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CLINICAL AND EXPERIMENTAL STUDIES OF THE EFFECTIVENESS OF VASCULAR PEPTIDES

Saint-Petersburg / 2024

St. Petersburg Institute of Bioregulation and Gerontology

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Linkova Natalia
Professor, Doctor of biological sciences

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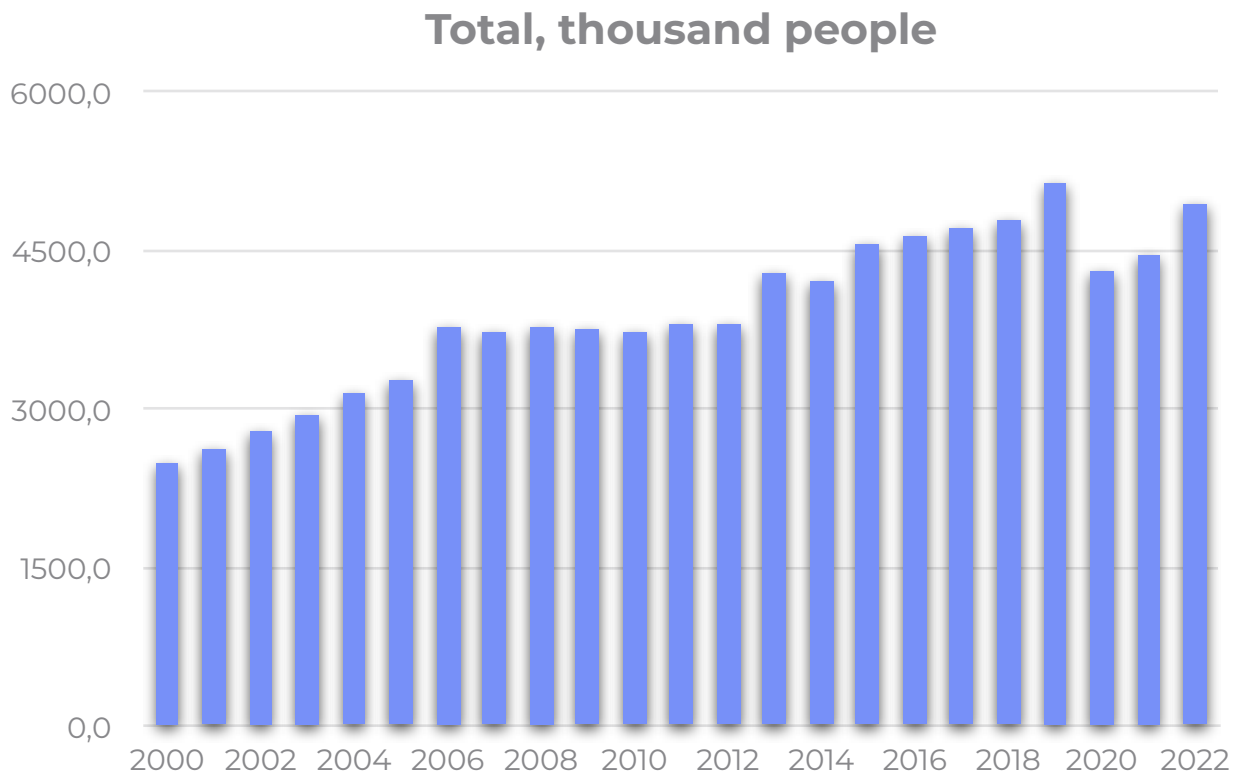
RELEVANCE

Cardiovascular disease (CVD) is the leading cause of death worldwide, killing approximately 18 million people each year.

CVD is a group of diseases of the heart and blood vessels, which includes coronary heart disease, cerebrovascular disease, rheumatic heart disease and other pathologies. More than four out of five deaths from CVDs occur as a result of heart attack and stroke, and a third of these deaths are premature and occur in people under 70 years of age.



