

## The Modern Mechanism of the Effect of Vitamins on the Health of Women during Menopause

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**Abstract:** Menopause usually occurs in women aged 47-55 years. This implies the cessation of the functioning of the ovaries and at the same time changes in the hormonal level, the loss of menstruation and the ability to conceive. During menopause, a comprehensive approach is required, including taking medications, vitamins, dietary supplements, and homeopathy. They are designed to alleviate the woman's condition, normalize the hormonal level and reduce the risk of possible complications.

**Key points:** Femoston, Qlaira, Cyclo-Proginova, Klimonorm, Proginova.

### Hormone replacement therapy

Hormonal levels change during menopause, in particular, estrogen (including estradiol) and progesterone levels decrease. They are important for many processes in the body, so their lack leads to a number of negative consequences. Replacement therapy solves the problem - drugs containing natural or synthetic hormones:

- a. Estradiol valerate - Proginova.
- b. Estradiol valerate and levonorgestrel - Klimonorm.
- c. Estradiol valerate and norgestrel - Cyclo-Proginova.
- d. Estradiol valerate and dienogest - Qlaira.
- e. Estradiol and dydrogesterone - Femoston.
- f. Esterol and drospirenone - Esteretta.
- g. Estradiol and drospirenone - Angelique.
- h. Hexestrol (synthetic estrogen) - Sinestrol.
- i. Tibolone - Leatrice, Livial, Velledien.
- j. Estriol - Ovestin, Estrocad.

A doctor should prescribe hormone replacement therapy and choose a drug that is suitable for a particular woman. This treatment is contraindicated for gynecological cancer, liver, heart and certain pathologies of blood vessels.

Separately, it is necessary to talk about contraceptives, which are not needed at all during menopause, because the body is no longer capable of bearing children. In addition, contraception is necessary during premenopause, when suppression of the functional ability of the ovaries is still ongoing. During this time, contraceptives not only prevent conception, but also help alleviate some of the symptoms of menopause. Thus, estrogen-containing preparations reduce the intensity of irregular menstruation and reduce the amount of blood loss. They also help with vaginal dryness, sweating, and hot flashes.

There is also a downside. In women over 40, COC use increases the risk of thrombosis, stroke, and heart attack. The decision to take them should be made individually and it should be done by a doctor.

### **Non-hormonal drugs**

One of the groups of such drugs are phytoestrogens - non-steroidal plant compounds, whose structure and effects are similar to estradiol. They are found in many common foods - wheat, barley, rice, lentils, soybeans, apples, carrots, pomegranates, tea. Phytoestrogens include isoflavones, lignans, and coumestans. Based on them, the following drugs are used during menopause:

- a. Climaxan - contains plant and animal components;
- b. Klimaktoplan N - the active composition is represented by plant components;
- c. Qi-Klim - contains phytoestrogens of black cohosh, similar to Klimaxan and Klimaktoplan N;
- d. Klimadinon - contains an extract of cohosh rhizome;
- e. Menoril Plus - active ingredients include vitamins, resveratrol (natural phytoalexin, genistein (isoflavone));
- f. Estrovel - contains soy isoflavones, dioscorea root extract, holy chasteberry fruits, a set of vitamins and minerals;
- g. Feminal is a preparation based on red clover extract (a source of isoflavones);
- h. Femin - the active ingredient is red clover extract;
- i. Lignarius - contains a patented formula of lignan from European spruce knots;
- j. Phytoestrogens based on Siberian rhubarb root extract (Evalar);
- k. Mabell is a dietary supplement and source of isoflavones and flavolignans, containing extracts of meadow clover and flaxseed;
- l. Mense is a vitamin complex with beta-alanine (natural beta-amino acids), soy extract (isoflavones) and griffonia.

All these medicines are homeopathic. The use of phytoestrogens is recommended by the Russian Society of Obstetricians and Gynecologists for mild and moderate symptoms of menopause, contraindications to hormone replacement therapy or reluctance to resort to it. Such products are beneficial not only for hormonal levels, but also for nervous system and bone health. Often, in addition to phytoestrogens, the composition contains other useful components. They have a positive effect on the health of the body in general and eliminate certain symptoms.

