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"North-Western State Medical University
named after I.I. Mechnikov"
under the Ministry of Health of the Russian Federation

(FSBEI HE NWSMU named after I.I. Mechnikov under the Ministry of Health of the Russian Federation)

WORK PROGRAM OF THE ACADEMIC COURSE

"Endocrinology"

Specialty: 31.05.01 General Medicine

Focus: Arrangement and delivery of primary health care to the adult population in medical organizations

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***Compilers of the work program of the academic course*:**
Vorokhobina N.V., Head of the Department of Endocrinology named after Academician V.G. Baranov, FSBEI HE NWSMU named after I.I. Mechnikov, Professor, Doctor of Medical Sciences; V.L. Baranov, Professor of the Department of Endocrinology named after Academician V.G. Baranov, FSBEI HE NWSMU named after I.I. Mechnikov, Professor, Doctor of Medical Sciences; Matesius I.Yu., Associate Professor of the Department of Endocrinology named after Academician V.G. Baranov, FSBEI HE NWSMU named after I.I. Mechnikov, Candidate of Medical Sciences; Yeremenko T.V., Associate Professor of the Department of Endocrinology named after Academician V.G. Baranov, FSBEI HE NWSMU named after I.I. Mechnikov, Candidate of Medical Sciences.

***Reviewer*:**
Volkova A.R., Professor of the Department of Theoretical Therapy including a course of Endocrinology, Cardiology and Functional Diagnostics named after G.F. Lang with the clinic of FSBEI HE "The Pavlov First Saint Petersburg State Medical University", Doctor of Medical Sciences

The working program of the academic course was discussed at a meeting of the Department of Endocrinology named after Academician V.G. Baranov
April 2, 2021, Protocol No. 4

Head of the Department _____ / Vorokhobina N.V./

Approved by the Methodological Commission по специальности 31.05.01 Лечебное дело
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Chairman _____ / Bakulin I.G./

Reviewed by the Methodological Council and recommended for approval by the Academic Council
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Chairman _____ / Artyushkin S.A. /

Updated:

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1. Aim of mastering the academic course

Aim of mastering the academic course "Endocrinology" is the development of student's competencies aimed at solving the tasks provided by the professional standard of a medical specialist. Preparation of a student for the professional activity of a primary care medical specialist acquainted with the diagnosis and treatment of endocrine diseases, the development of clinical thinking and the ability to use methods of differential diagnosis and treatment within the studied nosological forms.

2. Place of the academic course in the structure of the educational program

The academic course "Endocrinology" belongs to the part formed by participants in educational relations of Block 1 "Courses (modules)" of the basic professional educational program for major 31.05.01 General Medicine (educational level: specialist's degree), focus: Arrangement and delivery of primary health care to the adult population in medical organizations. The academic course is obligatory.

3. List of planned course outcomes correlated with program outcomes

Code and name of the competency	Code and name of the competency achievement indicator
PC-1 Ability to arrange and delivery medical care to patients in urgent or emergency conditions	AI-1 PC-1.1 Student recognizes and delivers emergency medical care for sudden acute diseases, conditions, and exacerbation of chronic diseases without an obvious threat to the patient's life in primary health care.
PC- 2 Ability to conduct an examination of the patient in order to identify the main pathological conditions, symptoms, disease syndromes, and nosological forms	AI-1 PC-2.1. Student carries out a survey and examination of the patient (collection of complaints, the patient's medical history, examination, palpation, percussion, auscultation)
	AI-2 PC-2.2. Student states a preliminary diagnosis, draws up a plan and directs the patient for laboratory and/or imaging tests if there are medical grounds in accordance with the current procedures for the health care delivery, clinical guidelines on the health care delivery with consideration to the standards of health care.
	AI-3 PC-2.3. Student refers the patient to medical specialists for consultation and/or for the specialized health care delivery in inpatient or outpatient setting, if there are medical grounds in accordance with current procedures of the health care delivery, clinical guidelines on the health care delivery with consideration to the standards of health care.
	AI- 4 PC- 2.4. Student performs differential diagnosis with other diseases/conditions.

	AI-5 PC-2.5. Student determines a diagnosis based on clinical classifications and the current International Statistical Classification of Diseases and Related Health Problems (ICD).
PC-3 Ability to manage and treat patients in need of the health care delivery	AI-1 PC-3.1. Student develops a plan and prescribes non-medicinal and medicinal treatment of patients, taking into account the diagnosis, age and clinical aspect in accordance with current procedures of the health care delivery, clinical guidelines on the health care delivery with consideration to the standards of primary health care.
	AI-2 PC-3.2. Student evaluates the effectiveness and safety of the use of medicines, medical devices and therapeutic nutrition and other treatment methods in primary health care.
	AI-4 PC-3.4. Student provides personalized general therapeutic care to patients, including pregnant women, elderly and senile patients in primary health care.
PC-5 Ability to determine the need for the use of natural therapeutic factors, medicinal, non-medicinal therapy and other methods in patients requiring medical rehabilitation and sanatorium treatment	AI-1 PC-5.1. Student identifies and refers patients requiring medical rehabilitation to a medical specialist for prescribing and conducting medical rehabilitation and/or sanatorium-resort treatment, including when implementing an individual rehabilitation or rehabilitation program for the disabled, in accordance with current procedures, clinical guidelines (treatment protocols) and standards of health care.
PC-6 Ability to implement a set of services aimed at preserving and strengthening public health	AI-2 PC-6.2. Student prescribes preventive services to patients, taking into account risk factors, for the prevention and early detection of diseases, including socially significant diseases.

Competence achievement indicator code	Study outcomes (assessment criteria)	Assessment means

AI 1 PC 1.1	**Student knows:** the etiology, pathogenesis, clinical aspect and diagnostic signs of urgent conditions in endocrine diseases (hypoglycemic conditions, diabetic ketoacidosis, acute adrenal insufficiency); the patterns of emergency therapy.	control questions, tests, case tasks
	Student is able to: identify the clinical signs of conditions requiring urgent medical care; carry out measures to provide emergency care for endocrine diseases.	tests, case tasks
AI 1 PC 2.1.	**Student knows:** the fundamentals of functioning and regulation of the endocrine system organs**,** - the main symptoms and syndromes of endocrine diseases, the method of collecting complaints, the patient's life and illness medical history.	control questions, tests, case tasks, essay
	Student is able to recognize typical symptoms during the initial examination of a patient with endocrine pathology.	control questions, tests, case tasks
	Student has the skill of assessing waist and hip circumference rates, calculating and estimating BMI.	tests, case studies
AI 2 PC 2.2	**Student knows:** the main symptoms and syndromes of endocrine diseases, diagnostic criteria of various endocrine pathologies, - methods of instrumental and laboratory diagnostics of endocrine pathologies in accordance with current health care procedures and clinical guidelines, - features of the examination results in various age and gender groups.	control questions, tests, case tasks, essay
	Student is able to: interpret the data of the physical examination of the patient; justify the necessity and scope of the laboratory studies of the patient.	tests, case tasks
	Student has the skill of stating a preliminary diagnosis and drawing up a plan for laboratory and instrumental studies.	tests, case tasks
AI 3 PC 2.3	**Student knows** the indications for referring a patient to medical specialists for a consultation to provide specialized medical care in inpatient settings.	control questions, tests, case tasks

