# MINISTRY OF HEALTH OF UKRAINE KHARKIV NATIONAL MEDICAL UNIVERSITY

# Department of Pediatrics №1 and Neonatology Academic year 2021/2022

# SYLLABUS OF THE EDUCATIONAL DISCIPLINE "FUNCTIONAL DIAGNOSTICS IN THE PEDIATRICS"

Normative educational component

The form of education is full-time, distance

**Educational program for training specialists of the second (master's)** 

level of higher education training 22 "Healthcare"

in specialty 222 "Medicine"

Course 6

The syllabus of the discipline was approved at the meeting of the Department of Pediatric #1 and

Neonatology

Protocol No.1 from

"27" August 2021

Head of Department

prof. M. Gonchar

Approved by the methodical commission of KhNMU on problems of professional training pediatric profile

Protocol No.1 from

"27" August 2021

Chairperson of the methodical commission of KhNMU on problems of professional training pediatric profile

prof. M. Gonchar

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**Direct consultations:** time and location according to department schedule.

**On-line consultations**: Moodle, Zoom, Google Meet (schedule and location by prior agreement with a lecturer)

**Location:** Municipal Non-profit Enterprise of the Kharkiv Regional Council "Regional Clinical Children Hospital

#### INTRODUCTION

The syllabus of the discipline "Functional diagnostics in the pediatrics" is compiled in accordance with the educational-professional program "Medicine", the second (master's) level, field of knowledge 22 "Health".

**Objective:** to provide training for highly qualified specialists in the field of medicine, namely in pediatrics, able to solve complex problems of functional diagnostics in the childhood diseases.

#### Learning outcomes.

The course covers the main aspects of training a future pediatrician, family doctor or neonatologist.

According to the training program in the discipline of "Functional diagnostics in the pediatrics", the applicant receives theoretical knowledge, methodological training, practical skills and abilities in the following areas:

- Functional diagnostics tests of the most common children respiratory diseases.
- Functional diagnostics tests of the most common diseases of the circulatory system.
- Functional diagnostics tests of the most common digestive diseases.
- Functional diagnostics tests of the most common diseases of the urinary system.

The subject of study of the discipline are functional diagnostics tests that can be providing in children of different ages.

#### **Interdisciplinary links:**

#### Prerequisites and co-requisites of the discipline

The discipline "Functional diagnostics in the pediatrics" is related to the disciplines of medical biology, normal and pathological anatomy, normal and pathological physiology, biochemistry, microbiology, propaedeutics of pediatrics, medical genetics, pharmacology and medical prescription, epidemiology and principles of evidence-based medicine, emergency care, and also have practical skills in caring for pediatric patients and their management in outpatient and inpatient settings.

#### Post-requisites of the discipline.

The main provisions of the training discipline should be applied in the study of related disciplines during the 6 year of study, is the basis for preparing for the licensed exam, preparing for study in higher education institutions at the programs of the third educational and scientific level.

#### 1. PURPOSE AND TASKS OF THE COURSE

- **1.1. The purpose of the study** is to provide training for highly qualified specialists in the field of pediatrics, able to solve complex problems of diagnosis of major somatic diseases and conditions in children of different ages.
- **1.2. The main objectives** of the course are the acquisition general and professional competencies of the educational and professional program "Medicine" of the second level of higher education, specialty 222 Medicine.
- **1.3. Competences and learning outcomes**, the formation of which is facilitated by the discipline:
- 1.3.1. The study of the discipline provides students with the acquisition of competencies:
- Integrated competencies:
- ability to solve typical and complex specialized tasks and practical problems in professional activities in the field of health care, or in the learning process, which involves research and/or innovation and is characterized by complex and uncertain conditions and requirements.
- General competencies:
- ability for abstract thinking, analysis and synthesis, ability to learn and to be trained; the ability to apply knowledge in practical situations; knowledge and understanding of the subject area and understanding of professional activities; adaptability and action in a new situation; the ability to make informed decisions; work in a team; interpersonal interaction skills; ability to communicate effectively in certain language with using both personal skills and appropriate technology; to be certain and responsible for any activities and take into account all social aspects.
- Professional competencies in pediatrics:
- Survey skills; ability to identify and evaluate a list of necessary laboratory and instrumental investigations; ability to establish a preliminary and clinical diagnosis of the disease; ability to determine the necessary regimens of work, rest and nutrition; the ability to define causes and principles of treatment of disease; ability to diagnose and provide an intensive care in emergency conditions; medical manipulation skills; the ability to plan and implement sanitary, preventive and anti-epidemic events, including infectious diseases; the ability to define tactics for the management of persons subject to dispensary supervision; ability to make medical records.
- 1.3.2. The study of the discipline provides students with the acquisition of the following program learning outcomes:
- PRT 1 to have general and special fundamental and profession-oriented knowledge, abilities, skills and competences required for carrying out typical professional tasks, which are associated with activity in the medical field in a particular position
- PRT 2 to have knowledge about psychophysiological peculiarities of human, human health, health support, prophylaxis of diseases, treatment of human, health of population