Data on the number of CVDs in Russia for 2000 - 2022 according to Rosstat (https://rosstat.gov.ru/)

VENTFORT – POLYPEPTIDE COMPLEX OF BLOOD VESSELS

Ventfort is a complex of peptides isolated from the blood vessels of cattle, which belongs to the group of cytomedins. **Ventfort** is a regulator of vascular functions, which is produced in the form of dietary supplements (capsules and drops under the tongue - lingual form). Its drug equivalent, Slavinorm, is currently in phase III clinical trials.

Ventfort is recommended for the complex treatment of most vascular and cardiovascular pathologies. These are diseases associated with circulatory disorders, including cerebral circulation, varicose veins and atherosclerosis.

Schemes of application:

- ✓ 1-2 capsules 1-2 times a day before or during meals for 1 month;
- ✓ under the tongue 10-15 minutes before meals, 5-6 drops 3-4 times a day for 1 month

VASOPROTECTIVE TRIPEPTIDE VESUGEN

The active principle of the polypeptide complex of blood vessels, **Ventfort**, is the tripeptide **Vesugen (KED),** which includes lysine, glutamic and aspartic acid. **Vesugen**, like **Ventfort**, is a regulator of vascular functions, which is produced in the form of dietary supplements (capsules and drops under the tongue).

Schemes of application:

- ✓ 1-2 capsules 1-2 times a day before or during meals for 1 month
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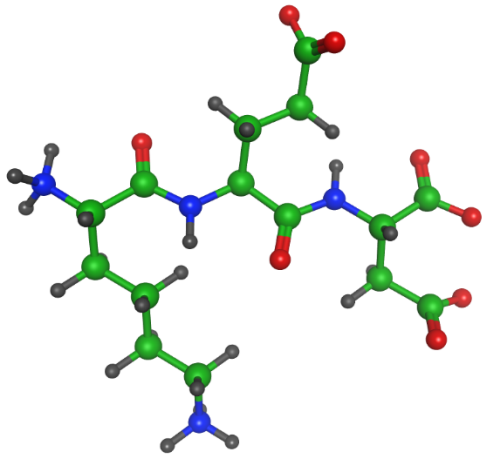


Two-dimensional structure of the KED peptide molecule (**Vesugen**, Lys-Glu-Asp)

VENTFORT AND VESUGEN - INDICATIONS FOR USE

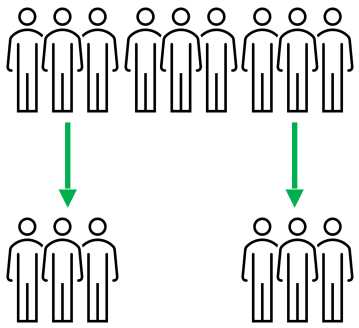
- prevention of atherosclerosis and vascular diseases with genetic predisposition;
- stress factors (hard physical or mental work, training loads, crisis situations);
- adverse external influences (bad habits, occupational hazards, unfavorable environmental conditions);
- elderly and senile age, lipid metabolism disorders (increased atherogenicity index);

- in the complex treatment of diseases that are accompanied by circulatory disorders:

  - obliterating endarteritis;
  - cardiac ischemia;
  - hypertonic disease;
  - chronic venous insufficiency (varicose veins, hemorrhoids);
  - angiopathy of any origin;
  - atherosclerotic vascular lesions.

- rehabilitation after heart attacks
- prevention and recovery after cerebrovascular accident.

THE EFFECTIVENESS OF VESUGEN IN CHRONIC ARTERIAL INSUFFICIENCY



41 patients with lower limbs ischemia

Group 1:
control,
15 patients
65-80 y.o.

Group 2:
Vesugen,
1 capsule per day, 1 month
26 patients
65-82 y.o.

Inclusion criterion: the degree of ischemia of the lower extremities is not more severe than IIB (pain-free walking distance is 50–200 m, ankle-brachial index is 0.45–0.7).

