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A DIDACTIC GUIDE WITH TECHNICAL MEDICAL VOCABULARY ACTIVITIES THROUGH THE MOODLE PLATFORM TO ENHANCE READING COMPREHENSION

BY

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PRESENTATION

In the last decades there has been an increasing interest in vocabulary learning strategies applied to facilitate second and foreign language vocabulary for reading. Since, many students do not develop sufficient skill of the strategy range, explicit instruction on vocabulary learning strategies may help them to become more proficient with the extensive stock of strategies that they can use through their vocabulary learning process especially in specialist terms. A diagnosis applied to the Medicine students at the University of Cuenca showed that they had a low level in medical vocabulary strategies for reading comprehension due to the limited exposure to medical readings, their weak practice in word formation process, and English learning background among other issues.

A major problem at the Medicine Faculty is that students generally demand medical texts additional to the required English texts. The main reason for the preference is because medical students receive all the information in English and also it takes longer to read the medical texts than to read English texts. Furthermore, much of their extra time needed for reading medical texts seems to go into looking for unfamiliar words in dictionaries. Reading seems a big problem for more advance medical students and for medical professionals because they have not been exposed to English medical texts to vocabulary instructional strategies. On the other hand, some students think that reading English medical texts is an advantage because it helps them familiarize with this kind of texts for their future purposes.

The instructional strategies provided in this research focus on those strategies of vocabulary by guessing in context, predicting and inferring. The researcher found these as the most effective instructional strategies for her students used before, during and after reading, and to be used with students in an autonomous way; as well as, it requires students to use their medical background knowledge, make connections to what they know, make predictions about the text, establish their own purpose for reading, use the information in the text and then make their own evaluation.

The present curriculum of study at Cuenca University is the teaching of English with a general purpose rather than to develop English for specific purposes on technical

medical issues. For that reason, the discussion among medical professors and professionals is the increasing need to provide material related to their major.

Moreover, the use of internet and especially the virtual learning environment for many students and instructors has become an important tool in today´s life. Aware of this, the University of Cuenca uses communication technology as a supplementary aspect for the four skills of English as L2 through the Moodle Platform.

Finally, the Moodle Platform has contributed to prepare students for working out of class autonomously. Therefore, the Didactic guide provides students with interesting activities to use on the Moddle Platform to improve in this way their knowledge of technical medical vocabulary in reading comprehension.

OBJECTIVES

General Objective:

To apply a Didactic Guide with Technical Medical Vocabulary Activities through the Moodle Platform to enhance the reading comprehension.

Specific Objectives:

- To elaborate activities for the identification of the word formation process of technical medical vocabulary through readings to enhance the reading comprehension.
- To apply the appropriate vocabulary learning strategies to complete with technical medical vocabulary to improve reading comprehension.
- To organize the medical vocabulary in reading comprehension activities to help students to understand English medical texts.

THEORETICAL FOUNDATION

Students in English language learning recognize the importance of vocabulary because without sufficient vocabulary, students cannot understand others or express their own ideas. Another problem a student faces is not only related with their limited vocabulary, but it is in reading in L2. According to Soria (2001), quoted by Büyükdurmuş, (2006) claims that encountering some unknown words might not hinder the general comprehension of a text; however, if learners do not know enough words or the most essential ones, then, they will not understand the text.

The effective motivation for vocabulary instruction and vocabulary strategies will help students understand material they will read. While, Nagy (1988), quoted by Büyükdurmuş, (2006) explains that more intensive instruction, if done well, is also more interesting than memorizing definitions.

It is important to take into account the difference between "to know a word" and "to use a word". That is to say, the purpose of vocabulary learning and acquisition must be the ability to remember words and to use them automatically in different language contexts when learners need them (quoted by Büyükdurmuş, (2006).

First, Krashen (1982; 1989; 2003) believes that vocabulary acquisition occurs through comprehensible input. He states that "competence in vocabulary is most efficiently attained by comprehensible input in the form of reading" (1982, p 440) that "contains structure a little beyond our current level of linguistic competence (i + 1) (Krashen, 1982)". As he argues, the learner is able to use the textual context to fill in the gaps in understanding. In fact, one of the most commonly accepted views of vocabulary acquisition is that second language vocabulary acquisition occurs incidentally through comprehensible input (Krashen, 1989) while reading a text (Waring, 2001, quoted by Hemmati & Binti, (2015).

Second, how much the student is reading, and whether the new word is repeated. If the most important words for a student to learn are those that do occur repeatedly, reading will supply the necessary repetition. Providing several repetitions (ten to fifteen) of an unknown word "before it is learned" seems to be essential (Waring & Takaki, (2003), quoted by Büyükdurmuş, (2006).

Of course, in reading activity readers make meaningful use of words and reading is the best practice to boost reading. The acquisition and learning of a word depends on how a word is remembered, the time a word is remembered, whether it can be retained and in what circumstances it can be recalled, quoted by Büyükdurmuş, (2006).

Finally, to memory medical vocabulary requires that students practice specialist vocabulary so that they can use it more confidently and effectively.

For this reason, this didactic guide was structured on the basis of the interesting material on technical medical vocabulary activities to improve the reading comprehension skill. Moreover, the Moodle Platform became the means to focus on Medical Vocabulary and texts to be applied during the two hours per week that the students focused on their reading activity.

The Educative Models most frequently used are Educational Models that are Content-Centered and Educational Models that are Results-Centered. However, what is needed is the implementation of Educational Model Centered on the Process whereby the students play an active role and the professor is a facilitator in the teaching-learning process.

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Lesson 2. Anesthesia

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ANSWERS SECTION

INTRODUCTION

Medical terms are comprised of words, word roots, combining forms, prefixes, and suffixes-all little words, if you will, and each with its own definition.

Sometimes medical terms are made up of two whole words. For example, the word SMALL is joined with the word POX to form the medical term SMALLPOX, the name of a disease. Would that it were all so simple!

Word roots are the foundations of words and are not used by themselves. THERM is a word root that means heat; to use it alone would make no sense. But when a vowel is added to the end of the word root to make it the combining form THERM/O, it can be joined with other words or word roots to form a compound term. THERM/O and METER (an instrument for measuring) combine to form THERMOMETER, an instrument for measuring heat or temperature.

More than one word root or combining form can be joined to form medical terms; ELECTROCARDIOGRAM is a good example. ELECTR/O (electric) is joined to CARDI (heart) and the suffix -GRAM (a written record) to form the medical term that means a written record of the heart's electrical activity.

Prefixes are used to modify or qualify the meaning of word roots. They usually tell the reader what kind of where (or in what direction), or how many.

The term -PNEA relates to breathing, but it says nothing about the quality or kind of breathing. Adding the prefix DYS- qualifies it as difficult breathing.

ABDOMINAL PAIN is a rather broad term; it gives the reader no clue as to exactly where the pain is located either inside or outside the abdomen.

Adding the prefix -INTRA to ABDOMINAL pinpoints the location of the pain, for INTRA-ABDOMINAL

PAIN means pain within the abdomen. -PLEGIA refers to paralysis of the limbs. The prefix QUADRI informs the reader as to how many limbs are paralyzed. QUADRIPLEGIA means paralysis of all four limbs.

Suffixes are word endings that form nouns, adjectives, or verbs. Medical terms can have more than one suffix, and a suffix can appear in the middle of a compound term affixed to a combining form. A number of suffixes have specialized meanings. ITIS means inflammation; thus ARTHRITIS means inflammation of a joint. -IAC forms a noun indicating a person afflicted with a certain disease, as for example, HEMOPHILIAC.

Some suffixes are joined to word roots to form terms that indicates a state, quality, condition, procedure, or process. PNEUMONIA and PSORIASIS are examples of medical conditions, while APPENDECTOMY and ARTHROSCOPY are examples of medical procedures. The suffixes in each case are underlined.

Some suffixes combine with word roots to form adjectives, words that modify nouns by indicating quality or quantity or by distinguishing one thing from another. GASTRIC, CARDIAC, FIBROUS, ARTHRITIC, and DIAPHORETIC are all examples of adjectives formed by adding suffixes (underlined) to word roots.

Some suffixes are added to word roots to express reduction in size, -OLE and -ULE, for example. An ARTERIOLE is smaller than an ARTERY, and a VENULE is smaller than a vein.

When added to word roots, -E and –IZE form verbs. EXCISE, and CATHETERIZE are examples.

Finally, some of what are commonly accepted as suffixes are actually the combination of a word root and a suffix. -MEGALY (enlargement) results from the combination of the word root MEGAL (large) and the suffix -Y (which forms the term into a noun). CARDIOMEGALY means enlargement of the heart.

(Taken of: https://wvde.state.wv.us/.../Public)

Medical terminology

Medical terminology is the language used by physicians and other members of health team that describe or define a disease, a condition or clinical signs and symptoms.
Medical terminology is essential and beneficial for students in medicine, pharmacy, nursing and in other majors allied health sciences.

The word building system
The medical words consists of three parts

1-The word root,

2-The prefix and

3-The suffix.

1-The word root

+ Is the foundation of the word for example

peri/*card*/itis,

endo/*card*/itis,

*card*io/megaly

+ The part *card*,means heart, is considered as the word root.

+ In medical term, the word root may be an organ, tissue, cell, fluid or cavity

The compound word:

+ Is formed when two or more word roots are used to build the word e.g.

Short/wave

Short/hand

+ This compound word has a specific meaning and could not be separated.

The combining word:

+ Is formed of two word roots or more joined by a vowel such as

Therm/*o*/meter

Micr/*o*/scope

+ The part of the word will retain its specific meaning irrespective of its presence in different words or positions in the words such as

Gastr/*o*/enter/*o*/logy
Enter/*o*/col/itis

+ In this two words, enter-means the small intestine in spite of the different positions in the two words.

+ Gastro-means stomach, while -logy means science, thus the meaning of gastroenterology is the science of digestive system (stomach and intestine).

In the enterocolitis, the part colmeans colon and itismeans inflammation, so the meaninig is inflammation of small intestine and colon.

+ Therefore, in medical terminology, most of the words are built from :
A combining word :
+a word root or more
+ a suffix

2-The suffix

+ The suffix means an ending of the word which will convert word into
-A noun such as port/*er*
-Adjective such as microscop/*ic*
-Modify the meaning of the word such
gaster/*itis*and gastro/*logy*.

3-The prefix

+ The prefix is the part that preceeds the medical word and changes its meaning e.g.
Tachy/cardia
Brady/cardia
+ Cardia means the heart and prefix *tachy/*means increase in rate and *brady/*means decrease in rate.

The most commonly used prefixes

Prefix	Meaning	Example
a-	without	apnea
an-	not	anesthesia
ante-	before	antepartum
anti-	against	antipyretic
con-	together	connective tissue
contra-	against	contraception
dys-	difficult, painful	dysuria
ect-	outside, outer	ectopic beats
end-	inside, inner	endocarditis
epi-	over, upon	epidermis
equi-	equal	equipotent
ex-	out	expectorant
hyper-	above	hypertension
hypo-	below	hypotension
poly-	many	polyarthritis
para-	beside, near	parametrium
per-	through	percutaneous
peri-	around	pericarditis
pre-	before	precardium
pro-	before	prognosis
semi-	half	semicircular canal
sub-	below	subnormal temp.
supra-	over, excess	suprarenal gland
trans-	across	transabdominal
pre-	before	precardium
pro-	before	prognosis
semi-	half	semicircular canal
sub-	below	subnormal temp.
supra-	over, excess	suprarenal gland
trans-	across	transabdominal

The most commonly used suffixes

Suffix	Meaning	Example
-algia	pain	myalgia
-ectasia	expansion	gastroectasia
-ectomy	surg. Excision	nephroectomy
-aemia	blood	anaemia
-genic	origin	myogenic
-graph	to write	electrocardiograph
-ic	pertaining	gastric
-itis	inflammation	gastritis

-lithiasis	stone in	nephrolithiasis
-logy	study of	pharmacology
-lysis	dissolution	haemolysis
-malacia	softening	osteomalacia
-mania	madness	hypomania
-megaly	enlargement	splenomegaly
-oid	similar	lipoid
-oma	tumor	nephroma
-pathy	disease	neuropathy
-penia	decrease	leucopenia
-phobia	fear	hydrophobia
-plasty	repair	hernioplasty
-rhea	to flow	rhinorrhea
-spasm	contraction	broncospasm
-stomy	opening	gastrostomy

The most commonly used word roots

Root	Meaning	Example
aden-	gland	adenoma
angio-	vessel	angiogenesis
arthr-	joint	arthritis
card-	heart	cardiopathy
cerebro-	brain	cerebral
chol-	bile	cholilithiasis
cost -	rib	costal cartilage
cyt -	cell	cytology
derm-	skin	dermatology
encephal-	brain	encephalitis
enter-	small intestine	enteropathy
gastr-	stomach	gastroectasia
glyco-	sweet	glycosuria
haem-	blood	haemorrhage
hepat-	liver	hepatomegaly
hyster-	uterus	hysterectomy
lip	lipid (fat)	lipoma
lith-	stone	lithiasis
mening-	membrane	meningitis
my-	muscle	myalgia
nephron-	kidney	nephropathy
oculus-	eye	ocular
ophthalm-	eye	ophthalmitis
osteo-	bone	osteoporosis
ot/o	ear,hearing	otitis
pneum-	lung	pneumonia

proct-	rectum	proctoscope
psych-	mind	psychology
radi-	ray	radiotherapy
ren-	kidney	renal faliuer
splen-	spleen	splenomegaly
vas-	vessel	vasodilation
viscer	internal organ	visceral

(Taken of: https://www.coursehero.com/file/12843565/lecture1/)

Circulatory system terms

Cephal/o	Head	Cephalgia (a headache)
Encephal/o	Inside the head (brain)	Encephalitis (inflammation of the brain) Anencephalic (born without a brain)
Mening/o	Membranes surrounding the brain and spinal cord	Meningitis (inflammation of the membranes)
Myel/o	Spinal cord	Myelogram (X-ray of the spinal cord)
Neur/o	Nerve	Neuroma (tumor) Neuritis (inflammation)
Dys	Difficult, painful, abnormal	Dyslexia (difficulty reading)
-cele	Hernia, abnormal protrusion of structure out of normal anatomical position	Meningomyelocele (protrusion of membranes and spinal cord)
-pathy	Disease, abnormality	Encephalopathy (disease of the brain) Neuropathy (disease of the nerves)
-plasia	Development, formation, growth	Aplasia (no development) Hyperplasia (over development)
-plegia	Paralysis	Hemiplegia (paralysis of one side of the body) Quadriplegia (paralysis of all four limbs)

Nervous system terms

Cardi/o	heart	Endocarditis, myocarditis, pericarditis (inflammation of the lining, the muscle layer, the outer layer of the heart)
Brady/tachy	slow/fast	Bradycardia (rate<60) tachycardia (rate>100)
Angi/o	vessel	Angiography, angiogram (X-ray of artery)
Veno/phlebo	vein	Venogram (X-ray of veins), phlebitis (inflammation of veins)
-stasis	to stop	Hemostasis (to stop bleeding), hemostat (a clamp-like instrument)
-cyte	cell	Erythrocytes, leucocytes (red, white blood cells)
Hem/o, -emia	blood	Hypoxemia (low oxygen), hematosalpinx (blood in the uterine tubes)

Digestive system terms

Gastr/o	Stomach	Gastritis, Gastrectomy
Hepat/o	Iiver	Hepatitis (inflammation of), hepatoma (tumor of
Chol/e	Gall, bile	Cholecystitis, cholecystectomy (inflammation of, removal of gallbladder)
Cyst/o	Bladder, sac	see above)
Emes/o	Vomit	Emesis (vomiting), emetic (stimulating vomiting), antiemetic (stopping vomiting)
Lith/o	Stone	Cholelithotomy (removal of gall stones)
Lapar/o	Abdominal wall	Laparotomy (cutting into the abdomen)
-centesis	To puncture	Abdominocentesis (puncturing and draining)
- tripsy	To crush	Cholelithotripsy (smashing gall stones with sound waves)
-rrhea	Flow, discharge	Diarrhea
-iasis (-osis)	Abnormal condition	Cholelithiasis (presence of gall stones causing symptoms)

