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NUTRITIONAL OBESITY AND REPRODUCTIVE HEALTH OF WOMEN IN THE MODERN ASPECT PHYSICAL REHABILITATION

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Abstract: Statement of the problem, analysis of recent research and publications, connection with scientific and practical tasks. Over the past decades, the incidence of obesity in the population of economically developed countries has increased sharply, which has given the WHO the right to declare it a global epidemic[3,8,9]. The number of obese people in most European countries exceeds 30%, and women are affected 2-3 times more often than men. 40% of people in the UK are overweight. Unfavorable indicators of the incidence of obesity and especially its dynamics were obtained in France, where in general, at least 25% of residents are obese. In Germany, the disease has been detected in almost 50% of the adult population. In Hungary, up to 38% of the population suffers from obesity, in Poland – 31% of women. In the United States, the number of obese patients according to NHANES (National Health and Nutrition Examination Survey) increased from 64.5% (1999–2000) to 66.3% (2003–2004).

Key words: Metabolism, obesity, anovulation, non-infectious diseases, metabolic syndrome, excess weight, morphology.

INTRODUCTION

One of the main reasons for the obesity epidemic around the globe is a decrease in physical activity, which is confirmed by data obtained over the past decades. The scientific and technological revolution has led to the development of a highly mechanized society in which the use of human physical activity is progressively reduced. A forecast analysis recently conducted by WHO experts showed that if nothing is done to correct negative trends in nutrition in recent years, then in 2037 obese people will make up 100% of the population in the United States [1]. In Russia, 30% of people of working age are obese (body mass index (BMI) more than 30 kg/m²) and 25% are overweight (BMI more than 25 kg/m²).

In Ukraine this figure is 45%. According to a WHO obesity committee report, “overweight and obesity are now so widespread that they have a greater impact on public health than traditional public health problems such as starvation and infectious diseases.” This also occurs against the backdrop of the progressive introduction of food products containing refined, high-calorie carbohydrates and a high percentage of easily digestible carbohydrates, which leads to the intake of excess energy into the body[10,11,12]. With a significant increase in body weight, almost all organs and systems suffer, in particular the reproductive function of women [2]. The research was carried out in accordance with the scientific theme “Improvement of health and rehabilitation programs, prevention and correction of dysfunctions that are caused by disorders in various body systems.”

The World Health Organization (WHO) estimates that by 2015, approximately 2.3 billion adults will be overweight and more than 700 million will be obese 2008. The purpose of the study is to study the features of the influence of excess body weight on the reproductive function of women of childbearing age.**Research methods** - theoretical analysis and generalization of special scientific and methodological literature.

Research results and discussion. The development of the female body from birth to maturation and extinction of its functions is usually divided into separate periods, which are characterized

by certain morphological and functional features. In any of these periods, the occurrence of obesity can have an adverse effect on the formation, formation and function of the reproductive system. In order for a woman to have and establish a normal menstrual cycle, and therefore the ability to bear children, a threshold, minimum amount of adipose tissue must accumulate in her body, since it is involved in the regulation of reproductive function. Thus, in obesity, a longer reproductive period is associated with earlier menarche. Some authors consider early age of menarche not only a reproductive factor, but also an independent predictor of an increase in body mass index and various complications of obesity [4]. Obesity is of particular importance for the reproductive health of young women, subsequently being a serious risk factor for infertility, complications of pregnancy and childbirth, perinatal pathology, breast, endometrial, and ovarian cancer.

Since the endocrine system in obesity is characterized by various dysfunctions, which reveal dysfunction of the pituitary gland and peripheral endocrine glands involved in the regulation of metabolic processes. Therefore, a change in the function of the gonads is relatively often observed, which in women is manifested by a violation of the menstrual cycle (its lengthening, amenorrhea or menorrhagia), as well as the presence of symptoms of hyperandrogenism, hirsutism, polycystic ovary syndrome (PCOS), an increase in estrogen levels and a decrease in sex hormone binding globulin in the blood plasma, a decrease in the secretion of prolactin (PRL) in response to various stimulants (thyrotropin-releasing hormone) and an increase in the formation of cortisol[13,14,15,16]. There is a direct correlation between the degree of obesity, menstrual irregularities and hirsutism. It has been established that menstrual irregularities in obese patients are not associated with primary ovarian failure, but are a consequence of altered function of the hypothalamic-pituitary system. [5]. Despite the fact that in most patients the initial concentration of follicle-stimulating hormone (FSH) and luteinizing hormone (LH) in the blood serum is within normal limits, a dynamic study reveals a subnormal increase in the level of FSH in the blood in the preovulatory period, but the integrated secretion of LH is reduced. There is also a slight deficiency of the corpus luteum, manifested by a decrease in the level of progesterone in the blood[17,18]. A woman's reproductive function directly depends on the critical mass of adipose tissue. According to most researchers, menstrual irregularities and the development of neoplasia in young women are secondary and are a consequence of obesity. According to other authors, to restore the cyclicity of menstrual function in obese women, a reduction in body weight of 10–15% is often sufficient. The dysfunctions of the gonadostatic system in obese women are based on changes in the central regulatory mechanisms of ovarian function, adrenal cortex and changes in the metabolism of sex steroids in the periphery, in particular in adipose tissue. The relationship between the amount of fat mass and estrogen content has been identified in a number of studies: it has been proven that upon reaching a certain critical body weight, peripheral conversion from androstenedione to estrone increases, and then, with the participation of the enzyme 17-hydroxysteroid dehydrogenase, to estradiol, primarily in adipose tissue and liver [6]. As a result, the long-term, unopposed influence of estrogens leads to the development of hyperplastic and neoplastic processes of the endometrium in obese patients. According to V.A. Epifanov, the core of the therapeutic effect on the body of an obese patient among all rehabilitation measures in the physical rehabilitation program Obesity and reproductive health of women in the modern aspect is aerobic exercises that develop endurance: dosed walking, running, swimming, aerobic dancing and gymnastics, working on a bicycle ergometer, running treadmill, etc. Aerobic physical training is often combined under the general name “aerobics”. It is this group of exercises, expanding the adaptive capabilities of the cardio-respiratory and central nervous systems, that significantly activates metabolism, thereby increasing energy consumption and ensuring weight loss. In

addition, these exercises help normalize fat and carbohydrate metabolism, reduce total cholesterol, triglycerides and uric acid in plasma, increase the concentration of HDL in plasma, improve glucose tolerance, increase the sensitivity of cells, including muscle cells, to insulin (the most important independent component of aerobic exercise). exercises), expanding the range of intensity of loads in which fat is used as a source of energy, reducing the concentration of catecholamines, increasing the concentration of mitochondria in muscle tissue; increasing the network of capillaries in the area of working muscles, including in the myocardium, improving the contractility of the heart, economizing its work; increasing tolerance to various types of stress - cold, heat, mental, etc., physical and mental performance [7,19].

CONCLUSION.

1. Obesity is a global medical, social and economic problem of modern society, it is one of the most common diseases, poses a serious threat to women of reproductive age and is accompanied by various menstrual cycle disorders associated with disturbances in the production of sex hormones, which inevitably leads to endocrine infertility.
2. This problem deserves attention from endocrinologists, gynecologists-reproductologists, as well as physical rehabilitation specialists.

3. Despite the fact that the principles of obesity therapy have changed significantly in recent years, its effectiveness remains extremely low due to the lack of a systematic approach to solving this problem.

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