	Student is able to justify the need to refer a patient to medical specialists for a consultation to provide specialized medical care in inpatient settings.	case tasks
AI 4 PC 2.4	**Student knows** the etiology, pathogenesis, main symptoms and syndromes of endocrine diseases, methods of their diagnosis and differential diagnosis.	control questions, tests, case tasks, essay
	Students is able to: consider the results of the patient examination; substantiate and plan the amount of additional research as the need required.	tests, case tasks
	Student has the skill of evaluating the results of a standard glucose tolerance test, scintigrams, and typical hormone test measures.	tests, case tasks
AI 5 PC 2.5	**Student knows** the fundamentals for statement of syndromic diagnoses, nosological forms in accordance with clinical classifications and the current International Statistical Classification of Diseases and Related Health Problems (ICD).	control questions, tests, case tasks, essay
	Student is able to: interpret the data obtained during laboratory and instrumental studies of the patient; state the primary diagnosis and complications of the underlying disease.	tests, case tasks
AI 1 PC 3.1	**Student knows:** modern methods of medicated and non-medicated treatment of endocrine diseases in accordance with current medical care procedures and clinical guidelines on the health care delivery, - mechanisms of action, main indications and contraindications to medications used in endocrinology, basic treatment regimens, - basic patterns of delivering medical care to patients with endocrine pathology, with consideration to the medical care standards in primary health care.	control questions, tests, case tasks, essay
	Student is able to draw up a treatment plan, with consideration to the diagnosis, age and clinical aspect in accordance the current procedures for the health care delivery, clinical guidelines on the health care delivery.	case tasks

	Student has the skill of: selecting an individual goal of diabetes therapy according to the level of glycated hemoglobin; calculating the daily caloric content and the number of bread units for a patient with diabetes.	tests, case tasks
AI 2 PC 3.2	**Student knows:** the main indications and contraindications to medications used in endocrinology; the patters of monitoring the effectiveness of medicated therapy in endocrine diseases.	control questions, tests, case tasks
	Student is able to: prescribe a treatment regimen for endocrine diseases, with consideration of indications and contraindications to medications; evaluate the effectiveness of therapy.	tests, case tasks
AI 4 PC-3.4	**Student knows** the features regarding to the course of endocrine diseases and methods of their treatment in pregnant women and elderly patients.	control questions, tests, case tasks
	Student is able to draw up a patient treatment plan based on a personalized approach, including pregnant women, elderly and senile patients.	tests, case tasks
AI 1 PC 5.1.	**Student knows:** the indications for the medical rehabilitation of the patient, with consideration of the diagnosis, according to the current procedures for the health care delivery, clinical guidelines, - the rehabilitation patterns of patients with endocrine pathology.	control questions, tests, case tasks, essay
	Student is able to determine required medical specialists to carry out rehabilitation for a patient in need of it, taking into account the diagnosis in accordance with the current procedures for the health care delivery.	case tasks
AI-2 PC-6.2.	**Student knows:** risks and preventive methods of socially significant endocrine diseases (diabetes, obesity, iodine deficiency diseases), - types and methods of sanitary and educational work on the development of a healthy lifestyle, including programs to reduce alcohol and tobacco consumption, fundamentals of proper nutrition and standards of physical activity.	control questions, tests, case tasks, essay

	Student is able to prescribe preventive measures for patients, with consideration of risks, for the purpose of prevention and early detection of socially significant endocrine diseases (diabetes, obesity, iodine deficiency diseases).	case tasks

4. Scope of the academic course and types of academic work

Type of academic work	Labor intensity	Semesters
		11
Students and teacher cooperative work	**48**	**48**
Classroom work:	46	46
Lectures (L)	12	12
Practical sessions (PS)	34	34
Individual study:	**24**	**24**
under the theoretical study	20	20
preparation for creadir	4	4
Interim assessment: credit (taking the credit and group consultations included)	2	2
Total labor intensity: academic hours	**72**	
credit units	**2**	

5. Content of the academic course, structured with units (topics) including the amount of academic hours and session types

5.1. Content of the academic course units

Sl.No.	Name of the academic course unit	Annotated content of the academic course unit	The list of competencies being developed in mastering the unit
1	Diabetes mellitus	Epidemiology, etiopathogenesis, and the medical and social significance of diabetes mellitus (DM). Arrangement of diabetic care in the Russian Federation. Classification, clinical aspect, and diagnosis of DM. Chronic complications of DM (pathogenesis, classification, diagnosis, treatment methods). Emergency conditions in DM. Treatment of DM: fundamentals of diet therapy, oral hypoglycemic medications (classification, mechanisms of action, contraindications), insulin therapy (classification of insulins, indications, insulin therapy regimens). Personalized approach to therapy, self-control methods. Preventive methods for DM and its complications.	PC-1, PC-2, PC-3, PC-5, PC-6

2	Diseases of the thyroid and parathyroid glands	Diseases of the thyroid gland with thyrotoxicosis syndrome (DTG, TNG). Thyroid diseases with hypothyroidism syndrome. Thyroid nodules, management tactics. Iodine deficiency diseases. Diseases of the parathyroid glands (hyperparathyroidism, hypoparathyroidism).	PC-2, PC-3, PC-6
3	Diseases of the adrenal glands	Hypercorticism syndrome (Cushing's syndrome), hyperaldosteronism, pheochromocytoma. Adrenal gland incidentalomas. Arterial hypertension in the pathology of the adrenal glands. Hypocorticism syndrome (acute and chronic adrenal insufficiency).	PC-1, PC-2, PC-3
4	Pathology of the hypothalamic-pituitary region	Pituitary adenomas (prolactinoma, somatotropinoma, corticotropinoma). Hypopituitarism. Obesity. Diabetes insipidus.	PC-2, PC-3, PC-5

5.2. Topical lecture plan

Sl.No.	Name of the academic course unit	Topics of lectures	Active forms of study	Labor intensity (academic hours)
1	Diabetes mellitus	L.1. Diabetes mellitus: epidemiology, etiopathogenesis, clinical and laboratory data	LC	2
		L.2. Methods of diabetes mellitus treatment	LC	2
2	Diseases of the thyroid and parathyroid glands	L.3. Pathology of the thyroid gland	LC	2
3	Diseases of the adrenal glands	L.4. Pathology of the adrenal glands	LC	2
4	Pathology of the hypothalamic-pituitary region	L.5. Pathology of the hypothalamic-pituitary region	LC	2
		L.6. Endocrine aspects of obesity	CL	2
		TOTAL:		12

Note: LP - lecture-presentation, CL - case lecture

5.3. Topical plan of practical sessions

Sl.No.	Name of the academic course unit	Topics of practical sessions	Active forms of study	Means of actual monitoring	Labor intensity (academic hours)
1	Diabetes mellitus	PS1.Epidemiology, etiopathogenesis, and the medical and social significance of diabetes mellitus (DM). Etiopathogenesis, classification, clinical aspect, diagnosis of DM. Gestational DM. Prediabetes. Risk groups for diabetes mellitus, prevention options. Fundamentals of diabetic care management in the Russian Federation, diabetic centers, schools of diabetes mellitus.	GD	testing, case tasks	4
		PS 2. Chronic complications of DM (neuropathy, retinopathy, nephropathy, macrovascular complications, diabetic foot syndrome). Classification, methods of diagnosis and treatment. Prevention of chronic complications of diabetes mellitus, rehabilitation, medical and social adaptation of patients.	GD	testing, case tasks	4
		PS 3. Treatment of diabetes mellitus. Methods, patters and goals of treatment, effectiveness assessment. Fundamentals of diet therapy, calculation of BMI and daily calorie content. Oral hypoglycemic medications: classification, mechanism of action, indications, contraindications for use. Modern insulin medications, insulin administration modes, the concept of basal-bolus therapy. Education of patient, self-control methods. Personalized approach to the treatment of DM. DM and pregnancy.	RG	testing, case tasks	4

