

**FEDERAL STATE BUDGET EDUCATIONAL INSTITUTION OF  
HIGHER EDUCATION "NORTH OSSETIAN STATE MEDICAL  
ACADEMY" OF THE MINISTRY OF HEALTH OF THE RUSSIAN  
FEDERATION  
(FGBOU IN SOGMA of the Ministry of Health of Russia)**

**Practical skills training and manual (surgical care) for students of  
1-3 courses of medical, pediatric, medical and preventive faculties.**

**Compilers:**

Beslekoev U.S., Khutiev C.S., Vakhotskiy V.V., Ardasenov T.B., Nanyev B.L., Dzakhov V.R.

The manual reflects the methods of performing the basic manipulations and methods of treatment, which are included in the day of skills, which should be mastered by the student in accordance with the program of mastering general surgery with the care of patients of surgical profile.

**Reviewers:**

Head of the Department of Surgical Diseases No.2

Prof. **Totikov V.S.**

Professor of the Department of Faculty of Surgery

FSBO V CSU Ayskhanov S.K.

**The list of knowledge and skills that should be received by a student in general surgery with the care of surgical patients.**

**The student should know:**

1. General principles of clinical examination of a surgical patient.
2. Clinical manifestations of major surgical syndromes.
3. Diagnostic capabilities of laboratory and instrumental methods of examination of surgical patients.
4. The main stages of treatment of patients with the most common types of surgical diseases.
5. The basics of medical staff at all stages of treatment of surgical patients.
6. Principles and methods of providing first medical pre-medical care in emergency pathology.

**The student should be able to:**

**1. Fill:**

- hospital history
- Operating Journal
- outpatient card
- blood transfusion protocol

**2. Treat:**

- hands disinfectant solutions
- Decubitus
- hands before surgery
- operating field

Use:

- surgical mask
- functional bed
- individual dressing package

**4. Produce:**

- sanitary treatment of the patient when admitted to the hospital
- disinfection of medical tools and care products
- processing and disinfection of linings and urinary tracts
- hygienic treatment of the body of an operated patient
- change of the patient's bed and bed linen
- hygienic washing of patients
- gas diversion from the colon
- bladder catheterization
- pre-operative preparation of the operating field
- disinfection of the air by the source of ultraviolet radiation
- trial for individual compatibility of donor-recipient blood
- catheterization of the peripheral vein
- puncture of superficially located hematoma and soft tissue abscesses
- pleural and abdominal puncture
- dialysis of the wound through the flowing and washing system
- active-passive tetanus prevention

**5. Dress:**

- and change sterile gloves
- sterile robe on your own and with the help of an operating sister

**6. Prepare:**

- patients to carry out instrumental screening methods
- and fill the infusion system

**7. Move the patient:**

- from bed to gurney and back
- with gurneys on the operating table and back
- with intravenous infusion and drainage

**8. Run:**

- purifying, siphon, nutritional and medicinal enemas
- pre-prevention training of medical and surgical instruments
- Physical examination of a surgical patient
- finger examination of the rectum
- temporary stop of external bleeding
- anterior tamponade of the nose in the nasal bleeding

- local cold skin anesthesia with chlorethyl
- local infiltration anesthesia of surface soft tissues
- removal of drains and tampons
- guide anesthesia for Lukashevich-Oberst
- elastic compression of the lower extremities

Sensing and rinsing the stomach

- subcutaneous and intramuscular injections
- veneer, blood samples from the vein and intravenous injections
- removal of stitches from the wound
- instrumental bandage wounds
- ventilation by the mask-bag
- indirect heart massage
- artificial respiration.

**9. Put in biks dressing material, operating clothes, masks, gloves.**

**10. Rate:**

- sterility material in bix
- the severity of the patient's condition
- and describe the local pathological status
- laboratory data for surgical diseases
- the suitability of the blood and its drugs for transfusion
- heaviness of blood loss
- condition of the wound and choose a method of wound treatment

**11. To provide:**

- First Medical Care for Disinfection Poisoning
- help the patient with vomiting

**12. Feed the sick:**

- in bed
- through the probe
- via gastrotomy

**13. Measure central venous pressure**

**14. Identify a terminal condition requiring cardiopulmonary resuscitation**

**15. Make a plan for the examination of patients:**

- traumatic chest injuries on the abdomen
- with ingous septic diseases
- bleeding

**Identify the availability of:**

- fracture and dislocation on the X-ray
- free gas in the abdominal cavity on X-ray
- hydro and pneumothorax on X-ray
- blood group on the AVO system
- rhesus affiliation express method

Kind of bleeding.

**17. To impose and shoot:**

- Calopreemnik
- transport tyres
- bandages and scarf bandages

**18. Enter:**

- Duct
- medicines through drainage and micro-irrigators

**19. Collect history**

**20. Monitor the condition of patients during blood transfusions**

**21. Select tools for primary wound treatment**

**22. Restoring the passage of the upper respiratory tract**

**General care for surgical patients.**

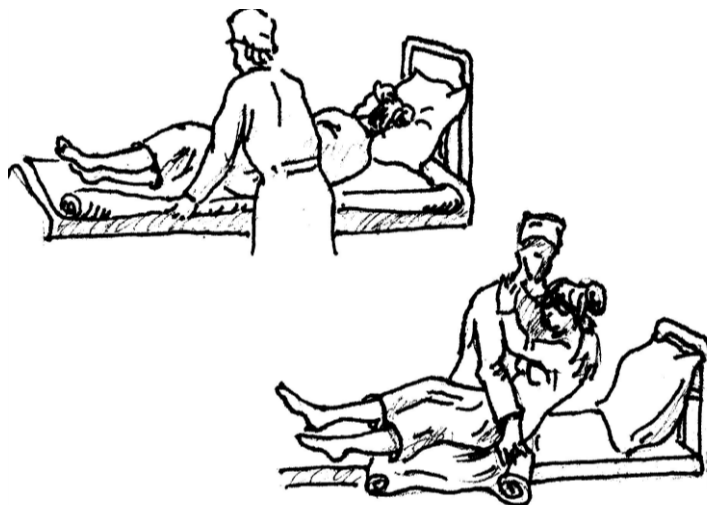
***Changing bed and linen.***

Proper preparation of the bed and control of its condition is important for the patient, and especially for the seriously ill. The patient's bed and his underwear should be kept clean. The change of bed and linen should be carried out once every 10 days, and in some cases more often - as pollution.

When changing the sheet of the patient is carefully pushed to the edge of the bed, part of the dirty sheet roll down and in its place spread a clean sheet, fixing it behind the edge of the bed. Then the patient is

transferred to the clean part of the sheet, dirty - removed, straightened the remaining clean sheet. It is necessary to monitor the absence of folds, bumps, crumbs, etc.

In a similar way, you can change the bed linen, having previously rolled the sheet under the torso, and then under the feet.

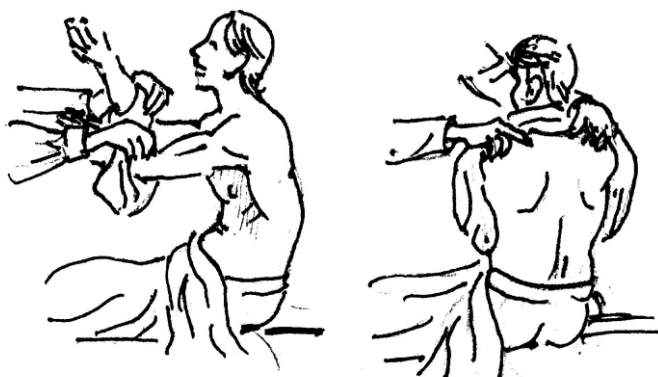


*Changing the*  
Medical nurse  
under the back  
pulls the shirt  
the back of the head, removes it over the head and frees the sleeves.

*underwear.*  
puts her hands  
of a seriously ill,  
over the edge to

#### ***Caring for the sick.***

In the absence of contraindications, hygienic showers are taken once a week. Seriously ill and sick with bed rest skin daily wipe with a weak solution of alcohol or soap solution. Hands wash before each meal, and legs - 2-3 times a week. The skin of the genitals is washed daily, and sometimes more often using solutions of furacilin or potassium permanganate in breeding 1:18.



When caring  
it is necessary  
measures to

constant monitoring of the condition of bed linen of the patient and timely elimination of irregularities, roughness, smoothing of folds, etc. at least 10 times a day, and even more often to turn the patient in bed. Skin in the appropriate places (crusader, shoulder blades, cool spine, etc.) wipe camphor alcohol, apply iodine mesh or conduct a light massage.

for emaciated patients  
to carry out a set of  
prevent bedsores,

Hair care: hair is washed once a week with various shampoos (if you suspect pediculosis use lotions and shampoos - "Tara," "Veda," "Elco-insect," nittiform, pediculin).



Washing the

head of the seriously ill

spend in bed, while the head of the patient is slightly raised and thrown. It is necessary to make sure that the water does not fall into the ears, nose, eyes, if necessary to drain.

#### ***Care for the mouth, nose and ears***

In order to prevent the development of diseases of the oral mucosa, patients at least twice a day should wash their teeth, rinse the oral cavity after each meal. Severely ill wash the mouth 0.5% of the solution of sodium hydrocarbonate (food soda), or a weak solution of potassium permanganate.

Preliminary, when cleaning the external ear canal injected a few drops of 3% solution of hydrogen peroxide (to soften the sulfur plug), and then apply the washing of the outer ear canal with a jet of sterile liquid (furacilin 1:1000, etc.) using a syringe Jean or a rubber can with a tip.

#### ***Prevention of bedsores and treatment of bedsores.***

Bedsores - soft tissue necrosis due to microcirculation disturbance at long-term pressure on tissues, their stretching or friction. Bedsores develop more often in places where bone protrusions are located more superficially and where there is little subcutaneous fat: the area of the shoulder blades, sacrum, the back of the head, the stylus vertebrae, the elbow area, the heel area, etc. Bedsores are characterized by persistent redness of the skin, the appearance of vesicles, ulcers or necrosis, and changes can extend to the underlying tissues, including muscles and bones.

Patients in old age to avoid the development of bedsores require mandatory skin care of the back

Bedding in such patients should be dry and clean, without stitches, without folds. For prevention, use anti-bed mattresses, to improve circulation massage. Places where bedsores can develop are sprinkled with talc or baby powder. Rubber circles of medium "inflated" are laid so that the place where the bed sore can develop, was in the center of the circle. The most effective way to prevent bedsores is early activation of the patient: as early as possible to put the patient on his feet or put in bed; turn the patient in bed from side to side every 1-2 hours.

In the treatment of bedsores in the early stages necessarily use the same measures as in prevention. In cases of the development of py-necrotic processes, treatment is carried out on the principle of treatment of the pulp wound. They produce necrectomy (excision of necrotic tissues), the wound is treated with 3% solution of hydrogen peroxide, proteolytic enzymes (pepsi, thripsin, terrilitin, etc.) or high-osmolar drugs (Levasil ointment, Levamecol), hypertensive solutions of table salt or sugar, honey) or adbsensor. Dressings such patients produce once or twice a day.

#### ***Eating sick.***

The basic principle of nutrition is the balance of the diet. A healthy person should consume 80-100 grams of protein (from the bottom of 50 grams of animal proteins), 80-100 grams of fat (of which 20-25 grams of plant origin), 400-500 grams of carbohydrates and 30 ml of water per kilogram of human weight.

At the same time, the ratio of proteins, fats and carbohydrates can vary depending on the nature of the disease. Thus, the presence of diabetes involves a decrease in carbohydrate intake, with the manifestations of renal failure or cardiopulmonary failure causes a decrease in the consumption of proteins, salt products and fluids.

Given the nature of the disease, patients should be prescribed therapeutic (dietary) nutrition. Currently, there are 15 main diets or therapeutic nutrition tables (see App). In addition, there are also special diets, named after the authors: the Carrel diet - with a severe degree of heart failure (limiting the intake of liquids to 300-500 ml per day, the complete absence in the diet of salt and spicy products and products containing fats, the exclusion of coffee, tea, etc.); Diet Meilengracht - bleeding from the upper parts (stomach or 12 finger intestines) of the gastrointestinal tract (receiving products, primarily aimed at stopping bleeding: taking ice cream, pieces of ice, protein raw eggs, raw potato juice, cold kisel, etc.).

Patients who are unconscious, with a violation of the esophagus or exit department of the stomach, feeding is carried out through the probe (probe nutrition), through gastrostom or enterostomy (overlay of gastric or intestinal fistula to organize feeding). At this type of feeding food should be easily digestible and liquid or use special balanced nutritional mixtures, such as "enpit," "nutrizon," "isocal," megamass, etc.

Patients who are feverish or with large losses of fluids (diarrhoea, indomitable vomiting, dehydration), are prescribed the intake of fluids or in / in infusion at the rate of 40-50 ml per kg of weight. As drugs for parenteral nutrition use drugs containing amino acids (alvezin, polyamine, vamin, aminofundin, etc.), protein hydrolysates, proteins (albumin, proteins), blood preparations (native and dry plasma, etc.), fat emulsions (intralipid, lipofundin), carbohydrates (glucose, fructose, dextrosol), various saline solutions containing electrolytes, minerals (Ringer solution, Ringer-Locca, reambirin, acesol,

#### ***Injection.***

Injection is called the introduction of a drug into tissues or vessels from a special device - an injector, with the possibility of dosed supply. Injections have been greatly simplified with the onset of disposable sterile syringes. With the increase in the number of patients with hepatitis of various kinds, HIV infected, etc.

there was a need to make all injections only in medical gloves. For any manipulation of the patient, the nurse or doctor is required to wear medical gloves (rubber or latex). Before the injections, it is necessary to make sure that the packaging is airtight and that the use of a disposable syringe is effective. To warn the patient about the procedure.

### **1. Intracutaneous injections.**

**Indications:** Intracutaneous injections are used for diagnostic purposes for staging allergic samples, specific reactions (Mantu reaction, etc.).

**Localization.** . . to perform intracutaneous injections usually choose the inner surface of the forearm.

**technique.** Pre-treated place with a tampon dipped 70% of alcohol solution, sodium ionate or other antiseptic solution.

The needle is injected at an acute angle into the skin to a shallow depth until the needle's clearance disappears. With the right technique at the injection site remains bump or papule.

**Complications.** Skin necrosis - manifests initially in the redness of the site, and then on the second or third day in the blackening of this area.

### **2. Subcutaneous injections.**

**Indications:** Subcutaneous injections are used to prolong the absorption and action of the drug (heparin, insulin, vaccination, etc.)

**Localization.** To perform subcutaneous injections the most convenient place are the outer surface of the shoulder and the hip subcutaneous area of the abdominal wall.

**Thetechnique.**Pre-treated place with a tampon soaked 70% with alcohol or other antiseptic solution. The left hand forms a skin fold, after which the base of the fold of the needle is inserted on 1/3 of the needle. The skin fold is released and the contents of the syringe are injected.

**Complications.** Skin necrosis.

The formation of infiltration - the appearance at the site of the introduction of the drug dense painful seal.

Infection - in the place of the formed infiltration the development of hyperemia, strengthening and the appearance of pulsating pain, the presence of fluctuation.

### **3. Intramuscular injections.**

**Indications:** the introduction of drugs.

**Localization.** To perform intramuscular injections choose places where the muscle layer is well developed: the upper-outer quadrant of the buttocks, the area of the deltoid shoulder muscle, the area of the three-headed shoulder muscle, the front-outer surface of the thigh.

**Thetechnique.**Pre-treated the chosen place with a tampon soaked in 70% alcohol solution, sodium iodoonate, or other antiseptic solution.

**Complications.**Formation of infiltration and hematoma.

Infection with the formation of an abscess.

Abscedation - the development of aseptic necrosis (tissue necrosis caused by the drug) followed by the infection.

A needle break in the tissues. Prevention - the introduction of the needle, not reaching the cannula 2-3 mm.