### **In addition to phytoestrogens, other non-hormonal drugs are also used during menopause:**

- a. Climalanin - contains beta-alanine;
- b. Ovariamine is a dietary supplement containing proteins and proteins isolated from the tissues and organs of cattle;
- c. Cyclodinone - the active substance is an extract of the fruits of the ordinary branch;
- d. MenoPrime (Solgar) - extract of Siberian rhubarb and saffron flowers;

Lady's formula Menopause Day-Night is a combination of herbal extracts to relieve hot flashes and anxiety, restore sleep.

It should be taken into account that dietary supplements and homeopathy, even if they are completely natural, have contraindications. The same thing for everyone - individual intolerance to the components. In addition, herbal preparations do not eliminate the risk of overdose, so the instructions must be strictly followed. For the same reason, it is dangerous to take several products at the same time - many contain the same components. An overdose of herbal ingredients is rarely life-threatening, but it can make your health worse.

## Vitamins and minerals

Hormonal levels change during menopause, which affects the work of various organs and systems. The body must adapt to new conditions, and you can help it if you take vitamins:

A is important for the health of the skin, nails, hair, their condition deteriorates during menopause. The vitamin also slows down the aging process and reduces the risk of infectious diseases and cancer. For better absorption, it is better to take vitamin E at the same time.

Group B is a whole set of vitamins that improve metabolism, ensure normal functioning of the nervous system and immunity. Thiamine (B1) is useful for a stable psycho-emotional state, improves thinking, has a positive effect on the heart and blood vessels. Riboflavin (B2) is important for metabolic processes, healthy skin, hair and nails. Folic acid (B9) normalizes the emotional background, and cobalamin (B12) has a mild sedative effect, increases resistance to stress and depression.

Vitamin C is important for strong immunity, strengthening of blood vessel walls and normalization of hematopoiesis. It has a positive effect on the nervous system, stimulates the production of collagen, which is important for the health and youth of the skin, hair and nails.

Vitamin E prevents the formation of blood clots, slows down the breakdown of progesterone for a gentle change in hormonal levels, helps reduce the intensity of hot flashes and relieves other symptoms of menopause.

Vitamin D is important for the health of bones, joints, muscles, and teeth. It improves the functioning of the cardiovascular system, reduces the risk of dementia and improves brain function.

During menopause, in addition to vitamins, various minerals are needed. One of them is calcium, which is important for the health of hair, skin and nails, affects the immune system, normalizes blood pressure and helps with weight loss. It should be taken along with vitamin D and magnesium to improve calcium absorption and benefit bones and joints. The latter lowers blood pressure, normalizes heart rate, relieves joint pain and muscle cramps. Together with calcium, magnesium increases bone mineral density, which is important for preventing postmenopausal osteoporosis.

You can not take vitamins and minerals without thinking and at the same time. They affect each other's digestion, and in addition, it is important to consider the characteristics of your diet. Most elements can be obtained in sufficient quantities from food. In addition, vitamins should not be taken regularly. What substances are needed and how long they should be used is determined by a specialist. If there is a doubt about the lack of certain elements in the body, the doctor can order tests to determine their concentration. Materials can be blood, hair, nails.

Attention should be paid to ready-made vitamin complexes specially developed for women during menopause:

Doppelherz Active menopause forte (Doppelherz) - contains vitamins D3 and group B, iodine, hop cones, soy isoflavones;

complex for menopause consumed (consumed) - soy isoflavones, holy chasteberry (extract);

Lady's formula Menopause Advanced formula - a complex of vitamins E, group B, selenium and plant extracts, reduces the symptoms of menopause and improves the condition of the skin and hair;

Menopause - isoflavones, vitamins E, C, group B, zinc, selenium, iron, magnesium, copper, manganese, chromium complex.

Taking vitamin complexes is convenient in several ways. First, the price is often lower than buying each item separately. Secondly, the composition is balanced and carefully selected, all its components are well absorbed when taken at the same time; Thirdly, it is much more convenient to take one capsule or tablet with the necessary set of elements and take only one package to work or on the way.

