

Ministry of Health of the Republic of Belarus

Educational Establishment

BELARUSIAN STATE MEDICAL UNIVERSITY

Контрольный
экземпляр

APPROVED

First Vice Rector, professor

S.V. Gubkin



Per. № УД-н. 54/а / 1617 / уч.

OTORHINOLARYNGOLOGY

Curriculum of higher educational establishment in the
educational discipline for the speciality:

1-79 01 01 General Medicine

Minsk BSMY 2016

The curriculum is compiled on the basis of the standart educational programm «Otorhinolaryngology».

Approved «29» 04..... 2016, registration № 70-4-541/Type.

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The curriculum is recommended for approval by the Department of Ear, Throat, Nose Diseases « 29 » April 2016 (Report № 12)

Accepted and recommended for approval by the methodical committee of surgical disciplines of the educational establishment “Belarusian State Medical University”.
« 18 » 05 2016. (Report № 14)

EXPLANATORY NOTE

Otorhinolaryngology is the subject, containing systematized scientific knowledge about etiology, pathogenesis and clinical course of the diseases of the ear, nose, paranasal sinuses, pharynx and larynx.

The curriculum of the discipline "Otorhinolaryngology" includes the current scientific data on etiology, diagnostics, clinical findings and treatment of the diseases of the ear, throat and nose.

The purpose of studying Otorhinolaryngology is aimed at acquiring by the students the knowledge, skills which facilitate formation of professional competence, and a proper level of otorhinolaryngological care.

The aim of studying Otorhinolaryngology is to acquire by the students the academic competence based on their ability for independent search of educational and informational resources and mastering skills of gaining and interpreting their knowledge on:

- social importance and prevalence of diseases of the ear, nose, throat, paranasal sinuses and larynx in the general structure of pathology, timely revealing and eliminating these diseases in prophylaxis of overall morbidity and in sanitation of patients;
- special methods of examining otorhinolaryngological organs, necessary in the general structure of clinical examination of patients, as well as the main therapeutic procedures carried out in the course of treatment of patients;
- anatomico-physiological features of the ENT organs;
- practical techniques of examining patients (rhinoscopy, otoscopy, pharyngoscopy, indirect laryngoscopy) and concepts of etiopathogenetic treatment of patients;
- causes and mechanisms of the development of diseases of the ear, nose, paranasal sinuses, pharynx and larynx;
- clinical manifestation of these diseases;
- main risk factors of developing ear, nose and throat diseases

The goal of teaching Otorhinolaryngology is formation of personal-social and professional competence, based on formation of clinical thinking with regard to the norms of medical ethics and deontology.

Successful learning of Otorhinolaryngology requires from the students the basic knowledge and skills acquired in the following disciplines:

Human Anatomy. Structure of the temporal bone. External ear, the walls of the tympanic cavity, the auditory (otopharyngeal, Eustachian) tube. Mastoid process, its embryogenesis. Bony and membranous labyrinth of the inner ear. Labyrinthine vestibule, semicircular canal and cochlea. Structure and age features of the nose and paranasal sinuses. Their innervation and perfusion. Structure and age features of the pharynx anatomy. Lymphoepithelial system of the pharynx. Structure of the tonsils. Features of the innervation and blood perfusion. Anatomico-physiological and age features of the larynx and bronchial tree.

Medical and Biological Physics. Basic physical laws used in otology (Newton's first law and universal gravitation law; concept about the resonance, leverage, liquid Brownian motion).

Theory of acoustics and mechanics including:

- physical characteristics of sound, sound sensations and their interrelations, hearing investigations, acoustic impedance, audiometry, sound level measuring;
- concept on the sound-conducting and sound-perceiving apparatus, the physical bases of sound methods of investigations, ultrasound, vibration;
- angular and rectilinear accelerations, their measurement;
- organization and purpose of basic physiotherapeutic devices and methods of physiotherapeutic treatment.

