The Peerian Journal
Open Access | Peer Reviewed
Volume 5, April, 2022.
Website: www.peerianjournal.com
ISSN (E): 2788-0303
Email: editor@peerianjournal.com

Vitamin D Deficiency in Menopausa Women

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Annotation. This article discusses the effect of vitamin D levels on bone mineral density in menopausal women. In addition, the effects of **vitamin D on menopause** have been studied. The aim of this review is to summarise the evidence linking vitamin D to bone health outcomes in menopausa women. A plethora of scientific evidence globally suggests that large proportions of people have vitamin D deficiency and are not meeting recommended intakes. Older adults are at particular risk of the consequences of vitamin D deficiency owing to a combination of physiological and behavioural factors. Epidemiological studies show that low vitamin D status is associated with a variety of negative skeletal consequences in older adults including osteomalacia, reduced bone mineral density, impaired Ca absorption and secondary hyperparathyroidism. There seems to be inconsistent evidence for a protective role of vitamin D supplementation alone on bone mass. However, it is generally accepted that vitamin D (17·5 μg/d) in combination with Ca (1200 mg/d) reduces bone loss among older white subjects. Evidence for a benefit of vitamin D supplementation alone on reducing fracture risk is varied. According to a recent Agency for Healthcare Research and Quality review in the USA the evidence base shows mixed results for a beneficial effect of vitamin D on decreasing overall fracture risk. Limitations such as poor compliance with treatment, incomplete assessment of vitamin D status and large drop-out rates however, have been highlighted within some studies. In conclusion, it is generally accepted that vitamin D in combination with Ca reduces the risk of non-vertebral fractures particularly those in institutional care. The lack of data on vitamin D and bone health outcomes in certain population groups such as diverse racial groups warrant attention.

Keywords: Menopause, menopausal period, Vitamin D, Calsium, Bone mineral density, metabolic processes, immunity.

Menopause is an inevitable phenomenon of the general aging in female's reproductive system and is defined as the permanent termination of menstrual periods that occurs after the loss of ovarian follicle development. Although, the average menopausal age onset is about 51 yr, it can vary between 40 to 60 yr. Additionally, early menopause occurs in 1% of young women before 40 yr. Moreover, the menopasal estrogen loss leads to an accelerated bone loss and osteoporosis that leads to reduction of bone mineral density (BMD) and subsequently the increase in osteoporotic fractures. Bone is defined as a mineralized connective tissue that includes four types of cells: osteoblasts, bone lining cells, osteocytes, and osteoclasts. Bone is responsible for several essential functions in the body, such as movement, support and protection of soft tissues, and calcium and phosphate storage. Despite its passive appearance, bone is an extremely dynamic organ that is continuously resorbed by osteoclasts and transformed by osteoblasts Menopause is a process in

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which a woman loses her fertility and menstrual cycles stop. Menopause occurs naturally throughout life and is not considered a disease. Although it is a natural process, if left unchecked, it can lead to a number of complications. The menopausal period is characterized not only by the loss of reproductive function, but also by abrupt changes in the hormonal background. This leads to a mass of physical and mental problems. There has been such a state for years. In order to support the body in difficult times, it is necessary to take specially designed medicinal complexes for different age groups. The importance of vitamins in the menopausal period is as follows: Flips, headaches, nervousness - all the consequences of all the stressful things for every woman after 45 years. Over time, the initial intake of vitamins helps to solve the following tasks: Accelerate metabolic processes - Good metabolism has a positive effect on the functioning of the gastrointestinal tract and helps to avoid unnecessary weight gain, which often occurs during the climax.

Strengthening the immune system - The body does not relieve the load, which can lead to complications of chronic diseases. Maintain an attractive appearance for many years. Treatment increases performance, removes emotional overload, cardiovascular system.

Types of menopause:

There are two main types: **natural and artificial.** Natural menopause is associated with the depletion of follicle reserves in the ovaries, depending on age. If a woman needs to stop the synthesis of sex hormones immediately, artificial menopause can occur. Such pathologies include:

- **Fibromas;**
- **Uterine fibroids;**
- **Endometriosis;**
- **Uterine bleeding of various origins;**
- **Malignant tumors.**

Artificial menopause is triggered in the following ways:

Surgical practice - ovarian incision, ovariectomy. Indications for this operation: tumors of the breast, uterus and ovaries.Taking medications. A slightly easier method is to temporarily stop menstrual cycles with special drugs.

X-rays of the ovaries. This method is used in malignant tumors. In most women, menopause begins between the ages of 47 and 52. The onset of this condition can start very early or be delayed for several years. Menopause that begins at age 40 is early menopause and late menopause between the ages of 56-65. The following factors affect the onset of menopause:

Genetic. The number of follicles that synthesize estrogen in the ovaries is programmed at the gene level. This also applies to the hypothalamus and pituitary gland, which control menstrual cycles.

Geographical. Sunlight affects the early or late cessation of menstrual cycles.To a woman's character. Menopause begins late in women who lead an active sex life and satisfy their sexual desires.

