492.html

39. The Cardiovascular System

The cardiovascular system consists of the heart, blood vessels, and the approximately 5 liters of blood that the blood vessels transport. Responsible for transporting oxygen, nutrients, hormones, and cellular waste products throughout the body, the cardiovascular system is powered by the body's hardest-working

organ — the heart, which is only about the size of a closed fist. Even at rest, the average heart easily pumps over 5 liters of blood throughout the body every minute.

The heart is a muscular pumping organ located medial to the lungs along the body's midline in the thoracic region. The bottom tip of the heart, known as its apex, is turned to the left, so that about 2/3 of the heart is located on the body's left side with the other 1/3 on right. The top of the heart, known as the heart's base, connects to the great blood vessels of the body: the aorta, vena cava, pulmonary trunk, and pulmonary veins.

From: InnerBody

<http://www.innerbody.com/image/cardov.html#full-description>

40. Human Heart: Anatomy, Function & Facts

The human heart is an organ that pumps blood throughout the body via the circulatory system, supplying oxygen and nutrients to the tissues and removing carbon dioxide and other wastes.

"The tissues of the body need a constant supply of nutrition in order to be active," said Dr. Lawrence Phillips, a cardiologist at NYU Langone Medical Center in New York. "If [the heart] is not able to supply blood to the organs and tissues, they'll die."

By Tanya Lewis, Staff Writer

<http://www.livescience.com/34655-human-heart.html>

41. Human Heart Anatomy

In humans, the heart is roughly the size of a large fist and weighs between about 280 to 340 grams in men and 230 to 280 grams in women, according to Henry Gray's "Anatomy of the Human Body".

The human heart has four chambers: two upper chambers (the atria) and two lower ones (the ventricles). The right atrium and right ventricle together make up the "right heart," and the left atrium and left ventricle make up the "left heart." A wall of muscle called the septum separates the two sides of the heart.

By Tanya Lewis, Staff Writer

From: LiveScience

<http://www.livescience.com/34655-human-heart.html>

42. Human heart anatomy (2)

The heart weighs between 200 to 425 grams and is a little larger than the size of your fist. By the end of a long life, a person's heart may have beat (expanded and contracted) more than 3.5 billion times. In fact, each day, the average heart beats 100,000 times, pumping about 7,571 liters of blood.

Your heart is located between your lungs in the middle of your chest, behind and slightly to the left of your breastbone (sternum). A double-layered membrane called the pericardium surrounds your heart like a sac. The outer layer of the pericardium surrounds the roots of your heart's major blood vessels and is attached by ligaments to your spinal column, diaphragm, and other parts of your body. The inner layer of the pericardium is attached to the heart muscle. A coating of fluid separates the two layers of membrane, letting the heart move as it beats.

Your heart has 4 chambers. The upper chambers are called the left and right atria, and the lower chambers are called the left and right ventricles. A wall of muscle called the septum separates the left and right atria and the left and right ventricles. The left ventricle is the largest and strongest chamber in your heart. The left ventricle's chamber walls are only about a half-inch thick, but they have enough force to push blood through the aortic valve and into your body.

From: Texas Heart Institute Heart Information Center

<http://www.texasheart.org/HIC/Anatomy/anatomy2.cfm>

43. Facts about the human heart

- A human heart is roughly the size of a large fist.
- The heart weighs between about 280 to 340 grams in men and 8 to 10 230 to 280 grams in women.
- The heart beats about 100,000 times per day (about 3 billion beats in a lifetime).
- An adult heart beats about 60 to 80 times per minute.
- Newborns' hearts beat faster than adult hearts, about 70 to 190 beats per minute.
- The heart pumps about 5.7 liters of blood throughout the body.
- The heart is located in the center of the chest, usually pointing slightly left.

From: Texas Heart Institute Heart Information Center

<http://www.texasheart.org/HIC/Anatomy/anatomy2.cfm>

44. Zaporizhzhia State Medical University: General Information

The main objective of the University is to provide higher medical education for Specialist's, Bachelor's and Master's degrees, as well as postgraduate training in internship, mastership, postgraduate study, residency and refresher courses for physicians and pharmacists.

