	Федеральное государственное бюджетное образовательное учреждение высшего образования «Волгоградский государственный медицинский университет» Министерства здравоохранения Российской Федерации Образовательная программа специальности 31.05.01 Лечебное дело (специалитет)	УЧЕБНО-МЕТОДИЧЕСКИЙ КОМПЛЕКС ДИСЦИПЛИНЫ «ГИГИЕНА»

ТЕМА:
« EVALUATION OF INDIVIDUAL MACRONUTRIENT INTAKES AND ENERGY (part 1,2)»

Methodical recommendations to the lesson
for students in the specialty 31.05.01 "General Medicine"

г. Волгоград, 2020 г.

The motivational description of the theme

Nutritional status is a criterion for determining the quality of human life. Its evaluation enables the doctor to develop individual programs for the integrated prevention of nutrition-related diseases. The study and analysis of the nutritional status involves evaluating actual nutrition (the list of food products consumed; nutrient composition; dietary patterns and conditions) as well as assessing a health condition (nutritional status and nutrition-related morbidity). By correctly adjusting the feeding habits of the patient living in a particular region, the physician can align the quality and quantity of foods consumed with the real needs of the patient's body for the proper nutrient and energy intakes.

The objective: to learn how to calculate the chemical composition and energy value of a diet (by analyzing a menu production record of the daily dietary needs of a medical student).

Students' independent classroom activities

1. Solving case problems.
2. Drawing up a menu production record of the daily dietary needs of the student (according to food intakes).
3. Determining the energy value (kcal) and qualitative composition (proteins, fats, carbohydrates, g) of food products at particular meals and in general during the day using the "table of the chemical composition and energy value of food."
4. Evaluating the actual energy value of the diet per food intake.
5. Presentation and discussion of topics individually assigned by the teacher.

Self-study tasks

1. The biological role of proteins, rationing, sources in the diet.
2. The biological role of fats, rationing, sources in the diet.
3. The biological role of carbohydrates, rationing, sources in the diet.
4. Diet, definition and importance.

Plan of students' independent activities

1. Case problem. The solution of case problems should be reported in writing.
2. Menu production record of the daily ration of a student (fill the table 1)
3. Outline of the energy values of the nutritional ration of the student according to food intake (fill the table 2)

Reference Information

Term descriptions

DIETARY INTAKE (FOOD RATION) is the composition and quantity of food consumed during the day.

DIETARY PATTERN is the number of meals per day (number of intakes), time when meals are taken, the duration of the intervals between meals, the distribution of the daily intake between individual meals.

Table 3

Chemical composition of products

№	Name of a product	Proteins	Fats	Carbohydrates	Kcal
1	*2*	*3*	*4*	*5*	*6*
1. Chemical composition of products used as major sources of proteins					
1.	First rate mutton	16.3	15.3	-	203
2.	Second rate mutton	20.8	9.0	-	164
3.	First rate beef	18.9	12.4	-	187
4.	Second rate beef	20.2	7.0	-	144
5.	Meat-type pork	51.6	33.0	-	199
6.	Fat-type pork	38.7	49.3	-	355
7.	First rate chicken	18.2	18.4	0.7	241
8.	Second rate chicken	20.8	8.8	0.6	165
9.	Chicken egg. first rate	12.7	11.5	0.7	157
10.	Beef liver	17.4	3.1	-	98
11.	Bream	17.1	4.1	-	105
12.	Semi-skimmed curd/cottage cheese	16.7	9.0	1.3	156
13.	Pacific herring (lean)	18.0	7.0	-	153
14.	Pike perch	9.0	0.8	-	83
II. Chemical composition of products used as major sources of fat					
1.	Unsalted butter	0.6	82.5	0.9	748
2.	Butter	1.3	72.5	0.9	661
3.	Milk margarine	0.3	82.3	1.0	746
4.	Purified sunflower oil	-	99.9	-	899
III. Chemical composition of products used as major sources of carbohydrates					
1.	Sand sugar	-	-	80	374
2.	Natural honey	0.8	-	80.3	308
3.	Potato starch	0.1	traces	79.6	299
4.	Tinned rye bread	6.5	1.0	41.2	190
5.	Wheat bread	7.6	0.9	49.7	226
6.	Long loaf	7.9	1.0	51.9	236
7.	Wheat farina	11.3	0.7	70.3	326
8.	Buckwheat	12.6	2.6	63.7	329
9.	Rice	7.0	0.6	73.6	323
10.	Wheat groats	12.0	2.9	64.8	334
11.	Oat flakes	13.1	6.2	59.2	355
12.	Macaroni (first rate)	10.4	0.9	68.5	332
IV. Chemical composition of dairy products					

