



## **DEFINITION OF A RATIONAL DIET WOMAN'S NUTRITION DURING PREGNANCY**

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### **Abstract:**

The issues of determining a rational diet for pregnant women are considered, i.e. vitamins that ensure the uniform development of the fetus to the genus. A calculation was made of the daily requirement of pregnant women for the main nutrients: proteins, fats and carbohydrates. Norms of physiological requirements for energy and nutrients for women have been developed. An analysis was made of the dynamics of fetal development, taking into account the saturation of nutrients and vitamins in food. Investigated about the main factors affecting the development of the fetus; The main types of nutrients in products that provide a rational diet for pregnant women have been identified.

**Keywords:** rational nutrition, vitamins during pregnancy, diet, trimester of pregnancy iron deficiency anemia, food allergy, physical activity coefficient.

### **INTRODUCTION**

Most of the people of our planet are not yet aware of the importance of food calories, and the importance of the share of food that they consume daily. In a civilized society, interest in healthy eating has recently increased, especially in a pandemic. One of the reasons for such an interest in food is that people get sick due to malnutrition, i.e. have diseases associated with the products they consume, their quantity and quality. But what is even worse is that malnutrition in the long term affects the offspring. This is especially true for pregnant women, she must eat right so that her unborn child is born healthy[1-2].

Therefore, the problem of malnutrition of a pregnant woman is relevant all over the world. Many women do not eat properly, which leads to various diseases themselves, and then their unborn child.

Nutrition is the traditional medicine of the future. The production of biologically active additives, the adjustment of the human diet in the face of the emergence of new food products - these are just a few of the prospects for this specialty.

As a rule, the rational nutrition of a pregnant and lactating woman is a necessary condition for ensuring the health of the unborn child, the resistance of his body to the action of infections and other adverse factors, and the ability to learn at all ages. Deficiency of micronutrients in the diet of a pregnant and lactating woman is one of the important causes of

the occurrence of nutritionally dependent conditions in an unborn child, which can include: in young children - iron deficiency anemia, food allergies, rickets, malnutrition [1].

In women, pregnancy is a special condition, which, of course, has its own specific needs and distinctive features. Proper nutrition is considered extremely important not only for the female body, which is experiencing a double load during this period, but also for the full development of the baby gestated in the womb.

Compliance with the correct diet allows you not to gain extra pounds in 9 months of waiting for the crumbs, but to keep weight gain within the recommended 10-15 kilograms. This, in turn, will certainly affect the positive mood of the expectant mother and she will recover faster and not worry about her appearance after childbirth. The diet of pregnant women should be foods containing proteins, fats and carbohydrates[2-3].

Excessive consumption of any of the above elements from the diet can lead to health problems. So, lack of proteins increases the risk of miscarriage, the occurrence of iron deficiency anemia. Lack of fat in the diet can adversely affect the child's weight and development. Excessive consumption of carbohydrates threatens to increase the risk of intrauterine death of the fetus, and their lack - a delay in the development of the embryo.



Meeting the increased need for vitamins is very important. The food consumed must necessarily contain the required amount of vitamins of all groups, as well as folic acid, iodine, iron, calcium, potassium, magnesium, etc. Compliance with a constant balanced diet throughout the entire period of pregnancy and planning for its onset will allow you to give birth to a healthy baby [2].

In the first trimester of pregnancy, a woman's diet does not differ significantly from her menu before pregnancy, the tastes of a pregnant woman can only change. However, one must begin to adhere to the basic principles of proper nutrition in order to avoid toxicosis, vomiting and lay the foundation for the proper development of the embryo.

It is desirable to include green salads with vegetable oil and sea fish in the diet menu daily. It is important to start taking folic acid, iodine and vitamin E preparations throughout the entire period of pregnancy[5-8].

Due to the increased work of the liver and kidneys, it is advisable for a pregnant woman at the very beginning of pregnancy to significantly limit the amount of spicy foods and spices such as pepper, mustard, and vinegar in the diet. In order to reduce the load on the liver, it is advisable to replace fried and fatty foods with boiled and stewed ones, as well as limit the use of butter, high-fat sour cream, cream, and vegetable oil. It is recommended to use low-fat cottage cheese.

Along with vegetables and fruits, it is recommended to eat wholemeal bread, as it contains fiber and B vitamins. Particular attention in the diet of a pregnant woman should be paid to table salt. It plays an important role in water exchange. Excessive consumption of it contributes to the development of edema and supports inflammatory processes. The usual daily intake of salt is 12-15 g. In the 1st trimester of pregnancy, it is already possible to recommend a restriction in the diet of pickles and smoked meats [3].

