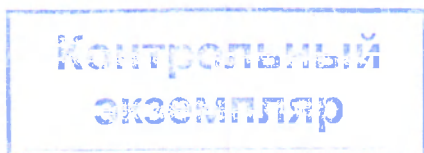


**MINISTRY OF HEALTH OF THE REPUBLIC OF BELARUS
EDUCATIONAL INSTITUTION
BELARUSIAN STATE MEDICAL UNIVERSITY**



APPROVED



by First Vice-Rector, Professor

I.N.Moroz

19.11.2020

Reg. # UD-1537/2021 /edu.

OTORHINOLARYNGOLOGY

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

1-79 01 07 «Stomatology»

Curriculum is based on the educational program «Otorhinolaryngology», approved 29.07.2020, registration # УД-Л.537/2021/уч.

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RECOMMENDED FOR APPROVAL:

by the Department of Ear, Throat, Nose Diseases of the Educational Institution «Belarusian State Medical University»
(protocol # 2 of 09.09.2020);

by the Scientific Methodical Council of the Educational Institution «Belarusian State Medical University»
(protocol # 13 of 18.11.2020)

EXPLANATORY NOTE

«Otorhinolaryngology» is the educational discipline, 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 tasks of studying «Otorhinolaryngology» are to develop the students' academic competences, based on the ability to self-search educational and information resources, as well as acquire and understand the knowledge of:

- 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 (ear, nose, and throat) 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 tasks of teaching «Otorhinolaryngology» include the formation of personal-social and professional competence, based on formation clinical thinking with regard to the norms of medical ethics and deontology.

Teaching and successful learning of the discipline «Otorhinolaryngology» is carried out on the basis of the knowledge and skills previously acquired by the students 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. Anatomic-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.

Surgical diseases. The concept of aseptic and antiseptic. Desmurgy of otorhinolaryngological organs, head, neck. Etiology, pathogenesis and methods of treatment of furuncle, carbuncle, burns and frostbites, thrombophlebitis. Diagnosis of fractures of the base of the skull and neck, methods of immobilization and reposition. The concept of trauma, shock, sepsis. Determination of blood loss, amount of blood transfusion, determination of the blood group, Rh factor. Complications of blood transfusions.

As a result of studying the discipline «Otorhinolaryngology» the student should

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;

- etiology, pathogenesis, clinical findings and treatment of the most common diseases of the hearing, voice and speech in children;

- 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, the purpose and importance of preventive medical examination of patients with chronic tonsillitis;

- differential diagnosis of labyrinths and non-nasal diseases of the inner ear, their treatment;

- differential diagnosis of meningitis;

- role of an X-ray examination in otorhinolaryngology;

be able to:

- make a cotton swab (ear, nasal, laryngeal);

- paint with different pharmaceutical compositions a mucous membrane in the pharynx, in the nose;

- instill nose drops;

- carry out anterior nasal packing;

- remove foreign bodies from the anterior part of the nose and oropharyngs;

- syringe the external auditory meatus

- carry out conicotomy;

master:

- history taking; making a preliminary diagnosis for diseases of the upper respiratory tract and ear, making an individual plan for examination of the patient;

- investigating the function of nasal breathing, the olfactory function of the nose, revealing on the roentgenograms signs of diseases and injuries of the upper respiratory tract and ear;;

- investigating of hearing with whispered speech and tuning forks, reading the auditory passport and audiogram;

– examining of the vestibular function by rotating on the Barani chair;

Total number of hours for the study of the discipline is 64 academic hours. Classroom hours according to the types of studies: lectures – 12 hours, practical classes – 20 hours, student independent work (self-study) – 22 hours.

Current assessment is carried out according to the syllabus of the specialty in the form of a graded credit (8 semester).

Form of higher education – full-time.