Sl.No.	Name of the academic course unit	Topics of practical sessions	Active forms of study	Means of actual monitoring	Labor intensity (academic hours)
		PS 4. Emergency conditions in diabetes (diabetic ketoacidosis, hypoglycemia, hyperosmolar coma): etiology, pathogenesis, clinical aspect, diagnosis. Procedure of pre-hospital care, pattern of further therapy. Prevention of development, prognosis, and the medical and social significance of emergency conditions in DM.	RG, CS	testing, case tasks	4
2	Diseases of the thyroid and parathyroid glands	PS 5. Diseases of the thyroid gland with thyrotoxicosis syndrome (DTG, TNG). Etiopathogenesis, clinical aspect, differential diagnosis, treatment methods. Autoimmune ophthalmopathy. Thyroid nodules (management tactics). Thyroiditis (classification, clinical aspect, differential diagnosis, treatment).	GD	testing, case tasks	4
		PS 6. Thyroid diseases with hypothyroidism syndrome (primary, secondary hypothyroidism, iodine deficiency diseases). Thyroid pathology and pregnancy. Pathology of the parathyroid glands (hyperparathyroidism, hypoparathyroidism).	GD	testing, case tasks	4
3	Diseases of the adrenal glands	PS 7. Hypercorticism syndrome. Cushing's syndrome (etiopathogenesis, clinical features, differential diagnosis, treatment methods). Prevention of complications in long-term glucocorticoid therapy. Pheochromocytoma. Primary hyperaldosteronism. Clinical forms, methods of diagnosis and treatment of adrenal incidentaloma.	GD	testing, case tasks	4

Sl.No.	Name of the academic course unit	Topics of practical sessions	Active forms of study	Means of actual monitoring	Labor intensity (academic hours)
		PS 8. Hypocorticism syndrome (primary and secondary insufficiency of the adrenal cortex, adrenogenital syndrome). Etiopathogenesis, clinical aspect, diagnosis, treatment. Adrenal crisis (causes, clinical aspect, emergency therapy, preventive measures).	GD	testing, solving case tasks	4
4	Pathology of the hypothalamic-pituitary region	PS 9. Pituitary adenomas. Prolactinoma. Somatotropinoma (acromegaly). Clinical manifestations, methods of examination and treatment. Hypopituitarism. Diabetes insipidus. Etiology, clinical aspect, examination methods, patterns of substitution therapy.	GD	testing, solving case tasks	2
				TOTAL:	34

Note: GD - group discussion, RG – role-playing game, CS - case study

5.4. Topical plan of the seminars is not provided

5.5. Topical plan of laboratory classes is not provided

5.6. Independent work:

Sl.No.	Name of the academic course unit	Types of individual study	Means of actual monitoring	Labor intensity (academic hours)
1	Diabetes mellitus	Working with lecture material Working with regulatory documents Working with educational literature Preparing the essay	testing, case tasks, essay	8
2	Diseases of the thyroid and parathyroid glands	Working with educational literature	testing, case tasks	4
3	Diseases of the adrenal glands	Working with educational literature Preparing the essay	testing, case tasks, essay	6

Sl.No.	Name of the academic course unit	Types of individual study	Means of actual monitoring	Labor intensity (academic hours)
4	Pathology of the hypothalamic-pituitary region	Working with educational literature Working with lecture material.	testing, case tasks	2
		Preparing for the credit	testing, solving case tasks	4
			TOTAL:	24

5.6.1. Topics for the essay:

1. Genetic factors in the development of type 1 diabetes.
2. Metabolic syndrome: diagnostic criteria, therapeutic options
3. Insulin resistance: pathogenesis, diagnosis, correction methods
4. Risk factors for type 2 diabetes, preventive strategies
5. Modern approaches in the treatment of obesity
6. Methods of diagnosis and treatment of diabetic foot syndrome
7. Modern methods of rehabilitation for patients with diabetic foot syndrome
8. Innovative methods in the treatment of type 1 diabetes mellitus
9. Adrenal gland incidentalomas – patient management tactics
10. Multiple endocrine neoplasia syndromes – classification, diagnosis
11. Differential diagnosis of primary and secondary hyperaldosteronism
12. Autoimmune polyglandular syndromes – diagnosis, management tactics
13. Congenital dysfunction of the adrenal cortex – metabolic and genetic markers
14. Secondary arterial hypertension of endocrine origin
15. Innovative methods for the diagnosis of adrenal gland diseases
16. Instrumental diagnosis of adrenal gland diseases
17. The use of HPLC and gas mass spectrometry in the differential diagnosis of hyperandrogenism syndrome

5.6.2. List of regulatory documents:

1. Order of the Ministry of Health of the Russian Federation No. 1053н dated 01.10.2020 "On Approval of Standards of Medical Care for Adults with Type 1 Diabetes Mellitus" http://publication.pravo.gov.ru/Document/View/0001202101140010
2. Order of the Ministry of Health of the Russian Federation No. 1054н dated 01.10.2020 "On Approval of Standards of Medical Care for Adults with Type 2 Diabetes Mellitus" http://publication.pravo.gov.ru/Document/View/0001202102080041?index=0&rangeSize=1

6. Guidelines for students on mastering the academic course

The focus of the program is practice-oriented, that implies the improvement of the student's competencies aimed at solving the tasks provided by the professional standard for a physician. The training system is based on a rational combination of several types of training sessions (lectures, practical sessions and independent work), each of them requires its specific approach.

To effectively master the endocrinology course, it is necessary to independently study the educational and methodological materials provided in the library and in the MOODLE system, actively work on practical sessions, and prepare an essay on the topic proposed by the

teacher. To work on an essay, you need to select literature from the university library or other sources, consider the material, highlight key concepts, and prepare an essay in accordance with the requirements.

Preparation for lectures

The introduction to the academic course begins with the very first lecture, and you are required not only to pay attention, but also to take notes on your own. Advantageous lecture notes should be taken individually by a student and include the most crucial information. A more appropriate approach is to first comprehend the lecturer's main idea, and then write it down. It is advisable to write on one side of the page or leave unfilled spaces, where later you can make additional notes and mark unclear points during independent work. It is better to divide the lecture notes into paragraphs that include questions of the lecture plan proposed by the teacher. You should pay attention to the accents and conclusions that the lecturer draws, noting the most important points in the lecture material with the remarks "important", "remember well", etc. Working on lecture notes, it is necessary to use the literature recommended by the curriculum.

Preparation for practical sessions and independent studies

The outcomes of this work should appear as the ability to naturally answer the theoretical questions, take the floor and participate in a collective discussion on the diagnostic and treatment tactics on practical sessions, and the ability to solve case tasks.

Preparing for practical sessions and studying individually, recommended literature should be studied with particular emphasis. Despite the completeness of the lecture notes, it is impossible to throughout enounce the material due to the limited classroom academic hours. Therefore, independent work with manuals, textbooks, scientific and reference literature, materials from periodicals and Federal Clinical Guidelines is the most effective method of obtaining additional knowledge. It allows you to significantly facilitate mastering of information, promotes deeper acquirement of the material, develops the right attitude to a specific issue.

Assessment of educational program outcomes

The quality control of the educational program mastering is implemented through ongoing and interim monitoring. Ongoing monitoring involves communication between the teacher and the student at each training session and after independent work by means of solving case tasks, studying clinical cases, and testing. During practical sessions, the teacher monitors the correct implementation of diagnostic, therapeutic and preventive skills. The study of the course is accomplished with an interim control by means of a credit.

To successfully pass the credit, it is necessary to study and work out all interview questions. The study of the course is accomplished with an interim control by means of a credit, which is conducted at the last practical session represented by an oral interview on control issues including all course units.

7. Assessment materials

Assessment materials on the course for conducting actual academic performance monitoring and interim assessment include examples of assessment means (Appendix A to the academic course's work program), procedure and criteria.