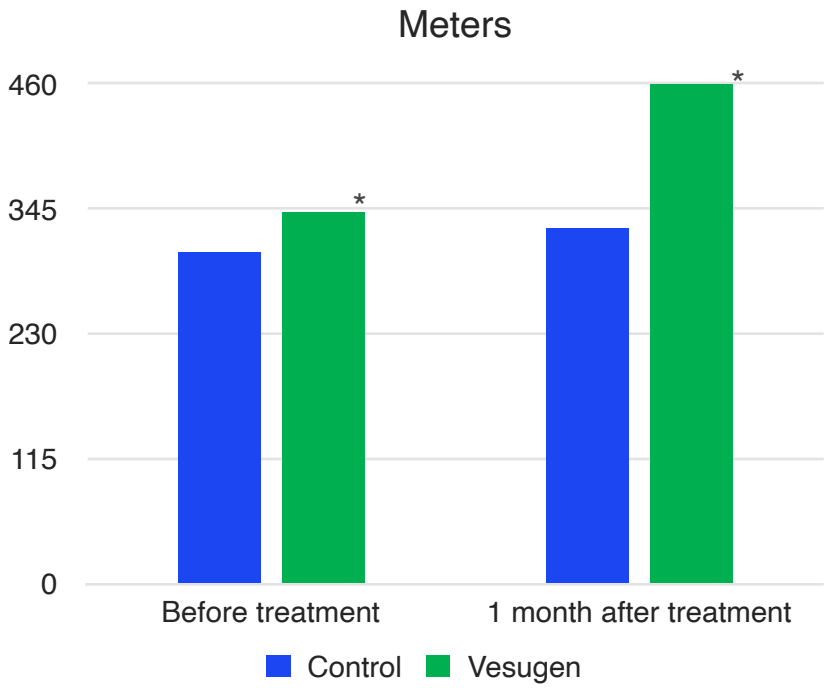
Exclusion criterion: the presence of critical ischemia of the lower extremities: pain at rest, necrotic changes in the distal segments of the limb, endogenous intoxication syndrome.

Pain-free walking distance is the distance that a patient with atherosclerosis can walk before the appearence of pain.

Ankle-brachial index (ABI) - reflects the degree of impairment of arterial blood flow in the legs. ABI = ankle BP/shoulder BP.

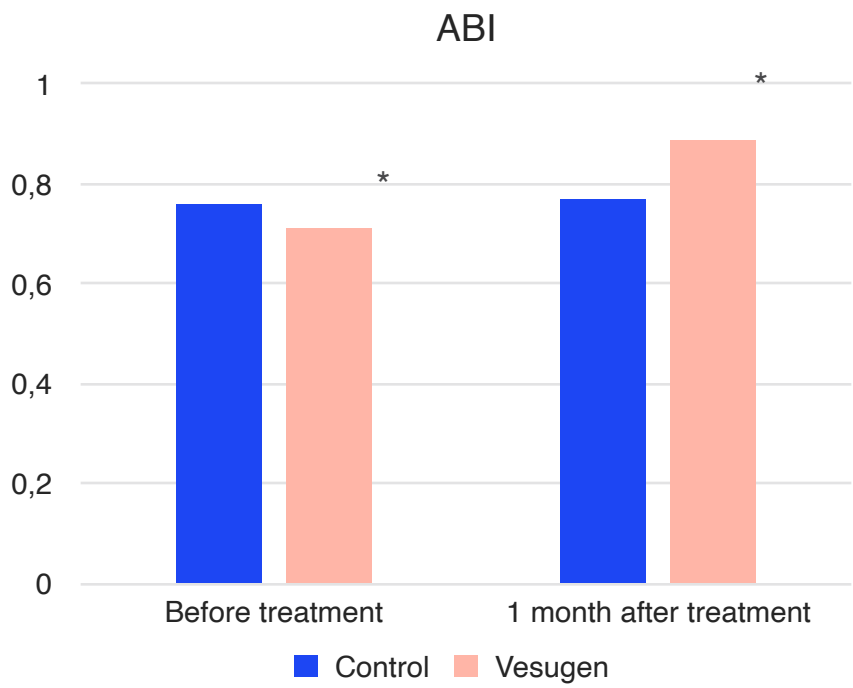
Kitachev K.V., Sazonov A.D., Kozlov K.L., Petrov K.Yu., Slyusarev A.S., Sedova E.V. The role of vasoactive peptide in lower limbs chronic arterial insufficiency treatment. Advances in Gerontology. 2013. T. 26. N. 2. P. 292–296.

