

**METHODOLOGICAL INSTRUCTIONS FOR THE ORGANIZATION OF STUDENTS'  
INDIVIDUAL WORK IN THE DISCIPLINE "DIAGNOSTICS AND TREATMENT OF  
EXTRAPULMONARY TUBERCULOSIS" OF SPECIALTY 31.05.01 "INTERNAL  
MEDICINE"**

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## **Introduction**

A short description of the academic discipline "Diagnostics and treatment of extrapulmonary tuberculosis".

The methodological manual has been prepared in accordance with the requirements of the working program and contains methodological instructions on the main sections of the academic discipline "Diagnostics and treatment of extrapulmonary tuberculosis" according to the current study plan. The teaching aid is intended for organization of individual work of students of medical faculty, studying on specialty 31.05.01 "Internal Medicine".

Discipline "Diagnostics and treatment of extrapulmonary tuberculosis" refers to the variative part of B.1. the curriculum of the specialty 31.05.01 "Internal Medicine", approved by the rector of Ulyanovsk State University.

The content, requirements, conditions and procedure for the organization of independent work of students, taking into account the form of training are determined in accordance with the "Regulations on the organization of independent work of students", approved by the Academic Council of ULGU.

Type of CRS: study of educational material on the data of literature.

Study of educational material according to the data of lectures.

### **The purpose of CRS in mastering the discipline**

The purpose of CRS in learning the discipline "Diagnostics and treatment of extrapulmonary tuberculosis" is to develop knowledge, skills and competencies to interpret the results of general clinical laboratory, microbiological, immunological, radiological, endoscopic, functional, morphological tests and management of patients with various clinical forms of extrapulmonary tuberculosis.

### **CRS tasks in learning the discipline**

- Obtaining knowledge on general clinical laboratory, microbiological, immunological, radiological, endoscopic, functional, morphological tests in various clinical forms of extrapulmonary tuberculosis.
- Mastering the principles of interpretation of the results of general clinical laboratory, microbiological, immunological, radiological, endoscopic, functional, morphological studies in various clinical forms of extrapulmonary tuberculosis.
- Mastering the principles of managing patients with various forms of extrapulmonary tuberculosis.

### Expected results (competencies)

Code and name of the performing competence	List of planned learning outcomes in the discipline, correlated with indicators of achievement of competencies
<p>UK-2 ability to manage a project at all stages of its life cycle</p>	<p>ID-1UK2 Know the stages of the project life cycle, the stages of its development and implementation ID-2UK2 To be able to develop a project, taking into account the analysis of alternative options for its implementation, to determine the target stages, the main areas of work ID-3UK2 Possess development and project management methods</p>
<p>PC-2 - readiness to collect and analyze patient complaints, data from his anamnesis, results of inspections, laboratory, instrumental, pathological and anatomical and other studies in order to recognize a condition or establish the presence or absence of a disease</p>	<p>ID-1PC2 To know the diagnostic value of the changes identified during the clinical study of a patient with tuberculosis and during laboratory and instrumental diagnostics in latent tuberculosis infection and disease in various clinical forms of tuberculosis, pathological and anatomical and other studies ID-2PC2 Be able to conduct debriefing, physical examination of an infected with tuberculosis infection and a patient with tuberculosis; interpret the results of laboratory and instrumental diagnostics and use them to substantiate a clinical diagnosis; interpret the data of pathological and anatomical and other studies ID-3PC2 Possess the methods of clinical research of the patient, interpretation of the results of additional research methods, substantiation of the preliminary and clinical diagnosis of tuberculosis; the skill of comparing the morphological and clinical manifestations of tuberculosis. Methodology for organizing the detection of tuberculosis.</p>
<p>PC-4 - readiness to determine the need to use natural therapeutic factors, drugs, non-drug therapy and other methods in patients in need of medical rehabilitation and spa treatment</p>	<p>ID-1PC4 Know the indications, contraindications, mechanism of action, pharmacokinetics and pharmacodynamics, side effects, ways to eliminate them and prevent the main anti-tuberculosis drugs and pathogenetic drugs used at the stage of treatment and rehabilitation of patients with extrapulmonary tuberculosis; indications and contraindications for spa treatment, surgical treatment of patients with extrapulmonary tuberculosis at the stage of rehabilitation; groups of dispensary observation of patients with extrapulmonary tuberculosis; methods of specific and non-specific prevention of diseases and relapses of extrapulmonary tuberculosis. ID-2PC4 To be able to choose a chemotherapy regimen and pathogenetic treatment; prevent, identify and eliminate side effects of drugs; choose an anti-tuberculosis sanatorium, taking into account the age, concomitant pathology in patients with extrapulmonary tuberculosis; carry out activities corresponding to the dispensary observation group. ID-3PC4 Possess the methods of dispensary observation; organization and</p>

