



Differentiated Dietary Nutrition in the Process of Prenatal Fetus Development

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Received 22nd Apr 2022,
Accepted 23rd May 2022,
Online 30th Jun 2022

Annotation: In the article discussed a nutritionally differentiated maternal nutrition during prenatal development of the fetus, the nutrients of various food products, as well as the most important factors affecting the pregnancy and the physiological state of pregnant women.

Keywords: fetus, dietary nutrition, food products, vitamins, nutrients.

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Women nutrition during pregnancy determines her own health as well as the full development and future health of the child. The mother's body during pregnancy is the only source of vitamins in the diet, and other nutrients for the fetus.

Diet during pregnancy significantly differs from the usual diet, as its main objective is not to harm the health of unborn baby. Any woman, having learned about the pregnancy, preparing overweight, should observe a special diet for women during pregnancy.

With regard to standards, then according to various sources is considered normal weight gain of 12 to 20 kilograms for the whole period of pregnancy. It all depends on the physical form of the women before pregnancy.

For example, if the expectant mother prior to his "interesting" situation was too thin, then during pregnancy, she can collect the missing to their norms weight plus the weight of normal pregnancy. If the expectant mother had extra weight before pregnancy and during her pregnancy she is rapidly gaining weight, your doctor may suggest a certain diet. As you can see, everything is relative. In the early stages of pregnancy, the baby organs begin to form. Therefore, by limiting themselves in some products, you can deprive the baby of certain vitamins. And they need to baby now, just need not.

The diet of a pregnant woman is to eliminate from the diet of pickles, fatty and salty foods, no fast food, fried foods also need to limit or exclude. In general, the food should be varied and healthy, that is, of course, natural.

It is recommended to eat more vegetables, fruits, but the ice cream, bakery and confectionery products should be discarded from the first weeks of her pregnancy. Uses of such products is not so much, but the weight gain is significant. Proteins are the building blocks of a living organism material on this in the early stages to eat foods rich in protein: meat, legumes, dairy products, rice, corn, nuts, eggs and many other similar products. For normal fetal development is necessary to gain weight properly during pregnancy.

It is advisable to try the first few weeks to get used to the dishes, steamed, this is how you keep the products in more vitamins and eliminate from the diet of fatty food.

In the third trimester there is rapid growth of the child, that is, the baby is gaining weight and getting ready to leave. He also stored a certain "fat." All this is necessary in order to provide the body with energy for the upcoming birth. In the second half of pregnancy, expectant mothers, obstetricians are advised to eat foods rich in calcium. This vitamin is important for the formation of bone of the baby, the nervous, the cardiovascular system, as a basis for future child's teeth.

If calcium is not enough, the future mom may experience problems with their teeth. Usually, but food should be added to food special vitamins that contain extra calcium.

Last month pregnant before giving birth, it is desirable to give up meat products. This is due to the fact that meat products and adversely affect the elasticity of the vaginal tissue. Removing meat from your menu, you better get ready to leave, and it also helps you to avoid tearing during childbirth.

If you follow the diet during pregnancy you choose together, and watch out for the addition of your weight, then to leave your baby will weigh about 3 kg. And this is an excellent result for the mother and for the baby.

A woman who gained weight during pregnancy corresponding norm is much easier to have a baby and then the recovery process she goes much faster and easier than those of pregnant women who are gaining excess weight. Let your pregnancy will be for you an enjoyable period of your life, your weight is within the normal range, and you will be able to enjoy fully their position.

In general, the power of women-vegetarian food likes other women, except that they need to pay attention to the intake of protein, iron and vitamin B12, which are found in animal products:

Protein - is recommended to drink fortified soy milk, eat tofu, boiled legumes and nuts. It is important to vary the diet.

Vitamin B12 - is found only in animal products. Additional sources of B12 (less efficient) - a fortified soy milk, fortified tofu and fortified cereals. It is important to check the level of vitamin B12 in the blood and start to take supplements if necessary.

Iron - it is important to consume leafy greens, dried beans, vegetables, dried fruits, fortified with iron foods along with foods rich in vitamin C, contributing to the absorption of iron, such as citrus fruits.

It should check the levels of these elements in the blood and taking supplements if necessary.

One of the most important factors affecting pregnancy and pregnant woman - is food.

There is a direct link between proper nutrition and health at any age, in any period of our lives, especially during pregnancy.

Health and nutrition of women before pregnancy and during the very important and affects the development of the fetus. The physiological changes that occur in the body of a pregnant woman, suggest proper and balanced intake of nutrients and energy. Today we know that proper nutrition during pregnancy reduces the risk of gestational diabetes, toxemia, and high blood pressure, and may prevent excessive weight gain. In addition, since the child's diet depends on maternal nutrition, maternal nutrition during pregnancy is very important. From this it follows that maternal nutrition during pregnancy is important both for her health and for the proper development of the fetus in her womb.