Normal Physiology. Physiology of auditory and vestibular analyzers. Function and physiology of the ear, nose, paranasal sinuses, pharynx, lymphoepithelial system of the pharynx, larynx, trachea, and bronchial tree.

Concept on the physiological condition of the cell, activation, inhibition, parabiosis, pain, selective irritation response of the cell.

Histology, Cytology, Embryology. Structure of the eardrum, otosalpinx and mastoid process. Structure of the vestibule, semicircular canal and cochlea receptors.

Microstructure of the mucous membrane of respiratory tract and olfactory region of the nose cavity, Waldeyer's tonsillar ring, structure of a mucous membrane of the larynx, trachea, bronchial tree.

Histologic diagnostics of specific diseases of the respiratory ways and new growths.

Topographical Anatomy and Operative Surgery. Topography of the ear, nose and paranasal sinuses, neck, pharynx, larynx, tracheas, bronchial tubes. Operative technique on the mastoid process, paranasal sinuses. Conicotomy, tracheotomy techniques.

Neck vessels ligation techniques. Peripharyngeal space topography.

Pathological Anatomy. Morphological changes of the mucous membrane of the upper airways and lymphoid tissue in case of inflammation and new growth.

Pathological Physiology. Signs of acoustical and vestibular function impairments. Manifestations and consequences of impairments of nasal breath and barrier function of tonsils.

Radiodiagnostics and Beam Therapy. Basic methods of roentgenologic diagnostics of ENT diseases, roentgenography, tomography, magnetic resonance imaging and computer tomography. Roentgenologic symptoms of basic ENT diseases. Principles of beam therapy of malignant neoplasms (new growths). The main types of X-ray imaging applied in ENT practice and their interpretation.

Microbiology, Virology, Immunology. Oral cavity and ear microbiology. Technics of sampling of microbiological material. Microbiological diagnostics of infectious diseases, Klebsiellas. Serum diagnostics of specific diseases. Human immune status and immunodeficiencies.

Pharmacology. Characteristics and action mechanism of antimicrobial, antiviral, antihistamine, antitussive and expectorant drugs. The mechanism of action of antiseptics, hypotensive and narcotic preparations, analgesics. Anti-shock medicaments.

Requirements for preparing the students for the final stage of learning the discipline.

The student is to know:

- The role and importance of anatomico-physiological features of the ear, nose, paranasal sinuses, pharynx and larynx;
- The features of blood supply and innervation of the ear, nose, paranasal sinuses, pharynx and larynx;
- Age features of paranasal sinuses development and their role in pathology;
- Etiology, pathogenesis, clinical findings and treatment of acute and chronic rhinitis, their differential diagnosis;

- Features of the clinical course of acute and chronic sinusitis. Development of rhinogenous orbital and intracranial complications;
- Surgical treatment of diseases of the nose and paranasal sinuses;
- Differential diagnosis of acute tonsillitis;
- Signs of chronic tonsillitis and its classification;
- Purpose and importance of preventive medical examination of patients with chronic tonsillitis;
- Treatment principles of purulent diseases in the pharynx; relationship between diseases in the pharynx and dental diseases;
- Diagnostics and principles of removal of foreign bodies in the respiratory tract;
- Conservative and surgical treatment of larynx stenosis;
- Differential diagnosis of both benign and malignant tumours of the larynx and their treatment;
- Diseases of the auricle and external auditory meatus;
- Acute and chronic purulent diseases of the ear and their surgical treatment;
- Penetration routes of infection to the inner ear;
- Treatment principles of patients with labyrinthitis;
- Etiology of intracranial complications, their clinical findings and treatment;
- Differential diagnosis of meningitis;
- Role of an X-ray examination in otorhinolaryngology.

The student must have skills of:

- History taking;
- Diagnosing the underlying and associated illness;
- Rendering urgent aid in case of nasal hemorrhage and larynx stenosis;
- Drawing up an individual plan of patient's examination;
- ENT disease prevention;
- Appropriate prescription of medicine.