Menopause is an inevitable event in a woman's life. It is accompanied by unpleasant symptoms and increases the risk of various complications. The situation can be alleviated, and some manifestations can be completely eliminated. For this purpose, there are many medicines, vitamin complexes, dietary supplements and homeopathic remedies. Any medication, including herbal, should be discussed with your doctor.

### **Causes of menopause syndrome**

Menopause develops against the background of menopause - the end of the menstrual period, the supply of eggs in the ovaries dries up, and they gradually "turn off". There is a lack of sex hormones - estrogen and progesterone, and the tissues of some organs begin to change.

First of all, the blood supply of the uterus, vagina, vulva, bladder and urethra is disturbed. Mucous membranes, as well as pelvic muscles, gradually atrophy. Vaginal microflora is more alkaline.

Metabolic diseases, which are also related to sex hormones, increase the symptoms of menopause and in some cases even cause complications.

A whole set of changes associated with a decrease in the concentration of sex hormones leads to the appearance of menopause symptoms. They are a sign that the body is having difficulty adjusting to new hormonal levels.

### **Signs and symptoms of menopause**

Since estrogen-sensitive tissues are present throughout the female body, menopause can have many manifestations: from increased sweating to increased appetite. Symptoms of menopause can be divided into vasomotor (depending on the tone of blood vessels), psycho-emotional, urogenital, musculoskeletal and metabolic-endocrine.

Each group of symptoms is associated with certain changes caused by the lack of female sex hormones. However, menopause does not remain with a woman for the rest of her life. Some symptoms become less noticeable over time or disappear completely as the body adjusts to the new hormonal levels.

#### **Vasomotor signs and symptoms of menopause**

Vasomotor symptoms are the group that includes the most common symptoms of menopause. These include, for example, flooding. They appear against the background of estrogen deficiency.

The lack of hormones leads to periodic disturbances of thermoregulation and spontaneous expansion of blood vessels. As a result, blood rushes to the upper part of the body, which is accompanied by a feeling of heat in the chest, back, neck and face, which is replaced by shivering after an average of 3-4 minutes. In addition, during the ascent, the heart rate increases and sweating increases.

Hot flashes and increased sweating at night are common causes of insomnia in menopausal women.

Hot flashes occur spontaneously and with different frequencies: from several times a day to once a month. On average, hot flashes bother women for 1-2 years, but can last from 7 to 10 years.

In addition to hot flashes, headaches, dizziness, tinnitus, and increased blood pressure appear due to a violation of the tone of blood vessels.

#### **Vasomotor manifestations of menopause:**

- a. flood,
- b. trembling
- c. thermoregulation disorder,
- d. increased sweating,
- e. rapid heartbeat,

- f. frequent headaches,
- g. unexplained tinnitus,
- h. high blood pressure.
- i. Wave
- j. During hot flashes, a woman feels intense heat in the upper body

### **Urogenital signs and symptoms of menopause**

Due to the decrease in estrogen levels, the mucous membrane of the uterus, vagina and vulva becomes thinner. Atrophic changes occur in the genitals - vulvovaginal atrophy (VVA).

With vulvovaginal atrophy, there is a feeling of dryness in the vagina, which is accompanied by a decrease in the amount of natural secretion that acts as a lubricant. Many patients with atrophy are also bothered by dyspareunia - pain during vaginal intercourse.

The urinary system is also affected by the low level of sex hormones. When the mucous membrane of the bladder becomes thinner, the receptors that determine its fullness become very sensitive. As a result, a woman experiences a frequent, unbearable urge to urinate. Some patients may even experience partial urinary incontinence - this is one of the most difficult and psychologically difficult symptoms to control, which causes a lot of discomfort.

### **Urogenital manifestations of menopause:**

- a. feeling of dryness in the vagina,
- b. pain during vaginal contact,
- c. frequent urge to urinate,
- d. partial urinary incontinence.

### **Metabolic-endocrine symptoms and menopause symptoms**

Estrogens and progesterone greatly affect metabolism. They help cells absorb glucose, which is the main source of energy for the body, and also process cholesterol. With a lack of sex hormones, glucose is not fully absorbed and its concentration in the blood increases. Excess sugar is stored in fat, and plaque is actively formed from excess cholesterol in the lumen of blood vessels - this is how atherosclerotic disease develops.

