

MINISTRY OF HEALTH OF UKRAINE

ODESA NATIONAL MEDICAL UNIVERSITY

Department of Family Medicine and Polyclinic Therapy



CONFIRMED by

Prorector for scientific and pedagogical work

Eduard BURYACHKIVSKIY

September 1st, 2023

**METHODOLOGICAL RECOMMENDATIONS
FOR PRACTICAL CLASSES
IN THE EDUCATIONAL DISCIPLINE**

Faculty: international, course: 6

**EDUCATIONAL DISCIPLINE:
MANAGEMENT OF OBESITY IN THE PRACTICE OF A FAMILY DOCTOR"**

Approved:

At the meeting of the department of family medicine and polyclinic therapy
Odessa National Medical University

Minutes No. 1 dated 30 / 08 / 2023 .

Head of the department



Valentyna VELYCHKO

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Practical lesson № 1-2

Topic 1: Overweight and obesity. Definition. Epidemiology. Etiology. Classification. Diagnostics.

Goal: Know the definitions of overweight and obesity. Know the causes and risk factors for the development of overweight and obesity, prevalence, classification of obesity. To have the measurement technique necessary to determine the degree of obesity.

Basic concepts: Adiposity. Excessive body weight. Principles of diagnosis. Psychogenic, deontological aspects of the family doctor's activity during the examination of a person with obesity. Peculiarities of the family doctor's communication with the patient and his family.

Equipment: multimedia projector

Plan:

1. Organizational measures (greetings, verification of those present, notification of the topic, the purpose of the lesson, motivation of applicants to study the topic).
2. Control of the reference level of knowledge (written work, written test, frontal survey, etc.) (if necessary):

—requirements for theoretical readiness of applicants to perform practical classes (knowledge requirements, list of didactic units);
—questions (test tasks, tasks, clinical situations) to check basic knowledge on the subject of the lesson.

Question:

1. Prevalence of obesity and overweight in the world and in Ukraine.
 2. Risk factors for the development of obesity.
 3. The relevance of allocating excessive body weight into a separate nosological unit.
 4. Peculiarities of the classification of overweight or obesity.
 5. Determination of the levels of primary intervention in the management of overweight or obese patients.
 6. Features of diagnosing overweight and obesity.
 7. Etiology of obesity.
 8. Classification of obesity.
 9. Clinical picture of obesity.
 10. Diagnosis and differential diagnosis of obesity and excess body weight.
-
3. Formation of professional abilities and skills (mastery of skills, conducting curation, determining the treatment scheme, conducting laboratory research, etc.):
—content of tasks (tasks, clinical situations, etc.);

Tasks:

Problem 1. A 49-year-old man. There are no complaints. He has been suffering from arterial hypertension for 9 years, the maximum blood pressure is 170/90 mm Hg. On examination - increased nutrition, height 174 cm, body weight 112 kg. Blood pressure 150/90 mm Hg. Art. while taking enalapril. No deviations from the norm were found on the part of the internal organs. The fasting blood glucose level is within 7.8-10.6 mmol/l

1. Formulate the diagnosis.
2. What additional examination should be performed on the patient?
3. Give recommendations on nutrition.
4. Prescribe treatment

Task 2. A 35-year-old woman has obesity, mainly on the face, shoulders, trunk, hirsutism, menstrual disorders. On the shoulders, chest, on the sides of the abdomen - purple-cyanotic bands of skin stretching.

1. Diagnose the woman.
2. What type of obesity is most likely?
3. Prescribe treatment and advise the woman about a healthy diet.

Task 3. A 28-year-old woman has obesity, mainly on the shoulders, trunk, increased hair on the legs and arms. On the shoulders, chest, on the sides of the abdomen - purple-cyanotic bands of skin stretching. Can this type of obesity be observed?

1. Decreased feeling of satiety.
2. Hyperinsulinism.
3. Sleep disturbance.
4. What additional examination methods should be prescribed to a woman.

—recommendations (instructions) for performing tasks (professional algorithms, orientation maps for the formation of practical skills and abilities, etc.)

No	Main tasks	Instructions	Answers
1	Define the term obesity.	What factors influence the prevalence of obesity?	
2	Etiology and pathophysiology of obesity	List the etiological factors. Pathogenesis of obesity.	
3	Obesity classification, BMI classification	Categories of obesity. Types of primary and secondary obesity. Characteristics of adipose tissue deposition.	
4	Clinical picture of obesity	List the clinical symptoms.	
5	Examination of an obese patient	Make an examination plan	
6	Treatment	Principles of treatment of obese patients.	

—Requirements for work results, including to registration: in the case of independent preparation for a practical lesson, an indicative card for a practical lesson is filled out.

Applicants must observe academic integrity, namely:

- independent performance of all types of work, tasks, forms of control provided for by the

- work program of this educational discipline;
- references to sources of information in case of use of ideas, developments, statements, information;
 - compliance with the legislation on copyright and related rights;
 - provision of reliable information about the results of one's own educational (scientific) activity, used research methods and sources of information.
- control materials for the final stage of the lesson: tasks, assignments, tests, etc. (if necessary).

Test tasks.

1. Clinical symptoms of obesity
 - A. excess body weight, shortness of breath
 - B. frostbite, constipation
 - C. thirst, polyuria
 - D. exophthalmos, tachycardia
2. A normal body mass index is:
 - A. 30-35%
 - B. 35-40%
 - C. 18-20%
 - D. 20-25%
 - E. 15-18%
3. Normal percentage of fat in men:
 - A. 20-25%
 - B. 11-17%
 - C. 25-30%
 - D. 5-10%
 - E. 30-35%
4. Normal percentage of fat in women:
 - A. 30-35%
 - B. 15-23%
 - C. 5-10%
 - D. 25-30%
 - E. 11-17%
5. Normal waist size for men:
 - A. up to 104 cm
 - B. Height up to 80 cm
 - C. up to 90 cm
 - D. up to 100 cm
 - E. up to 110 cm
6. Normal waist size for women:
 - A. up to 90 cm
 - B. Height up to 80 cm
 - C. up to 85 cm
 - D. up to 75 cm
 - E. up to 100 cm

7. Etiological factor of primary obesity
- insulin resistance
 - increased intake of food into the body and reduced energy expenditure
 - dysfunction of the hypothalamic-pituitary system
 - genetically determined disorder of monoamine metabolism in the brain
 - is associated with a violation of lipid metabolism.
8. The highest prevalence of obesity in developing countries compared to economically developed countries is explained by all of the above, except:
- consumption of cheap products with high carbohydrate content
 - an excess of fats of animal origin in the diet
 - lack of protein in the diet
 - lack of dietary fiber (vegetables and fruits)
 - an excess of protein in the diet
9. All the listed nutritional factors are important in the development of obesity, except:
- overeating
 - food mainly in the second half of the day
 - excessive use of easily digestible carbohydrates
 - excessive use of fiber
 - excessive use of animal fats
10. Obesity develops with all of the listed endocrine diseases, except:
- insulinomas
 - hypothyroidism
 - Itsenko-Cushing disease
 - hypocorticism
 - hypogonadism

4. Summing up:

- checking and discussing the answers of higher education applicants
- control of the level of professional skills and abilities
- evaluation of each answer, setting of grades
- answer to possible questions
- task for the next class

5. List of recommended literature (main, additional, electronic information resources):

Main:

- Guideline DUODECIM 00499: evaluation of the obese patient (<https://guidelines.moz.gov.ua/documents/3335>);
- Guideline DUODECIM 00500: treatment of obesity (<https://guidelines.moz.gov.ua/documents/3336>);
- Guideline DUODECIM 01142: the role of motivational interviewing in treatment and lifestyle modification.

Additional:

- CMAJ Canada Obesity in adults: a clinical practice guideline (<https://www.cmaj.ca/content/192/31/E875>)

Electronic information resources:

1) Primary care and primary healthcare in obesity management (Canada, 2020) (<https://obesitycanada.ca/wp-content/uploads/2021/05/15-Primary-Care-v6-with-links.pdf>);

Practical lesson № 3-4

Topic 2: Physical activity of patients living with obesity.

Goal: To determine the physical activity characteristics of overweight or obese patients.

Basic concepts: Approaches to changing physical activity and lifestyle modification in overweight and obese patients. Types of physical activity, its impact on health.

Equipment: multimedia projector

Plan:

1. Organizational measures (greetings, verification of those present, announcement of the topic, the purpose of the lesson, motivation of applicants to study the topic).
2. Control of the reference level of knowledge (written work, written test, frontal survey, etc.) (if necessary):

—requirements for theoretical readiness of applicants to perform practical classes (knowledge requirements, list of didactic units);
—questions (test tasks, tasks, clinical situations) to check basic knowledge on the subject of the lesson.