It is important to know that during pregnancy increases the need for nutrients and pregnant women need 350-440 extra calories. The main principles of a reasonable diet: regular meals varied diet containing all the food groups, more frequently than usual during pregnancy. Desirably, the additional calories obtained from all food groups - carbohydrates, proteins, fats, vegetables and fruit.

Reasonable daily menu (also before pregnancy) is important for the health of the woman and the baby's health. Menu before pregnancy and during it must include all of the basic groups of elements, including vitamins and minerals required for the baby and normal development.

If you follow a healthy diet before pregnancy, it is recommended only slightly change your diet, for example, slightly increase the number of calories consumed per day (in particular due to food rich in protein, iron, folic acid and calcium, fruits and vegetables).

The average weight gain during pregnancy is between 8-13 kg, in the case of a woman who had a normal weight for their height in early pregnancy. Weight gain can be an individual, and also depends on the initial weight of the mother, changing and differs in different women.

Too small weight gain in pregnant women is associated with low birth weight and premature birth. On the other hand, too much weight gains in the mother increases the risk of gestational diabetes, high blood pressure and complications during childbirth.

In addition, infants of obese women gain little Apgar scores and are at risk of child obesity in the future.

Obese pregnant women increase the risk of neural tube defects in children, regardless of folate intake. It should be remembered that the majority of women want to return to a normal weight after giving birth, and moderate weight gain during pregnancy increases the chances of them to return to their former weight quickly and easily.

Underweight women should recover an average of 12.5 kg (plus or minus 5 kg), while women who had overweight at the beginning of pregnancy, should gain an average of about 8 kg.

Precise recommendations for additional calories are still controversial due to conflicting data regarding the increased metabolism in the body, accumulation of fat layer and reduce physical activity with the development of pregnancy. Clearly, the extra calories are required depending on the initial weight of the pregnant woman, but there is no need for two.

Existing recommendations provide the desired range of weight gain during pregnancy, according to the body mass index (BMI) before pregnancy:

Table 1.

| <i>No</i> | <i>Body mass index (kg)</i> | <i>Weight type</i> | <i>Recommended weight(kg)</i> |
|-----------|-----------------------------|--------------------|-------------------------------|
| 1. | BMI<19,5 | not enough | 12,5 (12,5-18) |
| 2. | BMI~19,5-25 | normal | 11,5 (11,5-16) |
| 3. | BMI~26-30 | excess | 8 (7-11) |

| | | | |
|----|--------|---------|-----------|
| 4. | BMI>30 | obesity | no more 6 |
|----|--------|---------|-----------|

These recommendations are based on statistical analysis of births in which the birth weight was the best, and the mother did not experience complications during birth and difficulty with weight loss after giving birth.

During pregnancy increases the need for women in vitamins and minerals. Some of them are available at varied diet containing fruits, vegetables, meat, chicken, fish, milk and dairy products, legumes and cereals. Sometimes the necessary amount cannot be obtained from food and you have to take nutritional supplements (should consult a doctor or nutritionist).

Vitamin - B12, involved in the formation of the nervous system and the fetal tissue in the development of proteins. Since the sources of this vitamin is the only food of animal origin - meat products, fish, milk and eggs, the women on the vegetarian / natural diet is necessary to check the level of the vitamin in the blood, and taking vitamin B12 supplements in the form (you need to consult with a nutritionist and a doctor).

Folic acid - refers to the B vitamins and is especially important for the development of the brain and nervous system of the fetus, which develop in the first weeks of pregnancy. Folic acid, taken before pregnancy and during the first months, reduces the risk of fetal spinal defects. Therefore, the Ministry of Health recommends that all women of childbearing age, especially before pregnancy and during it, take a daily 400 mg of folic acid. From the fourth month of pregnancy, you should upgrade to a combined preparation 100 mg of iron and folic acid 5 mg until the end of pregnancy. In addition, it is recommended to eat foods rich in folic acid, such as legumes, nuts, leafy greens (lettuce, celery, cabbage), cauliflower, broccoli, liver and citrus.

Iron - an essential mineral for the formation of hemoglobin in red blood cells of the fetus and the mother. In the second half of pregnancy the need for iron increases due to an increase in blood volume. The fetus absorbs it needs iron from the iron stores in the mother's body. Lack of iron can lead to anemia, which can cause premature birth, low birth weight, increased fatigue and weakness of the mother. Pregnant women are advised to eat foods rich in iron: beef, turkey, fish, legumes, dried fruits, nuts and almonds, as well as cereal, iron-fortified. Iron from animal products is absorbed better than iron from plant foods. Foods rich in vitamin C (citrus fruits, tomatoes, peppers, kiwi), enhances the assimilation of iron, and it is recommended to consume with foods rich in iron. For example, add a salad of vegetables, seasoned with fresh lemon juice, a portion of meat with legumes. It is recommended to reduce the consumption of tea, coffee and Coca-Cola, which contain caffeine and slow assimilation of iron.

