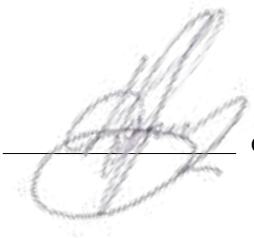
Contents

04	Preface
05	Abbreviations
06	Theories and Reasons of Aging
24	The Role of Stress Adaptation in the Process of Aging
29	Oxidation, Intoxication, Antioxidant Mechanisms. Detoxification and its Phases
34	On Peptides
46	The Process of Glycation Glycation
63	The Gastrointestinal Tract
69	The Immune System
76	Atherosclerosis
84	Memory, Intelligence and Vision
92	The Reproductive System
109	A Few Words on Joints
115	On «Ayurveda» Teas

Dear friends! It is with great joy and profound satisfaction that I present to you the long-awaited book *PEPTIDES — THE TERRITORY OF HEALTH*. It has incorporated a vast number of lectures and research spanning 10 years. When the book was conceived, its name was connected with the former name of our company — NPCRIZ, which is an abbreviation of the full Russian name Science and Production Center for Revitalization and Health. It took us more than 2 years to commit the lectures to paper, to create and edit the tapescripts. We have been through a lot: lack of energy and time, fatal equipment failures and loss of data. We even had to completely rewrite the material. The book was not yet complete, but we were already discussing aging, detoxification schemes and glycation at regional conferences and on our YouTube channel, and using slides by way of illustration. A lot of time has passed since then. Our original idea to compile a brochure of about 10 simple lectures that could be easy to understand for a person without any medical education and experience during a few commuting trips, has undergone serious changes. Now it is a collection of thematic speculations supported by presentations from events as well as clinical studies data on peptide drugs. I am convinced though that the original idea is not gone irrevocably, because this book has turned into something more sophisticated and informative. It is understandable for a person who does not have any medical background. This was my major goal. This is what I wanted to do over the past 15 years — to describe something that usually takes volumes — as briefly as possible.

The original book *NPCRIZ — the Territory of Health* became completely outdated because the regimens and approaches to most peptide drugs have changed dramatically. But it became a real breakthrough in 2014–2015. The book was something that many people were eagerly waiting for. Its time is over, and now we are releasing a new, more profound work which is called Peptides — the Territory of Health. Apparently, one book cannot reflect all the work we do, it might take another 1,5–2 years to describe it. But we need this particular book now, and I hope that it will be included in the must-read lists of many people. Thus, I consider my mission to be complete. The time has come for me to step aside and give way to young enthusiasts that I promise to oversee. They are certain to make their portion of mistakes, but they are not as hopeless as we might think.

In my own capacity, I would like to thank all those involved in the preparation of this book — Ella Koroleva, director of the Moscow office of the Peptides company, Vyacheslav Vasilenko, our Creative Director, Yulia Taratuto, head of the information and publishing department, Artem Evstigneev, our designer and specialist in presentation layouts, Sergei Trusov, our artist, operator and «chronicler», and, last but not least, Nina Dobrakovskaya, our editor, who went to great lengths to transfer the words from audio recordings to paper. I thank you all for your support and understanding.



Gorgiladze D.A.

Abbreviations

ACTH — adrenocorticotropic hormone
AGE — advanced glycation end products
ATP — adenosine triphosphate
BADs — biologically active dietary supplements
BCAAs — branched-chain amino acids
CNS — central nervous system
DHQ — dihydroquercetin
DNA — deoxyribonucleic acid
FSH — follicle stimulating hormone
GI tract — gastrointestinal tract
HRT — hormone replacement therapy
LH — luteinizing hormone
LDL — low density lipoproteins
NAD — nicotinamide adenine dinucleotide
SMA — supporting motor apparatus
SOD — superoxide dismutase
STH — somatotropic hormone
TSH — thyroid stimulating hormone
NO — nitric oxide
VLDL — very low density lipoproteins

Theories and Reasons of Aging

We can quite often hear the questions: «Can we reverse the aging process? Can mankind create an anti-aging pill?» Many people are concerned about these questions. Let us try to consider them.

The aging process is inherent, i.e. genetically determined. It can either proceed along the physiological (normal) path, or follow an accelerated scenario. In such cases, we speak about aging or premature aging of the body. Of course, today there are a lot of theories about how the functions of body organs and systems are suppressed. And, of course, today there are methods to slow down the aging process of the body, and bring its speed to normal physiological values.

On condition of timely intervention, doctors can delay the onset of the so-called «biological autumn» in humans and prolong active old age, which means people can live an active and vibrant life at the age of 60, 70 or even 80. This is the object of anti-aging medicine. Currently, there is no universal pill, but there is a wide range of medical tools that, when applied together, can prolong youth. In particular, there is an incredible amount of such drugs in the Peptides product portfolio. In order to understand how they work, let us have a closer look at the key aspects of body aging processes.

There are many theories of aging. In the 1950s, the American scientist Denham Harman proposed **a free radical theory of aging.** It states that our own antioxidant systems cannot cope with the volume of free radicals (oxidants). As a result, cell walls and deoxyribonucleic acid (DNA) molecules are damaged, and it has dire consequences. Oxidation is difficult to control; it can accelerate tissue degradation, loss of cellular mass, accumulation of gene errors and mutations, which cannot be easily fixed by the body's own repair systems. When the number of defective cells is excessive, the immune system is not always able to cope with them, i.e. track, destroy them and maintain the inner balance. That is why many researchers of this topic actively promote the use of antioxidants to prevent aging.

Another theory of aging is associated with the shortening of the end sections of chromosomes — telomeres. At the ends of chromosomes there are protective blocks, or specific markers that show how many times the cell can divide before its life cycle completes. In the event of a critical shortening of telomeres, the cell is subject to disposal — this is how nature has programmed it. Thus, the longer the ends of a chromosome, the longer the cell can work, function and divide. With each cell division, the end portions of the chromosomes are shortened, and when the number of divisions exceeds 46–47, the ends of the chromosomes are practically bare. At this point, the cell receives a signal that «it's time to retire». Among telomere theory advocates, there are those who propagate the use of activators of the telomerase enzyme, a telomere builder.

Another aging theory is related to gene disorders. It is believed that peptides are able to correct them. In other words, this is the peptide theory of aging regulation developed in our country. Its main provisions are based on the fact that gene activity is associated with the presence of a set of triggering signal molecules called regulatory peptides. Over time, as well as under the influence of stresses and mental and physical overload, the number of regulatory peptides decreases. As a result, the activity of the genetic apparatus and protein reproduction reduce, too, and tissues begin to malfunction.

In addition to that, at times some cells may fail altogether. The remaining active cells then try to fulfill the function of an entire organ or tissue as long as possible, and thus wear out. If we take into account that it may happen in all systems of the body, we can speak about premature aging caused by peptide deficiency. In the 70s-80s of the XX century, prototypes of modern peptide bioregulators that correct various body functions were developed in Russia.

There is a theory of aging that is based on the wear and tear of the nervous system caused by the deficiency of neurotransmitters. These include primarily serotonin, dopamine, and acetylcholine, which is involved in the transmission of nerve impulses between neurons, as well as from neurons to muscles. Apparently, the deficiency of neurotransmitters negatively affects a person's ability to communicate with and understand the outside world, causes memory loss, diminishes concentration and muscle tone (the muscles begin to degrade). Today, there are drugs that can compensate for the deficiency of neurotransmitters (e.g., choline deficiency). This is incredibly important, since it is the nervous system that answers the questions: what, where and when will happen in the body. But whether this or that event can occur in the body depends on the condition of cells. It also depends on the endocrine system, as well as on how the signaling molecules — peptides — work. If a command from the nervous system is received, and there are few peptides, then it will not be executed.

It is noteworthy that neither of the theories of aging fully explains its causes without drawing on other theories. Why? Because aging is a systemic process, and it should be viewed as a pyramid or an iceberg whose top is represented by three main problems: decreased stress adaptation, massive (generalized) oxidation and intoxication. If all the three problems coincide in time and manifest themselves, the aging mechanism is triggered, and the body begins to virtually fall apart.

Primary effects of aging include:

- disruption of the neuroendocrine system;
- hormonal imbalance and deregulation of the cardiovascular system;
- disorders of water-salt metabolism;
- disruption of the immune system;
- reproductive disorders;
- reduced metabolism of compounds associated with the work of the thyroid gland;
- peptide deficiency that is caused by the damage of the genetic apparatus, as well as by a decrease in the production of protein by cells. If some regulatory peptides are produced in bigger amounts than others, gene expression is disrupted, and, as a result, it leads to disrupted protein synthesis. Defective proteins can then be synthesized, which leads to certain negative processes in the body.

Impairment of stress adaptation, oxidation and intoxication, coupled with one of the primary effects listed above — hormonal imbalance — make the immune system to malfunction. As a matter of fact, the endocrine and the immune system are interrelated. The adrenal glands produce a large amount of regulatory hormones. One of them is the stress hormone cortisol, which is released into the bloodstream during stress, which causes an increase in sugar levels and suppression of the immune system. In times of stress, the body can be damaged, and in order to ignore the damage and maintain its normal functions, it has to calm down the immune system. Therefore, prolonged stress can cause immune deficiency.

It should be noted that the process of adaptation to stress can last for 1–1.5 weeks, and if the body is young and in an excellent shape, the resulting resistance to stress will last for 50 days. But what's next? Apparently, the resources of the neuroendocrine system will be exhausted — the hypothalamus, pituitary gland and pineal gland will begin to malfunction, followed by reproductive disorders and failures of the thyroid gland and the adrenal glands. They are not able to work under pressure for long. Hormones will be released irregularly, which will entail diabetes mellitus or persistent immune disorders. The immune system becomes either depressed or, conversely, hyperactive, which leads to the development of autoimmune diseases. These occur when the immune system attacks the body's own healthy tissues with the help of antibodies

produced by B-lymphocytes. This is the reason why stress damages the cells of the pancreas, causes psoriasis, neurodermatitis, autoimmune thyroiditis and other disorders.

However, stress does not always lead to autoimmune diseases. As a rule, the immune system is not able to properly recover after stress, and against the background of immunodeficiency, regeneration problems arise, and the processes of tracking defective cells are disrupted. The body's ability to resist viral diseases and prevent cancer is diminished. As stated above, all of the consequences of stress adaptation disorders, oxidation and intoxication are interrelated. They are not isolated from each other. The problems do not end there, though. To make things worse, secondary effects of aging occur:

1. Tissue degradation caused by the weakening of the immune system and the deficiency of peptides is the result of DNA malfunction and disrupted protein synthesis. Failures of the immune system, which, among other things, controls the exchange of signaling molecules and the process of regeneration, lead to the disruption of collagen synthesis, negatively affect the work of the musculoskeletal system, neuromuscular and interneuronal impulse transmission. It can lead to senile dementia. Such conditions as diabetes and atherosclerosis, which, by the way, are also associated with failures of the neuroendocrine and immune systems, can aggravate dementia.

2. Damage to the vascular wall in diabetes and atherosclerosis may occur due to uncontrolled and autoimmune inflammation.

3. Degradation of the vascular wall and collagen accelerates as a result of a considerable plunge in the level of reproductive hormones in men and women. Against this background, the mechanisms for maintaining the blood level of nitrous oxide and the process of blood coagulation are disrupted.

Ultimately, after the aging process has been initiated, we deal with peptide, hormonal and autoimmune disorders that accelerate the degradation of articular, cerebral, nerve and other tissues. We have listed here the major problems caused by aging. Early hormonal changes triggered by stress lead to aging of the reproductive, immune, vascular, and nervous systems, after which muscle tissue begins to degrade, the structure of collagen changes, and the risks of heart attack, stroke and thrombosis increase.

CONCLUSION

Age-related changes are accelerated by intoxication, oxidation, and impaired stress adaptation. This is followed by a violation of hormonal regulation, the work of DNA peptides, disrupted protein synthesis, and reduced efficiency of the immune system. Tissues degrade, atypical cells are produced and cause immune deficiency, autoimmune inflammations and hormone-dependent processes (including hormone-dependent tumors). All these conditions are closely intertwined with each other. The nervous and vascular systems are involved and badly affected, which causes accelerated aging.

Glycation

There is another factor that influences the aging process — glycation.

It is considered in more detail in the corresponding chapter later in this book. The process of glycation is an example of the Maillard reaction, and is known to us all in culinary arts: it is the formation of a crust, or caramelization that occurs in the frying process. The same happens to proteins in the body: they bind with excess sugars and begin to degrade.

Newly formed compounds reduce the mobility and activity of proteins. As a result, their enzymatic, transport and structural functions are affected. Everything — from enzyme functions to skin collagen, blood vessels, joints and bones — is severely damaged.

Some researchers claim that at the initial stage glycation (which, by the way, is closely connected with oxidation, caused by free radicals) can be reversed. This is possible due to intake of antioxidants and changes in the lifestyle. On the whole, though, this process will always advance incrementally, since the body does not have any effective system to help stop glycation.

We can only monitor it by observing the levelof glycated hemoglobin and fructosamine, and do everything we can to reduce its activity.

Glycation is a multistage process, whose end products are not easy to handle. They accumulate in the body, and altered proteins pose even more problems and plague aging bodies doubling people's suffering.

Glycation affects not only proteins, but peptides as well. This is easier for the body to cope with, since their sizes and molecular weights are smaller. However, the trouble is that peptides are the first to fall out of the race. And if peptide and protein deficiency is accompanied by glycation, the former becomes much more ruinous, as dysfunction and tissue degradation are further aggravated. Thus, the aging process accelerates 3-4 times.

Peptides — the Territory of Health

Peptides (and this is the real territory of health) has a lot to offer: antioxidants, peptides, antiglycants, adsorbents — they all help solve the problem.

Of course, peptides alone cannot always cope with age-related changes. There are, for example, such drugs as **«Panaxod»** and **«3D Complex»**, based on superoxide dismutase (SOD), and **«Trezvon»**, accelerating the second phase of detoxification.

The third phase of detoxification can be enhanced by drugs for functional nutrition: **«Volustom»** and **«Digemax»**. There are peptide bioregulators that affect both individual organs of the endocrine and immune systems, and all systems of our body. There are peptide drugs that boost both the immune and neuroendocrine systems: **«Vladonix»**, **«Endoluten»**, **«Kristagen»**, **«Revilab SL 03»** and the **«ML»** line of multifunctional drugs.

With the help of the cutting-edge developments, we try to influence hormone-dependent and autoimmune conditions. There is also a series of cancer drugs, which have proved efficient in the treatment of autoimmune diseases. For example, **«Revifort»** is a drug based on beta-D-glucans obtained from higher fungi.

People with diseases of the nervous system and the deficiency of neurotransmitters might be interested in such drugs as **«Cerluten»**, **«Revilab SL 02»**, **«Revilab ML 03»**. We have a series of choline-based drugs — basic **«Mesotel»**, **«Mesotel Beauty»**, «**Mesotel Neo»**, **«Mesotel Tubs»**, as well as **«Previn»** that helps prevent heart attack and stroke. Choline bitartrate contained in these drugs improves the state of the vascular wall and enhances tolerance of hypoxia. Intake of these drugs helps normalize sleep patterns, raise alertness, improve memory and other brain and body functions.

We also have a whole range of drugs that can be used to treat and relieve musculoskeletal disorders: **«Chondromix»**, **«Rege-**

nart», **«Sigumir»**, **«Kartalax»**, **«Revilab SL 04»**, **«Revilab ML 09»**.

We take a holistic approach to the human body, therefore Peptides is the territory of health. We identify problems and solve them. For example, to restore the telomere length we effectively use drugs containing the pineal gland peptide since they are able to boost telomerase activity, or the ability to increase the number of cell divisions. There is a general concern that it can increase the number of faulty cells. However, we can assure you that the pineal gland preparation is universal, it improves stress adaptation, the work of the neuroendocrine, immune, reproductive systems, pancreas, adrenal glands, and antioxidant systems. It can be used as an anti-cancer agent.

According to research data, the intake of **«Endoluten»** increases the number of cell divisions and their life expectancy, but cell mutations or failures have not been observed. So, we can influence telomerase mechanisms physiologically, and thus significantly slow down the aging process.

The Peptides product range includes the world's first complex antiglycating drug — **«revilab anti-A.G.E.»**, which is both an antiglycant and a complex antioxidant.

It is impossible to prevent premature aging only with the help of antioxidants and peptide bioregulators, as they destroy both primary and secondary glycation products.

In conclusion, I would like to point out that 40% of aging is conditioned by genes, and 60% — by the individual's habitat, lifestyle and timely preventive measures. Apparently, we have plenty of such tools.

Aging, peptide/non-peptide bioregulation and body functions are quite challenging topics. In a bid to make them more accessible, we present a series of diagrams, illustrations and tables at the end of some chapters of the book. This material can be used as a visual aid.

IMPARMENT OF STRESS ADAPTATION, OXIDATION, INTOXICATION

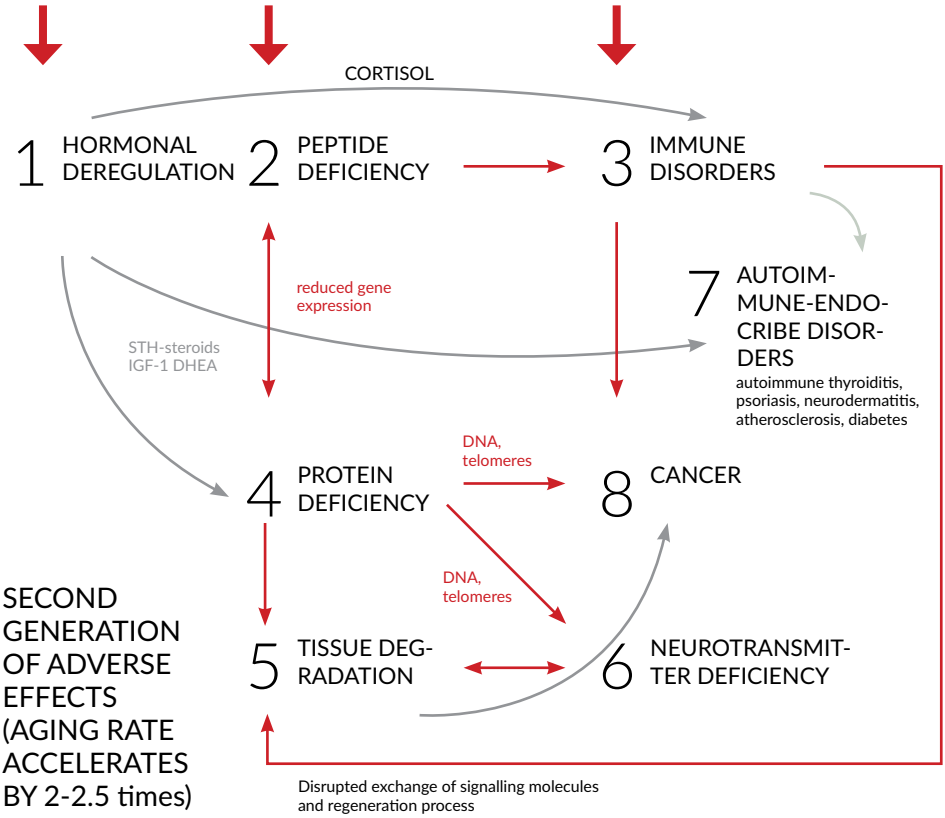
1 HORMONAL DEREGULA-TION

2 PEPTIDE DEFICIENCY

3 IMMUNE DISORDERS

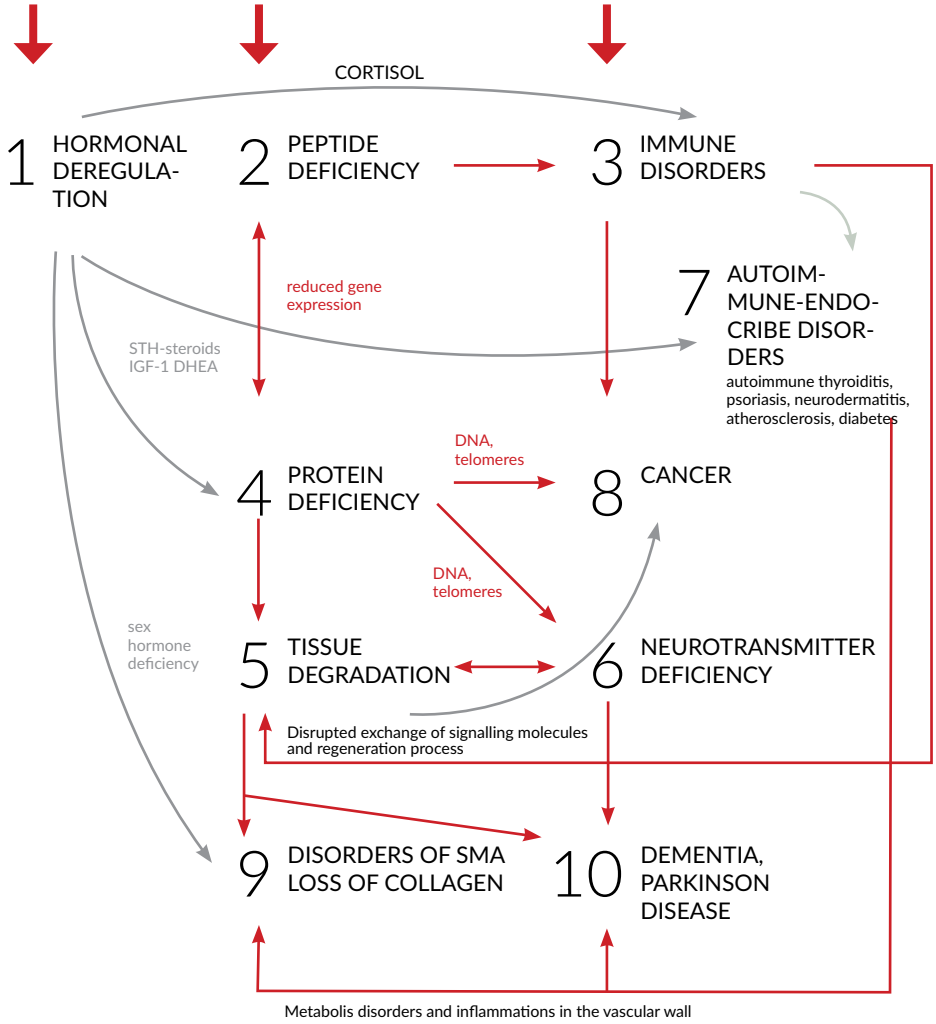
TRIAD OF BASIC DISORDERS AND FIRST GENERATION OF ADVERSE EFFECTS (AGING RATE ACCELERATES BY 1.5-2)