	implementation of specific, pathogenetic, sanatorium-resort, surgical treatment of patients with extrapulmonary tuberculosis at the stage of rehabilitation; methods of specific and non-specific prevention of extrapulmonary tuberculosis.
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### Questions for self-preparation for lessons

#### Section 1. Clinic and diagnosis of extrapulmonary tuberculosis

Theme 1: Etiology, general concept of extrapulmonary tuberculosis pathogenesis and its pathomorphology. Classification of extrapulmonary tuberculosis. Methods of diagnostics of extrapulmonary tuberculosis.

Questions to the lesson:

- 1 General concept of extrapulmonary tuberculosis pathogenesis
- 2 Types of specific tissue reactions in extrapulmonary tuberculosis
- 3 Features of extrapulmonary tuberculosis causative agent
- 4 MDT variability, drug resistance as an expression of variability
- 5 MBT detection methods (bacterioscopic, bacteriological, molecular genetic - PCR)
- 6 Physical methods of diagnostics of extrapulmonary tuberculosis.
- 7 Laboratory methods of VLT diagnostics: general clinical, cytological, histological.
- 8 Immunological methods of diagnostics of VLT. Sample with tuberculosis recombinant allergen.
- 9 Tuberculinodiagnosis of VLT (Mantu sample with 2 TE, Koch sample)
- 10 Instrumental diagnosis of VLT
- 11 Methods of radiation diagnostics - radiological, ultrasonographic, CT, NMR.
- 12 Endoscopic examination methods in HLT diagnostics: FGDS, FKS, cystoscopy, diagnostic laparoscopy

#### Theme 2. Tuberculosis of the brain tissue.

Questions to the topic:

- 1 Pathogenesis and pathological anatomy of tuberculosis meningitis
- 2 Basal and convexital tuberculosis meningitis; spinal cord tuberculosis
- 3 Clinical picture of tuberculosis meningitis in typical cases
- 4 Brain irritation symptoms
- 5 Symptoms of cranial nerve damage
- 6 Criteria for the diagnosis of tuberculosis meningitis
- 7 Exodus of tuberculosis meningitis.
- 8 Spinal puncture, liquor studies for tuberculosis meningitis
- 9 Differential diagnosis of tuberculosis meningitis

10 Atypical clinical variants of the onset of tuberculous meningitis: acute serous, acute abortion, acute purulent meningitis, acute psychosis, epileptoid, "acute abdominal".

11 Features of tuberculosis meningitis treatment

Theme 3: Tuberculosis of urinary organs, female and male genitals.

Questions to the topic:

1 Pathogenesis and pathological anatomy of the urinary system organs: kidney, ureter, bladder tuberculosis

2 Pathogenesis and pathological anatomy of genital tuberculosis in women

3 Pathogenesis and pathological anatomy of genital tuberculosis in men

4 Clinical picture, diagnosis and difdiagnosis of kidney tuberculosis

5 Clinical picture, diagnosis and difdiagnosis of ureterine and bladder tuberculosis

6 Cystoscopy, chromocystoscopy in diagnosis and difdiagnostics of tuberculosis of the urinary organs

7 Clinical picture, diagnosis and difdiagnosis of tuberculosis adnexitis

8 Clinical picture, diagnosis and difdiagnosis of tuberculosis endometritis

9 Hysterosalpingoscopy in diagnosis of female genital tuberculosis

10 Clinical picture, diagnosis and difdiagnostics of tuberculosis orchoepididymitis

11 Clinical picture, diagnosis and difdiagnosis of tuberculosis prostatitis

Theme 4: Tuberculosis of the osteo-articular system

Questions to the topic:

