

**MINISTRY OF HEALTH OF THE REPUBLIC OF BELARUS
EDUCATIONAL INSTITUTION
BELARUSIAN STATE MEDICAL UNIVERSITY**

**Контрольный
экземпляр**



APPROVED

by First Vice-Rector, Professor

S.V. Gubkin

Reg. #

10.08.2017
10-4.607/1718/едч

OCCUPATIONAL DISEASES

**Curriculum of higher educational institution
in the educational discipline for the specialty:**

1-79 01 01 «General Medicine»

Curriculum is based on the standard educational program "Occupational diseases", approved 08.08.17 registration # TD-6. 007/mun

COMPILERS:

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RECOMMENDED FOR APPROVAL:

by the 1-st Department of Internal Diseases of the Educational Institution "Belarusian State Medical University"
(protocol # 10 of 18.04.2017);

by the Methodological Commission of therapeutic disciplines of the Educational Institution "Belarusian State Medical University"
(protocol # 206/17 of 15.05.2017)

EXPLANATORY NOTE

“Occupational diseases” is the clinical subject containing the systematized modern scientific knowledge of the etiology, pathogenesis, clinical picture, techniques of diagnosis, treatment, medico-social examination (MSE) and prevention of the diseases caused by adverse working conditions.

The curriculum of the discipline "Occupational diseases" includes the latest scientific data on occupational medicine, etiology, pathogenesis of a number of occupational diseases: allergic, oncological pathology of respiratory organs, poisonings, infectious diseases, pathology resulting from the influence of physical factors (vibration, noise) and functional overstrain. Modern highly informative methods of occupational diseases diagnosis, new laboratory and functional markers of allergic diseases as well as occupational poisonings are presented.

The aim of teaching and studying the discipline "Occupational diseases" is to form students' scientific knowledge of diseases resulting from adverse working conditions; to master the methods of diagnosis, treatment and prevention of occupational diseases, the solution of MSE issues, medical and labor rehabilitation of patients.

The tasks of studying the discipline consist in developing students' academic competences based on the knowledge of:

- the basic concepts of occupational medicine (classes of working conditions, structure and diagnostic features of occupational diseases, medico-social examination of patients with occupational diseases);
- etiology and pathogenesis of occupational diseases;
- clinical manifestations of occupational diseases caused by the influence of industrial aerosols, chemical, physical factors, physical and functional overwork as well as allergic, oncologic and infectious diseases;
- adverse factors of the working conditions leading to occupational diseases development.

The tasks of teaching the subject consist in forming students' social and professional competences based on the knowledge and application of:

- methods of the sanitary and hygienic working conditions analysis, data of the occupational history for the definition of a class of working conditions and risk of occupational diseases development;
- methods of general and clinical examination of patients and the assessment of their findings;
- modern informative methods of laboratory and instrumental examination of patients;
- justification criteria of occupational diseases diagnosis;
- tactics of providing health care to workers under adverse working conditions;

- specific features of MSE of patients with occupational diseases and making up the rehabilitation program of a victim as a result of an industrial accident or occupational disease;
- methods of medical prevention of occupational diseases;

Teaching and successful studying of the discipline "Occupational diseases" is carried out on the basis of the knowledge and abilities acquired by students in the following disciplines:

General hygiene and military hygiene. Hygienic value of natural and social factors for health of a person.

Pathological physiology. Methods of examination of a functional condition of the body and systems, interpretation of their findings.

Biological chemistry. Biochemical methods of examination, interpretation of their findings.

Internal diseases. Principles of subjective and objective (physical) diagnosis, the main symptoms of diseases of inner organs.

Pharmacology. The main groups of medicines which are applied in clinic.

Public health and health care. Principles of assessment of temporary and persistent disability, their specific features in occupational diseases, organization of routine examination of individuals working under harmful industrial conditions.

As a result of studying the discipline «Occupational Diseases» the student should know:

- organization of medical care in the Republic of Belarus in the field of occupational diseases; incidence of occupational diseases;
- diagnostic methods, treatment and prophylaxis of occupational diseases;
- classes of working conditions;
- characteristic of diagnosis of occupational diseases in the Republic of Belarus;
- classification and the list of occupational diseases, their differences;
- structure of the Occupational Pathological Center, documents necessary for referring a patient to the Occupational Pathological Center;
- aims of the medico-rehabilitation expert commission (MREC), investigation order of acute and chronic cases of occupational diseases;
- etiology, pathogenesis, clinical picture, classification, diagnosis and differential diagnosis, treatment, prevention of the most common occupational diseases in the Republic of Belarus, MSE;
- special features of medical ethics in occupational diseases;
- degrees of restriction of activity and social insufficiency, determination of percentage (%) of loss of working capacity;
- order of making up rehabilitation program;
- occupational diseases of health care workers.

