

ФІЗИЧНА КУЛЬТУРА, ФІЗИЧНЕ ВИХОВАННЯ РІЗНИХ ГРУП НАСЕЛЕННЯ

UDC 613

PHYSIO PROPHYLAXIS OF OBESITY AT CHILDREN AND ADOLESCENTS

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Physical activity is any movement of the body that requires the use of our skeletal muscles, which in turn requires energy expenditure. This energy expenditure is basic to weight control. Aerobic exercise prescriptions and recommendations for strength/resistance training must go hand in hand with reduced food intake, and the progression of activity should be gradual, scientifically based, and tailored individually to each person. It is important that the physiotherapist finds the most appropriate activity for the individual, so that they will not only enjoy the activity but also have a greater chance of staying with it.

Keywords: obesity, physiotherapy, children, school.

The reality of the investigation. Obesity is a condition that is characterized through growth of body weight over a standard level through an excessive storage of fatty tissue that reflects the existence of some strong hormonal and metabolic imbalance in a human body.

Obesity is one of the biggest problems that modern society deals with on the world level according to the information offered by world organization of health in 2012, the number of people who suffer from the obesity was doubled and is in a continuous growth.

Obesity can appear in children and teenagers when they have an excess of fat in their bodies that is caused by an excessive use of food and lack of movement. Obese children have more chances to remain obese during their adolescence and they can also have excessive weight when they are adults.

Obesity in childhood and adolescence increases the risk of poor health in maturity indiffer-

ent if the adult is obese or not. That's why it is important to identify obesity at the right time and to make the right actions to remove it before the mature period.

The main factors for obesity are caused by genetics, nutrition culture, the behavior of family members, and social factors.

The goal of the work is to apply in a more effective mode all the methods of physical therapy and physical prophylactic.

The methods of the investigation. The investigation took place in June 2017 in a Sport Club from Chișinău, with three students that are overweight.

The hypothesis: it was presumed that the use of physical therapy methods for the overweight teenage girls will adjust the lipido-glycemic index metabolism decreasing the body weight.

The subject of the study served three overweight girls with of the age of 13-14 years.

The object of the study was aqua-shaping, shaping and anti-cellulite massage applied on an individual level.

The rules of joining the study:

- Signing the agreement for participation in this study by parents.
- The possibility of following and evaluation of the results of the program of promotion of a healthy way of life and health education for students.
- Students between 13-14 years.
- Obesity: BMI > percentile 95 (+2 DS) for gender and age.

The rules for the exclusion

- The secondary obesity: of endocrine, genetic, or neurologic cause.
- The impossibility of managing the kids.
- Parents' or children's refusal to participate in the study.

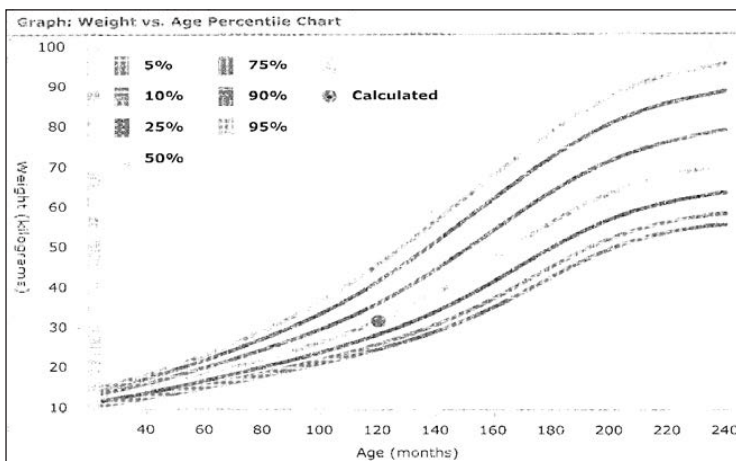


Fig. 1. Body mass index in children, index Quettelet

The methods of the investigation

- Theoretic analysis and generalization of literature facts of speciality.
- Biographic method.
- Method of observation.
- Anthropometric method.

The obesity evaluation for adults is made according to the formula related to the weight of the body (BMI)

$$\text{BMI} = \text{weight (kg)} / \text{height}^2,$$

If the index of body weight is > 30 , we are talking about obesity. If the index of body weight is < 25 – overweight, but this evaluation can not be referred to children. We have some special tables for the calculation of overweight and obesity in children (Fig. 1) [8].

For the resistance test we used the cooper test, but for the effort capacity evaluation we used the test Ruffier – Dickenson. For the evaluation of waist parameters, of thighs and buttocks parameters we measured with the help of centimeter band.

