MALE REPRODUCTIVE SYSTEM

STRUCTURES AND FUNCTIONS

Write the name of the appropriate structure beside its function. Choose from the following list:

BULBOURETHRAL GLANDS  PROSTATE
EJACULATORY DUCT  SCROTUM
EPIDIDYMIS  SEMINAL VESICLES
GLANS PENIS  SEMINIFEROUS TUBULES
INTERSTITIAL TESTICULAR CELLS  TESTES
PREPUCE (FORESKIN)  VAS (DUCTUS) DEFERENS

- sac which contains the testes: ________________________________
- location of the urethral orifice: ______________________________
- produce spermatozoa and testosterone: ______________________
- produce testosterone: ______________________________________
- glands below the prostate, secrete fluid into the urethra: ______
- glands that secrete fluid into the vas deferens: __________________
- gland at the base of the urinary bladder, secretes fluid into the urethra: __________________
- carries sperm from the epididymis toward the urethra: __________________
- carries sperm from the seminiferous tubules to the vas deferens: __________________
- produce sperm in the testes: ________________________________
- carries semen from the seminal vesicles to the urethra: __________________
- covers the glans penis in uncircumcised men: ________________________________

DID YOU KNOW THAT...?

Work in groups of 4. Each of you should read 2 of the following items and tell the group about it.

- the penis of many mammals contains a bone of variable shape called os penis or baculum?
- it was as late as 1878 that the practice of castration for male singers in the papal choir was finally abolished by Pope Leo XIII?
• male sexual function requires the synergistic, rather than antagonistic, action of the parasympathetic (to stimulate the bulbocavernosus muscles at the base of the penis) and sympathetic systems (to stimulate the smooth muscles in the urethral wall whose contractions help to eject the semen)?

• ejaculated spermatozoa can live up to 5 days at body temperature?

• the terms sperm and semen are often used as synonyms, although the first means spermatozoa, and the second sperm plus glandular secretions that are contained in the ejaculated fluid?

• the terms infertility and sterility are often used as synonyms, although infertility is in many cases treatable, while sterility is a permanent condition?

• in some cases male infertility may be the result of the testes being exposed to excessively high temperatures over a prolonged period of time (e.g. in saunas, or at work as long-distance drivers)?

• vasectomy, the procedure of making a male sterile by removing a segment of the vas deferens, can in some cases be reversed through a procedure called vasovasostomy (the reconnection of the cut-off ends of the vas deferens)?

Translate:

MUŠKA MENOPAUZA - MIT ILI STVARNOST?

Andropauza je naziv za pad proizvodnje muških hormona u tijelu sredovječnog muškarca. Sindrom ima mnoge simptome, među kojima je najčešći nemogućnost postizanja erekcije i/ili smanjen libido, depresija te smanjivanje mišićne snage.
Neka su istraživanja pokazala da liječenje testosteronom djeluje na isti način kao i liječenje estrogenom kod žena u menopauzi. No kako su nepoželjni učinci testosterona pogoršavanje postojećih bolesti prostate ili krvоžilnog sustava, muškarci s takvim bolestima neće biti obuhvaćeni u daljnjim istraživanjima.

Translate:

SMOKING AND ERECTILE DYSFUNCTION

Beside other possible physiological causes, vascular impairment in particular is highly associated with erectile dysfunction. Among vascular diseases that are recognized as risk factors, myocardial infarction, coronary bypass surgery, stroke, peripheral vascular disease, and hypertension have been singled out. Recent interest has turned towards cigarette smoking as a risk factor of erectile dysfunction, presumably along the basis that the harmful substances
-contained in cigarettes exert adverse effects on penile circulation relevant to erectile function.

**PROSTATE CANCER**

Read about a study on how lifestyle may relate to the risk of developing prostate cancer, and then decide if the statements below are true or false. Mark the lines which support your decision:

A recent study suggests that men might reduce their risk of developing prostate cancer by adopting a low-fat diet and taking regular aerobic exercise. It was reported that the growth of androgen-dependent prostate cancer cells in serum samples from overweight, sedentary men aged 42 – 73 years old decreased by 30% after 11 days on a low-fat, high-fibre diet, and exercise program. Serum from men of the same age who had been following the same diet and exercise program in an extended study lasting approximately 14 years reduced cell growth by a further 15%. There was no difference in the growth of androgen-independent prostate cancer cells in serum samples taken before and after the program of diet and exercise.

1. Regular exercise and a low-fat diet may help to prevent prostate cancer.
2. The surveyed men were fat, middle-aged to elderly and manual workers.
3. They went on a two-week diet and exercise program.
4. Urine samples were obtained from the surveyed men.
5. The growth of androgen-dependent cancer cells in the trial diminished by 30%.
6. There was another long-term study group of men involved.
7. The growth of androgen-independent cancer cells was reduced by 15%.

**PLUS...**

Complete the text with the correct form of the words in brackets:

The accepted fact that early (1) _____________ (DETECT) of prostate cancer depends on the PSA (prostate-specific antigen) test, in which an (2) _____________ (ELEVATE) of the protein tumor marker PSA indicates the (3) _____________ (PRESENT) of prostate cancer, is becoming (4) _____________ (CONTROVERSY). First, studies showed that many men who were (5) _____________ (DIAGNOSIS) with cancer had normal levels of PSA. Further research then suggested that the rate of increase of PSA, and not its absolute level, was a (6) _____________ (RELY) (7) _____________ (INDICATE) of the risk of the (8) _____________ (POSSIBLE) fatal disease. (9) _____________ (CONSEQUENCE), new standards for interpreting PSA readings have been (10) _____________ (SUGGESTION), but for the time being it is felt that they would result in too many unnecessary biopsies and cases of overtreatment.
SEXUALLY TRANSMITTED DISEASES (STD)

I Match the names of the following STDs with their short descriptions:

