

I. REVISION. Endocrine system.

Insert the missing words from the box.

thyroid gland, temperature, kidney, intestine, adrenal, thyroid, pituitary gland, regulates

1. The _____ secretes at least nine hormones that regulate numerous body functions and other endocrine glands.
2. The hypothalamus _____ pituitary gland activity through neuro-hormones.
3. The _____ is just inferior to the larynx.
4. Thyroid hormones increase the rate of glucose, fat, and protein metabolism in many tissues, thus increasing body _____.
5. Normal growth of many tissues is dependent on _____ hormones.
6. The adrenal glands are near the superior pole of each _____.
7. The _____ *adrenal* _____ hormones prepare the body for physical activity.
8. The pancreas is located along the small _____ and the stomach.

II. Anaesthesiology: vocabulary and terminology.

1. Vocabulary in use.

to induce sleep		
analgesia	/ænəl 'dʒi: zɪə/	
peripheral nerve bundles		
interscalene block	/ɪntəskə 'li: n/	
axillary block	/æk 'sɪləri/	
femoral nerve block	/'femərəl/	
subarachnoid block	/sʌbə 'ræknoɪd/	
indwelling catheters	/'kæθɪtə/	
intermittent	/ɪntə 'mɪtənt/	
cerebrospinal fluid	/serɪbrɔʊ 'spɪnəl/	
lumbar vertebra	/'lʌmbə/	
sacral vertebra	/'seɪkrəl/	
nipple		
thoracic dermatome	/θɔ: 'ræsɪk/	
to exert an effect	/ɪg 'zɜ: t/	
sedation		
itching		
haemorrhoids	/'heməroɪdz/	
to numb		
catheterization	/'kæθɪtəraɪzeɪʃn/	
cystoscopy	/sɪs 'tɒskəpi/	
complication	/kʌmplɪ 'keɪʃn/	
mishap	/'mɪʃæp/	
adverse reaction	/əd 'vɜ:s/	
dizziness		

2. READING. Read the text and answer the questions.

ANAESTHESIA

Anaesthesia is the loss of feeling or sensation. It may be accomplished without the loss of consciousness, or with partial or total loss of consciousness.

Anaesthesiology is a branch of medical science that relates to anaesthesia and anaesthetics. The anaesthetist is a specialized physician in charge of supervising and administering anaesthesia in the course of a surgical operation. Depending on the type of operation and procedures used, there are two types of anaesthesia: general anaesthesia, which causes a loss of consciousness, and local anaesthesia, where the anaesthetic “freezes” the nerves in the area covered by the operation. In local anaesthesia, the patient may be conscious during the course of the operation or given a sedative, a drug that induces sleep.

General: anaesthesia resulting in amnesia, with a loss of protective airway reflexes. While usually administered with inhalational agents, general anaesthesia can be achieved with intravenous agents, such as propofol. Amnesia is the main characteristic, while analgesia and muscle relaxation may be present, to varying degrees.

Regional: loss of pain sensation, with varying degrees of muscle relaxation, in certain regions of the body. It is administered with local anaesthesia to peripheral nerve bundles, such as the brachial plexus in the neck. Examples include the interscalene block for shoulder surgery, axillary block for wrist surgery, and femoral nerve block for leg surgery. While traditionally administered as a single injection, newer techniques involve placement of indwelling catheters for continuous or intermittent administration of local anaesthetics.

Spinal: also known as subarachnoid block. It refers to a regional block resulting from a small volume of local anaesthetics being injected into the spinal canal. The spinal canal is covered by the dura mater, through which the spinal needle enters. The spinal canal contains cerebrospinal fluid and the spinal cord. The subarachnoid block is usually injected between the 4th and 5th lumbar vertebrae, because the spinal cord usually stops at the 1st lumbar vertebra, while the canal continues to the sacral vertebrae. It results in a loss of pain sensation and muscle strength, usually up to the level of the chest (nipple line or 4th thoracic dermatome).

Epidural: it is a regional block resulting from an injection of a large volume of local anaesthetic into the epidural space. The epidural space is a potential space that lies underneath the ligamenta flava, and outside the dura mater. This is basically an injection around the spinal canal.

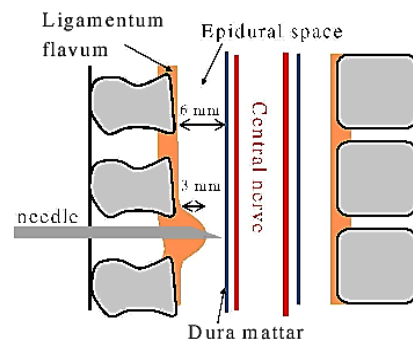
Local anaesthesia is similar to regional anaesthesia, but exerts its effect on a smaller area of the body.

Not all surgical procedures require anaesthetic.

Sometimes no anaesthetic is required, and conscious sedation is used, which does not result in loss of consciousness or significant analgesia, but frequently produces a degree of amnesia, and relaxes the patient.