There are 7 Faculties at the University (Medical Faculty No. 1, Medical Faculty No. 2, two Pharmaceutical Faculties (intramural and extramural), International Faculty No.1, International Faculty No.2, Faculty of Postgraduate Education), Medical College and University Clinic for 160 patients and 250 consultations at polyclinic.

The training at the University includes pre-university, undergraduate and postgraduate periods of study. Foreign students are trained at the International Faculty No.1 for further studies at higher educational institutions of Ukraine.

During their training at the University both Ukrainian and foreign students get higher education for the Specialist's and Master's degrees ("General Medicine", "Pediatrics", "Dentistry", "Pharmacy", "Technology of Perfume-Cosmetic Preparations").

From: Official site of ZSMU

http://int.zsmu.edu.ua/p_226.html

45. Zaporizhzhia State Medical University: International Contacts

Postgraduate education includes training in internship, mastership and postgraduate study in 29 specialties, in doctoral candidacy – in 12 specialties, as well as refresher courses for physicians and pharmacists.

10200 students, postgraduates, interns, students of refresher courses, teachers-probationers, masters and clinical residents study at the University. There are more than 1800 foreign students from 42 countries at the University. 1024 students are taught in English. The University has gained authority and recognition by training foreign citizens from Asia, Africa, Latin America and Europe for more than 40 years. About 10500 specialists have got medical and pharmaceutical education and are working now in more than 100 countries of the world, taking up high positions in the public health systems of their countries.

From: Official site of ZSMU

http://int.zsmu.edu.ua/p_226.html

46. Science at Zaporizhzhia State Medical University

The scientific schools of the University are well known outside Ukraine. Cardiological, surgery, pharmaceutical schools are among them. For the first time in Ukraine the specialists of Zaporozhye State Medical University have successfully performed the transplantations of heart. More than 500 transplantations of liver, kidney and pancreas have been performed. More than 20 preparations have been worked out by the scientists of the pharmaceutical school, produced and brought into medical practice in many countries abroad. The results of scientific work were reported at international forums in Sweden, Czech Republic, Spain, Holland, Brazil and Austria. The University has its own scientific editions.

There is a developed infrastructure of scientific units at the University including SRI (Scientific Research Institute) of medical and ecological problems, Institute of clinical pathology of a man, SMA “Pharmatron”, central scientific research laboratory, certification-testing laboratory of perfume and cosmetic preparations and household products, department of doctoral candidacy and postgraduate study,

editorial publishing department, Center of informatics and analytical support and testing, patent department, scientific research division, metrology service. Scientific Research Institute and laboratories are equipped with unique facilities for conducting fundamental and applied scientific researches.

From: Official site of ZSMU

http://int.zsmu.edu.ua/p_226.html

Змістовий модуль 4. Вища освіта у США

Тема 1. Higher education in the USA. Lungs

Тема 2. Digestive system

47. Medical Education in the USA

Higher medical education in the USA has its own peculiarities. Today, the future doctor must pass successfully through eight to thirteen or more years of the most intensive study before setting up his practice.

First, he must spend three to four years of premedical training at a university. Here he learns the basic sciences. Only top level students in premedical studies can become candidates for medical school. The medical curriculum is arduous and the cost of studies is very expensive amounting to one thousand dollars each year.

During the first two years of the four-year medical school curriculum, the student must master the laboratory sciences. To learn the structure of the human body he studies anatomy. Thorough training is given in the subject of biological chemistry, which is the basis for clinical laboratory diagnosis and medical therapeutics. The functions of the body are learned in classes of physiology. The student must have a knowledge of psychology to be able to deal with people. In his pathology classes the student learns about diseases and diseased tissues. In bacteriology classes, the causes of the infectious diseases are made clear to him.

Studying pharmacology, he learns about drugs.

In his third and fourth years, the student receives instruction and practical experience in the care of patients. The students study anesthesiology, dermatology,

endocrinology, legal medicine, neurology, obstetrics, gynecology, radiology, surgery, psychiatry, ophthalmology, otolaryngology, preventive medicine, orthopedics, pediatrics, proctology, and urology. During this time the students spend a considerable time in a hospital or acquaint themselves with many basic procedures and common disorders.