THE EFFECTIVENESS OF VESUGEN IN CHRONIC ARTERIAL INSUFFICIENCY



Dynamics of pain-free walking distance in patients of both groups, the correlation is significant (r=0.95).

** p < 0.001 compared to control*



Dynamics of the ankle-brachial index (ABI) in patients of both groups, the correlation is significant (r=0.97)

** p < 0.001 compared to control*

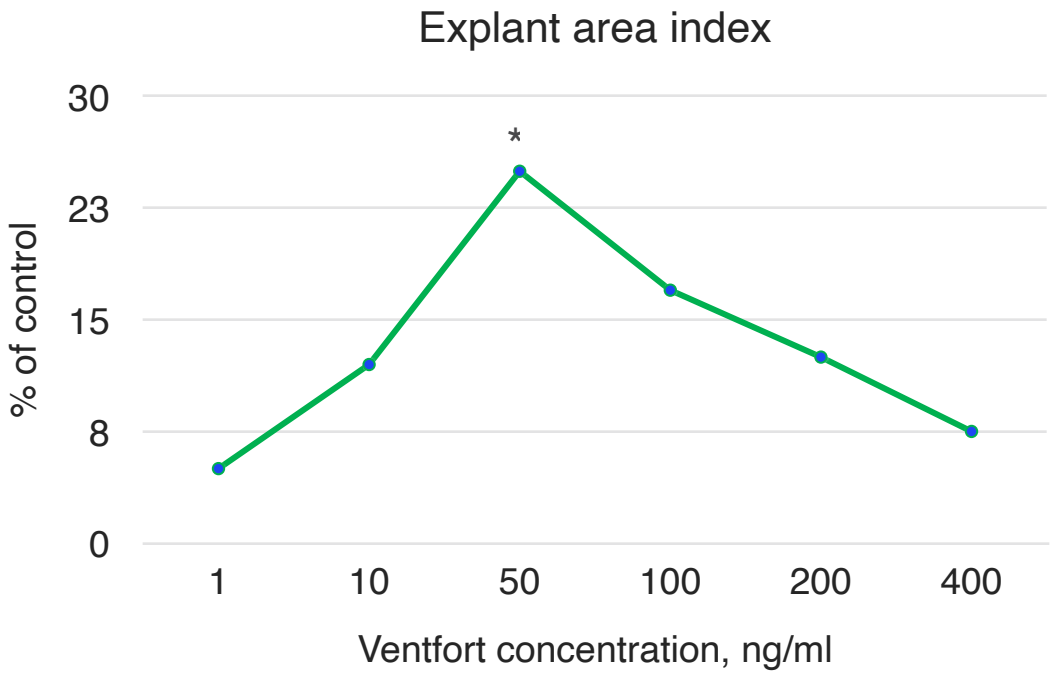
Vesugen significantly increased the pain-free walking distance and ankle-brachial index by **61%** and **53%** compared to the control.

Kitachev K.V., Sazonov A.D., Kozlov K.L., Petrov K.Yu., Slyusarev A.S., Sedova E.V. The role of vasoactive peptide in lower limbs chronic arterial insufficiency treatment. Advances in Gerontology. 2013. T. 26. N. 2. P. 292–296.