1 Pathogenesis and pathology of tuberculosis of bones and joints

2 Clinical picture of tuberculosis of bones and joints: intoxication syndrome, local symptoms

3 Clinical picture of tuberculosis spondylitis in the pre-spondylitic, spondylitic, postspondylitic stages

4 Clinical picture of tuberculosis coccitis and gonitis in the pre, arthritic and postartritic stages

5 Complications and outcomes of tuberculosis spondylitis

6 Complications and outcomes of tuberculosis coxitis and gonitis

7 Differential diagnosis of tuberculosis spondylitis

8 Differential diagnosis of tuberculosis coccitis and gonitis

Topic 5. Abdominal tuberculosis.

Questions to the topic:

1 Pathogenesis and pathologic anatomy of tuberculosis of the gastrointestinal tract

- 2 Pathogenesis and pathological anatomy of tuberculosis mesadenitis, tuberculosis of other intra-abdominal and retroperitoneal lymph nodes
- 3 Pathogenesis and pathologic anatomy of peritoneal tuberculosis
- 4 Pathogenesis and pathologic anatomy of tuberculosis of parenchymatous organs, abdominal cavity (liver and spleen)
- 5 Clinical picture of tuberculosis of gastrointestinal tract - intestine, stomach, esophagus
- 6 Clinical picture of tuberculosis mesadenitis, tuberculosis of other intra-abdominal and retroperitoneal lymph nodes
- 7 Clinical picture of peritoneal tuberculosis
- 8 Clinical picture of parenchymatous tuberculosis of abdominal organs (liver and spleen)
- 9 Complications of abdominal tuberculosis - bleeding, ulcer perforation, intestinal obstruction, etc.
- 10 Differential diagnosis of abdominal tuberculosis.
- 11 Exoderm of abdominal tuberculosis

Subject 6: Tuberculosis of peripheral lymph nodes, skin and eyes.

Questions to the topic:

- 1 Pathogenesis and pathatology of peripheral lymph node tuberculosis
- 2 Pathogenesis and pathological anatomy of skin tuberculosis
- 3 Pathogenesis and pathological anatomy of eye tuberculosis
- 4 Clinical picture of tuberculosis of peripheral lymph nodes in the initial stage, the stage of caseose without decay, abscess and fistulous stages
- 5 Bacteriological and histological criteria for the diagnosis of peripheral lymph node tuberculosis
- 6 Differential diagnosis of tuberculosis of peripheral lymph nodes with malignant lymphadenopathies, sarcoidosis, felinosis, AIDS, neck side cysts
- 7 Clinical manifestations and differential diagnosis of tuberculosis lupus with syphilis and lupus red
- 8 Clinical manifestations and difdiagnosis of papulonecrotic skin tuberculosis with vulgar acne rash
- 9 Clinical manifestations and differential diagnosis of scrofuloderma with chronic deep peptic ulcer pyoderma
- 10 Clinic and differential diagnosis of inductive erythema with thrombophlebitis
- 11 Clinic of hematogenic lesions of eyeball shells (anterior uveitis, peripheral uveitis, choreoretinitis, panuveitis)
- 12 Clinic of eye protection apparatus tuberculosis (eyelid skin, tear glands)
- 13 Clinic Tuberculosis allergic eye diseases in primary tuberculosis infection (allergic keratoconjunctionitis)
- 14 Clinic of visual lesions in CNS tuberculosis (involvement of otorhinolaryngeal nerves in tuberculous meningitis)

Section 2: Treatment, prevention and detection of extrapulmonary tuberculosis. Dispensary surveillance of extrapulmonary tuberculosis patients.

Topic 7: General principles of tuberculosis treatment and peculiarities of extrapulmonary tuberculosis treatment.

Questions to the topic:

1 General principles of tuberculosis treatment: complexity, duration, continuity, continuity, staging

2 General principles of specific chemotherapy - combination, account of the mechanism of action of drugs, account of sensitivity of the causative agent, account of side effects, account of related diseases, account of individual tolerance.