IMPARMENT OF STRESS ADAPTATION, OXIDATION, INTOXICATION

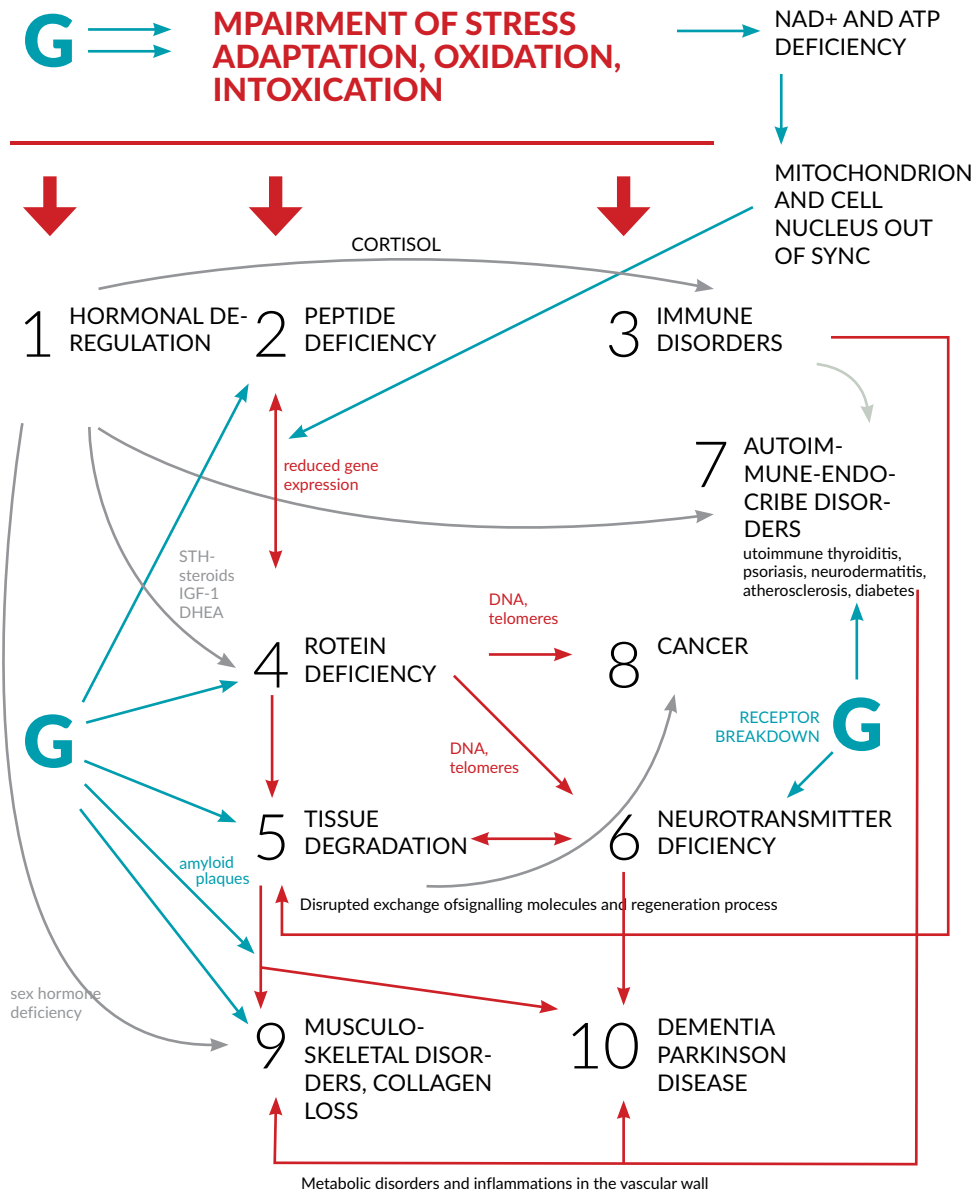


SECOND GENERATION OF ADVERSE EFFECTS (AGING RATE ACCELERATES BY 2-2.5 times)

IMPARMENT OF STRESS ADAPTATION, OXIDATION, INTOXICATION



THIRD GENERATION OF ADVERSE EFFECTS
(AGING RATE ACCELERATES BY 2.5-3 TIMES)



FOURTH GENERATION OF ADVERSE EFFECTS (AGING RATE ACCELERATES BY 3.5-4 TIMES)

G GLYCATION — UNIVERSAL ACCELERATOR AND MULTIPLIER

Solutions

The new doctrine of body revitalization has been under development for a long time now, and it has switched from the idea of combining peptides with antioxidants to the simultaneous treatment of consequences of stress, oxidation, detoxification imbalance and, of course, glycation.

It is glycation that aggravates peptide deficiency and protein and receptor degradation. It is glycation that disables the antioxidant enzyme systems of the second phase of detoxification, thus exacerbating oxidation and intoxication.

A promising area of medicine is the use of SIRT activators and NAD^+ precursors (drug development is underway).

Phase 1 of Revitalization — Treatment of the Distress Syndrome, Glycation, Oxidation and Intoxication

Supplement	Month 1	Month 2	Month 3
Revilab SL 03	+		
Endoluten		+	+
Vladonix		+	+
REVILAB ANTI-A.G.E.	+	+	+
Complex 3D / Panaxod	+		
ARDILIV / COMPLEX 3R		+	
Trezvon	+		+
Volustom	+	+	+
Digemax	+	+	+

Once I was approached by our creative director and curator of the European representative office, Vyacheslav Vasilenko. He suggested that I hold a seminar in Riga. The problem was all the lectures had already been delivered by that time. So, there was an idea to revive the interest in our numerous basic non-peptide drugs. But the question was how to do it. As a matter of fact, by that time our schools of epigenetics and webinars on basic drugs had become a regular thing. They were held by our medical consultant Irina Saburova. And people wanted something new, some sort of an instructional manual. So, I suggested that I tell them about non-peptide drugs based on our presentation of aging schemes.

This meant taking another perspective of the aging process. This is how our alternative scheme for the correction of functional body changes was conceived. It is this scheme that this book presents. The underlying principle — work with the neuroendocrine and immune systems —was preserved, as well as the use of adsorbents and antioxidants, first strong, then weaker ones.

The scheme also includes intake of the drug for kidneys called **«Renefort»** during the first phase (or month) of treatment. Then, step by step, drugs for the nervous, immune, respiratory, vascular, musculoskeletal and reproductive systems are added up. As a result, we get a detailed 5-month scheme of body recovery! It includes two «hybrid» supplements containing peptides: **«Alvenorm forte»** and **«Proteston»**. Apart from these, it is a purely non-peptide method of correction of body state and its restoration

Supplement	Phase I	Phase II	Phase III
Temero Genero	+	+	+
Revilab anti-A.G.E.	+		
Panaxod	+	1/2	1/2
Ardiliv (Complex 3R)		+	
Trezvon			+
Volustom	+	+	+
Digemax	+	+	+
Renefort	+		

TEMERO GENERO

- First prototype of multifunctional drugs
- Light-version of peptides of the pineal gland, T- and B-components of the immune system
- Combines the properties of internal «Mesotels»
- Improves neuroendocrine, immune and cerebral status

Temero (morning)
Ingredients: glycine, glutamic acid, choline bitartrate, aspartic acid, calcium citrate, magnesium citrate, alanine, zinc citrate, 5-hydroxytryptophan, folic acid.

Genero (evening)
Ingredients: calcium citrate, magnesium citrate, glutamic acid, aspartic acid, proline, choline bitartrate, zinc citrate, lysine, folic acid.

revilab anti-A.G.E

- First ever complex antiglycant and detoxicant
- Reduces peptide deficiency
- Reduces the rate of vessel degradation of blood vessels, central nervous system, cartilage tissue

Ingredients: carnosine (AA-17 dipeptide, consisting of β-alanine and L-histidine), rosemary extract, taurine, alpha lipoic acid, hematococcus extract (astaxanthin).

Antitoxic Hepatoprotector Trio

Panaxod (Complex 3D) | Ardiliv (Complex 3R) | Trezvon

Ingredients: superoxide dismutase (SOD), ginseng biomass, rutin, vitamin PP.

Ingredients: red grape leaf, strawberry, artichoke extracts; dihydroquercetin, resveratrol.

Ingredients: birch leaf extract, glycine, lemon balm herb, cinnamon, choline bitartrate, burdock root extract, artichoke fruit extract, herb extract, bay leaf, dihydroquertecin, vitamin B.

VOLUSTOM AND DIGEMAX

Antitoxic tandem at the level of the gastrointestinal tract

Ingredients: concentrated juices of apple and chokeberry, lactulose; chamomile, aloe vera, mint, thousand-peel, licorice, St. John's wort, calendula, marshmallow, fennel extracts.

Ingredients: apple powder, chicory inulin, bamboo fiber, oat fiber, apple fiber, chicory oligofructose, psyllium (psyllium husk), flax seeds, cinnamon powder, apple pectin, turmeric, ginger powder.

RENEFORT

Restoring another important filter in the body

- Nephroprotector
- Stone desintegrator
- Membrane stabilizer

Ingredients: magnesium oxide, red bilberry leaf, horsetail herb, rosehip and, rosemary extracts, hesperidin, vitamin C, superoxide dismutase, hibiscus extract, vitamin E, beta-carotene, dihydroquercetin, coenzyme Q, citric acid, sodium citrate.

SUPPLEMENTS TO BE PHASED IN GRADUALLY

- Supplements for the central nervous system («Felicita» and «Mesotel»).
- Extra immune correction starting from Month 2 («Imusil», «Zinsil-T»), to be later later substituted by «Calsil-T» and «Revifort». In Month 4, «Alvenorm forte» is added up.
- In Month 2, vascoactive agents «Adestab» and «Olekap» are added to the regimen, to be joined by «Kanakor» in Month 4.
- The musculoskeletal system is treated during Month 3. «Ardiliv» is substituted by «Regenart». In Months 4–5, «Chondromix» is added up. By that time, detoxification process completes, and the immune and vascular systems function adequately.
- The reproductive system is dealt with starting from Months 3–4: detoxification is expected to complete, and the liver functions well.

IMMUNE CORRECTION GROUP PART I

Imusil | Zinsil-T | Calsil-T | Revofort | Alvenorm forte

Natural innovative immune restorer

Ingredients: fragments of the cell wall of bifidus and lactobacilli, echinacea extract, ascorbic acid.

Restores the immune and antioxidant capacity

Ingredients: glycine, zinc citrate, vitamin B.

Osteoporosis and cancer prevention

Ingredients: calcium citrate, calcium carbonate, magnesium citrate, magnesium carbonate, vitamins A, D and E.

IMMUNE CORRECTION GROUP

Imusil | Zinsil-T | Calsil-T | Revofort | Alvenorm forte

Broad-spectrum anti-cancer agent

Ingredients: extracts of shiitake, reishi, maitake, cordyceps fungi, echinacea purpurea extract, zinc citrate, kelp thallus.

Bronchopulmonary multicomponent peptide-based supplement with an immunemodulatory effect

Ingredients: peptide of the B-link of the immune system, lung peptide, bronchi peptide, decoction of cetraria, concentrated red grape juice; plantain, calendula, nettle, red bilberry leaf, licorice root, thyme and eucalyptus extracts.

REPRODUCTIVE GROUP

Femalin | Mamiton

for women

Multicomponent drug used to normalize female body functions

Ingredients: L-arginine, dioscorea extract, muira puama extract, yohimbe bark extract and resveratrol.

Anti-cancer agent for the female reproductive system

Ingredients: horsetail, nettle leaves, kelp thallus, motherwort, rose hips, knotweed herb, mint, cone-hop and walnut pericarp extracts; resveratrol (Japanese knotweed extract), vitamins A and E.

CHONDROPROTECTIVE GROUP

Regenart | Chondromix

articular joints support

Chondroprotector and hepatoprotector

Ingredients: dandelion root extract, chondroitin sulfate, artichoke extract, dihydroquercetin.

Chondroprotector, polyvalent drug

Ingredients: chondroitin sulfate, glucosamine, methylsulfonylmethane, grape seed extract, catalase, boswellia serrata extract, superoxide dismutase.

VASOPROTECTIVE GROUP

Adestab | Olecap | Canacor

blood vessels support

A vasoprotective (angioprotective) drug for heart attack and stroke prevention

Ingredients: potassium chloride, magnesium citrate, chokeberry fruit, melissa herb, calendula flowers, hop cones, fennel seeds; hawthorn fruit and horsetail herb extracts.

Natural angiorestorer based on polysaturated fatty acids

Ingredients: cold water salmon oil, linseed oil, vitamins A and E.

Cardioprotector

Ingredients: concentrated apple juice, taurine, vitamin PP, arginine, natural plant extracts: hawthorn, white willow bark, nettle; dihydroquercetin.

REPRODUCTIVE GROUP

Actiman | Proteston for men

Multicomponent drug used to normalize male body functions

Ingredients: L-arginine, L-carnitine, acetyl-L-carnitine, extracts: sabal palm, prickly pear cactus, pumpkin seeds, pidgeum bark, muirapuaam, epimedium.

Complex peptide-based supplement for men's health

Ingredients: peptide complex AA-21, L-arginine, yeast, enriched with selenium, pidgeum bark extract, hemolen, pantel, zinc, epimedium extract.

COMPLETE SCHEME OF RECOVERY

OF ALL BASIC BODY SYSTEMS FOR 5 MONTHS

Supplement	Month 1	Month 2	Month 3	Month 4	Month 5
Temero Genero	+	+	+		
Felicita				+	+
Mesotel				+	+
Revilab anti-A.G.E.	+			+	
Panaxod (Complex 3D)	+	1/2	1/2		
Ardiliv (Complex 3R)		+			
Trezvon			+		
Canacor				+	+
Volustom	+	+	+		
Digemax	+	+	+		
Alvenorm forte				+	+
Renefort	+				
Imusil		+			
ZINSIL-T		+			
CALSIL-T			+		
Revifort			+	+	
Regenart			+		
Chondromix				+	+
Adestab		+	+	+	
Olecap		+	+	+	
Femalin and Mamiton			+	+	+
Actiman and Proteston			+	+	+

The Role of Stress Adaptation in the Process of Aging

The capacity to adapt to stress is the key to good health and prolonged youth. Impaired stress adaptation should be considered as one of the factors triggering the natural mechanism of aging. As stated in the previous chapter, the aging process is initiated and accelerated by the triad that consists of impairment of stress adaptation processes, oxidation and intoxication. They are all interrelated. The current chapter deals with stress adaptation.

Stress is ruinous for the body. Its consequences vary from sleep disorders and a chronic fatigue syndrome to lethargy and apathy.

Moderate stress is good for the body — it helps people adapt to the changing environment, weather conditions, nutrition, and psychoemotional states. However, moderate stress is a rare thing; stress is often excessive and long-lasting; it leads to severe disorders throughout the human body.

When the body and brain are moderately stimulated by stress, it is beneficial for the immune, neuroendocrine, vascular systems and the brain. Most Russians live in adverse socio-economic conditions with disrupted work-life balance and irregular sleep and wakefulness patterns. For this reason, stress must not be perceived as a means of training for the body.

The theory of stress was developed by the scientist Hans Selya quite a long time ago. He claimed that stress is an adaptive response of an organism to the changing environment. It is useful if the changes are negligible and do not take long. In times of stress, the nervous system becomes more active. The endocrine and immune systems are enhanced, the activity of the cardiovascular system changes. These mechanisms are triggered so that the body could preserve its functionality for some time. The behavior and properties of the vascular wall also change. As a rule, its permeability increases; in the classical model of stress, hemorrhages in the mucous membranes can also be observed.

It is believed that there is a short response to stress that does not significantly affect the body. It is referred to as adaptation. It spans up to 11 days. If the process lasts longer, the body reserves are involved. At its most, adaptation can last up to 50 days. After 1.5 months, the ability of body organs and systems, especially the brain and endocrine system, to function to best of their capacity, wears off. Exhaustion sets in. Organs may not change anatomically, but in terms of functionality they are no longer capable of anything. Depletion of natural body reserves causes an overall imbalance and a complete lack of coordination between the nervous system, the adrenal glands and the blood vessels. The immune system begins to lose its ability to ward off pathogens, which increases the risk of cancer and immunodeficiency. Sometimes, on the contrary, autoimmune processes are activated. Against this background, the work of all organs and systems is disrupted. The main mechanisms for maintaining homeostasis fail, and a cascade chaos begins: the most genetically weak parts of the body break down. In many of our patients, we diagnose the growth of pathologies that are characteristic of people not at 40, but at the age of 60. The cause for all this is prolonged and repetitive stress.

When people complain of increased fatigue, chronic lack of energy, and immune disorders, it testifies to the development of the so-called distress syndrome and failed adaptation to the changing circumstances.

The Role of Pineal Gland and Melatonin

The author of the theory of stress did not consider the role of the pineal gland in the process of stress adaptation. It is closely connected with the hypothalamus and hypophysis. These two, being the central organs of neuroendocrine regulation, send commands with the help of two groups of hormones (li-

berins and statins) to the endocrine system to activate its work, or inhibit it. The pineal gland itself is influenced by the hypothalamus, as the latter sends commands to the former, thus accelerating or slowing down its activity. The pineal gland produces a lot of hormone-like substances, but the production of serotonin in the day time and melatonin at night is particularly important.

Serotonin is not a hormone at all, but a real neurotransmitter. Its task is to form positive behavioral reactions. It participates in the work of the vascular and reproductive systems.

Melatonin is produced by the pineal gland at night from leftover serotonin — it is the general belief. However, there are two peaks in the production of melatonin — at 8.00–9.00 p.m. and around midnight. Melatonin is very important for the body; therefore, it is produced not only in the pineal gland, but also in the intestinal lymphoid tissue, appendix, prostate, skin, etc. It is a universal cellular messenger, all organs and tissues respond to it with the help of MT1, MT2, gamma ROR receptors. When it is released into the bloodstream during REM sleep, it «tunes» our body, to use a musical metaphor, synchronizes and adjusts the work of all organs, systems and cyclic processes.

Melatonin has a number of other important functions: it is a powerful antioxidant that activates the three basic components of the antioxidant system of the body: SOD, catalase, and glutathione peroxidase.

They neutralize free radicals during the second phase of detoxification, so, melatonin is extremely important as it helps prevent mutation and cancer. Melatonin protects the DNA, and is connected with the immune system. However, the latter is even more greatly influenced by thymus and adrenal glands, which produce a number of hormones.

The pineal gland affects the processes of stress adaptation. Together with the hypothalamus and the pituitary gland, it influences the thyroid gland and the adrenal glands. Melatonin, produced by the pineal gland, controls the activity of the endocrine system, sets the rhythm of the production of such a hormone as cortisol. In its turn, cortisol increases our blood sugar level temporarily, giving us quick energy, and thus allows the immune system to rest a while. By and large, the reproductive, cardiovascular, neuroendocrine and immune systems are mostly affected in times of stress, when the body tries to adapt to changing conditions. If they work in unison, the body can function normally for several weeks. The key point is to smoothly and painlessly get out of stress.

Consequences of Stress Adaptation Disorders. Distress Syndrome

Impaired stress adaptation has a variety of consequences, which, of course, affect the state of the whole body. Some of the major adverse effects of this process, as well as recommendations on how to counter them are listed below.

- Lethargy, apathy, a subdued mood, depressive disorders, and panic attacks. These suggest there is a serotonin-melatonin imbalance. We treat it with the help of drugs containing peptides of the pineal gland, such as **«Endoluten»**, multifunctional **«Revilab SL 03»**, **«Revilab ML 01»**, and in some cases — adrenal gland preparations, e.g. **«Glandokort»**.
- Insomnia and other sleeping disorders are also associated with impaired synthesis and imbalance of serotonin and melatonin. This is a sign that the pineal gland does not function properly. The problem is solved with the help of **«Endoluten»** or **«Revilab SL 03» («Revilab ML 01»)**, and non-peptide bioregulators **«Temero Genero»** or **«Felicita»**.
- Malfunctioning of the adrenal glands, reproductive and immune systems. The work of the immune system must be corrected. If there are no autoimmune processes, we

include T-cell drugs (**«Vladonix»**). If there is a suspicion of autoimmune changes, the sublingual drug **«Revilab SL 03»** based on pineal gland peptides, T- and B-cells of the immune system, is a better option. It must be taken once every 48 hours — this is an optimal regimen for people over 40 y.o., as it makes it easy to tolerate the pineal gland peptide drugs. **«Endoluten»** prescribe it once every 72 hours. When taken once in two or three days, the drug helps improve the rhythm and functioning of all body systems, including reproduction. It also helps treat diabetes and autoimmune diseases, since the daily use of pineal gland peptides stimulates the adrenal glands.