VENTFORT: IN VITRO STUDIES

Preclinical studies of acute, subacute and chronic toxicity conducted on mice, rats and guinea pigs showed the absence of side effects with single and long-term use of the vascular polypeptide complex (Ventfort) in doses exceeding the therapeutic dose **by 300-3000 times.**

Ventfort (50 ng/ml) stimulated the growth of organotypic culture (explants) of rat vessels
by 25%.



** p < 0,05 по сравнению с контролем*

Khavinson V.Kh., Malinin V.V., Ryzhak G.A. Pharmaceutical substance normalizing blood vessels functions and method for producing the same. Eurasian patent EA 010734 30.10.2008.

VASCULAR POLYPEPTIDE COMPLEX: EFFECTIVENESS OF USE IN PATIENTS WITH CEREBRAL ATHEROSCLEROSIS

Control:
12 patients → Standard therapy

Main group:
15 patients → Standard therapy
+
5 mg of the drug in 2 ml of saline (2.5 mg/ml) IM once daily for 10 days.

Patient age: 67-83 y.o.

Complaints before treatment:
clinical manifestations of cerebrovascular disorders (impaired memory, concentration, affective lability).

Patients' complaints were assessed over time, **a general clinical examination of blood and urine, and a biochemical study of blood were performed.**

The use of the drug helped improve overall well-being, reduce emotional lability, stabilize mood, and reduce anxiety. Patients noted improvement in memory and concentration.

Khavinson V.Kh., Malinin V.V., Ryzhak G.A. Pharmaceutical substance normalizing blood vessels functions and method for producing the same. Eurasian patent EA 010734 30.10.2008.

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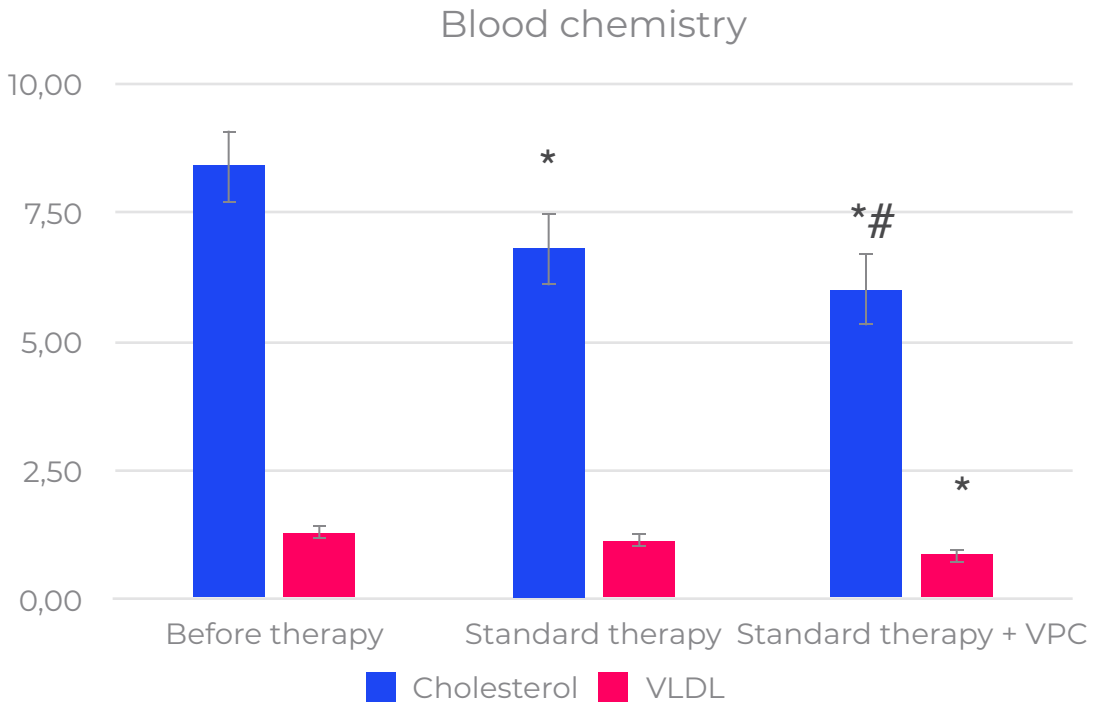

** p < 0.05 compared with the value before treatment*
 # p < 0.05 compared to the standard therapy group

The use of VPC contributed to a significant decrease in the level of total cholesterol in the blood compared to the indicator both before treatment (by **28.5%**) and after treatment using standard therapy(by **6%**).