8. List of necessary educational literature and Internet resources to master the academic course

8.1. Educational literature:

1. Endokrinologiya: uchebnik dlya studentov med. vuzov [Endocrinology: a student's book for students of medical universities] / ed. by N. V. Vorokhobin. St. Petersburg: SpecLit, 2019. 832 p. (250 copies)
2. Koloskov, V. A. Lechenie saharnogo diabeta 2-go tipa: uchebnoe posobie [Treatment of type 2 diabetes mellitus: manual] / V. A. Koloskov, S. M. Kotova; Ministry of Health of the Russian Federation, SBEI HPE NWSMU named after I. I. Mechnikov under the Ministry of Health of the Russian Federation, Department of Endocrinology named after V. G. Baranov. - St. Petersburg: Publishing house of NWSMU named after I. I. Mechnikov, 2015. - 44 p. (300 copies)
3. Eremenko, T.V. Kliniko-laboratornaya diagnostika saharnogo diabeta: ucheb.-metod. posobie [Clinical and laboratory diagnostics of diabetes mellitus: training manual] / T. V. Eremenko, I. Y. Mathesius ; The Ministry of Health of the Russian Federation, FSBEI HE NWSMU named after I. I. Mechnikov, Department of Endocrinology named after V. G. Baranov. - St. Petersburg: Publishing house of NWSMU named after I. I. Mechnikov, 2020. - 32 p. (170 copies)
4. Dedov I.I., Endokrinologiya: uchebnik [Endocrinology: student's book] [Electronic resource] / I.I. Dedov, G.A. Melnichenko, V.F. Fadeev - 2nd ed., revised and add. - M.: GEOTAR-Media, 2013. - 432 p. - ISBN 978-5-9704-2535-1 http://www.studmedlib.ru/book/ISBN9785970425351.html - ELS "Student's Consultant"
5. Dedov I.I., Melnichenko G.A. Rossijskie klinicheskie rekomendacii. Endokrinologiya [Russian clinical guidelines. Endocrinology] [Electronic resource] - M.: GEOTAR-Media. - 2018. – 592 p. http://www.rosmedlib.ru/book/ISBN9785970446034.html , ELM "Konsul'tant vracha" [Doctor's Consultant]
6. Dedov I.I., Melnichenko G.A. Endokrinologiya: nacional'noe rukovodstvo [Endocrinology: National guidelines]. [Electronic resource] - 2nd ed., revised and additional - M.: GEOTAR-Media. - 2016. : http://www.rosmedlib.ru/book/ISBN9785970436820.html ELM "Konsul'tant vracha" [Doctor's Consultant]
7. Dedov I.I. Personalizirovannaya endokrinologiya v klinicheskih primerah [Personalized approach in endocrinology in clinical examples] - Moscow: GEOTAR-Media. - 2018. http://www.rosmedlib.ru/book/ISBN9785970446171.html ELM "Konsul'tant vracha" [Doctor's Consultant].
8. Vanushko, V. E. Hirurgicheskie metody lecheniya v endokrinologii [Surgical methods of treatment in endocrinology] / V. E. Vanushko, N. V. The Smorshchok, D. G. Beltsevich, A. Y. Grigoriev, Moscow: GEOTAR-Media, 2011. http://www.studmedlib.ru/book/970406779V0006.html
9. Dreval, A. V. Endokrinnye sindromy. Diagnostika i lechenie [Endocrine syndromes. Diagnosis and treatment] / Dreval A. V. - Moscow: GEOTAR-Media, 2014. - 416 p. http://www.studmedlib.ru/book/ISBN9785970429594.html
10. Dzgoeva, F. Kh. Nemedikamentoznoe lechenie v endokrinologii [Non-medicated treatment in endocrinology] / F. Kh. Dzgoeva, O. V. Remizov, Moscow: GEOTAR-Media, 2011. - Text: electronic. http://www.studmedlib.ru/book/970406779V0004.html
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12. Mkrtumyan A.M., Neotlozhnaya endokrinologiya [Emergency endocrinology] / Mkrtumyan A.M., Nelaeva A.A. - M.: GEOTAR-Media, 2019. - 128 p. https://www.rosmedlib.ru/book/ISBN9785970451472.html
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8.2. Resources of the information and telecommunications network "Internet":

Names of the Internet resource	Web address
Scopus is the world's largest unified abstract database	https://www.scopus.com/search/form.uri?display=basic

Web of Science is abstract and scientometric electronic databases	https://apps.webofknowledge.com/
Scientific Electronic Library eLIBRARY.RU	https://elibrary.ru/project_orgs.asp
Educational portal on endocrinology	http://www.endotext.org/
Information and educational resource	www.medscape.org
Website of the Ministry of Health of the Russian Federation	https://minzdrav.gov.ru/
World Health Organization	http://www.who.int
Endocrine Research Center of the Russian Academy of Medical Sciences. Clinical recommendations	https://www.endocrincentr.ru/specialists/science/klinicheskie-rekomendacii-i-nauchno-prakticheskie-zhurnaly/konsensusy-i-klinicheskie-rekomendacii
Rubrisher of Federal Clinical Guidelines	http://cr.rosminzdrav.ru/
THYRONET – a website with information about the thyroid gland	http://thyronet.rusmedserv.com
Portal of scientific journals "Endocrinology Research Centre" of the Ministry of Health of the Russian Federation	https://www.endojournals.ru/ru/

9. List of information technologies used to master the academic course, including a list of software, professional databases and information reference systems

9.1. List of information technologies used in the implementation of the educational process:

Sl.No.	Name of the academic course unit	Information technology
	Diabetes mellitus. Diseases of the thyroid and parathyroid glands. Diseases of the adrenal glands. Pathology of the hypothalamic-pituitary region.	placement of educational materials *in the EIE of FSBEI HE NWSMU named after I.I. Mechnikov under the Ministry of Health of the Russian Federation*, *https://moodle.szgmu.ru/course/view.php?id=125* *https://moodle.szgmu.ru/course/view.php?id=150&section=95*

9.2. List of software used in the educational process *(licensed and freely distributed software, including domestically produced):*

Sl.No.	Name of the software product	License validity period	Documents supporting the right to use software products
licensed software			
1.	ESET NOD 32	1 year	Public contract № 07/2020
2.	MS Windows 8 MS Windows 8.1 MS Windows 10 MS Windows Server 2012 Datacenter - 2 Proc MS Windows Server 2012 R2 Datacenter - 2 Proc MS Windows Server 2016 Datacenter Core	Unlimited	Public contract № 30/2013-О; Public contract № 399/2013-ОА; Public contract № 07/2017-ЭА.
3.	MS Office 2010 MS Office 2013	Unlimited	Public contract № 30/2013-ОА; Public contract № 399/2013-ОА.
4.	Academic LabVIEW Premium Suite (1 User)	Unlimited	Public contract № 02/2015
licensed software of domestic production			
1.	Antiplagiat	1 year	Public contract № 2409
2.	"WEBINAR (VEBINAR)" VERSION 3.0	1 year	Contract № 347/2020-М
3.	"3KL Learning management system"	1 year	Contract № 348/2020-М
4.	TrueConf Enterprise	1 year	Contract № 396/2020-ЭА
freely distributed software			
1.	Google Chrome	Unlimited	Open License Agreement GNU GeneralPublicLicense
2.	NVDA	Unlimited	Open License Agreement GNU GeneralPublicLicense
freely distributed software of domestic production			
1.	Moodle	Unlimited	Open License Agreement GNU GeneralPublicLicense

9.3. List of professional databases and information reference systems:

Sl.No.	Name of the software product	License validity period	Documents supporting the right to use software products	Access mode for students with disabilities
1.	Konsul'tant Plyus [Consultant Plus]	1 year	Contract № 655/2020-ЭА	-
2.	ELS "Student's Consultant"	1 year	Contract № 307/2020-ЭА	http://www.studmedlib.ru/
3.	EML "Konsul'tant vracha" [Doctor's Consultant]	1 year	Contract № 281/2020-ЭА	http://www.rosmedlib.ru/
4.	ELS "ibooks.ru"	1 year	Contract № 06/2020	https://ibooks.ru
5.	ELS "IPRbooks"	1 year	Contract № 08/2020-ЗК	http://www.iprbookshop.ru/special

6.	Electronic Library System "BuckUP"	1 year	Contract № 05/2020	https://www.books-up.ru/
7.	ELS "Izdatel'stvo Lan'" [Fallow deer Publishing House]	1 year	Contract № 395/2020-ЭА	https://e.lanbook.com/

10. Logistical and technical support

Classrooms with equipment and educational medium tools for conducting lectures, group and individual consultations, actual academic performance monitoring and interim assessment of students:

St. Petersburg, Piskarevsky Prospekt, 47, lit. R (building 9), room 1, FSBEI HE NWSMU named after I.I. Mechnikov under the Ministry of Health of the Russian Federation.
Equipment: chalkboard; teacher's desk, student four-person desk, benches.
Technical educational medium tools: multimedia projector, system unit, monitor.
Special educational medium tools *(name if it is needed)*: *Roger Pen (Individual Roger wireless pen-shaped transmitter), Roger MyLink (Roger Pen system signal receiver) (for students with hearing impairments); IntelliKeys (wired keyboard with matte black coating Russian Braille script), (St. Petersburg, Piskarevsky Prospekt, 47, lit. R (building 9), classroom 18, 19, FSBEI HE NWSMU named after I.I. Mechnikov under the Ministry of Health of the Russian Federation).*

Classrooms with equipment and educational medium tools for conducting seminars, group and individual consultations, actual academic performance monitoring and interim assessment of students:

1. *St. Petersburg, Vavilovyh St., 14, letter A of St. Petersburg SBHI "City Hospital of St. Elizabeth the Martyr", Department of Endocrinology (Contract № 48/2017-IIIIO dated 22.05.2017)*

Equipment: *lecture hall:* desk, chairs with reading desks, floor-mounted screen on a tripod, chalkboard, *study room*: teacher's desk, student desks, benches, chairs
Technical educational medium tools: multimedia projector, teacher's laptop.

2. *St. Petersburg, Piskarevsky Prospekt, 47, lit. O (building 19), room 2, FSBEI HE NWSMU named after I.I. Mechnikov under the Ministry of Health of the Russian Federation.*

Equipment: chalkboard; teacher's desk, student desk, benches, chairs.
Technical educational medium tools: multimedia projector, teacher's laptop.
The interactive clinical thinking training system "Virtual Patient BodyInteract" is used in the educational process

Rooms for individual study of students, equipped with computer hardware connected to the Internet and provided with access to the electronic information and educational environment of the University: St. Petersburg, Piskarevsky Prospekt, 47, lit. AE (building 32), room 1, FSBEI HE NWSMU named after I.I. Mechnikov under the Ministry of Health of the Russian Federation.

Appendix A

The Ministry of Health of the Russian Federation

Federal State Budgetary Educational Institution
of Higher Education
"North-Western State Medical University
named after I.I. Mechnikov"
under the Ministry of Health of the Russian Federation

(FSBEI HE NWSMU named after I.I. Mechnikov under the Ministry of Health of the Russian Federation)

ASSESSMENT MATERIALS

(for actual monitoring of academic performance and interim assessment of students)

Specialty:	31.05.01 General Medicine
Focus:	Arrangement and delivery of primary health care to the adult population in medical organizations
Name of the academic course:	Endocrinology

Saint Petersburg – 2021

1. List of planned study outcomes of the academic course

Competence achievement indicator code	Study outcomes (assessment criteria)	Assessment means
AI 1 PC 1.1	**Student knows:** the etiology, pathogenesis, clinical aspect and diagnostic signs of urgent conditions in endocrine diseases (hypoglycemic conditions, diabetic ketoacidosis, acute adrenal insufficiency); the patterns of emergency therapy.	control questions, tests, case tasks
	Student is able to: identify the clinical signs of conditions requiring urgent medical care; carry out measures to provide emergency care for endocrine diseases.	tests, case tasks
AI 1 PC 2.1.	**Student knows:** the fundamentals of functioning and regulation of the endocrine system organs**,** - the main symptoms and syndromes of endocrine diseases, the method of collecting complaints, the patient's life and illness medical history.	control questions, tests, case tasks, essay
	Student is able to recognize typical symptoms during the initial examination of a patient with endocrine pathology.	control questions, tests, case tasks
	Student has the skill of assessing waist and hip circumference rates, calculating and estimating BMI.	tests, case studies
AI 2 PC 2.2	**Student knows:** the main symptoms and syndromes of endocrine diseases, diagnostic criteria of various endocrine pathologies, - methods of instrumental and laboratory diagnostics of endocrine pathologies in accordance with current health care procedures and clinical guidelines, - features of the examination results in various age and gender groups.	control questions, tests, case tasks, essay
	Student is able to: interpret the data of the physical examination of the patient; justify the necessity and scope of the laboratory study of the patient.	tests, case tasks
	Student has the skill of stating a preliminary diagnosis and drawing up a plan for laboratory and instrumental studies.	tests, case tasks
AI 3 PC 2.3	**Student knows** the indications for referring a patient to medical specialists for a consultation to provide specialized medical care in inpatient settings.	control questions, tests, case tasks
	Student is able to justify the need to refer a patient to medical specialists for a consultation to provide specialized medical care in inpatient settings.	case tasks

AI 4 PC 2.4	**Student knows** the etiology, pathogenesis, main symptoms and syndromes of endocrine diseases, methods of their diagnosis and differential diagnosis.	control questions, tests, case tasks, essay
	Students is able to: consider the results of the patient examination; substantiate and plan the amount of additional research as the need required.	tests, case tasks
	Student has the skill of evaluating the results of a standard glucose tolerance test, scintigrams, and typical hormone test measures.	tests, case tasks
AI 5 PC 2.5	**Student knows** the fundamentals for statement of syndromic diagnoses, nosological forms in accordance with clinical classifications and the current International Statistical Classification of Diseases and Related Health Problems (ICD).	control questions, tests, case tasks, essay
	Student is able to: interpret the data obtained during laboratory and instrumental studies of the patient; state the primary diagnosis and complications of the underlying disease.	tests, case tasks
AI 1 PC 3.1	**Student knows:** modern methods of medicated and non-medicated treatment of endocrine diseases in accordance with current medical care procedures and clinical guidelines on the health care delivery, - mechanisms of action, main indications and contraindications to medications used in endocrinology, basic treatment regimens, - basic patterns of delivering medical care to patients with endocrine pathology, with consideration to the medical care standards in primary health care.	control questions, tests, case tasks, essay
	Student is able to draw up a treatment plan, with consideration to the diagnosis, age and clinical aspect in accordance the current procedures for the health care delivery, clinical guidelines on the health care delivery.	case tasks
	Student has the skill of: selecting an individual goal of diabetes therapy according to the level of glycated hemoglobin; calculating the daily caloric content and the number of bread units for a patient with diabetes.	tests, case tasks
AI 2 PC 3.2	**Student knows:** the main indications and contraindications to medications used in endocrinology; the patters of monitoring the effectiveness of medicated therapy in endocrine diseases.	control questions, tests, case tasks
	Student is able to: prescribe a treatment regimen for endocrine diseases, with consideration of indications and contraindications to medications; evaluate the effectiveness of therapy.	tests, case tasks

AI 4 PC-3.4	**Student knows** the features regarding to the course of endocrine diseases and methods of their treatment in pregnant women and elderly patients.	control questions, tests, case tasks
	Student is able to draw up a patient treatment plan based on a personalized approach, including pregnant women, elderly and senile patients.	tests, case tasks
AI 1 PC 5.1.	**Student knows:** the indications for the medical rehabilitation of the patient, with consideration of the diagnosis, according to the current procedures for the health care delivery, clinical guidelines, - the rehabilitation patterns of patients with endocrine pathology.	control questions, tests, case tasks, essay
	Student is able to determine required medical specialists to carry out rehabilitation for a patient in need of it, taking into account the diagnosis in accordance with the current procedures for the health care delivery.	case tasks
AI-2 PC-6.2.	**Student knows:** risks and preventive methods of socially significant endocrine diseases (diabetes, obesity, iodine deficiency diseases), - types and methods of sanitary and educational work on the development of a healthy lifestyle, including programs to reduce alcohol and tobacco consumption, fundamentals of proper nutrition and standards of physical activity.	control questions, tests, case tasks, essay
	Student is able to prescribe preventive measures for patients, with consideration of risks, for the purpose of prevention and early detection of socially significant endocrine diseases (diabetes, obesity, iodine deficiency diseases).	case tasks

2. Examples of assessment means and criteria of actual monitoring

2.1. Examples of input control

The entrance control of knowledge is carried out by testing.