Question:

1. Types of physical activity;
 2. Recommendations regarding consultation of patients before starting physical exercises;
 3. Peculiarities of building training for various somatic pathologies;
 4. Minimal physical activity for patients who are overweight or obese;
 5. Minimal physical activity of patients who have already lost weight and wish to maintain the lost kilograms;
 6. Physical activity outside the gym;
 7. Physical activity as a lifestyle;
 8. Positive changes in the human body against the background of rational physical activity.
 9. General principles of physical activity for overweight or obese patients.
 10. Contraindications to intense physical activity.
 11. Types of physical activity.
 12. The concept of "metabolic equivalent". Calculation.
 13. Level of loads depending on BMI.
-
3. Formation of professional abilities and skills (mastery of skills, conducting curation, determining the treatment scheme, conducting laboratory research, etc.):
—content of tasks (tasks, clinical situations, etc.);

Tasks:

Task 1. A positive energy balance with normal nutrition in obese people is due to:

1. Insufficient utilization of fats in the body.
2. Increased formation of fat from carbohydrates.
3. Reducing energy needs as a result of reducing heat loss.
4. Decrease in physical activity.

Task 2. Patient M., 36 years old, complains of excess body weight, shortness of breath during physical exertion. She gained weight gradually. The reason is associated with the abuse of sweet food, a sedentary lifestyle. Menstruation since the age of 12, regular. Objectively: body weight - 108 kg, height - 165 cm. Correct physique, the location of adipose tissue is uniform. There are stretch marks on the buttocks and thighs, there is no hyperpigmentation. The skin is clean. From the side of the internal organs, there are no peculiarities.

1. Make a diagnosis
2. Assign the examination to the woman
3. Calculate MET
4. Prescribe comprehensive treatment, make a schedule of physical activity for the woman.

—recommendations (instructions) for performing tasks (professional algorithms, orientation maps for the formation of practical skills and abilities, etc.)

No	Main tasks	Instructions	Answers
1	Types of physical activity, its impact on health.	What factors influence the prevalence of obesity?	
2	Approaches to changing physical activity and lifestyle modification in overweight and obese patients	Give examples.	
3	General principles of physical activity for overweight or obese patients.	Give the principles of FA. FA equivalents.	
4	Contraindications to intense physical activity	What are the contraindications to FA	
5	The concept of "metabolic equivalent". Calculation	MET calculation formula. Evaluation of MET.	

—Requirements for work results, including to registration: in the case of independent preparation for a practical lesson, an indicative card for a practical lesson is filled out.

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- references to sources of information in case of use of ideas, developments, statements, information;
- compliance with the legislation on copyright and related rights;

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—control materials for the final stage of the lesson: tasks, assignments, tests, etc. (if necessary).

Test tasks.

1. Patients with obesity are recommended all of the above, except:
 - A. restriction of caloric intake to 1200 kcal per day
 - B. carrying out 1-2 times a week unloading days (600-700 kcal per day) with 5-6 meals
 - C. carrying out unloading days with 2 meals a day
 - D. restriction of fluid intake to 1 liter per day
 - E. alcohol intake
2. Physical exercises in obesity contribute to all of the above, except:
 - A. increasing the body's ability to utilize glucose, reducing body weight
 - B. reducing resistance to endogenous insulin
 - C. correction of dyslipidemia
 - D. lowering blood pressure
 - E. increasing the risk of heart diseases
3. Obesity can develop with all of the above lesions of the central nervous system and hypothalamus, except:
 - A. destruction of the ventromedial nucleus of the hypothalamus by a tumor
 - B. destruction of the ventrolateral nucleus of the hypothalamus by a tumor
 - C. neuroinfections
 - D. craniocerebral injury
 - E. metastases of malignant tumors in the hypothalamus
4. Obesity is the result of all of the above, except:
 - A. overeating (excess energy input to the body)
 - B. reduction of energy expenditure (reduction of motor activity)
 - C. changes in exchange processes
 - D. reduction of lipolysis
 - E. frequent low-calorie meals
5. All of the above contribute to the development of obesity, except:
 - A. intake of easily digestible carbohydrates
 - B. eating high-calorie food
 - C. excessive use of animal fats
 - D. rare food mainly in the afternoon
 - E. multiple (5-6 times a day) low-calorie meals
6. Obesity is characterized by all the following hormonal disorders, except:
 - A. hyperinsulinism
 - B. hypoinsulinism
 - C. hypoprolactinemia
 - D. decrease in secretion of THG
 - E. hypercorticism

7. Changes in the endocrine system during obesity are manifested by all of the above, except:
 - A. Violation of carbohydrate metabolism up to the development of diabetes
 - B. violation of the menstrual cycle
 - C. infertility
 - D. predominant development of type 1 diabetes
 - E. increased frequency of fetal death at different stages of pregnancy

8. Hypothalamic-pituitary obesity is characterized by all of the above, except:
 - A. rapid excessive growth of body weight over several months
 - B. bulimia
 - C. polydipsia
 - D. symptoms of organic damage to the central nervous system
 - E. slow increase in body weight

9. Obesity is a risk factor for the development of all the listed diseases, except:
 - A. diabetes
 - B. ischemic heart disease
 - C. hypertensive disease
 - D. hypotension

10. Itsenko-Cushing's disease is characterized by all of the above, except:
 - A. selective deposition of fat on the face, neck, abdomen in combination with relatively thin limbs
 - B. purple stretch marks
 - C. osteoporosis
 - D. adrenal hyperplasia
 - E. uniform deposition of fat on the body

4. Summing up:

- checking and discussing the answers of higher education applicants
- control of the level of professional skills and abilities
- evaluation of each answer, setting of grades
- answer to possible questions
- task for the next class

5. List of recommended literature (main, additional, electronic information resources):

Main:

- 1) Guideline DUODECIM 00499: evaluation of the obese patient (<https://guidelines.moz.gov.ua/documents/3335>);
- 2) Guideline DUODECIM 00500: treatment of obesity (<https://guidelines.moz.gov.ua/documents/3336>);
- 3) Guideline DUODECIM 01142: the role of motivational interviewing in treatment and lifestyle modification.

Additional:

- 1) CMAJ Canada Obesity in adults: a clinical practice guideline (<https://www.cmaj.ca/content/192/31/E875>)

Electronic information resources:

- 1) Primary care and primary healthcare in obesity management (Canada, 2020) (<https://obesitycanada.ca/wp-content/uploads/2021/05/15-Primary-Care-v6-with-links.pdf>);
- 2) <https://obesitycanada.ca/wp-content/uploads/2021/05/9-Physical-Activity-v3-with-links.pdf>

Practical lesson № 5-6

Topic 3: Diet of patients living with obesity.

Goal: Determining the peculiarities of diets in the management of patients who live with excess body weight or obesity

Basic concepts: Basic principles of diet therapy, characteristics of diet for people living with obesity. Healthy eating behavior. The effect of controlled weight loss on various obesity risk factors.

Equipment: multimedia projector/laptop, scale, height meter, scale-bioimpedance meter

Plan:

1. Organizational measures (greetings, verification of those present, announcement of the topic, the purpose of the lesson, motivation of applicants to study the topic).
2. Control of the reference level of knowledge (written work, written test, frontal survey, etc.) (if necessary):

—requirements for theoretical readiness of applicants to perform practical classes (knowledge requirements, list of didactic units);
—questions (test tasks, tasks, clinical situations) to check basic knowledge on the subject of the lesson.

Question:

1. Definition of the concept of "diet";
2. Definition of the concept of "rational eating behavior";
3. Types of diets;
4. Contraindications to diets;
5. Types of nutrition depending on the ethnic, religious and other characteristics of a person;
6. Types of diets recommended for overweight or obese patients;
7. Periods of appointment of diets;
8. Diet as preparation for bariatric surgery;
9. Rational food behavior as a lifestyle.

3. Formation of professional abilities and skills (mastery of skills, conducting curation, determining the treatment scheme, conducting laboratory research, etc.):
—content of tasks (tasks, clinical situations, etc.);

Tasks:

Task 1. During the medical examination of the workers of the cotton mill, an increase in body weight by 5-14% from normal was found in 30% of them, with a Quetelet index of 22 to 25.

1. That in order to normalize the body weight of this group of people in the diet, first of all, it is necessary to reduce: mono- and disaccharides, proteins, fats, polysaccharides, dietary fibers.
2. Prepare a diet for these workers.

Task 2. A 43-year-old woman underwent a bilateral adnexectomy 3 years ago. Complains of weakness, fatigue, lack of menstruation, lower back pain, memory loss, does not remember current events. During the examination, the presence of obesity, osteoporosis and hypercholesterolemia.

1. What syndrome is observed in the patient?
2. Schedule an additional examination
3. Prepare a woman's diet.

—recommendations (instructions) for performing tasks (professional algorithms, orientation maps for the formation of practical skills and abilities, etc.)