3 Main antituberculosis drugs: isoniazid, rifampicin, streptomycin, pyrazinamide, ethambutol: mechanism of action, side effects and methods of their elimination

4 Reserve antituberculous drugs: canamycin, etionamide, protionamide, PASK, products of Ofloxacin: mechanism of action, side effects, ways of their elimination

5 Pathogenetic means to limit inflammatory response (GCS, NPVP, heparin)

6 Pathogenetic means for the prevention of fibrosis (hyaluronidase, pyrogenal, penicillamine)

7 Desensitizing

8 Microbial immunomodulators - BCG vaccine, tuberculin, pyrogenal, prodigiosan, ribomunil, sodium nucleinate

9 Immunomodulators of endogenous origin - thymus extract, immunophan; Cytokines - interleukin -2 human recombinant, interleukin -1 $\beta$  human recombinant, interferon leukocytic human.

10 Synthetic and semi-synthetic immunomodulators - levamisole, glutoxime, polyoxidonium, lycopide

11 Pathogenetic drugs for the elimination of side effects

12 Radical methods of surgical treatment of extrapulmonary tuberculosis

13 Palliative treatments for extrapulmonary tuberculosis

14 Peculiarities of treatment of extrapulmonary tuberculosis: local application of medicines, immobilization in complex treatment of bone and joint tuberculosis.

Theme 8. Prevention and detection of extrapulmonary tuberculosis. Dispensary surveillance.

Questions to the topic:

1 Methods of specific prevention of extrapulmonary tuberculosis

2 Methods of nonspecific prevention of extrapulmonary tuberculosis

3 Primary chemoprophylaxis of extrapulmonary tuberculosis

4 Secondary chemoprophylaxis of extrapulmonary tuberculosis

5 Primary activities in the focus of extrapulmonary tuberculosis infection



- 6 Current activities in the focus of extrapulmonary tuberculosis infection
- 7 Work of the general network for prevention of extrapulmonary tuberculosis: risk groups for extrapulmonary tuberculosis
- 8 Work of the general network for detection of extrapulmonary tuberculosis: preventive bacteriological (study of urine on MBT), surveillance of patients with chronic kidney diseases, diseases of the gastrointestinal tract, hepatobiliary system, musculoskeletal system, HIV-infected persons
- 9 Dispensary groups for patients with extrapulmonary tuberculosis

### **List of practical skills on CRS**

- 1 Interpretation of histological examination results of organ and tissue samples of TB patients
- Interpretation of clinical OAC, OAM, biochemical blood tests for extrapulmonary tuberculosis 2.
- 3) Evaluation of the results of bacterioscopic and bacteriological examination of the materials for tuberculosis pathogen
- 4) Interpretation of the results of general clinical, biochemical study of liquor
5. Interpretation of the results of general clinical, biochemical study of ascitic fluid content
6. Interpretation of immunological research results in extrapulmonary tuberculosis - Mantu samples with 2 TE.
7. Interpretation of immunological test results in extrapulmonary tuberculosis - sample with tuberculosis recombinant allergen.
8. Interpretation of the results of immunological tests in extrapulmonary tuberculosis - Koch samples
9. Interpretation of immunologic research results in case of extrapulmonary tuberculosis - Grinchar-Karpilovsky sample
10. Interpretation of FBC, FGDS, laparoscopy, cystoscopy in extrapulmonary tuberculosis
- Interpretation of X-ray examination results in various forms of extrapulmonary tuberculosis 11.
12. Interpretation of ultrasound and CT results in various forms of extrapulmonary tuberculosis
13. Development of a treatment and management plan for patients with extrapulmonary tuberculosis under care
14. Drawing up a plan of measures to detect and prevent extra-pulmonary tuberculosis in the paediatric ward.

## Educational, methodical and information support of the discipline

### Basic Literature:

1. Перельман М.И., Фтизиатрия : учебник / М. И. Перельман, И. В. Богадельникова. - 4-е изд., перераб. и доп. - М. : ГЭОТАР-Медиа, 2015. - 448 с. - ISBN 978-5-9704-3318-8 - Текст : электронный // ЭБС "Консультант студента" : [сайт]. - URL : <http://www.studentlibrary.ru/book/ISBN9785970433188.html>
2. Перельман, М. И. Фтизиатрия: учебник для вузов / Перельман Михаил Израйлевич, В. А. Корякин, И. В. Богадельникова. - 3-е изд., перераб. и доп. - Москва : Медицина, 2004.
3. Мишин В.Ю., Фтизиатрия : учебник / В. Ю. Мишин и др. - 2-е изд., перераб. и доп. - М. : ГЭОТАР-Медиа, 2016. - 520 с. - ISBN 978-5-9704-3668-4 - Текст : электронный // ЭБС "Консультант студента" : [сайт]. - URL : <http://www.studentlibrary.ru/book/ISBN9785970436684.html>