In addition, due to the lack of estrogen, the amount of the hormone leptin, which is responsible for suppressing hunger, decreases. Women's sense of satiety is blurred and they begin to overeat, which accelerates weight gain, complicates the diet and creates an additional mechanism for the development of obesity.

Estrogens also stimulate the production of two important proteins, collagen and elastin. They form the basis of cartilage, skin and mucous membranes. With their help, the connective tissues retain moisture, elasticity and quickly heal when damaged.

Along with the level of sex hormones, collagen production decreases. When menopause occurs, the texture and appearance of the skin begins to deteriorate. The fat tissue on the face and neck becomes thin, and deep wrinkles appear, which cannot be coped with care cosmetics.

With a lack of collagen, the mucous membranes regenerate worse and dry out more often. This can lead, for example, to dry eyes, as well as dental pathologies - thinning and inflammation of the gums, bleeding, atrophy of the gingival margin. As a result, the root part of the tooth - the neck - opens and causes dental diseases.

The health of the joints also depends on collagen synthesis. If there is little collagen, the cartilage tissue is weak: the risk of injury increases and pain occurs during normal loads.

### **Metabolic and endocrine manifestations of menopause:**

- a. high level of glucose and cholesterol in the blood;
- b. rapid formation of atherosclerotic plaques in blood vessels;
- c. overweight, fat deposits in the abdomen;
- d. thinning and drying of mucous membranes;
- e. gum diseases;
- f. joint pain;
- g. sagging skin, wrinkles.

### **Musculoskeletal signs and symptoms of menopause**

In addition to carbohydrate metabolism, the metabolic process in bone tissue is disrupted in menopausal women. Usually, it is constantly renewed - this is necessary to ensure that the bones remain strong and do not break down from microtrauma, for example, bruises or physical stress.

With a decrease in estrogen levels, the resorption process slows down: cells deteriorate and bones become brittle - osteoporosis develops. As a result, the probability of an accidental fracture, for example, due to a fall, increases significantly.

Osteoporosis affects 34 percent of women over 50 and increases the risk of severe fractures.

Since the teeth also consist of bone tissue, changes in the hormonal level affect them as well. In menopausal women, tooth enamel becomes thin and teeth become brittle. The incidence of dental diseases is increasing.

### **Manifestations of the musculoskeletal system of menopause:**

- a. decrease in bone density, osteoporosis;
- b. fracture;
- c. frequent dental pathologies: broken teeth, cracks, caries, root infections.

### **Psycho-emotional signs and symptoms of menopause**

Sex hormones are closely related to the activity of the central nervous system. They affect the synthesis of neurotransmitters - substances that transmit signals between brain cells, shape behavior, emotions and support cognitive functions. These include, for example, memory and the ability to concentrate.

When estrogen levels drop, the way neurotransmitters work changes. Because of this, menopausal women often report irritability, tearfulness, lack of sexual desire, and mood swings - erratic mood swings for little reasons. Performance also suffers: it becomes much more difficult to remember and pay attention to information.

In addition to biochemical processes, a woman's emotional state is affected by the cessation of menstruation and age-related infertility, poor health, changes in appearance - all this causes additional anxiety and indifference. can issue.

A drop in estrogen levels, along with hot flashes, sweating, and a fast heart rate, can affect sleep and make it deeper. Menopausal women often wake up at night, have trouble falling asleep quickly, or suffer from insomnia.

Lack of sufficient sleep increases the psycho-emotional symptoms of menopause: irritability increases, problems with memory, attention and general performance increase.

### **The main psycho-emotional manifestations of menopause:**

- a. emotional instability;

- b. tears;
- c. nervousness;
- d. memory problems;
- e. carelessness, decreased concentration;
- f. sleep disorder, insomnia;
- g. apathy;
- h. anxiety;
- i. decreased sexual desire.

#### Risk factors for the development of menopause

If the symptoms of menopause in women are usually the same, their severity is different. It depends on genetic characteristics, nutrition, weight, chronic diseases, pregnancy and bad habits.