Question № 1. The first stage of thyroid hormone biosynthesis is:
1) deiodination
2) **uptake of iodine**
3) tyrosine iodination
4) thyroglobulin resorption

Question № 2. The most active stimulus of insulin secretion is:
1) amino acids
2) free fatty acids
3) **glucose**

4) electrolytes

Assessment criteria, assessment scale *passed/not passed*

Grade	Description
"passed"	Student performs a complete understanding of the issue. All requirements for the task have been met.
"not passed"	Student performs a lack of understanding of the issue. Many of requirements for the task have not been met. Answer is not provided.

2.2. Examples of tests:

AI 1 PC 1.1
Question № 1
Treatment of severe hypoglycemia begins with the administration of:
1) IV adrenaline
2) insulin 6-10 units subcutaneously
3) 60-80 ml of 40% glucose IV push
4) 60-80 ml of 5% glucose IV drip

AI 1 PC 2.1.
Question № 2
Memory loss, constipation, and bradycardia are observed in:
1) hypothyroidism
2) diffuse toxic goiter
3) diabetes mellitus
4) pheochromocytoma

AI 2 PC 2.2
Question № 3
Specify the glycemic level in 2 hours after exercise (during a standard oral glucose tolerance test) corresponding to diabetes mellitus:
1) above 7.8 mmol/L
2) above 6.1 mmol/L
3) above 5.5 mmol/L
4) above 11.1 mmol/L

AI 3 PC 2.3.
Question № 4
For diabetic foot syndrome, it is indicated consultation with:
1) a phlebologist
2) a physician
3) a podiatrist
4) a dermatologist

AI 4 PC 2.4.
Question № 5
The differential diagnosis of various types of diabetes mellitus is based on:

1) the study of blood glucose, cholesterol
2) the study of glycated hemoglobin
3) the study of glucose and acetone in daily urine
4) the level of insulin, antibodies, genetic study

AI 5 PC 2.5
Question № 6
Hypotension is common for:
1) Addison's disease
2) Cushing's disease
3) pheochromocytoma
4) aldosteroma

AI 1 PC 3.1
Question № 7
It is used for the treatment of autoimmune thyroiditis:
1) antibiotics
2) cardiac glycosides
3) L-Thyroxine
4) diuretics

AI 2 PC 3.2
Question № 8
The complications of insulin therapy include:
1) hypoglycemic conditions
2) ketoacidosis development
3) the dawn phenomenon
4) lactic acidosis development

AI 3.4 PC-3.4
Question № 9
Pregnant women with impaired carbohydrate tolerance are prescribed:
1) a diet with the complete exclusion of easily digestible carbohydrates
2) biguanides
3) oral sugar-lowering medications of the first generation
4) insulin therapy

AI 5.1 PC-5.1
Question № 10
Rehabilitation for patients with diabetes mellitus and diseases of the lower extremities arteries includes:
1) maintenance of individual rates of carbohydrate and lipid metabolism, blood pressure, training in foot care, if necessary, professional podiatry care
2) maintenance of individual rates of carbohydrate and lipid metabolism
3) training in the rules of foot care, professional podiatry care if necessary
4) maintenance of individual rates of carbohydrate and lipid metabolism, if necessary, professional podiatry care

AI 2 PC-6.2.
Question № 11
Obesity is a risk factor for:
1) type 1 diabetes mellitus
2) type 2 diabetes mellitus
3) primary hypothyroidism
4) Addison's disease

Assessment criteria, assessment scale of *tests*

Grade		**Description**
"passed with distinction"	5	Completed in full – 90%-100%
"passed with credit"	4	Completed not in full – 80%-89%
"passed"	3	Completed with contravention – 70%-79%
"failed"	2	Partially completed – 69% or less correct answers

2.2. Examples of case tasks:

Task 1. (AI 1 PC 1.1; AI 1 PC 2.1; AI 2 PC 2.2.; AI 3 PC 2.3)

A 30 years old patient was taken by ambulance to the intensive care unit. He collapsed in transport, and his blood sugar was 2.0 mmol/l. He is known to have type 1 diabetes mellitus and has been receiving insulin therapy.

Objectively: the patient is unconscious. The skin is pale and moist. Blood pressure is 130/90 mm. Hg. Pulse rate is 100 per minute, rhythmic, weak filling. In terms of the internal organs, there are no deviations from the normal state.

Questions:

1) What is your idea of the patient?
2) What are the causes of this condition?
3) What urgent medical measures should be carried out?
4) What is the max dose of a one-time administrated 40% glucose solution?
5) Emergency care tactics for mild hypoglycemia.

Task 2 (AI 1 PC 2.1; AI 2 PC 2.2.; AI 3 PC 2.3.; AI 5 PC 2.5.; AI 1 PC 3.1; AI 2 PC 3.2; AI 3.4 PC-3.4; AI.2 PC-6.2)

A 48-year-old woman, a pastry chef, is suffering obesity, increased appetite, and has no other complaints. It is known from the medical history that the patient's grandmother suffered from diabetes mellitus and received glibenclamide. Objective data: satisfactory condition, excessive nutrition. Height is 160 cm, body mass is 98 kg (BMI 38.5). The waist circumference is 96 cm, the hip circumference is 122 cm. The heart tones are muffled, rhythmic. Pulse is 68 per minute, blood pressure is 130/80 mm Hg. Respiration is vesicular. RR is 16 per minute. The abdomen is enlarged due to subcutaneous fat, painless. The liver is slightly enlarged on palpation. Healthy bladder and bowel habits. Blood sugar in capillary blood on an empty stomach - 6.0 mmol/l; 2 hours after eating - 9.7 mmol/l.

Questions:

1) Preliminary diagnosis (with BMI assessment), justification.
2) Examination plan.
3) Indications for glucose tolerance test.
4) Evaluation of the test results.
5) Outpatient care plan. Provide recommendations on a healthy lifestyle.

Task 3 (AI 1 PC 2.1; AI 2 PC 2.2.; AI 3 PC 2.3.; AI 5 PC 2.5.; AI 1 PC 3.1; AI 2 PC 3.2; AI 3.4 PC-3.4)

A 30-year-old woman came to a local physician, complaining of irritability, sweating, feeling hot, feeling of internal trembling, and fatigue. Over the past 3 months, she has lost 7 kg in weight while maintaining appetite. She considers herself ill after returning from a vacation she spent in Crimea. She notes that she spent a lot of time in the sun. It is known from the medical history that her sister and grandmother have thyroid pathology. She has no children, is planning a pregnancy. The ECG shows tachycardia (heart rate – 108 per minute) extrasystole. On examination: skin moisture, fine tremor of the fingers, dilated eye slits, tachycardia 110

beats per minute, blood pressure 135/55 mm Hg. On palpation of the thyroid gland: an increase in the size of the gland.
Questions:

1) Preliminary diagnosis, justification.
2) Additional examination methods, expected results.
3) Methods of the pathology treatment.
4) The choice of the treatment method in this case, justification.
5) Outpatient follow-up care plan for the patient.