In our concept, movement is extremely important and necessary for harmonious development for the whole body.

Physiotherapy has an important role in optimizing health status and for reaching or maintaining your body's ideal weight.

Physiotherapy intervenes in the treatment of obesity through the elimination of excess tissue, recognized by the fact that physical exercise alongside a proper healthy diet helps every patient with loss of surplus weight.

Obesity can be controlled with the help of a proper physiotherapy program. Physiotherapy is about doing physical exercises realized for each patient individually to help them with the loss of surplus weight.

Objectives given in the study of physiotherapy:

- Weight loss towards an ideal body weight.
- Body toning, especially in abdominal musculature.
- The growth of the body's strength capacity.
- Improvement of physical and psychological state.
- Improvement of respiration and growth of pulmonary ventilation.
- Prevention of gastric and intestinal hypotonia.
- Prevention of other conditions generated from obesity.
- Removal of associated conditions.

The treatment of obesity through physiotherapy can be formatted through a complex of cardio exercise, exercise for the elimination of water and fat from the body and exercise to tone the muscles in deficit areas. It is recommended to begin physical activity with a low intensity, where lipids will burn, but slowly the intensity of physical activities will increase and the carbohydrates will burn. If overweight people don't have the hypertension, then these can do physical activities and shaping [2, 7].

Time spent for the physical exercises should be at least 30 minutes every day for 3 times a week.

Losing weight is a process that is hard to obtain and very difficult to maintain. It is indicated to lose weight gradually, so that the period of losing weight would take 3 months and a period of maintenance of 3 or 6 months, and it is not indicated

a bigger loss of weight than 0.75 kg a week. A big loss of weight in a very short time will not be possible to be maintained and represents a huge effort for the heart. Physiotherapy for people with overweight starts with an introductory part where you can walk, do different types of steps and exercises for general warm-up of locomotor functions and continues with a fundamental part that includes exercise with different objects, breathing exercise, and finally to do relaxation exercise and breathing in an effort to decrease slowly.

The physiotherapy program for overweight can be divided in three stages:

1. The lipolytic stage:

This stage includes exercise of time and increasing intensity the leads to burning fat deposits. The exercises are done in ascending rhythm with breaks included. The exercises include the biggest muscle groups being done from different positions the determine permanent change to center of mass. The structure of the exercises combine isotonic muscle work with isometric; can do exercises of defense and free exercises. In this stage they need follow in parallel body reconstruction. Otherwise, the loss of fat mass in short term causes formation of unsightly wrinkles, crease or folds, because skin remains without support.

2. The musculopoetica stage:

Following muscular development of the back, abdomen, thorax and limbs. This stage includes exercises with big amplitude, done in slow rhythm and with final tension, isometric exercise, analytical exercises from position large area of support running medium duration. The exercises have the role to strengthen muscles to reduce the risk of the appearance of unsightly wrinkles and folds. In this stage even if losses are not very evident, stagnation can be false because the weight of fat lost is smaller than the mass muscle gained.

3. The maintenance stage:

In the stage it is intended to keep the results obtained in the first two stages and prevent the re-appearance of surplus weight. To execute maintenance exercises, exercises on appliances and free air or practice a sport depending on the preference of every person.

This stage is important for maintaining body weight and muscle tone. The physical exercise need to continue for prevention obesity, the sports being beneficial physically and mentally. Effort need to decrease slowly in the stage of maintenance by making room for exercises breathing and relaxing.

Interpretation of obtained result

Treatment and prophylaxis overweight in children and adolescents is a complex process that is planned in time specialists in the field. The means used in physiotherapy and prophylaxis are: medical gymnastics, diet, games of sport with applicable characteristics, hydrotherapy. The proper combination of physical effort with calorie requirements brings weight loss.

In the first stage of testing students are healthy only they have surplus of 8-10 kg from the normal indicators of children's body mass. According to the data from the table of children's body mass, the experiment's participants are found in the interval of 90-95%, which proves to us that the students are in the risk group for obesity. In

investigation the girls are not thankful for their physical appearance and attempts to lose weight with the help of diets were not successful and even added more kilograms.

Executing Ruffier test-the Ruffier Dickenson index that is between 5-10 shows us «good adaptation» to physical effort in adolescents. In the Cooper test participants ran from 1950 until 2200 on average 1966 +/- 32,5 m, the data results show us that overweight adolescents are found in the satisfactory group.