- Sleep disturbances lead to the suppression of the immune system and the development of autoimmune processes.
- Another negative scenario implies adrenal glands and pancreatic disorders. All this leads to diabetes. In this case, both pancreas-targeted agents and multifunctional drugs of the **Revilab** series are used. Antiglycants and antioxidants must also be taken.
- If the pineal gland functions well, there will be no hormonal surges, which are one of the consequences of stress adaptation disorders. Stress dramatically affects the reproductive system, especially in women. It causes a hormonal imbalance. The problem is solved with the help of pineal gland, thyroid gland drugs and ovary preparations, since thyroid gland disorders are often accompanied by mastopathy, endometriosis, and fibroids of mixed origin.
- The risk of developing cancer and benign «plus tissues» increases. In this case, all of the above products are effective.

CONCLUSION

Stress is an adaptive response of the body, which affects all of the above-mentioned systems: vascular, immune, neuroendocrine, nervous, reproductive. The hypothalamus, pituitary and pineal gland play an important role during stress. By normalizing the work of the pineal gland, we help the nervous, vascular, endocrine, immune, and even reproductive systems. We lay a foundation for the regeneration of the human body. The mechanism of stress adaptation is one of the pillars of health, youth and active longevity.

STRESS (ADAPTATION)
SHORT 7–11 DAYS, LONG 50–60 DAYS

- Changes in the activity of the central nervous system, hypothalamus, pituitary gland, pineal gland
- Changes in the activity of the thyroid gland, adrenal glands and organs of the reproductive system (FSH, LH, ACTH, TSH, serotonin, melatonin)
- High cortisol levels suppress immune responses and increase sugar (energy)
- The tone and permeability of the vascular wall is increased

DISTRESS SYNDROME (OVER 60 DAYS)

- Depression, insomnia, panic attacks
- Chronic fatigue syndrome
- Erosions and ulcers
- Reduced glucose tolerance, diabetes
- Hypothyroidism
- Immune deficiency, autoimmune disorders
- Reproductive disorders
- Hypertension, atherosclerosis
- Reduced antioxidant status and phase 2 of detoxification

Oxidation, Intoxication, Antioxidant Mechanisms. Detoxification and its Phases

The leading role in maintaining the normal functioning of the body is played by the mechanisms of stress adaptation that control the endocrine, nervous, immune, cardiovascular, reproductive systems, as well as the antioxidant defense of the body.

In the first chapter, we spoke about the free radical theory of aging. It is one of the most apparent reasons for aging. What are free radicals? It is either active oxygen, or highly active OH groups (superoxide anions) that are formed in the body in the course of life. They must be constantly neutralized and removed from the body. This is done by our antioxidant system. It is governed by melatonin-dependent mechanisms. Since the normal functioning of the pineal gland depends on the activity of the main enzymes of our antioxidant system — SOD, catalase and glutathione peroxidase, we must understand that stress and oxidation are closely related to each other.

All antioxidant mechanisms perform many metabolic tasks, but their main function is to neutralize and prepare for the elimination of free radicals and toxins. The task of the antioxidant system of the body is to reduce the amount of free radicals to zero. In the course of life the human body can produce up to 2 tons of free radicals. If the antioxidant system works well, only single molecules can overcome the defense system, but this is innocuous. If the system does not function properly, however, free radical oxidation or lipid peroxidation occurs. Lipids are an essential element of the cell wall and the membrane of cell nucleus where DNA is stored. When cells are attacked by highly active negatively charged particles, there is a massive oxidation degradation of the cell membrane that can lead to defects in the cell wall and nucleus, and even damage of the genetic apparatus. If the damage is insignificant, the DNA repair system copes with it, but if the oxidation is extremely strong, the structure of chromosomes can change with serious adverse effects. It is common knowledge that free radicals will still occur as a result of normal metabolic processes, it is inevitable. But if the antioxidant system runs smoothly, they do not pose any threat for the body.

It is noteworthy that free radicals are also derived from external sources such as food (preservatives, oxidants), exposure to X-rays, toxic and radiation effects on the body to name but a few. So, the inner antioxidant system is sometimes unable to cope with such attacks, although it functions to the best of its ability. If this is accompanied by impaired stress adaptation, the antioxidant system fails to counteract the increased number of free radicals. As a result, massive oxidation occurs. Brain tissues and the vascular wall are badly affected, and it leads to metabolic imbalances. As a result, aging accelerates and various pathologies develop.

You can change your lifestyle, dietary patterns, habitat, but often, in order to normalize the antioxidant system, you first need to put the mechanism of stress adaptation to right, and improve the state of the pineal gland. For this, Peptides has a number of drugs such as «Endoluten», Revilab SL, etc.

So, during oxidative stress, it is of paramount importance to supplement the pineal gland peptides with antioxidant drugs. We have a wide range of such drugs on offer, for example, SOD-based drugs such as «Panaxod» (SOD, extract of cedar root cells) and «Complex 3D» (SOD, catalase, glutathione, dihydroquercetin).

For better effect, it is recommended to combine «Panaxod» with drugs containing the pineal gland peptide («Endoluten », Revilab SL 03 / ML 01) and dihydroquercetin («Complex 3R», «Ardiliv»). These can be supplemented by detoxifying anti-cancer agents such as «Reviplant» and «Likam». Such a regimen will create the foundation for a prolonged and effective recovery of the body. We also have the «Complex 3D» drug, which contains SOD, catalase, glutathione, and dihydroquercetin (DHQ). It can be considered an alternative to «Panaxod» and «Complex 3R».

The Peptides product range includes a drug

that contains both SOD and catalase. It represents the anti-cancer series and is called «Indosine». It contains other antioxidant components as well.

All of the above drugs can be combined in any order, the point being that the therapy should be based on:

- pineal gland peptides;
- SOD and catalase;
- DHQ.

In general, to get maximum benefit from the intake of peptides, we must combine them with antioxidants, detoxicants and antiglycants. They help alleviate oxidative damage and increase the effectiveness of peptide therapy. It is generally believed that antioxidants should not be taken on a permanent basis, since we cannot evaluate the oxidative status of the body. However, if one lives in an urban area it is advisory that they take repetitive courses of antioxidants.

Astaxanthin is believed to be the most potent antioxidant and antiglycant. However, it seems irrational to rely exclusively on astaxanthin, or DHQ, or vitamins E or A alone, no matter how much these miraculous monopreparations are promoted. Compound drugs have proved to be much more efficient.

One of the drugs that has been effectively used to prevent hormone-dependent tumors in the female reproductive system, Resveratrol, is a very strong antioxidant. It is also known to improve the state of the vascular wall.

Coenzyme Q10 is actively promoted. It boosts the immune system and has an antiarrhythmic effect. It is a good membrane stabilizer and anti-cancer agent. But before combining it with other antioxidants and components, you must make sure that the liver functions well. If the metabolic function of the liver is impaired, there is no use taking coenzyme Q10, since its effect will be close to none. For this reason, I would recommend taking drugs containing this component at later stages of body recovery.

Antioxidants are almost always a very good idea. However, they can be dangerous if used uncontrollably and in large quantities. However, if you do it repetitively and in courses, then there is no harm from antioxidants whatsoever. It is very important to help the antioxidant defense system to get rid of excess antioxidant burden by means of peptide and non-peptide bioregulators, and to bring it back to normal.

Intoxication and Detoxification of the Body

Oxidative stress is closely connected with intoxication. It is almost a permanent process that takes place when we consume certain foods or inhale polluted air. The human body has certain detoxification mechanisms that include the work of the three antioxidant systems of the body described above. What is detoxification?

Detoxification is a metabolic process that helps the human body get rid of arrays of toxic substances. This process referred to as metabolic detoxification includes a series of enzymatic reactions that neutralize or dissolve toxins and transport them to such secretory organs as liver and kidneys to be ultimately removed out of the body. Detoxification is the work of detoxifying enzymes and antioxidants. There are three phases in this process:

1. Fat-soluble toxins, hormones, drugs and xenobiotics undergo primary processing by a group of enzymes, in particular, cytochrome P-450, which is associated with hydrolysis and dehalogenation. In the first phase, the primary transformation of toxins into something «digestible» takes place.

2. During the 2nd stage primarily processed substances undergo binding (conjugation): they bind either with amino acids or with various chemical groups in the

course of enzymatic reactions. These compounds are not fat-soluble, but water-soluble, and are readily broken down. They can leave the body with urine, bile and feces.

3 Toxins are released from the cells using various transport systems, as well as preventing the ingress of toxins into the cell using the antiporter (P-glycoprotein) system. It is an enzyme that ensures the elimination of xenobiotics and heavy drugs. The main task of P-glycoprotein is to remove endotoxins and conjugated toxins through the kidneys, intestines or bile.

The three main components of the antioxidant system are enabled during the 2nd phase of detoxification. All the phases of detoxification must be balanced. If the detox process is medically assisted, it must start from the end, that is, from the 3rd phase, so that toxins could be more effectively and quickly removed from the cells.

There are exogenous factors that influence intoxication and detoxification of the body.

Everything we consume — food, polluted air, etc. — accelerates the 1st phase of detoxification. The cytochrome P-450 defense system is overloaded, and the products of primary processing accumulate, thus rendering the antioxidant systems unable to cope with so much work. If you speed up the 3rd and 2nd phases, detoxification will speed up. If we endlessly boost the 1st phase, the 2nd and 3rd phases will lag behind, no matter how hard we try to balance them. This skew is dangerous because in the 1st phase, a large number of primarily processed sex hormones are formed. Some of them are dangerous for testes, prostate, mammary glands, ovaries, and uterus. The hyperactive 1st phase is malign! The 1st phase of detoxification can be accelerated by contraceptives, hormonal steroid drugs, barbiturates, nicotine, ethanol and caffeine. All these, however, complicate the 2nd phase of detoxification. One must get rid of bad habits and use such a drug as «Indosine» that contains indole-3-carbinol. It reduces the risk of hormone-dependent tumors in women.

It must be mentioned that the activation of the 2nd phase of detoxification enhances the detox process on the whole. Ellagic acid, contained, for example, in cruciferous plants, activates the 2nd phase of detoxification and suppresses the 1st phase. DHQ accelerates the 2nd phase of detoxification in the liver, and even when we stop taking it, the effect persists.

The 3rd phase can be enhanced by consuming leafy greens, barley and wheat sprouts, cabbage, polyphenols contained in apples, and compounds derived from conifers — delicholls or polyprenols that boost cell antiporter.

Branched-chain amino acids (BCAA) known in sports nutrition, also accelerate detoxification. They are contained in such drugs as «Revipant» and «Amviks». Their task is to regulate protein synthesis and increase the viability of body cells suppressed by toxins.

There is another issue that requires consideration. Everyone knows that the toxic load on the body can be reduced by using adsorbents. «Volustom», one of the products from our robust portfolio, can serve this purpose. But how do we reduce the damage to the body caused by high levels of ammonia? It is common knowledge that lactulose is used to reduce the amount of ammonia in the blood. It works by drawing ammonia from the blood into the colon where it is removed from the body. Lactulose is a polysaccharide contained in our «Digemax» drug. It stimulates the growth of microflora that breaks down sugars in the large intestine. As a result, the pH of the intestinal contents improves. In an acidic environment, ammonia is ionized, so, it does not permeate cell membranes, is not absorbed into the bloodstream and is easily removed from the body.

DETOXIFICATON
IN BRIFF

TOXINS

1 Detoxification phase

Activation of the cytochrome P-460 system

Primary processing of fat-soluble toxins and xenobiotics

Transformation into water-souble compounds (no activity limit)

Amphetamine, caffeine, contraceptives, alcohol, drugs accelerate this phase and thus increase therisk of cancer

2 Detoxification phase

Hundreds of enzyme systems are running, including catalase, SOD, glutathione

Toxins are bound (conjugated) to make them more transportable

Stress and glycation suppress this phase (there is a limit of activity)

3 Detoxification phase

Endotoxins are discharged from the cell and exotoxins are mirrored, i.e. the antiporter system (P-glycoprotein) is enabled

Toxins are removed through urine, bile, feces (there is a limit of activity)

THE MAIN TASK IS TO SPEED UP PHASE 2 AND 3, SLOW DOWN PHASE 1

On Peptides

Before we speak about glycation, let us consider peptides — signaling molecules that regulate many processes in the body. Against the background of impaired stress adaptation, oxidation and intoxication, the immune and neuroendocrine systems begin to malfunction, our body organs and systems are overloaded, and it ultimately causes tissue failure. All this results in DNA disruption and protein synthesis failure.

In order to clearly understand the importance of peptides, we must have a closer look at the processes of regulation that take place in the human body. There are three basic levels of regulation:

- the nervous system — with the help of the brain tissue, it answers the questions: WHAT, WHERE AND WHEN will happen;
- the endocrine system — or hormone-dependent mechanisms;
- the local, or interstitial, level of regulation Tibetan sages spoke about.

Thus, in the current chapter we will talk about the third level of regulation of processes — interstitial, and peptides as its integral part. Peptides comprise a system of targeting signaling molecules that trigger the reading of genes. A DNA molecule is not just a storehouse of information. It can be dormant, but when it is enabled, as a result of gene reading, a protein, encoded in one of its parts, is synthesized. Today it is hard to imagine protein synthesis and the work of genes without peptides. They became the object of research in the second half of the XX century, when they started talking about the structure of a DNA molecule and working on drugs that could significantly increase the survival rate of the organism under extreme conditions and with increased loads. Extreme survival conditions have always been the domain of military medicine.

But for our military doctors, we might never have made so many discoveries in anti-aging medicine.

In the 1970s in the USSR, a group of military immunologists under the supervision of V. G. Morozov and V. Kh. Khavinson was engaged in the development of such drugs that could increase the survival of the organism in extreme conditions such as irregular sleeping patterns, exposure to negative climatic factors, radiation, polarized light reaching retina, and pressure drops. With the stress model in mind, they assumed that the military personnel are exposed to intense and prolonged stress that affects adaptation mechanisms. Scientists noticed that those who experienced such a stress were more likely to develop age-related pathologies and prone to premature aging. Accelerated aging was perceived as the result of stress or multiple prolonged stresses. At the same time, scientists started to consider stress adaptation opportunities. They found out that the activity of genes and protein synthesis in the pineal gland gradually decreases. The same changes are observed in all worn-out tissues and organs. Consequently, in impaired organs and tissues, there is a decline in gene activity and protein synthesis, and the amount of short proteins — peptides — is sharply reduced.

A decision was made to obtain an extract, a fraction containing peptides, from healthy young tissues. It was expected that the extract of the respective organs and tissues would be able to repair worn-out organs. Those extracts were then injected into the tissue cells whose function had been impaired. Surprisingly, normal cellular function began to restore. Initially, this new technique was tested on laboratory animals, then experiments on volunteers followed. During the first stages, scientists tried to take an extract from the corresponding or homologous tissue. Later they used extracts from non-homologous tissues. In the course of the experiments, it was found that the obtained extracts have a targeted effect. For example, an extract taken from the bone and cartilaginous tissue will improve the work of the musculoskeletal system, and everything

related to collagen. An extract taken from the respiratory system will work in this particular system, i.e. restore the lung function, etc.
It was found out that «short proteins» (peptides) are accepted well by animals of a different biological species, even humans. It was proved that in all vertebrates (mammals) this system of molecules is identical in function and structure.
It was also evident that administration of extracts of body organs and tissues restored gene activity and protein synthesis, and the deficiency of peptides was reduced. After the extracts were withdrawn, their effect persisted for several weeks. When scientists tried to figure out how it happened, they found out that there is a whole system of signaling molecules, which leads to targeted restoration of protein synthesis. Neither mutations nor cancer develop in these cases.
This is how the theory of peptide regulation, or bioregulation of the mechanisms of rejuvenation and aging, was developed. At the same time, scientists brought the theory of stress adaptation to its logical conclusion, with a focus on the pineal gland, adrenal glands and the immune system. All this made them think about the anti-aging effects of peptides on various body systems.
How can a person without any medical education and background understand all this? Figuratively speaking, our body can be represented as a complex of millions of computers, interconnected according to a certain creative scheme, and all these computers have the same software (information system), i.e. the set of genes in all cells is absolutely identical. However, the functions these cells perform vary from organ to organ. However, the potential capabilities of these cells are the same, because they have the same set of genes. A logical question arises: how do cells of one organ differ from cells of another organ?

1 A certain group of proteins and enzymes must work in liver cells. In the cells of the osteochondral system, another group of proteins and enzymes is employed. Consequently, these systems use different parts of the software. Binding between specific body cells and signaling molecules occurs following the «lock-and-key» principle, and this access to gene-coded information is gained. Similar to drivers or executable files in a computer system, peptides activate certain organs.

2 Imagine that the signaling molecules of the cartilage tissue did get into a liver cell. What will happen in this case? You may think that the liver cell will degenerate and produce collagen, and a joint will grow instead of the liver. But this, of course, is not true; it will not happen, since there is another mechanism that ensures the targeting of signal peptides. It comprises histone proteins. If the collagen program is not to be read in liver cells, it will not be read, since these areas of DNA are blocked by the proteins. No matter how long we administer bone-cartilaginous extracts into liver cells, there will be no response.

3 The third criterion is that a number of certain signaling molecules, peptides, can be recognized by cell receptors. Only the required peptides penetrate into these groups of cells. Some of the peptides that are recognized by cells start cascade reactions. Another group of peptides enters the cell and targets specific DNA areas.

Where Do Peptides Come From?

Peptides are produced in the cell they work in. The protein that has been synthesized in the cell is gradually worn out in the process

of aging. When the wear reaches a critical level, the protein must be broken down (fragmented) and utilized. Degradation of protein is mediated by peptidase enzymes. Some of the fragmented proteins leave the body through the excretory system. Others are subject to further fragmentation.

A protein fragment contains a certain segment of amino acids linked in a certain way. This fragment has the same chemical and geometrical parameters with the respective area of a DNA molecule. Peptides, similar to missing puzzle pieces, are inserted into the DNA molecule right into the area where gene reading is initiated. The DNA molecule unwinds, information is read from it, and matrices (cheat sheets) are built to synthesize protein — the one that was utilized earlier.

Where does this lead us? Peptides are formed from protein according to the residual principle. No protein, no peptides. Likewise, no peptides, no protein.

‼ Peptides are formed from protein, but without them synthesis of the same protein is impossible‼ Peptides are signal triggering molecules that activate the work of cells. We know that cell activity gradually decreases. No matter how actively peptides boost it, its decline is inevitable. The internal reserves of the body cover 90% of its need for peptides, but there is always a small deficiency of peptides that must be replenished with food. Protein food provides the body with a substrate for building proteins and peptides. In non-vegetarians, in the process of digestion proteins are fragmented into peptides and the building material for protein synthesis. After age 35, the ability to replenish peptides through food decreases. For that matter, starting from this age, it is recommended that people take concentrated oral or sublingual peptide preparations.

Let's Recap

The role of the peptide signaling molecule system in the body can be compared to that of an update package for computer software. Peptides regulate the work of genes. Despite the regulation of protein synthesis using peptides, there is a small deficiency that the body fills in with the help of protein (peptide) food. But if the body is regularly exposed to stress, its organs and tissues wear out, and they need help. Food alone is no longer able to make up for peptide deficiency.

It is high time then to resort to special preparations that will temporarily replenish the stock of peptides in the body. Later on, when the tissue produces the required amount of proteins, its function will be normalized. But if the body is further exposed to the same amount of stress and/or physical and mental overload, the tissues will again begin to malfunction, and they will need support again.

Therefore, an average person should use peptide preparations if they want to live long. When nutritional intake of peptides is insufficient, people should resort to highly concentrated fractions of organs and tissues — peptides. Peptide preparations can be used separately, when needed. But if there is a need to improve the functionality of the whole body and to prevent premature aging, a holistic approach should be taken

First and foremost, the mechanism of stress adaptation should be repaired. Besides, the detoxification system must be set to rights. Therefore, it is important to consider peptides as a system, since there are drugs of primary importance for the neuroendocrine and immune systems, and local drugs, for example, liver, cartilage, respiratory system, vessel peptides, etc. That is the reason why we begin our therapy with the neuroendocrine, immune, vascular and cerebral systems, and then we repair and adjust other body systems. This topic was described in detail in our brochure *NPCRIZ — the Territory of Peptides*.

What Else Do You Need to Know about Peptides?

- Peptides are not rejected by the organism, since they are not foreign substances, and mammals easily absorb them.
- Contrary to popular belief, peptides do not disintegrate to amino acids in the gastrointestinal tract: proteins are fragmented into short sections. Due to this signal peptides are not affected by fermentation.
- Since they target different organs and tissues, several peptide drugs can be used simultaneously. They are compatible with each other and with other drugs.
- Peptides are not hormones, they have a different mechanism. Therefore, there are no withdrawal symptoms. Taking peptides of the thyroid gland does not disable the thyroid gland, it is medically assisted to produce hormones itself.
- Peptides do not cause mutations and cancer.
- Peptide preparations can be compared to a «package of updates» for our organism as a biological system, if we draw a parallel between them and the computer operating system.

In principle, this is all there is to know about peptide bioregulation as the safest and most effective alternative to hormone replacement therapy in anti-aging medicine.