Musculoskeletal System terms

Oste/o	Bone	Osteitis, osteoma, osteocyte
Chondr/o	Cartilage	Chondritis, chondroma, chondrocyte
Arthr/o	Joint	Arthritis, arthroplasty
Myel/o	Bone marrow	Myeloma
Ten/o, tendin/o	Tendon (binds muscle to bone)	Tendonitis, tenorrhaphy
Ligament/o	Ligament (binds bone to bone)	Ligamentous injury
Burs/o	Bursa, "bag", (shock absorber between tendons and bones)	Bursitis
My/o, myos/o	Muscle	Myoma, myositis
-malacia	Softening	Osteomalacia, chondromalacia
-porosis	Porous	Osteoporosis
-asthenia	Weakness, loss of strength	Myasthenia gravis
-trophy	Development, stimulation, maintenance	Atrophy (shriveling of muscles), hypertrophy (increase in size and strength of muscles)
-algia, algesia	Pain	Myalgia, arthralgia, analgesia (take away pain

Respiratory System terms

Rhin/o	Nose	Rhinitis, rhinorrhea (inflammation of and "runny" nose)
Laryng/o	Larynx, "voice box"*	Laryngotomy, Laryngectomy (cutting into, surgically removing the larynx)
Trache/o	Trachea, "windpipe"	Tracheotomy, tracheostomy (temporary and permanent openings)
Bronch/o	Lung air passageways	Bronchoscopy (looking into the bronchi)

Pne/u, -pnea	Breath, air, lung	Tachypnea, dyspnea, apnea (accelerated, difficult/painful, cessation of breathing)
Pulmo/o	Lung	Pulmonary artery
-ptysis	Spitting (coughing)	Hemoptysis (spitting or coughing up blood from lungs=
-plasty	Reconstruction	Rhinoplasty (surgical reconstruction of nose)

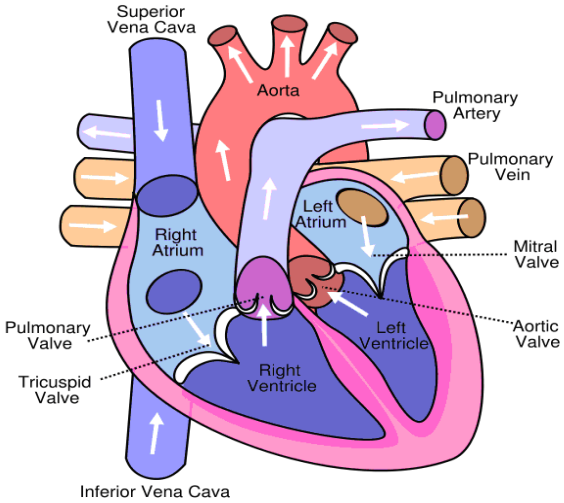
Urinary System Terms

Nephr/o, ren/o	Kidney	Nephritis, renal artery
Hydro/o	Water	Hydronephrosis (abnormal condition involving back up of urine into the kidney
Cyst/o	Bladder	Cystitis, cystectomy (inflammation of, removal of bladder)
Pyel/o	Renal collecting ducts	Pyelogram (X-ray of the collecting ducts)
Ur/o, -uria	Urine	Polyuria, anuria (frequent urination, no urine formation)
Olig/o	Scanty, less than normal	Oliguria (reduced urine formation)
-pexy	To surgically reattach, fix in normal position	Nephropexy (surgically attach kidney in normal anatomical position)

(Takenof:https//www.dmu.edu/medterms/circulatory=system

TOPIC 1. THE HEART

LESSON 1. THE HEART



Source: Wikipedia.

Did you know that the human heart beats about 100,000 times a day, 35 million times a year, and two and a half billion times in an average lifetime?

- The average heart pumps more than a gallon of blood a minute.
- A kid's heart is about the size of a fist.
- An adult's heart is the size of two fists.
- In the United States, about 2,000 people a day die of heart disease.

(Taken of: http://www.educationworld.com/a_tech/sites/sites020.shtml#sthash.8NToQklM.dpuf)

Pre-reading activity

Activity 1. Answer the following questions.

How do symptoms of a heart attack differ between men and women?

_____

After a person has had a heart attack, how long will he or she have to stay in the hospital?

_____

Is surgery the right step to treat heart problems?

_____

Technical Vocabulary

hemodynamic	adj:	A study of the forces involved in circulating blood through the body.
electrocardiograph	noun:	An apparatus for measuring and recording the electrical impulses in the heart muscle
catheterization	noun:	The act of putting a catheter into a patient's body.
cardiomyocytes	noun:	also called cardiac muscle cells
arrhythmia	noun:	A variation in the rhythm of the heartbeat.
defibrillation	noun:	a procedure to correct an irregular heartbeat by applying a large electrical impulse to the chest wall, especially in potentially life- threatening circumstances.
pacemaker	noun:	a node in the heart which regulates the heartbeat.

General Vocabulary

pattern	noun. A model to be followed in making things
output	noun: the energy, power, or work produced by a system.
heartbeat	noun: A single complete pulsation of the heart.
threaten	noun: (-ing) to indicate danger or other harm.
quiver	intr.v: To shake with a slight, rapid, tremulous movement. (-ing) adj.
twitch	verb: to make a slight, sudden movement that is not controlled or deliberate.

Vocabulary preview 1

1. Match the word in Column A with the contextual meaning in Column B.

A	B
1. Cardiomyocytes **2. Electrocardiograph** **3. Catheterization** **4. Pacemaker** **5. Hemodynamic** **6. Defibrilliation** **7. arrhythmia**	a. ____a node in the heart which regulates the heartbeat. b. _____a state in which the rhythm of the heartbeat is abnormal and irregular. c. _____a machine that records the electrical activity of the heart as it beats. d. ____the study of how blood moves in the body and of related physical effects. e. _____giving an electric shock to a heart that is not beating properly to make it beat in a normal rhythm. f. _____insertion of a usually long, narrow tube into and along a blood vessel or duct, or into a body cavity. g. _____ they are the muscle cells that make up the cardiac muscle.

Author: Sandra Segarra

2. Complete the sentences. Use the words in exercise 1

A) According to the American Heart Association, the sooner a heart can be restarted with a life-saving electric shock, known as _____, the better the chances are of recovery from cardiac arrest.

B) Atrial fibrillation occurs commonly in patients receiving _____ therapy, related in part to underlying sick sinus syndrome.

C) Doxorubicin (DOX), an anti-neoplastic drug with known cardiotoxic effects, was administered to produce heart failure in rats and examine the utility of _____ (ECG) as an indicator of heart dysfunction.

Vital signs are monitored with touch-screen instruments including built-in electrocardiograph systems.
The air ambulance is equipped with a 12-lead electrocardiograph which provides paramedics with the information to make a diagnosis and administer the drugs.

D) Long QT syndrome is an abnormal EKG (electrocardiogram) pattern that reflects disorder of the heart's electrical signals resulting in fast and chaotic heartbeats. During exercise or stress, long QT syndrome can cause dangerous_____

E) She lay her head on my chest so she could listen to my _____.

F) Heart attacks kill muscle cells called _____, leaving behind tissue damage.

G) Cardiac_____ is a minimally invasive procedure used to diagnose or treat heart problems, and often serves as a prelude to angioplasty/stenting or bypass surgery.

While reading

Read the text and do the activities.

The Heart

(Taken of the Japanese original by Dr. Taishiro Chikamori, Department of Cardiology, Tokyo Medical University)

We first review the cardiovascular system, the blood circulation through the body and through the lungs, and the main blood vessels and their branches. One objective is for students to reach an understanding of the various surgical approaches to the heart and great vessels, bearing in mind their anatomical relations.

Regarding cardiac function, the opening and closing of the heart valves and the **hemodynamics** of the cardiac cycle are discussed, and students are expected to gain the ability to explain **electrocardiographic** patterns and the mechanism of regulation of cardiac output. Moreover, it is intended that they should become able to give clear interpretations of the results of cardiac **catheterization** procedures.

With regard to the electrical activity of the heart, not only are the microstructure, electrical activity and function of the **cardiomyocytes** described, but also the conduction pathways for the electrical impulses and the relationship between excitation and contraction are reviewed. The details of a normal heartbeat tracing must be committed to memory so that a basic understanding of the **electrocardiogram** may be acquired. In addition, abnormal findings in features such as the P wave, the QRS complex, the ST segment, the T wave and the QT interval in common diseases are studied. The electrocardiographic characteristics of electrical abnormalities seen in cardiac **arrhythmias,** in particular, tachycardial and bradycardial arrhythmias, are also covered, as are life-threatening arrhythmias that require emergency management. In relation to the treatment of cardiac problems, the course covers not pharmacotherapy alone, but electrical **defibrillation**, **pacemaker** treatment and the use of implantable defibrillators as well.

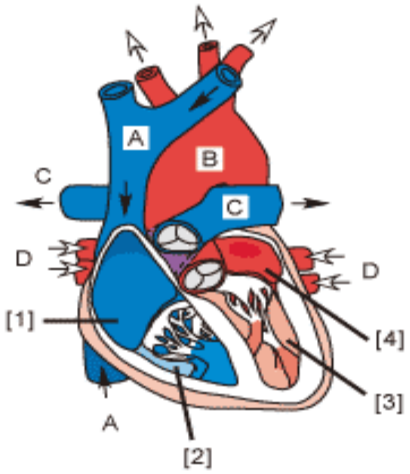
Evaluation of heart function during exercise is an important matter, and therefore an understanding of exercise physiology, as well as the principles and clinical application of exercise testing is essential. It is necessary to gain a good knowledge of the basics of chest radiography, ultrasonography of the heart, CT, MRI, cardiac nuclear medicine and cardiovascular imaging as essential methods for the diagnosis of circulatory disorders, and to be able to describe typical abnormal findings.

Activity 2. Comprehension

1. Below is a simple diagram of the heart.

a) What do **A** to **D** represent? Match each with the appropriate term in the box below.

Aorta	pulmonary artery	pulmonary veins	Vena cava



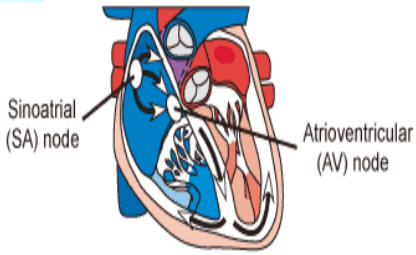
Source: www.emp-tmu.net/

b) What do **[1]** to **[4]** represent from the diagram? Match each with the appropriate term in the box below.

Right atrium	Left atrium	Right ventricle	Left ventricle

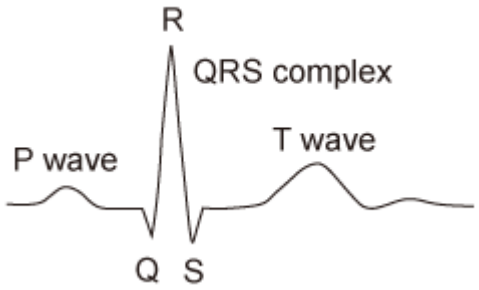
2. a) What induces contraction of the heart?
   a) blood pressure.
   b) electrical excitation.
   c) hormonal action.

c) Below is a simple diagram that shows the conduction pathways for the electrical impulses. In what order do the atria and ventricles contract?



Source: www.emp-tmu.net/

2) How the graph below is referred to in the text?



Source: www.emp-tmu.net/

3. Give a brief description of "cardiac catheterization".

_____

_____

4. 1. "Arrhythmia" means:

a. blood circulation.

b. anomaly of the heart.

c. abnormal heartbeat condition.

2. Two types of arrhythmia are mentioned. Extract the answers from the text.

_____

5. Circle the correct answer. What does each of the two arrhythmias indicate?

a. The heart beats too slowly.

b. The heart beats too rapidly.

6. a) The meaning of “fibrillation” is:

   a. a quivering or twitching state.
   b. change in size, in particular becoming smaller.
   c. Difficulty in moving something.

   d. What does “defibrillation” mean?

   _____

   _____

Post-reading Activity 3

Write a summary in 30 words about the topic.

_____

_____

_____

_____

_____

Vocabulary into their components

1. HOMEWORK. Complete the chart for each of the medical word listed in this table, placing the word part, prefix, root, suffix and meaning on the correct column. Word parts, prefix, root, suffix.

Word	prefix	Meaning	Root	meaning	suffix	Meaning
Perichondritis	Peri-	Around	Chondr-	cartilage	-itis	inflammation
Hemodynamic						
Electrocardiographic						
Cardiomyocytes						
Electrocardiogram						
Arrhythmias						
Tachycardial						
Bradycardial						
Defibrillation						
Radiography						
Ultrasonography						

Author: Sandra Segarra

TOPIC 2. ANESTHESIA

LESSON 2. ANESTHESIA

Source: wikipedia

Pre-reading.

Activity 1. Answer these question.

1. What are the types of anesthesia?

   _____

2. During anesthesia, will a person be awake of what is happening?

   _____

3. Will a person feel any pain?

   _____

4. How soon will a person wake up?

   _____

5. If a person had spinal or epidural anesthesia, will he or she have a headache afterwards?

   _____

Anesthesia Classification

ANESTHETICS: HOW THEY WORK			
Type	**Name(s)**	**Administered**	**Affect**
General	Halothane, Enflurane Isoflurane, Ketamine, Nitrous Oxide,	Intravenously, Inhalation	Produces total unconsciousness affecting the entire body

	Thiopental		
Regional	Mepivacaine, Chloroprocaine, Lidocaine	Intravenously	Temporarily interrupts transmission of nerve impulses (temperature, touch, pain) and motor functions in a large area to be treated; does not produce unconsciousness
Local	Procaine, Lidocaine, Tetracaine, Bupivacaine	Intravenously	Temporarily blocks transmission of nerve impulses and motor functions in a specific area; does not produce unconsciousness
Opical	Benzocaine, Lidocaine Dibucaine, Pramoxine, Butamben, Tetracaine	Demal (Sprays, Drope, Ointments, Creams, Gels)	Temporarily blocks nerve endings in skin and mucous membranes; does not produce unconsciousness

Source: Wikipedia

Technical Vocabulary

pneumonectomy noun: the surgical removal of all or part of a lung.

hyperpyrexia noun: a body temperature of above 41.1oC.

supine adj: lying on the back.

opioid (fentanyl) adj: based on opium Codeine is an opioid analgesic.

lumen noun: a hole at the end of an instrument such as an endoscope.

hypoxemia noun: It is oxygen deficiency in arterial blood

hypercapnia noun: an unusually high concentration of carbon dioxide in the bloodstream.

extrasystole noun: also called premature beat.

oliguria noun: a condition in which a person does not produce enough urine.

atelectasis noun: the failure of a lung to expand properly.

