



HME103-Principles of Nutrition

Nutrition by developmental stages (pregnancy)

Lesson Code: HME103-Principles of Nutrition

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Nutrition in Pregnancy

- ✓ Pregnancy is a natural event for every woman.
- ✓ The healthy birth of the child is directly related to the mother's nutrition.

Researches;

have shown that people who are chronically undernourished and unbalanced before and/or during pregnancy have higher rates of preterm, stillbirth, birth with missing limbs or postnatal mortality than those with a balanced diet.



With the mother's adequate and balanced nutrition during pregnancy;

- ❖ Physical and mental growth and development of the baby,
- ❖ Prevention of chronic diseases that may develop in the baby in adulthood (hypertension, diabetes, cardiovascular diseases, etc.)
- ❖ Prevention of premature birth (prematurity),
- ❖ Prevention of late birth,
- ❖ Preventing the development of pre-eclampsia*,
- ❖ The risk of gestational diabetes** **may be reduced.**



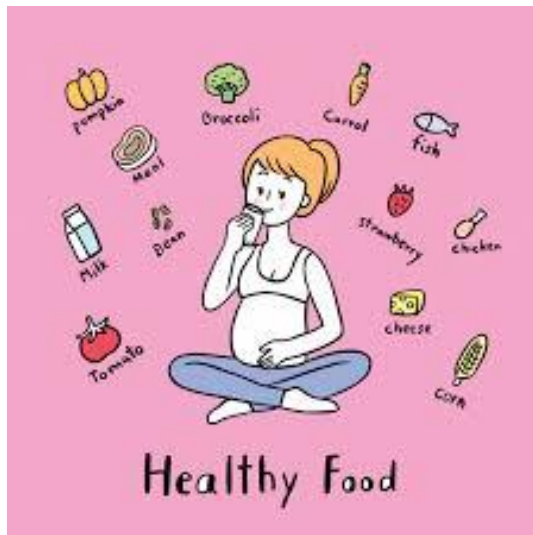
* **Pre-eclampsia**, also known as pregnancy intoxication, is a disease characterised by high blood pressure, usually starting after the 20th week of pregnancy. It can lead to liver rupture, kidney failure, widespread bleeding in the body and cerebral bleeding, which can cause loss of life for the mother.

** **Gestational diabetes:** Glucose intolerance that first occurs during pregnancy and resolves after birth.

The importance of nutrition during pregnancy;

1. The mother's own physiological needs (energy and nutrients) are met,
2. The stores in the mother's body are preserved,
3. Healthy growth and development of the baby is ensured,
4. The energy and nutrients of the milk to be secreted for breastfeeding are met.

The mother MUST eat adequate and balanced nutrition !!!



If the mother is malnourished

1. Premature birth (prematurity)
2. Birth of a baby with low birth weight (<2500 g)
3. Growth and developmental delay in the infant and
4. Stillbirth may occur.



ENERGY REQUIREMENTS IN PREGNANCY

- ✓ On average, a woman's weight increases by 1 kg per month due to pregnancy. Almost half of the increased weight consists of the baby and the placenta. The other half is stored for use during breastfeeding.
- ✓ During pregnancy, the energy requirement is adjusted to add 1 kg per month to the person's normal weight.
- ✓ Being overweight during pregnancy is also harmful.
- ✓ During pregnancy, 9-12 kg should be added to the appropriate weight according to height.

FOOD COMPONENTS NEEDED DURING PREGNANCY;

CARBOHYDRATES AND FATS



- In a healthy diet, it is appropriate to meet the needs of 50% of the energy from carbohydrates, 30% from fats and 20% from proteins.
- Instead of simple carbohydrates (sugar, honey, etc.), foods with high fiber content and low glycemic index (legumes, vegetables and nuts, etc.) should be preferred.
- Liquid oils, especially olive oil, should be preferred when cooking meals, and saturated fats should not be used.

FOOD COMPONENTS NEEDED DURING PREGNANCY;

PROTEIN



Protein intake is essential for the development of the baby, changes in the mother's body and especially the placenta.

Protein should make up 20% of the daily pregnant diet.

The recommended protein intake before pregnancy is 0.8-1.0 g protein/kg/day, while during pregnancy it is 1.0-1.2 g protein/kg/day.

The quality of the proteins taken is at least as important as the quantity.

FOOD COMPONENTS NEEDED DURING PREGNANCY;

VITAMINS AND MINERALS



- ❖ Vitamins and minerals play an important role in the performance of body functions, growth and development.
- ❖ Due to the needs of the baby during pregnancy, the amount of vitamins and minerals that the mother needs to take increases.
- ❖ If the requirements are not met adequately, the health of both the mother and the baby is negatively affected.

- ✓ While some decrease is observed in **serum iron, total and ionized calcium, magnesium and zinc levels during pregnancy; A decrease of nearly half was reported in folate, vitamin B6 and vitamin B12.**
- ✓ Just like the increased need for energy and protein during pregnancy, there is an increased need for vitamins such as thiamine, riboflavin, folate, vitamin A, vitamin C and vitamin D, as well as minerals such as iron and calcium.

VITAMINS AND MINERALS

VITAMINS AND MINERALS

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- ❖ Taking supplements of some minerals and vitamins (iron, zinc, selenium, vitamins A, C, D, B₆) higher than the recommended dose (such as 10 times) during the prenatal period may cause toxic effects during pregnancy. Therefore, more than 2 times the recommended dose should be avoided.
- ❖ All balanced diets that provide adequate calories and protein for nutrition during pregnancy and that will ensure appropriate weight gain usually contain all minerals and vitamins except iron.

