

## **Class № 1**

**Topic: "Introduction to the discipline" General Surgery". History of the development of surgery. Legal and ethical aspects in surgical practice. Organization of surgical care»**

1. Definition of the concept of surgery. History and periods of development of surgery. Representatives of surgical schools and their role in the formation of the main periods of surgery (empirical, anatomical and morphological, great discoveries, physiological, high-tech). The meaning, purpose, objectives and content of the discipline "General Surgery".
2. Stages of surgeon training in the Republic of Belarus and foreign countries. Communication of surgery with other medical disciplines. Development of surgery in the Republic of Belarus. The history of the development of the first department of domestic surgery. Leading branches of modern clinical surgery.
3. Legislative legal acts regulating surgical activity.
4. Issues of ethics and deontology in surgery. The concept of medical secrecy, iatrogenic in the provision of surgical care. Rights and obligations of surgical patients.
5. Organization of various types of inpatient and outpatient surgical care in the Republic of Belarus. Republican scientific and practical specialized centers.
6. The concept of a clinical hospital and a university clinic. Hospital-replacing technologies. Same-day surgery. Continuity between the outpatient and inpatient levels of surgical care.

## **LITERATURE**

### **Main:**

1. General surgery: textbook / ed. S.Ya. Ivanusy, P.N. Zubarova, M.V. Epifanova. - 4th ed., add. and correct. - St. Petersburg: SpetsLit, 2019. - 607 p.:
2. General surgery: textbook / Gostishchev, Victor Kuzmich. - 5th ed., Rev. and additional - Moscow: GEOTAR-Media, 2020. - 727 p., [8] p. col. incl.: fig., tab. - App.: p. 711-727. - Bibliography: p. 710.
3. General surgery: a textbook for students of institutions of higher education. education in special. "Pediatrics", "Medical-diagnostics", "Medical-psychology" / Garelik, Petr Vasilievich, Dubrovshchik, Olga Ilyinichna, Marmysh, Gennady Grigorievich. - Minsk: high edu., 2021. - 375 p.: fig., tab. - Bibliography: p. 370.

### **Additional:**

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## **Class № 2**

### **Topic: «Examination of a surgical patient»**

1. Purpose, tasks, stages of examination of a surgical patient. Features of examination, detection of complaints (formulation of a diagnostic hypothesis), anamnesis of the disease (sequence, method of "blitz survey"), anamnesis of life, physical examination and local status for the formulation of a preliminary diagnosis.
2. Study of laboratory diagnostic methods to confirm the final diagnosis - (CBC, CBP, URE, Blood chemistry test, coagulogram, microbiological, histological and other laboratory types of studies).
3. Features of instrumental ultrasonic, radiological, magnetic resonance, radioisotope (scintigraphy), endoscopic methods of investigation in surgery.
4. Methodology (algorithm) for making a clinical diagnosis, its components. Preparation of medical documentation. Features of the academic medical card of an inpatient surgical patient, its distinctive components.

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### **Class № 3**

**Topic: “Desmurgy (soft and hardening dressings). Transport immobilization.**

**Part 1. The history of the development of desmurgy. The features of main types of dressings. Classification of soft bandages”**

1. Desmurgy. Definition. The history of the development of desmurgy.
2. Main types and characteristics of dressings.
3. Classification of soft bandages (according to the nature and purpose, type of bandaging, method of fixing the dressing material, nature and purpose of immobilization).
4. Basic requirements for the patient and the operator performing bandaging.
5. Features of the use of dressings using a tubular-mesh bandage (retelasta), elastic bandages of various compression classes, sports taping, adhesive plaster and contour bandages, kerchiefs, elastic corsets and bandages. (For the anterior abdominal wall, spine, external opening of the inguinal canal and hernial ring, suspensory).