No	Main tasks	Instructions	Answers
1	General principles of a diet for weight loss	Name the general principles and their content	
2	Which is the main source of energy	Give examples	
3	How to calculate the rate of basic exchange	Give the calculation for women and men. Give the calculation of the total energy value	
4	Calculation of hypocaloric daily calories	Give an example of a calculation	
5	Basic recommendations of rational nutrition	Make recommendations	

—Requirements for work results, including to registration: in the case of independent preparation for a practical lesson, an indicative card for a practical lesson is filled out.

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- compliance with the legislation on copyright and related rights;
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—control materials for the final stage of the lesson: tasks, assignments, tests, etc. (if necessary).

Test tasks.

1. For the II degree of obesity, BMI is characteristic:
 - A. 18.5-24.5
 - B. more than 40
 - C. 30.0-34.5

D. 25.0-29.9

E. 35.0-39.9

2. Lipidogram in III degree obesity is characterized by all of the above, except:
 - A. hypercholesterolemia
 - B. hypertriglyceridemia
 - C. increase in the level of NEC
 - D. increase in the level of beta-lipoproteins
 - E. hypocholesterolemia

3. Hypothyroid obesity is characterized by all of the above, except:
 - A. uniform deposition of fat
 - B. drowsiness
 - C. dryness and pastiness of the skin
 - D. bradycardia
 - E. facial redness (matronism)

4. Hypothalamic forms of obesity are characterized by all of the above, except:
 - A. rapid growth of obesity in a short period of time
 - B. deposition of fat according to the female type
 - C. neurological symptoms
 - D. type 1 diabetes
 - E. bulimia, polydipsia

5. Pickwick's syndrome is characterized by all of the above, except:
 - A. significant obesity
 - B. drowsiness
 - C. bulimia
 - D. hypoventilation of the lungs
 - E. increased seizure activity on EEG

6. Diet therapy for obesity includes all of the above, except:
 - A. limitation of rapidly digestible carbohydrates
 - B. inclusion of vegetable fats in the diet
 - C. multiple 5-6 meals
 - D. food 2-3 times a day
 - E. low-calorie, but significant food volume nutrition

7. The diet of obese patients includes all of the above, except:
 - A. reducing the number of carbohydrates to reduce the calorie content of food
 - B. sufficient protein content to prevent protein starvation and reduced hunger
 - C. of reduced protein content
 - D. fats mainly of vegetable origin
 - E. vitamins and microelements within physiological norms

8. During the medical examination of the workers of the cotton mill, an increase in body weight by 5-14% of the normal was found in 30% of the people with a Quetelet index of 22 to 25. To normalize the body weight of this group of people in the diet, first of all, it is necessary to reduce:

- A. Mono- and disaccharides.
- B. Squirrels.
- C. Zhiry.
- D. Polysaccharides.
- E. Food fibers.

9. A 40-year-old woman underwent a bilateral adnexectomy 5 years ago. Complains of weakness, fatigue, lack of menstruation, lower back pain, memory loss, does not remember current events. During the examination, the presence of obesity, osteoporosis and hypercholesterolemia. What syndrome is observed in the patient?

- A. Post-castration syndrome
- B. Adrenogenital syndrome
- C. Adipose-genital dystrophy
- D. Antiphospholipid syndrome
- E. Climacteric syndrome

10. Which of the following alimentary factors does not play a significant role in the development of obesity?

- A. overeating
- B. feeding mainly in the second half of the day
- C. excessive use of easily digestible carbohydrates
- D. excessive consumption of fiber
- E. excessive consumption of animal fats

4. Summing up:

- checking and discussing the answers of higher education applicants
- control of the level of professional skills and abilities
- evaluation of each answer, setting of grades
- answer to possible questions
- task for the next class

5. List of recommended literature (main, additional, electronic information resources):

Main:

- 1) Guideline DUODECIM 00499: evaluation of the obese patient (<https://guidelines.moz.gov.ua/documents/3335>);
- 2) Guideline DUODECIM 00500: treatment of obesity (<https://guidelines.moz.gov.ua/documents/3336>);
- 3) Guideline DUODECIM 01142: the role of motivational interviewing in treatment and lifestyle modification.

Additional:

1) CMAJ Canada Obesity in adults: a clinical practice guideline (<https://www.cmaj.ca/content/192/31/E875>)

Electronic information resources:

1) Primary care and primary healthcare in obesity management (Canada, 2020) (<https://obesitycanada.ca/wp-content/uploads/2021/05/15-Primary-Care-v6-with-links.pdf>);

2) Medical nutrition therapy in obesity management (Canada, 2020) (<https://obesitycanada.ca/wp-content/uploads/2020/11/8-Medical-Nutrition-Therapy-v5-with-links.pdf>);

Practical lesson № 7-8

Topic 4: The latest pharmacological methods of obesity treatment.

Goal: To establish evidence-based pharmacological drugs for the treatment of patients living with obesity.

Basic concepts: Classification and mechanism of action of pharmacological drugs used to treat obesity. Indications and contraindications for prescribing the newest pharmacological drugs against obesity. Evaluation of the effectiveness, safety and side effects of the main drugs for the treatment and prevention of obesity.

Equipment: multimedia projector/laptop, scale, height meter, scale-bioimpedance meter

Plan:

1. Organizational measures (greetings, verification of those present, announcement of the topic, the purpose of the lesson, motivation of applicants to study the topic).
2. Control of the reference level of knowledge (written work, written test, frontal survey, etc.) (if necessary):

—requirements for theoretical readiness of applicants to perform practical classes (knowledge requirements, list of didactic units);

—questions (test tasks, tasks, clinical situations) to check basic knowledge on the subject of the lesson.

Question:

1. Pharmacological drugs affecting the development of excess body weight or obesity;
2. Non-pharmacological methods of obesity treatment;
3. Behavioral therapy, the basis of obesity treatment;
4. Indications for the appointment of pharmacological therapy of obesity;
5. Lifestyle modification of patients living with obesity;
6. Peculiarities of prescribing the drug liraglutide in the management of patients who live with excess body weight or obesity;
7. Peculiarities of prescribing naltrexone/bupropion in the management of patients who are overweight or obese;

8. Peculiarities of prescribing orlistat in the management of patients who live with excess body weight or obesity;
 9. Indications for bariatric therapy in obese patients.
10. Indications and contraindications for drug treatment.
11. Mechanism of action and side effects of drugs for the treatment of obesity.
12. Surgical treatment options.
13. Criteria for referral to surgical treatment.
14. Contraindications to surgical treatment.
15. Preoperative preparation.
16. Complications of surgical treatment.
17. Observation by primary medical care after surgical treatment.

3. Formation of professional skills and abilities (mastery of skills, conducting curation, determining the treatment scheme, conducting laboratory research, etc.):

—content of tasks (tasks, clinical situations, etc.);

Tasks:

Task 1. Patient Z., 20 years old, turned to the doctor with complaints about excess body weight, which had been increasing since he was 11 years old. The disease has nothing to do with it. In past years, he was ill with SARS, suffered from chicken pox. The family consists of a mother and a father. Appetite is good. Mealy dishes predominate in the diet.

About: Body weight - 108 kg, height - 175 cm. The physique is proportional, the distribution of adipose tissue is uniform. Skin of normal color and moisture. From the side, internal organs without features. Pulse -86 in 1 minute. Blood pressure - 135/80 mm Hg. Art. General analysis of blood and urine without pathological changes. Glucose tolerance test: fasting - 5.1 mmol/l, after 2 hours - 7.5 mmol/l.

Question:

1. Make a preliminary diagnosis
2. Assign additional examination to the patient
3. Prescribe treatment
4. Make a plan for rational nutrition?

—recommendations (instructions) for performing tasks (professional algorithms, orientation maps for the formation of practical skills and abilities, etc.)

No	Main tasks	Instructions	Answers
1	What are the indications and contraindications for medical treatment of obesity?	List indications and contraindications	
2	What groups of drugs are there for the treatment of obesity.	Pharmacodynamics, pharmacokinetics of drugs. Side effects.	
3	Types of surgical treatment of obesity	Indications and contraindications for surgical treatment. Bariatric surgery. Preoperative preparation.	

4	Compile a program of medical treatment of a patient with obesity.	Write an example of a drug treatment program for an obese patient	
5	To analyze indications and contraindications for bariatric treatment of obese patients.	What are the indications and contraindications.	
6	Complications of surgical treatment.	What complications can arise? Postoperative management.	

—Requirements for work results, including to registration: in the case of independent preparation for a practical lesson, an indicative card for a practical lesson is filled out.

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- references to sources of information in case of use of ideas, developments, statements, information;
- compliance with the legislation on copyright and related rights;
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—control materials for the final stage of the lesson: tasks, assignments, tests, etc. (if necessary).

Test tasks.

1. In the treatment of obesity, drugs are used:

- A. antimicrobial
- B. anorexic
- C. glucocorticoids
- D. cytostatics

2. Side effects of liraglutide include the following, except:

- A. decrease in appetite;
- B. dizziness;
- C. headache;
- D. diarrhea;
- E. increased appetite.