1 CHLAMYDIAL INFECTION
2 GENITAL HERPES
3 GONORRHEA
4 HPV INFECTION
5 SYPHILIS

A bacterial infection of the genital mucosa, but possibly of other mucous membranes as well; characterized by urethritis with pain and purulent discharge in men, while often asymptomatic in women; treated with antibiotics; if untreated, can result in sterility, arthritis, meningitis and endocarditis

B bacterial infection characterized by skin lesions called chancres in the primary stage; treated with antibiotics; if untreated, progresses to secondary and tertiary stages and results in degenerative changes in various body systems

C bacterial infection, usually asymptomatic except for an occasional whitish discharge from the penis or vagina; treated with antibiotics; if untreated, can cause chronic inflammation, damage to the fallopian tubes and consequently infertility in women

D viral infection; usually asymptomatic, resolves spontaneously; if persistent, closely associated with the incidence of cervical carcinoma

E viral infection of the genital skin and mucosa characterized by small, fluid-filled blisters and ulcers, initially accompanied by inguinal lymphadenopathy, fever, and malaise; remission and relapse periods are typical; no effective cure

PLUS...

Researchers have developed a vaccine that appears to be 100% effective against the two strains of HPV that cause 70% of cervical cancers.

II Read the text about SAFE SEX and mark the lines that give you the following information:

- which two concerns can be avoided by practising safe sex
- how the number of STD cases has changed recently
- why older women often put themselves at risk
- why most STD infections pass undetected
- why an STD infection should always be treated seriously
- how the majority of new HIV infections occur
- how gonorrhea is related to a possible HIV infection
An unwanted pregnancy is probably the primary concern of individuals using condoms, but the prevention of contracting a sexually transmitted disease (STD) should be of equal importance. Latest figures concerning the number of new STD infections worldwide reveal that the incidence of STDs has never been higher, and is still rising, which means that every act of unprotected sex with a new partner can put one at risk of catching an STD, with a range of long-term health implications. It is not just people in their teens and twenties who are at risk. Surveys show a surprising number of women over 30 being extremely careless when having sex with a new partner. Older women, single after separating from a long-term partner, comfortable using the pill, forget about other health concerns as their sex life changes. But just taking a risk once may be enough. According to latest statistics, only in Britain more than one million people a year are infected with an STD. However, most of them don't even realize they are infected, because often the infection is symptomless or symptoms are non-specific, such as a light discharge that can be mistaken for something more harmless, like thrush. These infections should not be taken lightly. If left untreated, they can cause serious long-term complications, including pelvic inflammatory disease (PID), an infection of the female reproductive organs. PID may cause infertility because it can result in scarring in the fallopian tubes and thus preventing the eggs from travelling down the tube into the uterus. Damage to the fallopian tubes causes increased susceptibility to further episodes of PID as well as the risk of an ectopic pregnancy. With all STDs, prompt action is the key. If identified early and treated promptly, STDs usually clear up without any serious complications. Experts warn that the increase in STDs indicates a pattern of unsafe sex, particularly in heterosexuals, following the suspension of the anti-HIV/AIDS campaigns of the nineties. More than 70% of HIV cases diagnosed recently involve people infected through heterosexual intercourse. Gonorrhoea, whose incidence has also risen sharply, is an indicator of the frequency of unsafe sex. Of greater concern is the fact that gonorrhoea is a cofactor in the transmission of HIV; having gonorrhoea increases both the chances of contracting the HIV virus and of transmitting it. Meanwhile, the silent STD, chlamydia, is threatening to create a fertility crisis. Recent research shows it is the biggest threat to a woman's ability to conceive. Although chlamydia can easily be treated with a single course of antibiotics, the majority of people infected are unaware of their condition. Although regular screening for STDs has been considered, so far no extensive measures have been taken. Therefore the concern about sexual health still stays with each individual.

III Now read about the ‘silent STD’, CHLAMYDIA, and complete the text with appropriate words. In most cases, there are several possibilities:

Chlamydia is easily ____________, but often goes undetected until it is too late, causing ____________. The British Family Planning Association ____________ that as many as a third of infertility cases could be caused by
Chlamydia. The FPA fears the official _________ are only the tip of the iceberg, as many of the infected are unaware of it because the infection is so often _________.

If symptoms occur, women may _________ discharge or pain during sex. Men are likely to feel burning while _________ urine.

Chlamydia can spread quickly and unnoticed into a woman’s internal genitals, where it causes the majority of cases of pelvic _________ disease (PID). Untreated, it can damage the _________, resulting in infertility. In-vitro fertilization (IVF) may then be the last resort.

Chlamydia can also cause _______ pregnancy, where the fertilized egg ________ in the fallopian tube instead of the uterus. A single ________ of antibiotics is usually prescribed to ________ the infection.

CASE REPORT: INFERTILITY DUE TO OLGOSPERMIA

Supply the missing medical terms from their definitions below:

A 30-year-old infertile married man presented to the clinic.

(1) _________ analysis (SA), performed 8 times during the previous 3 years, showed a (2) _________ ____________ (C) of 2 – 10 x10^6 per mL (mean 3.8 x10^6 per mL), (3) _________ ____________ (M) at one hour 1-10 % (mean 6%) and normal (4) _________ ____________ (N) less than 10%. The volumes of the (5) _________ were always normal, and bacterial cultures of the semen showed no growth of any microorganisms. Despite previous medications, the sperm counts did not improve. The couple had a failed attempt at IVF.

The patient did not have a past history of any significant illness or sexual dysfunction, nor had he a history of being exposed to heat or chemicals. He reported no (6) ___________. He had a family history of infertility.

(7) ___________ was not done.

He was (8) ___________ and nondiabetic. On physical examination, he was (9) ___________ without (10) ___________; his testes were of normal consistency, but small in size. There was no evidence of any (11) ___________ or any (12) ___________.