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## **Class № 4**

**Topic: "Desmurgy (soft and hardening dressings). Transport immobilization.**

### **Part 2. Indications and features of applying certain types of bandage dressings"**

1. Features of applying circular, spiral, creeping, cruciform, tortoiseshell, spicate, returning dressings.
2. Soft bandages for the head and neck (returning, Hippocratic cap, cap, bridle, Neapolitan, nodal, circular-cruciform on the neck).
3. Soft bandages on the chest and shoulder girdle (supporting on the left, right mammary gland, on both mammary glands, cruciform on the back surface, Deso bandage (one- and two-sided), spiral).
4. Soft bandage bandages on the abdomen, pelvis (spike-shaped on the hip joint, bilateral, eight-shaped on the perineum).
5. Soft bandage bandages on the upper limb (spiral, returning, spicate on the fingers, "glove", "mitten").
6. Soft bandage bandages on the lower limb (on one toe, returning to the foot, cruciform on the ankle joint).

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## **Class № 5**

**Topic: “Desmurgy (soft and hardening dressings). Transport immobilization.**

**Part 3. Hardening dressings. Transport immobilization»**

1. Hardening dressings. Plaster bandages. History of development.
2. Structure of gypsum, evaluation of its quality. The main indications for the use of certain types of plaster casts: longet, longet-circular, fenestrated, bridge-like, plaster corsets.
3. Indications and contraindications for the imposition of a plaster cast, the rules of imposition. Care and removal of the plaster bandage.
4. Features and characteristics of hardening polymer dressings (gypsum with a plasticizer; fiberglass; impregnated with polyurethane resin).
5. Transport immobilization. Concept definitions. Indications. immobilization rules.
6. The main types of immobilization supports and indications for their use (Cramer, plywood, pneumatic, vacuum, thermoplastic, hardening polyurethane, obtained by 3D printing).
7. The concept of orthoses of the knee and ankle joints.

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## **Class № 6**

### **Topic: "Asepsis"(Aseptics)**

1. Definition, history. The main ways and sources of spread of infection. Prevention of exogenous airborne infection.
2. Feature of organizational measures aimed at the prevention of airborne infection. Organization of a surgical hospital, admission department, operating unit. The concept of clean and purulent surgical departments.
3. Zones of sterility in the operating block. Rules of conduct in the operating room. Operating rooms with laminar flow, antibacterial environment. Types of cleaning in the operating room.
4. Prevention of exogenous contact infection. Principles and methods of sterilization, disinfection. Pre-sterilization processing of surgical instruments. Characteristics and features of physical high-temperature sterilization methods: steam sterilization under pressure, hot air.
5. Characteristics and features of low-temperature sterilization methods: express soaking in solutions, gas sterilization, the use of low-temperature plasma, ultrasonic and beam sterilization in paraformalin vapor.
6. Features of sterilization of various types of surgical instruments (metal, rubber, plastic, glass, optical), dressings and surgical linen. Types of stacking in Bix, storage rules.
7. Disinfection of hands (methods) and the surgical field.
8. Prevention of exogenous implantation infection. Characteristics of the suture material (by structure, biodegradability, source of production, thickness). Metric system for measuring surgical threads. Explants and transplants (their types, methods of sterilization).
9. Monitoring the effectiveness of sterility (features of physical, chemical and biological methods).
10. Prevention of endogenous infection. Features of intrahospital (nosocomial) infection. Prevention of nosocomial and HIV infection.

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## **Class № 7**

### **Topic: "Antiseptics. Part 1. Mechanical and physical antiseptics"**

1. Definition. History. Types of antiseptics (according to the mechanism of action, method of application, spectrum of anti-inflammatory effect).
2. Determination of the toilet of the wound, primary debridement, secondary debridement or SDPF (surgical debridement of a purulent focus), other operations. The concept of primary and repeated wound debridement.
3. Physical antiseptics, its main varieties. Characteristics of wound drainage methods (passive, active, flow-wash).
4. Environmental factors that provide physical antiseptics. Technical means of physical influence (Ultrasound, UVR, HBO, local ozone therapy, photodynamic therapy, spray and argon coagulation).