General Vocabulary

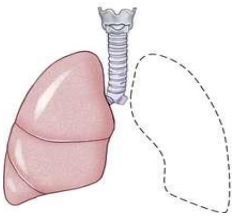
needle	noun: a small slender usually steel instrument that has an eye for thread or surgical sutures at one end and that is used for sewing.
prawn	noun: A marine crustacean with resembles a large shrimp
withdrawn	verb: to take back or away; remove.
indwelling	adj: permanent catheter.
invasive	adj: tending to spread very quickly.
bladder	noun: A muscular membranous sac in the abdomen which receives urine from the kidneys and stores it for excretion.
airways	noun: A tube for supplying air to a person's lungs in an emergency.
tidal	adj: relating to or affected by tides

Vocabulary Preview 1

1. Write the words under the pictures

Inhalation atelectasis Pneumonectomy supine hyperpyrexia

1 _____



2 _____

3 _____

4_____

5_____

Source: Wikipedia

2. Complete the sentences with the correct term

Hypercapnia	hyperpyrexia	hypoxemia	extrasystole oliguria
Supine	pneumonectomy	lumen	opidoid

1. A surgical excision of an entire lung or of one or more lobes of a lung. _____.
2. Lying on the back or with the face upward._____.
3. Abnormally low levels of oxygen in the blood. _____.
4. An abnormally high concentration of carbon dioxide in the blood, usually caused by acute respiratory failure from conditions such as asthma and obstructive pulmonary disease. It can lead to seizures and death if acute and untreated. _____:
5. A condition of abnormally high fever. _____.
6. A premature contraction of the heart, resulting in momentary cardiac arrhythmia. _____.
7. Abnormally slight or infrequent urination. _____.
8. Space within hollow tube, e.g. cross-sectional area of an artery._____.
9. Any morphine-like synthetic narcotic that produces the same effects as drugs derived from the opium poppy (opiates), such as pain relief, sedation, constipation and respiratory depression. _____

Skim the text. ANESTHESIA. Check (x) what it is about

_____ a. the procedure used for anesthesia for pneumonectomy in a patient with cancer of the right lung.

_____ b. It is about the methods of administration of anesthesia.

_____c. It is about the uses of the anesthesia.

Anesthesia

(Taken of the Japanese original by Dr. Seigo Watanabe and Dr. Shohei Matsumoto, Department of Anesthesiology, Tokyo Medical University)

The purpose of anesthesia is to elicit a painless state of analgesia, sedation and immobility (muscle relaxation). Anesthesia has two main categories, general and local. The former involves loss of consciousness, while in the latter, consciousness is maintained. There are two methods of inducing general anesthesia, by inhalation and by intravenous injection; and for local anesthesia, there is topical anesthesia, infiltration anesthesia, nerve block anesthesia, nerve plexus blockade, epidural anesthesia, and spinal anesthesia. In actual clinical practice, various combinations of these methods, for example, inhalation together with intravenous injection anesthesia, are frequently used according to the requirements of the case in hand (balanced anesthesia).

Before anesthesia is induced, it is important to conduct an ASA physical status evaluation. It is essential to have an understanding of the degree to which everyday activities are possible (NYHA and Fletcher-Hugh-Jones classifications), what types of complications (bronchial asthma, chronic obstructive pulmonary disease, hypertension, ischemic heart disease, diabetes, thyroid dysfunction, cirrhosis of the liver, chronic kidney failure, and so on) are present, and what types of drugs are being taken on a long-term basis (such as anticoagulants, adrenocortical hormones, insulin, antihypertensives, β-receptor blockers, digitalis, and tricyclic antidepressants); and also to know what degree of normal function the patient has in the internal organs, for example, how good respiratory function (%VC, FEV1.0%, arterial blood gas analysis, etc.) and circulatory function (ejection fraction, etc.) are. In addition, a check must be made of the family history for the presence of allergies and particular habits (such as smoking and alcohol consumption), and conditions such as malignant **hyperpyrexia.**

Let us now examine the management of anesthesia in, for example, a case in which **pneumonectomy** is used as a treatment for cancer of the right lung.

Premedication (with a sedative, an analgesic, and belladonna) may be used as needed but is not always necessary. After the patient has entered the operating room, all of the monitors (such as the sphygmomanometer, ECG, pulse oximeter, expired gas monitor, thermometer, EEG, and uroflowmeter) are connected to the patient or made ready for use. At the same time, a venous line is secured in place. Next, the patient is placed on his or her side (in the lateral decubitus position), and is directed to curl up like a prawn. The back is disinfected, and local anesthesia is induced in the region where an epidural needle will be inserted. Then, this needle is inserted and advanced as far as the epidural space, using the loss-of-resistance technique to confirm that it is correctly situated in that space. The epidural tube is introduced into the space between the third and fourth thoracic vertebrae. The needle is then withdrawn, the tube is secured with tape, and the patient is returned to the **supine** position. A mask is applied in close contact with the patient's nose and mouth area so that the patient breathes 100% oxygen, and the nitrogen is removed from the alveoli of the lungs. From the venous line, anesthesia is induced with an **opioid** (fentanyl), propofol and a muscle relaxant. To avoid respiratory inhibition or arrest, manual artificial ventilation is carried out, and endotracheal intubation is performed when the degree of anesthesia is sufficiently deep. In lung surgery, in order to carry out unilateral pulmonary ventilation, a **double-lumen** tube is used. Anesthesia is maintained by total venous anesthesia with fentanyl and propofol. The muscle relaxant is given intermittently. The lung is ventilated with 100% oxygen. A local anesthetic is administered continuously from the epidural tube. An indwelling arterial line is set in place in the radial artery, and is used for invasive arterial blood pressure monitoring and arterial blood gas analysis. A gastric tube and a bladder balloon are put in place. The patient is secured in the left decubitus position, and after the region to undergo surgery is disinfected, the operation proper begins.

During anesthetic management, care is taken to identify complications such as problems with the **airways, hypoxemia, hypercapnia**, abnormalities in the acid-base balance, electrolyte imbalance, massive hemorrhage, hypotension, hypertension, arrhythmias (bradycardia, tachycardia, ventricular **extrasystole**, atrial fibrillation, etc.), abnormalities of body temperature (hypothermia and malignant hyperpyrexia), and **oliguria**, among others. The administration of drugs that inhibit hypoxic pulmonary vasoconstriction is avoided as far as possible. The target level for the body's water balance in healthy adults is 3 to 5 ml/kg/h, and in elderly and high-risk subjects, 2 to 3

ml/kg/h. Since **atelectasis** and pulmonary edema tend to occur in lung surgery, frequent arterial blood gas analyses are carried out.

After the completion of surgery, the patient is returned to the supine position, and chest radiography is performed. Checks are made that the patient has woken fully, and that the **tidal** volume, respiration and heart rates, blood pressure, and recovery from the muscle relaxant are at suitable levels, and then the patient is extubated. After the vital signs and pain control have been checked in the recovery room, the patient is returned to the general ward.

While reading. Read the text and do the activities.

Activity 2. Comprehension

1. "The purpose of anesthesia is to elicit a painless state of analgesia, sedation and immobility (muscle relaxation)." TRUE / FALSE

2. What is the drug used for muscle relaxation called? Extract the answer from the fourth paragraph.

   _____

   _____

3. In which type of anesthesia is the patient awake, general or local?

   _____

   _____

4. Below is a simple list of items related to the patient which anesthesiologists should check beforehand. Check which ones.

   __ everyday activities
   __ complications
   __ use of drugs (on a long-term basis)
   __ functions of the internal organs.
   __ family history (allergies, malignant hyperpyrexia, etc)

5. What is “malignant hyperpyrexia”? Describe it briefly, and explain why this particular condition has to be checked before the patient is anesthetized.

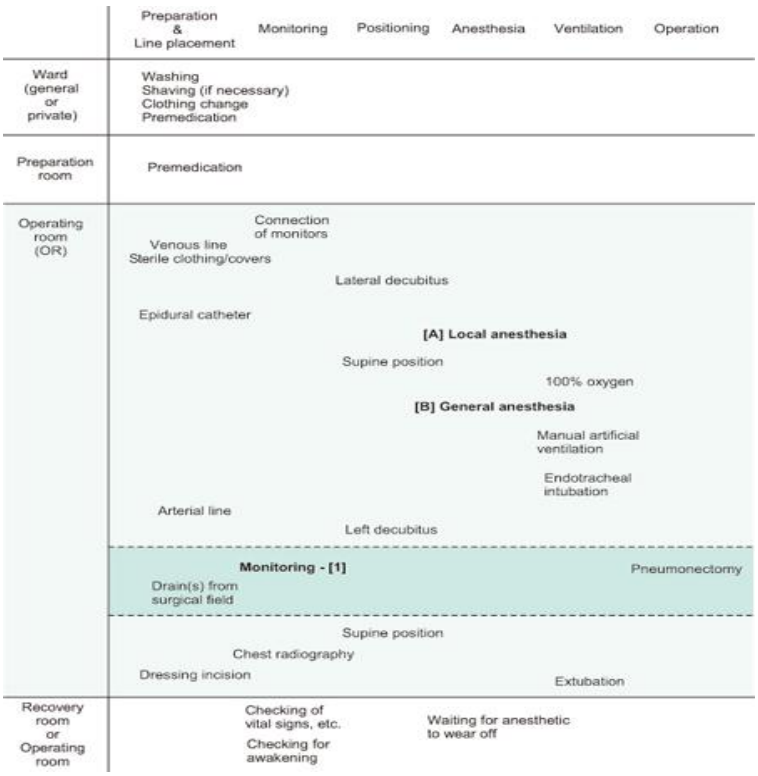
_____

_____

_____

6. Below is a diagram showing an example of the procedure used for anesthesia for pneumonectomy in a patient with cancer of the right lung.

Answer the following questions based on the diagram and the text.



Source: www.emp-tmu.*net/*

a) What does “pneumonectomy” mean?

_____

_____

b) Below is a table referring to [A] and [B] in the diagram. Complete information.

	Route of administration	How is the patient placed?
[A] Local		
[B] General	Intravenous injection	

Source: www.emp-tmu.net/

c) How is the combined use of some types of anesthesia referred to in the first paragraph? Extract the answer from the text.

_____

d) How is the patient's breathing maintained from the beginning of [B] to the end of the operation?

_____

_____

e). Anesthesiologists are in charge of monitoring various items during surgery, to help the patient undergo treatment safely ([1] in the diagram).

_____

_____

f) Pair the terms on the left with the definitions on the right.

A	B
1. Arrhythmia - _____ **2. Oliguria** _____ **3. Hemorrhage** _____ **4. Hypotension** _____	a. decreased amount of urine production. b. Bleeding c. Subnormal blood pressure. d. Abnormal heartbeat condition

Source: Sandra Segarra

Post-reading

Write in your own words, what the benefits and risks of anesthesia are. Do it in 50 words.

_____

_____

_____

_____

_____

TOPIC 3. EAR, NOSE AND THROAT

LESSON 3. EAR, NOSE AND THROAT

Source: Wikipedia

Pre-reading

Activity 1. Answer these questions

1. What is an Otolaryngologist?

_____

2. What do otolaryngologists treat?

_____

3. What are the seven areas of expertise in the field of otolaryngology?

_____

http://www.entnet.org/content/what-otolaryngologist

Technical Vocabulary Source: Sandra Segarra

Perichondritis	noun: inflammation of cartilage, especially in the outer ear.
Otitis	noun: inflammation of the ear
Antrum	noun: A hollow cavity or sinus in a bone
Epipharynx	noun: A structure which overlaps the mouth of certain insects. Synonym nasopharynx
ossicular	adj: pertaining to ossicles: *ossicles* are small bones which connect the tympanic membrane to the inner ear.
Cholesteatoma	noun: It is an abnormal, noncancerous skin growth that can develop in the middle section of your ear, behind the eardrum.
Otosclerosis	noun: A disease of the ear in which the movement of the stapes within the oval window becomes impeded by abnormal

	deposits of spongy bone, leading to a progressive loss of hearing.
ossicles	noun: a small bone, one of those in the middle ear.
Stenosis	noun: a condition in which a passage becomes narrow.
Neuritis	noun: an inflammation of a nerve, giving a constant pain.
paroxysmal	adj: referring to a paroxysm, noun: a sudden attack of coughing or sneezing.

General Vocabulary

malady	noun: diseases, illnesses
deafness	noun: general term for inability to hear.

Vocabulary Preview 1.

Exercise. 1. Complete the table for each of the medical word listed in this table, placing the word part, prefix, root, suffix and meaning on the correct column.

Word	**prefix**	**Meaning**	**Root**	**meaning**	**suffix**	**meaning**
perichondritis	Peri-	Around	Chondr-	cartilage	-it is	inflammation
Otitis						
Epipharynx						
Otosclerosis						
Neuritis						
Stenosis						
cholesteatoma						

Author: Sandra Segarra

Exercise 2. Read the following sentences and circle the correct words.

1. It is diagnosed based on the person's medical history and by examining the ear. If there is a history of trauma to the ear and the ear is red and very tender, then **perichondritis / otitis** is diagnosed.

2. A cavity within a bone (as the maxilla) or hollow organ (as the stomach) is called **antrum / bulge**.

3. An abnormal skin growth in the middle ear behind the eardrum is called **mastoiditis ／cholesteatoma**.

4. An abnormal bone growth in the middle ear that causes hearing loss is diagnosed as **otosclerosis／tonsilitis**.

5. Three small bones – the *incus* (*anvil*), *malleus* (*hammer*), and *stapes* (*stirrup*) – that lie in the mammalian middle ear, forming a bridge between the tympanum (eardrum) and the oval window. Their function is to transmit (and amplify) vibrations of the tympanum across the middle ear to the oval window, which transfers them to the inner ear. They are called **ossicles／ hyperacusis.**

6. A general term for infection or inflammation of the ear is diagnosed as **presbycusis ／ otitis.**

What is the topic about? Circle the correct option.

1. The functions and disorders of the ear.
2. Causes and symptoms of the ear.
3. Treatment for the external ear, the middle ear, and the inner ear.

Ear, Nose and Throat

(Taken of the Japanese original by Dr. Mamoru Suzuki,Department of Otorhinolaryngology, Tokyo Medical University)

We use our ears unconsciously in daily life as communication tools, and we are not always aware of the complicated anatomical characteristics and functions that make this possible. The ear consists of the external ear, the middle ear, and the inner ear, each with its own functions and disorders, which in turn cause various **maladies** depending on their structure and function.

The external ear consists of the auricle or pinna, and the external auditory canal, and is separated from the middle ear by the tympanic membrane, or eardrum. Its main function

is the collection of sound, and typical disorders include congenital external ear malformations, auricular **perichondritis**, and **otitis** externa.

The middle ear consists of the auditory tube, tympanic cavity, mastoid **antrum,** and mastoid cells, and forms a pneumatic (that is, air-filled) space surrounded by bone. It is separated from the external auditory canal by the eardrum, and from the inner ear by the vestibular window and cochlear window. The tympanic cavity communicates with the **epipharynx** via the auditory tube. Sound is further transmitted by the **ossicular** chain in the tympanic cavity. Typical disorders include perforation of the eardrum, acute otitis media, chronic otitis media, otitis media with effusion, **cholesteatoma** of the middle ear, **otosclerosis**, malformation of the auditory **ossicles**, disruption of the ossicles, and **stenosis** of the auditory tube. Each of these results in varying degrees of hearing loss, which in many cases can be corrected by surgery.

The inner ear is located inside the temporal bone, and is also referred to as the labyrinth because of its complex tubular structure. Filled with lymph fluid, it consists of the cochlea, which is responsible for the sense of hearing, and the vestibule and semicircular canals, which are responsible for the sense of balance. Typical disorders of the inner ear include sudden **deafness**, congenital sensorineural hearing loss, Ménière's disease, vestibular **neuritis**, and benign **paroxysmal** positional vertigo. Depending on the site and extent of the condition, these may cause hearing loss and vertigo.

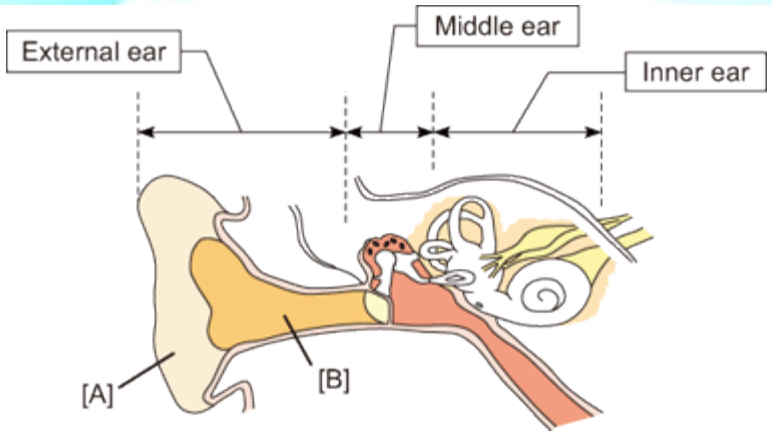
In conclusion, the ear mainly functions as an organ of hearing and an organ of balance, and the lectures will focus on these two functions.

While reading. Read the topic and do the activities about it.