3. A 57-year-old woman with third-degree obesity. diabetes was diagnosed two months ago. The endocrinologist recommended a low-calorie diet and dosed physical activity. The fasting blood glucose level is 9.2 mmol/l. What hypoglycemic drug can be prescribed to the patient?

- A. Glyquidon
- B. Glibenclamide
- C. Metformin

- D. Glipizide
- E. Repaglinide

4. To which group of drugs does liraglutide belong?

- A. alpha-glucosidase inhibitor
- B. dipeptidyl peptidase-4 inhibitors
- C. analogue of glucagon-like peptide-1
- D. sodium-glucose cotransporter 2 inhibitors
- E. biguanides

5. Side effects of orlistat from the gastrointestinal tract include the following, except:

- A. oily secretions from the rectum;
- B. imperative urges to defecate;
- C. steatorrhea;
- D. heartburn;
- E. abdominal pain or discomfort.

6. Main contraindications to bariatric therapy, except:

- A. serious general diseases that are a contraindication to general anesthesia;
- B. type I diabetes;
- C. type II diabetes;
- D. pregnancy and lactation;
- E. presence of oncological disease.

7. What is the mechanism of action of orlistat:

- A. inhibits the appetite center;
- B. blocks the activity of pancreatic lipase, reduces fat absorption in the intestines by 30%;
- C. increases the basic metabolism;
- D. suppresses the intestinal enzyme α -glucosidase, inhibits the absorption of carbohydrates in the intestines and the flow of glucose into the blood;
- E. inhibits the reuptake of serotonin and norepinephrine.

8. A 45-year-old patient has central type II degree obesity, crimson-red striae on the abdomen and thighs, an increase in blood pressure of 200/120 mm Hg. Art., fasting blood glucose - 9.3 mmol/l, menstrual cycle disorder. After the large dexamethasone test, the excretion of 17-OKS, 17-KS did not change. The most likely diagnosis?

- A. Corticosteroma.
- B. Itsenko-Cushing's disease.
- C. Metabolic syndrome.
- D. Stein-Leventhal syndrome.
- E. Carcinoid syndrome.

9. A patient with degree II obesity (BMI 36 kg/m²) consulted an endocrinologist with the aim of losing weight. What type of diet therapy should be offered to the patient?

- A. Physiological subcaloric diet therapy
- B. A protein-restricted diet

- C. Diet with restriction of carbohydrates
- D. Fat-restricted diet
- E. Fasting for 2 weeks

10. A 24-year-old patient came to the clinic with complaints of weight gain and increased appetite. Objectively: hypersthenic physique, body mass index 33.2 kg/m², waist circumference 100 cm. The ratio of waist circumference to hip circumference is 0.95. What is the previous diagnosis?

- A. Alimentary and constitutional obesity, 1st century, abdominal type
- B. Hypothalamic obesity according to Itsenko-Cushing type, II century, genoid type
- C. Alimentary-constitutional obesity, III century, genoid type
- D. Alimentary and constitutional obesity, II century, abdominal type
- E. Hypothalamic obesity according to Itsenko-Cushing type, 1st century, abdominal type

type

4. Summing up:

- checking and discussing the answers of higher education applicants
- control of the level of professional skills and abilities
- evaluation of each answer, setting of grades
- answer to possible questions
- task for the next class

5. List of recommended literature (main, additional, electronic information resources):

Main:

- 1) Guideline DUODECIM 00499: evaluation of the obese patient (<https://guidelines.moz.gov.ua/documents/3335>);
- 2) Guideline DUODECIM 00500: treatment of obesity (<https://guidelines.moz.gov.ua/documents/3336>);
- 3) Guideline DUODECIM 01142: the role of motivational interviewing in treatment and lifestyle modification.

Additional:

- 1) CMAJ Canada Obesity in adults: a clinical practice guideline (<https://www.cmaj.ca/content/192/31/E875>)

Electronic information resources:

- 1) Primary care and primary healthcare in obesity management (Canada, 2020) (<https://obesitycanada.ca/wp-content/uploads/2021/05/15-Primary-Care-v6-with-links.pdf>);
- 2) Pharmacotherapy in obesity management (Canada, 2020) (<https://obesitycanada.ca/wp-content/uploads/2021/05/Pharmacotherapy-v6-with-links.pdf>);

Practical lesson № 9-10

Topic 5: Comorbid pathology in obese patients.

Goal: To establish the main comorbid diseases in patients living with excess body weight or obesity and to determine the specifics of the management of such patients

Basic concepts: Diabetes and obesity. Diseases of the respiratory system and obesity. The course of cardiovascular diseases against the background of obesity. The course of gastrointestinal diseases and liver diseases against the background of obesity. Diseases of the musculoskeletal system and obesity. Disorders of the genitourinary system in women and obesity.

Equipment: multimedia projector/laptop, scale, height meter, scale-bioimpedance meter

Plan:

1. Organizational measures (greetings, verification of those present, announcement of the topic, the purpose of the lesson, motivation of applicants to study the topic).
2. Control of the reference level of knowledge (written work, written test, frontal survey, etc.) (if necessary):

—requirements for theoretical readiness of applicants to perform practical classes (knowledge requirements, list of didactic units);
—questions (test tasks, tasks, clinical situations) to check basic knowledge on the subject of the lesson.

Question:

1. What is a comorbid disease;
2. Features of endocrinological obesity;
3. Peculiarities of management of patients who have the combined pathology of overweight or obesity and type 2 diabetes;
4. Type 2 diabetes mellitus etiology, pathogenesis, features of the course, basics of treatment;
5. Peculiarities of management of patients who have the combined pathology of excess body weight or obesity and cardiovascular diseases;
6. Arterial hypertension etiology, pathogenesis, features of the course, basics of treatment;
7. Dyslipidemia etiology, pathogenesis, features of the course, basics of treatment;
8. Metabolic syndrome etiology, pathogenesis, features of the course, basics of treatment;
9. Peculiarities of management of patients who have the combined pathology of excess body weight or obesity and diseases of the musculoskeletal system;
10. Peculiarities of management of patients who have the combined pathology of excess body weight or obesity and certain forms of cancer.

3. Formation of professional skills and abilities (mastery of skills, conducting curation, determining the treatment scheme, conducting laboratory research, etc.):

—content of tasks (tasks, clinical situations, etc.);

Tasks:

Task 1. Patient K., 25 years old, turned to the doctor with complaints about excess body weight, which had been increasing since he was 11 years old. The disease has nothing to do with it. In past years, he was ill with SARS, suffered from chicken pox. The family consists of a mother and a father. Appetite is good. Mealy dishes predominate in the diet.

About: Body weight - 108 kg, height - 175 cm. The physique is proportional, the distribution of adipose tissue is uniform. Skin of normal color and moisture. From the side, internal organs without features. Pulse -86 in 1 minute. Blood pressure - 155/80 mm Hg. Art. General analysis of blood and urine without pathological changes. Glucose tolerance test: fasting - 6.1 mmol/l, after 2 hours - 10.5 mmol/l.

Question:

1. Make a preliminary diagnosis.
2. Assign an additional examination to the patient.
3. Prescribe treatment
4. What complications can occur in the patient?.

—recommendations (instructions) for performing tasks (professional algorithms, orientation maps for the formation of practical skills and abilities, etc.)

No	Main tasks	Instructions	Answers
1	Definition of "comorbidity"	Define comorbidity, give examples.	
2	Diseases of the gastrointestinal tract	GERD, gall bladder diseases, pancreatitis, liver diseases - pathogenesis, clinical symptoms	
3	Metabolic diseases	Metabolic syndrome, type 2 diabetes, dyslipidemia-pathogenesis, clinical symptoms	
4	Cardiovascular diseases	Ischemic heart disease, cerebrovascular and thromboembolic complications, arterial hypertension - pathogenesis, clinical symptoms	
5	Diseases of the respiratory system	Respiratory dysfunction, hypoventilation syndrome, obstructive sleep apnea - pathogenesis, clinical symptoms	
6	Diseases of the musculoskeletal system	Gout, osteoarthritis - pathogenesis, clinical symptoms	
7	Oncological diseases	Cancer - clinical symptoms of different localizations	
8	Diseases of the nervous system	Idiopathic intracranial hypertension - clinical symptoms	
9	Diseases of the genitourinary system in women	Amenorrhea, infertility	
10	Compile a program of additional examinations of the patient to identify complications of obesity.	Give examples	

—Requirements for work results, including to registration: in the case of independent preparation for a practical lesson, an indicative card for a practical lesson is filled out.

Applicants must observe academic integrity, namely:

- independent performance of all types of work, tasks, forms of control provided for by the work program of this educational discipline;

- references to sources of information in case of use of ideas, developments, statements, information;
- compliance with the legislation on copyright and related rights;
- provision of reliable information about the results of one's own educational (scientific) activity, used research methods and sources of information.

—control materials for the final stage of the lesson: tasks, assignments, tests, etc. (if necessary).

Test tasks.