So how to get the necessary amount of iron only from food is not possible, the Ministry of Health recommends to take iron supplements of 100 mg per day, starting from the ninth week of pregnancy and up to 6 weeks after delivery. Acceptance of iron can reduce the amount of zinc in the body of the mother. Zinc is essential for better assimilation and folate participates in the formation of the body cells and in the process of cell division. Therefore, women taking high doses of iron, it is recommended to eat meat, chicken, fish, seeds, nuts and wheat germ, rich in zinc.

Calcium - a mineral needed for the formation of bones and teeth of the fetus for nerve signaling mechanism and muscle contraction. Adequate calcium intake is also important for healthy teeth and bones of the mother and for blood clotting and can help prevent high blood pressure. The need for calcium increases during pregnancy, and the body's ability to absorb calcium becomes more efficient.

The amount of calcium recommended for pregnant women, no different from the general recommendations for women - 1000-1200 mg of calcium per day, which can get 4-5 servings of dairy products (see food groups below). It is recommended to choose dairy products enriched with calcium

and low fat (5% fat). Additional sources of calcium: calcium-enriched soy milk, leafy greens, sardines and Tahini. Women who do not consume dairy products or foods containing calcium, should take calcium and vitamin D tablets (should consult with a nutritionist and a doctor).

Vitamin C - vegetables and fruit containing vitamin C, helps in the formation of fruit body tissue. In addition, Vitamin C helps in absorption of iron. Examples of fruit and vegetables containing vitamin C, can be: melon, citrus, papaya, tomatoes, peppers, cabbage, broccoli, cranberries and others.

Unsaturated fatty acids are particularly important during pregnancy, since they form the child's brain.

There are two kinds of fatty acids necessary for the normal functioning of the brain: Omega-3 and Omega-6. A good source of Omega-3 is fish of the northern seas, including salmon, herring, tuna and sardines, as well as walnuts, flaxseed and hemp and soybean oil. A good source of Omega 6 are sunflower seeds and sunflower oil. One of the active components of omega-3 - is DHA, brain cells constituting the shell. Sufficient level of omega-3 can reduce the risk of preterm delivery, improve brain function and cognitive fruit and protect against heart disease, as in the mother.

Fish is an important part of a balanced diet during pregnancy. It is considered a source of high quality protein, B vitamins, minerals such as iron and zinc, and fatty acids such as omega-3, essential for brain development and visual system of infants and children. At the same time, some types of fish may contain chemical substances and heavy metals such as mercury, lead and industrial pollutants, and high doses of these substances can harm the fetus.

The Food and Drug Administration in the world recommends that pregnant and nursing women to refrain from the consumption of swordfish, shark, and mackerel. You can eat other types of fish, but it is necessary to limit the consumption of 2-3 servings per week, and preferably of different kinds. Fresh tuna and tuna steak can contain high amounts of mercury, and it is recommended to refrain from their use. Canned tuna is considered safe, but it should be there as part of a weekly rate of fish (you can reduce the amount of pollutants, remove the skin and fat from the surface of the fish before cooking).

Water plays a vital role in the diet of pregnant women, especially in connection with the growing volume of circulation. The water contains all the main food items for the baby. For the mother, water facilitates chewing and swallowing, prevents constipation and reduces the possibility of urinary tract infection. Adequate water intake prevents dehydration in the mother.

Pregnant women should drink at least 6 glasses of water per day and an extra glass for every hour of activity (of at least 10 glasses of water a day). You can drink water, soft drinks and juices, but we should remember that soft drinks like juices contain sugar and calories that should be included in the daily menu. It is important to remember that coffee, tea and soft drinks with caffeine reduce the amount of fluid in the body, and therefore is not considered part of the liquid amount required per day. It is necessary to drink a lot especially in the last trimester of pregnancy.

Studies in recent decades have proved one of the most important factors in the process of prenatal development of fetal depends on proper nutrition, that is, the required number of proteins, fats, carbohydrates and vitamins, micro and macro elements necessary for the full development of the unborn child.

References:

1. Спиричев В.Б. Сколько витаминов человеку надо. М., 2000.
2. Химический состав пищевых продуктов/ Под ред. Скурихина И.М., Волгарева М.Н. М.: Агропромиздат, 1987.

3. Мурашко А.В., Аль–Сейкал Т.С. Основы здорового питания беременной женщины. Гинекология, 2003;5(3): 117–21.
4. Методические рекомендации «Современные подходы к организации рационального питания беременных женщин и кормящих матерей». М., 2003.