The use of VPC also significantly reduced
(by **33%**) the content of very low-density lipoprotein cholesterol (VLDL), which is the most atherogenic.

This indicates the normalizing effect of Ventfort on the metabolism of the vascular endothelium.

Khavinson V.Kh., Malinin V.V., Ryzhak G.A. A drug that normalizes the functions of blood vessels and a method for obtaining it. RF Patent RU 2 302 874 C1 dated June 22, 2006.

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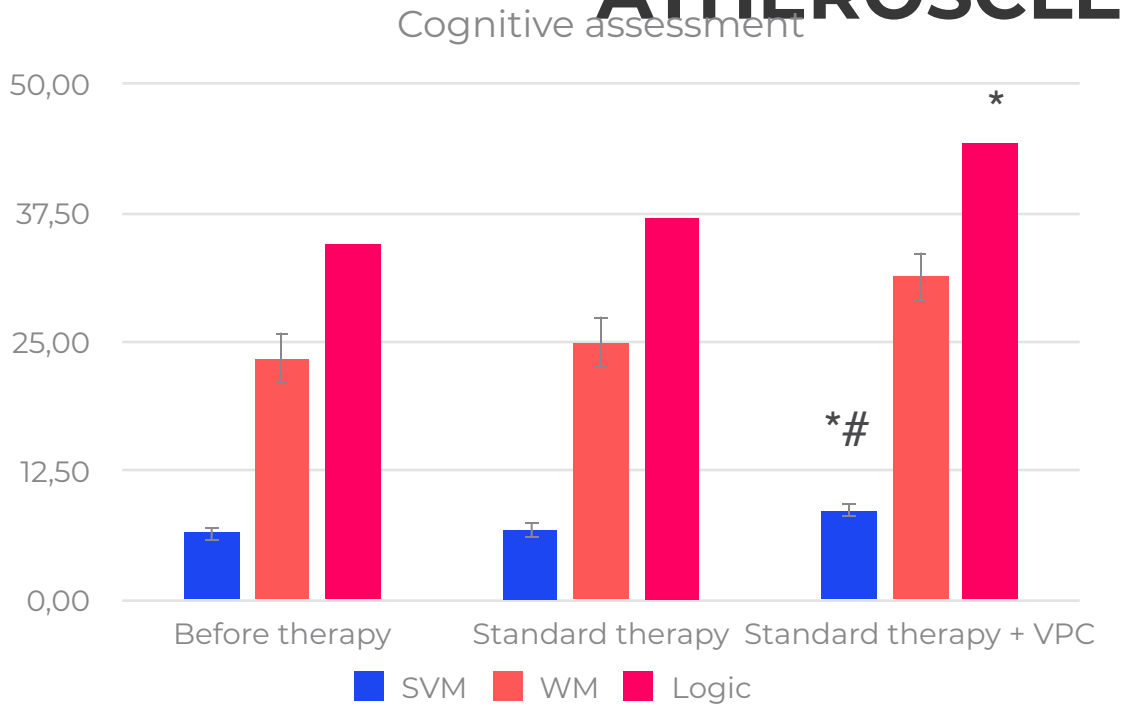

** p < 0.05 compared with the value before treatment*
 # p < 0.05 compared to the standard therapy group

The use of VPC contributed to a significant improvement in short-term visual memory (SVM) - by 36% compared to the value before treatment and by 28% compared to standard treatment.