Socio-economic. Menopause begins late in women who do not feel prolonged stress, have a good menstrual cycle and do not engage in strenuous physical activity.

What vitamins do you need during menopause:

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With the onset of menopause, the body begins to test for mineral deficiencies. Complexes developed for older women during this period include all the necessary vitamins, as well as phytoestrogens. They compensate for the lack of their sex hormones, improve the functioning of the endocrine system, and strengthen the nerves.

Vitamin D. Its main function is to help the body assimilate calcium and phosphorus. Helps prevent cardiovascular disease, enhances immunity, prevents thrombosis. Safety menopause - lethargy and high fatigue, the risk of developing osteoporosis leads to an increase in all diseases. Often you can see other problems: muscle pain, lubrication in the pelvic area, walking, lameness. There is a need for vitamin supplementation in women living in cities with low solar activity, patients, and high air pollution. The essential role of vitamin D and its metabolites on bone absorption and formation has been identified for a long time. Vitamin D plays the main role in regulating bone cell proliferation and maturation, as well as bone mineralization and resorption. Moreover, severe vitamin D deficiency has been reported to lead to osteomalacia in adults. Therefore, deficiency in vitamin D can elevate the rate of bone turnover and bone loss by increasing bone resorption in postmenopausal women . Some studies have demonstrated that Vitamin D receptors (VDRs) are expressed in reproductive systems including ovaries, endometrium, and placenta . Furthermore, several studies have reported the role of vitamin D + calcium supplements in maturation of the ovarian follicles. Additionally, the efficacy of calcium intake together with Vitamin D supplement has been demonstrated as an essential intervention for preventing osteoporosis due to postmenopausal conditions by increasing BMD . Despite the genetic efficacy on the age of menopause, it is theoretical that lifestyle factors such as diet and physical activity play a significant role in ovarian age . Previous studies confirmed that physical activity and, especially, physical exercise are effective in the reduction of clinical fracture in postmenopausal women . Muir and colleagues in 2013 published a study to assess the effect of physical activity on bone density in postmenopausal woman. Their results show that, overall, a regular exercise was effective for bone density in postmenopausal women . In addition, several previous studies have shown that physical activity, particularly, regular exercise program is the main way to maintain the BMC and prevent bone loss in women .

A vitamin. It performs several biochemical functions: supports visual acuity, provides the body with antioxidant protection - saves immune cells from destruction, helps maintain hair health, nails and teeth. Taking these vitamin receptors can significantly reduce the risk of developing malignant neoplasms, as well as increase the production activity of sex hormones. Its deficiency can lead to frequent colds, rapid aging of the skin. The substance builds up slowly in the body, but overdose can lead to limbs, drowsiness and nausea, and menstrual cycle failures. B1 and B6. Vitamins of this group provide health of the central nervous system, improve energy processes, relieve stressful situations, help to eliminate the work of the digestive system, promote normalization of blood sugar levels, which is very important during menopause. Nomana leads to muscle weakness, reduces endurance during exercise, loss of appetite, rapid skin aging, hair loss, hair loss. Excessive digestion and sleep can cause muscle cramps and headaches. Vitamin C is a very important element of any medicinal complex. It not only acts as an antioxidant, but also contributes:

- **better absorption of the iron;**
- **protection against infections;**

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- **stimulating the immune system;**
- **tissue cell regeneration;**
- **strengthen blood vessels.**

It also helps with injuries, regulates metabolic processes, removes toxins and improves liver and gallbladder function. It is almost impossible to overdose, but overdose can lead to urolithiasis, bloating and abdominal pain.

E vitamin. The substance is a powerful antioxidant - Restores cellular compounds and protects them from the destructive effects of free radicals. It helps prevent cancer, promotes blood clotting - strengthens the walls of the arteries, prevents varicose veins. It alleviates the unpleasant symptoms of the scientist and stimulates the work of the ovaries. Intake of vitamin E contributes to the beauty of hair, the preservation of skin youth - prevents the appearance of dryness and wrinkles, strengthens nails. Micronutrients and minerals with menopause

In addition to vitamins, the body needs the following nutrients: **Magnesium - calms, lowers blood pressure and cholesterol, prevents the appearance of diabetes and fights obesity, fatigue and heart attacks.**

Calcium - Its ions are involved in blood clotting and strengthening bone tissue. Nomana causes embarrassment in the joints, nervousness and insomnia, limbs, muscle spasms and cramps. What is menopause? Climax marks the end of a woman's reproductive life. Symptoms of menopause include sudden onset of fever, night sweats, mood swings, and a number of cognitive changes. Symptoms of menopause are caused by a decrease in the amount of female hormones in the blood. Hormonal therapy, self-management techniques, and home remedies can help fight menopause.

Conclusion

Resistance exercise in combination with vitamin D and calcium has a positive effect on bone mineral density and bone mineral content and can prevent or delay the development of breast cancer and diseases such as osteoporosis in menopausal women. However, further research is needed to evaluate the molecular pathways of this process.

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