Use of knowledge and understanding:

PRT 3 – to apply the acquired knowledge, skills and understanding for performing typical tasks in the doctor's activity, whose sphere of use is determined by lists of syndromes, signs and symptoms, diseases, medical emergencies, laboratory and instrumental methods of examination, medical manipulations

PRT 4 – to collect information about the patient

PRT 5 – to evaluate results of questioning, physical examination, data of laboratory and instrumental methods of examination

PRT 6 – to establish of an initial clinical diagnosis of a disease

PRT 7 – to determine the character and principles of treatment of diseases

PRT 8 – to determine the required diet, mode of work and rest in treating diseases

PRT 9 – to determine the tactics for managing the persons subject for regular medical check-ups

PRT 10 – to diagnose medical emergencies, determine tactics for provision of emergency medical aid

PRT 15 – to perform medical manipulations

PRT 17 – be able to keep medical documents and processing state, social and medical information Formation of judgements:

PRT 18 -to assess the state of human health and provide its support with consideration of effects of the environment and other determinants of health

PRT 20 – to apply the acquired knowledge about the current system of health care for optimization of one's own professional activity and participation in performing practical tasks in the field

PRT 21 – to adhere to the ethical code of the doctor, which ensures the formation of a specialist with appropriate personal qualities

The study of this discipline promotes development of the following soft skills:

- Communicability (implemented through: workingin groups with brainstorming during the analysis of clinical cases, presenting results of independent work to the group),
- teamwork (implemented through: workingin groups with brainstorming during the analysis of clinical cases),
- conflict management (implemented through: business games),
- time management (implemented through: self-organization during working in groups and individually),
- leadership skills (implemented through: presenting the results of individual work for the group).

#### 2. INFORMATION SCOPE OF THE COURSE

#### 2.1 General information

Name of indicators	Field of knowledge, direction of training, educational and qualification level	Characteristics of the discipline full-time education	
Number of credits 3	Area of knowledge 22 "Health care"	Normative	
		Year of preparation:	
The total number of hours is 90	Specialty: 222 "Medicine" 228 "Pediatrics"	6th	
		Semester	
	228 Fedianics	XI-XII	
		Lectures	
Hours for day (or evening)		0 hours	
form of study:	Education level:	Practical, seminar	
classroom - 30	master	30 hours	
independent work of the		Laboratory	
student - 60		0 hours	

Individual work	
60 hours	
Individual tasks:	
Type of control:	
credit	

# 2.2 Description of the discipline

# **2.2.1** Lectures

Not provided per the curriculum

# 2.2.2 Seminars

Not provided per the curriculum

# 2.2.3 Practical classes

№	Topics	Number of	Learning	Forms of
n/o	•	hours	methods	control
	Chapter 1. Differential diagnosis of	of the most commo	n respiratory dise	ases in children.
1.	Topic 1. Basics of Functional Echocardiography in Children and Neonates. Principals of ECG analysis in children with arrhythmia.	6	Verbal (explanation, conversation, discussion), Visual (presentation, videos), business, role play, (case simulation, delegation of duites), case method, debates, brainstorming, interactive virtual cases,	oral examination (individual and frontal); written survey; test control
			use of mannequins	
2.	Topic 2. Stress functional tests in the pediatrics.	6	Verbal (explanation, conversation, discussion), Visual (presentation, videos), business, role play, (case simulation, delegation of duites), case method, debates, brainstorming, interactive virtual cases, use of mannequins	oral examination (individual and frontal); written survey; test control
3.	Topic 3. Ambulatory Electrocardiogram Monitoring.	6	Verbal (explanation, conversation, discussion), Visual (presentation, videos), business, role play, (case simulation, delegation of duites), case method, debates, brainstorming,	oral examination (individual and frontal); written survey; test control