NATURAL PEPTIDES — CYTOMAXES

These are essential complexes of low molecular peptides with a mass of up to 5 kDa, extracted from organs and tissues of young calves. Each drug is a group of peptides and amino acids that correspond to the type of tissue. They have a prolonged effect on the body (up to 3-4 months).

ENDOLUTEN — a peptide complex of the pineal gland (1 capsule in the morning, once every 72 hours)

VLADONIX — a peptide complex of the thymus (corrector of the T-link of the immune response)

CERLUTEN — a peptide complex of the entire brain tissue

VENTFORT — a peptide complex of the vascular wall (obtained from the aorta)

SIGUMIR — a peptide complex of bone and cartilage tissue (obtained from the sternocostal joint)

THYREOGEN — a peptide complex of the thyroid gland

SVETINORM — a liver peptide complex

SUPREFORT — a pancreatic peptide complex

BONOTHYRK — a peptide complex of the parathyroid gland

BONOMARLOT — a bone marrow peptide complex

GLANDOKORT — a peptide complex of the adrenal glands (it is used quite often, 1 capsule once every 72 hours. Cannot be combined with ENDOLUTENE!)

TESTOLUTEN — a testes peptide complex

LIBIDON — a peptide complex of the prostate

ZHENOLUTEN — av ovarian peptide complex

TAXOREST — a bronchial peptide complex

PIELOTAX — a kidney peptide complex

GOTRATIX — a muscle peptide complex

VIZOLUTEN — a peptide complex of the eyeball

CHITOMUR — a peptide complex of the bladder

CHELOHART — a peptide complex of the heart muscle

We also have 19 peptide complex solutions for transdermal peptide administration. They enter the body through the basal membrane of the skin, but their bioavailability may vary.

Most supplements must be taken in the morning, usually in 2 capsules, with the exception of ENDOLUTEN, GLANDOKORT and BONOTHYRK.

CYTOGENS — SYNTHESIZED PEPTIDES

Usually the natural peptide chain is too long, but this does not mean that DNA interacts with the entire chain. What matters is a specific short sequence of 2-5 amino acids. So, a vast majority of synthesized peptides are copies of specific active part of natural peptides. They work fast and are 80 % efficient compared to natural ones.

Since 2000, we have synthesized 21 peptides, and work is still underway. Most of them are reserve drugs, however they are also used in our brand new multifunctional preparations of the Revilab series

CYTOGENS DEVELOPED IN THE 2000s:

VESUGEN — a vascular wall peptide

PINEALON — a cerebral cortex peptide

CRYSTAGEN — a peptide of the T-link of the immune system

CARTALAX — a cartilage peptide

OVAGEN — a liver peptide

CHONLUTEN — a peptide of lungs and stomach

REVILAB PEPTIDE SL: FASTER THAN EVER ...

SL is a series of 10 low-concentration complexes 0f short short peptides. A reduced and adapted concentration is preferable when working with teenagers or elderly people because of their increased sensitivity to drugs. The SL peptide complexes steam into work within minutes after they have been administered — even faster than with intramascular injections.

We are the pioneers and innovators in producing this form of drugs. Monopreparations of the «lingual» series appeared much later.

Peptides of the kidneys, ovaries, thyroid and para-thyroid glands have not yet been developed. However, a combination of Revilab SL and monotherapy «Lingual» series can be used.

SL 01 — peptides of the cardiac muscle and vascular wall

SL 02 — peptides of the cerebral cortex, vessels and retina

SL 03 — peptides of the pineal gland, T- and B-links of the immune system. It is strictly recommended to use it once every 48 hours.

SL04 — peptides of the respiratory tract and the T-link T- and B-links of the immune system

SL 05 — peptides of stomach, liver and pancreas

SL 06 — peptides of the bronchi, lungs and T-link T- and B-links of the immune system

SL 07 — peptides of the bone marrow, blood vessels and B-link of the immune system

SL 08 — peptides of T-link, vessels and urinary bladder

SL 09 — peptides of pineal gland, urinary bladder, testes and prostate (FOR MEN)

SL 10 — peptides of the pineal gland, urinary bladder and blood vessels (FOR WOMEN)

KHAVINSON SUBLINGUAL MONOPEPTIDES OF CYTOGEN CLASS

Vesugen® lingual
10 ml (100 µg / ml)

Ovagen® lingual
10 ml (100 µg / ml)

Cartalax® lingual
10 ml (100 µg / ml)

Pinealon® lingual
10 ml (100 µg / ml)

Crystagen® lingual
10 ml (100 µg / ml)

Chonluten® lingual
10 ml (100 µg / ml)

Visulingual® lingual 10 ml
(4 x 500 mkg in 1 ml) — a peptide complex

VISULINGUAL is the only combined sublingual drug developed by the Institute by persistent requests from ophthalmologists.

It contains peptide of vessels AC-2, peptide of the cerebral cortex AC-5, peptide of the thymus AC-6, peptide of the bronchopulmanory tree AC-7.

Recommended in case of retinal degradation, dry macular degeneration, atherosclerotic and diabetic retinopathy. Use with great caution in case of recent tears, retina detachments, hemorrhages and retinal thrombosis!

The dose of VISULINGUAL recommended by the Institute includes 5-6 drops 3-4 times a day, i.e. 125 µg x 4 peptides 4 times a day. It would be reasonable not to use the drug after

11-12 in the afternoon, since in some cases in can destabilize blood pressure and cause overexcitation. If there are age-related changes in blood vessels, it can be critical.

In my personal but professional opinion, the MAXIMUM DAILY DOSE OF THE SUPPLEMENT should not exceed 10 drops, i.e. 250 µg × 4 peptides. It is logical to start intake from 5 drops during the first part of the day.

KHAVINSON SUBLINGUAL MONOPEPTIDES OF CYTOMAX CLASS (10 MG/ML)

Ventfort® lingual 10 ml

Svetinorm® lingual 10 ml

Sigumir® lingual 10 ml

Cerluten® lingual 10 ml

Vladonix® lingual 10 ml

Thyreogen® lingual 10 ml

Suprefort® lingual 10 ml

Stamakort® lingual 10 ml

Pielotax® lingual 10 ml

Visoluten® lingual 10 ml

Testoluten® lingual 10 ml

Taxorest® lingual 10 ml

Libidon® lingual 10 ml

Chitomur® lingual 10 ml

Gotratix® lingual 10 ml

Glandokort® lingual 10 ml

Chelohart® lingual 10 ml

Zhenoluten® lingual 10 ml

Endoluten® lingual 10 ml

Bonomarlot® lingual 10 ml

Bonothyrk® lingual 10 ml

THE LEADER AMONG OTHER MODERN PEPTIDE PRODUCTS — THE REVILAB ML SERIES

ML stands for Multifunctional. ML is a group of hybrid preparations created on the basis of the «ALL IN ONE» principle. Each drug consists of a group of short peptides and parapharmaceuticals.

ALL YOU NEED IS... ML

ML 01 — an anti-age complex and anti-cancer agent. Main ingredients: peptides of the pineal gland and the B-link of the immune system and liver. Other ingredients: vitamins A, C, E, 5-hydroxytryptophan, Asp, Glu, resveratrol, omega-3 (hereinafter, in all the other drugs of the series, used to accompany peptides in the gastrointestinal tract and assist transportation into cells), choline bitartrate. Suggested use: once every 2 days.

ML 02 — an anti-anemic complex and support during chemotherapy and radiation therapy.

Main ingredients: peptides of the bone brain, T- and B-links of the immune system, and the liver. Other ingredients: vitamins B_6, B_9, E, omega-3.

ML 03 — a complex for the nervous system and retina. Main ingredients: peptides of the brain cortex, blood vessels and retina. Other ingredients: choline bitartrate, carotenoids, astaxanthin, zeaxanthin, lutein, vitamins B_1, B_2, B_6, omega-3.

ML 04 — a cardiovascular complex. Main ingredients: peptides of the pineal gland, myocardium and blood vessels. Other ingredients: resveratrol, nicotinamide, vitamin P, omega-3. Suggested use: once every 2 days.

ML 05 — a complex for the respiratory system. Main ingredients: peptides of the lungs, bronchi and T-link of the immune system. Other ingredients: vitamins A, E; licorice extract (regulates B-link), omega-3.

ML 06 — a complex for the gastroduodenal zone. Main ingredients: peptides of the stomach, pancreas and liver. Other ingredients: malt, artichoke, strawberry leaves and plantain leaves extracts; omega-3.

ML 07 — a complex for men. Main ingredients: peptides of the pineal gland, blood vessels, testes and urinary bladder. Other ingredients: L-arginine, carnitine, zinc, omega-3. Suggested use: once every 2 days.

ML 08 — a complex for women. Main ingredients: peptides of the pineal gland, cartilage, blodd vessels and urinary bladder. Other ingredients: L-arginine, resveratrol, omega-3. Suggested use: once every 2 days.

ML 09 — a complex for the musculoskeletal system. Main ingredients: peptides of the B-link of the immune system, blood vessels, cartilage, the «carnosine» peptide. Other ingredients: chondroitin sulfate, catalase, SOD, omega-3.

SHORT-TERM PROPHYLAXIS OF PREMATURE AGING (REVILAB SL), 2–3 INTAKES PER YEAR

	SUPPLEMENT	RECOMMENDED USE (IN THE MORNING, SUBLINGUAL ADMINISTRATION)
1 group	Revilab SL 01	4 drops
	Revilab SL 02	4 drops
	Revilab SL 03	6–8 drops (once every 48 hours!)
	Revilab SL 07	4–6 drops
2 group	Revilab SL 04	6–8 drops
	Revilab SL 05	6–8 drops
	Revilab SL 06	6–8 drops
	Revilab SL 08	6–8 drops
3 group	Revilab SL 09 (men)	6–8 drops (once every 48 hours!)
	Revilab SL 10 (women)	6–8 drops (once every 48 hours!)

SHORT-TERM PROPHYLAXIS OF PREMATURE AGING (CYTOGENS), 3 INTAKES PER YEAR (international names are indicated)

	SUPPLEMENT	RECOMMENDED USE
1 group	Crystagen Pinealon Vesugen	2 capsules of each product together in the morning before meal (days 1–10). LINGUALS — 12–14 drops each together in the morning before meals (14 days)
2 group	Chonluten Ovagen Cartalax	2 capsules of each product together in the morning before meals (days 11–20). LINGUALS — 12–14 drops each together in the morning before meals (the following 14 days)

SHORT-TERM PROPHYLAXIS OF PREMATURE AGING (CYTOMAXES), 3 INTAKES PER YEAR (international names are indicated)

	SUPPLEMENT	RECOMMENDED USE
1 group	Endoluten	1 capsule in the morning once in 72 hours (60 days). LINGUALS — 7–8 drops.
	Vladonix, Ventfort, Cerluten, Visoluten, Thyreogen, Chelohart	2 capsules of each supplement together in the morning before meals (days 1-10). LINGUALS — 12–14 drops each together in the morning before meals (14 days)
2 group	Svetinorm, Suprefort, Stamakort, Pielotax, Sigumir	2 capsules of each supplement together in the morning before meals (days 11-20). LINGUALS — 12–14 drops each together in the morning before meals (the following 14 days)
3 group women	Zhenoluten Chitomur	2 capsules of each supplement together in the morning before meals (days 21-30). LINGUALS — 12–14 drops each together in the morning before meals (the following 14 days)
3 group men	Libidon Testoluten	2 capsules of each supplement together in the morning before meals (days 21–30). LINGUALS — 12–14 drops each together in the morning before meals (the following 14 days)

SCHEDULED PROPHYLAXIS OF PREMATURE AGING,
TWICE A YEAR (cyclic intake of the **REVILAB ML** complex)

	SUPPLEMENT	**RECOMMENDED USE**
1 group	Revilab ML 01 (even days) Revilab ML 02 (odd days)	1 capsule in the morning before meals Once every 48 hours (60 days)
2 group	Revilab ML 03 (even days) Revilab ML 04 (odd days) Revilab ML 05 (even days) Revilab ML 06 (odd days)	1 capsule in the morning before meals Once every 48 hours (60 days)
3 group	Revilab ML 07/08 (odd days) Revilab ML 09 09 (even days)	1 capsule in the morning before meals Once every 48 hours (60 days)

The Process of Glycation

Scientists from all over the world are searching for a universal mechanism to prevent premature aging. Apparently, it doesn't exist, since aging is a multifactorial process. In the previous lectures we stressed its systemic character. Scientists, however, are trying to find distinct markers or indicators of aging and influence them. They are to understand that by working with one particular manifestation of aging they will not be able to solve the problem. In our country they consider the level of insulin-like growth factor to be one of such markers of aging, as it shows tissue growth and regeneration rate. Besides, the level of dehydroepiandrosterone produced by the adrenal glands is also taken into account, for it is known to decrease with age.

The level of melatonin can also be considered as a marker. It indicates the condition of the pineal gland. Melatonin levels determine how efficient the body is.

The length of telomeres (ends of chromosomes in cells) can also be taken into account. It is common knowledge that it shortens with age. When telomeres become too short, the cell receives a signal for utilization. A telomeric test can be used to determine the biological age of an individual. The length of telomeres can shorten because of various diseases and exessive overload. However, it can be increased with the help of the pineal gland peptide — this was proved back in 2000-2004. American scientists tried to prove that drugs that contain astragalus extract can also prevent telomere shortening. Unfortunately, it was proved that despite its valuable adaptogenic and immunomodulatory properties, it displays no telomerase activity.

Cosmetologists have their own markers of aging, such as the progerin protein. Its level can be reduced with the help of Revilab peptide cosmetics, especially Revilab No. 7 serum.

Over the past 10 years, a new trend has emerged — scientists started considering the effect of glycation on the process of aging. It is assumed to be an accurate predictor and indicator of aging. In the previous lectures we mentioned the fact that glycation can accelerate aging 3-4 times. But what is glycation actually?

A crust forms on food when frying. This is the result of the Maillard reaction that culinary experts are familiar with. A similar crust is formed in our body, and this is the result of glycation. It is a combination of various sugars with proteins. This reaction is reversible at the beginning, but as time passes, advanced glycation products may develop, and the body cannot get rid of them on its own. All types of proteins and peptides (being derived from proteins) undergo glycation. Peptides undergo structural degradation no less than proteins themselves. Because of this, the body can no longer reproduce good-quality proteins. Glycation also affects nuclear proteins and DNA molecules. The process of glycation is closely related to free radical oxidation of the body. Glycation damages not only proteins, but antioxidant enzymes as well. If the body's antioxidant systems do not function properly, the 2nd and 3rd phases of detoxification may fail. Glycation causes not only lipid peroxidation and protein damage, but also immune receptor mechanisms.

By disrupting the structure of endothelial receptors, the process causes inflammation in the vascular wall. Against the background of such an oxidative, inflammatory and glycation pattern, the vascular wall is permanently damage and atherosclerosis develops.

Where does glycation take place? Almost throughout the whole body. Structural, transportation, intracellular proteins are affected. Hemoglobin is also glycated Hemoglobin is also glycated (this is one of the ways to diagnose diabetes mellitus). The amount of glycated hemoglobin helps estimate the level of glycation in the body.

Sudden increases in the level of glycation might be a sign of an imminent catastrophe.

What other proteins does glycation affect? Collagen, fibrin, elastin, to name but a few. By the way, collagen undergoes the strongest structural changes precisely as a result of glycation. As a consequence, joints degrade, blood vessels wear out and skin grows old. Glycation also occurs in the brain tissue and leads to the formation of amyloid plaques that are associated with Alzheimer's disease. Another sign of glycation is the development of cataract, the opacity of the lens (aging of the biopolymer, the protein that makes up the lens). Glycation also negatively affects the rate of metabolic processes, hormones and blood plasma proteins. In general, the Maillard reaction in the body is permanent and ubiquitous: it takes place outside and inside cells and on the DNA level. It is unstoppable.

To prevent the consequences of glycation, it is necessary not only to take various drugs; it also takes a change of a diet, and the way of life in general: we must be more active, do sports, give up bad habits, cut back on certain foods. The foods that contain the biggest amount of glycation inducers and sources of its end products include fried and smoked meat, sweets, pastry, butter and mayonnaise.

Where does glycation take us? There is a long list of consequences, including a disruption of cellular interconnections, protein structures and matrix structures of internal body organs; a massive immune attack of healthy tissues and their degradation, etc. There is no single area in the body that is not affected by glycation. It is a kind of multifunctional accelerator of the aging process.

revilab anti-A.G.E.

We discussed the importance of a balanced diet and a healthy lifestyle. Now let us talk about the drug that possesses antioxidant and antiglycating properties. Foreign scientists were the first to discover antiglycating properties of rosemary and its ability to restore the collagen structure. The creation of anti-age rosemary-based cosmetic products followed naturally. However, we decided to go even further, and create a complex of antioxidants and antiglycants, a preparation not for external use, but a drug that will work from within. It is the world's first and unparalleled multifunctional antiglycant — revilab anti-A.G.E., an anti-aging anti-glycation agent.

Its major advantage is its multicomponent structure. It includes five active and powerful anti-aging super agents: carnosine, astaxanthin, rosemary, taurine and alpha lipoic acid. The drug is versatile and indispensable for the prevention of aging. How do its components work?

Alpha lipoic acid at the initial stages can prevent glycation of proteins. It improves neurotrophy, compensates for the lack of glutathione in nerve cells, and minimizes the effects of lipid peroxidation. Moreover, alpha lipoic acid is an inducer of the glyoxalase detoxification system. Methylglyoxal is one of the most dangerous and toxic end products of glycation. Alpha lipoic acid triggers enzyme systems that neutralize methylglyoxal.

Taurine also possesses anti-glycating properties. It supports erythrocytes, inhibits the formation of end products of glycation, and prevents oxidation of cholesterol. Taurine promotes normal synthesis of nitrogen oxide, normalizes the interaction of the immune system with the vascular wall, reducing inflammation. Taurine is of critical importance in diabetes and atherosclerosis s it helps reduce vascular complications. Another remarkable property of taurine is its ability to control blood sugar levels and thus prevent cataract.

Carnosine inhibits glycation and prevents the formation of amyloid plaques that cause Alzheimer's disease. It inhibits the second part of the Maillard reaction — the formation of advanced glycation end products. It prevents collagen cross-linking, improves wound healing and stimulates regeneration.

Rosemary is a powerful antiglycant that helps muscle cells absorb glucose, decelerate the absorption of sugars into the blood. It inhibits fructose glycation and is often included into anti-aging cosmetic products.

Astaxanthin is a powerful antioxidant that prevents glycation of membrane proteins by working simultaneously on the surface and inside the cell. It improves the activity of antioxidant enzymes in the 2nd phase of detoxification.

All these components comprise a complex, multifactorial anti-aging drug that significantly slows down tissue degradation in the body. revilab anti-A.G.E. must be included into detoxification and revitalization programs for a complete and rapid restoration of the normal body functions.

GLYCATION

Glycation is the non-enzymatic binding of simple sugars (glucose) with such vital substances as proteins, lipids, and DNA.
Glycation, the intensity of which is proportional to the concentration of glucose, occurs during normal physiological balance, but it is dramatically increased in diabetes.

! THE DANGERS OF GLYCATION

Our body lacks self-regulating and effective mechanisms of fighting glycation, except enzymatic destruction and elimination of damaged proteins. However, this mechanism is insufficient, and as a result glycation products accumulate.
That is why glycation is actually an unstoppable mechanism of aging!

DAMAGING FACTORS OF GLYCATION

1
Acceleration of lipid peroxidation

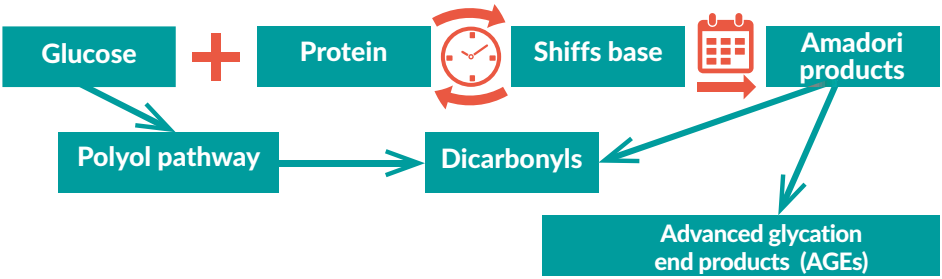
2
Decreased activity enzymes

3
Decreased level and activity of enzymes of the 2nd phase of detoxification

4
It is glycation, and not the level of cholesterol, that is decisive in the development of atherosclerosis

STAGES OF GLYCATION — MAILLARD REACTION

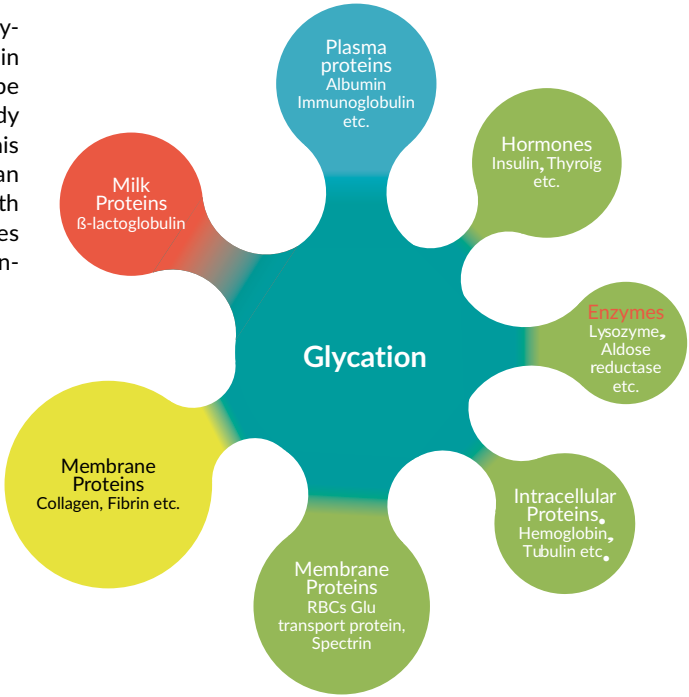
Glycation occurs in several stages. The first is reversible. Further on, as the process continues, irreversible damage to substrates occurs and AGE (advanced glycation end products) are formed.