Local anaesthetics block pain in regions of the body without affecting other functions of the body or overall consciousness. They are used for medical examinations, diagnoses, minor surgical and dental procedures, and for relieving symptoms of minor distress, such as itching, toothaches, and haemorrhoids. They can be taken as creams, ointments, sprays, gels, or liquid; or they can be given by injection and in eye drops.

Some local anaesthetics are benzocaine, bupivacaine, cocaine, lidocaine, procaine, and tetracaine. Some act rapidly and have a short duration of effect, while others may have a slow action and a long



duration. Sprays can be used on the throat and related areas for a bronchoscopy, and gels can be used for the urethra to numb the area for catheterization or cystoscopy.

Spinal anaesthesia is used for surgery of the abdomen, lower back and legs. Spinal or epidural anaesthesia is also used for surgery on the prostate gland and hip. A fine needle is inserted between two vertebrae in the lumbar (lower part) of the spine and the anaesthetic flows into the fluid surrounding the spinal cord. The nerves absorb the anaesthetic as they emerge from the spinal fluid. The area anaesthetized is controlled by the location of the injection and the amount of absorption of the anaesthetic by the spinal fluid.

There are a number of possible complications that can occur under general anaesthesia. They include loss of blood pressure, irregular heartbeat, heart attack, vomiting and then inhaling the vomit into the lungs, coma, and death. Although mishaps do occur, the chance of a serious complication is extremely low. Avoidance of complications depends on recognition of the condition of the patient before the operation, the choice of the appropriate anaesthetic procedure, and the nature of the surgery itself. It is possible to have adverse reactions to local anaesthetics, such as dizziness, hypotension (low blood pressure), convulsions, and even death. These effects are rare but can occur if the dose is too high or if the drug has been absorbed too rapidly. A small percentage of patients (1–5%) may develop headaches with spinal anaesthesia.

- 1) What types of anaesthesia are used nowadays in surgery?
- 2) What is the difference between general, local, regional, spinal and epidural types of anaesthesia?
- 3) When are different types of anaesthesia used?
- 4) What complications can general and local anaesthesia cause?

3. Read the sentences and fill in the gaps using the words from the box.

- 1) The _____ will make sure you are unconscious during the operation.
- 2) This _____ has performed hundreds of resections.
- 3) An important _____ guideline is not to eat for 12 hours before surgery.
- 4) In the recovery room a nurse will give you medications to take _____.
- 5) Visitors can see patients in the _____ after surgery.
- 6) Please, prepare the _____ for the next procedure.
- 7) The _____ of this tumor should save the rest of the patient's lung.
- 8) Please, be here at 6:30 in the morning for the _____.

operation
operating room
pre-op
post-op
surgeon
resection
anesthesiologist
recovery room

III. Surgery

1. Vocabulary

malformation	[mælfɔ: 'meɪfɒn]
deformity	[dɪ'fɔ: 'mɪtɪ]
excision	[ək'sɪʒən]
incision	[ɪn'sɪʒən]
congenital	[kən' dʒenɪtəl]
acquired	[ə'kwɪrɪd]
hernia	['hɜ: 'niə]
abscess	['æbses]
cleft palate	[kleft 'pæɪlt]
morbidity	['mɔ: 'bɪdɪ]
to approve	[ə'pru:v]
to fit	
to justify	['dʒʌstɪfaɪ]

anesthesia	['æni:s'ti:ziə]
asepsis	[ə'sepsɪs]
wound	[wu:nd]
dressing	
suture	['su:tʃə]
autoclave	['ɔ:tə,kleɪv]
enema	['eni:mə]
accuracy	['ækjərəsi]
to substitute	['sʌbstɪtju:t]
gauze	[gɔ:z]
sterile	['steraɪl]
stitch	[stɪtʃ]
overshoes	['əʊvə,ʃu:z]

2. Read the definitions and find the terms which are described.

1)	– a specialist who deals with a broad category of invasive medical treatment that involves the cutting of a body;
2)	– an injury usually involving division of tissue or rupture of the integument or mucous membrane, due to external violence or some mechanical agency rather than disease;
3)	– the loss of feeling or sensation;
4)	– another name for the stitches used in sewing up the opening after the operation;
5)	– the practice to reduce or eliminate contaminants (such as bacteria, viruses, fungi and parasites) from entering the operative field;
6)	– the condition of part of the body being wrongly formed;
7)	– free from or cleaned of germs and other microorganisms;
8)	– the branch of the medical science concerned with the study of the structure of diseased organs and tissues;
9)	– the surgical removal of a foreign body or of tissue.

4. Match the terms with their definitions.

1 - sterile	5 - excision
2 - clamp	6 - scalpel
3 - surgery	7 - suture
4 - transplant	8 - anaesthesia

A the act of moving an organ from one body to another
– _____;

B a medical specialty that involves the use of manual and instrumental techniques to treat a disease or injury – _____;

C a medical method of preventing sensation, used to eliminate pain – _____;

D a stitch used to hold tissue together – _____;

E free of all living microorganisms – _____;

F the complete removal of an organ, tissue or tumor from the body – _____;

G a device used to hold objects in place – _____;

H a very sharp knife used to make incision and other cuts – _____.