			method, debates, brainstorming,	
			duites), case	
			delegation of	
			simulation,	
			play, (case	
			business, role	
			videos),	
			(presentation,	
			Visual	control
			discussion),	survey; test
			conversation,	frontal); written
	Respiratory Function. Credit.		(explanation,	(individual and
5.	Topic 5. Assessment of	6	Verbal	oral examination
			mannequins	
			use of	
			virtual cases,	
			interactive	
			brainstorming,	
			method, debates,	
			duites), case	
			delegation of	
			simulation,	
			play, (case	
			business, role	
			videos),	
			(presentation,	control
			discussion), Visual	survey; test
			conversation,	frontal); written
	Blood Pressure Monitoring.		(explanation,	(individual and
4.	Topic 4. 24-Hour Ambulatory	6	Verbal	oral examination
4			mannequins	
			use of	
			virtual cases,	
			interactive	

# 2.2.4. Laboratory classes

Not provided by the curriculum

# 2.2.5. Individual work

No	Topics	Number of	Learning	Forms of
n/o		hours	methods	control
1.	Topic 6. Instrumental diagnosis of	6	Practical (self-	oral examination
	congenital heart defects in		education)	(individual and
	newborns and children.			frontal); written

			<u> </u>	<del></del>
				survey; test
			5 1 1 ( 10	control
2.	Topic 7. Medical tests in the	6	Practical (self-	oral examination
	pediatric cardiology		education)	(individual and
				frontal); written
				survey; test
				control
3.	Topic 8. Screening ultrasound	6	Practical (self-	oral examination
	program of abdominal organs and		education)	(individual and
	kidneys in newborns and children.			frontal); written
				survey; test
				control
4.	Topic 9. CT and MRI of the	6	Practical (self-	oral examination
	respiratory system in children.		education)	(individual and
				frontal); written
				survey; test
				control
5.	Topic 10. Radiography methods in	6	Practical (self-	oral examination
	children with urinary tract		education)	(individual and
	diseases.			frontal); written
				survey; test
				control
6.	Topic 11. CT and MRI of the	6	Practical (self-	oral examination
	urinary systemin children.		education)	(individual and
				frontal); written
				survey; test
				control
7.	Topic 12. Methods for assessing	6	Practical (self-	oral examination
	the condition of the		education)	(individual and
	gastroduodenal disease.			frontal); written
				survey; test
				control
8.	Topic 13. Methods for assessing	6	Practical (self-	oral examination
	the condition of the large intestine:		education)	(individual and
	colonoscopy, rectoromanoscopy.			frontal); written
				survey; test
				control
9.	Topic 14. Indications and	6	Practical (self-	oral examination
	evaluation of neurosonography in		education)	(individual and
	the neonatal period and early age			frontal); written
	children.			survey; test
				control
10	Topic 15. Indications and	6	Practical (self-	oral examination
	evaluation of electromyography in		education)	(individual and
	children.			frontal); written
				survey; test
				control
Total l	nours of independent student work	60		

# 3. EVALUATION CRITERIA

# 3.1 Policy of learning activities assessment

Assessment of current learning activities (CLA). Teachers make sure that every student received the necessary competence in the province included in the topics of practical classes.

Assimilation of the topic (current control) is controlled in a practical lesson according to the specific goals. The following tools are used to assess the level of preparation of students: tests, solving situational problems, interpretation and evaluation of laboratory tests, methods of prescribing therapy, monitoring the acquisition of practical skills.

When assessing the mastery of each topic of the discipline the student is graded according to the traditional 4-point system: "excellent", "good", "satisfactory" or "unsatisfactory".

Assessment of the discipline. The final lesson (FL) is conducted in accordance with the program of academic discipline during the semester on schedule, during classes. Assessment of the the the student at the last (final) lesson. The final score for the current learning activity (CLA) and the final lesson (FL) is defined as the arithmetic mean of the traditional grades for each class and FL, rounded to 2 decimal places and listed in a multi-point scale according to the standard table 1 and «Instructions of assessment of current student's learning activities» or recalculation average grades of CLA into score according to the ECTC, which teacher can get automatically using electronic journal of Automated Control System (ACS).

Student should get minimum - 120 points, maximum - 200 points during the current learning activities.

## Assessment of students' independent work

Assimilation of topics that are submitted only for independent work is checked during the current learning activities of topic on conformable classes.