LOCALIZATION OF GLYCATION PROCESSES

Glycation occurs in all tissues of the body, including bones.

As a result of hemoglobin glycation, glycated hemoglobin HbA1c is formed. It can be identified by a special study in diagnosing diabetes. This is the only protein that can be partially deglaciation with the help of special enzymes when the blood glucose concentration decreases.



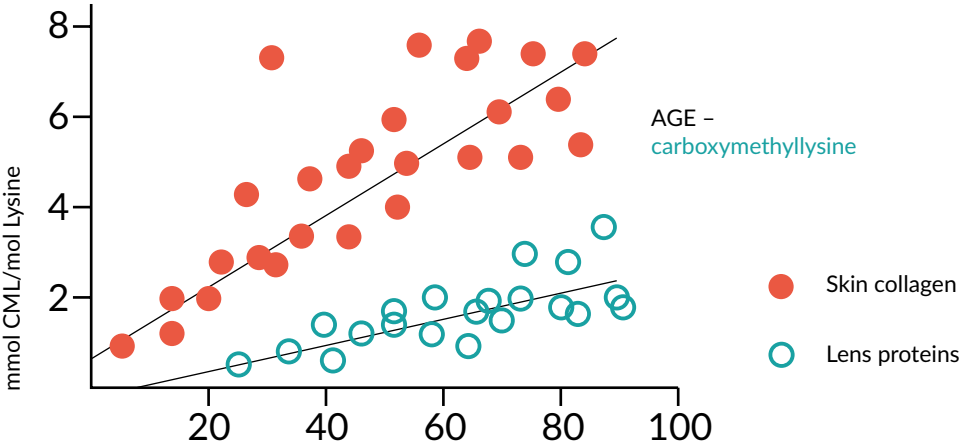
AGES CONTAINED IN FOODS AND THEIR EFFECTS ON THE BODY

Food item	AGE[a] (kU/g or /mL of food)
Fats	
Almonds, roasted	66.5 kU/g
Oil, olive	120 kU/mL
Butter	265 kU/g
Mayonnaise	94 kU/g
Proteins	
Chicken breast, broiled 15 min	58 kU/g
Chicken breast, fried 15 min	61 kU/g
Beef, boiled X 1 h	22 kU/g
Beef, broiled X 15 min	60 kU/g
Tuna, roasted X 40 min	6 kU/g
Tuna, broiled X 10 min	51 kU/g
Cheese, American	87 kU/g
Cheese, Brie	56 kU/g
Egg, fried	27 kU/g
Egg yolk, boiled	12 kU/g
Tofu, raw	8 kU/g
Tofu, broiled	41 kU/g
Carbohydrates	
Bread, whole-wheat center	0.54 kU/g
Pancake, homemade	10 kU/g
Milk, cow, whole	0.05 kU/mL
Milk, human, whole	0.05 kU/mL
Enfamil (infant formula)	4.86 kU/mL
Apple	0.13 kU/g
Banana	0.01 kU/g
Carrots	0.1 kU/g
Green Beans	0.18 kU/g

ATTENTION!

Not only sweets and pastry are dangerous. Complex carbohydrates contained in cereals, grains, pasta, starchy vegetables, fruits, when absorbed in the gastrointestinal tract, break down into monomers (glucose, fructose and others). Therefore, the level of monosaccharides in the blood an hour or two after a meal will be rather high.
You should not be misguided by the fact that you do not eat sweets: it does not mean your sugar level is normal

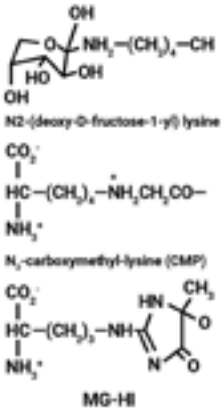
AGE-RELATED ACCUMULATION OF ADVANCED GLYCATION END PRODUCTS IN LENS PROTEINS AND SKIN COLLAGEN



GLYCATION AS A MECHANISM OF DAMAGE AND LOSS OF REGULATORY PEPTIDE POOL

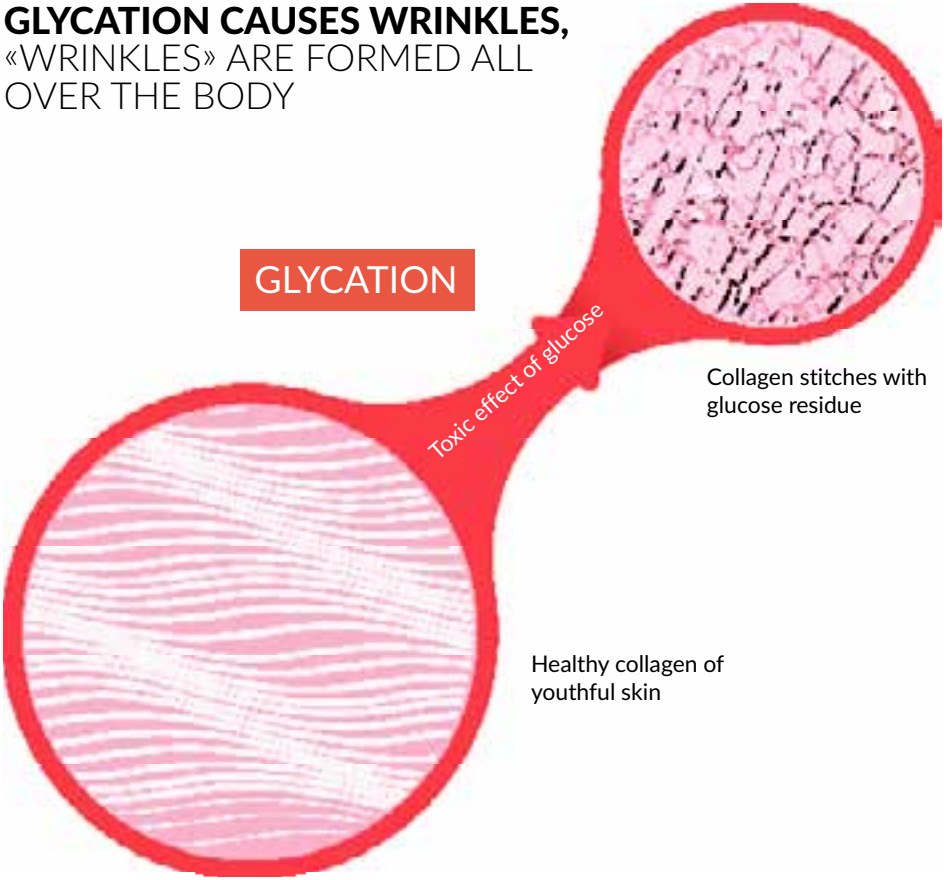
Residues of glycation products (molecular weight >12 kD)

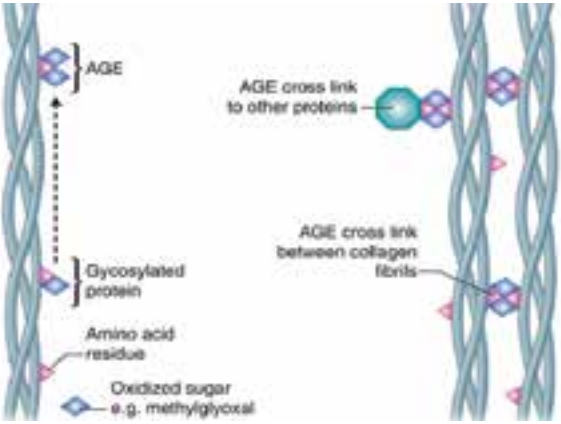
Residues of glycation products (molecular weight >12 kD)



Free glycation products (molecular weight <500 D)

GLYCATION CAUSES WRINKLES,
«WRINKLES» ARE FORMED ALL OVER THE BODY



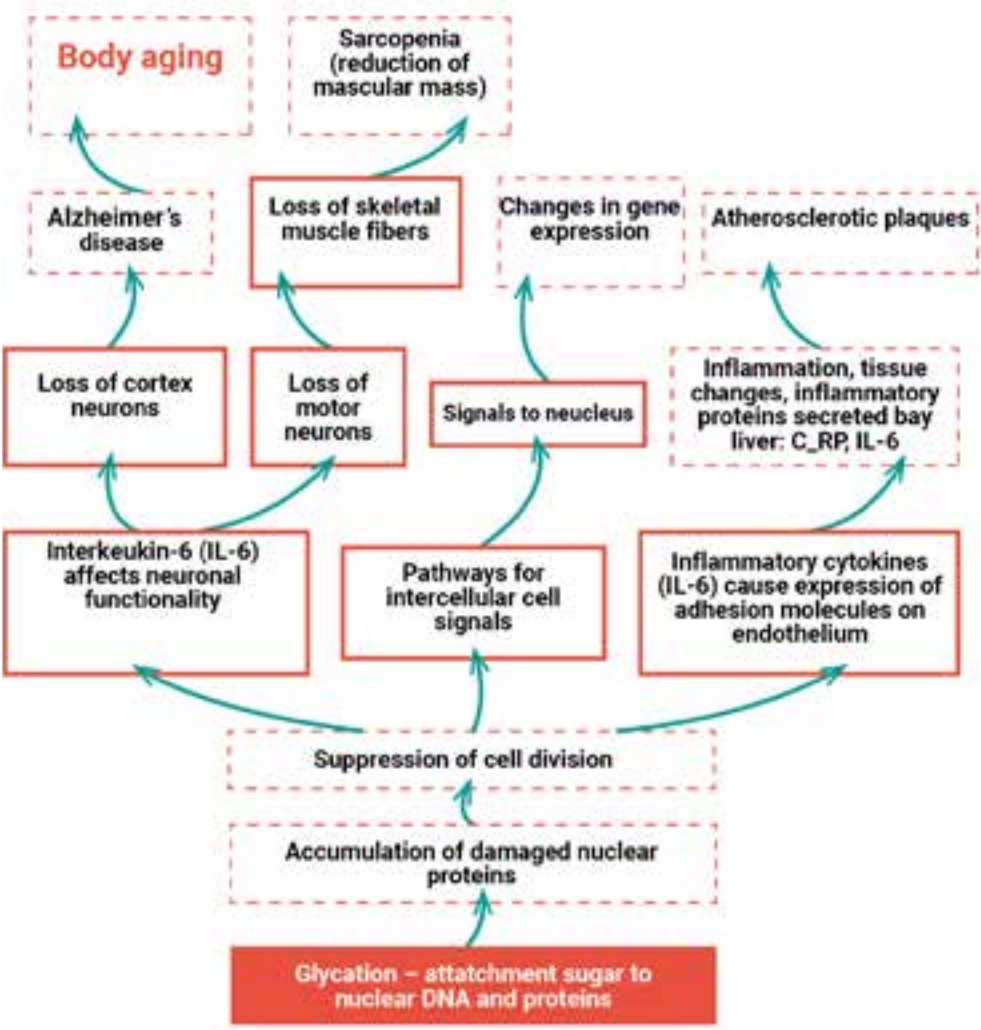


GLYCATION OF INTERCELLULAR MATRIX PROTEINS

Collagen is a long-lasting protein with a low rate of utilization. Therefore, glycated collagen exists in a damaged state, causing damage to adjacent cells.

DNA GLYCATION

Glycation affects nuclear DNA.

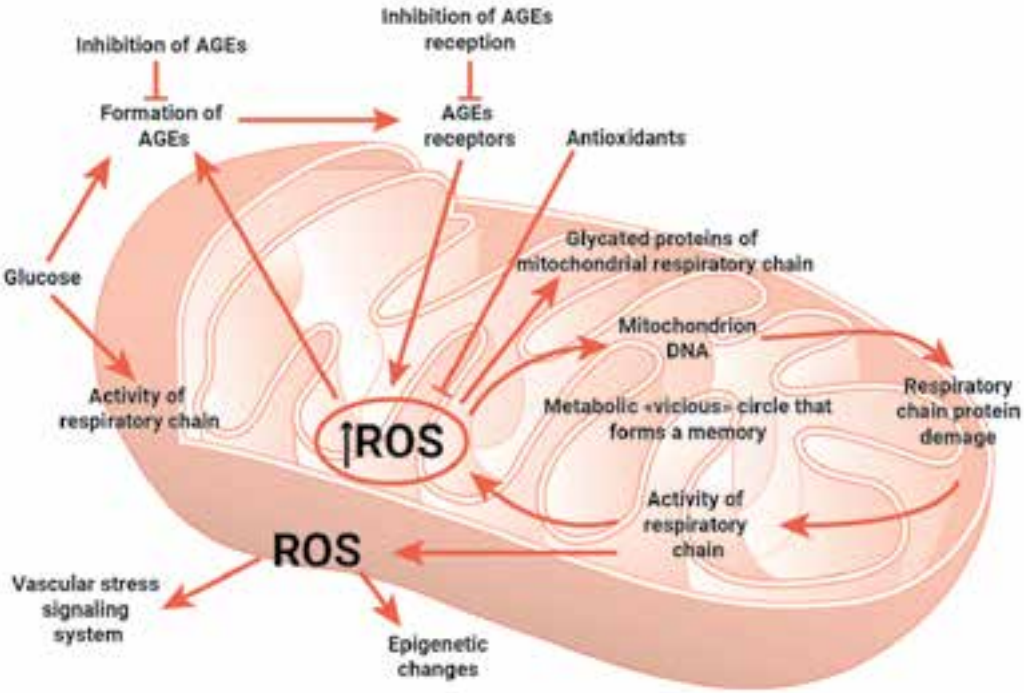


Consequences of Nuclear DNA Damage

GLYCATION CAUSES THE DEVELOPMENT OF METABOLIC MEMORY

MITOCHONDRION

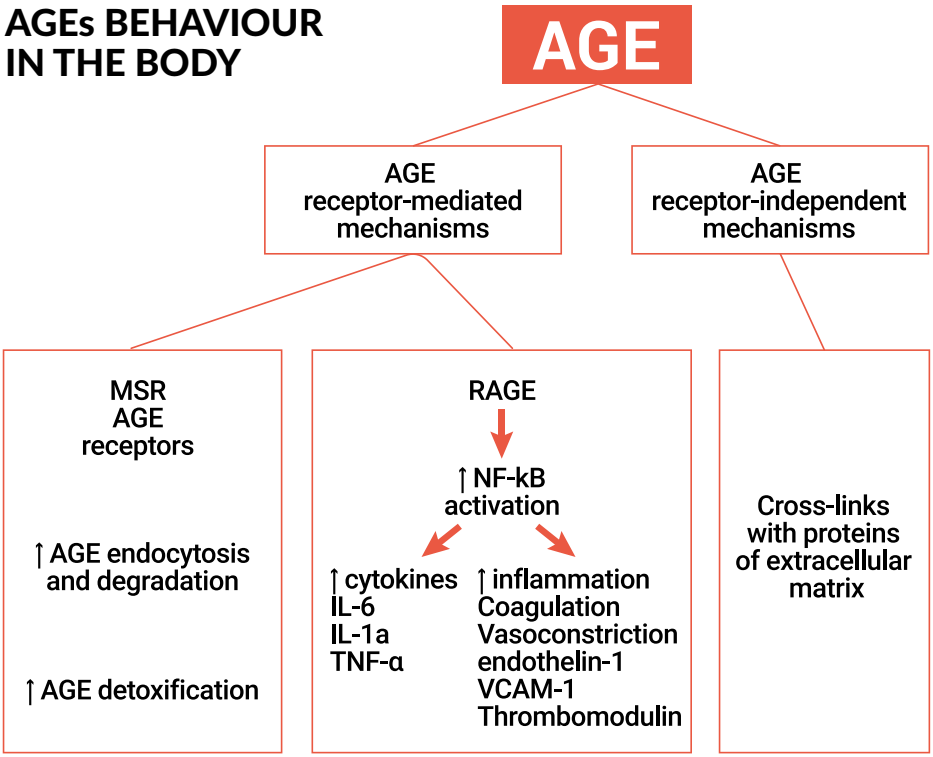
Glycated proteins of mitochondrial respiratory
Chain keep on synthesizing super-oxide anion for a long time when glycemia is normalized.



Glycation of proteins of the mitochondrial respiratory chain leads to disruption of its work and an excess of superoxide ions, regardless of the level of glycemia.

The formation of AGEs in the structure of mitochondria is an irreversible process and can also account for the long-term metabolic memory.

AGEs BEHAVIOUR IN THE BODY



Revilab anti-A.G.E.

Total control
over skin aging

Taurine

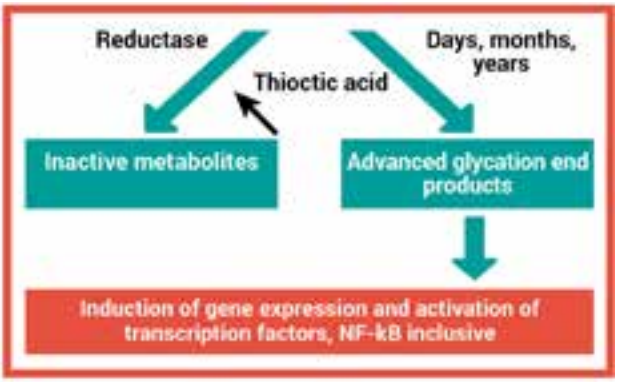
Alpha-lipoic acid

Carnosine

Haematococcus extract

Rosemary extract

THERAPEUTIC EFFECTS OF ALPHA-LIPOIC (THIOCTIC) ACID



1

α-Lipoic acid prevents protein modification caused by glucose

2

α-Lipoic acid increases endoneural blood flow

3

α-Lipoic acid compensates for glutathione deficiency in nerve cells during neuropathy

4

α-Lipoic acid reduces the concentration of diene conjugates that appear as a result of lipid peroxidation

5

α-Lipoic acid significantly normalizes the rate of nerve fibre conductivity

METHYLGLYOXAL IS ONE OF THE SUBSTANCES THAT ACCELERATE AGING

Methylglyoxal is a highly reactive by-product of glycolysis. Methylglyoxal, reacting with proteins and nucleic acids of the cell, forms the so-called advanced glycation end-products (AGE).

Alpha-lipoic acid is one of the most potent activators of the glyoxalase system that detoxifies methylglyoxal and other reactive aldehydes.

TAURINE

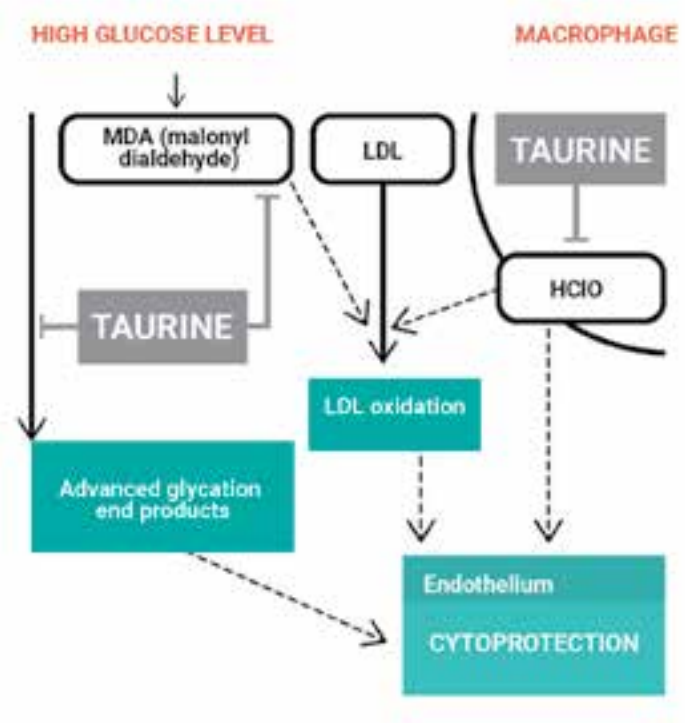
Taurine is an important component that regulates the physiological functions of erythrocytes. For that reason it can be used against glycation in complex antidiabetic therapy.

Intake of taurine prevented the formation of glycolized proteins (fructosamine and HbA1c).

Taurine significantly reduced the level of hemoglobin glycation, the formation of AGEs and lipid peroxidation.

Using taurine as a dietary supplement can solve the problem of taurine deficiency. Absence of side effects and contra-indications, as well as compatibility with other drugs makes it indispensable to the therapy of a number of diseases caused by metabolic disorders.