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## **Class № 8**

### **Topic: "Antiseptics. Part 2. Chemical, biological antiseptics"**

1. Chemical antiseptic. Classification (according to the purpose and methods of application, direction and duration of action, range of the antimicrobial spectrum, injection site).
2. Types of antiseptics of predominantly local action (groups, main representatives and their antimicrobial characteristics).
3. Types of antiseptics with a predominantly chemotherapeutic effect (groups, main representatives and their antimicrobial features).
4. Biological antiseptic. Classification. Characteristics of biological antiseptics of indirect influence.
5. Classes of immunocorrectors, types of activators of humoral, cellular links, monocyte-macrophage system. Methods of stimulation of natural resistance.
6. Biological antiseptics of direct action. History of antibiotics. Classes of antibiotics, their main representatives and the main spectrum of antimicrobial activity.
7. Principles of rational antibiotic therapy. The concept of antibiotic prophylaxis of wound infection.
8. Bacteriophages, proteolytic enzymes (plant, animal and bacterial origin), active immunization preparations (toxoids, hyperimmune plasma species, immunoglobulins).

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## **Class № 9**

### **Topic: "Closed injuries"**

1. General damage issues. Definition of trauma and traumatism. Reasons for the severity of injury. Classification of trauma. Theories of traumatism (psychological, social).
2. Classification of damage (by type of agent, nature of damage).
3. The main types of closed soft tissue injuries (concussion, bruise, sprain, rupture, compression), their clinical manifestations, principles of diagnosis and treatment.
4. Syndrome of prolonged compression. Definition. Etiopathogenesis. Classification (by type of compression, site of injury, combination with other injuries, severity, periods, complications).
5. Clinical picture and diagnosis depending on the periods of the process.
6. Principles of treatment (first medical aid, principles of qualified and specialized care).
7. Syndrome of positional compression. Pathogenesis, clinical picture, distinguishing features from the syndrome of prolonged compression.

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## **Class № 10**

### **Topic: “Dislocations. Fractures”**

1. Dislocations. Concept definition. Classification (by origin, lack of contact of the articular ends, relation to the skin, timing, complications). Diagnostic criteria (reliable, probable) of congenital and traumatic dislocations of the shoulder and hip.
2. Principles of treatment (first aid, features of reduction of dislocation of the shoulder (according to the method of Mota - Hippocrates, Janelidze), hip (according to Janelidze). Surgical treatment, indications, principles of treatment of complicated dislocations. Features of immobilization and rehabilitation.
3. Fractures. Concept, definition. Classification (according to the cause and period of occurrence, type of traumatic agent, location of damage, nature of bone damage, concomitant injuries, mechanism of occurrence, fracture line, number of injuries, condition of the skin, displacement of fragments and type of their displacement). The concept of the international classification of fractures (Muller) and osteosynthesis.
4. Complications of fractures. Bone tissue regeneration: morphogenesis, timing, types of callus. Features of primary and secondary types of fracture healing. Types of injury of the consolidation of fractures.
5. Clinical picture (reliable and probable signs). Fracture diagnosis.
6. Principles of treatment of fractures. First aid, features of transport immobilization for fractures. Reposition of fragments (open, closed, simultaneous and gradual). Fixation of bone fragments (types). Stimulation of bone tissue regeneration.
7. Features of reposition by skeletal traction and open method for fractures of the bones of the lower and upper extremities. The concept of extrafocal compression and internal osteosynthesis (periosteal, intramodular). Modern methods of osteoregeneration (medication, PT, specific growth factors, by stem cell transplantation).