Activity 1. Comprehension

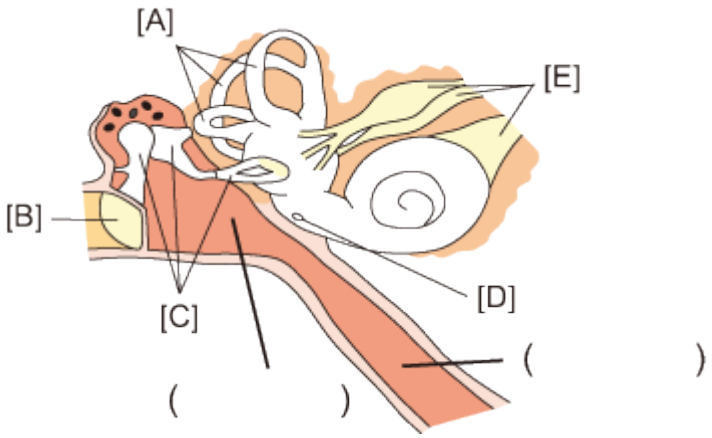
1. Look at the diagram below, which shows the structure of the ear.
   What do [A] and [B] in the diagram and the sentence below represent?

The external ear consists of [A] and [B].



Source: www.emp-tmu.net/

a) Look at the diagram below, and fill in the blanks.



Source: www.emp-tmu.net/

b) Of options [A] to [E] in the diagram which are the auditory ossicles?

_____

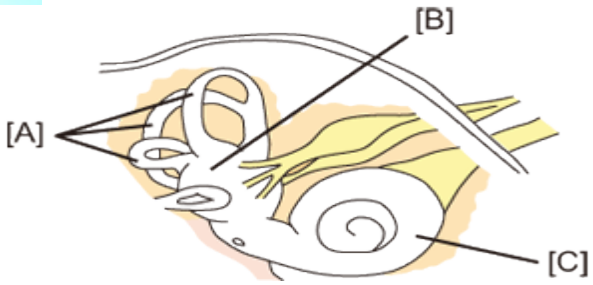
c) Through what part of the middle ear is the tympanic cavity exposed to the outside of the body?

_____

_____

Below is a diagram showing the structure of the inner ear.

2. a) What do [A] to [C] represent?



Source: www.emp-tmu.net/

b) Divide [A] to [C] into organs responsible for the sense of hearing and those for the sense of balance.

_____

_____

3.- Describe briefly the functions of the external ear, middle ear, and inner ear.

_____

_____

4. Pair these terms for ear disorders, which are mentioned in the text, with the definitions in the box.

EAR DISORDERS	DEFINITIONS
a) perichondritis	(a) _____ a benign, inward growth of the skin in the middle ear, which generally forms a cyst
b) cholesteatoma	(b) _____ an abnormal growth of the bone in the middle ear
c) otosclerosis	(c) _____ inflammation of the perichondrium of the external ear

Source: Sandra Segarra

5. Three types of otitis media are referred to in the text. Describe each briefly.

_____

_____

Post-reading. Write in your own words.

Both Méniere´s disease and benign paroxysmal positional vertigo are associated with vertigo. How do they differ?

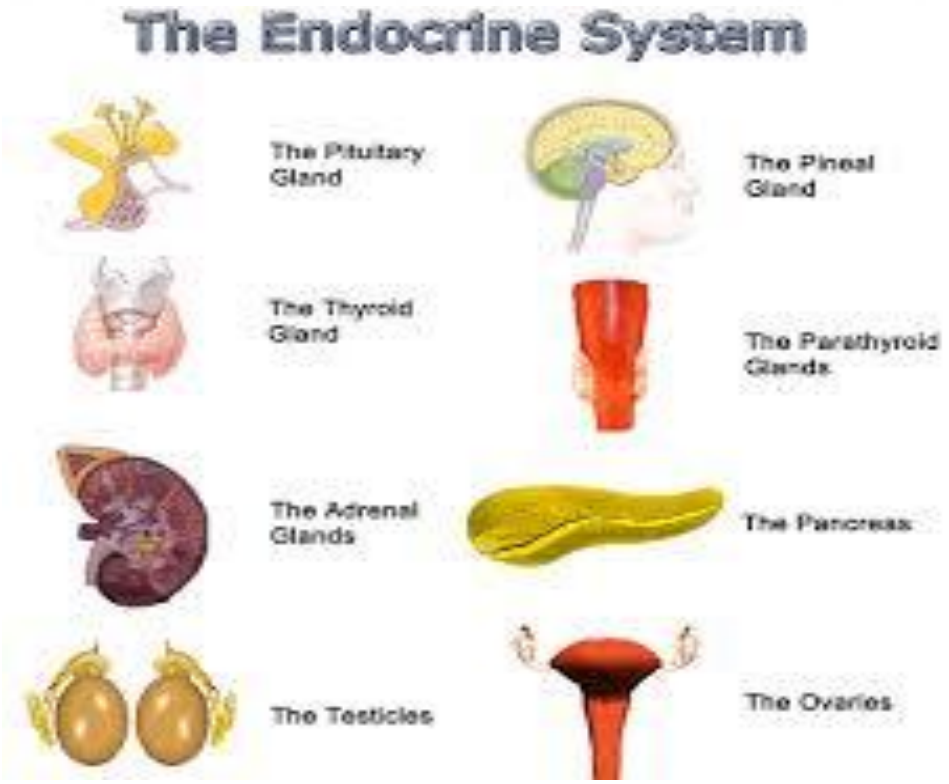
_____

_____

_____

TOPIC 4. DIABETES

LESSON 4. INTRODUCTION TO INSULIN AND DIABETES



Source: Wikipedia

Pre-reading

Activity 1. Answer the following questions.

What is insulin and how does it work?

_____

When is insulin prescribed?

_____

What causes diabetes?

_____

http://www.webmd.com/diabetes/guide/insulin-questions

Technical Vocabulary

Starvation	noun the fact of having had very little or no food.
Ketoacidosis	noun: the accumulation of ketone bodies in the blood, which results in metabolic ACIDOSIS; it is often associated with uncontrolled DIABETES MELLITUS.
Pancreatic	adj: referring to the pancreas
Urinary	adj: referring to urine
glucose	noun: a simple sugar found in some fruit, but also broken down from white sugar or carbohydrate and absorbed into the body or secreted by kidneys.
Retinopathy	noun: any disease of the retina
Nephropathy	noun: a disease or medical disorder of the kidney
Retinaculum	noun: any of several fibrous bands of fascia that pass over or under tendons (as at or near the ankle or wrist) and help to keep them in place

General Vocabulary

yardstick	noun**:** a rule or specific idea about what is acceptable or desirable that is used to judge or measure something
harsh	adj. unpleasant
emaciated	adj: to become thin
intake	noun**:** the thing or quantity taken in
befitting	adj: suitable, proper, becoming

Vocabulary Preview 1

1. Read the following paragraph and complete with the correct term

Pancreatic	insulin (x 2)	starvation	hyperglycemia
glucose (x 2)		ketoacidosis	

Diabetes Mellitus

Diabetes mellitus is a chronic disease that causes serious health complications including renal (kidney) failure, heart disease, stroke, and blindness.

Every cell in the human body needs energy in order to function. The body's primary energy source is 1._____, a simple sugar resulting from the digestion of foods containing carbohydrates (sugars and starches). 2._____ from the digested food circulates in the blood as a ready energy source for any cells that need it. 3. _____is a hormone or chemical produced by cells in the pancreas, an organ located behind the stomach. 4. _____ adheres to a receptor site on the outside of cell and acts like a key to open a doorway into the cell through which glucose can enter. Some of the glucose can be converted to concentrated energy sources like glycogen or fatty acids and saved for later use. When there is not enough insulin produced or when the doorway no longer recognizes the insulin key, glucose stays in the blood rather entering the cells.

The body will attempt to dilute the high level of glucose in the blood, a condition called 5. _____, by drawing water out of the cells and into the bloodstream in an effort to dilute the sugar and excrete it in the urine. It is not unusual for people with undiagnosed diabetes to be constantly thirsty, drink large quantities of water, and urinate frequently as their bodies try to get rid of the extra glucose. This creates high levels of glucose in the urine.

At the same time that the body is trying to get rid of glucose from the blood, the cells are starving for glucose and sending signals to the body to eat more food, thus making patients extremely hungry. To provide energy for the starving cells, the body also tries to convert fats and proteins to glucose. The breakdown of fats and proteins for energy causes acid compounds called ketones to form in the blood. Ketones also will be excreted in the urine. As ketones build up in the blood, a condition called 6. _____ can occur. This condition can be life threatening if left untreated, leading to coma and death.

Diabetes also can develop as a result of 7. _____ disease, alcoholism, malnutrition, or other severe illnesses that stress the body. Ketoacidosis, a condition

due to 8_____ or uncontrolled diabetes, is common in Type I diabetes. Ketones are acid compounds that form in the blood when the body breaks down fats and proteins. Symptoms include abdominal pain, vomiting, rapid breathing, extreme lethargy, and drowsiness. Patients with ketoacidosis will also have a sweet breath odor. Left untreated, this condition can lead to coma and death.

Skim the text Introduction to insulin and diabetes. Check (x) the main idea of the article.

- ☐ The history of discovery of insulin.
- ☐ The insulin as treatment for the diabetes
- ☐ The fluid extracted from a liver from animals as treatment of diabetes

Introduction to insulin and diabetes

(Taken of the Japanese original by Dr. Takashi Miwa, Department of Diabetes, Metabolism and Endocrine Medicine, Tokyo Medical University)

Insulin has the longest history as a drug currently in use for lowering the blood sugar level, and it is indispensable for the pharmacotherapy of diabetes.

Before the discovery of insulin, the treatment of diabetes was aimed at the preservation of pancreatic function, and in many cases, a harsh restriction of calorie intake (**starvation** treatment) was established, using the disappearance of **urinary glucose** as a **yardstick**. Many diabetic patients became emaciated and wasted, and died in a diabetic coma, the final stage of insulin deficiency (**ketoacidosis**). Their average life expectancy was 4.9 years, diabetes being the cause of death.

In July 1921, the orthopedic surgeon Banting and the medical student Best, under the guidance of McLeod, the Professor of Physiology at the University of Toronto, injected the fluid extracted from a pancreas that had been caused to degenerate by ligation of the **pancreatic** duct, into dogs with artificially induced diabetes, and discovered that it improved the blood glucose level and resuscitated them from diabetic coma. In January

1922, the pancreatic extract prepared by Banting, Best and the chemist Collis achieved a marked reduction of the blood glucose level in diabetic patients. After several months of administration of the pancreatic extract, a young man who had not been able to stand without support returned to a daily lifestyle **befitting** his age. Then, in April 1922, the pancreatic extract was named insulin. On May 3 of that year, McLeod announced in the American College of Physicians his discovery of insulin, a substance effective in treating diabetes, and insulin was then recognized publicly for its efficacy in diabetes therapy.

The supply of an insulin preparation extracted from the pancreas of cattle was initiated in August 1922. As a result of the appearance of insulin, the aim of diabetes treatment was turned toward improvement of the overall condition of the patient, which had not been possible before despite previous hopes and expectations, and a strict limit for glucose was no longer necessary. Insulin was administered in order to eliminate urinary glucose. After insulin came into use, the number of cases of diabetic coma fell sharply, and the mean life expectancy increased substantially (by 18.2 years). According to the statistics of the Joslin Clinic from 1937 to 1943, the leading causes of death in patients with diabetes were cardiovascular disorders, which occurred in 60% of cases, and diabetic **retinopathy** and diabetic **nephropathy** were found with increasing frequency as the survival period of patients with diabetes became longer. In other words, diabetes was no longer a fatal disease, but had become transformed into a mere chronic illness.

While reading. Read the topic and do the activities about it.

Activity 1. Comprehension

1 Which drug is dealt with in the text?

a) glucose
b) insulin
c) urine
d) ketoacid

2) What effect does insulin have on the body? Extract the answer from the first paragraph.

_____

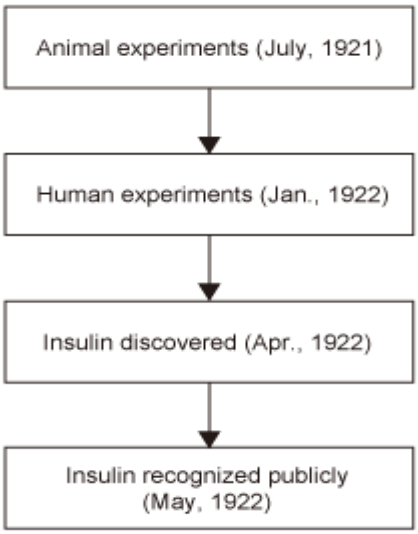
_____

3) What disease is treated by insulin?

_____

_____

4. Below is a simple diagram which outlines the process of insulin discovery.

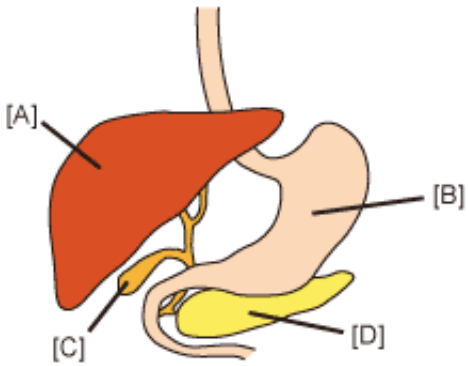


Source: www.emp-tmu.net/

5) A substance (fluid) was extracted from a pancreas and was injected into dogs in the animal experiments. What is it?

---

6) Which of the following options in the diagram below shows the pancreas in the human body?



Source: www.emp-tmu.net/

7) What was demonstrated by the animal experiments? Extract the answer from the third paragraph.

_____

_____

8) Were the results of the human experiments similar to those of the animal experiments?

_____

_____

9) Circle the best option. The meaning of "ligation" is:

a) binding or tying a part of the body (such as a duct or a blood vessel) using a surgical thread often in order to prevent flow through it.
b) A specially made substance or a mixture of substances which is used as a drug.
c) a flexible surgical tube inserted into a body cavity, blood vessel, or hollow organ such as the urethra, in order to extract or inject fluid.

10) Choose, from the options below, organs affected by diabetic retinopathy and nephropathy, respectively.

a) ear
b) kidney
c) liver
d) retinaculum of a muscle or tendon
e) eye
f) nerves

Post-reading activity

Describe with your own words about Diabetes. Do it in 40 words.

_____

_____

_____

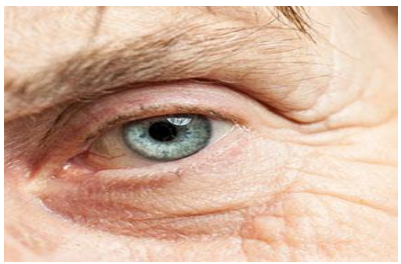
_____

_____

TOPIC 5. EYE DISEASES

LESSON 5. EYE DISEASES

- **Could You Have Cataracts?**



Source: Wikipedia

The lens of your eye are used everyday, for everything from reading to driving to bird watching. With age, the proteins inside the lens can clump together, turning the lens from clear to cloudy. Certain behaviors like too much time in the sun without eye protection, smoking, high blood sugar, high blood pressure, use of steroid medications, hormone replacement therapy, or taking statins may put you at higher risk for a cataract.

But you aren't alone. Over 20 million Americans over the age of 40 have cataracts in one or both eyes, and 6 million have had corrective surgery. If you have any of the following symptoms, talk to your eye doctor soon.

Pre-Reading

Activity 1. Answer the following questions.

What is a cataract?

_____

What are cataract symptoms?

_____

What are the benefits of cataract eye surgery?

_____

How is cataract eye surgery performed?

_____

- See more at: http://visianinfo.com/cataracts-intraocular-lens/#sthash.uScMc1tr.dpuf

Technical Vocabulary

Presenile	noun: dementia with onset before the age of 65.
Myotonic	adj: referring to tone in a muscle.
Dystrophy	noun: It is a chronic, slowly progressing, highly variable, inherited Multisystemic disease. It is characterized by wasting of the muscle. .
Atopic dermatitis	noun: It is a type of inflammation of the skin. It results in itchy, red, swollen, and cracked skin.
Concussion	noun: loss of consciousness for a short period, caused by a blow to the head.
Uveitis	noun: inflammation of any part of the uvea.
Autosomal	adj: referring to an autosome.
galactose	noun: a sugar which forms part of milk, and is converted into glucose by the liver
hemopathy	noun: a pathological state (as anemia) of the blood or blood-forming tissues
galactokinase	noun: an enzyme that catalyzes the first step in the metabolism of galactose the transfer of a phosphate group from ATP to galactose, producing galactose-1-phosphate.