TAURINE INHIBITS



1

Formation of advanced glycation and products

2

LDL (low density lipoprotein) oxidation due to reduction of malonyl dialdehyde

3

HCIO-dependent reduction of NO

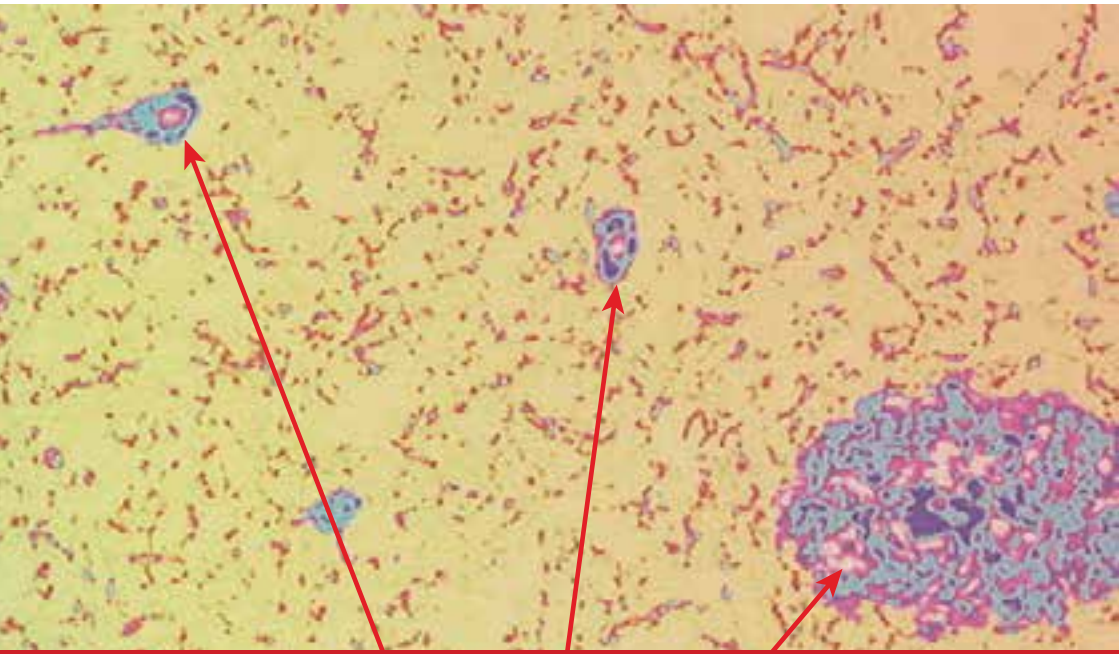
4

Interaction of leukocytes with endothelium

USING TAURINE FOR CATARACT PROPHYLAXIS

Studies on the lens of the eye have revealed that taurine forms Schiff bases with glucose, thereby preventing the contact of glucose with lens proteins.
It is also a scavenger of hydroxyl radicals, that is, it helps to remove them from the body.

CARNOSINE INHIBITS GLYCATION



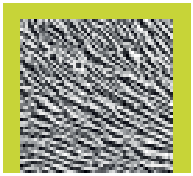
AMYLOID PLAQUES

Carnosine inhibits glycation and formation of AGEs and does it more efficiently and safely aminoguanidine widely used in Europe.

Several studies have shown that carnosine prevents protein cross-linking and formation of AGEs. Carnosine inhibits cross-linking in a special protein called beta-amyloid, which forms amyloid plaques, a hallmark of Alzheimer's disease.

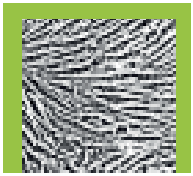
CAN COLLAGEN CROSS-LINKAGE BE PREVENTED?

Studies have shown that carnosine is effective against such forms of protein modification as oxidation, carbonylation, formation and removal of cross-linking, glycation and formation of advanced glycosylation end products.



Young fibroblasts

Aged fibroblasts



Aged fibroblasts after carcinine (β-alanylhistamine treatment)

Carnosine prevents the formation of collagen crosslinks that lead to loss of skin elasticity and wrinkles.

Carnosine is able to rejuvenate aging cells and prolong cell division.

Carnosine facilitates wound healing.

Carnosine helps macrophages more efficiently recognize AGE molecules, thereby facilitating their removal.

ROSEMARY EXTRACT HAS A WIDE RANGE OF ANTIGLYCATION FUNCTIONS

Increases glucose absorption by muscles

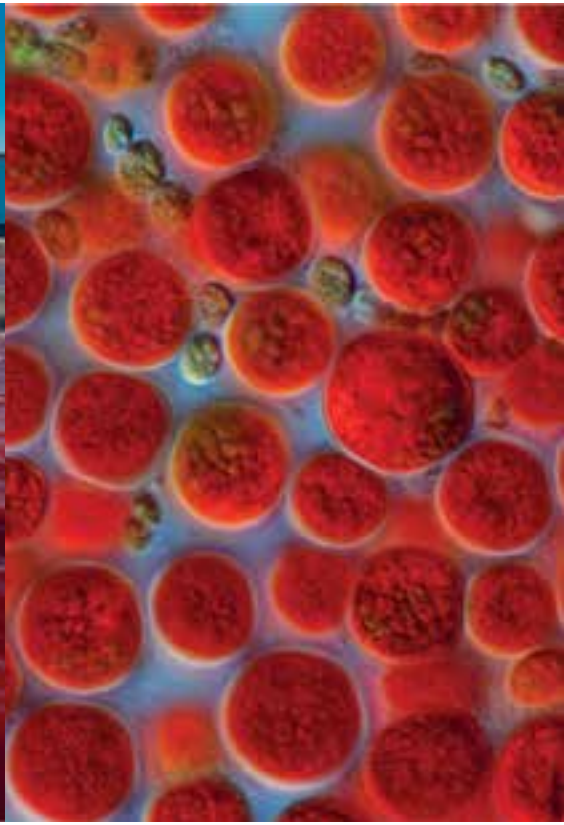
Inhibits intestinal α-glucosidase, reducing the rate of absorption of monosaccharides into the blood

Increases the expression of the PPARγ transcription factor, which integrally reduces glucose levels in the blood and intercellular space

Effectively blocks protein glycation by fructose

ASTAXANTHIN / GREEN ALGA HAEMATOCOCCUS PLUVIALIS

Algae grown in special breeder ponds



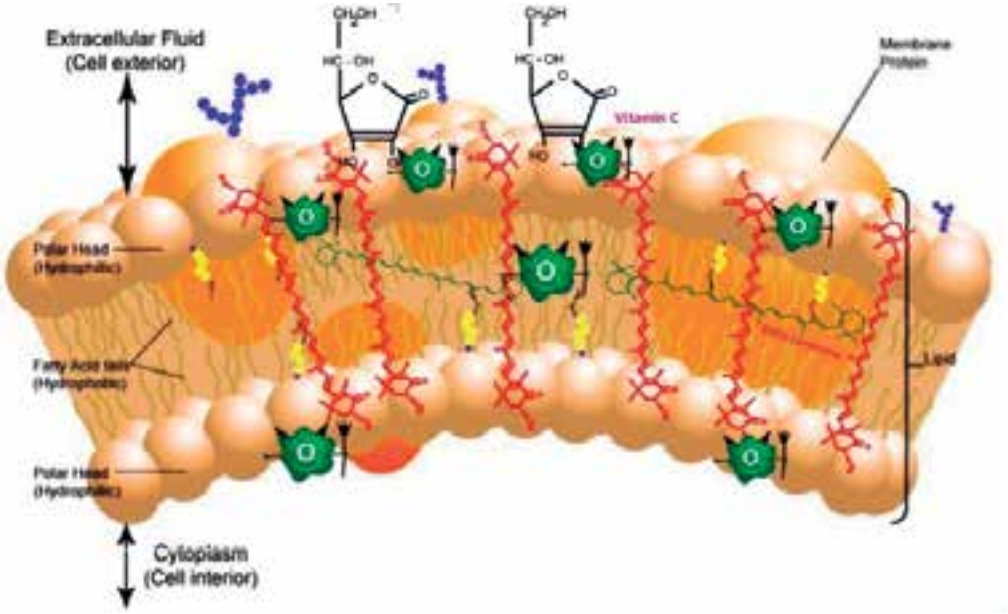
Algae under the microscope

Hematococcus extract

Haematococcus pluvialis is a rich source of astaxanthin.

ASTAXANTHIN IN CELL MEMBRANE

The transmembrane arrangement of the astaxanthin molecule allows for the antioxidant effect not only in the hydrophobic layer of the membrane, but also on the surface, i.e. in the cytoplasm and intercellular space.



PROTECTION

ASTAXANTHIN'S EFFECT ON GLYCATION

ASTAXANTHIN

Inhibits the formation of lipid peroxides stimulated by AGE by reducing the level of reactive oxygen sintermediates. The scope of action depends on the dose.

Increases the level and activity of antioxidant enzymes and phase II detoxification enzymes.

Protects cell DNA.

The Gastrointestinal Tract

We started out with Ayurvedic teas. It was back in 2005. Later we began to develop parapharmaceuticals, and only in 2009 we switched over to serious peptide drugs. In 2005 I first encountered oriental medicine, and I found it amazing. It states that there are five primary elements in nature. The first one — ether — appeared when space was created, followed by air, fire, water and earth. When interacting with each other, they form certain elements, or beginnings. The first principle (vata) is associated with putting something in motion; the second principle (pitta) is associated with splitting, transformation, obtaining heat, light and energy; the third (kapha) — with the synthesis of substances. These processes (or the activity of these elements) are balanced in the macro- and microcosm.

Ayurveda followers claim that most diseases are initiated in the intestine, first at the wave level, and then at the biochemical level. To be more precise, many diseases begin with suppressed emotions. First, they manifest themselves through changes in the human aura and the work of the central nervous system, to later reflected affect the work of the digestive tract. There is a breakdown in digestion. In addition to suppressed emotions, climatic factors and dietary habits come into play. Certain factors with homologous properties and qualities (substances with similar properties and action tend to accumulate and increase) cause an imbalance of processes in the body and impair the energy principles. How can it be observed? Through atypical processes that begin to occur in certain organs.

Due to improper digestion, food is not completely broken down, and the resulting residues are slowly deposited on the villi of the intestines. The situation leads to the accumulation of toxins in the intestines, which hinder digestion, disrupt the production of enzymes and the absorption of food components. This is not always easy to fix with the help of medicinal foods and herbs.

Toxins are absorbed into the blood through the intestinal wall. Internal intoxication that develops as a result of this process does even more harm to the body. Then the symptoms of the disease appear, and the patient asks a doctor for help. The latter prescribes symptomatic treatment with the help of chemical substances, which is not always effective. However, all this could have been avoided merely by paying more attention to one's diet. Odd as it may sound, it is often true.

Thousands of years ago, Ayurveda placed a very special emphasis on proper food and a proper work of the stomach. Ayurveda followers utilize a lot of diverse methods of body cleansing — from body oiling, oil pulling, medicinal vomiting to therapeutic herbal and oil enemas that prevent bowels from drying. Apparently, these radical measures must not be taken without a doctor's advice and consent. Oriental medicine suggests that the three central life elements can be balanced not only through rough cleansing, but also with the help of gentle detox methods. It implies a prolonged use of Ayurvedic compositions that help remove toxins from the bowels and restore the balance of energy. This idea, although significantly transformed, is reflected in our teas of the «Ayurveda» series.

For example, the «Vedomix» tea stimulates digestion and gastrointestinal motility, gently affects the gastrointestinal tract and normalizes its work. The «Helmax» tea has an immunomodulatory effect.

The terms «body cleansing» or «liver cleansing» have become popular buzzwords. Many people use choleretic drugs, but they alone will not get us far. Besides, they can cause colics, cholangitis, pancreatitis or some other irreparable damage.

But if you use some adsorbents as cleaning agents, this can certainly be beneficial for the body.

Cleansing and detoxification were covered in the chapter on the mechanisms of aging, impaired antioxidant status, etc. Let us recall the stages of detoxification with the help of our drugs. First, we use antioxidants. During the first month, we use more powerful drugs such as «Panaxod» or «Complex 3D»; during the second month they are followed by drugs with a moderate choleretic effect — «Complex 3R» or «Ardiliv». During the third we use the drug «Trezvon» that was originally conceived as a means to remove alcohol dependence and intoxication. As a matter of fact, however, it inhibits the 1st phase of detoxification and accelerates the 2nd and 3rd phases. If, during the 1st phase, products of partial neutralization become excessive, and in the 2nd phase they do not have time to be processed, there is a risk of certain metabolic disorders and hormone-dependent diseases.

Let us also recall the fact that normalization of the immune, antioxidant and hormonal processes should be based on the use of peptide preparations of the pineal gland, thymus and spleen. Revilab SL 03 has proved to be efficient in this domain. Then we need to combine the use of peptides, detoxifying antioxidants and drugs that improve the work of the gastrointestinal tract, i.e. we must simultaneously provide antioxidant protection and improve intestinal functions. This can be achieved with the help of the parapharmaceutical drug called «Digemax» that has an anti-inflammatory and moderate carminative effect. It includes lactulose that reduces the ammonia load on the body. Another useful drug is the adsorbent called «Volustom». It must be taken twice during the day — in the morning and in the evening. Besides, this therapy should be supported by peptide gastroduodenal drugs — Revilab SL 05 and Revilab ML 06.

Specific Diseases of the Gastrointestinal Tract

We must start our conversation on gastrointestinal diseases with the mouth — for this is where it all starts. One of the most typical problems here is parodontosis. It can be prevented with the help of Revidont oral balm. If the problem is very acute, you can dissolve 15-20 drops of Revilab SL 04 or Revilab SL 03 in 50 ml of water.

Stomach Diseases

БEsophagitis is almost always accompanied by gastritis. Gastritis can be hyperacid (with a low pH level and high acidity) or hypoacid (vice versa). However, irrespective of the level of acidity, during gastritis the stomach will produce hydrochloric acid (strange as it may seem), so modern gastroenterologists prescribe a proton pump inhibitor — omeprazole . Apparently, this should not be done. This measure can only be taken when there is an excessive amount of acid. If the acidity is as low as zero, it is dangerous: the cells of the stomach wall quickly degenerate, metaplasia is formed, and then atrophic gastritis, polyps, and even cancer can develop.

With normal acidity rate, pH ranges from 1.5 to 2.5. While we are on the subject of gastritis, it is interesting that at an exam, most students will mention heredity as its major cause. It must be understood, however, that this disease can be caused by a variety of factors such as stress, alcohol, smoking, microbial flora, an unhealthy diet and the use of oral contraceptives. Excessive acidity may lead to stomach ulcer, duodenal ulcer, gastroduodenitis, and reflux disease (reflux of acidic contents). Gastroesophageal reflux disease (GERD) is a long-term condition where acid from the stomach comes up into the esophagus.

It causes heartburn. It can be caused by frequent consumption of fatty and spicy food, as well as by late meals.

When stomach acid levels are low, it can also trigger heartburn, reflux, a sour smell from the mouth, reduced hemoglobin, dry skin, and acne. Whatever the symptoms, it is unreasonable to diagnose and determine the type of acidity based on these symptoms alone. Gastric juice must be collected and investigated; based on the data obtained, a doctor will then choose the proper therapy.

There is one more thing to clarify. There is a bacterium called Helicobacter pylori that is associated with gastritis and peptic ulcer disease. In hypoacid gastritis, H. pylori alkalizes the stomach environment, i.e. it reduces the acidity of the stomach. In response, the stomach begins to overproduce hydrochloric acid. This is exactly what gastroenterologists focus on when prescribing proton pump inhibitors and antibiotics. As we found out, this is all very risky. Instead, we suggest that at the first stage, patients should use complex peptide drugs for the gastroduodenal zone — Revilab SL 05 or Revilab ML 06. Then they can be combined with «Stamakort» containing a peptide of the gastric mucosa, or «Stamakort» and «Honluten». It is also highly recommended to take «Panaxod» and sources of omega-3, e.g. «Olekap» and «Reviform Oil Blend», in parallel.

Malabsorption Syndrome

Malabsorption is a state arising from abnormality in digestion and absorption of food nutrients across the gastrointestinal (GI) tract. For 1 in 10 patients (10%) it is a congenital pathology, for others it is a consequence of enteritis, pancreatitis, liver diseases, and biliary dyskinesia. Malabsorption can lead to weight loss and anemia. Peptides of the stomach, liver, and pancreas (both complex and mono-preparations) can be used to treat malabsorption. In addition, there is «Digemax» and «Pangluin». Microbial flora must also be taken into account: it must be populated with probiotics. We do not need any extra enzyme preparations, because we have a pancreatic peptide called «Suprefort».

Crohn's Disease and Ulcerative Colitis

So far, no peptide preparation has been derived from the intestinal wall. However, many patients have quite successfully been using «Stamakort» even for Crohn's disease and ulcerative colitis. These diseases are chronic inflammatory states, and it is not always easy to differentiate between them. Crohn's disease affects the gastrointestinal tract (various organs), and ulcerative colitis affects the large intestine, namely its mucous membrane. Crohn’s disease is accompanied by polyp-like changes, granulomas and strictures, while in ulcerative colitis there are no changes in the lymphatic system around the intestinal lesions (only the mucous membrane is affected). Some mechanisms behind these diseases are very similar, as they both are often genetically determined. Ulcerative colitis is often associated with autosensitization, which is an almost autoimmune, but rather allergic, process.

Crohn's disease is always triggered by autoimmune mechanisms. Gradually, scar tissue builds up in the wall of the large or small intestine and it becomes visually similar to a cobblestone pavement. When doctors want to reduce swelling and slow down the response of the immune system, they prescribe steroids and dexamethasone, and sometimes resort to experimental vaccines.

Our assortment includes Revilab ML 01, which blocks autoimmune responses, and a sublingual drug Revilab SL 03. Such mono-preparations as «Endoluten» and «Vladonix» can also be recommended, but Revilab SL 03 has proved most effective. In parallel, to improve the immune response, patients

are advised to take «Revifort» containing polysaccharides (beta-D-glucans) (1 capsule per day). The acuteness of the process will decrease without affecting the immune system. One can optionally take peptide preparations for the gastrointestinal tract («Stamakort», Revilab SL 05 or Revilab ML 06), but «Digemax» is absolutely necessary, as it contains many anti-inflammatory components. Those with iron deficiency should use «Revimite», and if there is a calcium deficiency, «Calsil-T» must also be added to the regimen. We resort to bone marrow preparations only in extreme cases, for a short time and do not increase the dosage.

Intestinal Polyps

When intestinal polyps are detected, treatment always implies cancer prevention, a no-meat diet with more fiber, preparations of the pineal gland, drugs that boost the immune system, and anti-cancer drugs. Theraputic tactics used in the treatment of Crohn's disease and intestinal polyps are identical. «Revifort» can be alternated with «Indosine». The regimens are very similar.

Dysfunction of the Liver, Biliary Tract and Reactive Pancreatitis

The gastrointestinal tract is closely connected with the liver and pancreas. Complex peptide preparations Revilab SL 05 and/or Revilab ML 06 help cope with liver dysfunctions. We also offer «Ardiliv» that accelerates the separation of bile. It contains strawberry and red leaf extracts, dihydroquercetin and resveratrol. It has proved effective in the treatment of viral hepatitis, toxic and alcoholic intoxication.

Before treating hepatitis, it is important to determine first whether it is viral or not. In case of viral hepatitis, we use peptide and non-peptide immune preparations. If it is of non-viral origin, the immune system can optionally be supported by peptides. It is reasonable to start therapy with simple drugs. The older a person is, the more difficult it is to predict body responses. The regimen depends on age. For some patients, two capsules of natural peptides per day are good, for others it is too much. There can be no reaction whatsoever, or some organ can start to «misbehave» and reject a drug. It is not always necessary to start with «Cytomax». Often, Revilab SL 05 and «Ardiliv» will suffice at the initial stage. The therapy should start off with small doses of peptide drugs, and then the doses can increase. Why is it important to be aware of all this? Liver peptides have a rather strong choleretic effect! If the liver pumps bile, the pancreas is overloaded and may fail. In some cases, food poisoning can lead to reactive pancreatitis. There can be girdle pains, stool disturbances (profuse diarrhea, vomiting), and chills. To alleviate pancreatitis, the following golden standard must be observed: «keep cold, stay hungry and calm down». One must try to refrain from eating at least for some time. Enzyme preparations will not be of much use. In case of pancreatic disorders, our drug «Suprefort» is used in a standard dose — 2-3 capsules per day. An overdose can lead to serious medical complications. In 3-4 days, 1 capsule of «Ovagen», «Svetinorm» or «Ardiliv» can be added. Revilab SL 05 sublingual peptide preparations or Revilab ML 06 multifunctional capsule preparations can also be of help.

Hemorrhoids or Pelvic Varicose Veins

Vascular wall protectors such as «Ventfort» and dihydroquercetin drugs, such as «Ardiliv» or «Complex 3D» can be recommended. Should cancer prevention measures be taken in this case? It would be beneficial. Recommended drugs include «Endoluten», «Vladonix» and «Digemax».

CONCLUSION

It is noteworthy that a lion's share of gastrointestinal disorders can be prevented and minimized by means of effective detoxification. This requires balancing immune mechanisms and metabolic processes. Preparations for the neuroendocrine and immune systems, antioxidants (from strong to soft), as well as «Digemax» and «Volustom», a source of dietary fiber, are recommended.

Another important problem — constipation — is resolved indirectly with the help of such drugs as «Panaxod», «Digemax», «Volustom» and the «Vedomix» tea. In women, constipation is often associated with the peripheral nervous system and is triggered by stress. Such supplements as «Cerluten» and «Endoluten» may also be of use. Constipation can be caused by a polyp or intestinal diverticulosis. In this case, the situation must be monitored by a specialist. If hemoglobin levels are low, a surgeon's consultation is required.