be able to:

- to find out complaints of the patient, to determine their pathogenetic value, to establish connection with professional hazards
- to estimate the sanitary and hygienic characteristics of a workplace
- to take and analyze the occupational history, the history of the disease, life, results of objective examination;
- to make up the program of examination, to evaluate the results of laboratory and instrumental methods of examination;

- to assess the results of provocative allergy tests,
- to determine the main syndromes and to prove the diagnosis of occupational disease;
- to prescribe etiotropic, pathogenetic, symptomatic treatment according to the existing protocols of treatment;
- to estimate the degree of restriction of activity and social insufficiency;
- to develop medical, occupational and social sections of the rehabilitation program;
- to fill out medical documentation;

should master:

- technique of certification, making up the sanitary and hygienic characteristic of a workplace, assessment of classes of working conditions
- methodology of investigation acute and chronic cases of occupational diseases in industry.

The structure of the curriculum of the educational discipline «Occupational Diseases» consists of five parts.

Total number of hours for the study of the discipline is 60 academic hours. Classroom hours according to the types of studies: lectures - 10 hours, practical classes - 25 hours, student independent work (self-study) - 25 hours.

Current assessment is carried out according to the syllabus of the specialty in the form of a credit (9 semester).

Form of higher education – full-time.

THEMATIC PLAN

Section (topic) name	Number of class hours	
	lectures	practical (laboratory or seminars)
1. Organization of Occupational pathological service in the Republic of Belarus. Investigation and accounting of occupational diseases. Specific features of medico-social examination in occupational diseases, programs of victims rehabilitation.	2	5
2. Occupational diseases caused by the influence of industrial aerosols	3	5
2.1. Pneumoconiosis: silicosis.	2	5
2.2. Chronic occupational bronchitis and chronic obstructive pulmonary disease	1	
3. Occupational allergic diseases: occupational asthma	1	5
4. Occupational diseases from exposure to physical factors: vibration disease	2	5
5. Occupational diseases from exposure to chemical factors: professional intoxication caused by aromatic hydrocarbons and lead	2	5
Total hours	10	25

CONTENT OF THE EDUCATIONAL MATERIAL

1. Organization of Occupational pathological service in the Republic of Belarus. Investigation and accounting of occupational diseases. Specific features of medico-social examination in occupational diseases, programs of victims rehabilitation.

The aims and organization of Occupational pathological service in the Republic of Belarus. Classes of working conditions. Classification of occupational diseases.

Features of occupational diseases diagnosis in the Republic of Belarus. Stages of establishing relationship between a disease and a profession. Comparison of examination data of the patient to the sanitary and hygienic characteristics of working conditions.

Special features of medical ethics in occupational diseases.

Diagnosis of acute and chronic occupational diseases.

Objectives of the Republican center of professional pathology and allergology of the Ministry of Health of the Republic of Belarus, regional centers of professional pathology and allergology. Rules of investigation and accounting of industrial accidents and occupational diseases.

Work of medico-rehabilitation expert commission (MREC) work in occupational diseases. Rules of identification of professional working capacity loss as a result of industrial accidents and occupational diseases.

Extent of restriction of activity and social insufficiency. Concept of functional classes. Principles of definition of disability groups and percentage of occupational working capacity loss. Rehabilitation and its types. Making up program of rehabilitation of the victim.

Management of patients with occupational diseases:

- working with medical records;
- revealing complaints, taking occupational and medical history, objective examination of a patient, making up a plan of examination, interpretation of results of laboratory tests and instrumental investigations, justification of the diagnosis of an occupational disease, making differential diagnosis, registration of the referral to MREC, making up PRP.

2. Occupational diseases caused by the influence of industrial aerosols

2.1. Pneumoconiosis: silicosis.

The characteristics of industrial dust, based on chemical origin, etiopathogenetic action, fibrogenic degree.

Definition of the concept "pneumoconiosis", "silicosis". Classification of pneumoconiosis and their characteristics. Pneumoconiosis caused by high and moderate fibrogenic types of dust (silicosis, silicotuberculosis). Pneumoconiosis caused by low fibrogenic types of dust (silicatosi, karbokoniosis, pneumoconiosis caused by influence of welding aerosol). Characteristics of a causative agent. Scheme of pathogenesis. Clinical features.

Clinical and radiological features of silicosis, course, complications, diagnostics criteria.

Assessment of the sanitary and hygienic characteristics, employment duration, character of profession, comparison of clinical, radiological and morphological data. Principles of pneumoconiosis treatment. Specific features of MSE and rehabilitation of pneumoconiosis. Prevention.