ALLOCATION OF ACADEMIC TIME ACCORDING TO SEMESTERS OF STUDY

Code number, speciality name	Semester	Number of class hours.				out-of-class self- studies	form of current assessment
		Total	in-class	lectures	practical classes		
1-79 01 07 «Stomatology»	8	64	42	12	30	22	graded credit

THEMATIC PLAN

The name of section (topic)	Number of class hours	
	lectures	practical lessons
1. Diseases of the nose and paranasal sinuses	2	10
1.1. Methods of investigation of the nose and paranasal sinuses. Diseases of the external nose and nose cavity		5
1.2. Diseases of the paranasal sinuses. Orbital and intracranial complications of inflammatory diseases of the nose and paranasal sinuses	2	5
2. Diseases of the pharynx. Methods of investigation of the pharynx. Tumours of the pharynx	2	5
3. Diseases of the ear	4	10
3.1. Methods of hearing investigations. Diseases of the external ear	2	3
3.2. Acute and chronic diseases of the middle ear		2
3.3. Diseases of the inner ear. Otogenic intracranial complications	2	5
4. Diseases of the larynx	4	5
Total hours	12	30

CONTENT OF THE EDUCATIONAL MATERIAL

1. Diseases of the nose and paranasal sinuses

1.1. Methods of investigation of the nose and paranasal sinuses. Diseases of the external nose and nose cavity

Anterior and posterior rhinoscopy. Function of the nasal cavity and paranasal sinuses. Congenital deformities of the nose. Choanal atresia and its treatment. Nasal 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.

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 the nose and paranasal sinuses

Odontogenic 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. 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. Benign tumours (lymphangioma, angiofibroma, papillomatosis). Clinical findings,

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

3. Diseases of the ear

3.1. Methods of hearing investigations. Diseases of the external ear

Testing hearing without an audiometer: hearing threshold for whispered voice and conversational speech. Otitis externa (eczema, furuncle of the external auditory meatus). Etiology, clinical findings, diagnostics, treatment.

3.2. Acute and chronic diseases of the middle ear

Acute catarrhal and purulent otitis media. Clinical findings, diagnostics, treatment. Acute mastoiditis. Penetration routes of the infection. Chronic purulent otitis media.

3.3. Diseases of the inner ear. Otogenic intracranial complications

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

Methods of examination of the larynx. Acute laryngeal diseases. Acute laryngeal stenosis. Foreign bodies of the larynx. Chronic laryngeal stenosis. Surgical methods of treatment of the laryngeal stenosis. Chronic laryngitis. Laryngeal tumors, its prophylaxis.

EDUCATIONAL DISCIPLINE CURRICULAR CHART

Section, topic #	Section (topic) name	Number of in class hours.		Self-studies	Form of knowledge control (order number)
		Lectures	Practical lessons		
1	Diseases of the nose and paranasal sinuses	2	10	10	
1.1	Methods of investigation of the nose and paranasal sinuses Diseases of the external nose and nose cavity	2	5	5	Interview, tests, abstracts
1.2	Diseases the paranasal sinuses. Orbital and intracranial complications of inflammatory diseases of the nose and paranasal sinuses		5	5	Interview, tests, abstracts
2.	Diseases of the pharynx. Methods of investigation of the pharynx. Tumours of the pharynx	2	5	5	Interview, tests, abstracts
3.	Diseases of the ear	4	10	10	
3.1	Methods of hearing investigation. Diseases of the external ear	1	3	3	Interview, tests, abstracts
3.2	Acute and chronic diseases of the middle ear	1	2	2	Interview, tests, abstracts
3.3	Diseases of the inner ear. Orogenic intracranial complications	2	5	5	Interview, tests, abstracts
4.	Diseases of the larynx	4	5	5	Interview, tests, abstracts, graded credit
		12	30	22	

INFORMATION AND INSTRUCTIONAL UNIT

LITERATURE

Basic:

1. Ear, Nose, and Throat Diseases with Head and Neck Surgery / H.Behrbohm [et al.] – Stuttgart : Theime, 2009. – 471 p.

Additional:

1. Handbook of Otolaryngology / C. Downs. – Foster Academics, 2015. – 212 p.

2. Atlas of Instruments in Otolaryngology, Head and Neck Surgery / B.K. Vikram, D. Manjunath. – Jaypee Brothers Medical Publishers (P) LTD, 2012. – 291 p.

3. Ear, Nose and Throat at a Glance / N. Munir, R. Clarke – Wiley-Blackwell, 2013. – 96 p.

4. Ear, Nose and Throat: The Official Handbook for Medical Students and Junior Doctors / A. Yao [et al.] – 2018. – 288 p.