Anthropometric measurement data from the first stage of the experiment, thigh circumference is 101 +/- 0.64 and of the abdomen is 72,3 +/- 1.2 cm.

After finishing a three month recovery program i made final evaluation where body mass indexes had improved. We have this date in table number 1.

Following the final evaluation the waist parameters have gone down on average 6 cm, and thigh circumference went down on average 7.2 cm.

Adolescent participants in the experiment were thankful for obtained results and decided that in the future problem of being overweight will be resolved only with the practice of physical activities and not through drastic diets (Table 1).

Conclusions and recommendations. Results obtained in the experiment show us that physiotherapy program applied to overweight ad-

olescents was directed mostly toward physical activities. In the three month the experiment lasted, it increased the functional state of the body, reduced weight, reduced the measurements of waist and thighs.

In our opinion the most important is the fact that the analytical program met the proposed purpose.

Prophylaxis overweight is a difficult objective to maintain and from this point of view in adolescents recovery parents also need to be involved. Parents need to be an exemple for their children.

Table 1
Initial and final evaluation results

Test points	Initial test X1±m	Final test X2±m	t	P
Body mass index	92,6±2,82	84±1,9	2,6	P<0,01
Body weight	69,3±4,9	59,3±1,2	2	P<0,01
Ruffier – Dickin-son test	5-10 Good adap-tation	0-5 Excellent adaptation		
Cooper, m test	1954±6,4 «satisfacto-ry»	2133±65 «excellent»	28,4	P<0,05
Thigh meas-urement, cm	101,6±0,64	96,6±1,3	3,57	P<0,05
Waist meas-urement, cm	72,3±1,2	66,6±1,4	3,1	P<0,05

References:

- Balint N. T. «Kinetoprofilaxia curs studii de licență». Editura Alma Mater. Bacău. 2010, p. 113.
- Mirza D. «Kinetoprofilaxia primară». Editura Tehnopres. Iași. 2005, p. 10.
- Бубенкова О. М. Восстановительный комплекс упражнений для детей с ожирением. В: «ЛФК и массаж» № 3. 2007. С. 43-45.
- Дубровский В. И. Лечебная физическая культура (кинезитерапия). Москва Гуманит. Издание центр ВЛА-ДОС. 2001. 608 с.
- Епифанов В. А. Лечебная физическая культура и массаж. Москва: ГЭОТАР-Медиа. 2011. 528 с.
- Картелишев А. В., Румянцев А. Г., Смирнова Н. С. Актуальные проблемы ожирения у детей и подростков. Москва: «Медпрактика-М»; 2010 г. 280 с.
- Новикова М. А. Физическое воспитание детей 5-10 лет с избыточной массой тела. Научно-методическое обеспечение физического воспитания, спортивной тренировки и оздоровительной физической культуры: Сб. научн. Тр. Челябинск: УралГафк, 2005. Вып. 8. Ч. 1. С. 65-69.
- <http://www.nutritionistcluj.ro/greutate-normala-copii-curbe-tabel-percentila> (acesat la 20 septembrie).

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КІНЕТОПРОФІЛАКТИКА ОЖИРІННЯ У ДІТЕЙ І ПІДЛІТКІВ

Анотація

Фізична активність – це будь-який рух тіла, яке вимагає використання наших скелетних м'язів, що, в свою чергу, вимагає витрат енергії. Ці витрати енергії є основними для контролю ваги. Аеробні вправи і рекомендації для тренування по силі / опору повинні йти рука об руку зі скороченням споживання їжі, а прогресування діяльності повинно бути поступовим, науково обґрунтованим і індивідуально адаптуватися до кожної людини. Важливо, щоб кінетотерапевт знайшов найбільш підходящу діяльність для індивідуума, щоб вони не тільки насолоджувалися діяльністю, а й мали більше шансів залишитися з нею.

Ключові слова: ожиріння, кінетотерапії, діти, школа.

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Аннотация

Физическая активность – это любое движение тела, которое требует использования наших скелетных мышц, что, в свою очередь, требует затрат энергии. Эти затраты энергии являются основными для контроля веса. Аэробные упражнения и рекомендации для тренировки по силе / сопротивлению должны идти рука об руку с сокращением потребления пищи, а прогрессирование деятельности должно быть постепенным, научно обоснованным и индивидуально адаптироваться к каждому человеку. Важно, чтобы кинетотерапевт нашел наиболее подходящую деятельность для индивидуума, чтобы они не только наслаждались деятельностью, но и имели больше шансов остаться с ней.

Ключевые слова: ожирение, кинетотерапия, дети, школа.