Task 4 (AI 1 PC 2.1; AI 2 PC 2.2.; AI 3 PC 2.3.; AI 5 PC 2.5.; AI 1 PC 3.1; AI 2 PC 3.2; AI 3.4 PC-3.4; AI 1 PC 5)

A patient K., 76 years old, visited a local endocrinologist, complaining of fatigue, general weakness, frequent urination, thirst, and weight loss of 1 kg for 3 weeks. She is also concerned about the lack of sensitivity in the foot area, the feeling of "crawling goosebumps" in her feet, and noted the appearance of swelling and redness in the back and plantar surface of the left foot about 4 weeks ago after taking a careless step and having injured the foot on the threshold. It is known from her medical history that she has been suffering from type 2 diabetes mellitus for about 17 years, and has been taking gliclazide MR 120 mg, 2000 mg of metformin, and 25 mg of empagliflozin. Glycemia is monitored 1-2 times a week and only on an empty stomach. On an empty stomach: glycemia is 11-12 mmol/l, the level of glycated hemoglobin is 10.6%. About 3 years ago, the 3rd toe of the left foot was amputated due to the development of gangrene, and the patient does not use orthopedic correction. A week before going to the endocrinologist, she was examined by a neurologist, and the examination results confirmed the diagnosis of diabetic polyneuropathy of the lower extremities. An MRI scan of the left ankle and foot was performed, according to the study: multiple fractures of the metatarsal and tarsal bones with the cortical layer involvement, edema of soft tissues. There are signs of osteoarthritis, intra-articular effusion, bone erosion, necrosis, bone fragmentation. According to the results of the performed MRI, she was examined by a traumatologist, the diagnosis of diabetic neuroosteopathy of the left foot was confirmed.
Objectively: Weight-70 kg, height-178 cm, the sarcopenia phenomenon. The skin is dry and pale. The tongue is dry, covered with a white plaque. The thyroid gland is not enlarged, elastic, painless, and has no nodules. Pulse is 79 per 1 minute, blood pressure is 145/90 mm Hg. Breathing is carried out throughout all lung fields, there is no wheezing. Ripple on a. dorsalis pedis is weakened, the skin is thinned, onychomycosis, hyperkeratosis. The third toe of the left food is missing, the foot is deformed, swollen, hyperemic.
Questions:

1) State the primary diagnosis and its complications. Determine the individual target level of glycated hemoglobin.
2) Specify the necessary correction of hypoglycemic therapy.
3) Develop a plan of rehabilitation measures that must be prescribed to the patient.
4) What complications of diabetes should be clarified? Develop a further examination plan.
5) Determine the variants of orthopedic guidelines for this patient.

Task 5 (AI 1 PC 2.1; AI 2 PC 2.2.; AI 3 PC 2.3.; AI 5 PC 2.5.; AI 1 PC 3.1; AI 2 PC 3.2; AI 3.4 PC-3.4;)

A woman is 26 years old. There are complaints of menstrual irregularities, infertility, headaches. She has menarche from the age of 13, the period was regular until the age of 24, then she noted an elongation of the menstrual period to 38-45 days. She is married for 3 years, no pregnancies. On examination: height – 162 cm, weight – 73 kg, galactorrhea; according to the gynecological examination, there is no organic pathology. According to laboratory diagnostics: fasting glucose – 4.6 mmol/l, TSH – 2.1 iU/l (N: 0.3 – 3.0), prolactin – 2390 mcg/l

(N:160-560). An additional MRI examination of the brain revealed a bulky pituitary gland formation with a diameter of up to 12 mm.
Questions:

1) What endocrine disorders are described?
2) What does the laboratory test give evidence of?
3) State a preliminary diagnosis.
4) What else can be a cause of increased prolactin?
5) Methods of the pathology treatment, prognosis.

Task 6 (AI 1 PC 2.1; AI 2 PC 2.2.; AI 3 PC 2.3.; AI 5 PC 2.5.; AI 1 PC 3.1; AI 2 PC 3.2; AI 3.4 PC-3.4; AI 6.2 PC-6.2)

A patient M., 38 years old, has an appointment at a women's clinic. Pregnancy II, duration of 12 weeks. The medical history: her sister has type 2 DM. The first pregnancy was at the age of 28, an urgent birth, a girl, 4100g. She does not intensively complain of anything. Excessive nutrition. Other than that, an objective examination is without deviations. Weight gain is + 4 kg.
Biochemical blood assay: blood glucose (venous plasma) is 5.2 mmol / l. CBC and UA, biochemical assay - without pathology.
Questions:

1. Presumptive diagnosis.
2. What risk factors does the patient have in this pathology? What other risk factors do you know?
3. Patient management tactics.
4. Does she need postpartum care?
5. The rules of conducting, timing, and interpretation of OGTT data during physiological pregnancy.

Assessment criteria, assessment scale for case tasks

Grade		**Description**
"passed with distinction"	5	The explanation of case solving is detailed, consistent, competent, with theoretical grounds, with correct and fluent use of terminology; Student presents signs of clinical thinking, correctly answers additional questions
"passed with credit"	4	The explanation of case solving is detailed, but not logical enough, with isolated particular errors, there are some difficulties in theoretical justification, the answers to additional questions are correct, but not clear enough
"passed"	3	The explanation of case solving is not complete enough, inconsistent, with errors, there is weak theoretical justification, the answers to additional questions are not clear enough, with particular errors
"failed"	2	The explanation of case solving is incomplete, inconsistent, with gross errors, without theoretical justification, and the answers to additional questions are incorrect or missing

2.3. Examples of essay topics

AI 1 PC-2.1.
Genetic factors in the development of type 1 diabetes mellitus.

AI 2 PC-2.2.
Congenital dysfunction of the adrenal cortex – metabolic and genetic markers

AI 4 PC-2.4.
Differential diagnosis of primary and secondary hyperaldosteronism

AI 5 PC-2.5.
Multiple endocrine neoplasia syndromes – classification, diagnosis

AI 1 PC-3.1.
Modern approaches in the treatment of obesity

AI 5.1 PC-5.1
Modern methods of rehabilitation for patients with diabetic foot syndrome

AI 6.2 PC-6.2
Risk factors for type 2 diabetes, preventive strategies

Assessment criteria, scale of *essay* assessment

Grade		**Description**
"passed with distinction"	5	All the requirements for writing an essay have been fulfilled: the issue has been identified and its relevance has been justified, a brief consideration of various viewpoints on the issue has been made and one's own viewpoint has been logically stated, conclusions have been formulated, the topic has been fully disclosed, required essay length has been maintained, and the requirements for formatting have been met. The topic is fully disclosed.
"passed with credit"	4	The basic requirements for the essay have been fulfilled, but there were shortcomings; in particular, there are inaccuracies in the presentation of the material; there is no logical consistency in judgments; required essay length has not been maintained; there are omissions in the formatting
"passed"	3	There are significant deviations from the requirements; in particular: the topic is only partially covered; factual errors were made in the content of the essay, conclusions are not substantiated
"failed"	2	The essay's topic has not been disclosed, a significant misunderstanding of the issue has been revealed, or the essay has not been presented at all

3. Procedure of conducting actual monitoring

The current control of academic course performance is provided by means of: testing, case tasks, preparation of an essay

4. Examples of assessment means and criteria of interim assessment

4.1. Indicative list of control questions to prepare for the test:

AI 1 PC 1.1
Hypoglycemic state in diabetes mellitus: clinical aspect, diagnosis, emergency care at the pre-hospital stage

AI 1 PC 2.1.
Type 1 diabetes mellitus: etiology, pathogenesis, clinical aspect, diagnosis.

AI 2 PC 2.2
Instrumental methods for the diagnosis of thyroid diseases. Ultrasound, biopsy, radioisotope methods (scanning). Rates, evaluation of results

AI 3 PC 2.3.
Diabetic foot syndrome: clinical forms, diagnostic methods.

AI 4 PC 2.4.
Differential diagnosis of endogenous hypercorticism

AI 5 PC 2.5
The concept of hypothyroidism and thyrotoxicosis syndromes. The causes of their development.

AI 1 PC 3.1
Treatment of primary hypothyroidism. Rules for prescribing thyroid medications

AI 2 PC 3.2
Goals and patterns of diabetes treatment. Evaluating methods of the therapy effectiveness. The role of self-monitoring and education of patients with diabetes mellitus

AI 3.4 PC-3.4
Gestational diabetes mellitus (clinical aspect, diagnosis, patterns and goals of treatment)

AI 5.1 PC-5.1
Diabetic foot syndrome: treatment, rehabilitation and social adaptation of patients

AI 6.2 PC-6.2
Risk groups for diabetes mellitus – screening of carbohydrate metabolism disorders, prevention methods

The final assessment interview includes 3 control questions from different units of the academic course

Assessment criteria, assessment scale *for control questions*

Grade		**Description**
"passed with distinction"	5	Student knows all the educational material, understands it perfectly and has firmly mastered it. Student gives correct, conscious and confident answers to questions (within the program). Student uses correct standard language and does not make mistakes in verbal answers.