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## **Class № 11**

### **Topic: "Thermal burns. Burn disease"**

1. Thermal burns. Burn definition. Specific gravity, lethality. Features of the anatomical structure of the dermis. Factors that determine the depth of tissue damage in thermal burns.
2. Classification of foci (according to the circumstances of receipt; the nature of the acting factor; localization, depth of damage).
3. Methods for diagnosing the depth and determining the area of the burn (according to Wallace, Glumov, Vilyavin-Postnikov, Dolinin).
4. Formula for designating burns (Dzhanelidze et al.). Determination of prognosis (rule of "hundreds", Frank index, age index of severity of the lesion).
5. Burn disease. characteristics of its periods. Degrees of burn shock. Principles of treatment of shock, acute burn toxemia and septicotoxemia.
6. Local treatment of burns (superficial and deep). Preparations for chemical and biological necrectomy. Types of mechanical necrectomy (tangential, sequestral, suprafascial).
7. Managed antibacterial environment. Burn wound closure methods (auto-, allogeneic grafts, xenoplasty, temporary synthetic wound dressings).

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## **Class № 12**

### **Topic: "Chemical, radiation (radiation) burns. Electrical injury"**

1. Chemical burns. Peculiarities. Pathogenesis,
2. Clinical picture of chemical burns. First aid. Principles of treatment.
3. Radiation (beam) burns. Features, pathogenesis.
4. Clinical picture. flow periods. Principles of treatment. First aid.
5. Electrical injury. Electrical burns. Features of direct and indirect effects of current (thermal, electrochemical, biological). General violations.
6. Degrees of electrical injury. local changes. Principles of treatment of electrical burns. First aid.

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## **Class № 13**

### **Topic: "Cold injury. Frostbite"**

1. General cooling (freezing). Types of cold injury. Factors that increase the risk of cold injury, cooling phases.
2. Clinical picture, characteristics of the degrees of cooling. Principles of cooling treatment. First aid.
3. Frostbite. Classification of frostbite (by clinical course, depth of injury, etiology).
4. Clinical picture in the pre-reactive and reactive (early and late) periods.
5. Methods for determining the viability of tissues in the late reactive period.
6. Principles of frostbite treatment.
7. Complications of frostbite in the early long-term period. Local treatment of frostbite.
8. Complications of frostbite in the late remote period. The concept of trench, immersion foot, contact frostbite and chills.

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## **Class № 14**

### **Topic: "Nutrition of the surgical patient"**

1. Basic concepts. Nutritional status. Assessment of the nutritional status of the patient in the hospital.
2. Parenteral nutrition. Indication for parenteral nutrition (PN). Concepts of conducting PN (combined, parallel, simultaneous). Varieties of blood substitutes for PN.
3. Basic protein hydrolysates and mixtures of amino acids. Mode of administration, indications for use.
4. Main generations and representatives of fat emulsions. Indications for their use.
5. Basic solutions of carbohydrates and polyhydric alcohols, multivitamin and microelement supplements used for PN.
6. Types of standard diets in a surgical hospital.
7. The concept of the program of accelerated rehabilitation of the surgical patient (ERAS), according to the principles of nutrition.
8. The concept of sipping. Principles of artificial enteral nutrition. Ways and modes of introduction of endopits. Types of basic polymeric, oligomeric (polyelement), elemental, metabolically directed modular endopits. Indications for their use.

## **LITERATURE**

### **Main:**

1. General surgery: textbook / ed. S.Ya. Ivanusy, P.N. Zubarova, M.V. Epifanova. - 4th ed., add. and correct. - St. Petersburg: SpetsLit, 2019. - 607 p.:
2. General surgery: textbook / Gostishchev, Victor Kuzmich. - 5th ed., Rev. and additional - Moscow: GEOTAR-Media, 2020. - 727 p., [8] p. col. incl.: fig., tab. - App.: p. 711-727. - Bibliography: p. 710.
3. General surgery: a textbook for students of institutions of higher education. education in special. "Pediatrics", "Medical-diagnostics", "Medical-psychology" / Garelik, Petr Vasilievich, Dubrovshchik, Olga Ilyinichna, Marmysh, Gennady Grigorievich. - Minsk: high edu., 2021. - 375 p.: fig., tab. - Bibliography: p. 370.