The student should be able to:

- use a head mirror;
- perform pharyngoscopy;
- make a cotton swab (ear, nasal, laryngeal);
- paint with different pharmaceutical compositions a mucous membrane in the pharynx, in the nose;
- examine the vestibule of the nose;

- carry out anterior rhinoscopy;
- investigate the function of nasal breathing;
- carry out anterior nasal packing;
- instill nose drops;
- remove foreign bodies from the anterior part of the nose and oropharyngs;
- perform otoscopy using both head mirror and otoscope;
- read roentgenograms of the nasal bones, paranasal sinuses;
- find out the patient's complaints, to make a differential diagnosis of ENT diseases;
- define the character and causes of ENT diseases.

In total, it is given 86 academic hours to study the discipline. Distribution of educational hours by type of occupation: 10 hours of lectures, 45 hours of practical classes, 31 hours of independent work of the student.

Clinical course assessment is carried out according to the curriculum in the form of test with differential mark. (7 semester).

Form of education - full-time tuition.

THEMATIC PLAN

The name of section (topic)	Quantity of study hours	
	Lectures	Practical lessons
1. Diseases of the nose and paranasal sinuses	2	10
1.1. Diseases of the external nose and nose cavity. Methods of investigation, clinical anatomy and physiology of the nose and paranasal sinuses	1	5
1.2. Diseases of the paranasal sinuses. Orbital and intracranial complications of inflammatory diseases of the nose and paranasal sinuses	1	5
2. Diseases of the pharynx. Clinical anatomy, physiology and methods of investigation of the pharynx. Tumours of the pharynx	2	5
3. Diseases of the ear	4	15
3.1. Clinical anatomy and physiology of the ear. Methods of hearing investigations and vestibular function tests. Diseases of the external ear	1	5
3.2. Acute and chronic diseases of the middle ear	1	5
3.3 Diseases of the inner ear. otogenic intracranial complications	2	5
4. Diseases of the larynx	2	10
4.1. Clinical anatomy, physiology and methods of investigation of the larynx. Acute diseases of the larynx. Acute stenosis of the larynx and its treatment	1	5
4.2. Chronic diseases of the larynx. Laryngeal tumours. Scleroma	1	5
5. Rendering first aid in otorhinolaryngology	-	5
Total hours	10	45

EDUCATIONAL MATERIAL

1. Diseases of the nose and paranasal sinuses

1.1. Diseases of the external nose and nose cavity. Methods of investigation, clinical anatomy and physiology of the nose and paranasal sinuses

Nose furuncle. Clinical findings, diagnostics, treatment, prophylaxis.
Eczema of the external nose. Etiology, clinical findings, diagnostics, treatment.
Acute rhinitises. Etiology, clinical findings, diagnostics, treatment. Hematoma and abscess of the nasal septum. Clinical findings, diagnostics, treatment. Nasal septum deviation. Etiology, symptomatology, indications for surgical treatment.
Congenital abnormalities of the external nose and nose cavity.

Chronic Rhinitises. Classification, clinical findings, diagnostics, treatment.
Ozena. Epidemiology, clinical findings, differential diagnosis, treatment.

1.2. Diseases of the paranasal sinuses. Orbital and intracranial complications of inflammatory diseases of a nose and paranasal sinuses