2.2. Chronic occupational bronchitis and chronic obstructive pulmonary disease.

Chronic occupational bronchitis and chronic obstructive pulmonary disease (COPD): definition of the concept, characteristics of etiological factors, scheme of pathogenesis. Clinical features of chronic occupational bronchitis and chronic obstructive pulmonary disease caused by the influence of industrial aerosols, classification, diagnosis criteria, differential diagnosis, treatment, MSE, prevention.

Clinical analysis of patients with occupational diseases caused by the influence of industrial aerosols: analysis of the occupational history, content of the sanitary and hygienic characteristics of a workplace, establishment of a class of working conditions; analysis of the patient's complaints, case history, life; data from objective, instrumental and laboratory methods of examination. Justification of an occupational disease diagnosis, carrying out differential diagnosis, making up a treatment plan and PRP, preparing the referral to MREC.

3. Occupational allergic diseases: occupational asthma

Occupational asthma: definition of the concept, characteristic of etiological factors, classification, scheme of pathogenesis, characteristic features of clinical manifestation, diagnosis criteria, treatment, MSE, prevention.

Clinical analysis of patients with occupational asthma: analysis of the occupational history, content of the sanitary and hygienic characteristic of a workplace, establishment of a class of working conditions; analysis of the patient's complaints, case history, life; data from objective, instrumental and laboratory methods of examination. Justification of an occupational disease diagnosis, carrying out differential diagnosis, making up a treatment plan and PRP, preparing the referral to MREC.

4. Occupational diseases caused by physical factors: vibration disease.

Vibration disease: definition of the concept, characteristics of etiological factors, industries, professions. Scheme of pathogenesis of vibration disease. Classification of vibration disease according to local, general, combined influence. Clinical characteristics of the main syndromes, their differential diagnosis. Criteria of the diagnosis, standards of treatment, MSE and prevention.

Clinical analysis of patients with vibration disease: analysis of the occupational history, content of the sanitary and hygienic characteristic of a workplace, establishment of a class of working conditions; analysis of the patient's complaints, case history, life; data from objective, instrumental and laboratory methods of examination. Justification of an occupational disease diagnosis, carrying out differential diagnosis, making up a treatment plan and PRP, preparing the referral to MREC.

5. Occupational diseases caused by chemical factors: professional intoxication caused by aromatic hydrocarbons and lead

Definition of the concept of occupational aromatic hydrocarbons intoxication. Chemical features of benzene, its homologs. List of industries and professions at risk of development of poisonings. Main mechanisms of development of acute and chronic poisonings. Clinical and laboratory manifestations of specific and nonspecific syndromes, remote consequences of intoxication. Criteria of the diagnosis, treatment of acute and chronic poisonings. MSE and prevention of aromatic hydrocarbons intoxication.

Definition of the concept of chronic lead intoxication. Characteristics of industries and professions in case of occupational lead poisoning. Pathogenesis of lead intoxication. Characteristics of specific and nonspecific syndromes. Clinical and laboratory criteria of the diagnosis. Assessment of provocative test. Ethiotropic antidote therapy. Pathogenetic treatment. MSE and prevention in patients with occupational lead intoxication.

Chemicals as a reason of acute and chronic occupational diseases. Classification of occupational poisonings. Clinical and pathogenic classification of occupational blood system poisonings.

Clinical analysis of patients with occupational diseases caused by chemical factors (lead, aromatic hydrocarbons): analysis of the occupational history, content of the sanitary and hygienic characteristics of a workplace, establishment of a class of working conditions; analysis of the patient's complaints, case history, life; data from objective, instrumental and laboratory methods of examination. Justification of an occupational disease diagnosis, carrying out differential diagnostics, making up a treatment plan and PRP, preparing the referral to MREC.

EDUCATIONAL DISCIPLINE CURRICULAR CHART

Section, topic #	Section (topic) name	number of hours		Self-studies	Equipment	Form of control
		lectures	practical			
1	Organization of Occupational pathological service in the Republic of Belarus. Investigation and accounting of occupational diseases. Specific features of medico-social examination in occupational diseases, programs of victims rehabilitation.	2	5	5	Electrocardiograms, FVD sets, Multimedia projector	Interview, tests
2	Occupational diseases caused by the influence of industrial aerosols	3	5	5	Negatoscope Roentgenograms, Sets of slides	Interview, tests
2.1	Pneumoconiosis: silicosis.	2	5	5		
2.2	Chronic occupational bronchitis and chronic obstructive pulmonary disease	1				
3	Occupational allergic diseases: occupational asthma	1	5	5	Negatoscope Roentgenograms, Sets of slides	Interview, tests
4	Occupational diseases from exposure to physical factors: vibration disease	2	5	5	Electrocardiograms, FVD sets, Multimedia projector	Interview, tests
5	Occupational diseases from exposure to chemical factors: professional intoxication caused by aromatic hydrocarbons and lead	2	5	5	Sets of laboratory analyses, computer supported training	Interview, tests, credit

INFORMATION AND INSTRUCTIONAL UNIT

LITERATURE

Basic (relevant):

1. Koh, D. Textbook of occupational medicine practice/ D. Koh, K. Takahashi .- 2011.- 606 p.
2. Aw .T.C. Pocket consultant occupational health/ T.C.Aw, K.Gardiner & J.M. Harrington. - 2013. - 364 p.
3. Smedley J. Oxford handbook of occupational health/ J. Smedley, F.Dick .- 2012.- 915 p.