### **Additional:**

1. General surgery: textbook / Sazhin, Alexander Vyacheslavovich, Klimiashvili, Anatoly Davidovich. - Moscow: MIA, 2019. - 424 p.: - Item decree: p. 411-417. - Bibliography: p. 404.
2. Kovalev A.I. General surgery. Lecture course. - 2nd ed., revised. and additional - M: MIA, 2013. - 760 p.

## Class № 15

### Topic: "Fundamentals of Surgical Oncology"

1. Definition of surgical oncology. The concept of the organization of oncological care in the Republic of Belarus. Tumor definition. Groups of dispensary observation of cancer patients. Primary and secondary cancer prevention.
2. Etiology of tumors (theories of origin). Mechanisms of carcinogenesis (characteristics of stages of initiation, promotion, progression). Characterization of factors contributing to tumor transformation (exogenous (chemical, physical, biological) and endogenous). The concept of cocarcinogens.
3. Facultative and obligatory precancers. Early stages of cancer (for non-invasive and invasive (microcarcinoma) cancer). Endophytic and exophytic cancer. Types of metastasis.
4. Nomenclature of tumors due to their parenchyma. Types and differences of benign and malignant tumors originating from the epithelium, glandular, connective tissues.
5. International classification of tumors (TNM). Characteristics of clinical stages: cancer in situ, stage I-II, locally advanced tumors and tumors with lymph node involvement (stage III), stage IV.
6. Clinic of malignant tumors (assessment of clinical symptoms of obstruction, destruction, compression, intoxication; "plus-tissue", pathological secretions, organ dysfunction, small signs).
7. The concept of early diagnosis, cancer alertness, overdiagnosis. Features of objective diagnostic methods (examination, palpation, percussion, auscultation).
8. Special laboratory-biochemical, molecular-genetic methods for diagnosing tumors (determination and types of tumor markers), radiation (X-ray, CT, MRI, radionuclide (PET), ultrasound), endoscopic.
9. Characteristics of the types of biopsies (fine-needle, needle, pluck, incisional, excisional, robotic (MURAB)). The use of endoscopic bots for the diagnosis of tumors.
10. Features of radical, palliative and symptomatic treatment. The concept of cytoreductive operations. Principles of surgical treatment (operability, inoperability, resectability, ablaticity, zoning, sheathing). Characteristics of pre- and postoperative types of antineoplastic (physical, chemical).
11. Radiation therapy: tasks, principles, types (remote and contact (interstitial, intracavitary)). The concept of radiofrequency and microwave ablation, high-frequency and low-temperature cytodestruction. Chemotherapy: tasks, principles, types (groups) of cytostatic drugs.

## LITERATURE

### Main:

1. General surgery: textbook / ed. S.Ya. Ivanusy, P.N. Zubarova, M.V. Epifanova. - 4th ed., add. and correct. - St. Petersburg: SpetsLit, 2019. - 607 p.:
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- 760 p.

## **Class № 16**

### **Topic: "Parasitic diseases"**

1. Echinococcosis. development of the parasite.
2. Course of echinococcosis. types of parasitism.
3. Treatment. Features of surgical intervention.
4. Alveococcosis. Development, clinical course, treatment.
5. Opisthorchiasis. Etiology, pathogenesis, clinic of complicated forms, treatment.
6. Amoebiasis. Etiology, clinic of complicated forms, treatment.
7. Ascariasis. development of the parasite. Complications of ascariasis in a surgical practice. Treatment

### **LITERATURE**

#### **Main:**

1. General surgery: textbook / ed. S.Ya. Ivanusy, P.N. Zubarova, M.V. Epifanova. - 4th ed., add. and correct. - St. Petersburg: SpetsLit, 2019. - 607 p.:
2. General surgery: textbook / Gostishchev, Victor Kuzmich. - 5th ed., Rev. and additional - Moscow: GEOTAR-Media, 2020. - 727 p., [8] p. col. incl.: fig., tab. - App.: p. 711-727. - Bibliography: p. 710.
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2. Kovalev A.I. General surgery. Lecture course. - 2nd ed., revised. and additional - M: MIA, 2013. - 760 p. .