The Immune System

It is common knowledge that the immune system protects the organism from various foreign invaders that can harm the organism. Moreover, this is a system of monitoring atypical cells since they must be detected and tackled in due time. This is a system of the most important factors of maintaining the internal environment — homeostasis. The liver is an organ that recycles everything that makes its way into the organism. It performs metabolic and detoxification functions by activating the 1st and 2nd phases of detoxification. Detoxification of the organism is also performed by kidneys that filter blood generating primary and secondary urine. As a result, the human organism generates up to 2.5 l of urine per day.

On the cellular and molecular levels, the immune system makes sure that the organism is in good order and there is no evidence of foreign invaders. This is a security service of the organism. The immune system is very complicated by itself. When a baby is due, the immune system only exists as a preimage, but the baby already obtains a set of immunoglobulins. Almost 10% of immunoglobulins of a certain class can penetrate through the placental barrier so that the baby in utero is already protected from various diseases. Subsequently, the baby obtains more primary immunoglobulins with the colostrum within the first days of life to train the immune system. Other useful knowledge is obtained in the course of human life and through contact with various antigens and agents. Therefore, transplacentally obtained antibodies constitute innate immunity, while antibodies acquired intra vitam are referred to as adaptive immunity.

Thus, the organism develops immunity to agents that it faces throughout life. Immunity can be either long-lived, or weak. Apparently, back in the day vaccination became the biggest breakthrough and a way to eliminate serious diseases (pox, poliomyelitis, etc).

There are vaccination schedules implemented as a preventive treatment standard. However, specialists and non-specialists treat vaccination differently. I quite often meet parents whose children developed developmental mental and speech delay, a weak virus-induced immunity, a hepatic and pancreatic dysfunction and sometimes irreversible neurodegenerative diseases. In almost all cases the appearance and development of these diseases were caused by certain events. There is also a perception that vaccinated «third generation» parents transmit immune memory obtained as a result of vaccination to their children. However, all the data was obtained from animals, and are so far one of the subjects of discussion. Particular attention should be paid to the opinion concerning precocious puberty, offspring's early menopause and in some cases decrease in fertility. To avoid being held responsible, I leave this subject for you to investigate further and form your own subjective opinion on it. I will simply add that I get frustrated when a girl has her first period not at 12–13, but at 9–10 years old. It doesn't surprise me by now when the reproductive system of a 35-year-old woman is similar to one of a 42-year-old. Surely, it can be «explained» by hormone-injected meat and poultry, as well as food additives and stabilizers, but it doesn't solve the problem. Fortunately, in most cases it can be solved using peptides, but it is another topic. One question that I am often asked is as follows: is it necessary to be vaccinated against influenza and hepatitis? I always answer it with another question: why?

Then I will let you study this topic by yourself. There is a good saying: «Everyone chooses for himself».

Now I would like to speak about a weak virus response. The topic is rather simple,

but not often though about by ordinary people. Weak immunity can be caused by immune system supplements (as a rule, immune response boosters) contained in some pharmaceutical products. It can also be a consequence of contracting viruses that cause mononucleosis (cytomegalovirus or CMV, Epstein-Barr virus or EBV, human herpesvirus 6), that can be brought by children from kindergartens and schools. By the age of 40, we all carry this delay-action bomb inside. This analogy can be explained: having these viruses in the body leads to a drastic decrease in virus immunity (firstly, concerning T-cells), then it leads to a rather frequent development of autoimmune diseases (T- and B-cells disturbance). Ignoring the presence of these viruses in the organism can result in lymphoma. Nevertheless, lymphoma can also be caused by unsupervised and incompetent use of immune system supplements. Periodical use of immune regulators, such as Revilab SL 03, Revilab ML 01 and «Vladonix» can restore the immune system. What's interesting, the first regulator is often used to treat autoimmune diseases... Let us stick to our topic, though.

The immune system is a combination of organs and tissues. Lymphatic tissue and blood cells belong to it as well. All immune competent cells are formed in the bone marrow: erythrocytes, platelets and white blood cells — leucocytes or lymphocytes, so called «top managers». As they grow, these cells differentiate into two big groups: T-lymphocytes and B-lymphocytes. T-lymphocytes are immune cells that exercise supervision over the body; they moderate the immune response. They are formed in the thymus. B-lymphocytes are formed in the spleen, lymph nodes, gut lymphoid tissue and appendix. There are also amoeba-like cells — macrophages. They travel across tissues, engulf any foreign substances and then provide information about what they came across. If something goes wrong in the organism, the immune response is triggered.

T-lymphocytes are divided into 4 groups. **Group 1**: T-helpers (modulators) that cooperate with B-lymphocytes and participate in all kinds of immune reactions. **Group 2:** T-lymphocytes that play a regulatory role, as a rule, as suppressors. They prevent the immune system from targeting self-tissues. It is a sort of brake for the immune system. **Group 3**: T-killers that destroy any pathogens. **Group 4:** T-cells that form various signal molecules, moderators of the cell response.

B-lymphocytes of various genotypes are essential executors that produce antibodies of different classes and participate in the serum (liquid) immune response.

What factor can influence the strength of our immune response? First, the level of intoxication. If it is high, the immune system is weak. Second, irregular sleeping patterns. If there is not enough melatonin, it doesn't train the endocrine and immune systems, the latter becomes depressed. Last but not least, stress levels. Stress influences the activity of the immune system, since adrenals under stress produce cortisol, a hormone that destroys the immune system.

Stress makes the organism abuse its abilities without paying attention to the damage, simply trying to survive. You already know that the immune system may not recover after stress and may become depressed or aggressive.

In addition, our organism constantly has to fight viruses. E.g. herpesvirus undermines the immune system. Human herpesvirus 6, cytomegalovirus and Epstein-Barr virus prevalently live in B-lymphocytes and one of these viruses (or all of them) can result in malfunction of the immune system. Specifically, the body's virus response becomes weaker. In this case it is necessary to support the immune system with the help of such drugs as «Vladonix» or Revilab SL 03.

Acquired immunodeficiency syndrome. In this case the presence of certain viruses reduces the quantity of T-lymphocytes, especially T-helpers. As such, the immune system fails to function properly. In the early days there was a drug that killed T-lymphocytes and AIDs sufferers died anyway. Nowadays we have a great variety of anti-viral and peptide drugs that influence DNA and RNA. The good news is that today scientists have learnt how to prevent human immune deficiency virus from penetrating immune cells, how to stop virus replication, and reduce virus activity. However, the treatment is very expensive. Adverse effects of the therapy can make individuals feel as though their hypothalamus, hypophysis, adrenals, testicles and ovaries were failing. In other words, the use of such anti-viral drugs affects the neuroendocrine system. In this scenario I recommend using T-cell drugs. One of the possible options is «Vladonix» combined with pineal gland hormone drugs.

What else can immunodeficiency lead to, apart from hormone fluctuations, intoxication, and sleep deprivation? It can trigger a massive production of atypical cells. The immune system then will not be able to detect and destroy cancerogenic cells on time. If the immune system has been depressed for a long time and affected by hormonal and toxical factors, it is incapable of tackling the serious damage. It can only impede the cancer process. In this case w recommend using our anti-cancer agents and other preventive drugs: «Imusil», «Indosine», «Revifort». The latter is of particular interest, given that mushroom polysaccharides contained in it accelerate the immune calls response to such an extent that T-killers prolifically start producing channel-forming proteins and granzymes that destroy atypical cells.

«Likam» is an immune modulator and detoxifier that contains not only a group of amino acids that train the immune system and are important for certain organs and tissues, but polyprenols — conifer derivatives — that speed up the 2nd and 3rd detoxication phases.

«Levain» is similar to homeopathic dugs. Its aim is to correct the activity of the immune system step by step, normalize the lymph efflux to prevent the lymph congestion (otherwise, it triggers inflammation). The drugs mentioned above should be used in order to boost the immune system, especially after age 40, to fight cytomegalovirus and similar agents.

Antibodies fight against any foreign substances. The organism contains certain markers of HLA-antigens that indicate histocompatibility. The organism attacks material that has other identifiers (markers). Such markers that employ the self-non-self discrimination system to identify pathogens are called antigens.

In autoimmune diseases the immune system produces antibodies that attack the body's own cells, tissues and organs, resulting in inflammation and damage. This problem cannot be done away with completely.

If there is an antigen, there is an antibody, i.e. every identifier has an antibody (counter marker — a discrimination indicator of foreign antigens). Then, complement-fixation reaction (CF) occurs — an antigen binds with an antibody. As a result, it enables the immune system to handle the situation faster. Once the foreign agent is marked by the antibody, it undergoes lipolysis, is dissolved and destroyed.

There are five classes of antibodies that bind with antigens. Antibodies of the first two large classes are formed on the very first days when an individual catches a disease. These are broad spectrum antibodies described as polyreactive. They are M-class immunoglobulins that boost motility of B-lymphocytes and macrophages and appear at the onset of the disease.

They help identify acute or chronic diseases. The appearance of G-class immunoglobulins (memory antibodies) signifies that the person has been sick for at least 2 weeks. These antibodies are specific, and they interact with certain foreign cells. These antibodies prevail in the body; their life cycle lasts for more than 3 weeks, after which new cells are synthesized. There is no accurate immunological memory for some agents, the organism produces M-class immunoglobulins in this case.

Another class of antibodies is A-class. It includes anti-toxic cells that mostly live in mucous membranes and, as practice shows, don't do their job very well.

E-class antibodies live in submucous membranes of the gastro-intestinal tract, respiratory system and are connected to allergies. The latter are closely related to autoimmune processes. An autoimmune pathology is hard to combat, it can be caused by imbalance of T-cells of the immune system (helpers/suppressors ratio), by non-controllable hyperactivity of B-lymphocytes and hormone fluctuations (post-stress thyroiditis, psoriasis, diabetes).

D-class immunoglobulins help B-lymphocytes detect antigens.

The immune response is a cooperative reaction of various cells of the immune system. It is divided into cell-mediated and humoral response: vaccine (attenuated virus) and serum (ready-made antibodies). An antigen, i.e. a cell that carries it on its own surface, penetrates into the body and meets macrophages on the way. Together they destroy toxins, end products of glycation and agents with antigens. Macrophages identify and report on the presence of foreign antigens in the organism. At a later stage, two types of lymphocytes — T- and B-lymphocytes — are activated. T-lymphocytes are moderators (they control the immune response) where T-helpers that help the immune system participate in the response are activated. They stimulate the immune response, produce interferons and interleukins (mediators that activate everything else). The next stage is B-lymphocytes modulation which results in binding of antigens and B-lymphocytes. Two groups of B-lymphocytes are generated. The first one is memory cells due to which the body becomes more resilient to the disease in case of recurrent infection. The second group starts to respond in the plasma — synthesized response antibodies are thrown into the plasma. By the way, T-lymphocytes also have a long-term memory. They group with other memory cells, and in doing so they can stimulate B-lymphocytes.

Sometimes a foreign agent does not only enter the bloodstream, but also integrates into the cells of organs and tissues, and thus modifies the cell antigen structure. The process does not remain undetected. T-killers are to fight against it, but they won't do anything until they acquire information from macrophages and are stimulated with interferons. In the end, we get T-killers with memory concerning disease agents and executors (B-lymphocytes with a memory of their own). They destroy everything that is infected, atypical and has a modified antigen structure. T-killers then start producing channel-forming proteins and granzymes that disturb the cytoderm and nuclear membrane. This is a process of immune system cooperation on cell (hybrid) response.

Even if a foreign agent is inside the cell, macrophages of its antigen are able to detect it. Subsequently, cell-killers and B-lymphocytes that participate in foreign agent destruction are put into action with the help of T-helpers. Next, T-lymphocyte suppressors enter the process that slow the immune system response at the right moment so that it doesn't destroy good cells.

Taking into account that both T- and B-lymphocyte groups are involved in the cell response, it is logical to influence them in order to improve the immune status and reduce the risk of autoimmune diseases and cancer. Drugs that improve B-cells and T-cells of the immune system help prevent the formation of cancer substrate. Professor V. H. Khavinson considers the effects of thymus and spleen peptides on the body in his monograph.

What follows is a list of Peptides drugs that can be used to improve the immune resoinse.

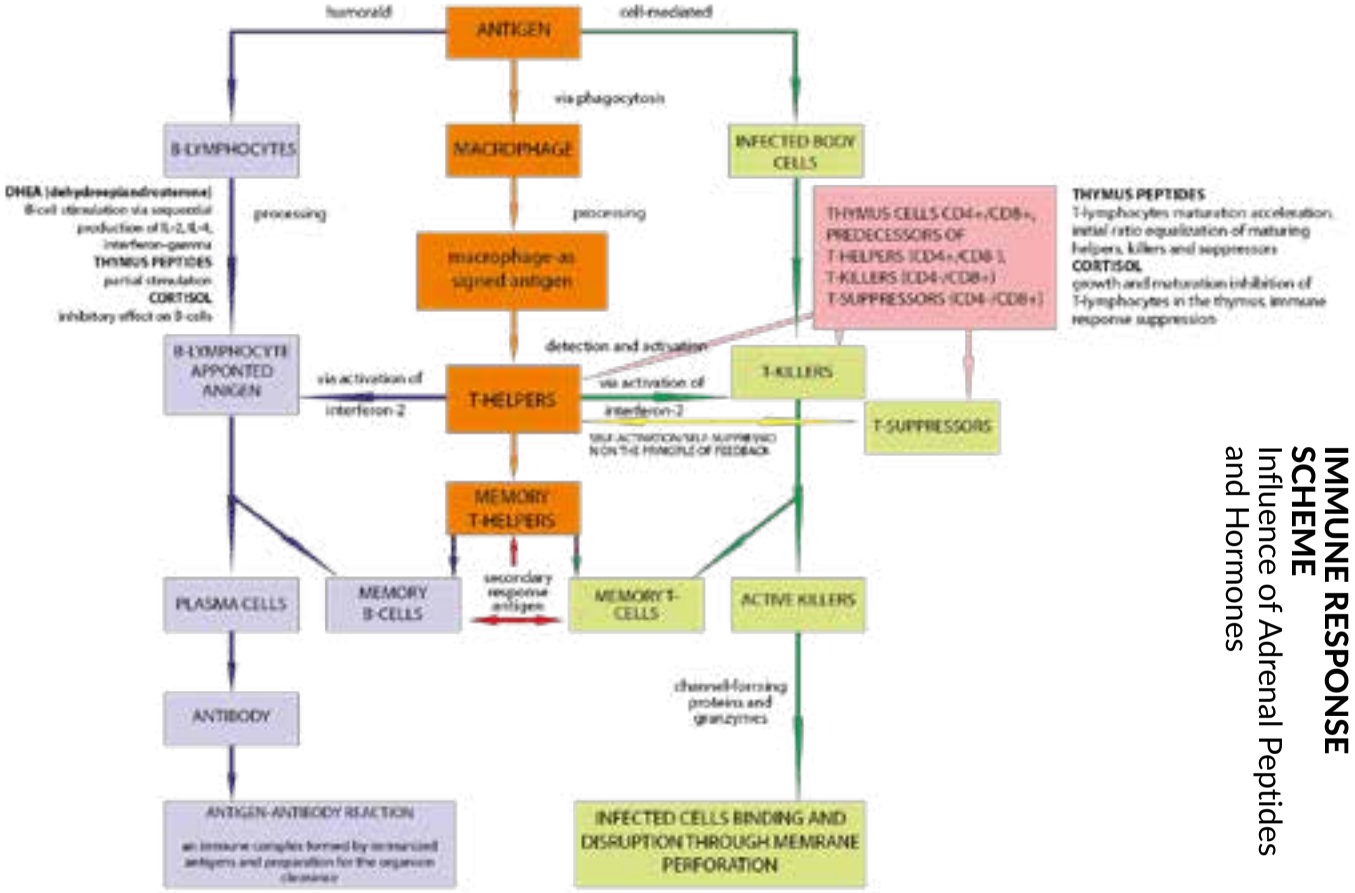
«Imusil», for example, initiates the production of M-class antibody immunoglobulins that prepare B-cells for the immune response, and enhances the activity of macrophages.

There are T-cell drugs that regulate the immunoregulatory balance. The problem can be holostically solved with the help of «Vladonix», a thymus peptide.

B-cell peptides are not produced as monopreparations, but they are contained in such complex peptide drugs as Revilab SL 03, 06, 07. Their advantage lies in sublingual administration and a rapid effect. Revilab SL 03 is the best variant in autoimmune diseases and allergies. The multifunctional Revilab ML series also contains peptides. For example, Revilab ML 01 contains pineal gland peptides (hence its wide range of effects, e.g. an antineoplastic effect, normalization of the performance of the neuroendocrine and immune systems), B-cell and liver peptides. It should be taken once every 2—3 days to avoid excessive stimulation of adrenals. Revilab ML 02 contains B-, T-cells, vessel wall and bone marrow peptides.

A compromise cost-effective derivative is a non-peptide drug «Temero Genero». It contains a whole complex of active ingredients — amino acids that are contained in pineal gland peptides and regulate its work. Its effect is somewhat delayed in comparison with peptides, but it is quite strong. A morning pill contains choline (for the brain and liver), 5-hydroxytryptophan (a predecessor of melatonin and serotonin), potassium and magnesium for the whole body. An evening pill contains amino acids that train the immune system, and folic acid. As a matter of fact, this drug is the result of decomposition of T- and B-cell drugs, the first multicomponent and multifunctional non-peptide drug and the prototype of the Revilab ML series. Last but not least is «Revifort» that will stimulate the activity of T-killers. Due to polysaccharides and beta-D-glucans, it makes the immune system work faster so that T-killers would capture and destroy defective cells.

PRIMARY RESPONSE



IMMUNE RESPONSE SCHEME

Influence of Adrenal Peptides and Hormones

Atherosclerosis

Atherosclerosis is a systemic process that affects various blood vessels. It manifests itself, in general, in abnormal accumulation of cholesterol in the form of plaques along arterial walls. It is important to bear in mind that cholesterol is used by the body to temporarily repair blood vessels. In other words, cholesterol is a kind of patch that appears when an untrained arterial wall is damaged under pressure. When the pressure is systematic, this patch grows in size and limits the blood flow. What other factors influence this process, except genetic factors and excessive coffee consumption? These include hypodynamia and substance abuse. A person who has a sedentary way of life and low muscle activity, is overweight, abuses alcohol and smokes a lot, is particularly at risk of atherosclerosis. For lack of training, vulnerable blood vessels become damaged when under pressure. Endothelial cells peel off, and microdamage accumulates. Temporary patches (first, in the form of fibrins, then cholesterol) cover the gaps in the vessel walls. Later on, these patches are covered by new endothelium cells that form a capsule. The defect in the wall is buried under cholesterol. Previously damaged vessel areas are always prone to recurring damage. As cholesterol accumulates over time, the resulting atherosclerotic plaque grows as large as to limit or even block blood flow. If there is a defect in the form of a plaque, the blood, as a rule, flows turbulently, not fluidly. If the blood clotting system is impaired (because of platelet breakage, for instance), it increases the risk of blood coagulation that can cause heart attack and thrombosis. Blood becomes viscous not only because of cholesterol but also because of hypercoagulability. As practice shows, the organism tries to compensate the vessel blockage. How can it increase the blood flow speed?

For example, it can expand capillaries ensuring the peripheral blood shunt, enhance the artery wall tone, and diminish the great vessels lumen that will increase the blood flow speed. However, the plaques make it very ineffective, that is why the heart will have to pump more blood, too. This may result in left ventricular myocardial hypertrophy. Muscle mass of the left ventricle wall will increase so that the more toned muscle would push the blood more effectively. All the above compensates the plaque problem, but only for a while. As time goes by, it doesn't help at all, ischemia occurs, the risk of hypercoagulability increases and, sooner or later, due to stress vasospasm develops and impairs blood circulation in the kidneys, lungs, spleen, cardiac muscle and the brain (an ischemic stroke is a stroke that occurs in the brain). Cholesterol is the cornerstone of the classical atherosclerosis theory. Due to age-related hormonal imbalance, blood coagulability is disturbed, and cholesterol level increases. For that reason, a whole range of statin drugs are developed and imposed on patients. Their aim is to fight cholesterol and lipoprotein complexes — low-density and very low-density lipoproteins (B-class and some C- and E-subclass apoliproteins). However, it is common knowledge that this is a foray into the work of the liver, and may lead to its destruction. Unfortunately, many conventional cardiologists and general practitioners prescribe statins even to patients with cholesterol levels of 5.6—5.8. Practice shows that this is to be prescribed only if the level of cholesterol reaches 8 and above, and only when antioxidants and other therapeutic and preventative drugs are ineffective.

Remember: statins and anticoagulants can be prescribed with normal cholesterol values only if a patient has suffered a heart or brain stroke, or if a patient has a stent deployed for the treatment of life-threatening conditions!