1. The patient suffered a Q-wave myocardial infarction. His body weight exceeds the norm by 36%. Blood pressure - 150/90 mm Hg. Art. Blood sugar – 5.6 mmol/l, total cholesterol – 4.9 mmol/l, uric acid – 0.211 mmol/l. Which of the patient's existing risk factors needs to be eliminated first in the process of secondary prevention?
 - A. Hyperuricemia.
 - B. Arterial hypertension.
 - C. Hyperglycemia.
 - D. Hypercholesterolemia.
 - E. Obesity.

2. During the medical examination of male drivers, 10% of them were found to exceed the optimal body weight by 65% (BMI – 39.3 kg/m² of body weight). What is the energy status of individuals?
 - A. Obesity of the 4th degree.
 - B. Normal energy status (adequate nutrition).
 - C. Obesity of the 1st degree.
 - D. Obesity of the 2nd degree.
 - E. Obesity of the 3rd degree.

3. The patient suffered a large focal myocardial infarction. Body weight exceeds the norm by 36%. Blood pressure 150/90 mm Hg. Blood sugar - 5.9 mmol/l, total cholesterol - 4.9 mmol/l, uric acid - 0.211 mmol/l. Which of the patient's existing risk factors needs to be eliminated in the course of secondary prevention?
 - A. Obesity
 - B. Arterial hypertension
 - C. Hyperglycemia
 - D. Hypercholesterolemia
 - E. Hyperuricemia

4. The patient is 46 years old and has been treated for hypertension for 5 years. Father has diabetes. Objectively: height 170 cm. Weight 96 kg. Pulse 72 / min., blood pressure - 190/110 mm Hg. Liver +3 cm. Legs pasty. Fasting blood sugar is 5.4 mmol/l. What are the means of primary prevention of diabetes in this patient?
 - A. Get rid of excess weight.
 - B. Normalize blood pressure.
 - C. Prescribe biguanides.
 - D. Prescribe hepatoprotectors.

E. Prescribe diuretics.

5. A 45-year-old woman complains of increased blood pressure, excess weight, increased fatigue. He has been overweight since childhood. Mother and older brother suffer from obesity. Objectively: temperature - 36.6 oC, CHDR - 20 per minute, pulse - 88 bpm, blood pressure - 160/95 mm Hg. Art. Height 166 cm, weight 95 kg. The skin is dry, clean, pigment-papillary degeneration. Subcutaneous adipose tissue is excessively and evenly developed. There are no swellings. In the lungs, breathing is vesicular. The tones of the heart are muffled, rhythmic. Abdomen is soft, painless. What is the most likely mechanism of development of obesity in the patient?

- A. Alimentary and constitutional
- B. Hypoovarian
- C. Hypothalamic
- D. Cerebral
- E. Adrenal

6. In a 52-year-old woman with III degree obesity and arterial hypertension, hyperlipidemia due to VLDL, a decrease in HDL cholesterol concentration, and hyperinsulinemia were detected. Diagnosed metabolic syndrome X. What is the main pathogenetic mechanism of the development of this syndrome?

- A. Decrease in HDL concentration
- B. Hyperlipidemia
- C. Hyperinsulinemia and insulin resistance
- D. Hyperuricemia
- E. Insulinoma.

7. Patient N., 32 years old, gained 20 kg of body weight after the 1st childbirth, and 30 kg after the 2nd. Currently, the patient's height is 168 cm, weight is 120 kg, body mass index is more than 40 kg/m². Obesity is dyselastic in nature, with pink stretch marks on the skin of the buttocks, the inner surface of the thighs, and the mammary glands. Blood pressure - 160/100 mm Hg. What type of obesity does the patient have?

- A. Hypothalamic-pituitary
- B. Endocrine-metabolic
- C. Alimentary and constitutional
- D. Cerebral
- E. Metabolic syndrome

8. A 52-year-old patient, who consulted a gastroenterologist for a stomach ulcer, was found to have dysplastic obesity, striae on the abdomen and thighs. Blood pressure -170/100 mm Hg. During the laboratory examination, an elevated level of cortisol, a moderately reduced level of ACTH was found. Make a diagnosis:

- A. Alimentary obesity
- B. Itsenko-Cushing's disease
- C. Itsenko-Cushing syndrome
- D. Hypothalamic syndrome with endocrine and metabolic disorders
- E. Zolinger-Ellison syndrome

9. A 30-year-old patient complains of obesity, weakness, drowsiness, headache, and decreased potency, which he has noted 4 years after a SARS. Objectively: height - 171 cm, weight - 101 kg. Fat deposits are mainly on the shoulders and torso. The skin is dry, purple-marble. Blood pressure - 160/102 mm Hg. The level of ACTH is increased. What is the most likely diagnosis?

- A. Itsenko-Cushing syndrome
- B. Itsenko-Cushing's disease
- C. Alimentary obesity
- D. Hypertensive disease
- E. Pathological climax

10. The patient came to the clinic with complaints of weight gain, chills, swelling, dry skin, drowsiness, difficulty concentrating. Objectively: height 165 cm, body weight 90 kg, female body proportions, $t=35.8^{\circ}\text{C}$, heart rate- 58/min., BP- 105/60 mm Hg. Heart tones are weakened, bradycardia. Other internal organs are unchanged. The thyroid gland is not palpable. The allocation of drops of milk from the mammary glands is noted. Hormonal research revealed an increase in the level of TSH and prolactin, and a decrease in T4. Which of the reasons led to the formation of obesity?

- A. Secondary hypothyroidism
- B. Prolactinoma
- C. Primary hypothyroidism
- D. Hypopituitarism
- E. Adipose-genital dystrophy

4. Summing up:

- checking and discussing the answers of higher education applicants
- control of the level of professional skills and abilities
- evaluation of each answer, setting of grades
- answer to possible questions
- task for the next class

5. List of recommended literature (main, additional, electronic information resources):

Main:

- 1) Guideline DUODECIM 00499: evaluation of the obese patient (<https://guidelines.moz.gov.ua/documents/3335>);
- 2) Guideline DUODECIM 00500: treatment of obesity (<https://guidelines.moz.gov.ua/documents/3336>);
- 3) Guideline DUODECIM 01142: the role of motivational interviewing in treatment and lifestyle modification.

Additional:

- 1) CMAJ Canada Obesity in adults: a clinical practice guideline (<https://www.cmaj.ca/content/192/31/E875>)

Electronic information resources:

- 1) Primary care and primary healthcare in obesity management (Canada, 2020) (<https://obesitycanada.ca/wp-content/uploads/2021/05/15-Primary-Care-v6-with-links.pdf>)

Practical lesson №11-12

Topic 6: Prevention of obesity in adults.

Goal: Determine the main areas of prevention of excess body weight or obesity

Basic concepts: Primary, secondary and tertiary prevention of obesity. The influence of bad habits on obesity. Pregnancy and gestational weight gain, weight maintenance after childbirth. Psychological and behavioral interventions in the treatment of obesity.

Equipment: multimedia projector/laptop, scale, height meter, scale-bioimpedance meter

Plan:

1. Organizational measures (greetings, verification of those present, announcement of the topic, the purpose of the lesson, motivation of applicants to study the topic).

2. Control of the reference level of knowledge (written work, written test, frontal survey, etc.) (if necessary):

—requirements for theoretical readiness of applicants to perform practical classes (knowledge requirements, list of didactic units);

—questions (test tasks, tasks, clinical situations) to check basic knowledge on the subject of the lesson.

Question:

1. Assessment of the presence of obesity in an adult, assessment methods

2. General principles of obesity prevention

3. What is primary prevention

4. What is secondary prevention

5. What is tertiary prevention

6. Recommendations for persons with normal body weight, but at risk of developing obesity

7. Physical activity for the prevention of obesity.

8. Food habits for the prevention of obesity.

9. Rational eating behavior and physical activity during pregnancy

3. Formation of professional skills and abilities (mastery of skills, conducting curation, determining the treatment scheme, conducting laboratory research, etc.):

—content of tasks (tasks, clinical situations, etc.);

Tasks:

Task 1. Patient K, 38 years old. Complains of weight gain. Appetite is increased. Does not follow a diet. Physical activity is limited. Cereals and flour products predominate in the diet. Troubled

by headache, weakness, drowsiness. An increase in body weight has been noted for more than 15 years, the body weight has been stable in recent years.

Objectively: Height - 168 cm; body weight - 116 kg. The skin is moist. Subcutaneous tissue is located evenly. There are no swellings. Pulse 72 per minute, rhythmic. Blood pressure - 150/105 mm Hg. The left border of relative cardiac dullness in the 5th intercostal space is 1 cm to the left of the midclavicular line. Tones of the heart are weakened, the accent of the II tone is over the aorta. Other data are within normal limits.

Additional examinations: general anamnesis of blood and urine without special features, fasting blood sugar - 5.3 mmol/l, narrowed arteries on the fundus, ECG - signs of left ventricular hypertrophy.