#### Policy of learning activities assessment

3.1. Evaluation of the success of education of students is carried out on the basis of the order of KhNMU from 21.08.2021 № 181 "Instructions for evaluating the educational activities of students of higher education at the Kharkiv National Medical University".

#### Link:

http://www.knmu.kharkov.ua/index.php?option=com\_content&view=article&id=1226%3A2013-03-25-12-07-55&catid=4%3A2011-05-04-07-20-12&Itemid=19&lang=uk

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After graduating from the discipline the student receives a credit.

# Assessment of students' independent work

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# Recalculation of the average grade for the current activity into a multi-point scale (for disciplines completed by the credit)

4-point scale	200- point
	scale
1	2
5	200
4.97-4,99	199
4.95-4,96	198
4.92-4,94	197
4.9-4,91	196
4.87-4,89	195
4.85-4,86	194
4.82-4,84	193
4.8-4,81	192
4.77-4,79	191
4.75-4,76	190
4.72-4,74	189
4.7-4,71	188
4.67-4,69	187
4.65-4,66	186
4.62-4,64	185
4.6-4,61	184
4.57-4,59	183
1	2
4.54-4,56	182
4.52-4,53	181
4.5-4,51	180
4.47-4,49	179
4.45-4,46	178
4.42-4,44	177
4.4-4,41	176
4.37-4,39	175
4.35-4,36	174
4.32-4,34	173

4-point	200- point
scale	scale
1	2
4.3-4,31	172
4,27-4,29	171
4.24-4,26	170
4.22-4,23	169
4.19-4,21	168
4.17-4,18	167
4.14-4,16	166
4.12-4,13	165
4.09-4,11	164
4.07-4,08	163
4.04-4,06	162
4.02-4,03	161
3.99-4,01	160
3.97-3,98	159
3.94-3,96	158
3.92-3,93	157
3.89-3,91	156
3.87-3,88	155
1	2
3.84-3,86	154
3.82-3,83	153
3.79-3,81	152
3.77-3,78	151
3.74-3,76	150
3.72-3,73	149
3.7-3,71	148
3.67-3,69	147
3.65-3,66	146
3.62-3,64	145
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4-point	200- point scale
scale	
1	2
3.6-3,61	144
3.57-3,59	143
3.55-3,56	142
3.52-3,54	141
3.5-3,51	140
3.47-3,49	139
3.45-3,46	138
3.42-3,44	137
3.4-3,41	136
3.37-3,39	135
3.35-3,36	134
3.32-3,34	133
3.3-3,31	132
3.27-3,29	131
3.25-3,26	130
3.22-3,24	129
3.2-3,21	128
3.17-3,19	127
1	2
3.15-3,16	126
3.12-3,14	125
3.1-3,11	124
3.07-3,09	123
3.05-3,06	122
3.02-3,04	121
3-3,01	120
Менше 3	Недостатньо

## 3.2. Questions for credit and exam:

- 1. What are the diagnostic criteria of atrial fibrillation?
- 2. What are the diagnostic criteria of paroxysmal tachycardia?
- 3. What are the diagnostic criteria of atrioventricular block?
- 4. What are the diagnostic criteria of sinus node block?

- 5. What are the diagnostic criteria of RBB?
- 6. What are the diagnostic criteria of LBB?
- 7. Clinical variants of paroxysmal tachycardia and atrial fibrillation in children.
- 8. What are the diagnostic criteria of extrasystolia?
- 9. What are the diagnostic criteria of ventrical tachycardia?
- 10. Spirometry: general principles of providing, interpretation of results.
- 11. Spirometry the main types of disorders.
- 12. Spirometry: test with a bronchodilator. Indications, contraindications, evaluation of results.
- 13. Criteria for obstructive disorders in spirometry.
- 14. Criteria of restrictive disorders in spirometry.
- 15. Criteria for mixed disorders in spirometry.
- 16. Peak flowmetry: clinical significance, general principles of providing, evaluation of results.
- 17. Stress functional tests in the practice of a pediatrician.
- 18. Indications for testing with exercise.
- 19. Absolute and relative contraindications to exercise tests.
- 20. Criteria for termination of tests with physical activity.
- 21. Medical tests in the practice of a pediatrician: indications and contraindications to their conduct