### **4. Intravenous injections.**

**Indications:** Introduction of drugs, blood collection for the production of tests, installation of the system for in/in infusions.

**Localization.** To perform intravenous injections choose places where the subcutaneous veins are well traced: the flexing surface of the elbow bend, the brush. foot, the sublingual veins, the newborn veins of the scalp.

**Thetechnique.**Pre-treated the chosen place with a tampon soaked in 70% alcohol solution, sodium ionate, or other antiseptic solution.**When blood is collected for the presence of alcohol, the needle injected is treated only by furacilin.**When injection in / in the elbow bend above the place of the alleged puncture put a harness on top of a gauze napkin or towel, with such force that the clamped remained only veins, and blood flow in the arteries remained. The injection is carried out in the direction of blood flow, needle, cut up (two-moment, first pierce the skin, and then the vein) is injected into the lumen of the vessel.

**Complications.**Infection.

Puncture of the back wall of the vein - the absence of blood when pulling up the piston syringe and the formation of infiltration when administering the drug.

The development of phlebitis (inflammation of the vein) - the appearance of hyperemia, pain and dense painful weight in the course of the vein.

Formation of subcutaneous hematoma.

### **5. Intra-arterial injections.**

**Indications:** introduction of drugs, local introduction of drugs, installation of the system for infusions.

**Localization.** To perform intra-arterial injections choose places where the arteries are located superficially: arteries of the neck, arteries of the ulnar bend, radiation artery, axillary artery, femoral artery in the area of the Scarp triangle.

**technique.** Pre-treated the chosen place with a tampon dipped in 70% alcohol solution, sodium ionate, or other antiseptic solution.

When injections syringe with a needle are carried out in the direction of arterial blood flow, the correctness of the needle is determined by the appearance of scarlet pulsating blood in the syringe. After extraction of the needle and secondary treatment of the puncture place is pressed with a sterile tampon or applied for 2-3 minutes a pressure bandage.

**Complications.** Infection;

Puncture of the back wall of the artery - the absence of blood when pulling up the piston syringe and the formation of infiltration when administering the drug.

The development of hematoma.

Introduction of the drug substance not in the artery, and in the artery wall - under the intima (lack of blood when pulling up the piston syringe and pain during the artery when administering the drug).

Bleeding - long-term expiration of blood from the place of injected when the needle is extracted.

Artery thrombosis and thromboembolism - manifests in the violation of blood circulation in the limb, in the form of lack of pulse in the distal diseases, changes in skin color and the appearance of pain in the limbs, the development of ischemic contractures, in later cases the development of gangrene limbs.

## **6. Intra-heart injection.**

**Indications:** Introduction of drugs, to solve a set of measures designed, first of all, to increase the effectiveness of indirect heart massage.

**Localization of the puncture** is made in the third-fourth intercostal left, retreating 1-2 cm from the edge of the sternum.

**technique.** Pre-treated place with a tampon soaked in 70% alcohol solution, sodium ionate, or other antiseptic solution.

A sterile 10- or 20-gram syringe and a long (10-20 cm) thin needle are required. The needle is inserted vertically from front to back into the left ventricle cavity with the constant sipping of the piston syringe. When blood appears in the syringe's lumen, the needle is stopped and the contents of the syringe are quickly inserted into the heart cavity. Making sure that the needle is in the heart cavity is extremely important, as the ingestion of a drug substance (e.g. adrenaline, calcium chloride) in the thickness of the myocardium can significantly hamper the successful implementation of subsequent electrical defibrillation. (If the dose of the drug is small in volume, for example, 0.5 ml of noradrenaline, it is pre-diluted in 10 ml of saline solution, and then intra-heartedly injected about 9 ml of the drug mixture.) In intra-heart injections it is important that they are carried out almost without stopping heart massage. After the restoration of myocardial tone and the appearance of signs of effective circulation, the necessary medicines are administered intravenously.

**Complications.** Heart puncture may be complicated by a coronary or intra-breast artery injury, but the risk in this case should be considered justified.

## **7. Catheterization of the peripheral vein.**

. If necessary, a multi-day intravenous drug use a special catheter (flexula), which is a soft catheter with a metal needle-conductor. After selecting the place of introduction of the catheter (often the area of the elbow bend or subcutaneous veins of the forearm) conduct a venopuncture, then remove the needle-conductor, close the hole of the catheter with a special stub, and the catheter itself is fixed to the surface of the band-aid or sewn to the skin.

## **8. Catheterization of the connective vein (by Selinger).**

**Indications:** the introduction of drugs, the definition of central venous pressure.

**localization.** Connective method. puncture is made at the point lying on the border of the inner and middle third of the collarbone, 1-2 cm below it (Obanaka point).

**technique.** It is necessary to have a set consisting of needles 22 and 25 caliber, fishing line - mandren or metal string-conductor diameter

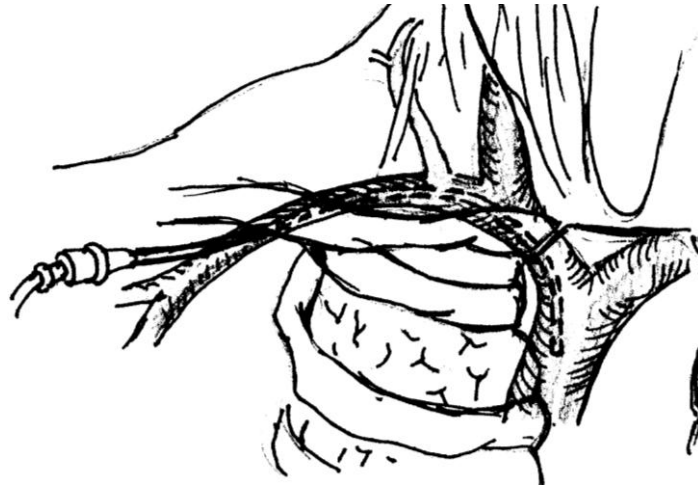
0.9 mm, 18 caliber catheter needle, plug-in catheter and transfusion system, filled with infusion fluid.

The position of the patient is lying on his back in the position of Trendelenburg with his hand set aside and his head turned in the opposite direction.

The doctor treats the hands with an antiseptic solution before the manipulation.

After processing the chosen place with a tampon soaked with an antiseptic solution, place the index finger of your left hand on the jugular clipping, and the thumb at the intersection of the collarbone and the first rib. Enter the anesthetic (0.5% novocaine p. 1-2% lidocaine) needle 22 or 25 caliber into the skin, subcutaneous fiber and the space between the first rib and the key. The 18-caliber needle punctuates the skin at Obanaka Point and slowly propels the needle under the collarbone towards your pointer finger on

the sternum's jugular clipping. The needle should be constantly in a horizontal position (parallel to the operating table), and the needle cut should be turned down, which will ensure the conductor's progress to the heart, not the neck. If the vein puncture is successful, unplug the syringe by pressing the needle cannula with your finger to prevent an air embolism. Then, through the needle, enter the conductor, remove the needle, holding the conductor and enter the connective catheter to a depth of 15-18 cm. Connect the system to the infusion environment.



Puncture the vein.

Installation of a connective appearance of blood in the

Air embolism - when the catheter is impaired, air is absorbed.

Pneumothorax - with too deep needle insertion, puncture of the pleura and pouring air into the pleural cavity. It is manifested in difficulty breathing, shortness of breath, auscultative - lack of respiratory noises. Requires pleural puncture and evacuation of air.

The break in the lumen of the vein of the part of the fishing line is a shortening of the length of the mandren. Sometimes surgery is required to extract this part.

Heart rhythm disturbance. Suspend manipulation and conduct drug treatment (introduction of antiarrhythmic drugs).

**Complications.**  
back wall of the  
catheter in the  
artery - the  
scarlet pulsating  
catheter.

## Techniques and ways of handling the surgeon's hands.

### *Be sure to wash your hands:*

- Before any procedures are carried out.
- Before helping weakened patients and newborns;
- Before and after contact with wounds;
- after any manipulation (even if gloves were worn), when contact with the patient's mucous membranes, blood, other bodily fluids was possible.

**Methods of processing the surgeon's hands:** before performing procedures or manipulation wash hands with soap in running water for 2-3 minutes, wipe dry with a sterile napkin, then begin to treat the hands in one way.

CHLORHEXIDINE Begleucanate: soaked 0.5% alcohol solution for 2-3 minutes.

AHD-2000, AHD-2000-Special: apply 5 ml of the remedy and rub into the skin of the brush and forearm until dry. After 2-3 minutes the procedure is repeated.

LIZANIN : 5 ml of the tool is applied to dry hands and rubbed for 2-3 minutes. After 2-3 minutes the procedure is repeated.

PLIVACEPT, OCTENIAM, OCTINIDERM, DIGMIN, Iodopiron, MONOPRONT, etc.: dry hands are applied at least twice, rubbed into the skin of hands, keeping them moist for 5 minutes.

FIRSTUR (formulation of P-4): within one minute, process the hands in a basin with a working solution of the Firstur and wipe them with a dry sterile napkin.

In one basin with 3-5 liters of solution can process at least 15 people. The solution is suitable for work within 24 hours. 85.5 ml 33% of hydrogen peroxide, 34.5 ml of ant acid and 5 liters of water are needed to make 5 liters of solution.

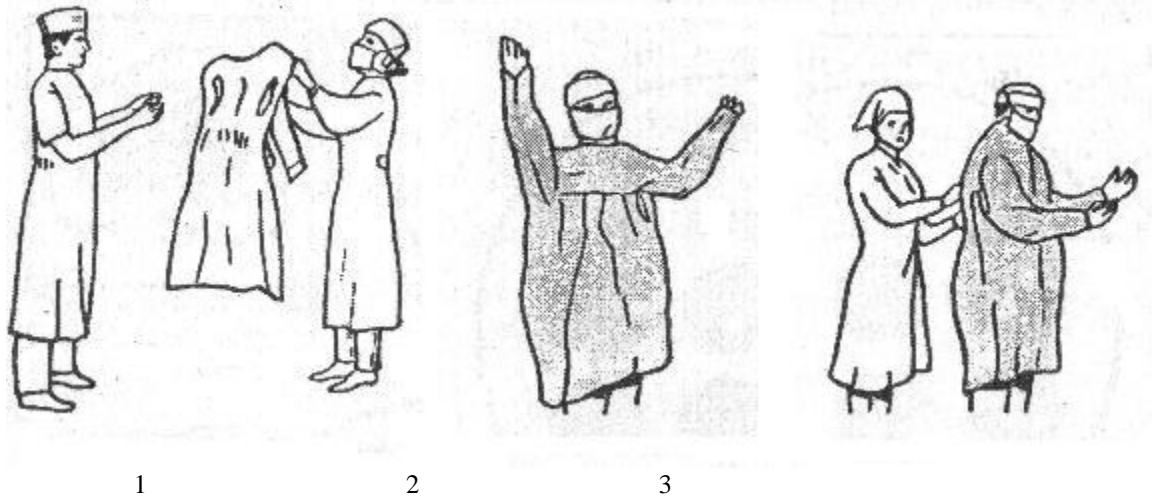
### **The technique of dressing a sterile robe.**

After the hand treatment, the nurse opens the lid of the bix using the foot pedal, making sure that the material is sterile (the color of the indicator has changed). Taking the robe, carefully unwraps it and, holding the outstretched left hand at the edge of the gate, puts on his right hand. Then with his right hand

he takes the gate over the left edge and puts it on his left hand and puts on his robe, stretching his arms forward and up. Having tied the ribbons on her hands, the operating sister begins to put on sterile gloves. The assistants tie the tights from the back.

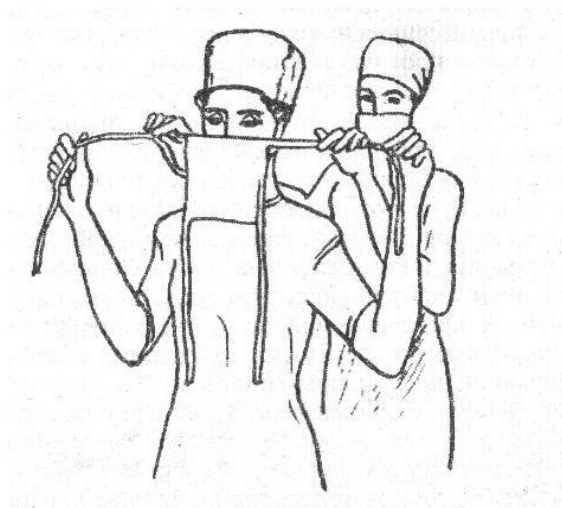
#### **The technique of dressing a robe with the help of anurse.**

The operating sister pulls out a sterile robe and unwraps it so that the front side is addressed to her sister, but does not touch it. Hold the robe should be held at the gate behind the shoulder stitches so that the sister's hands were covered with a robe. The sister then puts a tight robe on the surgeon's arms and ties the surgeon's hands. Assistants from the back tie the ribbons of the robe.



#### **The technique of dressing a sterile mask.**

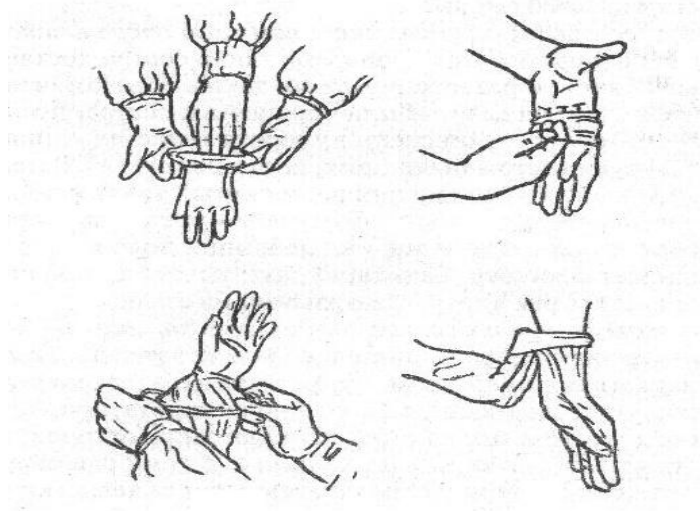
After the antiseptic treatment, the operating nurse or surgeon pulls out a sterile mask from the box, grabs the edges of the ribbon and applies it to the face. The assistant, sitting behind, takes ribbons so as not to touch the sterile hands of the sister or surgeon and, swiping them over the ears. The lower ribbons of the mask are tied in a similar way.



#### **The technique of putting on sterile gloves.**

The assistants of the operating sister unwrap the package with gloves. The operating sister with sterile hands pulls out one glove and, without touching the entire surface of the gloves, with her left hand holds only the turn of the glove. The right hand with closed fingers is inserted into the glove, while unlocking the fingers of the right hand, pull the gloves on the fingers, without breaking its turn. In the same sequence, put the glove on the left hand. After the gloves, they are treated with a tampon soaked in alcohol.

To make it easier to wear gloves, the hand is pre-treated with sterile talc or sterile vaseline oil.



### Ways of laying the material in bix.

There are several ways to stack the material in the bix.

**Universal (complete) styling.** The material, designed for one operation, is placed in the beaks. Diapers, towels and robes.

When **styling purposefully**, the bedding and dressing material needed for a particular operation are folded.

In **the type of styling** in the bix put only operating underwear or dressing material.

When extracting the bix from the autoclave close its side holes, shifting the belt of the bix and snapping its lock. In this state, sterility is maintained for 7 days. If the lid of the bix was opened, the sterility is maintained for one day.

### The technique of removing the stitches.

To remove the stitches it is necessary to have sterile anatomical tweezers or clamp, sterile scissors or scalpel and a general set of dressing material. Before the procedure, wash your hands thoroughly with soap, treat with antiseptic and put on sterile gloves.

Sequence of actions: remove the bandage, treat the operating wound with iononate or other antiseptic. Anatomical tweezers are taken in the left hand, and a scalpel or scissors are taken into the right hand.