Every medical school has a considerable number of different departments, each of which teaches one subject. After graduation from medical school, the student has the title of Doctor of Medicine. Then he has a year or two of internship in a hospital. During this period, the intern usually lives at the hospital and receives pay.

From: Official site of BSMU

<http://bsmy.ru/5134>

48. Study Medicine in the US: Application Process

Before applying to any medical school in the USA, international students should make sure they have completed a four-year bachelor's degree, with all of the prerequisite classes needed for the particular medical schools being applied to.

The prerequisites vary from school to school, but almost always include the following science courses: biology, general chemistry, and organic chemistry. Some schools may also require that you have taken Humanities, English, Math, and Science classes as well, so make sure you look into medical schools while you are still an undergraduate so you can choose your classes appropriately.

You will also need to have completed the *MCAT* test, which stands for *Medical College Admissions Test*. The test will determine your ability to think critically, problem solve, write clearly, as well as measure your knowledge of various scientific concepts. A good score on the MCAT is key to getting into a good medical school.

Assuming you now have a bachelor's degree and a good MCAT score, your next step is to actually apply. As an international student, you will, unfortunately, be at a disadvantage to local students. Many publicly funded colleges are required to put part or all of their state funds towards students who are residents of the school's state. This is mainly to ensure that there are enough doctors for the area, but it can put international students at a huge disadvantage in the selection process. You can always apply to private universities, but, of course, these will be more expensive. Each student will need to weigh the pros and cons of each choice that is available, and apply to the school that is right for him or her.

From: International Student

<http://www.internationalstudent.com/study-medicine/>

49. Study Medicine in the US: What to Expect from Medical School

Medical school typically takes 4 years to complete; then there is a 3 to 7 year residency after that, where students undergo supervised training in their specific field of focus. International students who still feel as though they need additional training or who wish to sub-specialize in a field can also do a fellowship, which gives 1 to 4 more years of training.

The education you will receive is intensive, and will be a full-time activity. You will find that the first year requires a huge amount of memorization, with classes like anatomy, histology, pathology, and biochemistry being likely for your first year. These classes will be classroom and lab based giving you both academic and first-hand knowledge of the human body. For example, a typical gross anatomy class will consist of a one-hour lecture followed by a lab for several hours, where you will be dissecting cadavers or animals to gain first-hand experience of what real bodies look and act like.

You will also be going through clinical rotations throughout your education. This will allow you to learn how to interact with patients, and will allow you to see what your future career as a doctor might be like. Clinical rotations will be more and more frequent as you approach the completion of your degree.

Before you can get your Medical Doctor degree in the United States, you will have to pass the *United States Medical Licensing Examination (USMLE)* test, also known as the Board exam. This test is separated into three parts, which you will take throughout your education. The first part is usually after your second year of medical school, the second part is during your fourth year, and the third part is after your first year of residency. Each test is different, and they are meant to ensure you meet certain standards set by the US in your education.

From: International Student
<http://www.internationalstudent.com/study-medicine/>

50. Study Medicine in the US

Studying medicine in the US is extremely challenging, but if you have the passion and are willing put in the effort required, it is worth the hard work. After graduation, you will have the skills to help those in need, and make a real difference in people's lives. That in itself is worth the hours of hard work.

International students who love to help people and be faced with new and challenging experiences may want to consider studying medicine in the US. The path is long and hard, but the reward for those students who want to study medicine is a secure, well-paying job that you can be proud of.

Because of the length of education, cost, and overall challenge, studying medicine in the US is not for everyone. Only students who have a real passion for medicine and love to be challenged should decide to study medicine. Also know that the financial toll of 4 or more years will be extremely high, especially if you go to a private college. However, if you feel up to the challenge and decide to study medicine in the US, you will be receiving some of the best education in the world for one of the most noble degrees.

From: International Student

<http://www.internationalstudent.com/study-medicine/>

51. Tuition fees to study medicine in USA

Studying medicine in USA is among the most expensive in the world. Taking in account that there is no financial aid available for international students, prospective student candidate must prove that he has around 25,000\$ per year. Also, most of medical university schools that accept international students are private and annually tuition fee is around 40,000\$.

