

**MINISTRY OF SCIENCE AND HIGHER EDUCATION
RUSSIAN FEDERATION**

**FEDERAL STATE AUTONOMOUS EDUCATIONAL INSTITUTION OF
HIGHER EDUCATION
NORTH-CAUCASUS FEDERAL UNIVERSITY**

Methodological Guidelines
for Students on arranging and performing independent work
in the Discipline of "Traumatology, orthopedics"
for Students majoring (Specialty) in 31.05.01 General Medicine

Explanatory note

The objective of this course is to equip students with contemporary knowledge of both theoretical and practical aspects of this medical discipline. It aims to teach students the methodology for examining orthopedic and trauma patients, enable them to establish accurate diagnoses, and develop essential practical skills for providing care to individuals injured in traumatic incidents.

The objectives of this course are to acquire modern professional knowledge in the following areas: the specifics of organizing medical care during mass events and sporting competitions, emergency situations, and disasters in peacetime; as well as the principles of providing first aid and performing resuscitation procedures for individuals injured in road accidents. Clinical symptoms of injuries to the musculoskeletal system, thoracic cavity, abdominal cavity, pelvic cavity, head, and cranial cavity; modern diagnostic and therapeutic approaches for disorders and injuries of the musculoskeletal system

Methodological Recommendations for Studying Theoretical Material

When performing the independent study of theoretical material, the student must follow the rules as set below. The working curriculum of the respective academic discipline shall be recommended to be used as the basis for such activity. According to the schedule of classroom lessons and independent work, a different number of hours is to be allocated for studying individual topics. A significant portion of the student's independent work should be allocated to mastering the material on the covered topic, writing a summary (notes) on the specified theoretical blocks, and searching for additional literature based on the NCFU library and via the Internet system. The lecture material shall not cover all theoretical material; the greater part of it must be mastered through independent work. Given the above, working with the recommended literature is mandatory. Special attention must be paid to the content of the main provisions and conclusions, the explanation of phenomena and facts, and the understanding of the practical application of the theoretical issues under consideration. In the process of this work, the student should strive to understand and memorize the main provisions of the material being considered, the examples illustrating it, as well as to understand the illustrative material. Preparation should be completed by drawing up a plan (summary/notes) on the material (issue) being studied. This allows for the creation of a concentrated, concise representation of the issues being studied. First, studying the recommended literature is to be done. Special attention must be paid to the content of the main provisions and conclusions, the explanation of phenomena and facts, and the understanding of the practical application of the theoretical issues under consideration.

During this work, the student should strive to understand and memorize the main provisions of the material being considered, the examples illustrating it, as well as to understand the illustrative material. Preparation should be completed by drawing up a plan (summary/notes) on the material (issue) being studied. This allows for the creation of a concentrated, concise representation of the issues being studied. If necessary, one should seek (advice) consultation from the instructor. When going to a consultation, it is necessary to thoroughly think through the questions that require clarification. Keeping records contributes to turning reading into an active process, mobilizing motor memory along with visual memory. The following should be born in mind: a student who systematically keeps records creates their own individual stock of auxiliary materials for a quick review of what has been read and for the mobilization of accumulated knowledge. Records are especially important and useful when they reflect the thoughts that arose during independent work.

It is important to develop the students' capacity to compare sources and to think through the material being studied.

Improving note-taking skills among students is of great importance.

The instructor may recommend the following main forms of recording to students: a plan (simple and detailed), excerpts, and theses (abstracts).

The results of note-taking can be presented in various forms.

- A plan is an outline of the read material, a brief (or detailed) list of questions reflecting the structure and sequence of the material.
- A detailed plan fully replaces a summary.
- A summary (notes) is a systematized, logical presentation of the source material. Four types of summaries are distinguished:
 - Outline-summary (Plan-notes) – this is an expanded, detailed plan in which sufficiently detailed records are provided for those points of the plan that need explanation.
 - Textual summary – this is the reproduction of the most important provisions and facts of the source.
 - Free summary – these are clearly and briefly formulated (stated) main provisions resulting from a deep understanding of the material. It may contain excerpts, quotations, and theses; part of the material may be represented by a plan.
 - Theme-based summary – this is compiled on the basis of studying a number of sources and gives a more or less exhaustive answer according to a certain scheme (issue).

Methodological Guidelines for the Preparation for Practical Activities

When preparing for practical activities, the recommendation implies studying the control questions for the given lesson and the theoretical material from one's own notes.

The main form of work during the lessons is an interview (discussion). Each student must be ready to speak on all issues raised in the plan and demonstrate maximum activity during their consideration.

The speech must be constructed freely, convincingly, and with arguments. The instructor ensures that the speech is not reduced to a reproductive level (simple reproduction of the text); simple reading of the summary is also not allowed.

It is necessary for the speaker to show their own attitude towards what they are talking about, express their personal opinion and understanding, substantiate it, and be able to draw the correct conclusions from what has been said. In doing so, the student may refer to the entries in the summary, directly to the primary sources, use knowledge of previously studied disciplines, etc. In addition, to obtain a grade at an advanced level, students solve situational tasks based on the results of the mastered topics.