The use of VPC contributed to the improvement of working memory (WM, by **34%** and **25%**) and logical thinking (by compared to the control). **28%**

This indicates a normalizing effect of the drug on cognitive functions in cerebrovascular disorders.

Khavinson V.Kh., Malinin V.V., Ryzhak G.A. A drug that normalizes the functions of blood vessels and a method for obtaining it. RF Patent RU 2 302 874 C1 dated June 22, 2006.

ADESTAB: MULTI-COMPONENT HIGHLY EFFECTIVE NUTRACEUTICAL FOR OPTIMIZING THE FUNCTIONING OF THE HEART AND BLOOD VESSELS

- For primary prevention of cardiovascular diseases starting from 40-45 years.
- For secondary prevention in combination with prescribed therapy for coronary heart disease, atherosclerosis, arterial hypertension, cardiomyopathies of various origins, arrhythmia, heart failure.

Adestab consists of:

POTASSIUM and **MAGNESIUM.** Potassium and magnesium ions ensure the conduction of cardiac impulses, improve myocardial contractile function, and regulate the metabolism of cardiomyocytes. Magnesium reduces the rate and optimizes the strength of heart contractions.

Complex of medicinal herbs (hawthorn, lemon balm, calendula, hop cones, fennel, horsetail, chokeberry fruits).

Herbs from this complex have a calming effect on the central nervous system, inhibit the excessive excitatory effect of the sympathetic department of the autonomic nervous system (sympathicotonia), and gently activate its parasympathetic department.
They also have a mild diuretic and antispasmodic effect, which helps lower blood pressure.

www.peptides1.com

PREVIN: EFFECTIVE PREVENTION OF ATHEROSCLEROTIC CHANGES IN BLOOD VESSELS

Previn increases the functionality of the vascular endothelium, normalizes cholesterol and blood sugar levels, exhibits antioxidant properties, reduces the level of inflammatory mediators and prevents the spread of the inflammatory process. Prevents excessive platelet activation and thrombus formation. Normalizes the rheological properties of blood. Relieves excess tension and spasm of smooth muscle cells of arteries and aretioles.

The properties of **Previn** are provided by the components included in its composition:

Hesperdin is a flavonoid, a polyphenol of plant origin, which normalizes the metabolism of vascular endothelial cells.
Green tea polyphenols are antioxidants that prevent lipid peroxidation and accelerate fat metabolism.

Choline is a vitamin-like substance, a hepatoprotector, lowers cholesterol levels and normalizes the level of lipoproteins in the blood.
L-arginine is an amino acid that donors nitric oxide, which is a powerful vasodilator.
Vitamin PP (nicotinic acid) normalizes the concentration of lipoproteins in the blood and microcirculation, stabilizes the cell membrane of platelets, and restores the rheological properties of the blood.

SCHEME FOR THE USE OF PEPTIDE AND NON-PEPTIDE VASCULAR BIOREGULATORS FOR THE PREVENTION OF CARDIOVASCULAR DISEASES

- Previn - 1 tablet per day before meals.
- Adestab – 2 tablets per day in the morning and evening before meals.
- Vesugen or Ventfort - 1-2 capsules in the morning 30 minutes before meals or 10-12 drops under the tongue 10-15 minutes before meals 2 times a day.

- Course duration – 1 month; can be repeated after 1-3 months, preventive courses must be carried out 2-3 times a year.

SCHEME FOR THE USE OF PEPTIDE AND NON-PEPTIDE VASCULAR BIOREGULATORS FOR THE PREVENTION OF CARDIOVASCULAR DISEASES

- Previn - 2 tablets per day before meals.
- Adestab – 1 tablet 2 times a day before meals.
- Vesugen or Ventfort - 2 capsules 2 times a day before meals or 10-12 drops under the tongue 10-15 minutes before meals 3-4 times a day.

- Course duration – from 1 to 3 months; the course can be repeated after 1-3 months, preventive courses must be carried out 2-3 times a year.

Thank you for attention!

St. Petersburg / 2024