Tuition fees for Public and private medical university schools in USA 10 approximately 10 years ago can up to 35,000 and 50,000\$ per year.

On the annually tuition fee, students must have also a good amount of living expenses during his studies in USA.

The student who can afford the high cost of medical school programs and living expenses, and has chance to get into USA medical school, after getting his medical degree from the USA, he will be able to practice almost anywhere.

From: Medical Study Guide

<http://www.medicalstudyguide.com/medicine-in-usa.html>

52. Lungs: Size

Lungs are sacks of tissue located just below the rib cage and above the diaphragm. They are an important part of the respiratory system and waste management for the body.

A person's lungs are not the same size. The right lung is a little wider than the left lung, but it is also shorter. The right lung is shorter because it has to make room for the liver, which is right beneath it. The left lung is narrower because it must make room for the heart.

Typically, a man's lungs can hold more air than a woman's. At rest, a man's lungs can hold around 750 cubic centimeters of air while a woman's can hold around 285 to 393 cc of air. "The lungs are over-engineered to accomplish the job that we ask

them to do," said Dr. Jonathan P. Parsons, a professor of internal medicine, at the OSU Asthma Center at The Ohio State University. "In healthy people without chronic lung disease, even at maximum exercise intensity, we only use 70 percent of the possible lung capacity."

By Alina Bradford

From: Live Science

<http://www.livescience.com/52250-lung.html>

53. Lungs: Facts, Function and Diseases

The cone-shaped lungs are sponge-like organs that fill the chest cavity and make up most of the lower respiratory tract. Their most important job is providing oxygen to capillaries so they can oxygenate blood.

Each lung is divided into lobes. The right lung has three, but the left lung has only two, thus allowing room to accommodate the heart.

Together, the lungs' tissue surface is almost 40 times greater than the body's outer surface, making the lungs (together) one of the largest organs in the body.

Each lung houses a bronchial tree, which gets its name from the intricate network of air passages that supply the lungs with air. The air-filled sacs in the lungs called alveoli resemble grape clusters. White blood cells known as macrophages, located inside each alveolus, ingest and destroy airborne irritants that enter the lungs. After you exhale, the lungs stay partly inflated because of a fluid called surfactant that is produced by special cells and secreted within the alveoli. Surfactant contains fatty proteins and helps to prevent lung infections.

From: Healthline Medical Team

<http://www.healthline.com/human-body-maps/lung>

54. Lungs

The lungs are a pair of spongy, air-filled organs located on either side of the chest (thorax). The trachea conducts inhaled air into the lungs through its tubular branches, called bronchi. The bronchi then divide into smaller and smaller branches (bronchioles), finally becoming microscopic.

The bronchioles eventually end in clusters of microscopic air sacs called alveoli. In the alveoli, oxygen from the air is absorbed into the blood. Carbon dioxide, a waste product of metabolism, travels from the blood to the alveoli, where it can be exhaled. Between the alveoli is a thin layer of cells called the interstitium, which contains blood vessels and cells that help support the alveoli.

The lungs are covered by a thin tissue layer called the pleura. The same kind of thin tissue lines the inside of the chest cavity -- also called pleura. A thin layer of fluid acts as a lubricant allowing the lungs to slip smoothly as they expand and contract with each breath.

From: WebMD, LLC.

<http://www.webmd.com/lung/picture-of-the-lungs>

55. In Depth: Lung

The cone-shaped lungs are sponge-like organs that fill the chest cavity and make up most of the lower respiratory tract. Their most important job is providing oxygen to capillaries so they can oxygenate blood.

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Suffering from a respiratory disorder is one of the most common reasons for doctor visits in industrialized countries, where the air is filled with chemicals, pollutants, dust, pollen, bacteria, and viruses. The billions of microorganisms — bacteria, viruses, and fungi — in the air you breathe can enter the lungs, and they make respiratory infections quite common. Some infections, such as the common cold or sinusitis, affect the upper respiratory tract. Others, such as bronchitis and pneumonia, affect the lower respiratory tract.

