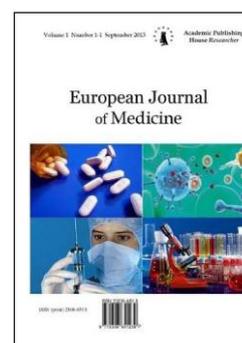


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## The Concept of Preparing Female Students for Pregnancy Management

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### Abstract

In this article topical issues addresses, related to the preparation of pregnant students for pregnancy and the birth of healthy children. The special section «Physical Education for Pregnant Women» is developed and presented in the academic discipline «Physical Education» as «Additional Type of Education» intended for students studying in non-sports specialties in higher educational establishments.

In most cases, in the process of life, all students are faced with the issues of motherhood and fatherhood, bearing healthy children and maintaining the correct lifestyle (lifestyle) during pregnancy. Surprising is the fact that these issues are not discussed in high school at school, they are not considered at the university, and only when a woman is already pregnant, she can attend theoretical classes in medical institutions, practical classes in various health and fitness centers (on a paid basis) or be self-taught and study the necessary material on your own.

In our opinion, it is necessary to approach this period in life more consciously, to prepare your body in advance for bearing and giving birth to a healthy child. Be prepared for physiological changes and hormonal changes that will ensure the correct development of the fetus, as well as prepare for the upcoming delivery.

If a woman in advance will think more seriously about her health and prepare her body for conception, then in the future we will be able to prevent the appearance of many problems and thus get away from the phrase – «A sick child is born from unhealthy parents».

**Keywords:** higher educational establishments, physical education, students, trimesters of pregnancy, physiological changes, health, the curriculum, exercise.

### 1. Introduction

Nowadays, maintaining and strengthening the health of pregnant women is the main vector of the State policy of the Republic of Belarus. According to official figures in our country more than 73 % of women in pregnancy have disabilities, which are reflected in the childbearing function, and in the future also in the state of health of children.

The health of pregnant women, as well as the category of women who are trained in higher educational establishments with the status of «student», deserves close attention, because they fulfill the main task – the birth of healthy children, which means a healthy nation, the future of our state. According to analytical data, the number of pregnant students studying at higher educational establishments increases annually.

The current situation shows that modern youth often lack the main values in life, the so-called new lifestyle has been formed, with accompanying chronic and acquired diseases and bad habits that negatively affects the general health of female students.

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Given the above, we have come to the conclusion that the best response to adverse factors is regular physical education, which in turn helps restore, strengthen and preserve the health of pregnant students.

The purpose of the work is a theoretical and experimental justification for organizing classes in the educational discipline «Physical Education» for pregnant students studying at a higher educational establishment.

## 2. Materials and methods

The research was carried out on the basis of the educational institution «Vitebsk State University named after P.M. Masherov», which was attended by 25 female students studying at the KhGF, BF, FMiIT and IF, aged 20 to 23 years. These students did not have deviations in health and belonged to the main educational department before pregnancy.

Specific pedagogical methods were used as research methods. Namely theoretical and empirical.

## 3. Results

Nowadays, there is no higher educational establishment in the Republic of Belarus which provides for the training of pregnant students for the upcoming birth. Mainly, pregnancy is carried out by doctors, who often take necessary tests and prescribe a certain list of medicines and vitamins. There are pre-pregnancy rooms that do not reflect a complete picture of the course of pregnancy and the outcome of childbirth in individual women's clinics.

Currently, pregnant students, studying at a higher educational establishment in non-sports specialties have a choice: to undergo a course of special training for childbirth in medical institutions or private fitness organizations. But the specifics of this training have not been improved enough, because women's consultations at clinics, in schools for pregnant women, only theoretical classes are held in the amount of 4 hours monthly, without practical material. In private sports and recreation organizations, practical classes are held in an amount of 2 times a week for a duration of 30 minutes, only for persons who do not have a deviation in their state of health and associated chronic diseases. Classes are practical and conducted on a paid basis.

Today, there are no pregnancy programs specially designed for each woman (student) for nine months, taking into account individual characteristics, chronic diseases, professional activities and age.

We analyzed the work of the UVO in the educational discipline «Physical Culture», studied regulatory documents, analyzed the activities of medical institutions and private fitness organizations for pregnant women. In that way, we approached the question: why UVO can train good specialists, open new specialties, provide practical bases where students can consolidate their knowledge. But unfortunately, UVO does not provide for the preparation of pregnant students in the educational discipline «Physical Education» for the informed correct management of pregnancy, the birth of healthy children and the care of newborns. It turns out that one of the important stages in any woman's life is fixed at the level of instinct. Which in our view is a crucial moment in the life of any woman.

Working in the educational system in the field of physical education, we were looking for ways to solve this issue. Studying opinions of a number of scientists ([Balsevich, 2005](#); [Lubysheva, 2004](#); [Stolyarov, 2012](#)), we found out that the modern system of this pedagogical activity is not effective enough and needs modernization. Almost in all countries there is critical position of modern physical education, especially in educational establishments. The view is expressed that many physical educational curriculum are in deep crisis ([Hardman, 2011](#)).