#### 3.3. Control questions:

- 1. The mechanism of action of the echocardiograph. Echocardiography modes (B-mode, M-mode, Doppler echocardiography).
- 2. Types of echocardiography (transthoracic, esophageal, intracardiac).
- 3. Features of echocardiography in children with somatic and surgical pathology.
- 4. The mechanism of action of the electrocardiograph. Methods and features of ECG in children of different ages.
- 5. ECG analysis in children with arrhythmias and conduction.
- 6. Indications for additional methods of examination of the cardiovascular system according to ECG data.
- 7. Types of loading tests (test with hyperventilation, respiratory arrest, clinoorthostatic test, sinocarotid test, bicycle ergometry, treadmill test, tilt test).
- 8. Indications and contraindications, scope of tests, features of children of different ages, evaluation of the sample.
- 9. Features of conducting and evaluating standardized exercise tests in athletes.

- 10. Emergency care for complications during the test.
- 11. Types of Holter monitoring (daily ECG monitoring, wireless ECG monitoring).
- 12. Preparing the patient for the study. The concept of "patient diary".
- 13. Absolute and relative indications for HMECG.
- 14. The main stages of the analysis of HMEKG.
- 15. Features of HMEKG in children of different ages.
- 16. Assessment of arrhythmias and conduction, heart rate variability, ischemic myocardial changes.
- 17. Features of Ambulatory Blood Pressure Monitoring (ABPM) in children of different ages.
- 18. Preparing the patient for the study. The concept of "patient diary".
- 19. Absolute and relative indications for ABPM.
- 20. The main stages of ABPM analysis.
- 21. Spirography, pneumotachography.
- 22. Features of conducting in children of different ages.
- 23. Indications for conducting.
- 24. Interpretation of research results.
- 25. Methods of conducting and evaluating the results of micturition cystography, intravenous urography, scintigraphy.
- 26. Methods of conducting and evaluating the results of fibrogastroduodenoscopy, daily PH-metry, rapid diagnosis of pH levels.
- 27. Methods of conducting and evaluating the results of colonoscopy, rectoromanoscopy.

#### 3.4. Individual tasks

#### **Assessment of individual student tasks** is carried out by the teacher:

- 10 points publication of the article in publications included in scientometric databases
- 9 points presentation at international scientific student conferences or other forums outside Ukraine with the publication of work in conference materials
- 8 points participation in international scientific student conferences with the publication of work in the conference materials,
- 7 points participation in intra-university and inter-university olympiads and student scientific conferences with the publication of the work (with a prize)
- 6 points participation in intra-university and inter-university competitions and student scientific conferences with the publication of the work (without receiving a prize)
- 5 points writing an essay on the topic or a description of a clinical case (case study), creating a video or other digital versions of visual material.

Scores for individual student tasks (a total of not more than 10 points) can be added as an incentive additional points to the final score for current learning activities, calculated using Table 1 and are part of the assessment of the discipline.

#### 3.5. Rules for appealing the assessment

The procedure for appealing is carried out in accordance with the order № 150 of 24.06.2021 on approval of the new version of the "Regulations on the procedure for deduction, renewal and transfer of persons", and approved by the order of KhNMU from 30.09.2020 №252 "Regulations on appeal Education of Kharkiv National Medical University".

#### Link:

http://www.knmu.kharkov.ua/index.php?option=com\_content&view=article&id=1226%3A2013-03-25-12-07-55&catid=4%3A2011-05-04-07-20-12&Itemid=19&lang=uk

## 4. THE POLITICS AND VALUES OF DISCIPLINE.

In order to successfully complete the relevant course, it is necessary to attend practical classes regularly; to have theoretical preparation for practical classes; not to be late and not to miss classes; perform all necessary tasks and work actively during each lesson; be able to work in a group; contact the curators of the course on various issues on the subject of classes and receive it when you need it.

Students can discuss different tasks, but their performance is strictly individual. You are not allowed to write off, use any kind of software, tips, use a mobile phone, tablet or other electronic gadgets during classes for purposes other than the learning process. Students are not allowed to be late for practical classes.

Visiting patients during the curation in the hospital is possible, provided that students have the appropriate uniform, a health book with a note about the timely medical examination.

Students with special needs can meet with the teacher or warn him before the start of classes, it can be done by the head of the group on the students request. If you have any questions, please contact the teacher.