By: Written and medically reviewed by the Healthline Editorial Team

From: Healthline <http://www.healthline.com/human-body-maps/lung>

56. What is the digestive system?

The digestive system is made up of the gastrointestinal (GI) tract—also called the digestive tract—and the liver, pancreas, and gallbladder. The GI tract is a series of hollow organs joined in a long, twisting tube from the mouth to the anus. The hollow organs that make up the GI tract are the mouth, esophagus, stomach, small intestine, large intestine—which includes the rectum—and anus. Food enters the mouth and passes to the anus through the hollow organs of the GI tract. The liver, pancreas, and gallbladder are the solid organs of the digestive system. The digestive system helps the body digest food.

Bacteria in the GI tract, also called gut flora or microbiome, help with digestion. Parts of the nervous and circulatory systems also play roles in the digestive process. Together, a combination of nerves, hormones, bacteria, blood, and the organs of the digestive system completes the complex task of digesting the foods and liquids a person consumes each day.

From: National Institute of Diabetes and Digestive and Kidney Diseases

<https://www.niddk.nih.gov/health-information/health-topics/>

[Anatomy/your-digestive-system/Pages/anatomy.aspx](https://www.niddk.nih.gov/health-information/health-topics/Anatomy/your-digestive-system/Pages/anatomy.aspx)

57. Parts of the digestive system

The digestive system consists mainly of a long muscular tube, the digestive tract. This starts at the mouth, continues via the oesophagus and stomach to the intestines, and ends at the anus. The system also relies on the pancreas, liver, and

gall bladder to help digest food. Each day the pancreas releases about 1.5 litres of enzyme-containing juice into the tract. The liver produces about 1 litre of bile, which is stored temporarily in the gall bladder.

From: Fact Monsters

<http://www.factmonster.com/dk/science/encyclopedia/digestive-system.html>

58. The Digestive System

The digestive system is a series of hollow organs joined in a long, twisting tube from the mouth to the anus (see Figure 1). Inside this tube is a lining called the mucosa. In the mouth, stomach, and small intestine, the mucosa contains tiny glands that produce juices to help digest food.

Two solid organs, the liver and the pancreas, produce digestive juices that reach the intestine through small tubes. In addition, parts of other organ systems (for instance, nerves and blood) play a major role in the digestive system.

Why is digestion important

When we eat such things as bread, meat, and vegetables, they are not in a form that the body can use as nourishment. Our food and drink must be changed into smaller molecules of nutrients before they can be absorbed into the blood and carried to cells throughout the body. Digestion is the process by which food and drink are broken down into their smallest parts so that the body can use them to build and nourish cells and to provide energy.

How is food digested

Digestion involves the mixing of food, its movement through the digestive tract, and the chemical breakdown of the large molecules of food into smaller molecules. Digestion begins in the mouth, when we chew and swallow, and is completed in the small intestine. The chemical process varies somewhat for different kinds of food.

Last updated: 28 October 2015

From: International Foundation for Functional Gastrointestinal Disorders

<http://www.iffgd.org/the-digestive-system.html>

59. Movement of Food Through the System

The large, hollow organs of the digestive system contain muscle that enables their walls to move. The movement of organ walls can propel food and liquid and also can mix the contents within each organ.

Typical movement of the esophagus, stomach, and intestine is called peristalsis. The action of peristalsis looks like an ocean wave moving through the muscle. The muscle of the organ produces a narrowing and then propels the narrowed portion slowly down the length of the organ. These waves of narrowing push the food and fluid in front of them through each hollow organ.

The first major muscle movement occurs when food or liquid is swallowed. Although we are able to start swallowing by choice, once the swallow begins, it becomes involuntary and proceeds under the control of the nerves.

The esophagus is the organ into which the swallowed food is pushed. It connects the throat above with the stomach below. At the junction of the esophagus and stomach, there is a ringlike valve closing the passage between the two organs.

However, as the food approaches the closed ring, the surrounding muscles relax and allow the food to pass.

The food then enters the stomach, which has three mechanical tasks to do. First, the stomach must store the swallowed food and liquid. This requires the muscle of the upper part of the stomach to relax and accept large volumes of swallowed material.

The second job is to mix up the food, liquid, and digestive juice produced by the stomach. The lower part of the stomach mixes these materials by its muscle action. (The mixture is referred to as chyme.)