Additional:

4. P.J. Baxter /Hunter`s diseases of occupationals/ P.J. Baxter, T.Ch. Aw, A. Cockcroft, P. Durrington & J.M. Harrington. - 2010. - 1291 p.

Regulations:

5. List of occupational diseases: the resolution of the Ministry of Health of the Republic of Belarus, the Ministry of Labour and Social Defense of the Republic of Belarus from 3/24/2009 No. 29/42.
6. The instruction about an order of performing the obligatory medical examinations of workers: the resolution of the Ministry of Health of the Republic of Belarus from 4/28/2010 No. 47 (with changes and additions of the resolution of the Ministry of Health of Republic of Belarus from 4/26/2011 No. 31).
7. Provision on service of occupational pathology of the Republic of Belarus: the resolution of the Ministry of Health of Republic of Belarus from 4/8/2003 No. 20.
8. Provision on the Republican center of occupational pathology and allergology of the Ministry of Health of the Republic of Belarus: the resolution of the Ministry of Health of Republic of Belarus from 4/8/2003 No. 20.
9. Rules of investigation and accounting of industrial accidents and occupational diseases: the resolution of Council of ministers of Republic of Belarus from 1/15/2004 No. 30 (with changes and additions).
10. Rules of identifying professional working capacity loss as a result of industrial accidents and occupational diseases: the resolution of Council of ministers of the Republic of Belarus from 10/10/2003 No. 1299 (with changes and additions).
11. About the documents necessary for investigation and the accounting of industrial accidents and occupational diseases: the resolution of the Ministry of Labour and Social Protection of the Republic of Belarus and the Ministry of Health of the Republic of Belarus from 8/14/2015 No. 51/94.

LIST OF AVAILABLE DIAGNOSTIC TOOLS

The following forms are used for competences assessment:

1. Oral form:
 - interviews;
2. Written form:
 - tests;
3. Oral-written form:
 - credits;

LIST OF LECTURES

№	Topic name	Number of hours
Semester 9		
1.	Organization of Occupational pathological service in the Republic of Belarus. Investigation and accounting of occupational diseases. Specific features of medico-social examination in occupational diseases, programs of victims rehabilitation.	2
2.	Pneumoconiosis: silicosis.	2
3.	Chronic occupational bronchitis and chronic obstructive pulmonary disease. Occupational allergic diseases: occupational asthma.	2
4.	Occupational diseases from exposure to physical factors: vibration diseases	2
5.	Occupational diseases from exposure to chemical factors: professional intoxication caused by aromatic hydrocarbons and lead.	2
Total hours		10

LIST OF LABORATORY (PRACTICAL) STUDIES

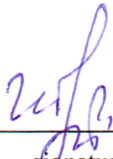
№	Topic name	Number of hours
Semester 9		
1.	Organization of Occupational pathological service in the Republic of Belarus. Investigation and accounting of occupational diseases. Specific features of medico-social examination in occupational diseases, programs of victims rehabilitation.	5
2.	Pneumoconiosis: silicosis. Chronic occupational bronchitis and chronic obstructive pulmonary disease.	5
3.	Occupational allergic diseases: occupational asthma.	5
4.	Occupational diseases from exposure to physical factors: vibration disease.	5
5	Occupational diseases from exposure to chemical factors: professional intoxication caused by aromatic hydrocarbons and lead.	5
Total hours		25

**PROTOCOL OF THE CURRICULUM APPROVAL
BY OTHER DEPARTMENTS**

Title of the discipline requiring approval	Department	Amendments to the curriculum of the academic discipline	Decision of the department, which designed the curriculum (date, protocol #)
1. General hygiene and military hygiene	Department of general hygiene	no offers	18.04.2017, protocol № 10
2. Biological chemistry	Department of biological chemistry	no offers	18.04.2017, protocol № 10
3. Internal diseases	1st department of internal diseases	no offers	18.04.2017, protocol № 10
4. Pathological physiology	Department of pathological physiology	no offers	18.04.2017, protocol № 10
5. Pharmacology	Department of clinical pharmacology	no offers	18.04.2017, protocol № 10
6. Public health and health care	Department of public health and health care	no offers	18.04.2017, protocol № 10


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Curriculum content, composition and accompanying documents comply with
established requirements.

Dean of the Medical Faculty of
International Students

10.08 2017



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University”

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