Vocabulary Preview 1

Activity 1. Read the sentences and circle the correct meaning of the words in bold.

1. She suffered a severe ***concussion*** after falling on the ice.
   a) relief b) trauma

2. Alzheimer is credited with identifying the first published case of "**presenile** dementia", which Kraepelin would later identify as Alzheimer´s disease.

   a) Pre-old age b) Young age

3. Problems of cerebral palsy, muscular **distrophy**, and spina bifida leads to physical problems.

a) atrophy b) progressive weakness

4. All have a cloudy **cataract** covering one or both eyes.

a) Opacity of the eye b) **pterygium**

5. In countries of the developed world such as the UK, **uveitis** is the cause of about 1 in 10 people with visual impairment.

a) Blinking, frequent b) redness.

6. Many people with **atopic dermatitis** develop hay fever or asthma. This may be caused by allergies or the unclean environment.

a) seborrheic eczema b) ulcers

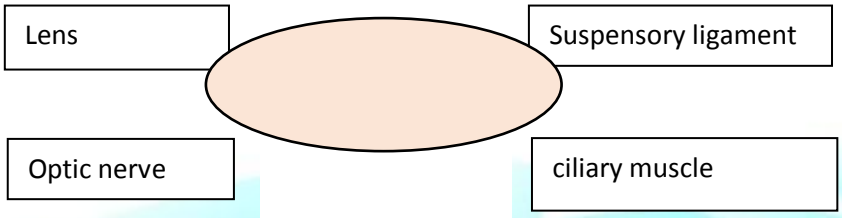
7. Patients with rare hereditary problems of **galactose** intolerance, the Lapp lactase deficiency or glucose-**galactose** malabsorption should not take this medicine.

a) Sucrose b) fructose

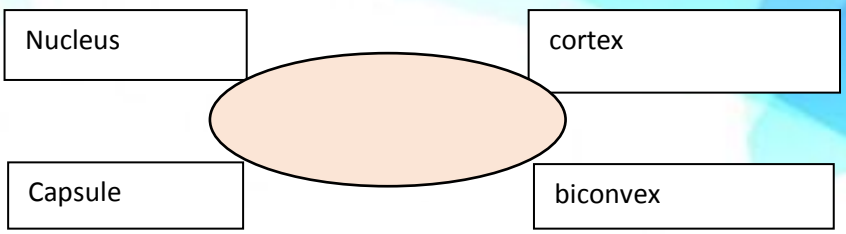
Activity 2. Word association: missing links

Each of the sets of two, four, or five words below can be linked by one other word. All the words are related according to the reading. What are the missing words? Write them in the center of the charts.

1.



2.



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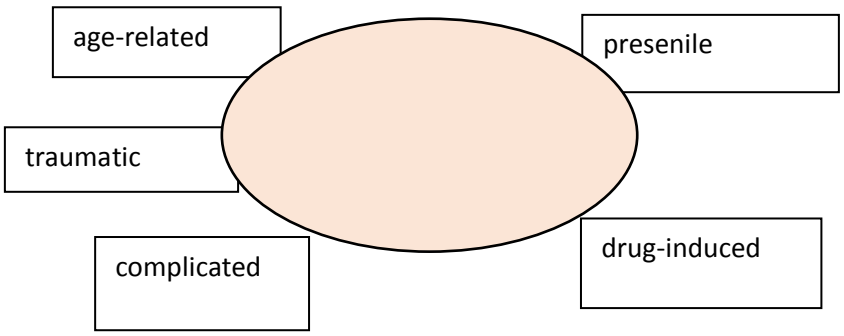
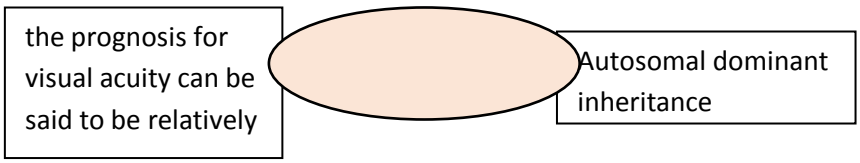
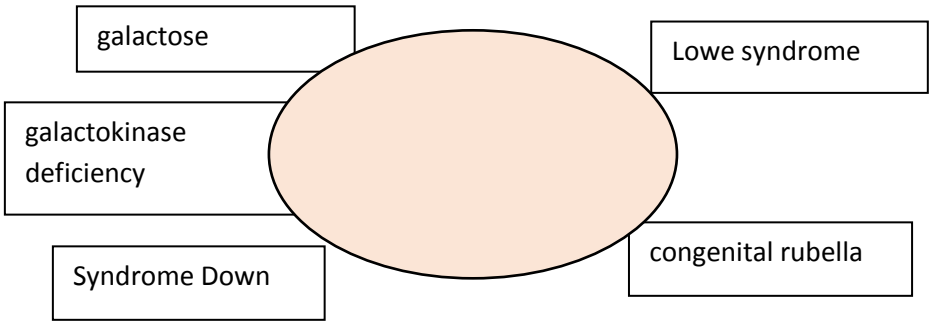


4.



5.



Author. Sandra Segarra

After you read. Check the main idea

___ The classes of cataracts

___ The cataract's diseases

___ The symptoms and diagnosis of the cataract.

Cataract

(Taken of the Japanese original by Dr. Takeshi Kezuka,Department of Ophthalmology, Tokyo Medical University).

The crystalline lens is a biconvex, transparent body of tissue without a blood supply. It consists of the nucleus, the cortex and the capsule. The normal lens is transparent, and any opacity, either congenital or acquired, that is seen in the capsule of the lens or in its cortex and nucleus, whether it affects visual acuity or not, is known as cataract. Five types of acquired cataracts exist: 1) age-related cataracts, 2) **presenile** cataracts 3) traumatic cataracts 4) drug-induced cataracts, and 5) complicated cataracts. Congenital cataracts occur at a rate of about three for every 10,000 births. In some two-thirds of these cases, the condition is bilateral. There are some that accompany systemic diseases and some that do not.

1. Acquired cataracts

1) Age-related cataracts: These include posterior subcapsular cataracts, nuclear cataracts and cortical cataracts. Since the opacity of the first of these is situated in the center, the effect on vision is more marked from an early stage than in other disorders.

2) Presenile cataracts: These cataracts manifest early in conditions such as diabetes, **myotonic dystrophy** and **atopic dermatitis**.

3) Traumatic cataracts: Trauma is the commonest cause of unilateral cataracts found in young people. Factors such as direct perforation reaching the lens, **concussion**, electric shock or a lightning strike, ionizing radiation or infrared radiation may all

contribute to the formation of a traumatic cataract.

4) Drug-induced cataracts: The development of a cataract is sometimes due to the internal administration of adrenocorticosteroid drugs and chlorpromazine.

5) Complicated cataracts: These frequently occur in cases of chronic anterior **uveitis**, acute angle-closure glaucoma, severe myopia.

2. Congenital cataracts

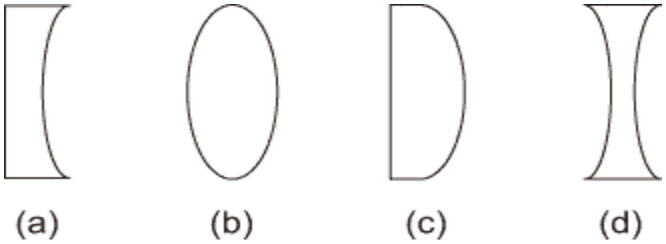
1) Cataracts not accompanying systemic diseases. These are the so-called genetic cataracts, and account for 25% of cases of congenital cataracts. The form of inheritance most commonly seen is that of **autosomal** dominant inheritance. Since cataracts at birth are frequently partial, the prognosis for visual acuity can be said to be relatively favorable in comparison with that in subjects with systemic abnormalities.

2) Cataracts that accompany systemic diseases. These are found in many children born with systemic diseases. The best-known of these diseases are **galactose hemopathy**, **galactokinase** deficiency, Lowe syndrome, congenital rubella (15% of cases have cataracts), and Down syndrome (cataracts in 5%).

While reading. Read the topic and do the activities about it.

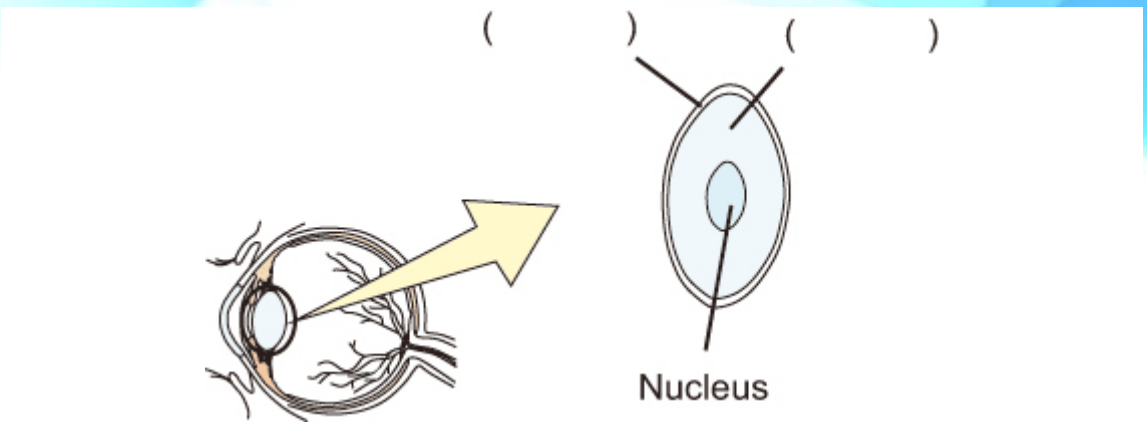
Activity 1. Comprehension

1. Which of the following shapes is biconvex?



Source: www.emp-tmu.net/

2. Below is a diagram showing the structure of the lens of the eye. Fill in the blanks.



Source: www.emp-tmu.net/

3. What is a cataract? Answer briefly on the basis of the text, using your own words.

_____

_____

4. a) Three types of age-related cataracts are mentioned in the text. What are they?

_____

_____

b) Briefly describe each of the three types of age-related cataracts, mentioning in particular where opacity starts and how it spreads.

_____

_____

4. The three disorders below are associated with cataracts. Match the disorder on the left with the definition on the right.

a. myotonic dystrophy.	1) nearsightedness
b. uveitis	2) inflammation of the uvea
c. myopia	3) systemic disease involving muscle weakness and stiffness.

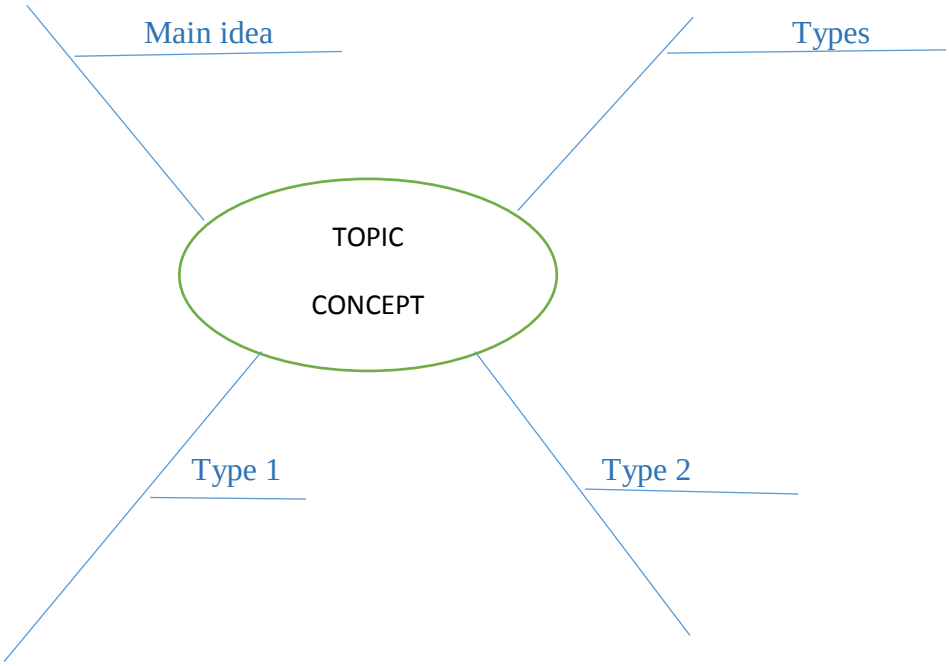
6. What is “autosomal dominant inheritance”?

_____

_____

Post-reading activity

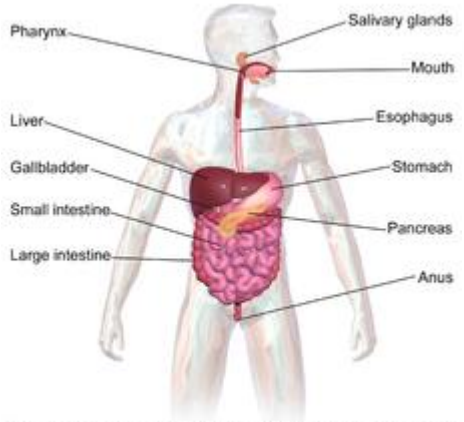
graphic with the main ideas of the reading.



Author: Sandra Segarra

TOPIC 6. PERITONITIS

LESSON 6. PERITONITIS



The Components of the Digestive System

Source: Wikipedia

Pre-reading.

Activity 1. Answer the following questions.

What is peritonitis?

_____

What causes peritonitis?

_____

What are the symptoms of peritonitis?

_____

http://www.healthline.com/health/peritonitis#Overview1

Technical Vocabulary

peritonitis	noun: inflammation of the peritoneum as a result of bacterial infection
suppurative	adj: Causing suppuration: producing, or causing the production of, pus.
gastroduodenal	adj: referring to the stomach and duodenum.
appendicitis	noun: inflammation of the vermiform appendix
diverticulitis	noun: inflammation of diverticula formed in the wall of the colon
septicemia	noun: a condition in which bacteria are present in the blood, multiply rapidly and destroy tissue.

intravascular	adj: inside the blood vessels.
ultrasonography	noun: the procedure of passing ultrasound waves through the body and recording echoes which show details of internal organs.
ascites	noun: abnormal accumulation of serous fluid in the spaces between tissues and organs in the cavity of the abdomen.

General Vocabulary

Leakage	noun: such an escape or passage
Rebound	noun: A quick recovery from or reaction to disappointment or depression
tenderness	adj. Painful; sore: a tender tooth.
shallow	adj: Marked by insufficient inhalation of air; weak: shallow respirations.
Distended	adj: swollen, esp as an indication of illness or injury
Sweat	noun: the secretion from the sweat glands, esp when profuse and visible, as during strenuous activity, from excessive heat.