The third task of the stomach is to empty its contents slowly into the small intestine.

Several factors affect emptying of the stomach, including the nature of the food (mainly its fat and protein content) and the degree of muscle action of the emptying stomach and the next organ to receive the contents (the small intestine).

As the food is digested in the small intestine and dissolved into the juices from the pancreas, liver, and intestine, the contents of the intestine are mixed and pushed forward to allow further digestion.

Finally, all of the digested nutrients are absorbed through the intestinal walls. The waste products of this process include undigested parts of the food, known as fiber, and older cells that have been shed from the mucosa. These materials are propelled into the colon, where they remain, usually for a day or two, until the feces are expelled by a bowel movement.

Last updated: 28 October 2015

From: International Foundation for Functional Gastrointestinal Disorders

<http://www.iffgd.org/the-digestive-system.html>

60. Digestive System

The digestive system is the series of tubelike organs that convert our meals into body fuel. In all there's about 30 feet (9 meters) of these convoluted pipeworks, starting with the mouth and ending with the anus. Along the way, food is broken down, sorted, and reprocessed before being circulated around the body to nourish and replace cells and supply energy to our muscles.

Food on the plate needs to become a mashed-up, gooey liquid for the digestive system to be able to split it up into its constituent parts: proteins, carbohydrates, fats, vitamins, and minerals. Our teeth start the process by chewing and grinding up each mouthful, while the tongue works it into a ball-shaped bolus for swallowing.

Moistening saliva fed into the mouth from nearby glands starts the process of chemical digestion using specialized proteins called enzymes. Secreted at various points along the digestive tract, enzymes break down large molecules of food into smaller molecules that the body is able to absorb.

Once we swallow, digestion becomes involuntary. Food passes down the throat to the esophagus, the first of a succession of hollow organs that transport their contents through muscular contractions known as peristalsis.

The esophagus empties into the stomach, a large, muscular chamber that mixes food up with digestive juices including the enzymes pepsin, which targets proteins, and lipase, which works on fats. Hydrochloric acid likewise helps to dissolve the stomach contents while killing potentially harmful bacteria. The resulting

semifluid paste—chyme—is sealed in the stomach by two ringlike sphincter muscles for several hours and then released in short bursts into the duodenum.

The first of three sections of the small intestine, the duodenum produces large quantities of mucus to protect the intestinal lining from acid in the chyme. Measuring about 20 feet (6 meters) in length, the small intestine is where the major digestion and absorption of nutrients take place. These nutrients are taken into the bloodstream, via millions of tiny, fingerlike projections called villi, and transported to the liver.

What's left in the digestive tract passes into the large intestine, where it's eaten by billions of harmless bacteria and mixed with dead cells to form solid feces. Water is reabsorbed into the body while the feces are moved into the rectum to await expulsion.

From: National Geographic

<http://science.nationalgeographic.com/science/health-and-human-body/human-body/digestive-system-article/>

ДОДАТОК

Слова найбільш широкого значення	Problem, fact, phenomenon, matter, subject, object, case, observation, interpretation, regard, question, notion, situation, picture, instance, event, circumstance, field, data, thing, information
«Результат»	Result, consequence, response, solution, conclusion
«Причина»	Reason, rationale, explanation
«Вплив»	Effect, influence, impact
«Розбіжність»	Difference, distinction, discrepancy
«Дія»	Work, job, practice, experiment, action, process, activity, measure, decision
«Взаємодія»	Combination, interaction, relation
«Модальність»	Argument, requirement, condition, restriction
«Властивість»	Property, characteristic, advantage, feature, behaviour, quality, quantity
«Спосіб»	Way, approach, method, technique
«Точка зору»	Theory, idea, phrasing, view, viewpoint, thought, concept, conjecture, position, idea, assumption, hypothesis, statement

«Мета»	Aim, task, purpose, goal, intention, end
«Тенденція»	Trend, tendency, prognosis
«Зміна»	Increase, decrease, change, improvement, surplus
Інші слова «загального» значення	Chance, emphasis, oversight, possibility, pathway, frame, application, juncture, movement, site, bit, recognition, pattern, gap, calculation, finding, level, flexibility, plasticity, difficulty

Рекомендована література

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