After taking written informed consent, the patient was given one combination tablet of ethinyl estradiol 0.0044 mg and methyl testosterone 3.6 mg orally daily. The patient did not report of any (13) ___________ ___________ and no problems were detected upon physical examination.

After a period of 2 months, the pelvic ultrasonography of the patient’s wife showed a live intrauterine single pregnancy of seven weeks. In due time, she delivered a boy weighing 2800 grams by cesarean section.

1 substance expelled during ejaculation
2 number of male sex cells in a given volume of semen
3 ability to move of male sex cells
4 form and structure of male sex cells
5 ejaculated substance
6 dependence on a psychoactive substance
7 arranging chromosomes according to a standard classification
8 of normal BP
9 showing a response to androgens (secondary male sex characteristics)
10 excessive growth of the male mammary glands
11 enlarged veins near the testis
12 inflammation of the epididymis
13 unwanted side effects
13 unwanted, negative side effects
URINARY SYSTEM

THE PRODUCTION OF URINE

I  Put the following sentences into sequence to describe the process of urine production:

A  Each renal tubule containing urine ends in a larger collecting tubule.
B  From the Bowman capsule they pass through the renal tubule, from where most of the water, all of the sugar and some salts (sodium) return to the bloodstream. (glomerulus + renal tubule = nephron)
C  All collecting tubules lead to the renal pelvis, an area in the central part of the kidney, which contains small cup-like regions called calices.
D  Blood enters the kidneys through the renal arteries.
E  In the final process of urine formation, some metabolic waste products (acids, potassium, drugs) from the bloodstream are secreted into the renal tubule.
F  There are about 1 million glomeruli in the renal cortex.
G  The renal pelvis narrows into the ureter, which carries the urine to the urinary bladder, where the urine is temporarily stored before being excreted through the urethra out of the body.
H  The renal arteries branch into smaller arteries. The smallest, arterioles, are located throughout the cortex of the kidney.
I  As blood passes through the glomerular walls, it is filtered – water, salts, sugar and urea with creatinine and uric acid leave the bloodstream, while proteins and blood cells are retained.
J  This process is called reabsorption.
K  The filtered materials are collected in the Bowman capsule, which surrounds each glomerulus.
L  Each arteriole branches into a mass of tiny intertwined capillaries, shaped like a ball and called glomerulus.

II  Now match the following definitions with some of the bolded structures from above:

- sac-like pelvic structure for temporary storage of urine: ________________
- structure surrounding the glomerulus and forming the beginning of the renal tubule: ________________
- structure that brings blood to the kidney: ________________
- tubular structure leading from the urinary bladder to the outside of the body: ________________
- ball-shaped mass of capillaries in the renal cortex: ________________
- structure continuous with the Bowman capsule where reabsorption occurs: ________________
- tubular structure leading from the kidney to the urinary bladder: ___________
- basin-like area in the central part of the kidney: ________________
- basic functional unit of the kidney: ________________
• tubular structure continuous with the renal tubule, leading to the renal pelvis: _______________

DID YOU KNOW THAT...?

Work in pairs. Read the following bits of information and then take turns to pass them on to your partner.

• a hard blow to the lumbar region can cause blood in the urine, because the kidneys are highly vascular organs that are especially susceptible to hemorrhage?
• the pain from a kidney stone (renal calculus) that has been lodged in the ureter is one of the most extreme kinds of pain?
• women are much more susceptible to urinary bladder infections (cystitis) because the female urethra is much shorter than the male one?
• since urine is sterile at the moment of leaving a healthy body, it has been used as a disinfectant in emergency situations?
• since both alcohol and caffeine are diuretics, beer is not the best choice to quench your thirst, neither is coffee a cure for a hangover, which is caused by dehydration?

-URIAS AND -ITISES

In the description of urinary symptoms and disorders, there are a number of terms containing the element URE/URI. Match the most frequent ones with their definitions:

1 ANURESIS A presence of serum proteins in the urine
2 ANURIA B presence of blood in the urine
3 DIURESIS C decreased urine production and excretion
4 DYSURIA D presence of pus in the urine
5 ENURESIS E excess of urea+creatinine+nitrogenous waste in the blood
6 GLYCOSURIA F increased excretion of urine
7 HEMATURIA G physical / chemical / microscopic analysis of urine
8 OLGURIA H urinary incontinence (often used for bedwetting)
9 POLYURIA I supression of urine formation and secretion
10 PROTEINURIA J painful / difficult urination
11 PYURIA K urinary retention
12 UREMIA L excretion of a large volume of urine in a given period
13 URINALYSIS M presence of glucose in the urine
II  Write down the terms for the following INFLAMMATIONS:

- inflammation of the urinary bladder
- inflammation of the kidney + glomeruli
- inflammation of the kidney
- inflammation of the renal pelvis
- inflammation of the renal pelvis + renal medulla
- inflammation of the ureter
- inflammation of the urethra

PROBLEMS AND PROCEDURES

Work in groups of four. Each of you should read one of the texts and do the task involved. Then report what you have learned to the group.

1. HEMATURIA

Hematuria is the presence of erythrocytes in the urine. It can be noticed if a large amount of blood colors the urine red, or it can be established by microscopic analysis of the urine. In many cases no specific cause can be found and the condition resolves on its own. But since it can also be caused by a tumor or some other serious problem, a doctor should be consulted. In the case of hematuria, urinalysis, blood tests, intravenous pyelogram and cystoscopy are usually indicated. By urinalysis, in addition to RBCs, white blood cells that signal a urinary tract infection can be found, or casts (groups of cells molded together in the shape of the renal tubules) that signal kidney disease. Excessive protein in the urine also signals kidney disease.