Pregnant women should completely eliminate coffee from their diet, even if it was the woman's favorite drink before pregnancy. A pregnant woman who drinks at least 3-4 cups of black coffee a day is more likely to give birth to a premature baby with a small birth weight. Substances contained in tea and coffee (caffeine and tannin) can dilate blood vessels, which will lead to increased pressure. A long-term study has shown that there is a definite link between caffeine use and certain birth defects in babies. Drinking a lot of coffee in the middle of pregnancy can even lead to a miscarriage, as it constricts blood

vessels, which leads to an oxygen starvation of the fetus.

During pregnancy, a woman's body must receive enough iron to prevent anemia in the mother and fetus, as well as stock up on iron during breastfeeding (this is the only and very important source of iron for the newborn). To do this, often include buckwheat and nuts in your diet[2-4].

In the second trimester of pregnancy, the diet of a pregnant woman should be moderate in carbohydrates, since excessive consumption of them can lead to excessive weight gain. You should avoid excessive consumption of foods that contain a lot of cholesterol and impede the functioning of the liver. If the expectant mother cannot refuse scrambled eggs and chopped egg salads, it is better to use only protein.

From the 2nd trimester of pregnancy, it is advisable to exclude pickles from the diet, limit fat intake and moderately add salt to food. Very important: from the 2nd trimester, limit potential allergens in the menu (citrus fruits, strawberries, exotic fruits, etc.) so that the child is not born allergic [4].

In order to ensure the body's need for calcium, dairy products are daily included in the menu: milk, kefir, low-fat cottage cheese, cheese. Otherwise, calcium will be washed out of the bones and teeth of the pregnant woman, and the child will develop a tendency to fractures. Be sure to start taking calcium supplements (a child, unlike an adult, also absorbs inorganic calcium). And do not eat chalk, in addition to calcium, it contains a lot of substances harmful to you and the child, besides, in most cases this leads to the deposition of calcifications in the umbilical cord and difficulty in feeding the fetus.

It is advisable to spend an apple (1 kg of green apples per day) or kefir (1 kg of cottage cheese or kefir) fasting day once a week. You should get used to drinking less liquid, this will be needed in the third trimester. Dietary recommendations in the third trimester of pregnancy are the toughest. Firstly, in order to avoid late toxicosis of pregnant women and, as a result, edema, the amount of liquid should be limited to 1 liter (including soups and fruits). The amount of fluid in and out of the body should be measured daily, the difference should be no more than 200 ml. By limiting salt, it is possible to free the tissues from excess fluid and thereby enhance their metabolism and their function. In the last two months of pregnancy, the amount of table salt should not exceed 5 g per day. If you have fluid retention or swelling, see a doctor immediately!



During this period, it is not recommended to eat meat and fish broths, especially concentrated ones, as well as meat sauces, as they disrupt the liver, which is already working with a load. It is better to prepare vegetarian soups, dairy sauces, meat and fish to be consumed boiled, or baked. Limit the use of mushroom broths [5].

Of animal fats, it is best to use only butter, and exclude all others (beef, pork, mutton fat or lard) from the diet. Cooking should be in vegetable oil, it has more vitamins and a sufficient amount of nutrients. Then arrange unloading kefir and apple days 1-2 times a week. In the last month of pregnancy, you should limit the intake of easily digestible carbohydrates: sugar, honey, jam, etc., refuse flour products and fatty foods - this will prepare the fetus for childbirth, reduce the fat mass of the fetus for easier passage through the birth canal.

At the same time, the opening of the birth canal occurs much faster, the abdominal press works more intensively, in connection with this, the birth act is accelerated and to a certain extent anesthetized [6].

The question of acceptable weight gain during pregnancy worries everyone. During the entire pregnancy, for 40 weeks, the total weight gain should be on average in the range of 9.5 to 12.5 kg. At the same time, in the first 20 weeks of pregnancy, the weight gain should be about 2.5 kg per 500 g. per month. And in the second half of pregnancy, over the next 20 weeks, weight gain can be 10 kg at the rate of 500 g per week. The maximum weight gain for the entire pregnancy should not exceed 10-12 kg. This includes: baby weight - 3 kg, uterus weight - 1 kg, placenta - 0.5 kg, amniotic fluid - 0.5 kg, increased blood volume - 1 kg, subcutaneous fat - 1 kg. That is, for the entire pregnancy, the woman herself can add up to 6 kg [7].

Before pregnancy, if you had the habit of overeating or, conversely, eating inadequately, then after learning that you would become a mother, you should reconsider your views on your own diet. But word of mouth still continues to spread a lot of myths and silly stereotypes about the nutrition of the expectant mother. And so that the advice of your girlfriends does not mislead you, we will find out the main rules that a pregnant woman should follow.