1.	Pasteurized milk	2.8	3.2	4.7	58
2.	Skimmed milk	3.0	0.05	4.7	31
3.	Condensed milk	7.2	8.5	12.5-43.5	315
4.	Skimmed kefir	3.0	0.05	4.1	30
5.	Rich kefir	2.8	3.2	4.1	59
6.	Acidophilus milk	2.7	3.2	3.8-7.0	84
7.	Sour cream 20%	2.8	20.0	3.2	206
8.	Cake cheese	9.1	23.0	18.5	315
V. Chemical composition of vegetables. fruits. and berries					
1.	Green peas	5.0	0.2	13.3	72
2.	Marrow	0.6	0.3	5.7	27
3.	White cabbage	1.8	-	5.4	28
4.	Potatoes	2.0	0.1	19.7	83
5.	Green onion	1.3	-	4.3	22
6.	Bulb union	1.7	-	9.5	43
7.	Carrot	1.3	0.1	7.0	33
8.	Cucumbers (ground-grown)	0.8	-	3.0	15
9.	Sweet green pepper	1.3	-	4.7	23
10.	Parsley	3.7	-	8.1	45
11.	Dill	2.5	0.5	4.1-4.5	32
12.	Beet	1.7	-	10.8	48
13.	Tomatoes (ground-grown)	0.6	-	4.2	19
14.	Water-melon	0.7	-	9.2	19
15.	Melon	0.6	-	9.6	39
16.	Apricots	0.9	-	10.5	46
17.	Cherries	0.8	-	11.3	49
18.	Pears	0.4	-	10.7	42
19.	Peaches	0.9	-	10.4	44
20.	Plums	0.8	-	9.9	43
21.	Apples	0.4	-	11.3	46
22.	Oranges	0.9	-	8.4	38
23.	Lemons	0.9	-	3.6	31
24.	Grapes	0.4	-	17.5	69
25.	Raspberries	0.8	-	9.0	41
26.	Red currants	0.6	-	8.0	38
VI. Beverages					
1.	Black tea	20.0	-	4.0-6.9	109
2.	Whole bean coffee	13.9	14.3	2.8-4.1	223
3.	Instant coffee	15.0	3.6	7.0	119

Table 4

Mass of product (g) in commonly consumed quantities

Name of product	Tea Spoon	Table Spoon	Glass
Wheat farina	8	25	210
Buckwheat	8	25	210
Rice	8	25	230
Millet	8	25	220
Peas	-	22	230
Sand sugar	8	25	200
Honey	9	30	
Milk	5	18	250
Sour cream	11	25	250
Cottage cheese	5	17	-
Butter	5	17	-
Cherries	-	-	165
Raspberries	-	-	180
Currants	-	-	155
Tomato pulp	8	30	-
Fruit & Veg juices	5	18	250
Jam	20	45	-

Table 5

The mass of most commonly consumed food products (g)

Name of product	Mass of a single unit of the product (g)
Bread products and doughnuts:	
A slice of bread	50
Pone	50
Confectionery:	
Caramel with filling	6
Toffees	7
Marmalade	12
Marshmallows	33
Biscuits and crackers	13
Cookies	35
Pie	75
Milk products:	
Melted cheese	35 и 100
Ice-cream	50. 100. 250
Fruits and Vegetables:	
Potatoes. Cucumbers	100
Onions. Carrots	75
Tomatoes	50-100
Apricots	26

Pears	135
Plums	30
Apples, diameter 7.5 cm	200
Oranges, diameter 7.5 cm	150
Grapefruit	130
Lemons	60
Strawberries	8
Meat products:	
Wieners/French sausages	100
Sausages	50
Chicken eggs:	50