Blood tests may reveal kidney disease if the blood contains high levels of nitrogenous wastes that the kidneys are supposed to remove. An intravenous pyelogram (IVP) is an X-ray of the urinary tract. An IVP may reveal a tumor, a kidney or bladder stone, an enlarged prostate, or other blockage to the normal flow of urine.

Cystoscopy, the visual examination of the urinary bladder, may provide a better view of a tumor or bladder stone than can be seen in an IVP.

Treatment for hematuria depends on the cause. If no serious condition is causing it, no treatment is necessary.

Medical terms for:

protein in the urine
kidney stone
bladder stone
2. CYSTOSCOPY
In the case of a urinary problem, a cystoscopy, the visual examination of the urinary bladder through the urethra, may be indicated. The cystoscope, a thin tubular instrument with a light at the tip, allows the doctor to focus on the inner surfaces of the urinary tract by means of lenses. Many cystoscopes have extra tubes to guide other instruments for procedures to treat urinary problems.
Concerning the procedure itself, it requires no special preparation, apart from signing a consent form, since it involves a small risk of injury. After gently inserting the tip of the cystoscope into the urethra, the doctor will slowly glide it up into the bladder. A sterile liquid (water or saline) will flow through the cystoscope to slowly fill the patient’s bladder and stretch it so that the doctor has a better view of the bladder wall.
As the bladder reaches capacity, the patient will feel some discomfort and the urge to urinate.
The time from insertion of the cystoscope to removal may be only a few minutes, or it may be longer if the doctor finds a stone and decides to remove it. Taking a biopsy will also make the procedure last longer. In most cases, the entire examination, including preparation, will take about 15 to 20 minutes.
After the procedure, the patient may have a mild burning feeling when urinating, and may see small amounts of blood in the urine. However, these problems should not last more than 24 hours.

**Medical term for urination**

**biopsy** = 

3. CHRONIC KIDNEY DISEASE (CKD)
Chronic kidney disease (CKD) is the permanent loss of kidney function. It may be the result of physical injury or a disease that damages the kidneys, such as diabetes or hypertension.
CKD is a hereditary disorder, so individuals with a blood relative who suffers from it may be at risk. It is also a silent condition. In the early stages, it is asymptomatic and it often develops so slowly that many patients don’t realize their problem until the disease is advanced, in which case cardiovascular problems may appear without the patient realizing the underlying problem of CKD.
Apart from the genetic component, the biggest risk factors for CKD are diabetes and high blood pressure. So a screening for these conditions by means of simple medical blood and urine tests makes sense.
If any of these conditions or CKD has been established, they have to be controlled through medication and diet, as well as regularly and carefully monitored to slow down the damage to the kidneys, retain their function as long as possible and prevent kidney failure.
Since CKD is on the increase in developed countries, and thus a considerable burden on health budgets, many research programs have been started with the aim of slowing down its progression.
Explain:
hereditary =
asymptomatic =

4. HEMODIALYSIS
Dialysis is a treatment for people in the later stage of chronic kidney disease (kidney failure). This treatment cleans the blood and removes wastes and excess water from the body, which is normally done by healthy kidneys. Sometimes dialysis is a temporary treatment. However, when the loss of kidney function is permanent (as in end-stage kidney failure), it must be continued on a regular basis. The only other treatment for kidney failure is a kidney transplant.

There are two types of dialysis: hemodialysis and peritoneal dialysis. In hemodialysis, the patient’s blood is passed through an artificial kidney machine to clean it. Peritoneal dialysis uses a filtration process similar to hemodialysis, but the blood is cleaned inside the body rather than in a machine.

Hemodialysis means ‘cleaning the blood’ - and that is exactly what this treatment does. Blood is circulated through a machine which contains a dialyzer (also called an artificial kidney). The dialyzer has two spaces separated by a thin semipermeable membrane. Blood passes on one side of the membrane and dialysis fluid passes on the other. The wastes and excess water pass from the blood through the membrane into the dialysis fluid, which is then discarded. The cleaned blood is returned to the patient’s bloodstream. Each hemodialysis treatment normally takes four to five hours, and usually three treatments a week are needed. More frequent, shorter treatments or longer treatments may be indicated for certain patients. Only a small amount of the patient’s blood is out of the body at one time. Therefore the blood must circulate through the machine many times before it is cleaned.

Explain:
peritoneal =
semipermeable =

CASE REPORT: ACUTE RENAL FAILURE

Read the case report and explain the medical terms in italics using general English. Supply the missing medical terms concerning urinary symptoms from their definitions below:

History: A 48-year-old female presented to the emergency department reporting nausea, vomiting, anorexia, chills, myalgia, arthralgia and headache. She denied fever, cough, exanthem, diarrhea, (1) ___________ or (2) ___________. She also reported sharp left flank pain radiating to her neck, shoulders and chest, which occurred three consecutive nights and then spontaneously resolved. The day prior to presentation, the patient reported abdominal distention and (3) ___________.
The patient’s past medical history included hypertension, thyroideotomy, mitral valve prolapse and gastric bypass surgery.

Physical exam: On examination, the patient was afebrile, BP 149/82, pulse 65, RR 16 with an oxygen saturation of 100%. Oral mucosa was moist without lesions. Neck was supple without lymphadenopathy. Lungs were clear to auscultation bilaterally. Abdomen had normal active bowel sounds, mild epigastric tenderness and was not distended. Musculoskeletal exam revealed no joint erythema or tenderness and normal range of motion of all joints. Neurological exam was without focal deficits.

Differential diagnosis: Initial differential diagnosis included (4) presence of kidney stones as the patient had reported flank pain and a recent decrease in urination.