1. Make a diagnosis.
2. Does the patient need a glucose tolerance test?
3. What primary treatment should be prescribed to the patient?
4. What prevention of further weight gain can be offered to a woman?

—recommendations (instructions) for performing tasks (professional algorithms, orientation maps for the formation of practical skills and abilities, etc.)

No	Main tasks	Instructions	Answers
1	What is primary, secondary, tertiary prevention of obesity	Define primary, secondary, and tertiary prevention of obesity	
2	Draw up a program of preventive measures for patients with an already established diagnosis of obesity.	Give an example of the program	
3	The influence of anxiety-depressive disorders on the development of overweight or obesity	Give examples	
4	The influence of sedentary behavior on the development of overweight or obesity	Give examples	
5	Organization of tertiary prevention of overweight and obesity.	Make a prevention plan	
6	Self-control of body weight as one of the methods of secondary prevention	Make a prevention plan	

—Requirements for work results, including to registration: in the case of independent preparation for a practical lesson, an indicative card for a practical lesson is filled out.

Applicants must observe academic integrity, namely:

- independent performance of all types of work, tasks, forms of control provided for by the work program of this educational discipline;
- references to sources of information in case of use of ideas, developments, statements, information;
- compliance with the legislation on copyright and related rights;

- provision of reliable information about the results of one's own educational (scientific) activity, used research methods and sources of information.

—control materials for the final stage of the lesson: tasks, assignments, tests, etc. (if necessary).

Test tasks.

1. Preventive measures to prevent the development of obesity are carried out in all the following "risk groups", except:

- A. People with a hereditary predisposition to obesity
- B. People over 40 years old
- C. Persons whose profession does not involve physical activity
- D. Persons who are limited in their movements due to the disease
- E. Patients with oncological diseases

2. Prevention of obesity

- A. limitation of physical exercises
- B. increased consumption of fats
- C. increased use of carbohydrates
- D. rational nutrition

3. Patient K., 43 years old, complains of a moderate increase in body weight, shortness of breath during physical exertion. In the past, I was not sick with anything. Body weight - 124 kg, height - 176 cm. Correct build, distribution of fatty tissue is uniform. What disease can the patient have?

- A. Alimentary obesity
- B. Hypothalamic obesity
- C. Dysovarian obesity
- D. Ishchenko-Cushing's disease
- E. Adipose-genital dystrophy

4. A 34-year-old patient complains of increased appetite, excess weight, shortness of breath during physical exertion. During the examination: excessive accumulation of fat in the abdomen and shoulder girdle, pale pink skin, male-type body hair, no striae, heart rate - 90/min, blood pressure - 120/80 mm Hg. Additional studies: blood sugar - 4.9 mmol/l, cholesterol - 6.2 mmol/l. Ophthalmoscopy: fundus unchanged. Neurologist's examination: healthy. Make a diagnosis:

- A. Primary alimentary-constitutional obesity gynoid type
- B. Primary alimentary and constitutional obesity, android type
- C. Secondary cerebral obesity
- D. Secondary endocrine hypothyroid obesity
- E. Secondary endocrine hypoovarian obesity

5. A 62-year-old woman came to see a gynecologist with complaints of itching of the vulva. He has been suffering from chronic pancreatitis for 8 years. Increased nutrition, body weight 102 kg, height 158 cm. Palpable inguinal lymph nodes up to 0.8 cm. Scratching marks on the skin of the perineum. Blood sugar - 7.8 mmol/l. What is the most likely diagnosis?

- A. Obesity of alimentary genesis
- B. Diabetes
- C. Vulvit

- D. Lymphogranulomatosis
- E. Allergic dermatitis

6. Patient K., 42 years old. He is 162 cm tall, weighs 87 kg, and has a BMI of 33 kg/m². The general condition is satisfactory. Heart sounds are dull, no murmurs are heard during auscultation. Heart rate 72 per minute. In the lungs, breathing is vesicular. The lower edge of the liver protrudes 1.5-2 cm below the edge of the right hypochondrium. Swelling is not observed. I consulted an endocrinologist to determine obesity, its degree, and treatment methods. Blood pressure: right – 140/90 mm Hg, left – 145/85 mm Hg. Determine the type of obesity and its degree?

- A. Alimentary and constitutional obesity, 1 st.
- B. Alimentary and constitutional obesity, 2nd art.
- C. Alimentary and constitutional obesity, 3rd century.
- D. Hypothalamic obesity of the 2nd century.
- E. Excess weight

7. Patient N., 32 years old, gained 20 kg of body weight after the 1st childbirth, and 30 kg after the 2nd. Currently, the patient's height is 168 cm, weight is 120 kg, body mass index is more than 40 kg/m². Obesity is dyselastastic in nature, with pink stretch marks on the skin of the buttocks, the inner surface of the thighs, and the mammary glands. Blood pressure - 160/100 mm Hg. What type of obesity does the patient have?

- A. Alimentary and constitutional
- B. Endocrine-metabolic
- C. Hypothalamic-pituitary
- D. Cerebral
- E. Metabolic syndrome

8. A patient with degree II obesity (BMI 36 kg/m²) consulted an endocrinologist with the aim of losing weight. What type of diet therapy should be offered to the patient?

- A. Physiological subcaloric diet therapy
- B. A protein-restricted diet
- C. Diet with restriction of carbohydrates
- D. Fat-restricted diet
- E. Fasting for 2 weeks

9. A 40-year-old woman underwent a bilateral adnexectomy 5 years ago. Complains of weakness, fatigue, lack of menstruation, lower back pain, memory loss, does not remember recent events. During the examination, the presence of obesity, osteoporosis and hypercholesterolemia. What syndrome is observed in the patient?

- A. Postcastration syndrome
- B. Androgenital syndrome
- C. Adiposogenital dystrophy
- D. Psychoneurotic syndrome
- E. Climacteric syndrome

10. During the medical examination of male drivers, an increase in body weight was found in 10% of people (BMI = 39.3 kg/m², body weight is 65% higher than the norm). What is the energy status according to the Quetelet index:

- A. Energy status is normal (adequate nutrition)
- B. Obesity of the 1st degree
- C. Obesity of the 2nd degree

- D. Obesity of the 3rd degree
- E. Obesity of the 4th degree

4. Summing up:

- checking and discussing the answers of higher education applicants
- control of the level of professional skills and abilities
- evaluation of each answer, setting of grades
- answer to possible questions
- task for the next class

5. List of recommended literature (main, additional, electronic information resources):

Main:

- 1) Guideline DUODECIM 00499: evaluation of the obese patient (<https://guidelines.moz.gov.ua/documents/3335>);
- 2) Guideline DUODECIM 00500: treatment of obesity (<https://guidelines.moz.gov.ua/documents/3336>);
- 3) Guideline DUODECIM 01142: the role of motivational interviewing in treatment and lifestyle modification.

Additional:

- 1) CMAJ Canada Obesity in adults: a clinical practice guideline (<https://www.cmaj.ca/content/192/31/E875>)

Electronic information resources:

- 1) Primary care and primary healthcare in obesity management (Canada, 2020) (<https://obesitycanada.ca/wp-content/uploads/2021/05/15-Primary-Care-v6-with-links.pdf>);
- 2) <https://obesitycanada.ca/wp-content/uploads/2021/05/4-Prevention-and-Harm-Reduction-v5-with-links.pdf>

Practical lesson №13-14

Topic 7: Prevention of obesity in children.

Goal: To determine the features of definition, diagnosis, treatment and prevention of obesity in children of different ages.

Basic concepts: Screening for obesity in children. Etiology of obesity in children. Risk factors. Differential diagnosis. Methods of preventing obesity in children.

Equipment: multimedia projector/laptop, scale, height meter, scale-bioimpedance meter

Plan:

1. Organizational measures (greetings, verification of those present, announcement of the topic, the purpose of the lesson, motivation of applicants to study the topic).
2. Control of the reference level of knowledge (written work, written test, frontal survey, etc.) (if necessary):

—requirements for theoretical readiness of applicants to perform practical classes (knowledge requirements, list of didactic units);
 —questions (test tasks, tasks, clinical situations) to check basic knowledge on the subject of the lesson.

Question:

1. Peculiarities of nutrition of children of different ages
2. General principles of obesity prevention in pediatric patients
3. General principles of prevention of excess body weight in pediatric patients.
4. Primary prevention of obesity and excess body weight in pediatric patients.
5. Secondary prevention of obesity and excess body weight in pediatric patients.
6. Skills of using centile tables
7. Peculiarities of behavioral therapy for overweight or obese children
8. Comorbid pathology in children living with obesity

3. Formation of professional skills and abilities (mastery of skills, conducting curation, determining the treatment scheme, conducting laboratory research, etc.):

—content of tasks (tasks, clinical situations, etc.);

Task 1. Patient Yu, 17 years old, complains of excess weight, increased sweating, periodic headache, irritability, and rapid fatigue. Body weight began to increase significantly at the age of 14, at the same time the above-mentioned complaints appeared. There is a history of frequent colds, sore throats. The girl's mother has increased body weight. Monthly regular from the age of 14.