5. European Position Paper on Rhinosinusitis and Nasal Polyps 2020 / W.J. Fokkens [et al.] – Rhinology, 2020. – 464 p.

LIST OF AVAILABLE DIAGNOSTIC TOOLS

The following forms are used for competences assessment:

- Oral form:
- interviews.
- Written form:
- tests;
- abstracts.
- Oral-written form:
- graded credit.
- Technical form:
- electronic tests.

LIST OF PRACTICAL SKILLS

1. Medical history taking, primary diagnosis of diseases of ENT organs
2. Study of the function of nasal breathing, olfactory function
3. Interpretation of radiographs, MRI and CT of the nose and paranasal sinuses, ear, larynx
4. Hearing tests: whispered speech, tuning fork tests, analysis of the audiograms

5. Vestibular function testing by rotating in the Barany chair.
6. Screwing a cotton onto a threaded probe (ear, nasal, laryngeal).
7. Lubrication of the mucous membrane of the pharynx, nose with drugs, instillation of drops in the nose, anterior tamponade of the nose.
8. Removal of foreign bodies from the anterior parts of the nasal cavity and oropharynx.
9. Irrigation of the external auditory canal.
10. Performing conicotomy.

LIST OF LECTURES

1. Diseases of the external nose and nasal cavity. Clinical anatomy and physiology of the nose and paranasal sinuses. The methods of investigation of the nose and paranasal sinuses. Diseases of the paranasal sinuses. Orbital and intracranial complications of inflammatory diseases of the nose and paranasal sinuses.
2. Clinical anatomy and physiology of the pharynx. Acute and chronic diseases of the pharynx. The methods of investigation of the pharynx. Pharyngeal tumors.
3. Diseases of the outer ear. Methods of hearing investigations. Acute and chronic diseases of the middle ear.
4. Diseases of the inner ear. Otogenic intracranial complications.
5. The methods of investigation of the larynx. Acute diseases of the larynx. Acute laryngeal stenosis, its treatment. Acute laryngotracheitis in adults and children. Foreign bodies of the larynx.
6. Chronic laryngeal stenosis. Surgical treatment of the laryngeal stenosis. Chronic hyperplastic laryngitis. Laryngeal neoplasms. Prophylaxis of the laryngeal cancer.

LIST OF PRACTICAL CLASSES

1. Clinical anatomy and physiology of the external nose, nasal cavity, methods of investigation. Anomalies in the development of the nose. Furuncle of the nose. Hematoma and abscess of the nasal septum. Acute and chronic rhinitis. Nasal septum deviation.
2. Acute and chronic diseases of the paranasal sinuses. Orbital and intracranial complications of inflammatory diseases of the nose and paranasal sinuses. Malignant and benign tumors: methods of diagnosis and treatment.
3. Clinical anatomy and physiology of the pharynx, methods of investigation. Acute and chronic diseases of the pharynx. Differential diagnosis of acute tonsillitis. Classification of acute and chronic tonsillitis (I.B.Soldatov). Pharyngeal tumors.
4. Methods of hearing investigations. Diseases of the outer ear. Acute and chronic diseases of the middle ear.
5. Diseases of the inner ear. Otogenic intracranial complications.

6. Acute and chronic diseases of the larynx. Methods of investigation of the larynx. Acute and chronic laryngeal stenosis, its treatment. Acute laryngotracheitis in adults and children. Foreign bodies of the larynx. Surgical treatment of laryngeal stenosis. Chronic hyperplastic laryngitis. Laryngeal neoplasms. Prophylaxis of the laryngeal cancer.

**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
Surgical Diseases	Department of General Surgery	There are no proposals for changes in the curriculum	protocol # 2 of 09.09.2020
Ophthalmology	Department of Eye Diseases	There are no proposals for changes in the curriculum	protocol # 2 of 09.09.2020
Oral and Maxillofacial Surgery	Department of Oral and Maxillofacial Surgery	There are no proposals for changes in the curriculum	protocol # 2 of 09.09.2020

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

Dean of the Medical Faculty of
International Students of the
Educational Institution
«Belarusian State Medical
University»

18.11. 2020

O.S.Ishutin

Methodologist of Educational
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