As the patient had no history of (5) disordered function of the kidneys verified by tests, investigation into her acute renal failure was initiated. The patient had no rash or new medication use that could suggest (6) disordered function of the kidneys verified by tests. A (7) disordered function of the kidneys verified by tests or obstructive lesion remained the most likely reason for the patient’s acute renal failure. A computerized tomography of the abdomen and pelvis was performed and revealed a right kidney with moderate to severe (8) distention of the kidney with urine as a result of obstruction of the ureter with a 1cm stone at the pelvic inlet and left moderate (8) distention of the kidney with urine as a result of obstruction of the ureter with several (9) stones including an 8 mm stone. This established the diagnosis of (10) blockage of the ureters on both sides resulting in acute renal failure.

1. presence of blood in the urine
2. painful / difficult urination
3. decrease of frequency and quantity of urination
4. presence of kidney stones
5. disordered function of the kidneys verified by tests
6. sudden-onset inflammation of the renal interstitium
7. occurring after leaving the kidney
8. distention of the kidney with urine as a result of obstruction of the ureter
9. stones
10. blockage of the ureters on both sides
FEMALE REPRODUCTIVE SYSTEM

MENSTRUAL CYCLE

Put the passages describing the menstrual cycle into sequence:

A In mid-cycle the graafian follicle ruptures and releases an ovum in the process called ovulation.
B During the period itself, resulting from a drop in ovarian secretion of estrogen and progesterone, disintegrated endometrial cells with glandular secretions and blood cells contained in a fluid are discharged from the uterus.
C The secretory phase occurs when the ovary is in its luteal phase.
D The ovum leaves the ovary and passes into the fallopian tube.
E If fertilization does not occur, the corpus luteum stops hormone production, which after a few days induces the next menstrual period.
F The ovum grows in the graafian follicle.
G The proliferative phase of the endometrium occurs while the ovary is in its follicular phase, releasing estrogen which helps in the repair of the uterine lining.
H Each menstrual cycle, lasting approximately 28 days, can be divided into 4 phases.
I Menarche, the first menstrual cycle, occurs at the onset of puberty.
J The empty graafian follicle fills with an adipose substance and becomes the corpus luteum, which starts secreting estrogen and progesterone in anticipation of fertilization and pregnancy.

PLUS...

In pairs, read 2 items each and exchange information.

- The average age of menarche is later in girls who are very active physically, due to a requirement for a minimum percentage of body fat for menstruation to begin.
- Menstrual cycles as long as 36 days or as short as 21 days are considered within the normal range.
- Although most women don’t know when exactly their ovulation occurs, about 30% of them experience a sharp, cramplike pain at the time of ovulation, which is sometimes confused with the symptoms of appendicitis.
- Amenorrhea, the absence of menstruation, is classified as normal, primary, or secondary. Normal amenorrhea occurs during pregnancy (sometimes also during lactation) and after menopause. Primary amenorrhea is the absence of menarche, usually due to endocrine disorders. Secondary amenorrhea occurs in women who have menstruated previously, and can be due to various endocrine disturbances, but also to psychological causes, intense training, or eating disorders (anorexia nervosa), which considerably reduce the percentage of body fat.
PREGNANCY AND BIRTH

I DID YOU KNOW THAT...?

• in pregnancy the uterus, a fist-sized organ, enlarges to occupy practically the whole abdominal cavity, becoming 16 times heavier in the process?
• the amount of milk the mammary glands produce during lactation is not related to breast size, because their size depends only on the amount of fatty tissue deposited at puberty?
• milk flow can be a conditioned reflex in response to, for instance, the baby’s crying; but it can also be suppressed by adrenergic effects caused by stress and anxiety?

II Vocabulary check - to complete each sentence, choose an adjective + Noun combination from the lists below:

Adjectives: AMNIOTIC, BIRTH, BREECH, DILATED, ECTOPIC, FALLOPIAN, FETAL, MENSTRUAL, MULTIPLE, PREMATURE, UMBILICAL, UTERINE

Nouns: CANAL, CERVIX, CONTRACTIONS, CORD, FLUID, INFANT, MONITORING, PERIOD, POSITION, PREGNANCY (2x), TUBES

1. Fertilization normally occurs in the __________ __________, except in the case of an __________ __________.
2. A full pregnancy lasts 280 days from the first day of a woman’s last __________ __________.
3. The result of ovarian hyperstimulation as part of infertility treatment may result in a __________ __________.
4. The fetus is connected to the placenta by the __________ __________.
5. In a procedure called amniocentesis, a sample of __________ __________ is obtained for testing if chromosomal abnormalities are suspected.
6. Labor is the term for __________ __________ during delivery.
7. __________ __________ means checking the baby’s heart rate during labor.
8. During delivery, the baby passes through the fully __________ __________ Into the __________ __________.
9. One of the possible complications during delivery may be the result of a __________ __________.
10. A baby born before full term and weighing less than 2,500 g is considered to be a __________ __________.
III Look at some advice for pregnant women on how to REDUCE THE RISK OF AN EMERGENCY C-SECTION and supply the missing words:

Before the birth:

- Take early ____________ classes, from around 30 weeks.
- Ask about the hospital policy, e.g. if you can walk during ____________.
- Do ____________ exercises to train and firm the muscles which will be involved in the process of giving birth. A yoga class for pregnant women may also be a good idea.
- For a few weeks before the birth, massage the ____________, i.e. the area between the vagina and anus. Massaging with vegetable oil encourages the skin to stretch to double its normal capacity.
- If your baby is ____________, ask about external version and vaginal delivery in spite of this position.
- If you are significantly ____________ before pregnancy, get advice on an appropriate eating plan.

During labor:

- Eat and drink lightly to sustain your energy: a ____________ in blood sugar disrupts the flow of labor.
- Ask for ____________ fetal monitoring, because constant monitoring increases the likelihood of unnecessary intervention.
- If possible, don’t be on your ____________ during the whole labor.