### **Additional literature:**

1. Кишкун А. А., Назначение и клиническая интерпретация результатов лабораторных исследований [Электронный ресурс] / А. А. Кишкун - М. : ГЭОТАР-Медиа, 2016. -

448 с. - ISBN 978-5-9704-3873-2 - Режим доступа:

<http://www.studentlibrary.ru/book/ISBN9785970438732.html>

2. Мишин В.Ю., Туберкулинодиагностика / Мишин В.Ю. - М. : ГЭОТАР-Медиа, 2013. - 136 с. (Серия "Библиотека врача-специалиста") - ISBN 978-5-9704-2338-7 - Текст : электронный // ЭБС "Консультант студента" : [сайт]. - URL :

<http://www.studentlibrary.ru/book/ISBN9785970423387.html>

### **educational and methodical literature:**

1. Савоненкова Л. Н. Вопросы раннего выявления туберкулеза внелегочных локализаций : учеб.-метод. комплекс / Л. Н. Савоненкова. - Ульяновск : УлГУ, 2006.

#### **б) Программное обеспечение**

#### **в) Professional databases, information and reference systems:**

Электронно-библиотечные системы:

1.1. IPRbooks [Электронный ресурс]: электронно-библиотечная система / группа компаний Ай Пи Эр Медиа . - Электрон. дан. - Саратов , [2019]. - Режим доступа: <http://www.iprbookshop.ru>.

1.2. ЮРАЙТ [Электронный ресурс]: электронно-библиотечная система / ООО Электронное издательство ЮРАЙТ. - Электрон. дан. – Москва , [2019]. - Режим доступа: <https://www.biblio-online.ru>.

1.3. Консультант студента [Электронный ресурс]: электронно-библиотечная система /

ООО Политехресурс. - Электрон. дан. – Москва, [2019]. - Режим доступа:

<http://www.studentlibrary.ru/pages/catalogue.html>.

1.4. Лань [Электронный ресурс]: электронно-библиотечная система / ООО ЭБС Лань. - Электрон. дан. – С.-Петербург, [2019]. - Режим доступа: <https://e.lanbook.com>.

1.5. Znanium.com [Электронный ресурс]: электронно-библиотечная система / ООО Знаниум. - Электрон. дан. – Москва, [2019]. - Режим доступа: <http://znanium.com>.

2. КонсультантПлюс [Электронный ресурс]: справочная правовая система. /Компания «Консультант Плюс» - Электрон. дан. - Москва : КонсультантПлюс, [2019].

3. База данных периодических изданий [Электронный ресурс] : электронные журналы / ООО ИВИС. - Электрон. дан. - Москва, [2019]. - Режим доступа: <https://dlib.eastview.com/browse/udb/12>.

4. Национальная электронная библиотека [Электронный ресурс]: электронная библиотека. - Электрон. дан. – Москва, [2019]. - Режим доступа: <https://нэб.рф>.

5. Электронная библиотека диссертаций РГБ [Электронный ресурс]: электронная библиотека / ФГБУ РГБ. - Электрон. дан. – Москва, [2019]. - Режим доступа: <https://dvs.rsl.ru>.

6. Федеральные информационно-образовательные порталы:

6.1. Информационная система [Единое окно доступа к образовательным ресурсам](#).  
Режим доступа: <http://window.edu.ru>

6.2. Федеральный портал [Российское образование](#). Режим доступа: <http://www.edu.ru>

7. Образовательные ресурсы УлГУ:

7.1. Электронная библиотека УлГУ. Режим доступа : <http://lib.ulsu.ru/MegaPro/Web>

7.2. Образовательный портал УлГУ. Режим доступа : <http://edu.ulsu.ru>

I approve \_\_\_\_\_



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