During the execution of practical works, a defense of practical skills is provided, the full list of which is specified in the fund of assessment tools.

Methodological Recommendations for the Preparation of Presentations and Reports

The report must contain elements of novelty; along with the fundamental aspect, an analysis of the current state of the problem under study must be carried out, as well as inclusion in regional issues. The report must include an introduction, a theoretical part, a conclusion, a list of literature, and a presentation that reveals the essence of the topic in graphs, pictures, diagrams, and formulas.

The report is recommended to be submitted on 1 printed sheet. The text of the work must be printed with 1.5 line spacing on one side of a standard sheet (A4) of white paper.

The text and other printed elements of the work must be black, and the contours of letters and signs must be clear, without halos and shading. The font must be Times New Roman, size 14. The titles of chapters and paragraphs are highlighted in bold. The sheet with text must have margins: left – 30 mm, right – 10 mm, top – 20 mm, bottom – 20 mm.

Page numbering of the text is done in the lower right corner of the sheet. It is necessary to number pages starting from the page where the Introduction is printed, on which the number 3 is placed. After that, all pages, including appendices, are numbered.

A space equal to two intervals is placed between the title of the chapter and the title of the paragraph of this chapter, and the title of the paragraph must not be separated from the text of this paragraph by a space. The titles of paragraphs shall be separated from the text of the previous paragraph by a space equal to two intervals. Each chapter, as well as the introduction, conclusions, appendices, and the list of used literature, begin on a new page. The word Chapter is not to be written. Chapters have ordinal numbers within the entire work, designated by Arabic numerals (for example: 1, 2, 3), followed by a period.

The word **PARAGRAPH** or the paragraph symbol (§) is not placed in the title. Paragraphs have ordinal numbers within the chapters, designated by Arabic numerals (for example: 1.1. and 1.2.).

Headings of chapters and paragraphs in the text must be centered; a period shall not be placed at the end of the title of the chapter and paragraph. It is not allowed to hyphenate (transfer) a part of a word in a heading. 4.5. The numbering of tables and figures can be running (continuous) or relate to the number of the chapter and paragraph. For example, if a table or a figure is included in the text of the first paragraph of the second chapter, the numbering is as follows: Table 2.1.1., Fig. 2.1.1.

The last digit means the ordinal number of the table (or figure) in this paragraph.

The table is to be placed as the next page after the first mention of it in the text.

Recommended Literature.

List of primary sources:

1. Zhidkova, O. I. Traumatology and Orthopedics: Textbook / O. I. Zhidkova. – 2nd ed. – Saratov: Scientific Book Publishing House, 2019. – 158 pp. – ISBN 978-5-9758-1794-5. – Text: electronic version // Electronic Library System IPR BOOKS: [website]. – URL: <http://www.iprbookshop.ru/80994.html> ;
2. Complete Handbook for Traumatologists / O. V. Ananyeva, D. A. Bondarenko, V. V. Gradovich [et al.]. – Saratov: Nauchnaya kniga, 2019. – 734 pp. – ISBN 978-5-9758-1840-9. – Text: electronic version // Electronic Library System IPR BOOKS: [website]. – URL: <http://www.iprbookshop.ru/80217.html>

List of additional literature:

1. Zhulikov, Control Test Questions for the Discipline "Traumatology and Orthopedics": Textbook / L. A. Zhulikov. Volgograd: VolgGMU, 2019. 88 pp. Text: electronic format // Lan: Electronic Library System. URL: <https://e.lanbook.com/book/1411822> .
2. Fishkin, A. V., Reference Manual: Traumatology. Fishkin. – Saratov: Nauchnaya kniga, 2019. – 319 pp. – ISBN 978-5-9758-1875-1. – Text: electronic version // Electronic Library System IPR BOOKS: [website]. – URL: <http://www.iprbookshop.ru/80218.html>

Online resources:

1. <http://rudocctor.net> / – Medical portal;
2. <http://www.e-reading.club> / – Comprehensive online library;
3. <http://www.pubmed.com> / – Database of full-text medical articles;
4. <http://www.spravocnikpolekarstvam.ru> / – Free online pharmacological reference guide;
5. <https://dic.academic.ru> / – Dictionaries and encyclopedias;
6. <https://www.rmj.ru> / – Russian medical journal.

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Practical lesson No.1

TOPIC 1: Symptomatology and Semiotics of Traumatic Patients; Examination Methods; Conservative Treatment Approaches

1. Medical history taking, physical examination, palpation, percussion, and functional assessment.
2. Radiographic diagnosis.
3. Measurement of limb length, circumference, and muscle strength.

Practical lesson No. 2

TOPIC 2. Operative methods of treating injuries.

1. Classification of operations on bones and joints.
2. Indications and contraindications for the operative method of treatment.
3. Types of skin grafting.

Practical lesson No. 3

TOPIC 3. Fractures of the femur. Intra-articular injuries of the knee joint.