With the help of tweezers, the suture thread is pulled up from one end until the white, iondonate-stained area appears. At this point the thread intersects and is removed outwards. After removing the stitches, it is necessary to re-treat the operating wound with an antiseptic and apply a sterile bandage.

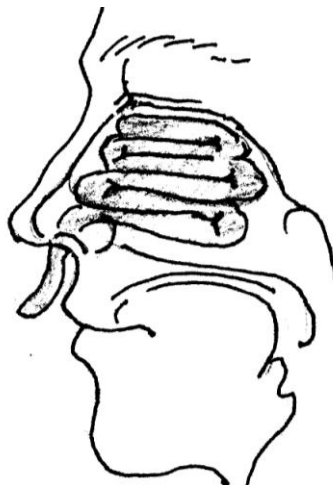
### Manipulations on the nasopharynx and mouth.

#### Tamponade nose.

**The evidence.** Continued nosebleeds.

**technique.** *The anterior tamponade of the nose.* Insert one end of the moisturized gauze turund (1.5-2.5 cm wide) into the nasal passage as deep as possible, then tightly seal the nasal cavity.

The tampon can be left for 3-4 days. Before removing the tampon it should be abundantly impregnated with any oil solution (vaseline or vegetable oil)



The back  
bleeding  
swab of the

tamponade. If the  
continues, the posterior  
nose should be

performed.

In the absence of a catheter, you can use a different technique of the back swab of the nose. A rubber catheter is inserted into the nasal passage so as to extract its end through the mouth. A strong thread of 50 cm long is tied to the end of the catheter, which is tied to the opposite end of the catheter, at the opposite end of which is tied with a gauze tampon. The catheter together with the thread is extracted through the nose so that the gauze tampon blocked the rear hoanas.



Ineffective  
2.It is  
infection  
Eustachian  
suspected,  
tampon.

**Complications.** 1.  
use of manipulations.  
possible to develop an  
with the obstruction of the  
tube. If the infection is  
immediately remove the

#### Techniques for restoring airway traversal

##### Throwing the head and removing the lower jaw.

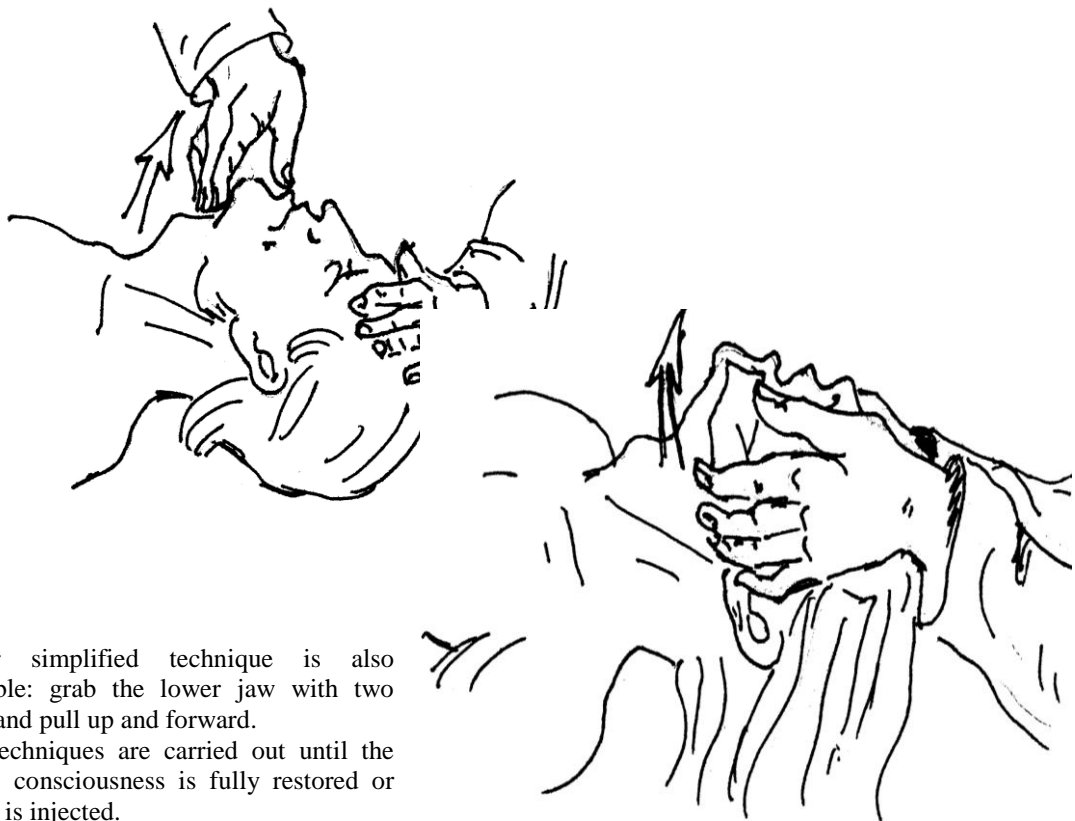
**Testimony.** In order to restore the passage of the airways at the westernality of the tongue throw the head of the patient and remove the lower jaw.

**contraindications.** Suspicion of damage to the cervical spine.

Down syndrome (due to incomplete ossification of C1-C2 and sub-infection of the cervical vertebrae).

Pathology of the cervical spine - ankylosing spondyloarthritis, etc.

**technique.** Throw your head back, keeping your mouth closed.



Another simplified technique is also acceptable: grab the lower jaw with two fingers and pull up and forward.

These techniques are carried out until the patient's consciousness is fully restored or the duct is injected.

### Introduction of duct through the mouth.

**Testimony.** Prolonged post-drug depression with the western language.

Compressed jaws in patients unconscious or intubated patients.

The need for aspiration from the nasopharynx.

**technique.** Open the patient's mouth, press the spatula on the root of the tongue and enter the duct into the mouth with the concave side of the chin and propel towards the back wall of the nasopharynx.

Alternatively, the duct can be entered by the concave side to the sky. After its dist the end reaches the tongue turn the duct 180 degrees and further advance through the tongue. So that its bend is located at the root of the tongue. The edge and 1-2 cm of the duct shaft should be protruding from the incisors.

**Complications.** 1.  
of bronchospasm -  
breath, shortness of  
presence of whistling  
2. Nausea and

#### Artificial

**Testimony.** The  
inadequacy of  
breathing.

**technique.**  
techniques are  
perform the



Development  
shortness of  
breath, the  
wheezing.  
vomiting.

#### ventilation.

absence or  
spontaneous

Preparatory  
needed to  
ventilator:

- The patient should be released from the external environment factors that prevent ventilator and place horizontally on the back.

- quickly free the neck, chest and torso area from crushing clothing.

- open the victim's mouth and make sure that the mouth and mouth of the mouth are traversed

- to take a position on the side of the head of the victim and with the help of both hands to throw his head as much as possible.

**The ventilator is the way of "mouth tonose".** - The hand of the resuscitator, supporting the head behind the parable area, retains its position, and the thumb of the other hand covers his mouth.

- The resuscitator is carried out by a forced exhalation of air through the nose of the victim.

- Stop blowing, free the nose and mouth of the patient. Passive exhalation is carried out through the mouth, not through the nose.

**Complications and errors:** - Ineffective activities.

Not the unbuttoned position of the head of the victim, while the inflated air gets not into the lungs, but the stomach.

Insufficient air volume, lack of sealing between the mouth of the resuscitator and the patient's airways.

Premature cessation of ventilator, i.e. immediately after the restoration of independent breaths, when there is not yet sufficient adequate ventilation of the lungs or it requires too much effort of the victim.

**Ventilator in the way of "mouth to mouth."** - After all the preparatory techniques with the fingers of the hand, which before that supported the head of the victim behind the darkened area, clamp his nose, with the other hand to cover the chin and slightly open his mouth.

**Take** a deep breath

- lips (directly or through a pre-imposed gauze napkin) to cover the ajar mouth of the patient

- to make a forced exhalation of all air in the lungs of the victim, while watching the lifting of the anterior wall of the chest.

To free the victim's mouth. The duration of passive exhalation can be judged by the decline of the chest.



- at the end  
exhalation

of the passive  
all again repeat.

The optimal ratio of active inhalation and passive exhalation is 1:2 with the duration of inhalation 1sec and exhalation of 2 seconds.

### ***Artificial ventilation of the lungs with the help of a breathing bag AMBU.***

**Testimony.** They're the same.

#### **contraindications.**

- 1.Regurgitation - asphyxia by vomit.
- 2.Inability to carry out manipulation on the head and neck due to injuries to the facial skeleton.
- 3.Damage to the trachea.
- 4.The presence of a tracheo-in-the-head fistula.

**technique.** The patient's position on his back.

Introduce the duct through the mouth.

- lower the mask so that its chin rests on the alveolar comb.
- tightly press the mask to the face, while pulling up the lower jaw with the bent finger of the left hand up to the mask, slightly tilting the mask to the right.
- periodically compress the bag to perform breathing movements.
- To perform inhalation, the mask is tightly pressed to the patient's face.
- to perform a passive exhalation, slightly move the mask away from the patient's face.

**Complications.** The inefficiency of the ventilator,

The air entering the stomach and its acute expansion (visually defined bloating in the epigastric area), which requires the introduction of a nasogastric probe.

### **Intubation of the trachea.**

**Testimony.** Carrying out anesthesia endotrache.

**contraindications.** There are no absolute contraindications.

Relative contraindication:

To intubation through the mouth : the rupture of the trachea.

To the intubation through the nose: - broken nose bones.

- curvature of the nasal septum
- expiration of cerebrospinal fluid through the nose
- in the history of nasopharyngeal surgery.

**technique.** *Intubation through the mouth under the control of a laryngoscope.*

Tools: a set of intubation tubes, a laryngoscope with a set of blades (straight and curved), a metal conductor.

The position of the patient on the back with his head thrown up (the improved position of Jackson). Holding a laryngoscope in his left hand, insert his blade into the mouth cavity, pressing the tongue upwards. The laryngoscope blade is moved deeper, a tongue appears in the field of view, and then the overgord. The end of the straight blade capture the over the hill and shift it to the top. If a curved blade is used, the end of it is inserted between the root of the tongue and the overgord, the latter is easily pushed upwards.

This opens the vocal slit, located vertically between two white-headed vocal cords, which under the control of vision enter the endotracheal tube. This is greatly simplified if a flexible metal conductor is inserted into the tube in advance, which is removed after intubation. The intubation tube is carried to a depth equal to the distance from one earlobe to the other through the upper lip or equal distance from the earlobe through the corner of the mouth to the jugular clipping.

*Intubation of the trachea through the nose.* There are two ways - "blind" method and under the control of a laryngoscope. The tube is well smeared with glycerin, inserted a tube into the nostril and, overcoming the light resistance promote it on 5-7 s, and then it seems to fall into a yawn. If the intubation is carried out under the control of the laryngoscope, then insert its blade, as described above, and the end of the tube clamp conduct in the voice slit.

If the intubation is conducted blindly, the tube is moved deep under the careful control of breathing through the tube.

After the intubation is completed, it is necessary to make sure that the manipulation is correct: to perform an auscultation of the lungs. With proper intubation, breathing is performed on both sides.

*Extubation* - extraction of the endotracheal tube is possible only when spontaneous breathing has fully recovered.

**Complications.** - damage to the mucous airways,

- damage to the vocal cords.
- broken teeth,
- tube into the esophagus,
- inserting a tube into one of the bronchi.

After anesthesia, swelling of the vocal cords, laryngitis and hoarseness are possible.

## Manipulations on the neck and chest.

### Conicotomy.

**Testimony.** This operation is done as a matter of urgency, when there is no time and conditions for the production of tracheostomy, and intubation is impossible.

**technique.** The patient is placed on the operating table with a raised chest, a pillow is placed under his shoulders, the head is thrown.



**A**  
**Testimony.**

(a) The obstruction of the upper respiratory tract;

b) The need for repeated aspirations from the airways for a long time in "wet lungs", disorders swallowing, re-leaking into the airways of the vomit, blood, saliva, etc.

c) The need for long-term ventilation.

**localization.** Upper tracheostomy-rings of the trachea are dissected above the isthmus of the thyroid gland.

Lower tracheostomy - the rings of the trachea are dissected below the isthmus of the thyroid gland

**The technique.** It is necessary to have a tracheostomy set, which includes: tracheostomy tube, single-toothed hooks, blood-stopping clamps, tracheostomy extender, scalpel, ligatures. Manipulation is carried out either under local anesthesia or under anesthesia.

Upper tracheostomy. The incision of 4-6 cm length is made along the middle line of the neck from the tub downwards dissect soft tissues.

Numerous small veins cross between ligatures. The isthmus of the gland is taken down with a blunt hook; expose the rings of the trachea. Single-toothed hooks fix the trachea, for which inject into it two hooks on the sides of the middle line or one



hook pick  
The edge  
directed  
cartilage,

up finger-like cartilage.  
of the knife should be  
towards the ring  
otherwise the isthmus

of the gland may be injured. Careful fast movement of the scalpel cut 2-3 rings of the trachea so as not to accidentally dissect the back wall of the trachea. A tracheostomy cannula is inserted into the tracheoexenor's open trachea. At the correct position of the cannula, the breath acquires a characteristic whistling hue, becomes smooth, asphyxia is eliminated. After hemostasis, the wound is sewn up 2-3 stitches. The canola is fixed with strips of gauze encircled around the neck.

### **Lower tracheostomy.**

To the bottom corner of the wound can lie tr.Brachiois a cephalicus whose damage is fatal.

The canula is left in the trachea until the phenomena that cause shortness of breath are eliminated. After extracting the cannula the wound is not sewn up, it closes on its own.

**Complications.** Massive bleeding.  
- esophageal perforation.

### **Vagosympathetic blockade on A.V. Wisniewski.**

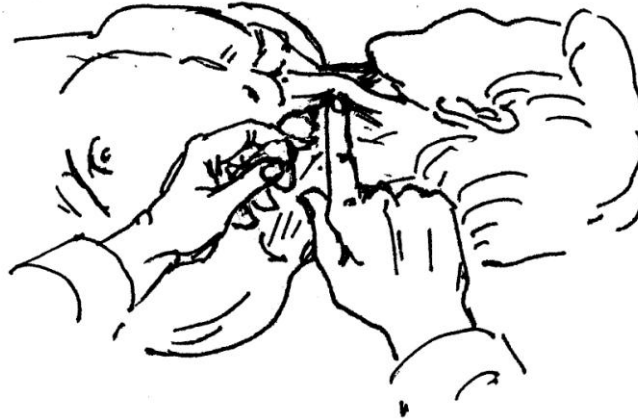
#### **Testimony.**

1) Prevention of pleuropulmonary shock caused by chest injuries and complex operations on the chest organs

2). When the patient is removed from bronchial status.

**technique.** The position of the patient on the back, the head is set aside in the opposite direction.

The index finger of the left hand is placed on the middle of the posterior edge of the sternum-fluid-mastoid muscle and when pressed fix it on the cross-section of the spine, this technique allows you to ward the vascular-nervous beam of the neck. The needle ink place the intersection of the outer jugular vein and the rear edge of the nodusing muscle. They carry out anesthesia of the skin and then injected the finger into the tissue until the sensation of bone, continuously pumping the solution of anesthetic. After the sensation of contact with the spine, the needle is pulled back by 1-2 mm and injected 40-50ml 0.25% novocaine. The injected solution blocks the wandering, sympathetic and diaphragmatic nerves.



The adequacy of the manipulation is determined by the developed midriasis (pupil constriction) or Gorner syndrome (upper-eyelid ptosis, narrowing of the eye slit and the fall of the eyeball).

#### **Complications.**

1. Damage to large blood vessels, bleeding, intermuscular hematoma.
2. Rarely damage to the vagus nerve.
3. Ineffective manipulation.

### **Blockade of intercostal nerves.**

**Testimony.** Broken ribs, inter-rib neuralgia.

**technique.** The patient's position on the back or on a healthy side. After anesthesia of the skin, the needle is injected to contact with the rib.