Body weight - 87 kg, height - 162 cm. Regular physique, distribution of fat fiber is uniform. On the hips, stomach, chest - pink thin stretch marks, isolated acne on the back. From the side of the internal organs, there are no peculiarities. Pulse 80 in 1 min. Blood pressure - on the left hand 110/70 mm Hg. on the right hand 150/80 mm Hg. The thyroid gland is not enlarged. Secondary sexual characteristics are well developed.

1. Preliminary diagnosis
2. What examinations should be carried out to confirm the diagnosis.
3. Determine the possible cause of this disease
4. What is the reason for the appearance of striae, "acne" on the body
5. Prescribe treatment
6. Prescribe preventive measures to prevent weight gain.

—recommendations (instructions) for performing tasks (professional algorithms, orientation maps for the formation of practical skills and abilities, etc.)

No	Main tasks	Instructions	Answers
1	Features of nutrition of children of different ages	To determine the peculiarities of children of the first year of life, from 1 year to 3 years, older than 3 years of life.	

2	Peculiarities of physical activity of children with excessive body weight or obesity	Give examples	
3	What are the risk factors for the development of overweight and obesity in children.	Name the risk factors for the development of obesity in children	
4	Primary, secondary and tertiary prevention of obesity in children	General principles of obesity and overweight prevention	
5	A program of preventive measures for pediatric patients with an established diagnosis of obesity	Compile a program of preventive measures for a 3-year-old child with obesity	

—Requirements for work results, including to registration: in the case of independent preparation for a practical lesson, an indicative card for a practical lesson is filled out.

Applicants must observe academic integrity, namely:

- independent performance of all types of work, tasks, forms of control provided for by the work program of this educational discipline;
- references to sources of information in case of use of ideas, developments, statements, information;
- compliance with the legislation on copyright and related rights;
- provision of reliable information about the results of one's own educational (scientific) activity, used research methods and sources of information.

—control materials for the final stage of the lesson: tasks, assignments, tests, etc. (if necessary).

Test tasks.

1. A 15-year-old patient complains of excessive body weight, headache, irritability, and rapid fatigue. A significant increase in body weight occurred at the age of 14. Body weight - 90 kg, height 160 cm, correct build. The distribution of adipose tissue is uniform. Pink thin stretch marks on the hips, stomach and breast glands. Blood pressure - 145/90 mm Hg. What is your previous diagnosis?

- A. Itsenko-Cushing's disease
- B. Alimentary-constitutional obesity
- C. Vegeto-vascular dystonia
- D. Puberty-youth disputarianism
- E. Cushing's syndrome

2. A 17-year-old patient complains of amenorrhea. Objectively: hirsutism, obesity with a predominant distribution of adipose tissue on the face, neck, upper body. Acne vulgaris on the face, stretch marks on the skin. Blood pressure - 170/100 mm Hg. Mental development and intelligence are not impaired. Gynecological status: hairiness on the external genitalia is moderate, acute hypoplasia of the vagina and uterus. What is the most likely diagnosis?

- A. Sheehan's syndrome
- B. Shereshevsky-Turner syndrome
- C. Stein-Leventhal syndrome
- D. Itsenko-Cushing syndrome
- E. Pehrantz-Babinsky-Froelich syndrome

3. The child is 10 years old. Body weight - 46 kg. Excessive weight gain since birth. Parents are prone to fullness. The child underwent a study of tolerance to carbohydrates, the level of 17-ketosteroids, blood electrolytes, ultrasound of the adrenal glands, and radiography of the skull. No pathology was detected. Exogenous constitutional obesity was diagnosed. Which direction of therapy should be considered a priority?

- A. Appointment of anorexic drugs.
- B. Sanatorium-resort treatment.
- C. Adherence to a reduction diet and exercise regime.
- D. Dehydration therapy.
- E. Taking "fat burners".

4. An 8-year-old patient was diagnosed with obesity of the 1st degree during the examination. What principle of treatment should be applied?

- A. Heavy physical exertion
- B. Anorexics
- C. Diet therapy
- D. Hepatoprotectors
- E. Vitamin therapy

5. A mother with a 13-year-old boy turned to the doctor with complaints about the child's feeling of constant hunger, excess weight. The boy consumes a lot of sweets, pies, does not move enough. He was born with a body weight of 4700. On examination: the weight of the child is 64 kg, height is 158 cm. Fat folds are well expressed on the neck, groin, and chest. Heart tones are weakened. Specify the most likely

- A. Itsenko-Cushing syndrome
- B. constitutional-endogenous obesity
- C. glycogenosis
- D. Moriak cider
- E. diencephalic syndrome

6. An 18-year-old female patient has obesity, mainly on the shoulders and trunk, hirsutism, menstrual disorders. On the shoulders, chest, on the sides of the abdomen, thighs - purple-cyanotic bands of skin stretching. What type of obesity is most likely?

- A. Hypothalamic
- B. Alimentary and constitutional
- C. Hypoovarian
- D. Hypothyroid

7. Among disorders of the function of the respiratory center, the most common cause of chronic pulmonary heart disease is:

- A. Obesity (Pickwick's syndrome).
- B. Idiopathic alveolar hypoventilation.
- C. Syndrome of night apnea of central origin.
- D. Prolonged stay in the highlands.
- E. The main one is not indicated.

8. The mother of an 8-year-old girl complains about the girl's short height and increased weight. Objectively: obesity with excessive deposition of fat on the body and face (round, moon-shaped face), acne, stretch marks on the thighs, lower abdomen. Hirsutism. An excess of which hormone in a child's body can cause the specified manifestations of the disease?

- A. Cortisol

- B. Thyroxine
- C. Testosterone
- D. Insulin
- E. Glucagon

9. An 18-year-old patient came to the clinic with complaints of weight gain and increased appetite. Objectively: hypersthenic physique, body mass index - 33.2 kg/m², waist circumference - 100 cm. The ratio of waist circumference to hip circumference - 0.95. What is the previous diagnosis?

- A. Alimentary-constitutional obesity, first stage, abdominal type
- B. Hypothalamic obesity according to the Itsenko Cushing type, II century, gynoid type
- C. Alimentary-constitutional obesity, III century, gynoid type
- D. Alimentary-constitutional obesity, II century, abdominal type
- E. Hypothalamic obesity according to the Itsenko-Cushing type, 1st stage, abdominal type

10. An 18-year-old patient came to the clinic with complaints of weight gain, chills, swelling, dry skin, drowsiness, difficulty concentrating. Objectively: height 165 cm, weight 90 kg, female body proportions, body temperature - 35.8°C, heart rate - 58/min., blood pressure - 105/60 mm Hg. Heart tones are weakened, bradycardia. Other internal organs are unchanged. The thyroid gland is not palpable. Hormonal research revealed an increase in the levels of TSH and prolactin, and a decrease in T₄. Which of the reasons led to the formation of obesity?

- A. Primary hypothyroidism
- B. Secondary hypothyroidism
- C. Prolactinoma
- D. Hypopituitarism
- E. Adipose-genital dystrophy

4. Summing up:

- checking and discussing the answers of higher education applicants
- control of the level of professional skills and abilities
- evaluation of each answer, setting of grades
- answer to possible questions
- task for the next class

5. List of recommended literature (main, additional, electronic information resources):

Main:

- 1) Childhood obesity an evidence-based clinical guideline https://www.dec.gov.ua/wp-content/uploads/2022/09/2022_08_29_kn_ozhyrinnya-u-ditej.pdf
- 2) Standards of medical care "obesity in children" https://www.dec.gov.ua/wp-content/uploads/2022/09/40275-dn_1732_24092022_dod.pdf

Additional:

- 1) Obesity and eating disorders: diagnosis, prevention and therapy. Educational and methodological manual. / O.Ye Abaturov, L.M. Yur'eva, V.I. Velychko, T.O. Kryuchko, etc.: edited by O.E. Abaturov and L.M. Yur'eva.-Lviv: T.V. Marchenko, 2021.-268 p.

Electronic information resources:

1)<https://www.cmajopen.ca/content/10/1/E155>

2)<https://www.cdc.gov/nccdphp/dnpao/features/childhood-obesity/index.html>

Practical lesson №15

Topic 8: Treatment of obesity in children.

Goal: To establish general principles of treatment of obese childhood patients.

Basic concepts: General principles and methods of treatment of obesity in children. Medicinal and non-medicinal approaches to the management of obese childhood patients.

Equipment: multimedia projector/laptop, scale, height meter, scale-bioimpedance meter

Plan:

1. Organizational measures (greetings, verification of those present, announcement of the topic, the purpose of the lesson, motivation of applicants to study the topic).
2. Control of the reference level of knowledge (written work, written test, frontal survey, etc.) (if necessary):

—requirements for theoretical readiness of applicants to perform practical classes (knowledge requirements, list of didactic units);
—questions (test tasks, tasks, clinical situations) to check basic knowledge on the subject of the lesson.