1. Classification, diagnosis and treatment methods of fractures of the neck of the femur and the diaphysis of the femur.
2. Classification, clinic, diagnosis and treatment methods of intra-articular injuries of the knee joint.

Practical lesson No. 4

Topic 4. Fractures of the clavicle, scapula, sternum, and ribs. Possible complications.

Fractures of the lower leg, ankle, and foot bones.

1. Classification, clinical features, and diagnosis of fractures of the clavicle, scapula, sternum, and ribs, as well as their treatment.
2. Treatment of complications of rib fractures.
3. Clinical features, radiological diagnostics, and treatment methods for fractures of the lower leg, ankle, and foot.

Practical lesson No. 5

TOPIC 5. Fractures of the humerus, forearm, and hand bones.

Damage to the tendons of the hand.

1. Classification, clinical features, and diagnosis of fractures of the proximal and distal ends of the humerus.
2. Clinical features and diagnosis of fractures of the forearm bones.
3. X-ray diagnostics and treatment of fractures of the hand bones.
4. Diagnosis of tendon injuries.

Practical lesson No. 6

TOPIC 6. Fractures of the pelvis and spine. Multiple and combined injuries. Traumatic disease.

1. Classification, clinic, diagnostics of injuries.
2. Basic methods of treatment of fractures of the spine and pelvis.

Practical lesson No. 7

TOPIC 7. Traumatic dislocations of the musculoskeletal system.

1. Classification, clinical manifestations, and diagnosis.
2. Methods and techniques for reducing dislocations of the hip, shoulder, forearm, and clavicle.

Practical lesson No. 8

TOPIC 8. Amputation and prosthetics. Orthopedics. Congenital deformities of the bone-joint apparatus. Deformities of the spine.

1. Indications for amputation, types of amputations, methods.
2. Classification. Prosthetics of the upper and lower extremities using orthopedic devices.
3. Congenital hip dislocation, congenital muscular torticollis, wing-shaped shoulder blade, amniotic bands.

Practical lesson No. 9

TOPIC 9. Osteochondropathies. Systemic diseases and deformities of the skeleton. Deforming osteoarthritis. Osteochondrosis of the spine.

1. Classification, clinic, diagnosis and treatment of chondrodystrophy, dyschondroplasia, arthrogryposis, fibrous osteodysplasia, imperfect bone formation, endocrine and alimentary osteodystrophies.

Practical lesson No. 10

TOPIC 10. Bone tumors. Foot diseases and deformities. Spastic and flaccid paralysis.

1. Classification, clinic, diagnostics and treatment of tumor-like bone, cartilage and soft-tissue genesis.
2. Principles of treatment of bone tumors.

Practical lesson No. 11

TOPIC 11. Military-field surgery. Stages of medical evacuation of the wounded and affected. Gunshot wounds and their treatment at the stages of medical evacuation.

1. History of development of military-field surgery.
2. Medical evacuation and sorting of the wounded.

3. Classification of gunshot wounds, clinic, diagnostics and treatment at the stages of medical evacuation.

Practical lesson No. 12

TOPIC 12. Damage to blood vessels. Blood loss. Blood transfusion in war. Gunshot wounds to the upper limb.

1. Types of bleeding, diagnosis, and clinical manifestations of acute blood loss.
2. Methods of temporary and permanent stopping of bleeding.
3. Classification, clinical manifestations, and diagnosis of upper limb wounds and their treatment at the stages of medical evacuation.

Practical lesson No. 13

TOPIC 13. Wound infection, its prevention and treatment at the stages of medical evacuation. Gunshot injuries of the lower limbs.

1. Clinic and diagnosis of purulent infection.
2. Indications for secondary surgical treatment.
3. General and local therapeutic measures.
4. Complications: abscess, seeps, phlegmons, osteomyelitis, sepsis, lymphangitis, lymphadenitis.
5. Principles of treatment.

Practical lesson No. 14

TOPIC 14. Traumatic shock and prolonged compression syndrome, their treatment at the stages of medical evacuation.

1. The concept of traumatic shock and prolonged compression syndrome.
2. Classification and periods of traumatic shock and prolonged compression syndrome.
3. Clinic, prevention and treatment at the stages of medical evacuation.

Practical lesson No. 15

TOPIC 15. Chest, abdominal, and pelvic injuries and their treatment at the stages of medical evacuation.

1. Classification of closed chest injuries and wounds.
2. Clinical picture, diagnosis, and treatment of chest injuries at the stages of medical evacuation.
3. Early and late complications, their prevention.

Practical lesson No. 16

TOPIC 16. Organization of medical care for the wounded and afflicted at the stage of MPP (trauma center). Basic principles of treatment and rehabilitation of patients of the traumatically-orthopedic profile in outpatient conditions (trauma center).

1. Intra-point and evacuation-transport sorting at the MPP.
2. Possible terms of treatment of patients with consequences of injuries.

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4. <http://www.spravocnikpolekarstvam.ru> / – Free online pharmacological reference guide;
5. <https://dic.academic.ru> / – Dictionaries and encyclopedias;
6. <https://www.rmj.ru> / – Russian medical journal.