The features of the clinical course of sinusitis in children and adult patients.
Acute maxillary sinusitis. Etiology, clinical findings, diagnostics, treatment. Acute ethmoiditis. Etiology, clinical findings, diagnostics, treatment. Acute frontitis. Etiology, clinical findings, diagnostics, treatment. Acute sphenoiditis. Etiology, clinical findings, diagnostics, treatment. Chronic maxillary sinusitis. Etiology, Clinical findings, Diagnostics, treatment. Chronic ethmoiditis. Etiology, clinical findings, diagnostics, treatment. Chronic frontitis. Etiology, clinical findings, diagnostics, treatment. Chronic sphenoiditis. Etiology, clinical findings, diagnostics, treatment. Indications for surgical treatment of diseases of the paranasal sinuses. Orbital and intracranial complications of diseases of the nose and paranasal sinuses. Eyelid edema, orbital periostitis. Etiology, clinical findings, diagnostics, treatment. Subperiosteal abscess. Etiology, clinical findings, diagnostics, treatment. Periorbital cellulitis, orbital phlegmon. Etiology, clinical findings, diagnostics, treatment. Arachnoiditis, meningitis, brain abscess, thrombosis of the cavernous sinus. Etiology, clinical findings, diagnostics, treatment. Malignant and benign tumours. Diagnostics and treatment methods.

2. Diseases of the pharynx. Clinical anatomy, physiology and methods of investigation of the pharynx. Tumours of the pharynx.

The methods of investigation of the pharynx: pharyngoscopy, epipharyngoscopy, digital investigation of the nasopharynx. Pharyngeal lymphatic (Waldeyer's) ring, its role in formation of local and general immunity in children. Adenoid vegetation and the palatine tonsil hyperplasia in children. Diagnostics,

treatment methods. Classification of acute and chronic tonsillitis. Differential diagnosis of acute tonsillitis.

Chronic nonspecific tonsillitis. Classification, diagnostics, treatment tactics and complications. Prophylactic medical examination of patients with chronic tonsillitis. Acute pharyngitises. Etiology, clinical findings, diagnostics, treatment and prophylaxis. Chronic pharyngitises. Classification, Etiology, clinical findings, diagnostics, treatment and prophylaxis. Sleep disorders in children and adults diagnostics and treatment methods. Benign tumors (lymphangioma, angiofibroma, papillomatosis). Clinical findings, diagnostics, treatment.

Malignant tumors of the pharynx (cancer, lymphosarcoma). Methods of early diagnostics, treatment principles.

3. Diseases of the ear

3.1. Clinical anatomy and physiology of the ear. Methods of hearing investigations and vestibular function tests. Features of hearing investigations in children. Diseases of the external ear

Testing hearing without an audiometer: hearing threshold for whispered voice and conversational speech, tuning fork tests. Different types of audiometric testing. Vestibular function tests, spontaneous nystagmus, its differential diagnosis with cerebellar nystagmus. Otitis externa (eczema, furuncle of the external auditory meatus). Etiology, clinical findings, diagnostics, treatment. Foreign bodies of the external auditory meatus. Characteristics of foreign bodies. Removal methods of foreign bodies.

3.2. Acute and chronic diseases of the middle ear. Features of the clinical course of acute otitis media.

Acute and chronic catarrhal otitis media in children and adult patients. Etiology, pathogenesis, diagnostics, treatment and prophylaxis. Acute purulent otitis media. Clinical findings, diagnostics, treatment. Specific forms of inflammation of the middle ear (scarlatinal otitis, measles otitis, influential otitis). Acute mastoiditis. Penetration routes of the infection. Indications for surgical treatment. Otoantritis. Etiology, clinical findings, diagnostics, treatment. Paracentesis: principle of performing, its indications and complications. Chronic diseases of the middle ear (mesotympanitis, epitympanitis, mesoepitympanitis). Etiology, clinical findings, treatment. Indications for surgical treatment of chronic purulent otitis media .

3.3. Diseases of the inner ear. Otogenic intracranial complications

Labyrinthitis. Etiology, clinical findings, treatment. Classification of labyrinthitis. Differential diagnosis of labyrinthitis. Sensorineural hearing loss.

Etiology, clinical findings, diagnostics, treatment. Rehabilitation of patients with sensorineural hearing loss.

Otosclerosis. Etiology, clinical findings, diagnostics, treatment.