**Complications.** Damage to intercostal vessels and nerves.  
Damage to the pleura.

### **Pleural puncture is thoracocentesis.**

**Testimony.** Thoracentesis is carried out with diagnostic (to detect the presence of effusion or blood) and therapeutic purpose (removal of effusion, blood, air and introduction of medicinal substances).

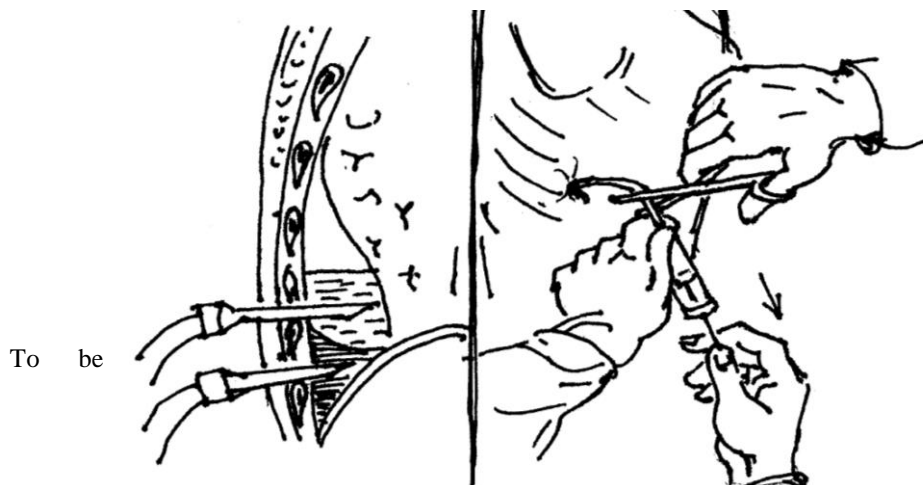
**localization.** If there is **air** in the pleural cavity, puncture is done on the front of the torso in the second intercostal on the mid-line on the upper edge of the lower edge.

If there is **fluid** in the pleural cavity, puncture is made in the VII-VIII intercostal on the posterior armpit or shoulder blades.

**technique.** You need to have a needle for catheterization of the 18 caliber with a rubber tube and a syringe Jean.

The patient is in an upright position, sitting on a chair. The doctor treats his hand with an antiseptic and the intended puncture place. It produces anesthesia of all layers of soft tissues, including a parietal sheet of pleura, 0.5% with novocaine solution or 1% solution of lidocaine. The needle for catheterization is punctured soft tissues, rested on the rib, and then the needle is carried on the upper edges of the ribs so as not to damage the inter-breath vessels and nerves running along the lower edge. After each suction of liquid or air, before disconnecting the syringe, a clamp is applied to the rubber tube.

If necessary, through the same needle in the pleural cavity injected drugs. At the end of the puncture, the needle is removed and applied with a sterile bandage.



and after it to perform **chest X-rays**.

#### **Complications.**

1. Damage to the intercostal vessels and the development of hemotorax.
2. Inadequate evacuation of liquid or air.
3. Development of pneumothorax.

#### **Pericardium puncture is pericardiocentesis.**

**Indications:** preventing further compression of the heart caused by his tamponade.

**The localization of** the puncture is made at the point to the left of the top of the sword-shaped process of the sternum.

**technique.** Pre-treated place with a tampon soaked with an antiseptic solution.

A sterile 10- or 20-gram syringe and a long (10-20 cm) 16-18 caliber are required. Produce anesthesia of the place of injecting 1-2% solution of lidocaine. Introduce the needle at the point of the injected. Move deep at an angle of 45 to the surface of the chest (under the sternum), directing it to the back, towards the left shoulder joint. Constantly maintain discharge in the syringe. At a depth of 2-3 cm there is a pre-sinus of the heart shirt. Carrying a needle should be done carefully, without rough movements. The feeling of pulsation speaks of the closeness of the heart, pushing the needle deeper through the epicard into the pericardium. The successful puncture is evidenced by the flow of liquid through the needle.



#### **Complications.**

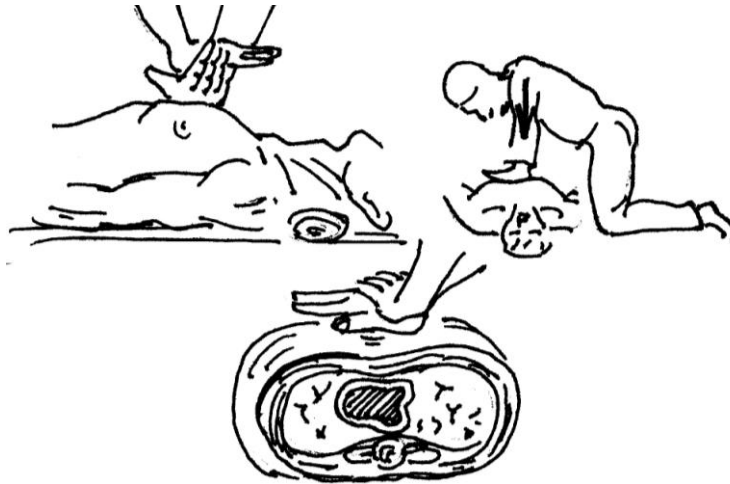
1. Puncture of the myocardium and penetration into the heart cavity.
2. Damage to the coronary artery;
3. Air embolism;
4. Heart rhythm disorders;

5. Hemotorax or pneumothorax;
6. Infection.

### Heart massage.

**Indications** In cardiac arrest, in addition to the introduction of medicinal substances, used closed (external) and open heart massage.

**technique. Outdoor massage .** The palm of the left hand is placed on the lower third of the sternum, the right hand is superimposed on the left.



Not  
strongly  
cm chest  
in one

sharply, but  
squeezed on 3-4  
wall 60-80 times  
minute.

**Open massage.** The chest is cut through the fourth intercostal space, so that the doctor's hand easily penetrates the heart.

According to Stefansen, the heart is compressed between the palm surfaces of the II-V fingers and I finger of the left hand.

According to Hosler palm surface of the right hand, the heart is pressed to the front chest wall

In abdominal surgery, you can use an over-diaphragm approach to the heart.

In all cases, the heart is compressed 60-80 times per minute. The effectiveness of the massage is determined by:

- the appearance of pulsation on the carotid arteries in the beat of massage;
- Narrowing of pupils;
- the appearance of self-breathing.

### Complications.

1. Ineffectiveness of the massage.
2. When conducting a closed massage - broken ribs.



**Errors.** The most indirect heart

- conducting a patient is lying on surface.

common errors in  
massage are:  
heart massage if the  
a soft springing

- wrong location of the hands of the resuscitator
- too small and excessive force to press on the sternum.
- long (more than 5-10 seconds) breaks in massage for other therapeutic manipulations.
- belated transition to direct heart massage when inefficiency is indirect.

- carrying out a massage without simultaneous artificial ventilation of the lungs.

### Manipulations on the abdomen and its organs.

#### Wash the stomach.

**Testimony.** 1. Poisoning with various poisons, medicines, poor-quality food.

2. Before surgery as pre-operative training.

3. In the postoperative period with stagnation in the stomach.

**contraindications.** The inability to conduct a probe for esophageal stenosis.

**technique.** To wash the stomach for poisoning poisons, drugs, poor quality food use a thick probe, diameter of 10-13 mm and a length of up to 1 meter - an orogastral probe.

The tip of the probe is placed on the root of the tongue, ask the patient to make swallowing movements and with each sip conduct a probe up to the second mark or up to the previously marked mark on the probe (from the lips to the earlobe and further down the anterior abdominal wall to the level below the sword-shaped process by 5 cm). The probe is attached to the funnel and poured at once to 1.5-2 liters 4 % soda solution, or a weakly concentrated solution of potassium permanganate, then lower the funnel to the level of the knees. At the same time, the funnel will begin to flow a washing liquid with gastric contents. Rinse the stomach to clean water.

When stagnation in the stomach use a thinner probe, diameter up to 0.5-0.8 cm and injected through the nasal passages - nasogastric probe. Pre-smear Vaseline probe is injected into the nasal passage, move it to the nasopharynx, ask the patient to make swallowing movements (or give sips to drink water) and with each sip conduct a probe to the second mark. A 200ml syringe is attached to the probe and the gastric contents are sucked out. Then with the same syringe injected 4% solution of sodium bicarbonate (soda), or a weak-concentrated solution of potassium permanganate. Rinse to clean water. If necessary, the nasogastric probe can be left for up to seven days.

#### Complications.

1. Getting the probe into the trachea. Remove the probe and try to re-examine it.

2. Vomiting, aspiration by vomit.

3. With long-term use of the probe, the development of bedsores in the nasopharynx.

### Установка зонда Блекмора (SENGSTAKEN-BLAKEMORE).

**Testimony.** The Blackmore probe is set in emergency situations to temporarily stop bleeding from the varicose veins of the esophagus.

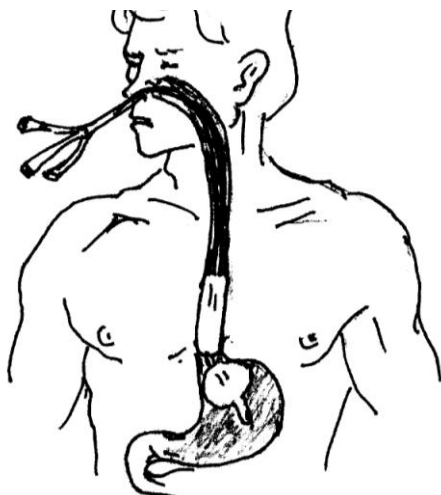
**contraindications.** No, no, no

**technique.** The position of the patient on the back or on the side. Making sure that the probe has reached the stomach (as evidenced by the flow of blood from the probe), inflate the air (80-100 ml) dist (gastric) spray, clamp the port of the balloon to avoid air leakage. Slowly remove the probe with a bloated can until there is resistance - the spray rests in the esophagus-gastric hole. In order for the probe not to pass further into the stomach, it is necessary to create thrust, for which to attach a load of up to 200 grams to the probe at the nose level. After the creation of the thrust inflate the proximal (esophageal) can in the volume of up to 120-150 ml of air and again squeeze the port of this can. Thus, the veins of the esophagus are mechanically compressed. Upon completion of the probe, it is necessary to flush the stomach to clean water through its main channel. The probe is left for a few days -3-5 days and daily washed the stomach. To make sure the bleeding stops, the esophagus can relax and if no blood enters the main channel, the bleeding is not resumed, the gastric spray is relaxed and the probe is slowly and carefully removed.

**Complications.** 1. Re-bleeding.

2. Vomiting blood and aspiration by vomit.

3. Esophageal perforation, the development of bedsores during the long-standing probe.



### **The technique of overlaying and removing the calopreem.**

In cases where the patient for medicinal purposes on the front abdominal wall superimposed intestinal fistula (anus praeter naturalis), shown the wearing of a calopreem.

A disposable calopreem is a cellophane bag, sealed on both sides, and on one surface of it is a adhesive device, in the center of which there is a hole. This hole can be enlarged with scissors.

Without removing from the glued surface of the safety film, cut out the hole of the necessary diameter, remove the safety film and apply the calopredium adhesive base on the front abdominal wall so that the functioning intestinal fistula was in the center of the hole. As the package is filled, the calopredium is carefully removed, peeling it off the skin. They conduct a toilet skin around the fistula, process with a disinfectant solution, wipe the skin dry and re-apply the calopreem.

### **Factional study of stomach secretion.**

**Testimony.** This technique is used to study the acid-forming function of the stomach.

**technique.** *The study is carried out in the* morning on an empty stomach.

The probe is inserted into the stomach in the usual way through the mouth, i.e. the tip of the probe is placed on the root of the patient's tongue and asked to make swallowing movements. After the second mark on the probe has reached the corner of the mouth swallowing movements stop and begins to take the gastric juice. Immediately with the help of a syringe suck the first portion - a thin portion. Then for an hour every 15 minutes again sucked or self-assembled 4 portions of gastric juice - basal secretion. After that, the patient is injected with a secretion stimulant: either a test breakfast or for the purity of the study in / m administered histamine at the rate of 0.01 mg per 1 kg of weight of the patient. Again within an hour every 15 minutes collect gastric juice in separate test tubes. All the portions studied are sent to the laboratory to determine the quantity, color, consistency, presence of impurities and further determine the free and general acidity in each serving, and then basal and stimulated acidity.

**Errors.** The gastric probe may curl up and the study will be unreliable.

### **Study of stomach acidity during fibrogastroscopy.**

Currently, in the arsenal of doctors there is a more informative and reliable way to determine the acidity of the stomach, the so-called **Rh-metria** during the FGDS.

### **Duodenal sensing.**

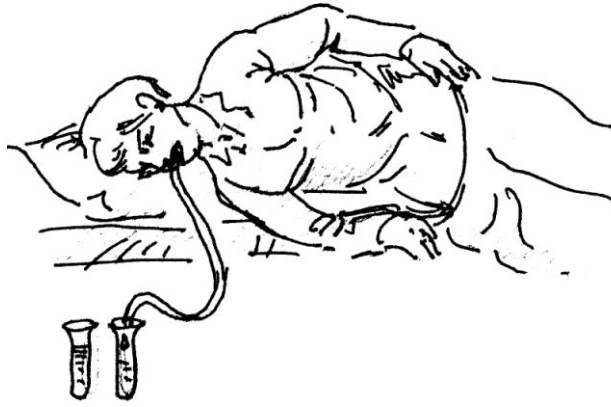
**Testimony.** Macro- and microscopic examination of duodenal contents and bile.

**technique.** For the study, it is necessary to have a duodenal probe with a metal olive at the end and a set of test tubes. The study is carried out in the morning on an empty stomach.

After the second mark of the probe reached the corner of the patient's mouth is laid on the right side, putting the roller. The outer end of the probe is lowered into one of the three prepared test tubes and begin to collect the first portion - duodenal, consisting of gastric juice, pancreatic juice and its own secret of the duodenum. When filling the first test tube - 50 ml, the end of the probe is transferred to the next test tube and given a test breakfast or through the probe injected gallbladder stimulant - 30 ml 25% magnesium sulfate, or injected in/m histamine at the rate of 0.01 mg per kg of weight of the patient. Dark bile begins to arrive, coming from the gallbladder - bubble. Fill the second test tube -50 ml and transfer the end of the probe to the third test tube; light hepatic bile begins to flow. Also collect 50 ml of detated, after which the probe can be removed.

The resulting portions of duodenal contents are subjected to macro- and microscopic examination, which allows to determine the presence of inflammatory process, to detect lamblia and to identify the groomsia, i.e. the presence of bleeding in the bile ducts.

The technique of therapeutic duodenal sensing (dubage) is similar, without conducting microscopic examination.



**Errors.** The probe and the olive left in the

curled up stomach.

### Enema.

#### A cleansinglyth.

**Testimony.** Designed to thin and remove the contents of the lower colon, used for persistent constipation, toxic substances removed during poisoning, before surgeries and childbirth, before radiology of the digestive tract and endoscopic examinations of the colon, before the use of medicinal enemas.

**technique.** The cleansing enema is put with the help of a glass or rubber mug Esmarch. For a cleansing enema an adult usually needs 1-1.5 liters of warm water (25-35°C), children under 5 years - from 150-200 ml, older children 200-500 ml.°

The patient is laid on the left side, the infant is put on the back. The rubber tip is smeared with vaseline and, diluting the patient's buttocks with the left hand, insert it into the anus, the tip is first injected forward towards the navel, then backwards, parallel to the coccyx to a depth of 5-10 cm. Pre-filled with water mug Esmarch raise to a height of one meter, open the crane and enter the liquid. After removing the tip, the patient should lie down for 5-10 minutes until the peristalticism and the urge for the act of defecation appears. The patient empties the intestines on his own.