IV Look at the jumbled PROS AND CONS OF C-SECTIONS for mother and baby and sort them out below:

- increased risk of death (up to 11 times in an emergency Cesarean)
- fewer minor musculoskeletal problems
- longer recovery period
- less risk of infection if the mother has HIV or herpes
- obstetrician of the woman’s choice
- post-operative pain
- possible head and lung problems, as the squeezing process during vaginal birth is thought to encourage the lungs to work properly
- reduction in pelvic-floor damage
- possible emergency hysterectomy
- less pain and tiredness
- major surgery, with potential for infections, endometriosis, internal adhesions, thrombo-embolism
- potential future pregnancy problems
- more control; convenient
PROS for the mother (4):
PROS for the baby (2):
CONS for the mother (6):
CONS for the baby (1):

V Put the verbs below where they belong in the following passage describing a C-SECTION, using the Present Simple passive throughout:

CLAMP CLEAR CUT DELIVER DO
DRAIN HAND MAKE OPEN PERFORM

A C-section delivery ____________ when a vaginal birth is not possible or
is not safe for the mother or child. Surgery ____ usually ____________ while the woman is awake but
anesthetized from the chest to the legs by epidural or spinal anesthesia. An
incision ______________ across the abdomen just above the pubic area.
The uterus _______________, the amniotic fluid _______________, and the
baby _______________.
The baby’s mouth and nose _______________ of fluids, and the umbilical
cord _______________ and _______________. The baby _______________
to the pediatrician or nurse who will make sure that breathing is normal. The
mother is awake and she can hear and see her baby.

Due to a variety of medical and social factors, C-sections have become
quite common – about 26% of all births in the US in recent years have
been C-sections.

VI CASE REPORT: ECTOPIC PREGNANCY

Explain the underlined medical terms using general English:

Diagnostic and therapeutic (1) laparoscopy was indicated and, as expected,
(2) preoperative pelvic exploration showed an extensive (3) hematocoele in the
ampullar region of the left tube. Initial (4) salpingostomy confirmed the
(5) hemorrhagic content of the tube, which supported the diagnosis of left
tubal pregnancy. Rapid inspection of the (6) contralateral adnexa identified a
slight (7) tumefaction in the (8) interstitial portion of the right tube. This aspect
suggested a (9) minor tubal alteration and was therefore neglected. On
account of the extended tubal injury, we decided to do a left
(10) salpingectomy. The patient left hospital with a noticeable improvement of
her clinical symptoms.

1 ___________________________________________________________
2 ___________________________________________________________
3 ___________________________________________________________
4 ___________________________________________________________
VII Translate:

Trudovi i porod mogu izazvati simptome posttraumatskoga stresa, koji se obično povezuje s ratom i drugim oblicima nasilja, izvješćuju britanski psiholozi. Ustanovili su da trećina majki proživljava strah, tjeskobu i noćne more, te da ih još tjednima poslije poroda progone neugodne misli i ‘flashbackovi,’ posebno ako je trudnoća bila neželjena ili se žena bojala za svoje zdravlje.

Nedavno je objavljena prva opsežna studija koja je trudove i porod povezala s traumom. Ispitane su 264 žene 72 sata poslije poroda i ponovno nakon 6 tjedana. U drugom ispitivanju četvrtina žena pokazivala je znakove zabrinutosti, razdražljivosti ili nervoze, a tri posto žena pokazivalo je jake simptome posttraumatskoga stresa.

FERTILITY

I In groups of 3, read the short description of one of the METHODS OF ART (ASSISTED REPRODUCTION TECHNOLOGY) each, and then report to the group.
Together, decide which underlying problem might be the basis for each of these procedures:

In vitro fertilization (IVF)
A woman's eggs are extracted and mixed with her partner's sperm in a Petri dish. The resulting embryo is transferred to her uterus through the cervix. At least 60,000 IVF procedures are performed in the US annually, with an average birthrate of 25%.

Intracytoplasmic sperm injection (ICSI)
To counteract problems with sperm count, quality or mobility, doctors inject a single sperm directly into a mature egg to increase the chance of fertilization. ICSI accounts for approximately 24,000 IVF procedures annually. Average birthrate: 30%.

Egg donation
When the problem is aging eggs, a young woman may donate her eggs to a couple. Fertilized with the man's sperm, the resulting embryo is implanted in the older woman's womb. More than 5,000 eggs are donated yearly. After the eggs are fertilized, the birthrate is approximately 40%.
Now discuss the ETHICAL IMPLICATIONS OF EGG DONATION AND SURROGATE MOTHERHOOD. European legislation is much more restrictive than American concerning these matters – do you think that things should change?

II Read about the RISKS INVOLVED IN PREGNANCIES RESULTING FROM ART, and make a list of potential problems that may arise for The mother and the baby:

Assisted reproductive technology is one of the great medical success stories of the late 20th century. Thanks to fertility drugs, IVF and a growing number of even more sophisticated techniques, tens of thousands of healthy babies are born each year that otherwise might never have been conceived. But the process is neither simple nor risk free. There are limits to what science can do for infertile couples, and the more doctors have to intervene with drugs, needles and surgery to get sperm to meet egg, the greater the chance that something will go wrong. To list just a few potential problems:

**Ovarian hyperstimulation:** The first step in most assisted-fertilization techniques is to stimulate the ovaries to produce a lot of eggs at once. But the hormones doctors use to do this are powerful drugs and in rare cases can cause serious complications, including blood clots and kidney damage.

**Multiple gestation:** About 20% to 35% of IVF pregnancies produce multiple fetuses, usually twins. Having more than two or three babies at once is often a medical disaster. Babies that develop in a crowded uterus or are born too early are at risk for a lifetime of developmental problems, including mental retardation, paralysis and blindness. Trying to reduce the number of fetuses through selective abortion has its own problems, not the least of which is an increased chance of miscarriage.