3. Listen to and read the pamphlet on surgery. Then, choose the correct answers.

Before Your Operation: What You Need to Know

It is common to feel nervous before **surgery**. While there are risks involved in any **operation**, it is important for you to feel calm, and confident in your **surgeons**. This pamphlet will help you prepare for your procedure.

You will meet with several doctors **pre-op** to discuss the details of your operation. Surgical preparation depends on the patient and the procedure. A heart **transplant** is quite a different operation than the **resection** of a lung tumor or gall bladder **excision**. In any case, an **anesthesiologist** will speak to you about being put to sleep during the operation. You will likely be under **anesthesia** the entire time you are in the **operation room**.

Surgeons have many tools to help them perform their tasks. Be assured these tools are **sterile**, with replaceable parts changed between each operation. **Scalpels** help surgeons make very precise incisions and other cuts, while **clamps** temporarily hold things together. When you wake up, you will have **sutures** holding your incisions together. Your surgeon will tell you when these can be removed.

After the operation you will awake in the **recovery room** to begin the **post-op** healing process. This will involve regular medication and follow-up visits to your surgeon and other doctors.

1) *What is the purpose of the pamphlet?*

- A to reduce the risks of surgery
- B to get patients' consent for surgery
- C to provide instructions for post-op recover
- D to inform patients about the events surrounding surgery.

2) *Which of the following does NOT occur before surgery?*

- A An anesthesiologist speaks to the patient.
- B Surgical instruments are sterilized.
- C A surgeon discusses the details of the procedure.
- D The sutures are put in place.

3) *What is the purpose of scalpels?*

- A to make very precise cuts
- B to allow incisions to heal
- C to sterilize surgical tools
- D to make a patient unconscious.

5. Read the text.

OPERATION

The patient was wheeled on a stretcher cart to the operating room. At that time preparation for the operation was being carried on in the operating room. The surgical nurse was getting sterile gowns and dressings ready, sterilizing the necessary set of surgical instruments, preparing the apparatuses for blood transfusion, checking up the presence and state of blood substituting solutions and preserved blood.

First of all, the surgeon and his assistants began to prepare their hands – they bared their arms above the elbow, scrubbed their hands and forearms for 15 minutes with soap and brush under hot running water. Then the doctors rinsed their hands twice in the solution of ammonium chloride. After rinsing the hands were sponged with alcohol and the nails painted with iodine. It is essential that persons engaged in surgical work keep their nails trimmed short and clean. The doctors put on sterile caps and masks and having entered the operating room they put on sterile gowns and rubber gloves.

The patient was prepared for the operation; premedication was over, the abdomen was shaven and the patient was lying on the operating table. The anesthesiologist began giving intratracheal anesthesia. The patient fell asleep.

The surgeon painted the operative field with iodine and covered the patient with sterile sheets leaving bare only the operative field. The surgeon made a midline abdominal incision with a scalpel. Bleeding was stopped with the clamps.

On laparotomy turbid exudates and food mass were found in the abdominal cavity. The stomach being lifted up, a perforated ulcer 0.5 cm in diameter was found on the posterior side of the lower portion of the stomach. The resection of the stomach was performed. Having cleansed the abdominal cavity from exudates and food mass and having introduced antibiotics into it, the surgeon closed the abdominal wound in layers with drainage. A patch was stuck on the wound. 300 ml of blood and 500 ml of glucose were transfused during the operation. The patient survived the operation well.

The patient was taken on a stretcher cart from the operating room to his ward. His postoperative course was uneventful. No complications were noted, the wound was healing well. On the 7th postoperative day the stitches were taken out.

6. Answer the following question.

- 1) What was done to prepare the patient for the operation?
- 2) How did surgeons prepare their hands?
- 3) What kind of anesthesia was given to the patient?
- 4) What was found in the abdominal cavity on laparotomy?
- 5) How did the surgeon close the abdominal wound?
- 6) What did the surgeon do before closing the abdominal wound in layers?
- 7) How did the patient survive the operation?
- 8) What was the patient's general state after the operation?

6. An operation report usually includes the following sections:

- | | |
|---------------------------------|--|
| 1) <i>diagnosis</i> , | 4) description of the <i>procedure</i> itself, |
| 2) type of <i>anaesthesia</i> , | 5) type of <i>closure</i> . |
| 3) kind of <i>incision</i> , | |

Read the sentences and organize them according to the structure of the operation report.

- A The external oblique aponeurosis was divided and the spermatic cord mobilized. The hernial sac was identified and separated from the spermatic cord.
- B Thereafter the posterior wall of the inguinal canal was repaired in two layers.
- C Right inguinal.
- D The hernial sac was identified and separated from the spermatic cord.
- E The patient had an indirect right inguinal hernia.
- F The fascia at the neck of the spermatic cord was divided, carefully preserving the vessels, the genital branch of the nerve and the vas deferens.
- G The wound was closed in layers with Dexon suture material to the external oblique aponeurosis and staples to the skin.
- H Spinal anaesthetic with local anaesthetic infiltration.
- I The hernial sac was then mobilized back to its neck where it was transfixed and the redundant tissue excised.