#### **Factors affecting the timing of menopause and menopause:**

heredity - a genetic predisposition to early or late decline in reproductive function. You can judge him by his female gender: his mother, grandmother, sisters;

chronic diseases - with pathologies of reproductive, nervous, cardiovascular or other systems, menopause may begin earlier and be more severe;

lifestyle - low physical activity, lack of sleep, stress, eating too much fatty and sweet food, overwork increases the symptoms of menopause;

bad habits - smoking, drug addiction, alcohol abuse cause early menopause;

gynecological diseases and procedures - irregular menstrual periods due to pathologies, for example, polycystic ovary syndrome, as well as incorrect use of hormonal drugs, artificial and spontaneous abortions negatively affect the reproductive system;

reproductive history - lack of pregnancy and childbirth can accelerate the onset of menopause and the development of menopause.

#### **Complications of menopause**

Menopause itself is a complication of the menopause period: it can be the basis for various diseases that greatly affect the lifestyle of patients, and in some cases pose the risk of disability and inability to take care of themselves.

#### **Bone diseases**

Disruption of metabolism and collagen synthesis leads to osteoporosis - bone density decreases.

The most dangerous consequence of osteoporosis is fracture. Those that can lead to long-term or permanent limitation of the patient's mobility, including.

These include, for example, a fracture of the femoral neck. People with this type of injury cannot walk or stand on their own and experience severe pain. Usually, a hip fracture requires surgical treatment.

90% of hip fractures occur in the elderly. In women, the pathology occurs 2 times more often than in men. Causes disability.

The risk of other cracks cannot be ruled out. They can appear in any situation where young people can escape with injury. For example, when you fall from your height.

## Endocrine diseases

Due to the decrease in the level of sex hormones, menopausal women often gain excess weight and blood sugar levels rise. Because of this, insulin resistance can develop - immunity of cells to the hormone insulin, which is involved in glucose metabolism.

If insulin resistance is not treated, it develops into metabolic syndrome or type 2 diabetes.

Metabolic syndrome is a set of symptoms that include fat accumulation in the abdomen and abdominal organs, a steady increase in glucose levels and blood pressure. With metabolic syndrome, the functions of internal organs are disturbed and the risk of type 2 diabetes mellitus increases.

Diabetes develops when cells do not respond to insulin. The body cannot cope with high levels of glucose, and it begins to "stick" to various proteins in the blood.

Proteins are a resource for the body to function, but when combined with glucose, they are useless. Due to the lack of "pure" proteins, the organs begin to work incorrectly and this affects the general health.

## Cardiovascular diseases

One of the most dangerous pathologies is atherosclerosis, the formation of atherosclerotic plaques in the lumen of blood vessels. They disrupt blood flow in organs or tissues (ischemia), and can also cause serious diseases - coronary heart disease, myocardial infarction or stroke.

Ischemic heart disease (CHD) is a disorder of blood supply to the heart. Against the background of advanced ischemia, a heart attack can develop - a partial or complete stoppage of blood flow, which disrupts the functions of the heart and can cause it to stop.

Brain blood supply disorder due to stroke (ischemic) or rupture (hemorrhagic). The condition of the patient after a stroke depends on many factors: the type of stroke, the speed of medical assistance, the area and depth of brain damage. In some cases, after a stroke, a patient may experience a permanent loss of coordination, speech, thinking, memory, or other skills. In severe cases, brain death is possible.

## Diagnosis of menopause

The main diagnosis of menopause and climacteric syndrome is made by a gynecologist. Consultation with an endocrinologist, cardiologist or rheumatologist may also be required to assess the risk of complications.

The primary goal of evaluating a patient who complains of menopausal symptoms is to determine whether she is truly menopausal. To do this, the doctor collects an anamnesis: the date of the last menstrual period, the nature of vaginal discharge, asks about general health and is interested in the complaints of close relatives (mother, sisters), genetic predispositions and gynecological diseases.

The doctor also examines the mammary glands to rule out their pathology and asks about height and weight - this is necessary for calculating the body mass index and diagnosing obesity.

To check the general condition of the patient, a clinical and biochemical blood test is prescribed to identify inflammatory processes, evaluate metabolism and the functioning of various systems.

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