In this regard, the problem of modernizing the modern system of physical education is urgent.

Yu.M. Nikolaev (2012) argued that – «We have come to the milestone when the choice of a strategy for the development of physical culture and physical education is important. And this choice will depend on the real progress in these critical areas of society and the individual, in general, the prestige of the sphere of physical culture» ([Nikolaev, 2012](#)).

The educational discipline «Physical Culture» in a higher education institution should reflect activities in the field of quality policy of general physical education, namely: update the content of the discipline, improve the effectiveness of physical education teaching in the context of the

implementation of the program for the health saving of students, use individual approaches in training and the formation of vocational competencies of a graduate (Koleda, 2017).

The purpose of the «Physical Culture» discipline in higher education is to develop the social and personal competencies of students, ensuring the targeted use of appropriate means of physical culture and sports for the preservation, promotion of health and preparation for professional activity.

Since human life and health are the main values, education is subordinate to the idea of enriching these values (Polyakova, 2012).

#### 4. Discussion

In view of the above, there is a need to improve the educational process in the educational discipline «Physical Culture» in the institution of higher education and to create all conditions for the successful course of pregnancy, childbirth, the birth of healthy children and the care of newborns. The solution to this issue lies in the introduction of an innovative form of organizing classes in the educational discipline «Physical culture» for students with various trimesters of pregnancy, studying in non-sports specialties as «Additional type of training» under the special section «Physical culture during pregnancy». This innovation allows you to prepare the body of the future mother for childbirth, and get the necessary level of theoretical knowledge.

The introduction of the specially developed section «Physical culture during pregnancy» for pregnant students was carried out on the basis of the educational institution «Vitebsk State University named after P.M. Masherov» in the period from 2015 to 2018.

Offering an innovative form of organizing classes for pregnant students studying at a higher education institution should first of all take into account the main changes that occur in the body of students during pregnancy.

With the onset of pregnancy in the body of female students, certain changes occur in the body systems, such as: cardiovascular, respiratory, nervous, hormonal, digestive, musculoskeletal system.

Let's take a closer look at the changes in the presented systems.

In the cardiovascular system, an increase in vascular tone is noted, due to which, by the end of pregnancy, a pulse increase of approximately 10 beats per minute. The minute volume of blood also changes with a gradual increase to a maximum by the 25th-32nd week, and then it remains at a high level and decreases before childbirth. By the end of pregnancy, the increase in minute volume is about 40-45 %. The total mass of circulating blood also increases. This is due to the development of utero-placental circulation. Late toxicosis of pregnant women may also be associated with dilation of the venous knee in capillaries, resulting in slowing blood flow.

In the respiratory system, changes occur from the first weeks of pregnancy. The minute volume of breathing increases and remains at a fairly high level. The frequency of breathing does not change. Before childbirth, the diaphragm rises by 4 cm. Changes in the thorax occur. The vertical size of the chest decreases, but its circumference increases. There are no significant changes in the life capacity of lungs.

In the nervous system, cyclic changes in nervous processes occur. In the first trimester of pregnancy, excitation processes dominate, which from the middle of the second trimester are replaced by inhibition. 75 % of pregnant students have psychoemotional changes. At the beginning of pregnancy, the taste changes, drowsiness, plaquity and irritability appear. At the end of pregnancy, a depressive state appears, turning into anxiety for the outcome of childbirth.

The hormone system is also subject to changes. Sex hormones progesterone and estrogen increase approximately 100-fold. The function of the endocrine glands also changes. The thyroid gland also increases.

In the digestive system, pressure in the abdomen mainly increases. The functioning of the liver, which synthesizes a large amount of protein, is enhanced. With an increase in the fetus, the stomach acquires a horizontal position. Heartburn appears.

The musculoskeletal system is subject to changes, which is reflected in the softening of the ligament apparatus of the pelvic joints. The placenta and yellow body release the hormone relaxin, which increases the stretchability of the ligaments (pubic symphysis, sacroiliac and coccyx joints). Physiological expansion of pubic symphysis is within 1.5-7 mm. In addition, it loosens, thereby increasing mobility. After childbirth, this process is characterized by reverse development. With an

increase in fetal weight and body weight of the pregnant woman, a shift in the general center of gravity occurs, lumbar lordosis increases.

The main part of the classes uses special exercises. In the preparatory and final parts general developmental exercises are used. Classes must be held 3 times a week. In a well-ventilated room with an air temperature about 18–20 °C. During the visit of classes, pregnant female students should wear loose clothing that does not restrict movement. The duration of classes initially increases from 15 to 40 minutes, and then in the third trimester should be no more than 25 minutes. On the lessons, it is necessary to use a differentiated approach to the dosage of physical activity and the nature of the exercises used. The differentiated approach is used taking into account the physical fitness of pregnant female students. Special care must be taken during the first trimester of pregnancy, on the days of menstruation and at the end of the third trimester of pregnancy. The size of the group can be from 8 to 12 people. It is advisable to conduct special classes with musical accompaniment. On the, exercises are used both with objects, and without them. You can use different starting positions, but preferably – lying on your back, on your side, standing on all fours (Venskovich, 2015).