Grade		Description
"passed with credit"	4	Student knows all the required educational material, understands it well and has mastered it. Questions (within the program) are answered without difficulty. Student uses standard language in verbal answers and does not make mistakes.
"passed"	3	Student knows the core educational material. Student answers questions (within the program) uneasily. Student makes mistakes in the presentation of the material and in the construction of speech during verbal answers.
"failed"	2	Student does not know most of the educational material, has a tend to uncertainly answer merely teacher's guiding questions. Student makes frequent and gross mistakes in verbal answers.

4.2. Examples of case tasks to prepare for the *credit*:

Task 1. (AI 1 PC 1.1; AI 1 PC 2.1; AI 2 PC 2.2., AI 5 PC 2.5, AI 1 PC 3.1)

A 18-year-old patient was taken to the intensive care unit in severe condition. He has been suffering from type 1 diabetes for 3 years, and receives about 40 units of insulin per day in a basal-bolus regimen. Deterioration of well-being within two days, when sore throat appeared, body temperature rose to 39.2. The local physician prescribed antibiotics and reduced the dose of injected insulin due to a decrease in food intake caused by lack of appetite and difficulty swallowing. The patient's condition worsened: thirst, nausea, repeated vomiting, severe weakness, abdominal pain. Objectively: severe condition, conscious, answering questions with efforts. The dry and pale skin with reduced turgor; Kussmaul respiration, RR - 32 per minute, pulse - 120 per minute, weakened, blood pressure - 90/50 mm Hg. Glycemia (according to the blood glucose monitor) - 31 mmol/L.

Questions:

1) State a clinical diagnosis.
2) What mistake was made in the outpatient management by the local physician?
3) Patterns of pre-hospital emergency care.

Task 2 (AI 1 PC 2.1; AI 2 PC 2.2.; AI 3 PC 2.3.; AI 5 PC 2.5.; AI 1 PC 3.1; AI 2 PC 3.2; AI 3.4 PC-3.4; AI.2 PC-6.2)

A 50-year-old woman, a cook (undergoing a professional examination). She is suffering of long-standing obesity, increased appetite, and has no other complaints. She does not smoke. The medical history: her grandmother suffered from type 2 diabetes. Objectively: satisfactory condition, excessive nutrition. Height is 160 cm, body weight is 98 kg. The waist circumference is 96 cm. The heart tones are muffled, rhythmic. Pulse is 68 per minute, blood pressure is -140/80 mm Hg. Respiration is vesicular, without wheezing. The abdomen is enlarged due to subcutaneous fat, painless. The liver is located along the edge of the costal arch. Healthy bladder and bowel habits. Laboratory: fasting blood glucose (venous plasma) - 6.2 mmol/L, cholesterol – 6.0 mmol/L.

Questions:

1) Preliminary diagnosis (with BMI assessment)
2) Examination plan.
3) Outpatient care plan. Provide recommendations on a healthy lifestyle.

Task 3 (AI 1 PC 2.1; AI 2 PC 2.2.; AI 3 PC 2.3.; AI 5 PC 2.5.; AI 1 PC 3.1; AI 2 PC 3.2; AI 3.4 PC-3.4)

A 30-year-old woman came to a local physician, complaining of irritability, sweating, feeling hot, feeling of internal trembling, and fatigue. Over the past 2 months, she has lost 7 kg in weight while maintaining appetite. It is known from the medical history that her sister and grandmother have thyroid pathology. She has no children, is planning a pregnancy within the next 1-2 years. On the ECG: Heart rate is 108 per minute, sinus rhythm. On examination: skin moisture, fine tremor of the fingers, dilated eye slits, tachycardia 110 beats per minute, blood pressure 135/60 mm Hg. On palpation of the thyroid gland: a diffuse increase in the size of the gland.

Questions:

1) Preliminary diagnosis.
2) Additional examination methods, expected results.
3) The choice of the treatment method in this case.

Task 4 (AI 1 PC 2.1; AI 2 PC 2.2.; AI 3 PC 2.3.; AI 5 PC 2.5.; AI 1 PC 3.1; AI 2 PC 3.2; AI 3.4 PC-3.4; AI 1 PC 5)

A patient K., 68 years old, complained of general weakness, frequent urination, thirst, pain and swelling in the back and plantar surface of the left foot about 4 weeks ago. From his medical history, he has been suffering from type 2 diabetes for about 20 years, and has been taking gliclazide MR 120 mg, 2000 mg of metformin, and 25 mg of empagliflozin. Fasting outpatient glycemia is 11-12 mmol/l, the level of glycated hemoglobin is 10.8%. About 3 years ago, the 3rd toe of the left foot was amputated due to the development of gangrene, and the patient does not use orthopedic correction. He visited a traumatologist a week ago, and according to the examination and MRI results, he was diagnosed with diabetic neuroosteopathy of the left foot. Objectively: Weight-70 kg, height-178 cm, the sarcopenia phenomenon. The skin is dry and pale. The tongue is dry, covered with a white plaque. Pulse is 80 per 1 minute, blood pressure is 145/90 mm Hg. Breathing is carried out throughout all lung fields, there is no wheezing. Hyperkeratosis of the feet skin, onychomycosis. The third toe of the left food is missing, the foot is deformed, swollen, hyperemic.

Questions:

1) State the primary diagnosis and its complications. Determine the individual target level of glycated hemoglobin.
2) Specify the necessary correction of hypoglycemic therapy.
3) Develop a plan of treatment and rehabilitation measures.

Task 5 (AI 1 PC 2.1; AI 2 PC 2.2.; AI 3 PC 2.3.; AI 5 PC 2.5.; AI 1 PC 3.1; AI 2 PC 3.2; AI 3.4 PC-3.4; AI 6.2 PC-6.2)

Patient M., 40 years old, has an appointment at a women's clinic. Pregnancy II, duration of 12-13 weeks. The medical history: her grandmother has type 2 DM. The first pregnancy at the age of 26, an urgent birth, a girl, weight 4100g at birth. She does not intensively complain of anything. Excessive nutrition. Other than that, an objective examination is without deviations. Weight gain is + 4 kg. Biochemical blood assay: blood glucose (venous plasma) is 5.3 mmol / l. CBC and UA, biochemical assay - without pathology.

Questions:

1) Preliminary diagnosis.
2) Patient management tactics during pregnancy.
3) Does the patient need postpartum follow-up care?

Assessment criteria, assessment scale for case tasks

Grade		**Description**
"passed with distinction"	5	Case solving is detailed, consistent, competent, with theoretical justifications, with necessary schematic images and visual presentations, with correct and fluent command of terminology;

		the answers to additional questions are correct, clear
"passed with credit"	4	Case solving is detailed, but not logical enough, with isolated particular errors, some difficulties in theoretical justification, schematic images and visual presentations, the answers to additional questions are correct, but not clear enough
"passed"	3	Case solving is not complete enough, inconsistent, with errors, weak theoretical justification, with significant difficulties and errors in schematic representations and visual presentations, the answers to additional questions are not clear enough, with errors in details
"failed"	2	Case solving is incomplete, inconsistent, with gross errors, without theoretical justification, without schematic images and visual presentations, or with a large number of errors, the answers to additional questions are incorrect or missing

Assessment criteria, final assessment scale *(credit)*

Grade	Description
"passed"	Student performs a complete understanding of the issue. Student knows the basic concepts within the discussed issue, the methods of study and their interrelation, practical problems and has an idea of the developmental promising directions of the issue under consideration
"not passed"	Student performs a lack of understanding of the issue. Student does not know the basic concepts and methods of study, and has no idea about the main practical problems within the discussed issue

5. Procedure of interim assessment

Interim assessment in the course is conducted by credit. Credit includes: an interview on control questions and solving case tasks.