Students' participation in research and conferences on this topic is encouraged. All students of KhNMU are protected by the Regulations on prevention and settlement of Cases Related to Sexual Harassment and Discrimination at Kharkiv National Medical University, designed to determine an effective mechanism for resolving conflict situations related to discrimination and sexual harassment. on the basis of the following regulations of Ukraine: Constitution of Ukraine: Law of Ukraine "On Education"; Law of Ukraine "On Higher Education"; Law of Ukraine "On Principles of Prevention and Counteraction of Discrimination in Ukraine"; Law of Ukraine "On Ensuring Equal Rights and Opportunities for Women and Men"; Convention for the Protection of Human Rights and Fundamental Freedoms; Convention for the Suppression of Discrimination in Education; Convention on the Elimination of All Forms of Discrimination against Women; General Recommendation № 25 to Article 4, paragraph 1, of the Convention on the Elimination of All Forms of Discrimination against Women, General Comment № 16 (2005) "Equal rights for men and women to use economic, social and cultural rights" (Article 3 of the International Covenant on Economic, Social and Cultural Rights; Committee on Economic, Social and Cultural Rights of the United Nations); education in the spirit of respect for human rights and fundamental freedoms (UNESCO), the Concept of the State Social Program for Equal Rights and Opportunities for Women and Men until 2021. Kharkiv National Medical University ensures education and work, that is free from discrimination, sexual harassment, intimidation or exploitation. The University admits the importance of confidentiality. All persons, responsible for the

implementation of this policy, (staff of deans' offices, faculties, institutes and the Center of Gender Education, members of the student government and ethics committee, vice-rector for research and teaching) are confidential, regarding those, who report or accuse of discrimination. or sexual harassment (except where the law requires disclosure and / or when disclosure by the University is necessary to protect the safety of others).

KhNMU creates a space of equal opportunities, free from discrimination of any national, racial or ethnic origin, sex, age, disability, religion, sexual orientation, gender, or marital status. All rights, privileges, programs and activities, granted to students or staff of the University, apply to anybody, without exception, in case they are properly qualified. The anti-discrimination policy and the policy of counteracting sexual harassment of KhNMU are confirmed by the Codex of Corporate Ethics and the Charter of KhNMU.

#### The rules of behavior in University and on classes

It is important for students to follow the rules of good behavior at the university. These rules are common to all, they also apply to all teachers and staff and are not fundamentally different from the generally accepted norms.

During classes it is allowed:

- leave the audience for a short time if necessary and with the permission of the teacher;
- drink soft drinks;
- take photos of presentation slides;
- take an active part in the class

#### Forbidden:

- eat (except for persons whose special medical condition requires another in this case, medical confirmation is required);
- smoking, drinking alcohol and even low-alcohol beverages or drugs;
- use obscene language or use words that offend the honor and dignity of colleagues and faculty;
- - gambling;
- to damage the material and technical base of the university (damage inventory, equipment; furniture, walls, floors, litter the premises and territories);
- shouting, shouting or listening to loud music in classrooms and even in corridors during classes.

#### **5. ACADEMIC INTEGRITY**

The Department of Pediatrics №1 and Neonatology has zero tolerance to any form of the plagiarism. Students are expected to constantly raise their awareness on the academic writing. The first lessons will provide information on what to consider plagiarism and how to properly conduct research and scientific research.

Follow the link for more information at: Regulations on academic integrity and ethics of academic relations at Kharkiv National Medical University

http://files.knmu.edu.ua:8181/upload/redakt/doc\_uchproc/polog\_ad\_etyka\_text.pdf http://www.knmu.kharkov.ua/index.php?option=com\_content&view=article&id=2520%3A2015 -04-30-08-10-46&catid=20%3A2011-05-17-09-30-17&Itemid=40&lang=uk