**contraindications.** Acute inflammatory and erosive ulcer lesions of the lining of the colon, some acute surgical diseases of the abdominal cavity (acute appendicitis, acute peritonitis), gastrointestinal bleeding, decaying colon tumors.

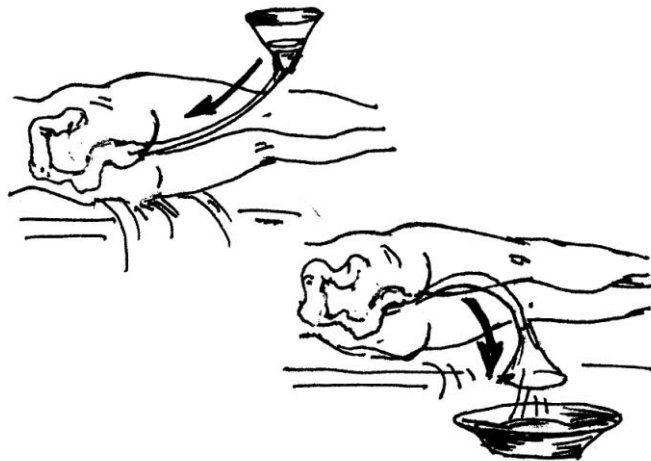
### Siphoned an alyse.

**Testimony.** Same as in cleansing lyss.

Inefficiency of the purifying enemas.

Dynamic and mechanical obstruction.

**technique.** When placing a siphon enemas use a large funnel with a capacity of up to 1.5 m liters, to which connect the rubber tube, and instead of a glass tip use a thick gastric probe. Fill the funnel with warm water and raise it to a height of 50-80 cm above the level of the patient's body.



As a rinse  
a weak

soda

It is used as

liquid use clean water,  
solution of potassium  
permanganate or 2%  
solution.

**Hypertensive** lystic.  
a cleansing enema.

### Invasive methods.

### **Puncture superficially located hematoma and abscesses of soft tissues.**

To puncture the hematoma or abscess, it is necessary to have a 20.0 ml syringe with anesthetic and a large diameter needle. After putting on sterile gloves and processing the operating field choose the place of needle inlet. To do this, find a point of maximum softening of soft tissues over the formation. At this point, infiltration anesthesia is carried out and, replacing the needle with a larger needle, inject a syringe with a needle deep into the sensation of failure. Pull up the piston of the syringe and visually determine the quality of the contents (the dingy detated or blood). The same syringe then pumps out the contents, does not remove the needle, or connects the vacuum suction to the needle and thus evacuates its contents.

### **Removal of drains and tampons.**

To remove **tubular drainage** inserted into the cavity, The tool (tweezers or blood-stopping clamp) captures the fixing drainage of the thread and crosses it.

When removing **gauze tampons** use a similar technique.

To facilitate the removal of gauze tampons, it is suggested to envelop the gauze with glove rubber - a "cigar-shaped" tampon. In this case, the gauze does not stick to the edges of the wound, the cure is easier and less painful

### **Laparocentesis.**

**Testimony.** This procedure is carried out for a diagnostic and therapeutic purpose.

For the diagnostic purpose: to detect the presence of blood in the abdominal cavity in the inability to perform laparoscopy or ultrasound of abdominal organs.

For medicinal purposes: evacuation of ascytic fluid.

**contraindications.** 1. Intestinal obstruction.

2. Pregnancy.

3. Breaking blood clotting: haemophilia, thrombocytopenia, DVS syndrome, etc.

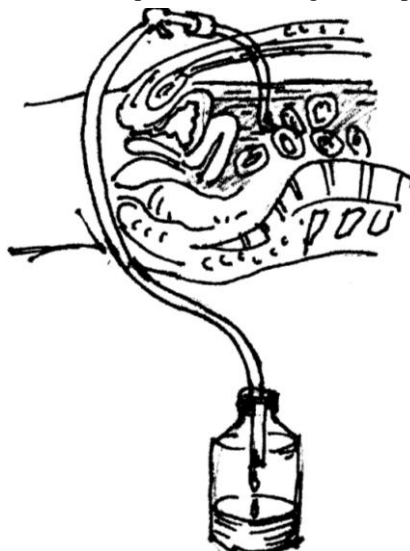
4. The presence of inflammatory diseases of the anterior abdominal wall:

piodermia, boil, phlegmon, etc.

**technique.** The position of the patient on the back.

**Diagnostic test.** After treatment with the anterior abdominal wall antiseptic, local anesthesia is performed, for which they are used to inject a needle with a syringe at a point located on the middle line of the abdomen in the middle distance between the navel and the loin joint and layered to the abdomen. Through this incision, the trocars puncture the peritoneum and penetrate into the abdominal cavity. "With the help of a syringe injected a small amount (5-10ml) of sterile fluid, and then produce aspiration of this liquid. that is an indication of emergency surgery. In the absence of impurities in the aspirated liquid catheter is left in the abdominal cavity for a day or two as a control drainage.

**Therapeutic puncture.** The technique of conducting a therapeutic puncture is the same as in the diagnostic sample. And the cavity freely enters the ascitic fluid.



**Complications.** 1.

2.

vessels of mesal with intra-abdominal bleeding.

3. Development of arterial hypotension during or after the manipulation.

Gut or bladder perforations.

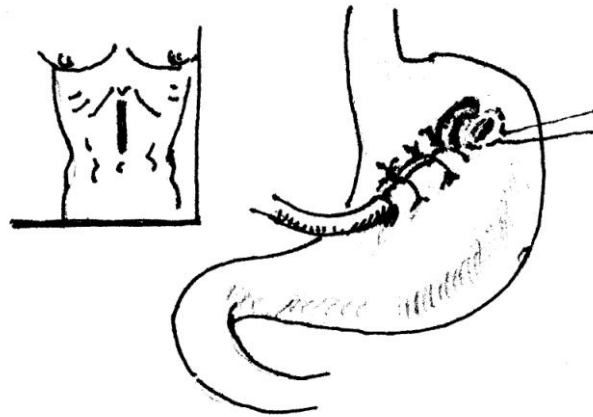
Injury of epigastric vessels or

### **Gastrostomy on Witzel.**

**Testimony.** surgery is performed in the obstruction of the esophagus (oesophageal tumor, esophagus stenosis).

**technique.** The abdominal cavity is opened by the upper middle slit. The tube is surrounded by folds created from the stomach wall, which sew over it 4-6 knots.

operating  
wall.  
from the



**Complications.** 1. The wound.  
2. Necrosis of the stomach  
3. The tube is dropped stomach

### Manipulation of the organs of the genitourinary system.

#### Cystoscopy - bladder examination.

**Testimony.** The need for endovesic manipulation, catheterization of ureters.

**technique.** In the empty bladder injected lookout or manipulation cystoscope, through which the bladder is injected up to 200 ml of transparent fluid, more often furacilin, and make a visual examination.°

**Complications.** 1. Inability to carry out a cystoscope due to the pronounced narrowing of the urethra.  
2. Infection.  
3. Perforation of the urethra and the formation of false moves, the development of bleeding.

#### Chromocystoscopy.

**Testimony.** Applied to determine the separate function of the kidneys.

**technique.** They produce cystoscopy, then 2-3 ml 0.4% indigocarmine (medical blue) are administered and after 3-5 minutes observe the flow of it through the mouth of the ureters.

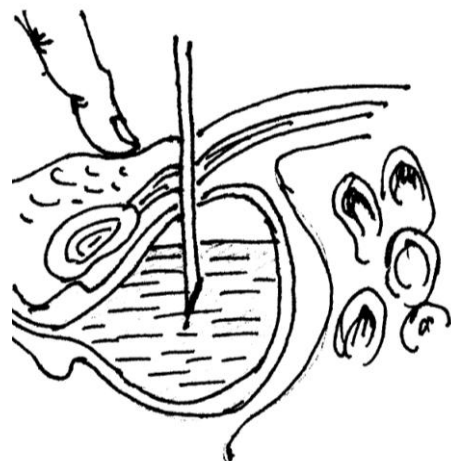
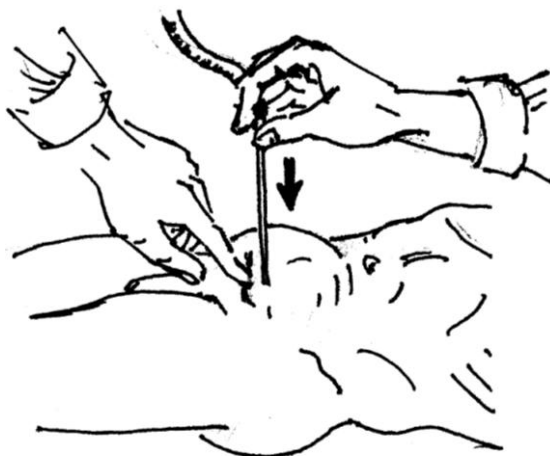
#### A puncture of the bladder.

**Testimony.** The bladder puncture is used to evacuate urine from the bladder in case of inability or contraindications to catheterization, in case of trauma of the urethra burns of the external genital organs.

**contraindications.** Contradictions are small bladder capacity, acute cystitis, bladder tamponade with blood clots, presence of bladder tumors, large scars and groin hernias

**technique.** Before manipulation, it is necessary to make sure of sufficient filling of the bladder with urine. At the readings, the head puncture can be repeated up to 3-4 times a day for 5-7 days.

**Complications.** 1. Perforation of the posterior wall of the bladder.  
2. The penetration of the needle is not in the bladder, but in the abdominal cavity. It is manifested in the absence of urine in the syringe with the possible appearance of symptoms of irritation of the peritoneum when perforating the hollow organ.  
3. Blood vessel damage and the development of macrohematuria.

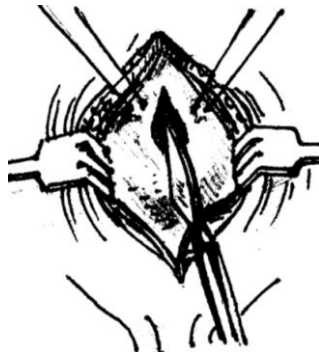


### Epicystostosis.

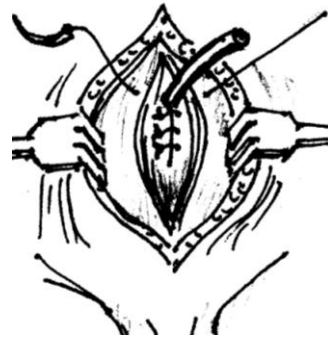
**Testimony.** For constant urine removal for a variety of periods, including after surgery on the bladder, prostate and urethra.

**technique.** After pre-treatment of the operating field, on the middle line of the abdomen above the forehead joint by 2-3 cm, the incision up to 3-5 cm cut soft tissues to the bladder.

It is necessary to monitor the situation, so as not to open the abdominal cavity. They open the bladder and insert a drainage tube or Petzer catheter. The tube is fixed to the bubble wall with ketgut seams.



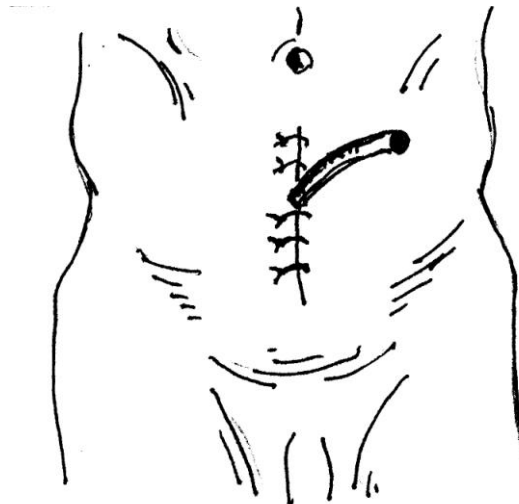
The  
the tube



wound of the  
abdominal wall

anterior  
is layered to

with the rubber graduate's wound in the bottom corner.



### Complications.

1. Damage and pre-bubble fiber.
2. Abdominal perforation and abdominal injuries.
3. The appearance of paravezic hematoma, the formation of urinary tracts and pelvic phlegmon.

bleeding from the veins of

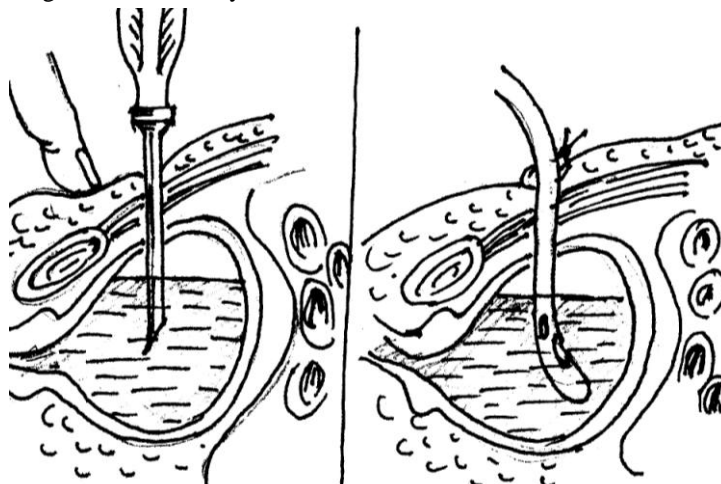
### Troakar cystostomy.

**Testimony.** The indications are the same as for the imposition of epicystostomy.

**contraindications.** Contradictions are small bladder capacity, acute cystitis, bladder tamponade with blood clots, presence of bladder tumors, large scars and groin hernias

**technique.** Local anesthesia by any anesthetic. 2-3 cm above the forehead joint injected anesthetic substance to the pre-positive space.

After the catheter began to flow urine removed the tube troacar. Rubber catheter seams fix to the skin, or inflate the fixing can of the Folley catheter.



**Complications.** 1. Damage and bleeding from the veins of pre-bubble fiber.  
2. Abdominal perforation and abdominal injuries.  
3. The occurrence of paravezic hematoma, the formation of urinary tracts and pelvic phlegmon.

### Bladder catheterization.

**Testimony.** The removal of urine in acute urine retention, due to mechanical obstruction (prostate adenoma) or neurogenic nature.

**contraindications.** Men have scar-stretching urethra.

**technique.** Depending on the condition of the prostate, men and the urethra use rubber, plastic or metal catheters of various diameters and lengths up to 25 cm. the most convenient and less traumatic is the use of the Folley catheter. For bladder catheterization in **women** use a catheter Follleae No. 12-18, or a metal (female) catheter up to 15 cm long, the patient is in the position of Valentine.

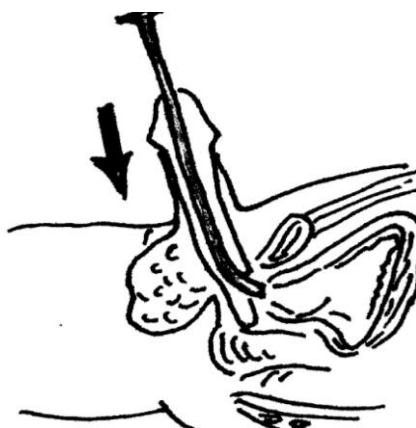
After the outer opening of injected a catheter the urethra by 10-appeared. If the supposed to be long time, the can is inflated and collection container When the bladder **men**, the patient is with diluted legs.

In rare cases, a metal catheter is used for disposable urine removal. Observing all the rules of aseptics, as much as possible throw the penis on the front abdominal wall and in the urethra enter the bend of the metal catheter. Gradually, moving the catheter, lower the penis together with catheters between the legs and penetrate into the bladder cavity. After the urine is evacuated, the catheter is removed.

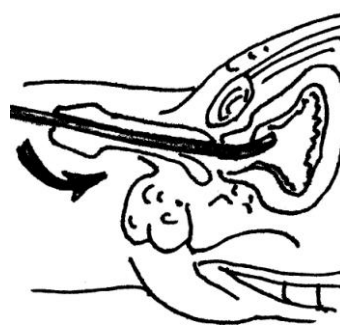


treatment of the the urethra, a cate into the hole of 12 cm until urine catheter is preserved for a Folley catheter the urine is connected. catheterization in laid on the back

metal catheter is urine removal.