Vocabulary Preview 1

Exercise 1. Complete the sentences. Then compare with a partner

1. A painful swelling of the appendix is called _____.

   a) Inflammation of the gallbladder b) appendicitis

2. A diagnostic imaging technique based on the application of ultrasound. It is used to see internal body structures such as tendons, muscles, joints, vessels and internal organs is called _____

   a) ultramicroscopic b) ultrasonography

3. We report the case of a pediatric patient infected with Blastocystis that was manifested by gastroenteritis associated with _____appendicitis and peritonitis.

a) bleeding b) suppurative

4. Through the discovery of the bacterium Helicobacter Pylori can produce gastritis finishing in a peptic _____ .

a) Ulcer b) inflammation

5. Symptoms of _____include fever and abdominal pain. An acutely ill patient usually tries to lie very still, because any amount of movement causes excruciating pain. Often, the patient lies with the knees bent, to decrease strain on the tender peritoneum. There is often nausea and vomiting.

a) gastritis b) peritonitis

6. When the diverticula become infected and inflamed which can cause more serious complications such as abscesses, fistula and obstruction. It is referred to as _____

a) diverticulum b) diverticulitis

7. The doctor may order a test if you have symptoms of a blood infection such as bacteremia or _____

a) Septicemia b) anemia

8. An abnormal accumulation of fluid in the abdomen is called _____.

a) pancreatitis b) ascites

2. What is the article about? (1 point)

_____ Symptoms and signs of peritonitis

_____ Information about gastrointestinal system

_____ A disorder of the peritonitis

Acute Secondary Diffuse Suppurative Peritonitis

(Taken of the Japanese original by Dr. Takashi Ozawa, Department of Gastrointestinal Surgery and Pediatric Surgery,Tokyo Medical University)

Peritonitis, or inflammation in the peritoneal cavity, is a serious gastrointestinal disorder which often requires emergency surgery. The condition is classified into a number of types according to onset, cause, characteristics, and range. One of these, acute secondary diffuse **suppurative** peritonitis, is a serious condition in which perforation of the digestive tract by a **gastroduodenal** ulcer, **appendicitis, diverticulitis,** gastric cancer or colon cancer results in leakage of the digestive juices into the peritoneal cavity, which causes the rapid spread of inflammation throughout the abdominal cavity. Perforation of the lower digestive tract, in particular, quickly leads to peritonitis involving multiple bacteria, such as gram-negative bacilli or anaerobic bacteria, and readily induces **septicemia**.

Symptoms include abdominal pain, symptoms of peritoneal irritation (muscle guarding, rebound tenderness, board-like abdomen), fever, nausea, and vomiting. When the condition progresses, breathing becomes shallow and rapid, and the abdomen becomes distended. Neglect of the condition may be followed by the appearance of shock symptoms (facial pallor, decrease in blood pressure, tachycardia, and cold sweats), and finally, the development of septicemia, disseminated **intravascular** coagulation, and multiple organ failure.

Examination should be limited to essential and non-invasive procedures, and should be performed promptly and effectively. Blood testing shows an increase in the white blood cell count (but in severe cases, a decrease), an increase in the number of neutrophils, a

nuclear shift to the left, and a rise in CRP levels. Plain abdominal radiography (in the standing or left lateral position) shows free air in 80-90% of cases of peritonitis resulting from perforation of the upper digestive tract, and in 30-50% of those where perforations have occurred in the lower digestive tract. Abdominal computed tomography and **ultrasonography** show **ascites** and inflammatory changes around the site of perforation. Emergency upper GI endoscopy may be performed to confirm an upper digestive tract perforation.

Early diagnosis and early treatment are important, and both systemic management by transfusion, administration of antibiotics and anti-shock therapy, and surgical management including removal and cleansing of the primary lesion as well as insertion of a drain are required. Recently, early upper digestive tract perforation has been successfully treated conservatively.

Prognosis depends on the delay before surgery, the cause of the condition, and the patient's age

While Reading. Read and do the activities

Activity 1. Comprehension.

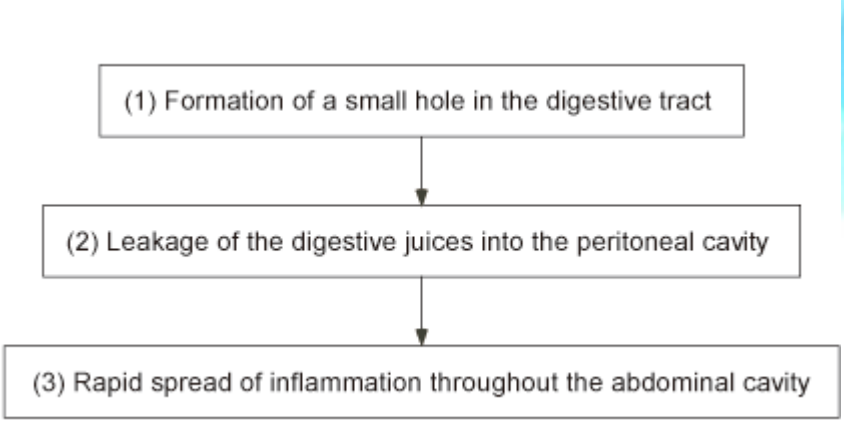
1. Extract, from the text, the definition of peritonitis.

   _____

   _____

2. Below is a diagram which shows how acute secondary diffuse suppurative peritonitis may develop.

Diagram of acute secondary diffuse suppurative peritonitis may develop.



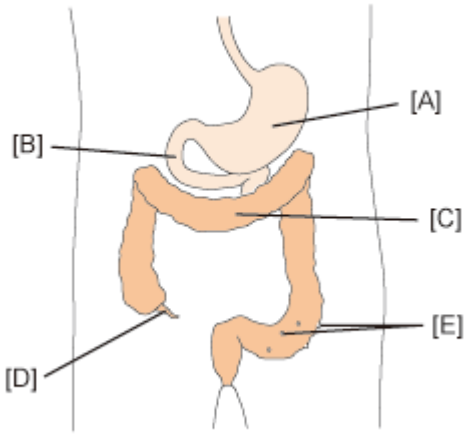
Source: www.emp-tmu.net/

a) List disorders which may cause a small hole in the digestive tract (mentioned in (1) of the diagram).

_____

_____

b) Choose, from the options in the illustration below, the organ(s)/structure(s) affected by each of the disorders described in the question above. Give the name(s) of the organ(s)/structure(s).



Source: www.emp-tmu.net/

c) How is formation of a small hole referred to in the text? Extract the expression from the same paragraph.

_____

_____

3. Septicemia is:

a) the seven blood types

b) tenderness caused by a sudden release of pressure on the abdomen

c) a systemic disorder caused by pathogenic microbes in the circulating blood

d) contraction of an injured muscle in response to pain during movement

4. The third paragraph addresses examinations when peritonitis is suspected.

a) Five types of examinations are mentioned. One is abdominal ultrasonography. What are the others?

_____

_____

b) Which of these are imaging techniques?

_____

_____

c) What does CRP stand for?

_____

_____

d) What does a rise in the CRP level signify?

_____

_____

5. What is:

a) a lesion?

_____

b) a region?

_____

c) a primary lesion?

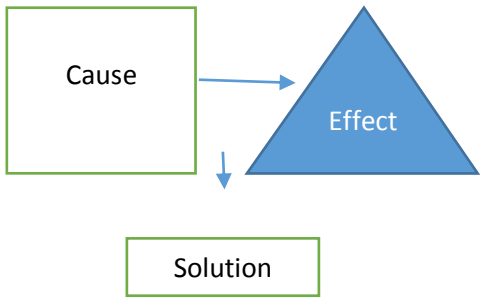
Post Reading Activity.

Complete the graphics of peritonitis and suppurative peritonitis

Peritonitis

Problem and Solution Map

Problem and Solution Map of peritonitis.

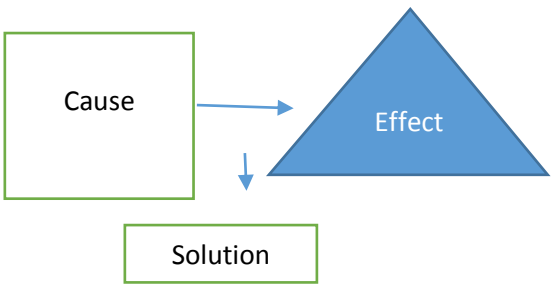


Author: Sandra Segarra

Suppurative Peritonitis

Problem and Solution Map

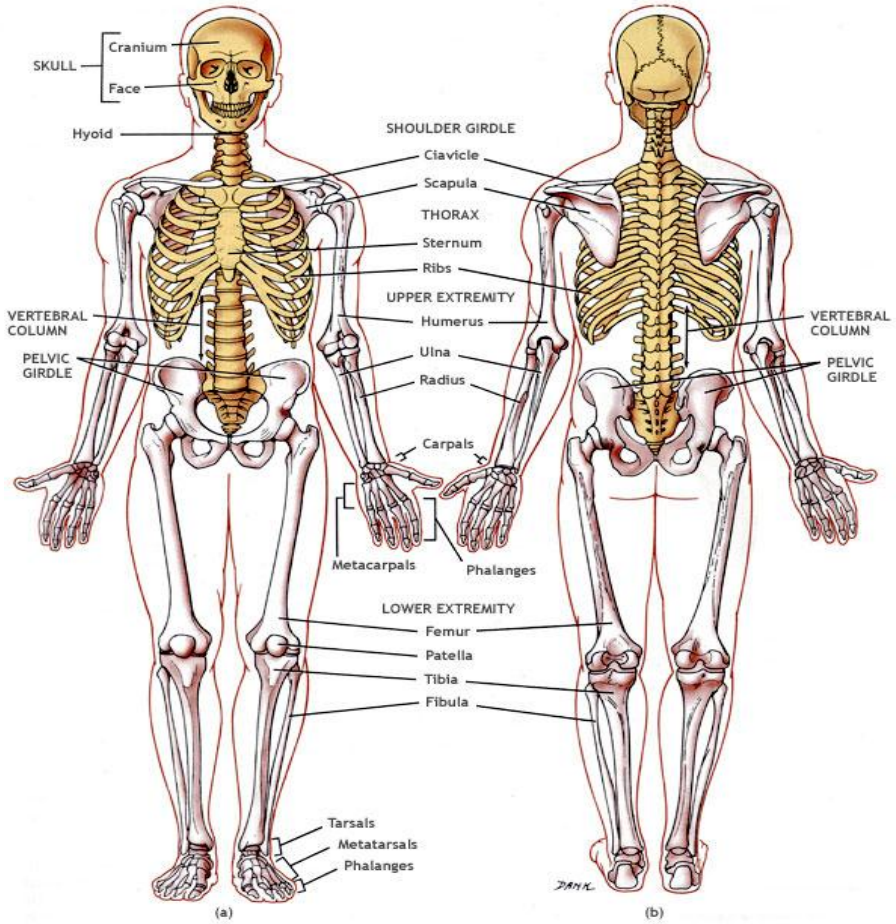
Problem and Solution Map of suppurative peritonitis.



Author: Sandra Segarra

TOPIC 7. MUSCULOSKELETAL SYSTEM

LESSON 7. MOTOR AND MUSCULOSKELETAL SYSTEM



Divisions of the skeletal system. The axial skeleton is indicated in gold. (a) Anterior view. (b) Posterior view

Source: Wikipedia

Pre-reading

Activity 1 Answer the following questions

What to Do About that Neck Pain?

_____

What causes lower back pain?

_____

How does a person know if he or she has osteoarthritis?

---

http://www.ninds.nih.gov/disorders/backpain/detail_backpain.htm

Technical Vocabulary

cervical vertebrae	noun**:** the seven bones which form the neck.
spondyl	noun**:** same as vertebra
spondylotic	adj: referring to spondyl
myelopathy	noun**:** any disorder of the spinal cord or bone marrow.
Numbness	noun: a loss of feeling or sensation
Ossification	noun**:** the formation of bone
cervical spine	noun**:** vertebral column
herniation	noun**:** development of a hernia
lumbar	adj: referring to the lower part of the back.
osteoarthritis	noun**:** a degenerative disease of middle~aged and elderly people characterized by inflamed joints which become stiff and painful.

General Vocabulary

Impairment	noun: symptom of reduced quality or strength, deterioration
Limping	noun**:** disability of walking due to crippling of the legs or feet.

Vocabulary Preview 1

Exercise 1. In each set, match the columns to the correct terms.

1. A compression of the spinal cord in the neck is ___ a. ossification
2. Abnormal sensation, including absent or reduced sensory perception as well as paresthesias is _____ b. spine
3. The process of creating bone, that is of transforming cartilage (or fibrous tissue) into bone is _____ c. numbness
4. the rigid bony structure in the midline of the back, composed of the vertebrae is _____ d. myelopathy

5. Abnormal protrusion of an organ or other body structure through a defect or natural opening in a covering membrane, muscle, or bone is _____

6. A chronic disease characterized by progressive degeneration of the cartilage of the joints, occurring mainly in older persons is ____

7. Of, near, or situated in the part of the back and sides between the lowest ribs and the pelvis is____

8. A compression of the spinal cord in the neck, it affects older adults, but affects men at an earlier age than women is _____

a. cervical spondylotic myelopathy

b. lumbar

c. herniation

d. osteoarthritis

Skim the Motor and Musculoskeletal System.

Write what the text is about.

_____

Scan. Complete the sentences.

1. Cervical spondylotic myelopathy (CSM) is a _____condition that arises when the spinal cord becomes compressed—or squeezed—due to the wear-and-tear changes that occur in the spine as we age.
2. The lowest part of the spine is called the _____. This area usually has five vertebrae. However, sometimes people are born with a sixth vertebra in the lumbar region.
3. A joint is where two or more _____ come together, like the knee, hip, elbow, or shoulder. Joints can be damaged by many types of injuries or diseases

The Motor and Musculoskeletal System

(Taken of the Japanese original by Dr. Masashi Komagata, Department of Orthopedic Surgery, Tokyo Medical University)

The second week of the module covers common disorders of the cervical and thoracic vertebrae, the lumbar and sacral vertebrae, the shoulder girdle, the upper limbs, the pelvis, the hip joints, and the lower limbs. To develop a systematic understanding, each disorder is discussed from the aspects of general description, causes, conditions, clinical and laboratory findings, differential diagnosis, progress and prognosis, and treatment examples.

Main points of the module

1. **Cervical vertebral** disorders

Cervical **spondylotic myelopathy** (CSM) is the most common disorder and accounts for about 90% of the cases of cervical vertebral disorders that require surgical treatment. It is mainly seen in middle and old age, and involves **numbness** of the limbs and motion impairments such as difficulty in writing and walking. Magnetic resonance imaging (MRI) reveals the multiple spinal cord compression at several spinal cord sites. CSM is progressive in most cases, and surgical treatment is necessary so that walking does not become impossible. Other common disorders include **ossification** of the posterior longitudinal ligament of the **cervical spine**, and cervical disk **herniation**.

3. **Lumbar vertebral** disorders

Common disorders of the lumbar vertebrae include **lumbar disk herniation** and **lumbar** spinal canal stenosis. Lumbar disk herniation is often seen in subjects in their 20s or 30s, while lumbar spinal canal stenosis tends to occur in the 60s or 70s. The former causes lumbago or sciatica, and is cured in most cases by conservative treatment. However, the conservative treatments are usually prolonged courses of therapy, and endoscopic surgery has been gaining increasing attention because it enables patients to return home on the day of the surgery. The latter condition is characterized by intermittent claudication (alternate periods of a few minutes of limping and then of resting), and most patients choose surgical treatment.

4. Joint disorders

The aging of society results in increasing numbers of cases of **osteoarthritis** of the hip or the knee. Although osteoarthritis in these joints was a common cause of inability to walk in the elderly, recent developments in artificial joint replacement technology have brought improved quality of life (QOL) to many elderly people. There is a well-known story about Jack Nicklaus, the professional golfer, who was forced to quit playing golf because of osteoarthritis of the hip. However, he underwent an operation to replace both hips with artificial joints, and received a round of applause when he returned and played a round of golf with Arnold Palmer and Gary Player in the Masters Tournament.