Gynecologists always pay special attention to the level of hemoglobin in the blood of pregnant women. And if the indicator is below the norm, then the intake of multivitamin complexes and iron-containing preparations is immediately prescribed. But recently, British doctors have proven that during pregnancy, the ability of a woman's body to absorb

iron from food increases several times. Thus, additional intake of iron-based drugs can only harm the expectant mother and baby. British doctors recommend not to abuse iron therapy, and anemia (which manifests itself in the form of low hemoglobin in the blood) is treated in a simple and effective way - daily walks in the fresh air.

What danger can an excess of iron pose to the body? First, lead to pathological changes in erythrocytes (increase in size). Secondly, to disorders and disturbances in the normal functioning of the gastrointestinal tract[11]: diarrhea, flatulence, nausea, poor appetite, poor absorption of zinc. By the way, these are common symptoms that accompany pregnant women when taking iron-containing drugs [8].

If iron deficiency anemia was clearly established in a pregnant woman, then for a start it is worth trying to make up for the lack of this element in the body with the help of foods rich in iron. These include pomegranates, dried apricots, apricots, prunes[4], sesame seeds[6], beets, lentils, walnuts and other products. One of the well-known and proven folk remedies is fresh carrot and beetroot. It is important to follow the recommendations of doctors to stop drinking coffee - because it prevents the absorption of iron in the body[5-6].

The role of vitamins is enormous, and their content in the body of a pregnant woman is especially significant. Vitamins are necessary for the development of the fetus, many of them help fight infectious diseases, increase the immunity of the pregnant woman and protect the child, some contribute to the renewal of blood in the woman's body, which protects her from anemia and allows the body of the unborn child to fully form.

Vitamins are found in so many foods. So, vitamin A is present in butter, milk, egg yolk, beef and fish fat, liver, but it is not enough in lard. Many vegetables, such as spinach, lettuce, cabbage, tomatoes, carrots, as well as rye, wheat, etc., contain a special substance - carotene, which helps to form vitamin A in the human body.

There is a lot of vitamin B in brewer's yeast, rye bread, carrots, spinach, beans, peas, cabbage; oranges, apples, milk, eggs, liver, etc[6-8]. Vitamin C is found in large quantities in fresh cabbage, tomatoes, lemons, blackcurrants, strawberries, rose hips, green onions, oranges and other vegetables and berries. Vitamin D is rich in fish oil, egg yolk, caviar, and vitamin E - sprouted wheat, lettuce, egg yolk and others. As you can see, many substances and vitamins that are useful for pregnant women are found



precisely in those products that most people consume daily in regular food. Therefore, you should not think that during pregnancy you need to completely drastically change your usual diet [7-9].

There is a direct link between proper nutrition and health at any age, in any period of our lives, and especially during pregnancy. The health and nutritional status of a woman before and during pregnancy is very important and affects the development of the fetus. The physiological changes that occur in the body of a pregnant woman require a correct and balanced intake of nutrients and energy[9].

It is clear that proper nutrition during pregnancy reduces the risk of gestational diabetes, morning sickness and high blood pressure, and may also prevent excessive weight gain. In addition, since the nutrition of the child depends on the nutrition of the mother, the nutrition of the mother during pregnancy is very important. From this it follows that the nutrition of the mother during pregnancy is important both for her health and for the proper development of the fetus in her womb.

It should be noted that during pregnancy, the need for nutrients increases, and a pregnant woman needs 350-440 additional calories. The main principles of sensible nutrition: regular meals with a variety of foods containing all food groups, more frequent than usual during pregnancy. It is desirable that additional calories come from all food groups - carbohydrates, proteins, fats, vegetables and fruits. The slogan "eat for two" can only be realized by slightly increasing each meal, as detailed below. A reasonable daily menu (also before pregnancy) is important for the health of the woman and for the health of the baby. The menu before and during pregnancy should include all the main groups of elements, including vitamins and minerals, necessary for the baby and its normal development

Norms of physiological needs for energy and nutrients for women [1, 9, 10].

Table 1.

Labor group	Age groups (years)	Energy, kcal	Proteins, g			Fats, g		Carbohydrates, g	
			Total	including animals	% of kcal	Total	% of kcal	Total	% of kcal

1	18-29	2000	61	30.5	12	67	thirty	289	50
2	30-39	1900	59	29.5		63		274	
3	40-59	1800	58	29		60		257	

The coefficient of physical activity (CFA) is the ratio of daily energy consumption to the value of basal metabolism. This coefficient is determined by the types of activities that a person performs per day, and the duration - of these kinds of activity.