Certain



types of regional (local) anesthesia.

### Intravenous and intra-erativeal anesthesia.

**Testimony.** Surgery on the limbs.

**contraindications.** Common for local anesthesia (mental imbalance, increased sensitivity to anesthetic) and peripheral vascular disorders.

**technique.** To perform the insilency, the limb is raised up and the harness on the limb is more distal than the expected area of the operation.

In the space between the harnesses cut off one of the veins on the leg (see saphena magna или parva) или на руке (see cephalica, basilica, median cubiti) under pressure pump a solution of anesthetic.

During arterial anesthesia after bleeding of the limb with a thin needle pierce the artery and introduce a solution of anesthetic.

Usually, the introduction of 50-100 ml 0.5 % of novocaine solution is enough to obtain good anesthesia.



### Intra-bone anesthesia.

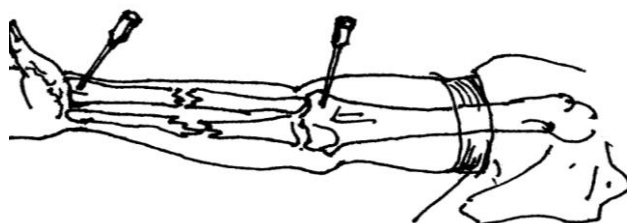
**Testimony.** All interventions on the distal parts of the limb, limited by a duration of 1-1.5 hours.

**Contradictions.** Interventions in the upper limb, prolonged operations for more than 1.5 hours, inflammatory limb diseases, hypersensitivity to anesthetic.

**technique.** The introduction of anesthetic above the bone fracture or the intended area of surgery does not give proper anesthesia, so the prerequisite is the introduction of anesthetic more distal than this area.

On the blood-bleed limb (raise the limb by 2-3 moon) in its raised position at the level of the diaphysis of the femoral or humerus put a harness. Pre-anesthetize the skin, subcutaneous fiber and overcrinal, then the rotational movements of the Kassirsky needle or Igloo CITO injected into the spongy substance of the bone. An anesthetic is being pressured. As anesthetics are used 0.25% and 0.5 % solutions novocaine, xicain, trimecain.

In the process of pumping anesthesia on the skin there are white spots, indicating the onset of anesthesia.



Complications.  
needle.

removing the

by the observance of dosages, intermittent removal of the harness or inclusion of barbiturates in the premedication.

3. Development of Crash Syndrome with long-term limb compression.

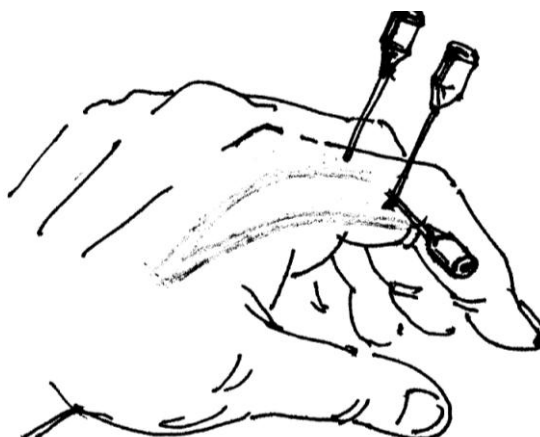
1. Breaking the

2. Intoxication when  
harness. It is warned

### Blockade of finger nerves on Oberst-Lukashevich.

**Testimony.** Operational intervention on the finger.

**technique.** Before carrying out anesthesia on the base of the finger put a rubber or gauze harness, then after the treatment of the operating field antiseptic dystopic dispensed with the harness in the base of the finger injected a solution of anesthetic (1-2 ml 2.5% of the solution of lidocaine).



**Complications.**

1. Premature start of the operational allowance.
2. Necrosis of the plots of the injected.
3. Infection.

**Blockade of the seed rope by M.I. Lauryn Epstein.**

**Testimony.** 1. Operations on the external genitals.

2. Elimination of pain in diseases of the external genitalia
- 3 (U.S.)

**contraindications.** Hemoagulation disorder.

**technique.** To carry out the manipulation it is necessary to have a 10 ml syringe with a 22 caliber needle. In men, the finger-pointing is defined by the seed rope, the II and I fingers of the left hand are captured and the headland is inserted into the area below the level of the outer groin canal: 1 cm lateral zone of the penis connection with the pubic. After processing the alleged site of the needle, the needle is inserted and the soft tissues are layered.



Repeat the same sequence  
In women, anesthetic  
peripheral part of the uterine

**Complications.** Vascular injury, hematoma formation.

of actions on the opposite side.  
solution is injected into the  
round ligament.

**Intra-pelvis blockade on Shkolnikov - Selivanov.**

**Testimony.** 1. Renal colic, which arose during the stone of the lower third of the ureter.

2. Fractures of the pelvic bones, rupture of the symphysis.

**technique.** To carry out the blockade, it is necessary to have a 20 ml syringe with a needle length (15-17 cm), anesthesior.

The position of the patient on the back is treated with an antiseptic. Retreating 1-2 cm from the antessesy bone's front-upper ossium, they form an anesthetic "lemon crust". Then the long needle is promoted under the iliac bone from front to back and gradually introduce a solution of anesthetics. On the inner surface of the iliac bone the needle is injected at a depth of 12-14 cm, reaching the level of the inner iliac pit. After feeling the bone obstruction, the needle is pulled by 0.5 cm and slowly injected 150-200 ml 0.25 % of novocaine solution. If necessary, the blockade is carried out on the other side.

**Complications.** 1. Damage to blood vessels.

2. Infiltration into the abdominal cavity with bowel perforation.

**Paranephral blockade.**

**Testimony.** As an anti-shock agent in the case of abdominal injuries, in the case of post-traumatic acute renal failure, bowel atony in the postoperative period.

**technique.** The patient lies on the side with a roller under his lower back. At this time, the syringe is removed several times from the needle to catch the moment when it does not appear a drop of solution. This demonstrates the correctness of the blockade. In addition, when administered a small amount of anesthetic drop on the needle fluctuates in the tact of the patient's breathing, the so-called "breathing drop." Introduce up to 80ml 0.25% novocaine.

The blockade can be carried out on both sides.

**Complications.** Damage to the kidney or intestines.  
infection.

**Neurosurgical manipulations.**

## Lumbar puncture.

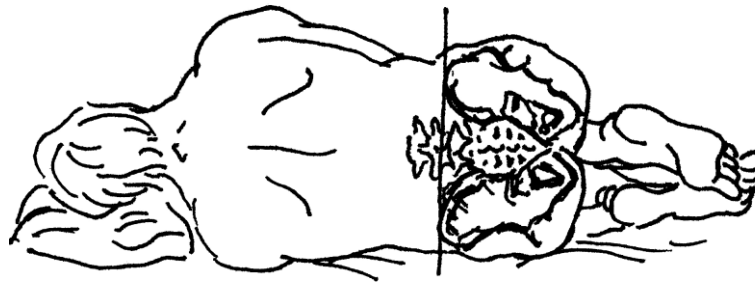
**Testimony.** 1. Puncture for diagnostic purposes.  
2. Measuring intracranial pressure.  
3. Introduction of medicines into the spinal canal.  
4. Spinal anesthesia.

**contraindications.** 1. Breaking hemoagulation.  
2. Full spinal block above the puncture point.  
3. Expressed lumbar spondylosis.

**technique.** To carry out the manipulation it is necessary to have a special needle with a mandren for cerebrosum puncture.

A) On the side: the patient must be in a position lying on his side with his chest head and knees brought to his stomach.

B) Sitting: The patient sits on the edge of the bed, bent forward as possible, head to the provision is spinal

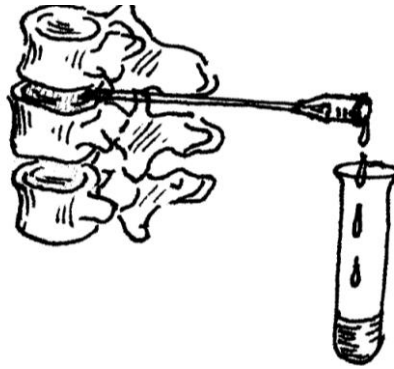


patient sits on bed, bent much as bringing his chest. This preferable to anesthesia.



Лумбальную пункцию проводят обычно на уровне L3-L4, L4-L5, L5-S1. Уровень L4-L5 располагается на линии, соединяющей верхние края гребней подвздошной кости - межгребневая линия.

After treatment with an antiseptic solution, 1 ml of anesthetic solution is injected into the intended puncture site. Then move the needle deeper, strictly in the sagittal plane and slightly (about 15 degrees) in the crane direction. The needle will meet a slight resistance. The passage of the needle through the yellow ligament into the subarachnoid space is evidenced by the appearance of a specific sense of failure, sometimes with a characteristic click. If the needle rests on the bone, pull it back into the subcutaneous tissues and change the tilt of the needle, make the next attempt to hold the needle in the subarachnoid space. As soon as the needle is in the spinal canal, remove the mandren and follow the expiration of the liquor.



For microscopic examination of cerebrospinal fluid, a test indicates the subarachnoid number of white blood cells, the presence of a large amount of protein - the growth of the central nervous system.

examination, collect 3-5 ml of tube. The presence of blood bleeding, the presence of a large cells - the inflammatory process,

In the case of cerebrospinal anesthesia, an anesthetic substance is introduced into the subarachnoid space. The correctness of the anesthesia is evidenced by the feeling of heat in the patient's legs, and then numbness of the lower extremities.

Insert the mandrel needles into the needle's lumen and remove them before removing the needle.

**Complications.** 1. Damage to nerve roots.

2. Headaches, short-term or persisting for a long time after manipulation.

3. Hypotonia, sometimes persistent, requiring urgent action.

4. Damage to blood vessels, hematoma formation.

5. Dislocation (wedge) of the brain. When the liquor is rapidly ingested, the oblong brain is wedged into the

6. Infection.

7. Stopping breathing and heart. This complication occurs during or after cerebrospinal anesthesia, when the head end is below the torso and the anesthetic substance reaches the oblong brain.

#### **Trauma manipulation.**

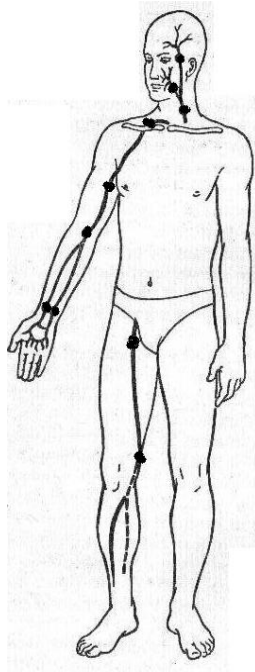
Temporary stop of bleeding can be achieved by pressing the damaged vessel in the wound or throughout, sharp bending and fixation in this position of the limb, the imposition of a pressure bandage, giving a sublime position to the damaged part of the body, the imposition of a blood-stopping harness Esmarch or clamping on the vessel with the abandonment of it in the wound.

#### **Temporary stop of bleeding with a fingerpress.**

Pressing the vessel throughout is carried out by squeezing the bleeding vessel above the place of bleeding when the arteries are injured and below - when the vein is injured. The finger pressing of the vessel requires considerable physical effort; even a physically strong person can perform this procedure no more than 15-20 minutes.

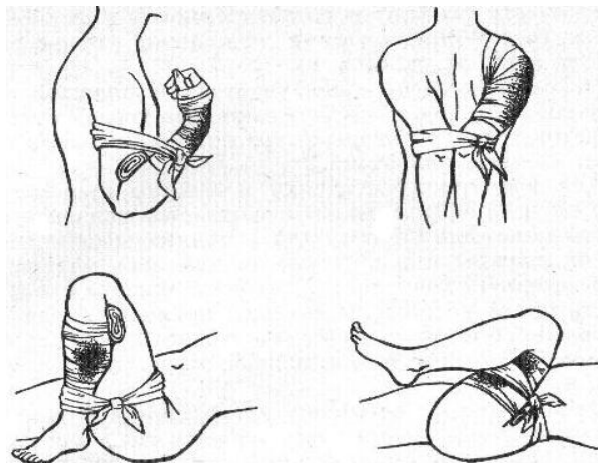
For each large arterial trunk there are typical places where his finger press is made. The artery is pressed on those areas where the arteries are located superficially and near the bone: the carotid artery - the transverse process VI of the cervical vertebra, the connective - I rib, the shoulder - the area of the inner surface of the humerus, the femoral artery - pubic bone.

However, stopping the bleeding with the finger press should be replaced as quickly as possible by pressing the bleeding vessel with a clamp or a harness.



### **Stop bleeding by flexing the limb.**

To stop bleeding, you can successfully apply the method of maximum limb flexion, followed by fixing it in this position. This method of stopping bleeding is advisable to use in intensive bleeding from wounds located at the base of the limb. When the forearm and shin are injured, the limb is fixed in the elbow and knee joints; When bleeding from the vessels of the shoulder - the arm should be styled to failure behind the back and fixed; When the hip is injured, the leg is bent in the hip and knee joints and the hip is fixed in the position brought to the abdomen.



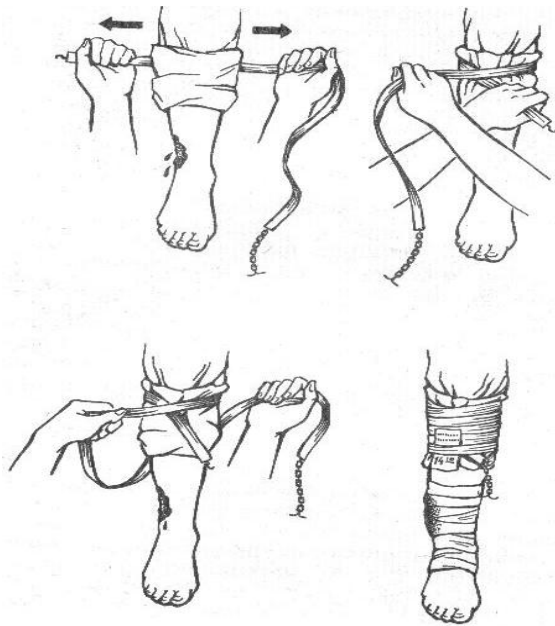
### **Stop the bleeding by stitching the harness.**

The quickest way to stop bleeding is a way of overlaying the blood-stopping harness of Esmarch. This manipulation is shown only in massive arterial (non-venous) bleeding. The harness is superimposed above (central) bleeding sites and as close to the wound as possible. The stitching is as follows:

The place of the proposed imposition of the harness is wrapped with a towel, a piece of matter or several layers of bandage;

- The harness is evenly stretched and make 2-3 rounds around the limb, the ends of the harness are fixed with the help of a hook and chain, or tied with a knot;
- The limb should be stretched to the full stop of bleeding;

The time of the harness should be specified in the note attached to the clothing.



When properly imposed harness bleeding from the wound stops and palpatorically not determined peripheral pulse on the limb. It should be remembered that the harness can be kept no more than 2 hours in summer and no more than 1 hour in winter. The harness should lie in such a way that it catches the eye.

After the critical time of the harness to partially restore circulation, it must be removed or weakened for 10-15 minutes, and then superimposed again slightly above or below the place where it was located. During the release of the limb from the harness, arterial bleeding is warned by the finger pressing of the artery throughout.