4. Limb surgery

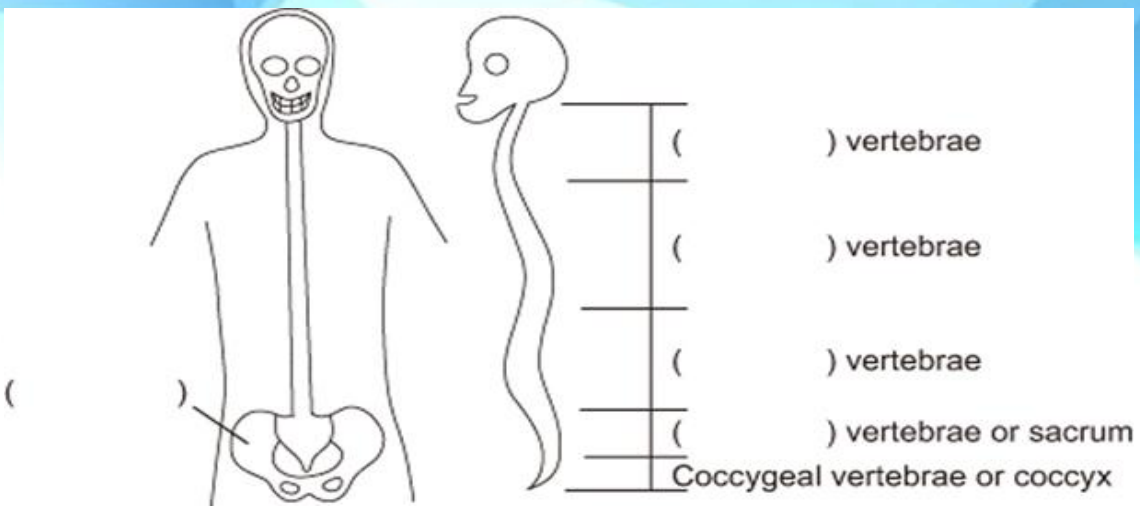
Hand surgery deals with congenital malformations, injuries, neuroparalysis, and tumors of the hands. A plastic surgeon discusses microsurgery such as that used in the reattachment of a severed finger. Leg and foot surgery includes important topics such as hallux valgus and congenital clubfoot.

While Reading Read and do the activities

Activity 1. Comprehension.

1. Fill in the brackets in the figure, using the terms in the box below.

Sacral	cervical	pelvis	thoracic	lumbar



Source: www.emp-tmu.net/

2. In CSM, what causes myelopathy? In CSM, is it required a surgical treatment? why?

_____

_____

3. Who are most likely to suffer from CSM?

_____

_____

4. What is the major symptom that patients with CSM complain of? How is CSM treated?

_____

_____

5. Name two common examples of the lumbar vertebral disorders discussed?

_____

_____

6. Describe the differences between these two common disorders, in terms of patient age, symptoms, and treatment.

_____

_____

7. Investigate it. Choose the best term from the following list to fill in the blank.

Osteoarthritis is a(n) _____ joint disease.

a) malignant

b) degenerative

c) musculoskeletal

d) intermittent

e) chondro-osteodystrophic

8 Investigate it. Which of the following refers to “hallux valgus”?

a) a disorder in which the foot is bent inward, and with which a baby may be born. It is also known as talipes varus.

b) abnormal eversion of the bones of the big toe at the metatarsophalangeal joint. It is frequently caused by wearing pointed and high-heeled shoes and is therefore often seen in women

c) a painful condition of the big toe, with swelling and inflammation at the metatarsophalangeal joint

Post-Reading activity.

What has contributed to improving the quality of life in elderly osteoarthritis patients? Explain your answer in 40 words.

_____

_____

_____

_____

_____

TOPIC 8. DELIVERY AND PREGNANCY

LESSON 8. CESAREAN SECTION


Source: Wikipedia

Pre-reading

.

Activity 1. Answer the following questions.

When a cesarean might be needed?

_____

Is a planned cesarean really more "convenient" than a vaginal birth?

_____

http://www.nhs.uk/conditions/Caesarean-section/Pages/Introduction.aspx
http://www.babycenter.com/0_c-section-by-choice_1498696.bc

Technical Vocabulary

breech	noun**:** the buttocks, especially of a baby.
cesarean	noun: an operation by which a fetus is taken from the uterus by cutting through the walls of the abdomen and uterus.
cephalopelvic	adj**.** referring to the head of the fetus and the pelvis of the mother.
cephalopelvic disproportion	noun: **(CPD)**a condition in which the pelvic opening of the mother is not large enough for the head of the fetus.

fetal	adj**:** referring to a fetus.
distress	noun**:** anguish or suffering
prolapse	noun: a condition in which has moved downwards out of its usual position.
uterus	noun**:** A hollow muscular organ in females, above the bladder. Inside it, a fertilized ovum develops into a baby.
Intrauterine	adj: inside the uterus (the organ in a woman's body where a baby develops)
Myoma	noun: a tumor composed of muscular tissue
Surgical	adj: pertaining to or involving surgery or surgeons.

Gneral Vocabulary

Threatened	adj**.** To indicate danger or harm
Overall	adj**.** From end to end
Trend	noun**:** A general tendency
Lump	noun: an area of swelling or growth on your body
Incisions	noun: a cut made into the body during surgery
Steadily	adv: gradually

Vocabulary preview 1

Exercise 1. Read and circle the correct meaning for the bold words.

1. If the head is not engaged near term in a pregnant woman, the clinical assessment of **cephalopelvic disproportion** is made by a combined abdominal and vaginal examination (Menrokerr Muller technique).

   a. A spontaneous vaginal delivery (SVD) occurs when a pregnant female goes into labor without the use of techniques to induce labor, and delivers her baby in the normal manner, without cesarean section.

   b. In the cephalopelvimetry (radiographic measurement) of the dimensions of the pelvis and the fetal head indicates when a baby's head or body is too large to fit through the mother's pelvis, the safest type of delivery for mother and baby is a cesarean.

2. Thirteen women in the propranolol group (52.0%) and 11 in the placebo group (40.7%) had a caesarean section. This difference was not statistically significant (p=0.59). No caesarean section was done for **fetal distress** in either of the groups.

a) Doctors prefer to call "nonreassuring fetal status" — occurs when a baby's oxygen supply is compromised in utero, usually during labor but occasionally in the third trimester of pregnancy.

b) To keep an eye on baby's movements every day and note that it is not normal for a baby to slow down the number of kicks towards the end of pregnancy – the movements change due to lack of space, but should never slow down are signals of a normal pregnancy state.

3. It reminds me of all the bulging sensations I had in my vulva when pushing during labour. I took a look down below last night and there are strange lumps at the opening of my vagina. I am wondering if these are varicose veins or a **prolapse**. Anyone any experience of either and what they might look like?

a) This usually occurs during sexual intercourse, where infection can cause severe inflammation of the fallopian tubes with swelling, collections of pus and abscesses and ultimately damage to the fallopian tube.

b) Vulval varicosities are varicose veins of vulval area very common in pregnancy. Your symptoms sound like them but you can also have a descend usually stress incontinence would occur with descend.

Exercise 2

Match the correct meaning with the correct words.

Fetal distress	cephalopelvic disproportion		prolapse	breech
myoma	intrauterine	uterus	cesarean	

1. A benign tumor composed of muscle tissue. _____
2. within the uterus. _____
3. A baby is in a bottom-down position. It's usually a temporary position during your third trimester. _____
4. Abnormally large size of the fetal skull in relation to the maternal pelvis, leading to difficulties in delivery. _____
5. A nonspecific clinical diagnosis indicating pathology in the fetus. The distress, which may be due to lack of oxygen, is judged by fetal heart rate or biochemical changes in the amniotic fluid or fetal blood. _____

EXERCISE 3. Complete with the appropriate term.

1. If your baby is_____ near the end of your pregnancy, you may feel discomfort under your ribs.
2. No cesarean section was done for _____ _____ in the patient of room 4.
3. An _____pregnancy is "good." It means the pregnancy is developing inside the uterus, which is the only place a pregnancy can progress to full term.

4. She had a _____ approximately the size of a 4-month fetus and heavybleeding.

5. Obese women were significantly to have dysfunctional labor or _____

While reading. Read the text and do the activities.

Skim Cesarean Section. Check (x) the best subtitle

1. _____What to expect in a Cesarean Section
2. _____What happens during the procedure
3. _____Factors affect mother and the fetus in the C-section

Cesarean Section

(Taken of the Japanese original by Dr. Junko Nagata, Department of Obstetrics and Gynecology, Tokyo Medical University)

A cesarean section is a surgical procedure for delivering a baby through incisions in the walls of the abdomen and the uterus.
(1)Frequency of cesarean sections

Of all deliveries in Japan, cesarean delivery accounted for approximately 5% in the 1970s, and the number increased steadily after 1980. In the 1990s the proportion of cases reached 15 to 20% at some hospitals, because of the increasing number of cesarean sections performed in women with a **breech** presentation, previous **cesarean** births, a preterm labor condition, or a multiple pregnancy.

(2) Indications of cesarean section

A – Possible factors in the mother

Contracted pelvis, rigidity of the birth canal, placenta previa, premature separation of the placenta (placental abruption), **cephalopelvic disproportion**, **intrauterine** infection, uterine **myoma,** cervical cancer, ovarian tumor, a congenital anomaly of the uterus, **threatened** uterine rupture, a repeat cesarean section, pregnancy-induced hypertension, and other maternal disorders such as diabetes and collagen disease.

B – Factors possibly affecting the baby

Fetal distress, prolapse or hernia of the umbilical cord, abnormal positions or abnormal rotations of the fetus, **intrauterine** growth retardation, premature birth, multiple pregnancy, and fetal anomalies.

The decision to perform a cesarean section rests on the patient's overall condition during labor, including weak uterine contractions and whether labor is prolonged or arrested, in addition to the above indications.

While Reading. Read and do the activities

Comprehension

1. What is a cesarean section?

   _____

   _____

   _____

2. Does the text mention any trend related to cesarean sections that has occurred in Japan in the last 40 years? If so, what is it?

   _____

   _____

3. Extract from the text the words defined below.

   a) labor that begins before the 37th week of pregnancy. _____

   b) a condition in which the fetus' head, rather than its buttocks, is positioned in the fundus (upper part of the uterus. _____

   c) pregnancy with more than one fetus. _____

4. Choose a factor from the list given in "A – Possible factors in the mother", and write a brief description.

   _____

   _____

5. Choose a factor from the list given in "B – Factors possibly affecting the baby", and write a

brief description.

_____

_____

Post-Reading Activity

Compare the natural birth with the cesarean birth.

Comparison of the natural birth with the cesarean birth.

T-Chart

Natural Birth	Cesarean birth

Author: Sandra Segarra

TOPIC 9. IMMUNITY AND ALLERGY

LESSON 9. ALLERGIC DISEASES

Source: Wikipedia

Pre-reading

Activity 1. Answer the following questions.

1. What exactly is an allergy?

   _____

   _

2. How do I know if I have a seasonal allergy?

   _____

   _

3. Can an allergy be cured?

   _____

   _

4. Are there any other remedies that work?

_____

http://www.besthealthmag.ca/best-you/allergies/allergies-everything-you-need-to-know/

Technical Vocabulary

airway	noun: a passage through which air passes, especially the trachea.
stenosis	noun: a condition in which a passage becomes narrow.
hyperresponsiveness	noun: also called the early phase of asthma
humoral	adj: relating to human body fluids, in particular blood serum.

spastic	adj: affected with or marked by spasticity or spastic paralysis.
smooth muscle	noun: a type of muscle found in involuntary muscles.
edema	noun: the swelling of part of the body caused by accumulation of fluid in the intercellular tissue spaces.
dyspnea	noun: difficulty or pain in breathing.
Epithelium	noun: the layer or layers of cells covering an organ, including the skin and the lining of all hollow cavities except blood vessels, lymphatics and serous cavities.

General Vocabulary

peak	noun. The most important point
flow	noun: the smooth motion characteristic of fluids.
Allocate	verb: to set apart for a special purpose, designate.
Switch	verb: to change or replace (something) with another thing.
Mites	noun: any of numerous small or minute arachnids of the subclass Acari, including species that are parasitic on animals and plants.

Vocabulary. Preview 1

1. Cross out the word that do not have similar meanings to the words in bold.

dyspnea	breathlessness	asphyxiation	exhalation
humoral	secretion	virus	aqueous humor
airway	air passage	air duct	tongue
edema	reapsortion	swelling	inflammation
stenosis	narrowing	expansion	constriction
hyperresponsiveness	sensation	hyposensitivity	hypersensitivity
Spastic	spasmodic	periodic	sporadic
Smooth muscle	involuntary muscle	flat	rough
Epithelium	epithelial tissue	epidermis	body

2. Complete with the appropriate words in exercise 1.

1. Bronchodilators are used to treat bronchial _____in asthma.
2. Swelling of the ankles, hands, and face may occur (called _____), caused by the retention of fluids in the mother.

3. Carotid_____ or narrowing of one of the major arteries which carries blood to the brain, can cause a stroke.

4. _____ pathology (Med.), the pathology, or doctrine of the nature of diseases, which attributes all morbid phenomena to the disordered condition of the fluids or humors of the body.

5. Solid food can block _____ and cause breathing difficulties.
6. Special observations of assessment of a patient who has **dyspnea** include: auscultation of the chest for abnormal breath and voice sounds.

Diseases producing chronic dyspnea may leave the patient with significant breathlessness despite maximal therapy.

7. The medical term "_____**"** became used to describe cerebral palsty. The Spastics Society, a UK charity for people with cerebral palsy, was founded in 1951.

8. _____in the lungs helps the airways to expand and contract as necessary.

9. The human airway epithelium, a surface of 1-2 M2, has the potential of exposure to a variety of oxidants, including hyperoxia, air-borne pollutants, cigarette smoke, and products of inflammation.

While reading. Read and do the activities about the reading

Activity 1. HIGHLIGHTING. Read Allergic diseases. Highlight the most important information.

Allergic Diseases

(Taken of the Japanese original by Dr. Tomoyuki Niitsuma, Third Department of Internal Medicine, Tokyo Medical University)

More than 30% of the Japanese population are thought to suffer from allergic diseases such as bronchial asthma, atopic dermatitis, hay fever and food allergies, and the number of people with allergic problems is increasing. Of the above diseases, bronchial asthma is sometimes fatal and was reported to be the cause of 3,701 deaths in 2003.

According to the "Asthma Prevention and Management Guidelines 2003, Japan", bronchial asthma is characterized by chronic airway inflammation, and various degrees of **airway stenosis** and **hyperresponsiveness**. It is recognized clinically by repeated coughing, wheezing, and difficulty in breathing. Airway stenosis is reversible, either spontaneously or by treatment. Airway inflammation involves numerous **humoral** factors, and many cells including eosinophils, T cells, mast cells, and respiratory epithelial cells. Recurrent airway inflammation often causes remodeling of the respiratory tract structure, consequently reducing the reversibility of airway stenosis. Inflammation and remodeling of the respiratory tract are considered to accelerate airway hyperresponsiveness.

Asthma risk factors are of two types: those involved in the onset of asthma, and those that aggravate the patient's condition. The former, which include allergens and irritants, cause airway inflammation, while the latter factors - such as physical exercise and psychological stress - induce asthma attacks. Although attacks of asthma are transitory, airway inflammation persists chronically. The basic principle of asthma management is to remove and avoid these factors, and medication is aimed at long-term prevention of airway inflammation and obstruction. It may be possible, by elimination of **mites** (Dermatophagoides), the major allergen likely to be inhaled indoors, to prevent an asthma attack or deterioration of a patient's condition.

The diagnosis of asthma is established on the basis of the presence of symptoms such as wheezing, sudden dyspnea, and repeated coughing at night and in the early morning.

The diagnosis can be confirmed by the results of clinical testing: reversibility of changes in degree of airway obstruction, improvement of peak expiratory flow (PEF) or forced expiratory volume in one second (FEV1) by more than 20% after beta 2 agonist inhalation, and the degree of airway contraction caused by acetylcholine, histamine, and methacholine (for evaluation of airway hyperresponsiveness).

Asthma is a chronic inflammatory disorder of the airway and involves hyperresponsiveness to various kinds of irritants, which causes **spastic** contraction of airway **smooth muscle**, **edema** of the airway mucosa, and hypersecretion of airway mucus. As a result, the airway undergoes obstructive changes, which cause **dyspnea**. Infiltration of cells such as eosinophils, T cells, and mast cells is seen in the airway. The presence of inflammation is a characteristic of asthma, and the **airway epithelium** is often damaged or detached. A patient with a prolonged asthma condition shows airway remodeling such as organic thickening of the airway wall, and a decrease in the reversibility of airway obstruction.

The main goal of asthma treatment is to prevent death due to asthma by advising careful avoidance of exposure to asthma risk factors in daily life, by providing pharmacotherapy without side effects, and by helping the patient to live the same kind of life as is enjoyed by healthy people.

Objective evaluation of the severity of asthma is essential. It is also important that proper medication be administered in both adult and pediatric patients following a number of steps based on the severity of the disease. If only subjective observations are taken into account, the severity of the asthma may be underestimated and the patient may be treated inappropriately. Therefore, the severity of asthma should be evaluated objectively, and peak flow monitoring is an easy and useful method for patients with asthma, particularly if they are adults.