Question:

1. General principles of treatment of obese childhood patients
2. Indications for the appointment of drug therapy for children with obesity depending on age
2. Principles of diet therapy and dosed physical activity for obesity in children
3. What drugs are allowed in the treatment of pediatric patients who live with excess body weight or obesity
4. Peculiarities of prescribing the drug liraglutide in the management of pediatric patients who live with excess body weight or obesity
5. Peculiarities of prescribing orlistat in the management of pediatric patients who are overweight or obese
6. Peculiarities of prescribing metformin in the management of pediatric patients who live with excess body weight or obesity
7. Recommendations for changing the lifestyle of children with obesity.
8. Behavioral therapy of obesity in children.
9. General characteristics of drugs approved for the treatment of obese children.
10. Indications for bariatric treatment of obesity in children.

3. Formation of professional skills and abilities (mastery of skills, conducting curation, determining the treatment scheme, conducting laboratory research, etc.):

—content of tasks (tasks, clinical situations, etc.);

Tasks:

Task 1. An 8-year-old girl complains of excess weight, fatigue during physical exertion, increased appetite. She was born with a body weight of 4100, the pregnancy was physiological, the delivery was by caesarean section. Heredity - hypertension, obesity, gallstone disease, type II diabetes. Objectively: correct physique, high nutrition, body weight 45 kg. The distribution of subcutaneous adipose tissue is uniform according to genoid type. The skin is clean, of moderate moisture, without rashes, stretch marks are not detected. Percussion sound on the lungs is clear pulmonary, auscultatory – breathing is vesicular. Borders of the heart: right 0.5 cm outside the right sternal line, left 0.5 cm outside the left midclavicular line, upper - 2 intercostals. The abdomen is soft, painless, the edge of the liver does not protrude from under the costal arch, the spleen does not palpate. Ultrasound - the liver is enlarged due to the right lobe, there are manifestations of perivascular infiltration and isolated hyperechoic inclusions.

Task

- 1) Establish a diagnosis
- 2) Treatment tactics

Problem 2. The girl is 14 years old. Complaints about growth retardation (growth rate after 4 years of life did not exceed 2-3 cm per year). The child from the 2nd pregnancy, which occurred with gestosis of the 2nd half, was born in the pelvic position, labor was prolonged. In the newborn period, there were convulsions, as well as prolonged jaundice. The teeth appeared in 1 year, the large crown closed in 2 years. Parents and 16-year-old older sister of average height. The height of the girl is 108 cm. Excessive development of adipose tissue in the shoulder, chest area. Pulse - 56/min. Blood pressure - 90/60 mm Hg, secondary sexual characteristics are absent.

Task:

- 1) Specify the previous diagnosis
- 2) What is the main cause of the disease?
- 3) Assign additional research methods

—recommendations (instructions) for performing tasks (professional algorithms, orientation maps for the formation of practical skills and abilities, etc.)

No	Main tasks	Instructions	Answers
1	Lifestyle modification in pediatric patients living with obesity	Recommendations for lifestyle changes as the primary approach to childhood obesity treatment.	
2	Caring for obese children.	Risk factors that increase the risk of overweight in a child.	
3	Evaluate the indications and contraindications for medical treatment of obesity.	Give indications and contraindications for medical treatment of obesity. What groups of drugs can be used to treat children	
4	To draw up a program of non-pharmacological treatment of	Give an example of a non-drug treatment program	

	children with obesity.		
5	To draw up a program of medical treatment of childhood patients with obesity.	Give an example of a drug treatment program	
6	To analyze indications and contraindications for bariatric treatment of obese childhood patients.	List indications and contraindications for bariatric treatment	

—Requirements for work results, including to registration: in the case of independent preparation for a practical lesson, an indicative card for a practical lesson is filled out.

Applicants must observe academic integrity, namely:

- independent performance of all types of work, tasks, forms of control provided for by the work program of this educational discipline;
- references to sources of information in case of use of ideas, developments, statements, information;
- compliance with the legislation on copyright and related rights;
- provision of reliable information about the results of one's own educational (scientific) activity, used research methods and sources of information.

—control materials for the final stage of the lesson: tasks, assignments, tests, etc. (if necessary).

Test tasks.

1. When conducting a glucose tolerance test for a 13-year-old child with third-degree obesity, the following was established: fasting blood sugar - 5.4 mmol/l, 1 hour after a carbohydrate load - 10 mmol/l, 2 hours later - 7.8 mmol/l What measures should be taken to normalize carbohydrate metabolism?

- A. Diet, exercise regime
- B. Sugar-lowering collections of herbs
- C. Preparations of the biguanide series
- D. Sulfanilamide drugs
- E. Insulin

2. During the preventive examination of a child suffering from bronchial asthma, an increase in blood pressure up to 140/90 mm Hg was detected. What is the possible cause of arterial hypertension in a child?

- A. Obesity
- B. Theophylline overdose
- C. Chronic lung disease
- D. Coarctation of the aorta
- E. Kidney disease

3. An 18-year-old patient complains of increased appetite, excess weight, shortness of breath during physical exertion. Go ahead slight deposition of fat in the abdomen, shoulder girdle, pale pink skin, male-type body hair, no stretch marks, heart rate - 90/min, blood pressure - 120/80 mm Hg, body

mass index - 35. Blood sugar - 4.9 mmol/l, cholesterol - 6.2 mmol/l. Ophthalmoscopy: fundus without changes. What is the likely diagnosis?

- A. Primary alimentary-constitutional obesity, android type
- B. Primary alimentary-constitutional obesity, gynoid type
- C. Secondary cerebral obesity
- D. Secondary neuro-endocrine obesity
- E. Secondary endocrine-hypoovarian obesity

4. From what age is it allowed to use liraglutide in pediatric patients:

- A. 6
- B. 10
- C. 12
- D. 14
- E. 18

5. From what age is orlistat allowed to be used in pediatric patients:

- A. 6
- B. 10
- C. 12
- D. 14
- E. 18

6. From what age is metformin allowed to be used in pediatric patients:

- A. 6
- B. 10
- C. 12
- D. 14
- E. 18

7. Indications for bariatric treatment of obesity in pediatric patients:

- A. BMI ≥ 40
- B. BMI ≥ 25
- C. BMI ≥ 30
- D. BMI ≥ 20
- E. BMI ≥ 35 without concomitant pathology

8. Concomitant pathology that is an indication for bariatric treatment of obesity in pediatric patients, except:

- A. type 2 diabetes
- B. idiopathic intracranial hypertension
- C. obstructive sleep apnea
- D. non-alcoholic steatosis of the liver
- E. frequent SARS

9. An 18-year-old patient came to the clinic with complaints of weight gain and increased appetite. Objectively: hypersthenic physique, body mass index 30.5 kg/m², waist circumference 98 cm. The ratio of waist circumference to hip circumference is 0.92. What is the previous diagnosis?

- A. Alimentary and constitutional obesity, 1st century, abdominal type
- B. Hypothalamic obesity according to Itsenko-Cushing type, II century, genoid type
- C. Alimentary-constitutional obesity, III century, genoid type

- D. Alimentary and constitutional obesity, II century, abdominal type
- E. Hypothalamic obesity according to Itsenko-Cushing type, 1st century, abdominal type

10. A 17-year-old female patient, who consulted a gastroenterologist for a stomach ulcer, was found to have dysplastic obesity, striae on the abdomen and thighs. Blood pressure -150/100 mm Hg. During the laboratory examination, an elevated level of cortisol and a moderately reduced level of ACTH were revealed. Make a diagnosis:

- A. Zollinger-Ellison syndrome
- B. Itsenko-Cushing's disease
- C. Alimentary obesity
- D. Hypothalamic syndrome with endocrine and metabolic disorders
- E. Itsenko-Cushing syndrome

4. Summing up:

- checking and discussing the answers of higher education applicants
- control of the level of professional skills and abilities
- evaluation of each answer, setting of grades
- answer to possible questions
- task for the next class

5. List of recommended literature (main, additional, electronic information resources):

Main:

- 1) Guideline DUODECIM 00499: evaluation of the obese patient (<https://guidelines.moz.gov.ua/documents/3335>)
- 2) Guideline DUODECIM 00500: treatment of obesity (<https://guidelines.moz.gov.ua/documents/3336>)

Additional:

- 1) CMAJ Canada Obesity in adults: a clinical practice guideline (<https://www.cmaj.ca/content/192/31/E875>)

Electronic information resources:

- 1) Primary care and primary healthcare in obesity management (Canada, 2020) (<https://obesitycanada.ca/wp-content/uploads/2021/05/15-Primary-Care-v6-with-links.pdf>)
- 2) Pharmacotherapy in obesity management (Canada, 2020) (<https://obesitycanada.ca/wp-content/uploads/2021/05/Pharmacotherapy-v6-with-links.pdf>)