Otogenic intracranial complications. Thrombophlebitis of the sigmoid sinus. Etiology, clinical findings, treatment. Otogenic sepsis. Etiology, clinical findings, diagnostics, treatment. Meningitis (serous and purulent). Pathogenesis, Etiology, clinical findings, treatment. Cerebral and cerebellar abscesses. Etiology, clinical findings, diagnostics, treatment.

4. Diseases of the larynx.

4.1. Larynx-applied anatomy and physiology. Methods of Examination. Acute diseases of the larynx. Acute laryngeal stenosis and its treatment.

Indirect and direct laryngoscopy. Radiological and endoscopic methods of diagnostics of laryngeal, tracheal, bronchial and esophageal diseases. Acute laryngeal diseases. Acute laryngitis. Subglottic laryngitis in children. Acute laryngeal stenosis, surgical methods of treatment. Indications for tracheotomy.

4.2. Chronic diseases of the larynx. Laryngeal tumours. Scleroma.

Chronic laryngitis. Classification, clinical findings, diagnostics, treatment. Chronic laryngeal stenosis. Treatment methods. Paresis and paralyse of the larynx. Etiology, clinical findings, diagnostics, treatment. Specific diseases of the larynx (tuberculosis, syphilis), differential diagnosis. Tumor-like laryngeal diseases: vocal nodules, laryngeal cysts and polyps. Benign laryngeal tumors. Juvenile papillomatosis of the larynx. Etiology, diagnostics, clinical findings, treatment. Malignant tumors of the larynx (cancer, sarcoma), methods of early diagnostics, treatment concepts. Scleroma: epidemiology, clinical findings, classification, treatment.

5. Rendering first aid in otorhinolaryngology

Nasal bleedings. Estimation methods of blood loss. Causes of nasal bleedings, clinical findings, methods to stop nose bleeding. Foreign bodies of the ear, pharynx, larynx, tracheas, bronchial tree, esophagus. Methods of diagnostics and foreign bodies removal. Dislocated and non-dislocated nasal fractures, open and closed fractures of the nasal bone. Treatment technique.

Discipline curricular chart

Lesson number	The name of section, theme and the list of studied problems	Number of in class hours.		Self-studies	Literature	Form of knowledge control (order number)
		Lectures	Practical lessons			
1	Diseases of the nose and paranasal sinuses	2	10	7		
1.1	Diseases of the external nose and nose cavity. Methods of investigation, clinical anatomy and physiology of the nose and paranasal sinuses	1	5	2	1, 2, 3, 4, 5, 6	Oral test, testing, essays
1.2	Diseases the paranasal sinuses. Orbital and intracranial complications of inflammatory diseases of the nose and paranasal sinuses	1	5	5	1, 2, 3, 4, 5, 6	Oral test, testing, essays, demonstration of practical skills.
2	Acute and chronic diseases of the pharynx. Clinical anatomy, physiology and investigation methods of the pharynx. Tumours of the pharynx.	2	5	5	1, 2, 3, 4, 5, 6	Oral test, testing, essays, demonstration of practical skills.
3	Ear diseases	4	15	8		
3.1.	Clinical anatomy and physiology of the ear. Methods of investigation of the hearing and vestibular mechanism. Diseases of the external ear.	1	5	2	1, 2, 3, 4, 5, 6, 7	Oral test, testing, essays, demonstration of practical skills.

Lesson number	The name of section, theme and the list of studied problems	Number of in class hours.		Self-studies	Literature	Form of knowledge control (order number)
		Lectures	Practical lessons			
3.2	Acute and chronic diseases of the middle ear.	1	5	4	1, 2, 3, 4, 5, 6, 7	Oral test, testing, essays, demonstration of practical skills.
3.3	Diseases of the inner ear. Otogenic intracranial complications.	2	5	4	1, 2, 3, 4, 5, 6, 7	Oral test, testing, essays.
4.	Diseases of the larynx.	2*	10	7		
4.1	Clinical anatomy, physiology and methods of investigation of the larynx. Acute diseases of the larynx. Acute stenosis of the larynx, its treatment.	1*	5	3	1, 2, 3, 4, 5, 6, 8	Oral test, testing, essays, demonstration of practical skills.
4.2	Chronic diseases of the Larynx. Laryngeal tumors. Scleroma	1*	5	4	1, 2, 3, 4, 5, 6, 8	Oral test, testing, essays, demonstration of practical skills.
5.	Rendering first aid in otorhinolaryngology	-	5	4	1, 2, 3, 4, 5, 6, 8	Oral test, testing, essays, demonstration of practical skills. Final session