Results obtained from asthma severity evaluation allocate each patient to one of the treatment steps (which specify the type and dose of drugs to be used). Generally, if the effect of medication is not sufficient, the patient must be moved to the next treatment

step. If the disease can be properly controlled over a longer period (about 3 months), the patient should be switched to a treatment step for less severe asthma.

Asthma is a chronic illness and requires patients to control their disease for years, but during this time, acute attacks may occur frequently. Therefore, drugs for asthma management are divided into controllers (drugs aimed at long-term management) and relievers (those aimed at subsiding acute attacks), and both are administered according to the appropriate treatment step. Controllers are long-acting bronchodilators, and anti-inflammatory agents such as inhaled steroids and leukotriene receptor antagonists. Relievers are short-acting bronchodilators and systemic steroids.

While Reading. Read and do these activities.

Activity 1. Comprehension

Scan Allergic diseases and answer the questions.

1 What is asthma?

---

a) What are three major signs mentioned in the second paragraph?

_____

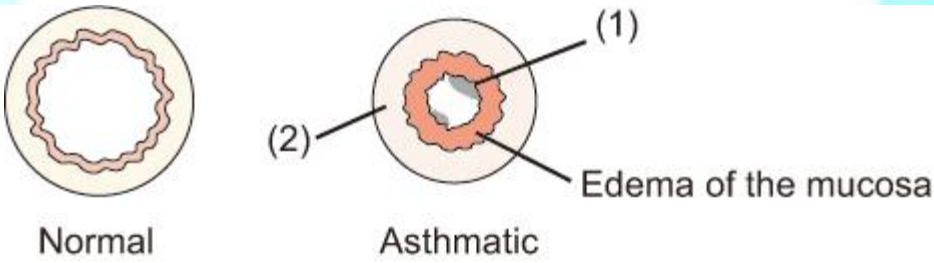
_____

_____

c) These conditions are associated with each other and, as a result, the bronchial tubes become:

1. Wider
2. Narrower

d) Below is a simple cross-sectional diagram of a bronchus in two conditions. The fifth paragraph gives three factors that lead to obstructive changes in the airway. Extract the answers for (1) and (2) from the text.



Source:www.emp-tmu.net/

2. a) Give a brief description of two types of asthma risk factors.

_____

_____

_____

b) How should the patient cope with the risk factors?

_____

_____

_____

3. There are several tests to determine the conditions of the lungs and of the airways.

a) What is measured by the PEF test?

_____

b) Give a brief description of FEV_1.

---

4. Why are acetylcholine, histamine, and methacholine used for evaluation of airway hyperresponsiveness?

_____

_____

5. In the last two paragraphs, a stepwise approach for managing asthma is mentioned.

_____

6. How are patients with asthma given drugs in this treatment? Extract, from the text, the part that describes it.

_____

_____

7. Drugs used for treatment of asthma are broadly divided into two types: controllers and relievers.

a) Describe these two types of drugs in simple words.

_____

_____

b) Investigate it. What effect do bronchodilators have on the bronchial tubes?

_____

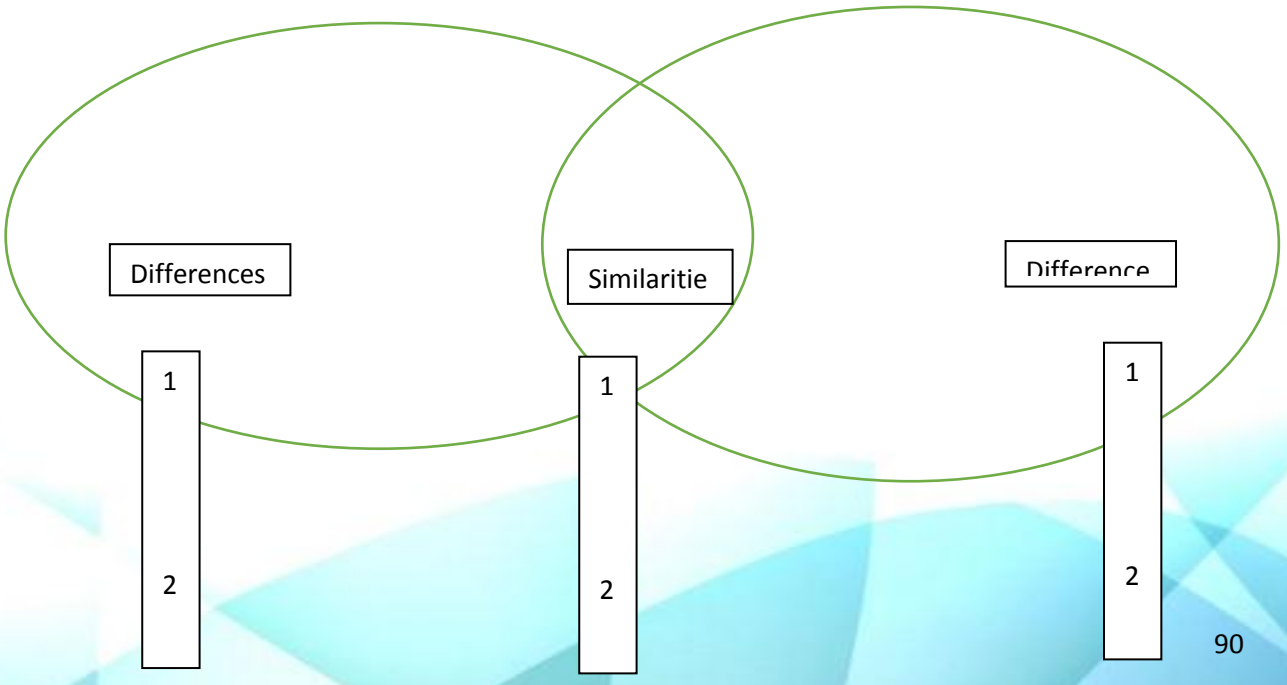
_____

Post-reading activity

Complete the Venn's diagram with the similarities and differences among these allergy diseases.

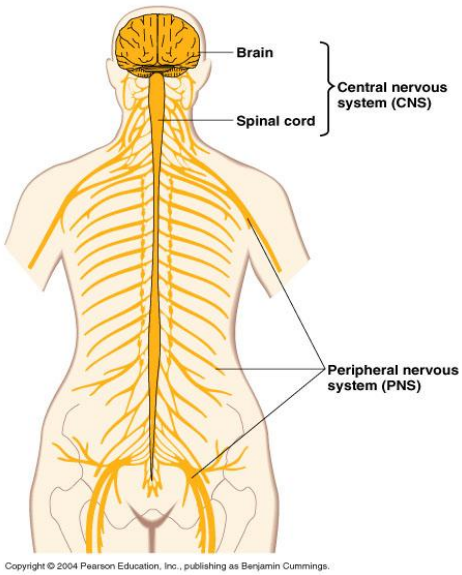
Compare and contrast: Asthma and epoc

Venn´s Diagram of asthma and epoc.



TOPIC 10. PARKINSON'S DISEASE

LESSON 10. LEVODOPA AND THE PROGRESSION OF PARKINSON'S DISEASE.



Source: Wikipedia

Pre-reading

Activity 1. Answer the following questions.

How quickly do you think the Parkinson's disease will progress?

_____

What physical changes can a patient expect?

_____

How will Parkinson's disease affect the people's work?

_____

What treatments do you suggest now? Will that change as the disease progresses?

_____

Technical Vocabulary

Levodopa noun: A natural chemical that stimulate the production of dopamine in the brain and is used to treat Parkinson's disease.

Bradykinesia noun**:** a condition in which someone walks slowly and makes slow movements because of disease.

Dopaminergic	adj**:** referring to a neuron or receptor stimulated by dopamine
substantia nigra	noun**:** a layer of large pigmented nerve cells in the midbrain that produce dopamine and whose destruction is associated with Parkinson's disease.
Dopamine	noun: a substance found in the medulla of the adrenal glands, which also acts as neurotransmitter.

General vocabulary

Flexed	verb**:** to bend especially repeatedly
gait	noun**:** the manner or style of walking.
hasten	verb**:** to speed up, accelerate.
Stiffness	adj: rigid or firm; difficult or impossible to bend or flex:

Vocabulary Preview 1

Exercise 1. Rewrite the sentences and match the phrases or words to the words in bold they can replace in the sentences

Levodopa

1. Parkinson´s disease can be treated with antibiotics, but the drug loses its effectiveness over time.

_____

Bradykinesia

2. A symptom of nervous system disorders, a condition called osteomyelitis which causes movements to slow down and weakness in balance and coordination.

_____

Dopaminergic

3. Dopamine stimulates both seizures and adrenergic (both alpha and beta) receptors.

Substantia nigra

4. Parkinson's disease results from a slow degeneration of a small area in the midbrain, called the cerebellum.

Dopamine

5. Discovered as a Parkinson's treatment by Arvid Carlsson, levodopa is a natural chemical precursor that is transformed into hormones by the brain.

While Reading. Read the topic and do the activities.

Skim the text

1. Underline the topic sentence in the paragraph.

Levodopa and the progression of Parkinson's Disease

(Reproduced with permission from Levodopa and the progression of Parkinson's disease. N Engl J Med. 2004 Dec 9;351(24):2498-508)

Parkinson's disease is a progressively disabling neurodegenerative disorder that is manifested clinically by **bradykinesia**, tremor, rigidity, flexed posture, postural instability, and freezing of gait. It is characterized pathologically by the loss of pigmented **dopaminergic** neurons in the **substantia nigra**. The course of the clinical decline parallels that of the progressive degeneration of the remaining dopaminergic neurons.[1] The use of levodopa as **dopamine**-replacement therapy is highly effective in ameliorating the symptoms of the disease and remains the standard drug with which other therapies are compared.

Because levodopa and dopamine can generate reactive oxygen species and induce the degeneration of cultured dopamine neurons, concern has been raised that levodopa

could enhance oxidative stress and hasten the degeneration of residual dopamine neurons in patients with Parkinson's disease.[4-6] However, levodopa is not toxic in animals and may be trophic and promote the functional recovery of damaged nigral neurons. Humans without Parkinson's disease who are exposed to levodopa do not develop nigral damage, but such persons do not have increased oxidative stress in their substantia nigra neurons.

Whether levodopa is detrimental, beneficial, or without effect on the rate of the progression of Parkinson's disease is unknown and extremely important, both scientifically and clinically. We therefore conducted a controlled clinical trial to assess the effect of levodopa on the course of Parkinson's disease.

Scanning questions

1. Parkinson's disease is a disorder in which the nerves gradually degenerate. What clinical signs are shown by patients with Parkinson's disease? Choose the appropriate ones from the list below.

(a) shaking	(b) paralysis
(c) unstable posture	(d) stiffness
(e) slowness of movement	(f) shortening of limb length
(g) reduced bone strength	(h) difficulty in walking
(i) weakness of the joints	(j) bent posture

2. What pathological signs are shown by patients with Parkinson's disease?

_____

3. Read the following sentence. According to this statement, which of the following is true?

"The course of the clinical decline parallels that of the progressive degeneration of the remaining dopaminergic neurons." (First paragraph)

4. According to the above statement, which of the following is true?

a) There is no clear connection between the clinical decline and the progressive degeneration of the remaining dopaminergic neurons.

b) Treatment is given according to the degree of degeneration in the remaining dopaminergic neurons.

c) The more the residual dopaminergic neurons degenerate, the worse the clinical conditions become.

5.- Fill in the blanks

Levodopa is used for the treatment of Parkinson's disease, because it restores _____ whose loss is shown by patients with Parkinson's disease.

6.Answer these questions.

a) The favorable result has been clinically demonstrated. How about the unfavorable result? Has it been demonstrated clinically or experimentally?

_____

b) What results from reactive oxygen species generated by levodopa or dopamine?

_____

c) Because of reactive oxygen species generated by levodopa, oxidative stress in the substantia nigra neurons could be increased. As a result, what could happen?

_____

d) What happens to people without Parkinson's disease, if they take levodopa? Answer with reference to nigral damage and oxidative stress in the substantia nigra neurons.

_____

e) Because levodopa is not toxic in animals, what beneficial effects can be expected?

_____

6. Circle the correct. The issue of whether levodopa is detrimental, beneficial, or without effect on the rate of the progression of Parkinson's disease is extremely important because:

a) increased oxidative stress is not shown by people who do not suffer from Parkinson's disease and who take levodopa.

b) levodopa effectively alleviates signs of Parkinson's disease, but it could accelerate its a progression.

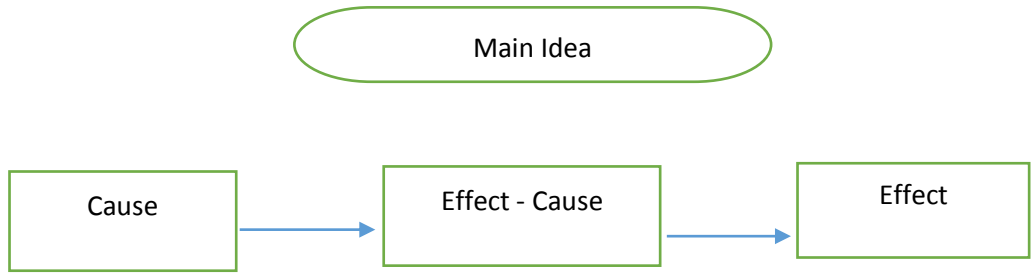
c) levodopa is not toxic in animals and it is also expected to be effective in humans.

Post- Reading Activity.

Complete the graphic about the reading in the first paragraph.

Sequential Episodic Map of Levodopa and the progression of Parkinson´s disease.

Sequential Episodic Map



Author: Sandra Segarra

Answers section of vocabulary previews

I The heart

1. Match the terms with the definitions

1.g. 2 c. 3. f. 4. a 5.d. 6. e. 7. b.

2. Complete with the correct word

1. Defibrillation
2. Pacemaker
3. Electrocardiogram
4. Arrthymias.
5. Heartbeat
6. Cardiomyocytes
7. catheterization

II Anesthesia.

1. Match the pictures with the words**.**

1. Inhalation
2. Pneumonectomy
3. Supine
4. Hyperpyrexia
5. Atelectasis

2. Complete the sentences with the correct term.

1. Pneumonectomy
2. Supine
3. Hypoxemia
4. Hypercapnia
5. Hyperpyrexia
6. extrasystole
7. oliguria
8. lumen
9. opidoid

III Ear, nose, and throat

2. Read the following sentences and choose the correct term

1. Perichondritis
2. Antrum
3. Cholesteatoma
4. Otosclerosis
5. Ossicles
6. Otitis.

IV Diabetes

1. Answer Diabetes Mellitus

1.glucose	3. Insulin	5. hyperglycemia	7. Pancreatic
2. glucose	4. Insulin	6. Ketoacidosis	8 starvation

V. Cataract

1. Read and circle the correct meaning for the words in bold

1.a 2b 3a 4b 5b 6a 7.a

VI Peritonitis

1. a.	3. b.	5.b.	7. a
2. b	4.a	6. b.	8.b

VII Motor and Musculoskeletal System

Scan the text

1.Neck 2. Lumbar spine 3 bones

1. In each set, match the columns to the correct terms.

1. Myelopathy
2. Numbness

3. Ossification
4. Spine
5. Herniation
6. Osteoarthritis
7. Lumbar
8. Cervical spondylotic myelopathy.

VIII Pregnancy and Delivery.

1. 1.b 2.b 3.a. 4.b

1 Answers

1. Myoma
2. Intrauterine
3. Breech
4. Cephalopelvic disproportion
5. Fetal distress

IX Inmmunity and Allergy

1. Hyperresponsiveness
2. Edema
3. Stenosis
4. Humoral
5. Airways
6. Dyspnea
7. Spastic
8. Smooth muscle

X Parkinson´s disease

1. Antibiotics- levodopa
2. Osteomyelitis- bradykinesia
3. Adrenergic - dopaminergic
4. Cerebellum – substantia nigra
5. Hormones- dopamine