**Low birth weight:** Twins and triplets (not to mention septuplets) often weigh less than normal at birth. But a recent study suggests that even single babies conceived through IVF are more likely to be born underweight. Whether that also puts them at greater risk of developmental problems is uncertain.

**Birth defects:** Although it has been reported that IVF children are twice as likely to suffer birth defects – such as cleft palate, a hole in the heart or kidney problems – as children conceived the usual way, several earlier studies have shown no differences between the two kinds of babies, so further research is needed. But even if the apparent increase is real, it might not be clear whether the birth defects are caused by the artificial reproductive technology or by the underlying problem that caused the infertility.

Potential problems for the mother:

Potential problems for the baby:
CONTRACEPTION

I  Put the following CONTRACEPTIVE DEVICES AND MEASURES into the categories below. In small groups, discuss what you know about each of them:

CONDOM                      INTRAUTERINE DEVICE (IUD)
CONTRACEPTIVE PATCH         'MORNING AFTER' PILL
DIAPHRAGM                   ORAL CONTRACEPTION (THE PILL)
FEMALE CONDOM               SPERMICIDE (CREAM, FOAM, GEL)
HORMONAL IMPLANT            STERILIZATION (TUBAL LIGATION, VASECTOMY)
INJECTABLE CONTRACEPTION    (THE JAB)

Hormonal methods (5):
Long-term mechanical methods (2):
Barrier methods (4):

II  Read about the ORAL CONTRACEPTIVE PILL (OCP) and supply the missing words:

The female sex hormones ____________ and ____________ are two hormones which direct many of the processes surrounding the ____________ cycle. Artificial analogues of these have proven an efficient form of ____________ control. To ____________ pregnancy a woman takes a pill daily which ____________ both of these hormones. This is the combination pill, or simply 'the pill'.
The estrogen works by preventing an egg from being ____________ from the ovaries (i.e. ____________) most of the time. Both hormones make the ____________ a hostile environment for a(n) ____________ by causing a thinning of the uterine ____________. As modern combination pills contain less estrogen than their predecessors, an egg will leave the ovaries 2 – 10% of the time. If ____________ occurs, the embryo will be unable to ____________ in the uterus, resulting in its death.
Oral contraceptives also have some uncommon but serious risks associated with their use, especially among smokers; these include abnormal blood ____________ and heart attacks, cancer, and gallbladder disease.
_____________ effects include headaches, acne, weight ____________, vaginal infections, and depression.
III As you read about the INTRAUTERINE DEVICE (IUD), supply the correct forms of the words in brackets:

The intrauterine device is a small plastic or metal device that is placed inside the uterus by a gynecologist for an (1) ________ (EXTENSION) period of time. The IUD prevents (2) ________ (IMPLANT) of an embryo and makes it more difficult for sperm to enter. The copper in some types of IUD has a (3) ________ (SPERMICIDE) effect, and recent studies cite the (4) ________ (INTERCEPTION) action as a major factor. To make the IUD more (5) ________ (EFFECT), some contain progestin, which also (6) ________ (INTERFERENCE) with implantation. It has also been stated that the IUD may mechanically dislodge an embryo after implantation. The IUD carries with it a number of serious health risks, which have caused many manufacturers to stop (7) ________ (DISTRIBUTE). These risks include pelvic (8) ________ (INFLAMMATION) disease, permanent (9) ________ (INFERTILE), and ectopic pregnancy. Because the risks to fertility, the IUD is usually not recommended to women who haven’t had children yet.

IV Translate:

PRVI KONTRACEPCIJSKI FLASTER ODOBREN ZA PRODAJU
Tvrtka Johnson & Johnson napokon je od američke Agencije za hranu i lijekove dobila dozvolu za prodaju kontracepcijskog flastera nazvanog Evra, prvog takvog proizvoda u svijetu.
Flaster djeluje tako da u kožu žene ispušta hormone koji ulaze u krvotok i tako sprječavaju začeće.
Evra je izazvala golemo zanimanje u cijelom svijetu čim je objavljeno da je proizvedena.

V Which METHOD OF CONTRACEPTION would you suggest in the following cases? (Don’t forget the issue of STDs!) Give arguments for your suggestions:

- Teenage couple, infrequent sex.
- Woman in her 20s, no permanent partner, working on career, no family plans for the next 10 years.
- Married couple in their 30s, 1 child, possible further pregnancy, but not immediately.
- Single bisexual man in his 40s, frequent sex with varying partners, no family plans.
- Married couple with children in their 40s, woman smokes, no more pregnancies wanted.
MENOPAUSE

I DID YOU KNOW THAT...?

- contrary to other mammals, only human females lose their ability to reproduce? Females of wild animals in zoos, which live to an advanced age, continue to breed, although less frequently.

II Read about the largest long-term study into the EFFECTS OF HORMONE REPLACEMENT THERAPY (HRT), parts of which had to be shut down because of some preliminary findings that raised concern.

The Women’s Health Initiative (WHI), begun in 1991 by the US National Institutes of Health, is one of the largest studies of women’s health ever undertaken. More than 160,000 post-menopausal women ages 50 to 79 were involved into a variety of clinical trials designed to find the best ways to prevent heart disease, breast and colorectal cancers, and osteoporosis. Due to the study’s strict design, most doctors view the WHI as the definitive word on women’s health. Final results were due to be published in 2005. But one part of the study, involving more than 16,000 women taking a combination of estrogen and progesterone called hormone-replacement therapy, was stopped in 2002, after researchers concluded that the risks of HRT clearly outweighed the benefits (see table below). In 2004 another arm of the study was shut down involving women who had had a hysterectomy and were on estrogen therapy without progesterone, because it was established that taking estrogen alone also raises a woman’s risk of stroke and blood clots. Although other parts of the giant WHI study still continue, doctors have come to the conclusion that HRT may be appropriate as a short-term therapy for menopausal distress, relieving hot flashes and contributing to bone health, rather than as long-term protection against aging-related diseases. It seems that after two years the benefits no longer outweigh the risks.