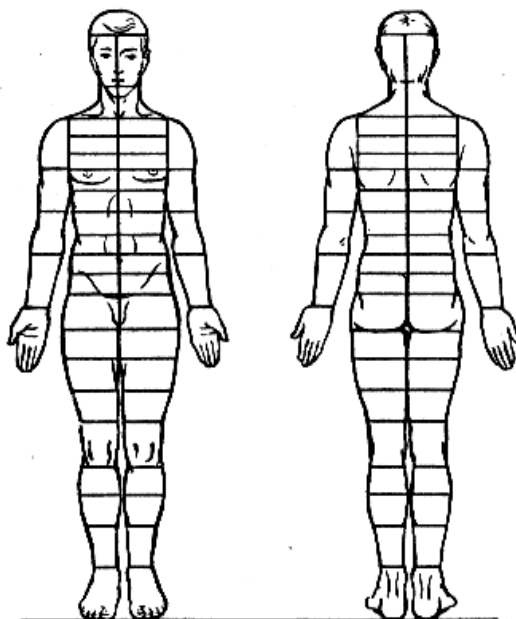
### Burns

Simple criteria can be used to define the area of impact in an indicative way: "rule of nine" and "palm rule."

According to the "rule of nine", the surface of the head and neck of adults is 9%, one upper limb-9%, one lower limb -18% (thigh 9%, shin and foot -9%), front and back of the torso by 18%, perineum and external genitalia - 1%.

The size of an adult's palm is one percent of the total surface of the skin. The "palm rule" is used in limited or, on the contrary, in subtotal burns.

More precisely the area of the burn can be determined using a special stamp, which shows the contours of the human body, divided into segments. Each segment is 1% of the body's surface.



To calculate the area of the burn surface in children use the data of the next table (the methodology for calculating N.N. Blokhin)

	Skin area %				
Body parts	New-life-money	1 year	5 years old	10 years old	15 years old
head	20	17	13	10	8
neck	2	2	2	2	2
breast	10	10	10	10	10
Life	8	11	8	8	8
back	11	5	11	11	11
Buttocks (2)	5	1	5	5	5
genitals	1	8	1	1	1
Shoulders (2)	8	5	8	8	8
Forearms (2)	5	5	5	5	5
Kmsti (2)	5	5	5	5	5
Hips (2)	11	13	16	18	19
The shins (2)	9	10	11	12	13
Rate (2)	5	5	5	5	5

At the depth of the lesion, the burns are divided into 4 degrees.

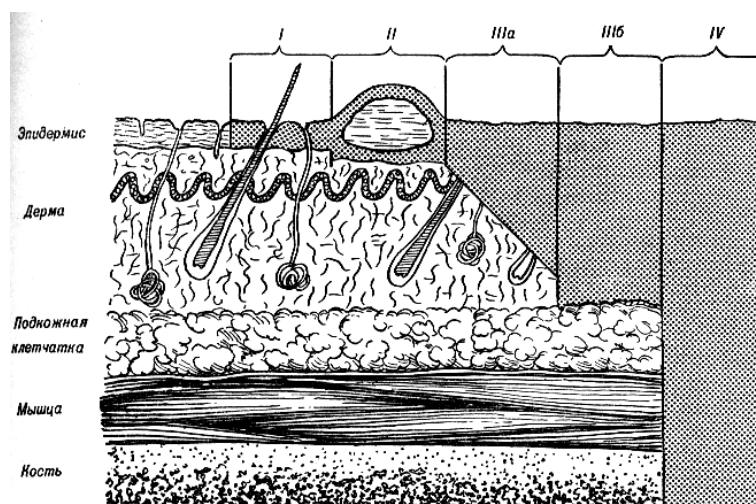
**I degree** - skin hyperemia, accompanied by burning pain;

**Ii degree** - hyperemia and swelling of the skin with detachment of the epidermis and the formation of blisters filled with transparent fluid;

**IIIand degree** -there is noepidermis, soft tissues are sated, tense, the surface of their bleached color or covered with a dry thin light brown scab.

**IIIb degree** - necrosis of the skin, which have the appearance of dense brown-brown struts.

**The IV degree** is skin necrosis and deeper-lying tissues, the scab is dense and thick, sometimes black, with signs of charring.



**Burn sickness.** In middle-aged people, burn sickness develops with burns on the area 10-15 % of the body surface, And in the elderly and children with a lower area of damage.

#### Dieterichs bus overlay technique.

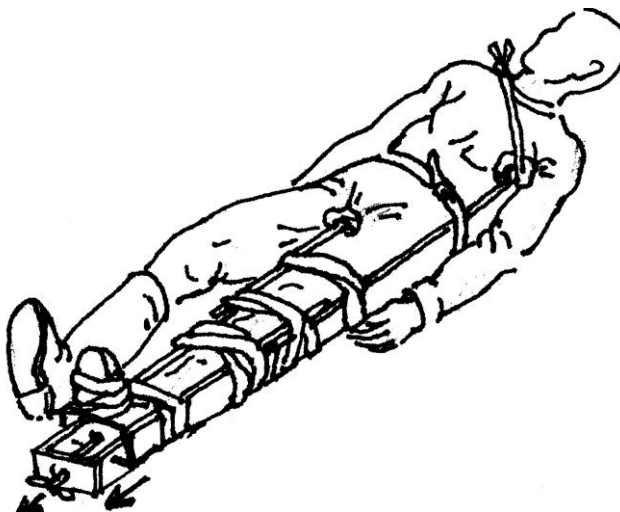
**The evidence.** Closed and open hip injuries (fractures, dislocations), femur and knee fractures, extensive soft tissue damage.

**The technique of immobilization.** Dieterichs' distraction tyre is superimposed in the following order. Preparation of the tyre is to push the branes to such a length that the outer half, resting the upper crutch in the armpit area, and the inner- in the crotch of the victim, protruding for the edge of the foot on 10-12 cm. adjusting the tyre along the length of the limb, fix the achieved position of the bran, inserting the spike of

one half of each branch into the corresponding hole of the other half and tying them together at the level of the bandage.

The ankle area is covered with a thick layer of cotton wool and bandaged to the foot, paying attention to the strong fixation of the heel.

Attach the splint to the torso with special straps or straps, cloth braid or scarf. Careful pulling for the foot produce an extremity of the limb until the axis of the damaged limb is corrected, and the cross-section branch does not rest in the groin and armpit. In this position, the foot is fixed by a twist to the lower crossbar. The most durable fixation is required at the level of the torso, hips and shin. If necessary, plaster rings are imposed in these places for a very long time.



In the absence of a bus, you can also use

Dieterichs a stair tire.

#### The technique of overlaying Kramer's stair bus.

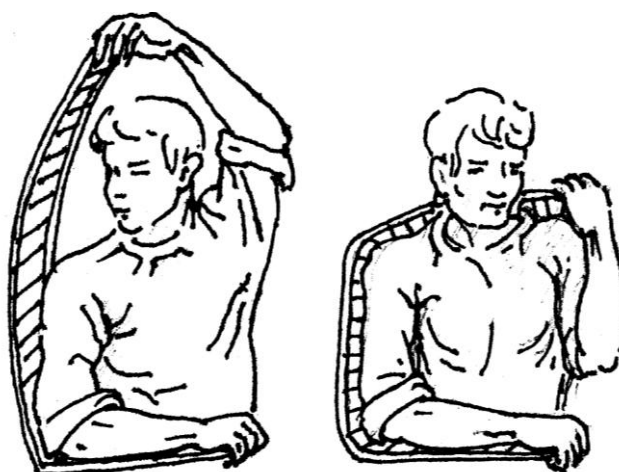
**Testimony.** Open and closed limb damage, dislocation of limb joints, extensive damage to soft tissues, blood vessels and nerves.

#### **The technique of immobilization in damage to the upper limb.**

The standard stair tire up to 120 cm long, it should capture the entire damaged limb from the fingers to the back of the healthy side.

Sheena pre-prepared:

- Cotton wool is applied to the tyre and wrapped with a bandage;
- Two gauze ribbons up to 75 cm long are tied to one end;
- the immobilizing tyre simulates it on itself:



The sheen is superimposed on the of the victim and

injured limb create the

correct, most physiological position: the shoulder is removed 30 forwards, the ends of the gauze ribbons are tied to the second end of the tire on the forearm. In the armpit put cotton wool roller. The tire should be fixed with bandages to the torso and limb.°

### Sprains. Methods of dislocation of

The administration of dislocated crying is more often performed under local anesthesia, in rare cases the administration is carried out under anesthesia.

1. *Cocher Method*. The patient is laid on a table or seated on a stool.

■ The doctor with both hands takes the dislocated limb for the lower thirds of the shoulder and forearm (in the position of flexion in the elbow joint at an angle of 90°) and slowly pulls the shoulder downwards;°

■ As much as possible presses the shoulder to the torso;

■ With the simultaneous turn of its exterior;

■ the shoulder is lifted to the front and up by 60° and quickly turned inside so that the palm of the dislocated limb is closer to a healthy shoulder joint. At this point, the characteristic "click" indicates the direction of the head of the humerus.°

2. *Janelidze Method*. The patient should lie on his back with a slight turn of the torso towards the damaged limb on two extended tables so that the dislocated hand hangs between them.



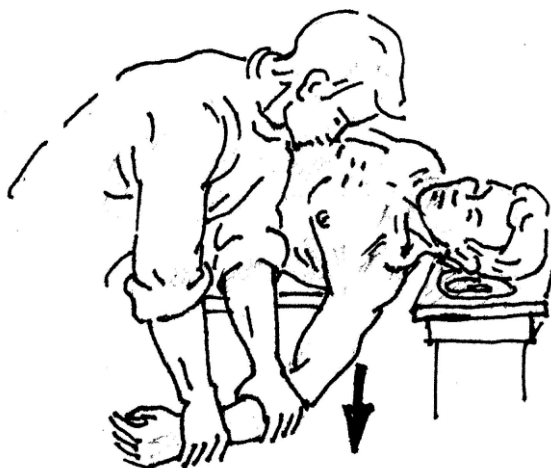
correcting  
the humerus.

3. *Hippocratic-Method*. The victim

back, the doctor

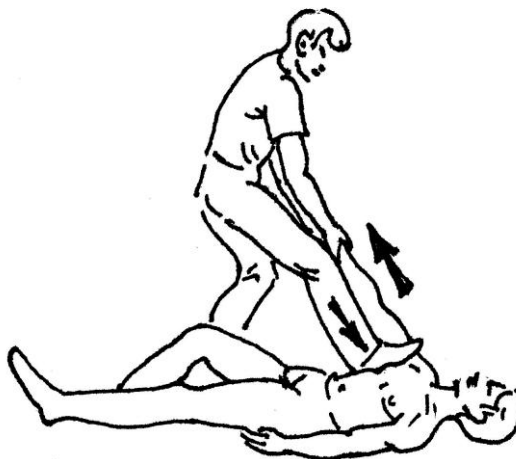
foot in the armpit on

and the injured hand pulls the wrist along the torso.



*Cooper*  
lies on his  
places a bare  
the sore side,

### Methods of correcting hip.



a dislocated

Removal of dislocated hips produce only under general anesthesia.

1. *Janelidze Method*. The patient under anesthesia is placed on the edge of the table.

2. *Cocher Method*. The patient (under anesthesia) is put on his back. The assistant tightly holds the patient's pelvis.°

3. Central hip dislocation is usually eliminated with skeletal stretching. The load on the damaged limb is allowed in 3-4 months. After it has been eliminated. Until then, the patient must walk with crutches.

### blood transfusion.

In the Russian Federation, the Order of the Minister of Health of the Russian Federation No. 363 of November 25, 2002 "On the approval of the instructions on the use of blood components" is currently in force.

This instruction includes methods of determining blood groups by the AVO system, rhesus-belonging, the order of immunoserological studies for blood transfusions and blood components, blood transfusion techniques and blood components. The instructions include indications, contraception and complications during transfusion, as well as ways and methods of treatment of developed complications.

### Methods for determining blood groups under the AVO system.

I. A method using known standard hemagglutinating serums.

II. **Method** using known standard red blood cells.

I. *According to the famous serums*. On a three-point record labeled anti-A, anti-B, anti-AB place two drops (0.1 ml) of reagent -hemagglutinating serum or suspension of tsoliclone and next to one drop of the studied blood (0.01-0.02 ml when using hemagglutinating serums; 0.02-0.03 ml when using tsoliclons). The plate is constantly swayed, watching the reaction for 3 minutes when using tsoliclone; 5 minutes when using hemagglutinating serums. After 5 minutes, 1-2 drops of saline solution are added to the reacting mixture to remove possible non-specific aggregation of red blood cells.

The results are interpreted by table.

Agglutination of red blood cells with reagent			Blood belongs to the group
Antique	Antikv	Anti-AB	
-	-	-	O(I)
+	-	+	A(II)
	+	+	B(III)
+	+	+	AB(IV)

If there is **agglutination with all three reagents**, it is necessary to conduct a study with the serum group AV (IV). Blood can be attributed to the group OF AV(IV) only in the absence of agglutination of red blood cells in the serum AV(IV).

2. *By the famous red blood cells*. Standard red blood cells are prepared from the blood of donors with a pre-known blood group, stored at t° 4-8C.°

The blood studied is centrifuged to produce serum. Then in three rows with 10 drops of the studied serum put 1-2 drops of weights of known standard red blood cells, mix and observe for 5 minutes.

The results are interpreted by table.

Agglutination of reagents with red blood cells			Blood belongs to the group
O(I)	A(II)	B(IV)	
-	+	+	O(I)
-	-	+	A(II)
	+	-	B(III)
-	-	+	AB(IV)

In serological laboratories, the method of cross-identification of blood type is more often used, i.e. simultaneous use of both methods.

### Definition of rhesus affiliation.

To determine rhesus-belonging use antiresus standard serum containing antibodies to the rhesus protein.

Antiresusum serum is prepared from the blood of a woman who had a history of rhesus-conflict during pregnancy.

Apply a large drop (about 0.1 ml) antiresus serum on the plate, next to a small (five times smaller) drop of the blood studied, mix and shake the plate. Despite the fact that a clear agglutination occurs in the first 30

seconds, the results of the reaction are taken into account after 3 minutes after mixing. In the presence of agglutination, the blood studied is marked as rhesus positive, in the absence - as rhesus negative.

Causes of errors in determining blood groups and rhesus-belonging.

1. Technical errors:

(a) Mistaken arrangement of reagents. Each time when determining blood groups and rhesus-belonging should check the location of reagents, as well as visually assess their quality, exclude the use of clouded, partially dried reagents, reagents with expired expiration date.

b) Temperature conditions. The identification of blood groups is produced at  $t^{\circ}$  not below 15C and no higher than 25C.<sup>oo</sup>

c) Ratios of reagents and red blood cells studied. Optimal ratios of red blood cells to serums - 1:10., with the use of tsoliclone and serums -2:10.

D) The duration of observation. Agglytination of red blood cells appears within the first 10 seconds, but the observation of the reaction should be carried out at least 5 minutes.

2. Hard-to-define blood groups.

(a) Blood subgroups. Antigen A can be presented with two variants -<sub>A1</sub> and A2, which can lead to a misinterpretation of the results of the study.

b) Blood chimeras. Blood chimeras are the simultaneous stay in the blood of two populations of red blood cells, differing in the group of cuties and other antigens. Establishing a blood group in blood chimeras is difficult, as in some cases half of the red blood cells circulating in the bloodstream have one blood group and the other half have another.

c) Non-specific agglutination of red blood cells. It is judged on the basis of the ability of red blood cells agglutinate to serums of all groups, including AB(IV). Observed in autoimmune hemolytic anemia and other autoimmune diseases.

d) Other features. Determining the groups of cutia can be difficult in patients with changes in the properties of red blood cells in various pathological conditions: it can be expressed in the increased agglutinability of red blood cells in patients with cirrhosis of the liver, burns, sepsis.

In some newborns antigens A and B on red blood cells are poorly expressed, and the corresponding serum agglutinins are absent.

**Assessment of the suitability of blood and its components to transfusion.**

Before transfusion of blood and its components, the doctor conducts a visual assessment of the suitability of the bottle and contents. Any kind of violation of the tightness of the container are the opposites to the use of the transfusion environment. The label should include: the name of the station or the department of blood transfusion, the date of the harvest, the name of the transfusion environment, the F.I.O. donor and the doctor who produced the blood, the volume and shelf life of the environment, the mark on the blood examination for the presence of infection with syphilis, hepatitis and the AIDS virus.