Iron

- **Iron is essential** for the construction of hemoglobin, a component of blood.
- During pregnancy, **the amount of hemoglobin decreases with the increase in the mother's blood volume.**
- **Hemoglobin** is involved in carrying oxygen to the developing baby through the placenta. A hemoglobin level of 11-12 g/dl is sufficient for a healthy birth.



Iron



- It may be difficult to obtain sufficient amounts of iron from food to meet the iron need during pregnancy (inadequate absorption from iron sources, low consumption of iron-rich foods).
- Therefore, your doctor and dietitian may recommend **iron supplements in addition to an iron-rich diet** (iron-rich foods such as red meat, poultry, legumes, green leafy vegetables, eggs, whole grains and fortified grain products).
- Care should be taken not to take it with factors that prevent optimal absorption of iron (milk, tea, coffee, etc.).
- Consuming foods that are sources of vitamin C, such as vegetables and fruits, at every meal helps the body absorb the iron found in foods.

FOOD COMPONENTS NEEDED DURING PREGNANCY;

Folic acid

- ❑ Adequate folic acid intake before pregnancy protects against problems such as neural tube defects, low birth weight, and premature birth.
- ❑ It is recommended to give **400 μ g** of folic acid supplementation per day in addition to the diet, starting from the pre-pregnancy period until the 3rd month after pregnancy.
- ❑ Adequate vegetables and fruits (at least 5 portions) should be consumed during pregnancy.



FOOD COMPONENTS NEEDED DURING PREGNANCY;

Iodine



- Iodine deficiency is the most important cause of mental retardation.
- Iodine deficiency in the fetus is a result of iodine deficiency in the mother.
- In cases of **severe deficiency**, deafness and mutism, cretinism (mental retardation), miscarriage, premature birth, stillbirth and congenital disorders are observed in babies.
- **In the first month of pregnancy**, the effects of iodine deficiency appear in the baby and affect brain development in the fetus.

- ✓ Iodized salt should be used to prevent iodine deficiency.
- ✓ Seafood also contains iodine.

The iodine requirement (200-250 $\mu\text{g}/\text{day}$) of women planning pregnancy, pregnant and breastfeeding women, especially those who need to restrict salt intake for various reasons, should be met.

FOOD COMPONENTS NEEDED DURING PREGNANCY;

Vitamin D



- ❖ The best source of vitamin D is the sun, but the increased need cannot be met during pregnancy.
- ❖ Due to the increased need, the Ministry of Health of the Republic of Turkey recommends the use of a single dose of vitamin D supplement of **1200 IU (30 µg)/day (9 drops)** to all pregnant women from the 12th week of pregnancy until the 6th month after birth.

Calcium



- Calcium losses increase with inability to benefit from sunlight, lack of movement, frequent births and breastfeeding.
- If the mother does not get enough calcium from the diet, osteomalasia (bone softening) and tooth decay occur.
- Consumption of milk and dairy products should be increased.



With adequate calcium consumption, the baby's bone structure develops, the mother's bone mass is preserved and protects the mother from osteoporosis..

Daily Food Consumption Amounts During Pregnancy:

Food Groups	Amount
milk, yoghurt	2 cups (400-500 ml)
Cheese	About 2 matchboxes (60 g)
Meat, chicken, fish	3-4 portions
Eggs, legumes	1 portion
Fresh vegetables and fruits	5-7 portions
Cereals	
- Bread	4-6 portions
- Rice, bulgur, pasta etc.	2-3 portions

HEALTH PROBLEMS THAT MAY BE OBSERVED DUE TO NUTRITION DURING PREGNANCY

Anemia:

- Failure to meet the increased iron requirement during pregnancy,
- Increased blood volume,
- Less than 2 years between two pregnancies,
- Decrease in iron stores due to miscarriages,
- Insufficient use of dietary iron in the body,
- Eating non-nutrient sources such as soil, paper and lime (pica) is one of the main causes of anemia.



The Ministry of Health recommends that every pregnant woman be given 40-60 mg/day iron supplement for a total of 9 months, starting from the 16th week until birth and until the 3rd month after birth.

HEALTH PROBLEMS THAT MAY BE OBSERVED DUE TO NUTRITION DURING PREGNANCY

Constipation:

- Hormonal changes during pregnancy cause bowel movements to slow down and result in constipation.
- The use of iron supplements can also aggravate constipation.
- Foods rich in fiber such as vegetables, fruits, legumes and whole grains should be consumed.
- Water consumption should be increased. **8-10 glasses a day!!!**
- Foods such as dried plums and figs, which have a laxative effect, can prevent constipation.
- Regular physical activity also supports your bowel movements.



HEALTH PROBLEMS THAT MAY BE OBSERVED DUE TO NUTRITION DURING PREGNANCY

Gestational Diabetes:

- It is glucose intolerance that occurs for the first time during pregnancy.
- It mostly passes after birth. Blood sugar levels should be monitored regularly and a diet appropriate to blood glucose levels should be created and excessive weight gain should be avoided.
- A weight loss diet should not be followed!!!



HEALTH PROBLEMS THAT MAY BE OBSERVED DUE TO NUTRITION DURING PREGNANCY

Pregnancy Poisoning (Pre-eclampsia):

- Towards the end of pregnancy, due to inadequate and unbalanced nutrition, the mother's blood pressure may increase, protein loss in the urine and edema in the hands and feet may occur.
- Dietary sodium and protein intake is limited and medical nutrition therapy is recommended by increasing the intake of B group vitamins.



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