http://files.knmu.edu.ua:8181/upload/redakt/doc\_uchproc/kodex\_AD.docx

#### 6. RECOMMENDED LITERATURE

- 1. NelsonTextbook of Pediatrics 21th Edition. Robert M. Kliegman, JosephSt. Geme. Publisher: Elsevier. 2019. P. 4112.
- 2. 2015 ESC Guidelines for the management of patients with ventricular arrhythmias and the prevention of sudden cardiac death: The Task Force for the Management of Patients with Ventricular Arrhythmias and the Prevention of Sudden Cardiac Death of the European Society of Cardiology (ESC) Endorsed by: Association for European Paediatric and Congenital Cardiology (AEPC) // European Heart Journal, Volume 36, Issue 41, 1 November 2015, Pages 2793–2867
- 3. International recommendations for electrocardiographic interpretation in athletes. Sanjay Sharma etal. // European Heart Journal (2017) 00, 1–19
- 4. Recommendations and Considerations Related to Preparticipation Screening for Cardiovascular Abnormalities in Competitive Athletes: 2007 Update http://circ.ahajournals.org/cgi/content/full/115/12/1643
- 5. Multimodality Imaging Guidelines of Patients with Transposition of the Great Arteries: A Report from the American Society of Echocardiography Developed in Collaboration with the Society for Cardiovascular Magnetic Resonance and the Society of Cardiovascular Computed Tomography. Meryl S. Cohenetal. // J AmSocEchocardiogr 2016;29:571-621.
- 6. Clinical guidelines diagnosis and treatment manual 2016 edition Update September 2017 Електронний ресурс: <a href="http://refbooks.msf.org/msf\_docs/en/clinical\_guide/cg\_en.pdf">http://refbooks.msf.org/msf\_docs/en/clinical\_guide/cg\_en.pdf</a>
- 7. Guidelines for the Echocardiographic Assessment of Atrial Septal Defect and Patent Foramen Ovale: From the American Society of Echocardiography and Society for Cardiac Angiography and Interventions Електронний ресурс: <a href="http://www.onlinejase.com/article/S0894-7317(15)00387-9/fulltex">http://www.onlinejase.com/article/S0894-7317(15)00387-9/fulltex</a>
- 8. Pediatric Gastritis Clinical Practice Guidelines Joint Recommendation of the ESPGHAN/NASPGAN, Update 2017)
- 9. <a href="https://www.bsecho.org/Public/Education/Protocols-and-guidelines/Public/Education/Protocols-and-guidelines.aspx">https://www.bsecho.org/Public/Education/Protocols-and-guidelines/Public/Education/Protocols-and-guidelines.aspx</a>
- 10. Hansen, Kristoffer Lindskov et al. "Ultrasonography of the Kidney: A Pictorial Review." Diagnostics (Basel, Switzerland) vol. 6,1 2. 23 Dec. 2015, doi:10.3390/diagnostics6010002
- 11. SOCIETY OF DIAGNOSTIC MEDICAL SONOGRAPHY. https://www.sdms.org/resources/other-guidelines-standards
  12.

#### 7. INFORMATION RESOURCES

**Internet resources:** http://www.medscape.com, http://www.orpha.net, https://www.aace.com/, http://www.endocrinology.org, http://www.cochranelibrary.com/

#### 8. OTHER

## **Useful links:**

Provisions on prevention, prevention and settlement of cases related to sexual harassment and discrimination in KhNMU <a href="http://files.knmu.edu.ua:8181/upload/redakt/doc\_uchproc/polog-sex.doc">http://files.knmu.edu.ua:8181/upload/redakt/doc\_uchproc/polog-sex.doc</a>

Regulations on Academic Integrity and Ethics of Academic Relations at Kharkiv National Medical University http://files.knmu.edu.ua:8181/upload/redakt/doc\_uchproc/polog\_ad\_etyka\_text.pdf

The order of conducting classes on in-depth study by students of Kharkiv National Medical University of certain disciplines beyond the scope of the curriculum <a href="http://files.knmu.edu.ua:8181/upload/redakt/doc\_uchproc/nak-poriad-pogl-vyv-dysc.docx">http://files.knmu.edu.ua:8181/upload/redakt/doc\_uchproc/nak-poriad-pogl-vyv-dysc.docx</a>

Regulations on the Commission on Academic Integrity, Ethics and Conflict Management of KhNMU

http://files.knmu.edu.ua:8181/upload/redakt/doc\_uchproc/polog\_komis\_ad\_text.pdf

Regulations on the recognition of the results of non-formal education at Kharkiv National Medical University

http://files.knmu.edu.ua:8181/upload/redakt/doc\_uchproc/polog\_neform\_osv.pdf

# INCLUSIVE EDUCATION:

http://www.knmu.kharkov.ua/index.php?option=com\_content&view=article&id=7 108%3A2021-03-10-14-08-02&catid=12%3A2011-05-10-07-16-32&Itemid=33&lang=uk

## ACADEMIC INTEGRITY:

http://www.knmu.kharkov.ua/index.php?option=com\_content&view=article&id=2 520%3A2015-04-30-08-10-46&catid=20%3A2011-05-17-09-30-17&Itemid=40&lang=uk

http://files.knmu.edu.ua:8181/upload/redakt/doc\_uchproc/kodex\_AD.docx