INFORMATIONAL AND METHODOLOGICAL PART

LITERATURE

Basic:

1. Ear, Nose, and Throat Diseases with Head and Neck Surgery / H.Behrbohm [et al.] – Stuttgart : Theime, 2009. – 471 p.
2. Color Atlas of ENT Diagnosis / Tony R. Bull. – Stuttgart : Theime, 2003. – 258 p.

Additional:

3. Basic Otorhinolaryngology. A Step-by-Step Learning Guide / R. Probst, G. Grevers, H. Iro. – Stuttgart : Theime, 2009. – 430 p.
4. Ballenger's Manual of Otorhinolaryngology Head and Neck Surgery / Snow James B. – Decker, B.C. Inc., 2003. – 640 p.
5. Pediatric Otolaryngology for the Clinician / Ron B. Mitchell, Kevin D. Pereira. Humana Press, 2009. - 251 p.
6. Complications in pediatric otolaryngology / edited by Gary Josephson, Daniel Wohl. – Taylor & Francis Group, 2005. – 610 p.
7. Color atlas of otoscopy: from diagnosis to surgery / Mario Sanna, Alessandra Russo, Giuseppe De Donato; with the collaboration of Essam Saleh...[et al.]. – Stuttgart : Theime, 2004. – 149 p.
8. Tracheostomy. A multiprofessional handbook / Claudia Russell , Basil Matta. – Cambridge University Press, 2004. - 392 p.

LIST OF DIAGNOSTIC FACILITIES

The estimation of educational achievements of the student is carried using estimation facilities and technologies of the university. The fund of estimation means of educational progress of the student includes:

- Typical tasks in various forms (oral, written, test, situational, etc.);
- Examinations;
- Educational medical histories and results of supplementary methods of investigation (laboratory, functional, radiologic investigation, etc.);
- Educational and research work of students;
- Other diagnostic facilities in accordance with the curriculum.

The fund of control technologies of training includes:

- Oral test;
- Graphic works;
- Final session (offset);
- Defence of the educational medical history or essay on the theme of educational research work.

**REPORT ON THE COORDINATION OF THE EDUCATIONAL PROGRAM IN THE DISCIPLINE
«OTORHINOLARYNGOLOGY» WITH CURRICULA OF OTHER DISCIPLINES**

Related subject name	Department carrying out teaching of a related subject	Maintenance of the offered changes in the curriculum.	Decision approved by the chair-developer (date, report number)
<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
1. Medical and Biological Physics	Medical and Biological Physics	There are no offered changes in the curriculum.	Changes were not included. 29.04. 2016 (protocol № 12)
2. Pharmacology	Clinical Pharmacology	There are no offered changes in the curriculum.	Changes were not included. 29.04. 2016 (protocol № 12)

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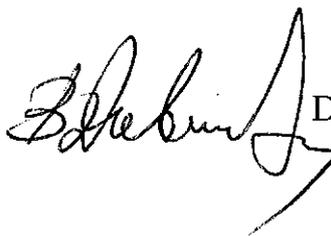
K.N. Ustinovich

Curriculum contents, composition and accompanying documents conform the
established requirements.

Dean of the Medical Faculty for International
Students of the Educational Establishment
“Belarusian State Medical University”

Associate Professor

« 01 » 08 _____ 2016



Davidov V.V.

Methodologist of the Educational Establishment
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« 01 » 08 _____ 2016



Kharitonova S.A.

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