In the first trimester of pregnancy, physical culture has a general health-improving effect on the body of students, the skills of correct diaphragmatic breathing are mastered. Gradually the cardiovascular system adapts to physical activity. Taking into account increased excitability of CNS simple exercises are used that cover large muscle groups. Exercises are performed at a slow and medium pace. Students in the first trimester of pregnancy master the relaxation technique. Relaxation exercises are performed from a starting position, lying on the left side. It is considered that this position improves the relaxation of the muscles of the lower back and small pelvis (Venskovich, 2015).

In the second trimester of pregnancy, an intensive increase in the body weight of a pregnant student takes place, the general center of body weight shifts, and the location of the fundus of the uterus changes. The fundus of the uterus is at the level of the navel. In the second half of this trimester, due to a strong increase in the uterus (the bottom of the uterus is located between the xiphoid process and the navel), the mobility of the diaphragm is significantly limited, blood and lymph circulation is hampered, which is accompanied by edema of the lower extremities. There is a risk of varicose veins. Pain in the lumbar region may appear (Venskovich, 2015).

In the second trimester of pregnancy, physical education helps to strengthen the abdominal muscles, strengthen the muscles of the perineum and make them more elastic, increase the mobility of the spine, sacroiliac joints. In this period, breathing exercises are introduced with holding the breath while inhaling. It is not recommended to use the exercises in the initial prone position. Exercises for the first trimester of pregnancy are also used. Exercises are used to reduce back pain. In this way, after childbirth, well-developed muscles contract faster and prevent sagging of the abdomen and prolapse of the abdominal organs. All kinds of tilts and turns of the body, alternate flexion and extension of the lower extremities are used. Exercises for tension and relaxation of the gluteal muscles are used while the anus is pulled in. The implementation of such exercises is aimed primarily at facilitating the labor act. Exercises are used in a standing position on all fours, knee-elbow stand – abduction and adduction of straight and bent legs, flexion and extension, arching and arching of the back, lunges, half-squats with one leg resting on a gymnastic wall. Much attention is paid to corrective exercises for the feet, for the prevention of flat feet. Rides of a gymnastic stick, raising and lowering small objects from the initial sitting position are used. In the second half of this trimester, to combat edema, 50 % of the exercises are performed from the starting position, lying or sitting with the lower limbs raised. They use flexion and extension of the feet, alternately pulling the knees to the stomach (Venskovich, 2015).

In the third trimester of pregnancy, the use of physical culture helps to eliminate congestion in the small pelvis and lower extremities. Thanks to this, the achieved level of physical activity is maintained, the motor skills necessary for childbirth are developed. At this time, further difficulties in the function of external respiration, blood circulation, digestion, and venous congestion are noted. The fundus of the uterus is located at the costal arch, the range of motion in the joints of the lower extremities is limited. By the end of the third trimester, the uterus descends, facilitating the activity of the cardiovascular and respiratory systems. 90 % of physical exercises should be used from a sitting and lying position. 4 weeks before giving birth, students learn to push correctly: lying on their backs, knees bent, hands on knees, chin lowered to chest. When performing this exercise, you

must take a deep breath, hold your breath and push as with a hard chair. Skills in this exercise will make the pushing activity easier. In this way, having fulfilled all the recommendations, pregnant female students successfully prepare themselves for the upcoming birth (Venskovich, 2015).

## 5. Conclusion

Considering the above, we have come to the conclusion that in most cases, in the process of life, all students are faced with the issues of motherhood and fatherhood, bearing healthy children and maintaining the correct lifestyle (way of life) during pregnancy. Surprising is the fact that these issues are not discussed in high school at school, they are not considered at the university, and only when woman is already pregnant, she can attend theoretical classes in medical institutions, practical classes in various health and fitness centers (on a paid basis) or be self-taught and study the necessary material on your own.

Having conducted pedagogical research for a rather long period of time, we came to the conclusion that the special section «Physical culture during pregnancy» developed earlier by us is insufficient and requires further improvement.

In our opinion, it is necessary to approach this period in life more consciously, to prepare in advance the organism of students for bearing and giving birth to a healthy child. To prepare female students for physiological changes and hormonal changes, which will ensure the correct development of the fetus, as well as preparation for the upcoming delivery.

If a woman in advance will think more seriously about her health and prepare her body for conception, then in the future we will be able to prevent the appearance of many problems and in this way get away from the phrase – «A sick child is born from unhealthy parents».

Therefore, preparation for pregnancy is not only a mass of examinations and the appointment of vitamins. It is also an understanding of the importance of all the processes that take place at the time of conception and bearing a child.

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