mechanism. Repeatments of cocaine and amphetamine lead to the depletion of dopamine stocks, which is accompanied by insufficient excitement of the reinforcement system with the arrival of a "normal" impulse. This manifests itself as a fall in structure, a feeling of sluggishness, weakness, malaise, boredom experience, emotional discomfort, and a depressive condition.

In the treatment of these types of dependence, antidopaminergic agents, disulfiram and antidepressants are used to influence mood swings in people in the early withdrawal syndrome.

**Conclusions**. As a result, an understanding of the mechanisms of dependence on these funds will allow the development of drugs for the treatment of these types of dependence.

## VITAMIN D DEFICIENCY AND METABOLIC SYNDROME

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**Introduction.** Classical ideas about vitamin D are associated with its important role in calcium-phosphorus homeostasis and the influence on bone mineral density. However, this does not limit the biological effects of vitamin D. It also affects other physiological processes in the body, including modulation of cell growth, neuromuscular conduction, immunity and inflammation. Recently, significant material has been accumulated on the relationship between vitamin D deficiency and obesity, insulin resistance, adverse effects on insulin secretion, and glucose tolerance.

**Aim.** Carry out an analytical review of the role of vitamin D in the development of metabolic syndrome.

Materials and methods. Data analysis of literature and Internet sources.

Results and discussion. It has been established that insufficiency of vitamin D leads to insulin resistance and increases the secretion of insulin, and, ultimately, leads to the emergence of a metabolic syndrome. There is a hypothesis about the "ionic" theory of the development of arterial hypertension, type 2 diabetes, obesity and other manifestations of the metabolic syndrome, which manifests itself in increasing intracellular calcium concentration, decreasing intracellular magnesium and pH. Low serum calcium levels due to limited consumption of food and vitamin D deficiency lead to a secondary increase in parathyroid hormone, which in turn causes an increase in intracellular calcium concentration leading to increased preadipocyte differentiation into adipocytes and the development of obesity. There is evidence that increased intracellular calcium enhances the effect of  $11\beta$ -hydroxysteroiddehydrogenase type 1 on adipocytes, which, like angiotensin II, leads to increased cortisol production in these cells, causing the progression of both hypertension and obesity. There is a so-called "vicious circle" - on the one hand, obese people have a lowered level of vitamin D, on the other hand, vitamin D deficiency is a risk factor for obesity, type 2 diabetes and other components of metabolic syndrome.

**Conclusions.** Thus, vitamin D deficiency has a negative impact on human health and is independent risk factor for the development of metabolic syndrome components. To increase the effectiveness of primary and secondary prevention of cardiovascular diseases and metabolic syndrome, it is necessary to maintain vitamin D at the optimal level.

## INFLUENCE OF VAGINAL ADMINISTRATION OF THE NEW GELS TO BEHAVIORAL AND EMOTIONAL REACTIONS IN FEMALE RATS WITH ESTROGEN DEFICIENCY

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**Introduction.** Neuroendocrine alteration in the women organism during menopause is often accompanied by the development of a climacteric syndrome with concomitant mental disorders (fear, anxiety, depression, etc.) that occupy a significant place in the symptomatology of menopausal disorders.