III Look at some of the STATISTICS resulting from the WHI study on HRT. More cases of certain disorders were reported among women taking HRT than among those in the placebo group, although the absolute risk for an individual woman is quite small. HRT proved beneficial for some other disorders.

Write three sentences based on the data shown.
### Cases per 1,000 women per year

<table>
<thead>
<tr>
<th></th>
<th>HRT</th>
<th>Placebo</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breast cancer</td>
<td>3.8</td>
<td>3.0</td>
<td>+ 26%</td>
</tr>
<tr>
<td>Heart disease</td>
<td>3.7</td>
<td>3.0</td>
<td>+ 23%</td>
</tr>
<tr>
<td>Stroke</td>
<td>2.9</td>
<td>2.1</td>
<td>+ 38%</td>
</tr>
<tr>
<td>Blood clots</td>
<td>2.6</td>
<td>1.3</td>
<td>+ 100%</td>
</tr>
<tr>
<td>Hip fractures</td>
<td>1.0</td>
<td>1.5</td>
<td>- 33%</td>
</tr>
<tr>
<td>Colon cancer</td>
<td>1.0</td>
<td>1.6</td>
<td>- 37%</td>
</tr>
</tbody>
</table>

1. 
2. 
3. 


THE EAR

HOW WE HEAR

Most of the missing words in this simple description of the process of hearing are the MAIN STRUCTURES OF THE EAR:

Sound travels down the ____________ ____________ and strikes the ____________, which is taut like the skin of a real drum, so it ____________ when sound waves hit it. The motions are passed down the ____________ (____________, ____________ and ____________) to the ____________, which is the main structure in the ____________ ____________. The vibrations make the ____________ in the ____________ move. This movement in turn makes the ____________ ____________ move, thus producing tiny ____________ ____________, which are picked up by the ____________ ____________. The cells at one end of the cochlea send low pitch sound information in these signals and those at the other end send high pitch sound information. These electrical signals pass up the ____________ ____________ to the ____________, which interprets them as ____________.

DID YOU KNOW THAT...?

• a ruptured tympanic membrane can generally regenerate within days?
• there are two basic types of deafness: conduction deafness, caused by an interference with the sound waves in the outer or middle ear resulting from trauma or pathological conditions, usually improved by medical treatment, and perceptive deafness, caused by disorders of the inner ear or the auditory centers within the brain, which is permanent, and in some cases may be helped with hearing aids?
• permanent exposure to noise can be a serious health hazard – resulting not only in impaired hearing or hearing loss (from frequent or prolonged exposure to sounds above 90 decibels), but also in hypertension, stress and depression?

COCHLEAR IMPLANTS

In this short explanation of HOW COCHLEAR IMPLANTS WORK, Supply the appropriate verbs from the list. Be sure to use the correct forms (active or passive):

CODE, CONSIST, PICK UP (2x), RECOGNIZE, SEND (2x), TRANSMIT (2x), TRAVEL, TURN
The whole device _____________ of an outer (microphone, speech processor, coil) and an inner part (the implant itself). Sounds _____________ by a microphone and _____________ into an electrical signal. This signal _____________ to the speech processor where it is _____________ (turned into a special pattern of electrical pulses). These pulses _____________ to the coil and then _____________ across the intact skin (by radio waves) to the implant. The implant _____________ a pattern of electrical pulses to the electrodes in the cochlea. The auditory nerve _____________ these tiny electrical pulses and _____________ them to the brain. The brain _____________ these signals as sounds.

II This is the description of a COCHLEAR IMPLANT OPERATION. Put the 10 steps into sequence:

A The skin and tissue are reattached, and the wound is stitched up.
B The incision is made and the skin and tissue are lifted back to expose the skull.
C A hole is drilled into the cochlea.
D A general anesthetic is normally given.
E Patients are usually up and about the next day. The length of stay in the hospital depends on local practice and can be as short as 3 days.
F The electrode array and the implant itself are secured in place.
G There is usually little discomfort when the patient wakes up. Pain medication can normally be given if required.
H A bed is drilled out in the bone behind the ear for the implant.
I The skin is shaved around where the incision is to be made.
J The electrode array is inserted into the cochlea.

III Now translate the procedure. What happens to all the passives in Croatian?

IV As you read about the past and present of cochlear implants, mark the passages that give you the following information:

- the breakthrough realization in the 1970s that is the principle on which cochlear implants work
- the main difference between the first generation of cochlear implants and today’s devices
- why time matters in implants for children who were born deaf
- drawbacks that still need to be improved
BIONICS - NEW HOPE FOR THE DEAF?

The idea of electrically stimulating the auditory system is nothing new. In the 18th century, Italian physicist Count Volta connected two metal rods to his most famous invention, the battery, and inserted them into his healthy ears, generating some sort of sound.

By the 1970s, scientists had found out that electrical pulses needed to be targeted to localized groups of hair cells which transmit different sets of tonal and pitch information to the brain. While the first generation of cochlear implants used a single, clumsy electrode to convey the whole spectrum of sound, today’s devices have up to 24 electrodes, each stimulating a different group of neurons.

Cochlear implants first appeared on the market in 1985, but they were controversial through the mid-90s, partly because they improved hearing in only 30% to 40% of patients. Today, technology has advanced considerably. Doctors say they can now significantly enhance hearing in 80% of patients, and even children born deaf are candidates for the procedure. But they should be treated within their first five years, before the brain loses its ability to process sound.

The results still aren’t perfect. People with the implant often say voices sound metallic, like a radio broadcast. And few are able to enjoy the tonal richness of music. Many also still lip-read to complement their new hearing, particularly in loud environments - though they are able to use the telephone, where there’s little background noise.