Storage time:

**blood and red blood type** - 21 days from the date of harvesting;

**concentrate of platelets** with constant stirring for 3-5 days;

**red blood celli**, depleted white blood cells and platelets (so-called - laundered red blood cells) should be used within 24 hours after harvesting.

**Protocol of blood transfusion and blood components.**

The doctor who is transang the transfusion of blood components is required to register with the medical card at each transfusion:

- readings to transfusion of blood components;
- The date of transfusion, the beginning and end of transfusion;
- prior to transfusion - passport data from the label of the donor container, containing information about the donor code, blood group on the systems of AVO and rhesus, container number, date of harvest, the name of the blood service institution, (after the transfusia of the label is unstuck from the container and pasted into the medical card.);
- The result of a control check of the group affiliation of the recipient and donor;
- The result of samples for individual compatibility of the donor and the patient;
- The result of a biological sample;
- At the end of transfusion, the presence or absence of a reaction to transfusion, complications;
- The results of three times the thermometer every hour;
- Results of urine color control;
- the next morning the urine is sent for general analysis.

**Prior to transfusion of blood and blood components, it is necessary to obtain the patient's written consent for this procedure.**

**Recommended literature.**

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**Appendix No1**

to the teaching and methodological manual on practical skills for  
students

2-3 courses

**THERAPEUTIC DIETS****DIET No 1A**

**SOURCE:** ulcerative disease of the stomach and twelvepergola of the intestine during a period of sharp aggravation (in the first 8-10 days of aggravation); acute gastritis and exacerbation of chronic gastritis in the first 2 days.

**GENERAL WARNING:** a sharp restriction of chemistry and mechanical stimuli of the mucosa-re-chaining apparatus of the upper part of the gastrointestinal tract; substances that linger for a long time in the stomach, gastric secretion mulators.

**LIST RECOMMENDED DISHES:** mucous soups of cereals (oatmeal, pearl, rice, semolina). Meat and fish steamed souffle, puree of low-fat meats, poultry and fish without fascia, tendons, skin. Grated porridge from ovnya, semolina, rice, buckwheat with milk or cream. Mixed omelettes, whipped egg whites.

**BANS:** dishes and side dishes from vegetables, mushrooms, bread and bakery, products, lactic acid products, spices, snacks, coffee.

## **ДИЕТА №1В**

RELATED: exacerbation of gastric and duodenal ulcers (10-20th day of illness), acute gastritis (2-3 day).

GENERAL HEALTH: moderate compared to a hundred scrap 1a mechanical, chemical and thermal sorrel.

READ MORE: To diet products

1a add breadcrumbs from white bread of the highest grade, thinly sliced and not browned; low-fat varieties of meat, poultry and fish without tendons and skin, chopped steamed cooking or boiled in water meatballs, nnely, etc.

## **DIET No 1**

RELATED: Gastric and duodenal ulcers during aggravation without pronounced symptoms of "irritated stomach"; chronic gastritis, with preserved secretion during aggravation.

RELATED: Moderate mechanical, chemical sting of the mucosa and; receptor apparatus of the gastrointestinal tract, limiting the stimulants of jelly milk secretion and substances that linger in the stomach for a long time.

A LIST OF RECOMMENDED DISHES; Yesterday's wheat bread, dry sponge cake. Soups on mucous broth with the addition of rubbed boiled vegetables and cereals, egg-milk with mash, cream: Low-fat varieties of fish, mint and birds are mostly chopped, steamed or boiled in water. Sours, jelly, mousse, grated compotes of sweet varieties of berries and fruits, apple marmalade. Whole milk, condensed, cream, fresh sour cream, fresh low-fat cottage cheese.

BANS: white cabbage, turnip, radish, trouser, radish, sorrel, spinach, onion, garlic, mushrooms, legumes, spices and coffee.

## **DIET No.2**

RELATED: Acute gastritis, enteritis and colitis during the convalescence period as a transition to a rational diet; chronic gastritis with secretory insufficiency, enteritis, colitis in the period of persistent remission.

READ MORE: The diet is full of value with the exception of foods and dishes that are load-sweet for the gastrointestinal tract; long lingering in the stomach, difficult to digest, but contributing to increased gastric secretion: Eating fractional 4-5 times a day, table salt up to 15 grams per day.

LIST OF RECOMMENDED DISHES: yesterday's wheat bread, 1-2 times a week a limited number of unskeable buns or baked pies. and fish broth with various cereals (except millet), vermicelli; Low-fat meat and poultry, from boiled to piece or chopped, fried without breading. Soft-boiled eggs, steamed, baked and fried omelets, dishes of whipped egg whites. Kiseli, compotes, jelly, mousse of sweet berries and fruits in raw form sweet varieties of berries and fruits (strawberries and strawberries), baked apples, marmelada, sugar. acidophiline, kefir), fresh cottage cheese, Non-acid syswarm, and baked, sour cream fresh no more than 15 g per dish.

BANS legumes and mushrooms.

## **DIET No.3**

RELATED: Chronic bowel disease with a predominance of constipation in -period of non-severe aggravation and remission

READ MORE: an increase in the diet of foods that enhance motor function. Eating 3 times, table salt up to 12-15 grams per day.

LIST RECOMMENDED: Wheat bread from coarse flour or with the addition of wheat bran, With good portability, black bread (table, eagle, rye) soups on soft, low-fat meat; fish broth, vegetable brew (mostly with vegetables) meat of low-fat varieties - beef, veal, chickens, etc. poured, piece, sometimes in rublenom form. Eggs are soft-boiled or in the form of steamed omelets, no more than 2 pieces a day. Fresh, ripe, sweet fruits and berries are raw and in dishes in increased quantities. Acidophilus, kefir, rye,

sourdough, etc. Cheese neostchi. Tea, rosehip broth, fruit sweet juices (special but plum, apricot), vegetable (tomato, carrot, etc.).

BANS: vegetables rich in essential oils (turnips, radishes, onions, garlic, radishes, and mushrooms.)

#### **DIET No.4**

GOOD: acute and chronic bowel diseases during profuse diarrhea and sharply expressed dyspeptic of certain phenomena.

GENERAL WARNING: a sharp restriction of mechanical and chemical stimuli of the mucosa and receptor apparatus of the gastrointestinal tract with the exception of products and dishes that enhance the motor function of the intestines 5-6 times, table salt 8-10 g per day,

LIST OF RECOMMENDED DISHES: breadcrumbs from the highest varieties of white bread, thinly sliced. Also, meatballs, soufflé of boiled meat or fish, meat low-fat in chopped form, boiled or steamed.

Eggs (with good tolerability) no more than 2 pieces a day in the form of steamed omelets. RELATED: Sugar up to 40g, butter 40 -50 g, cream.

BANS: pasta, milk, vegetable fiber, sauces, spices, smoked, snacks, pickles, boiled.

#### **DIET No.5**

READ MORE: chronic hepatitis with benign and progressive course: and in the compensation stage; chronic cholecystitis in the period of aggravation and remission, bile-like disease.

A GENERAL CHARACTERISTIC; Strong stimulants of the secretion of the stomach and pancreas (extractive substances of products, which are hot essential oils), fried dishes containing about the outflow of slow fission of fat (acroleins and aldehydes), refractory fats, foods rich in cholesterol, purines are excluded. Increased carbohydrate content.

READ MORE: yesterday's bread wheat and rye, breadcrumbs, dry biscuit: Soups on vegetable or meat broth with various cereals and vegetables, dairy, fruit and vegetables. Dishes of egg whites (steam and baked protein omelets, snowballs, meringues). Sugar, honey, marmalade, marshmallow, toffee, jam, pastille.

BANS: turnips, radishes, radishes, sorrel, spinach, onions, garlic, mushrooms, spices, cocoa.

#### **ДИЕТА №5А**

READ MORE: acute hepatitis and cholecystitis, exacerbations of chronic hepatitis, cholecystitis and gallstone disease, nor comorbidities of the stomach and intestines. Acute and chronic pancreatitis.

THE WORLD: the same as with the diet Number 5, but with mechanical and chemical sororulation of the stomach and intestines.

LIST RECOMMENDED DISHES: bread wheat yesterday, dry biscuit. Soups on mucous broth with rubbed pumpkins and vegetables with the addition of egg-milk mixture and butter or on vegetable broth with well-boiled cereals (rice, semolina) and finely chopped vegetables (potatoes, carrots, zucchini, etc.). Cutlets are steamed meat, soufflé meat. Jelly, mousses. soufflé of fresh and dry sweet varieties, berries and fruits, sugar, honey, baked apples and pears. Milk only in dishes, lactic acid products and cottage cheese fresh.

BANS: snacks, spices, cabbage, turnips, radishes, sorrel, spinach, cocoa.

#### **DIET No5P**

RELATED: Chronic pancreatitis. General characteristic: low energy value, physiological protein norm (1/3 of animal origin) with a sharp restriction of fats and carbohydrates, exclude foods that cause bloating, containing coarse fiber, rich in extractive substances, stimulating the secretion of digestive juices. Culinary processing: food is cooked in boiled form or steamed, liquid or semi-liquid consistency. Energy value: 1,800 kcal (7,536 kJ). Ingredients: proteins 80 g, fats 40-60 g, carbohydrates 200 g, free liquid 1.5-2 liters, table salt 8-10 g. Mineral composition: potassium 3,800 mg, calcium 1,100 mg, magnesium 500 mg, phosphorus 1,700 mg, iron 30 mg, sodium 4,050 mg. Vitamin content: vitamin A 1.5 mg, carotene 12.6 mg, vitamin B, 1.8 mg, vitamin RP 19 mg, vitamin C 115 mg.

#### **DIET No 6**

RELATED: Gout, u control diathesis, oxaluria.

GENERAL FINAL: restriction of foods rich in purines, sorrel acid, calcium, restriction of proteins, fats, carbohydrates. Eating 3-4 times, table salt up to 6-8 g.

**LIST RECOMMENDED:** low-fat beef, lamb, pork, fish. Milk, dairy and lactic acid products, eggs are not limited. Recommended: potatoes, rice, pasta, cereals, carrots, lettuce, melon, cucumbers, cabbage, onions, tomatoes, fruits (grapes, plums, cherries, pears, peaches, etc.), berries.

**RELATED:** green peas, lentil beans, sorrel, spinach, lettuce, rhubarb, radishes, mushrooms.

**BANS:** giblets (liver, kidneys, lungs, brains), meat navar, meat of young animals (ram, veal, chicken, piglets), tea, coffee, cocoa, chocolate, spicy cheeses, canned food, sausages.

#### **DIET No.7**

**READ MORE:** Acute jade, during convalescence, chronic jade with minor changes in urinary sediment.

**GENERAL:** protein and table salt restrictions up to 3-5 g; liquids up to 800 ml - 1 litre; extracts, spicy seasonings

**READ MORE:** White and chopped bread without salt, vegetarian soups without salt with vegetables and cereals. Low-fat meat and poultry. The fish is a low-fat piece, chopped, rubbed; Boiled. Vegetables in natural, boiled form, vinaigrettes, salads without salt. Krupa and pasta in the form of cereals, puddings. An egg is one a day. Fruits and berries in any kind, honey, sugar, jam. Milk and dairy products, cottage cheese. Butter is creamy and vegetable.

**RELATED:** Cream, sour cream

**RELATED:** Legumes.

#### **ДИЕТА №7А**

**RELATED:** Acute jade, exacerbation of chronic jade with pronounced changes in urine

**GENERAL HEALTH:** limiting salt to 1-2 g and liquids up to 600-800 ml, protein, maximum vitaminization of the diet by introducing fruit and vegetable juices and adding vitamin C.

**READ MORE:** Same foods as diet no 7, but meat and fish are limited to 50g per day

**RELATED:** Soups.

#### **DIET No8**

**RELATED:** Obesity.

**RELATED:** Limit energy value by 20-50 per cent (depending on obesity and fisalload) mainly due to carbohydrates and fats while increasing the amount of protein.

**READ MORE:** Rye bread about yesterday' - 100-150 g. Vegetarian soups with vegetables and cereals, meat, fish. Tea and coffee.

**RELATED:** butter, sour cream, potatoes.

**RELATED:** Flavorings.

#### **DIET No.9**

**GOOD:** Diabetes.

**RELATED:** Diet with the exception of water-soluble carbohydrates, limiting animal fats. Diet helps to eliminate metabolic disorders caused by insufficient amount of insulin in the body.

**LIST RECOMMENDED DISHES:** rye bread, cookies on xylitol. Soups, on vegetable broth with vegetables and cereals. Low-fat varieties of meat, poultry, fish. compote on xylitol, juices fruit and vegetable, fruits and berries (prunes, apricots, watermelons, strawberries, raspberries).

**RELATED:** legumes, cereals, pasta.

#### **DIET No.10**

**READ MORE:** exacerbation of cardiovascular diseases with circulatory disorders 1-II A degree (rheumatism, in the active phase, hypertension, coronary heart disease, etc.), kidney and urinary tract diseases without disturbance of nitrogen-causing kidney function.

**GENERAL:** moderate restriction of proteins, fats and carbohydrates in a mode of limited mobility. Limiting the intake of table salt to 4-7g (at the rate for a healthy body 12-15 g), liquids up to 1-1.2 liters, and swelling - 0.8 liters.

**LIST RECOMMENDED DISHES:** bread gray coarse grind, breadcrumbs. Soups cereal, dairy, vegetarian, borscht, low-fat meat broth once a week. Low-fat meats; birds and fish in boiled and baked form. Oatmeal and buckwheat porridge, puddings and casseroles. Protein omelette. Vegetable vinaigrettes and salads (except sorrel and mushrooms). Fruits, berries, juices. Fats per day up to 50 grams, of which 50% are vegetable. Sahara up to 40 grams per day. Soft tea.

**RELATED:** strong tea, coffee, cocoa, radish, radish, garlic, onion, legumes.

**BANS:** fatty dishes of meat, fish, dough, brains, kidneys, liver, liver sausage, salty snacks, canned food, alcohol, caviar.

**DIET No.11**

READ MORE: Pulmonary tuberculosis, exhaustion and reduced reactivity of the body, during the reconvalescence period, after, in febrile diseases, anemia, various pneumonia processes.

READ MORE: A diet with increased energy value, increased animal proteins, lipotropics, calcium, phosphorus and vitamins.

THE LIST OF RECOMMENDED DISHES: the most diverse products.

RELATED: Poultry (duck and goose).

**DIET No.13**

EXPERT: acute infectious diseases, post-op dietary period (except for strip operations).

RELATED: restriction of proteins, fats, углеводов, chemical and mechanical stimuli of the mucosa and receptor apparatus of the gastrointestinal tract.

GOOD OF THE RECOMMEND: White bread and suhari. Meat broth, meat soufflé. soup puree of meat on a slimy broth. eggs soft, omelette. porridge rubbed. fructose, berry juices, morsels, sour.

**DIET No.14**

WINNER: phosphate with stone formation.

RELATED: Protein, fat, углеводов, within physiological norms of need.

LIST OF RECOMMENDED DISHES: meat, fish, bread and cereals.

RELATED: Milk and dairy products; vegetables, whole snacks, spices, etc.

**DIET No.15**

EXPERT: all diseases in the absence of indications for the appointment of a special diet.

THE WORLD: A physiologically complete diet with double the amount of vitamins and the exception of fat meat dishes.

LIST OF THE PRICE: White and rye bread.

**DIET No.16**

READ MORE: Appointed for 2-3 days after operations on the same intestinal tract; on the lungs, mediastinum, heart - on the 1st day, in feverish, semi-conscious states (cerebral-brain injury).

READ MORE: Low-calorie diet, drastically limit the content of proteins, fat, table salt.

THE LIST OF THE RECOMMENDED DISHES: teas with sugar, fruit and berry soups.