Table 2 shows CFA values for men and women, depending on the labor intensity group[4-5].

table 2

Labor Intensity Group	CFA
	Women
I	1.4
II	1.6
III	1.9
IV	2.2
V	-

The CFA value corresponding to a certain professional group is used, for example, to calculate the daily energy consumption of the human body. To do this, you need to multiply the known CFA value by the basal metabolic rate, taking into account the sex, age and body weight of a person. And according to the calculation of daily energy consumption, it is possible to calculate the daily need for basic nutrients: proteins, fats and carbohydrates[11].

The article considers the nutrition of a pregnant woman based on 3 women aged 19 to 25 years. After looking at their lifestyle and diet, they came to the conclusion that the content of proteins, fats and carbohydrates in their diet is very different from normal. Proper nutrition during pregnancy protects the mother and baby from food deficiencies and protects the mother from damage to organs such as the liver and kidneys. Appropriate nutrition ensures not only the proper development and maturation of the fetus, but also complex physiological changes in the mother's body, which require their own provision[12-14]. It should be remembered that during pregnancy, the demand of a woman's body for a number of nutritional ingredients increases. The needs of the female body during the first period of pregnancy increase by an average of about 100 calories per day. Starting from the fifth month of pregnancy, the body needs a 10% supplement to the normal diet, and in the last two months, a 20% supplement. Therefore,



the nutrition of a pregnant woman should be designed, first of all, to cover the increased needs for all the main ingredients. It should be sufficient, and food should be taken evenly throughout the day, adhering to the appointed hours [10].

For example, if the total weight gain for the entire period of pregnancy is an average of 12 kg, then 8 kg of it is the weight of the fetus and neoplasms (blood, fluid, etc.). The remaining 4 kg of weight constitute the "maternal reserve" or supply of nutrients that are necessary for the postpartum period and ensuring the feeding of the child. Intensive processes occurring during pregnancy require additional supply of nutrients and energy.

The need for protein in the daily diet of a woman in the second half of pregnancy is 110-130 g. The daily diet should include lean meats up to 130-200 g per day or fish - 150-200 g per day. Of the products that a pregnant woman should receive daily, milk and sour-milk products - kefir, yogurt, fermented baked milk, etc. should be in the first place. They are included in the diet both as protein sources and as the main suppliers of calcium and phosphorus salts. The amount of fat should be brought up to 80-100 g per day. It is advisable to replace part of the butter with sour cream. Be sure to use vegetable oil. The daily amount of carbohydrates is limited to 400-500 g and it is not advisable to allow excessive consumption.

Vegetables and fruits are an important part of a pregnant woman's diet. In the daily menu, preference should be given to green and yellow vegetables (tomatoes, carrots, pumpkin, lettuce, cabbage, parsley). The daily norm of vegetables should be at least 500 g[13-14]. Of fruits and berries, the most valuable are black and red currants, strawberries, raspberries. In winter, fresh fruits can be replaced with canned fruits, juices, frozen fruits, supplemented with fresh apples and citrus fruits - lemons, oranges, tangerines. Vegetables and fruits not only add variety to the diet, but also constitute a valuable source of vitamins and minerals. In addition, they normalize the processes of digestion. Part of the vegetables needed in the daily diet should be used raw.

A special problem in the nutrition of a pregnant woman is the provision of iron. The daily requirement for iron reaches 15-20 mg. In order to provide such an amount, it is necessary to regularly use dishes from the liver, egg yolk, buckwheat and oatmeal, fresh apples[4-7].

At the end of the second half of pregnancy, edema repeatedly appears. This suggests that you need to limit the amount of salty foods[5-6], and salt -

up to 5-7 g per day. You should refrain from those foods and dishes that have ever caused allergic reactions or skin rashes. Limit the number of foods that cause bloating (legumes, cabbage, black bread). Alcoholic drinks are excluded. In addition, pregnant women should avoid pickled foods, hot spices, strong meat broths, coffee, and tea, which can irritate congested kidneys [10-11].

With the development of toxicosis, it is advisable to carry out curd - milk days. The diet of such a day may consist of 400 g of cottage cheese and 100 g of sour cream with sugar or 1 liter of milk with cottage cheese; all this is divided into 5-6 servings. Dairy products in this set replace meat and fish[16]. Vegetables and fruits should be preserved in the dairy diet. In order for the nutrition of a pregnant woman to fully cover the needs of the body in the components of nutrition, the menu should be varied, the range of food products should be as wide as possible.

## CONCLUSION

The problems of rational nutrition of pregnant women in the modern world occupy their niche in the list of issues of general health of the population. Insufficient and unbalanced nutrition causes a number of deviations in the development of the fetus, the born child, as well as the mother. It is possible to avoid vices and poor health through the use of specialized foods for the nutrition of pregnant women.

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