Modern scientists claim that atherosclerosis is caused not only by high cholester-

ol levels, but also by homocysteine. This acid (a polymeric cysteine bond) damages endothelium and vessels muscle layer. As for cholesterol, high-density cholesterol (or "good" cholesterol) oxidizes faster whereas low-density cholesterol does it much slower. Active high-density cholesterol doesn't «like» being a patch and it is always in deficit. Instead, low-density cholesterol oxidizes in conjunction with apoproteins — a group of low- and very low-density apolipoproteins that contribute to the formation of atherosclerotic plaques.
Besides, now, after decades of neglect for this point of view, scientists can finally say that atherosclerosis is an inflammatory process. Yes, it is a multistep autoimmune reaction resulting in damage, inflammation, infiltration, and cicatrization. In fact, atherosclerosis cholesterol can be compared to acne on. Over time the plaque (a sort of post acne) starts growing, and it may lead to deplorable consequences, such as a heart or brain stroke. This process can be represented as a succession of the following stages: damage → fibrin → inflammation → defect closure with cholesterol → sclerosis → recurrence. There is a variety of theories of atherosclerosis, and each of

Classical atherosclerosis theories complemented by different perceptions:

1. The lipoprotein theory (accumulation of primary low-density lipoproteins in the vessel wall).

2. The primary genetic dysfunction of inner vessel wall endothelium.

3. The autoimmune theory is associated with hyperactivity of macrophages and leucocytes due to autoimmune processes. It is caused by a disorder of endothelium cell receptors triggered by glycation end products entering the blood flow with food via the gastrointestinal tract.

4. The monoclonal theory. In the process of aging, a generation of defected muscle cells appears. It gradually leads to vessel damage. There is no evidence that this process is directly related to the problem, but its indirect effect is undeniable.

5. The virus vessel damage theory. Some types of herpesvirus as well as cytomegalovirus and Epstein-Barr virus result in autoimmune processes and immune depression.

6. The antioxidant theory and lipid peroxidation. Active peroxidation during antioxidant deficiency, inflammation and active glycation causes damage to the cells of the vessel walls lining.

7. Additional genetic factors — excess of homocysteine and apolipoproteins of certain classes.

8. Defects (genetic and acquired) of the synthesis of matrix metalloproteinases and NO-synthase — enzymes that ensure the stability and vessel wall tone.

9. Chlamydia that causes a severe pneumonia damaging the vessel wall.

10. Hormone imbalance that triggers enforced stimulation of genital glands. If there is no appropriate correctional treatment, stimulators — the follicle-stimulating and adrenocorticotropic hormones — are produced in large amounts. These boost the production of cholesterol. Moreover, during sex hormone imbalance the risk of thrombosis and the decrease of nitric oxide activity — a fundamental vessel-dilating agent — are observed. There is one

more circumstance: in menopause collagen degradation accelerates, therefore vessel elasticity and strength drastically decline.

11 The damaging action of sugar and insulin excess increases the permeability and the risk of vessel wall damage.

What causes blood vessel damage? Apart from menopause, high homocysteine and apolipoprotein levels, another adverse factor is glycation. It disables proteins and enzymes, impairs detoxification processes and reduces the antioxidant status. Impaired detoxification leads to an imbalance in the synthesis of sex hormones (if a patient is still in the reproductive age). Advanced effects of glycation also include mitochondria defects, their mal-synchronization with the cell nucleus, and gene expression changes. This disturbs the synthesis of matrix metalloproteinases and NO-synthase. Glycation triggers endothelium cell receptor changes, inflammation and tumour necrosis. It correlates with autoimmune processes. In other words, glycation leads to enzyme disorders and multistep uncontrollable inflammatory processes that destroy any tissue or body system. It complicates all the processes in the vessels. Besides, the inflammation level is measured by C-reactive protein levels — the higher the level, the more active is the process. Thus, the risks of heart and brain strokes and even thrombosis increase. Glycation increases gene expression that controls the work of mediators in the vessel wall. They are responsible for endothelium stability, spasms, vasoconstriction, and blood coagulability. In diabetes, lipid metabolism is disturbed, sugar levels become excessive, and the vessel wall begins to degenerate.

I personally don't believe that the main factor of atherosclerosis is fat accumulation in the vessel wall. I suppose, there is a genetic predisposition to the vessel wall damage, high levels of homocysteine and some apoproteins. At least 50% of cases of vascular disease depend on immune disorders caused by glycation and autoimmune processes that can be triggered by Epstein-Barr virus, herpesvirus, cytomegalovirus, etc.

Anyway, atherosclerosis is not just about fat and weak vessel walls, but also about blood sugar and insulin fluctuations, as well as glycation that changes the activity of certain vessel dilating enzymes. A priori there is inflammation that results in plaque formation where cholesterol accumulates. This is an iterative process.

When a woman goes through a menopause, cholesterol level begins to rise. A man's low testosterone level makes the production of nitrous oxide impossible. All of the above results in artery damage and plaque formation. Plaques become very solid, so one should not expect them to disappear by themselves. Moreover, scars left after a plaque is removed distort blood vessels as well.

It is important to distinguish atherosclerosis from Monckeberg's sclerosis in which a muscle layer is damaged, but no plaques are formed. This form of sclerotic damage is characterized by lesion of artery middle coat (as opposed to atherosclerosis). For this disease degeneration and vessel wall hardening processes are relevant, calcium salt accumulates in the vessel wall instead of cholesterol. Calcification (calcium deposits) and inflammation occur in the middle area of the vessel wall, but not in the endothelium. Endothelium may be affected as well, but for other reasons (stated above), that is why atherosclerosis can follow. In this case calcinated plaques are formed. In most cases, both processes affect the same arteries and their segments simultaneously. Often, as calcium accumulates, the vessel wall begins to slough off, which may cause aneurism. So, we should always bear in mind that calcinated plaques are a double threat since sclerosis may be developing under the plaque

Vessel Wall Peptides

No therapy will be effective without a drug containing vessel wall peptides. Such vessel wall peptide complexes as Revilab SL 01, Revilab SL 02, Revilab ML 03, Revilab ML 04 can be used. «Vesugen» and «Ventfort» contain a bigger peptide dosage, but with age vascular drugs should be prescribed with caution (it is better to start with small doses and alternate days). There is a lot of evidence that vessel wall peptides effectively reduce cholesterol levels, inflammation and blood coagulability. The most important positive effects of these drugs are reduced plaques and increased coronary arteries permeability.

By the way, «Adestab», a non-peptide drug, is very effective in vessel pathologies. It contains black chokeberry that stabilizes arterial tension and controls sugar levels.

Antiglycants

Another effective method in the treatment of vascular diseases is the use of antiglycants. They help combat advanced glycation end products, and thus protect endothelium cell receptors. Antiglycating agents also reduce autoimmune multistep inflammation in arteries. The Peptides company has a modern antiglycant revilab anti-A.G.E. on offer.

Influence on the Immune System

In case of inflammation and stress, not only thymus peptides («Vladonix»/ «Crystagen») are effective, but also pineal gland peptides (Revilab SL 03, Revilab ML 04, «Endoluten»). The latter three are effective in autoimmune processes, especially Revilab SL 03. They should be taken once every 48 hours in the morning, «Endoluten» — once every 72 hours to synchronize the functioning of the central link of the neuroendocrine system and adrenals.

«Revifort» can be recommended as a means of correction of the immune system functions and inflammation reduction. It is a pharmaceutical product based on extracts of shiitake, maitake, reishi and cordyceps mushrooms. Mushroom polysaccharides are effective against autoimmune processes, in case you take half a dose.

Since atherosclerosis is a multi-factor process, it should be treated with a combination of drugs.

To recap, these include antioxidants, antiglycants, vessel, pineal gland and immune system peptide drugs as well as complementary immune correction drugs in the form of small doses of polysaccharides of higher fungi. Such a treatment must be accompanied by a change in dietary patterns and a way of life in general.

What means of atherosclerosis prevention and control do we have in our product portfolio? These are antioxidants, oils and lean fats. Omega-3, -6, -9 polyunsaturated fatty acids in «Reviform Oil Blend» and «Olecap» may be used to prevent atherosclerosis. It is proved that a long-term administration of lean fats does not only improve the antioxidant status and reduce the risk of inflammation, but also contributes to the reduction of the total cholesterol level by 0.5—1.5 mmol/L.

Antioxidants are an effective means of atherosclerosis prevention. Resveratrol is widely advertised nowadays as an integral part of decholesterolization schemes. It certainly has an antiatherogenic effect, but it is somewhat exaggerated. It may be effective in regards to cholesterol and dihydroquercetin. It improves vessel elasticity, thus normalizing parietal metabolism of cholesterol and its level. It is contained in «Canacor», «Complex 3R», «Ardiliv».

Our new detoxicant «Complex 3D» is based on SOD, glutathione-peroxydase, catalase and dihydroquercetin. Three antioxidant systems meant for the 2nd detoxification phase in a capsule with 50 mg of dihydroquercetin are sure to help us bring atherosclerosis under control!

INFLUENCE OF A PEPTIDE COMPLEX ON LIPID METABOLISM AND BLOOD COAGULATION SYSTEM IN PATIENTS WITH CEREBRAL ATHEROSCLEROSIS

Study period — 2010–2012

Location — Russia, Moscow, Moscow office of the Peptides Research and Production Center of Revitalization and Health

Actual enrollment — 1249 participants

Age — 55–65 y.o

Regimens:

Ventfort — 2 capsules a day for 3 months;

Cerluten — 2 capsules a day for 3 months;

Svetinorm — 2 capsules a day for 3 months;

Endoluten — 1 capsule a day (in the morning) for 2 months.

Period of administration — 4 months.

Parameter	Before treatment, 1249 participants	Standard regimen, 281 participants	Standard regimen and a complex: Ventfort®, Cerluten®, 430 participants	Standard regimen and a complex: Ventfort®, Cerluten®, Svetinorm®, Endoluten®, 538 participants
Total cholesterol (mmol/L)	8,7±0,4	7,6±0,3	6,3±0,5*	5,8±0,6*
VLDL (mmol/L)	1,42±0,07	1,22±0,06	0,92±0,07*	0,87±0,5*
Triglycerides (mmol/L)	4,6±0,5	4,1±0,5	3,9±0,6	3,2±0,5*
Prothrombin index (%)	151±8	138±7	119±6*	106±7

* Accurate in comparison with Group I (standard regimen).

RESEARCH OF EFFECTIVENESS OF THE MULTIFUNCTIONAL PEPTIDE SUPPLEMENT REVILAB ML 04

Study period — April 2016 – November 2018

Location — Russia, Moscow, Moscow office of the Peptides Research and Production Center of Revitalization and Health

Actual enrollment — 98 participants

Age — 42–58 y.o

Regimen — 1 capsule in the morning a.c. once in 48 hours

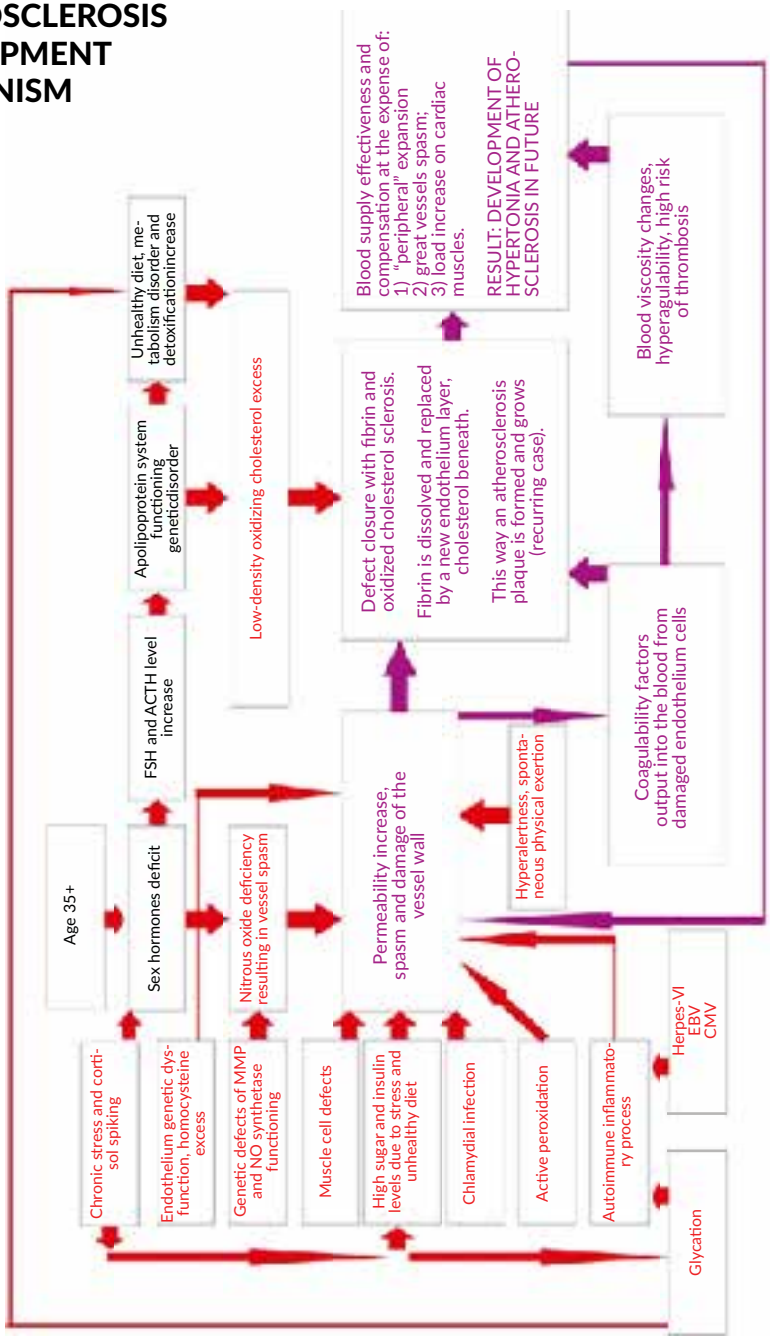
Period of administration — 4 months

EFFECTIVENESS OF REVILAB ML 04

Parameter	Norm	Placebo group before research, 46 participants	Placebo group after research, 46 participants	ML 04 group before research, 52 participants	ML 04 group after research, 52 participants
Total cholesterol, mmol/L	3,3–5,2	6,7±0,18	6,5±0,14	6,6±0,19	5,8±0,11*
C-reactive protein, mg/l	Менее 1,0	2,3±0,32	1,9±0,46	2,2±0,29	1,1±0,23*
Prothrombin time, c	11,5–14,5	12,2±0,21	12,9±0,35	12,1±0,24	13,8±0,22*
High or unstable blood tension	—	46 (100%)	42 (91%)	51 (98%)	19* (37%)
Sleep onset disorder	—	38 (83%)	34 (74%)	44 (85%)	18* (35%)
Segment ST abnormality on ECG	—	42 (91%)	41 (89%)	49 (94%)	21* (40%)

* Accurate changes in comparison with the placebo group.

ATHEROSCLEROSIS DEVELOPMENT MECHANISM



Memory, Intelligence and Vision

The Nervous System

It is common knowledge that there are central, peripheral and autonomic nervous systems. The responsibility of the nervous system, in general, is to ensure well-coordinated functioning of all organs and systems. It should be regarded as a coordination and management center. Our brain can be compared to a transmitting and receiving device enabling us to think, transform thoughts into words and act.

We all want to stay alert and competent as long as possible. There is an opinion that we use just a part of our brain. In case one brain area is damaged, the neighboring areas take some of its functions, although it happens rarely. As for memory, it usually works faultlessly at a young age, but brain capabilities change with age. It is often the case that after 40-45 it is difficult to remember anything simple, and after 60 serious problems with short-term memory are observed. Furthermore, fine motor skills and psychoemotional state decline as one grows old. Mood swings, sleep disorders and hypotaxia occur as a consequences of brain tissue dysfunction that may develop for various reasons. The first reason is tissue fatigue in which a synthesis of certain proteins is subdued. Another reason is deficiency of acetylcholine (a mediator that helps neurons exchange signals with each other). This affects associative contacts between neurons; it can also be affected by a peptide deficiency. Acetylcholine deficit can also be observed in case of liver dysfunction.

If we talk about neuromediators, in general, dopamine that is produced in certain brain divisions is worth mentioning. Dopamine decrease results in such motion activity disorders as tremor and Parkinson's disease.

It can be caused by damage of a certain brain area called substantia nigra, or by genetic factors. Serotonin is also a neuromediator that participates in the formation of behavioral reactions and mood; it regulates the vessel tone and is an antecessor of melatonin that normalizes cyclic processes of the organism and circadian rhythms.

So, what does it take to make the brain function well? We need to replete peptides and neuromediators, organize a proper operating pattern of the nervous system and normalize the sleep-wake pattern. Moreover, it is very important to improve cerebral circulation that depends on stress. As it was said earlier, stress is one of the reasons of atherosclerosis. The older you are, the more likely is your brain to fail due to stress, because in times of stress blood circulation of various brain areas is impaired. Gliosis (postishemic) lesions that can be seen on a series of tomography scans occur in the subcrustal area.

Brain blood supply can also be affected by disorders in the cervical vertebrae that exacerbate S-shaped vertebral artery tortuosity, and that leads to poor brain blood supply. Both essential cartilage protectors («Regenart», «Chondromix») and peptide drugs (Revilab SL 04, Revilab ML 09, «Cartalax», «Sgumir») can be used to solve the problem.The complex drug Revilab ML 09 contains cartilage protectors, antioxidants and cartilage and vessel peptides.

How to prevent brain functioning impairment? It is necessary to administer choline-containing drugs (acetylcholine predecessor). As opposed to an overhyped dimethylaminoethanol, it doesn't exacerbate the liver detoxification function. Choline is harmless and can be found in salmon, egg yolk and some grains. Its effect develops gradually. It (in the form of choline bitartrate) forms part of Mesotels for internal use. Mesotel Beauty contains zinc and selenium apart from choline. Mesotel Neo is a more complex version with resveratrol, gotu kola, lycium. These herbs improve brain blood circulation and nervous activity. Mesotel Tabs is easy to carry. Apart from Mesotels, there is «Previn» medication that also contains choline bitartrate. It improves the blood supply of the cerebral tissue and the central nervous system functioning.

Furthermore, one should also find a reliable

chiropractic, if there are no contraindications for vertebral column correction. First, all the displaced vertebrae must be repositioned to their normal position and fixed within the vertebral column. In this case our preparations will be more effective.

How can brain malfunction be prevented? Choline-based drugs must be administered. Choline (acetylcholine predecessor) does not impair the liver detoxification capacity. Choline is harmless, and is contained in salmon, egg yolk, and some grains. Its effect is gradual. It is included in mesotels for internal administration in the form of choline bitartrate. Mesotel Beauty contains zinc and selenium in addition to choline bitartrate. Mesotel Neo is a more complexversion that contains resveratol, gotu kola and lyceum. These herbs improve brain blood circulation and nervous activity. Mesotel Tabs is easy to carry and use during trips. Another drug, «Previn», also contains choline bitartrate. It improves the blood supply of the cerebral tissue and the work of the central nervous system.

It is recommended to use a combination of peptides and choline drugs: Revilab ML 03 (choline, brain, vessel and retina peptides), «Mesotel» – «Vesugen» – «Pinealon», «Mesotel» –«Cerluten» – «Ventfort». «Cerluten» is unique due to its ability to normalize the state in lesions of the peripheral nervous system and positive effects in Biemond syndrome and multiple sclerosis. There are solutions of peptide complexes, for example, Revilab SL 02, that act fast.

If a patient doesn't want to have a lot of drugs, he can be prescribed with Revilab ML 03. Mesotels and «Temero Genero» are used to correct insignificant CNS disorders, but can be replaced by Revilab ML 03, all in one.

There is one more peptide supplement that contains pineal gland peptides. It was frequently used as a corrector of the immune, endocrine and reproductive systems, but, apparently, this peptide drug alone is able to improve memory and enhance motor performance. It produces an antistress effect, thus reducing the load on the nervous system. It also reduces the inflammation load on the vessels, thus improving the brain tissue blood supply.

A recurring question is whether it is possible to patients with Parkinson's disease and Alzheimer's disease. Our drugs cannot treat Parkinson's disease, although they may be used as means of prevention (e.g. «Cerluten»). In Alzheimer's disease, our medications help to stabilize the state of patients. Needless to say, we aren't dealing with psychiatric and neurotic disorders, since, first and utmost, we correct only the brain physiology. As for emotional disorders, they can be treated with pineal gland drugs, «Felicita» and «Temero Genero».

It should be mentioned that brain and vessel preparations may affect the arterial tension by toning the vessels. Vessel peptide drugs alone affect the tone. Cartilage peptide medications indirectly affect the vessel tone by influencing the collagen lattice. Brain peptides tone the system of catecholamines (adrenaline and noradrenaline) by activating the central nervous system, hence sometimes may increase arterial tension as well. If a patient has labile arterial tension, it is important to start with sublingual drugs, for example, Revilab SL 04 and SL 02, and only afterwards to continue the treatment with capsule peptide preparations.

Multiple Sclerosis

PMultiple sclerosis is a severe autoimmune disease, genetic, as a rule.

The immune system starts producing antibodies that mark brain tissue areas in a particular manner, and then neurons are attacked. At first, patients notice loss of sensitivity and limb tingling. Then, according to the tomography scans, neurologists detect distinctive degenerative changes in the brain tissue and render a verdict. Either glatiramer acetate or immunosuppressive drugs are prescribed.

In our range of products, a good drug for multiple sclerosis is Revilab SL 03 that randers an autoimmune effect. The same effect is achieved with half a dose of «Revifort».

Epilepsy

The state of a patient suffering from epilepsy may be improved with the help of minimum choline doses, half a dosage of «Cerluten» to avoid neural hyperactivity and epileptic seizures.

What else can be administered?

Revilab ML 03 и Revilab SL 02, but it is better to combine them with «Cerluten», number one drug in multiple sclerosis. We also recommend choline-based drugs such as Mesotels and «Previn» that boost neuron interaction.

Amyotrophic Lateral Sclerosis

In case of amyotrophic lateral sclerosis the situation is slightly different. It is necessary to influence the immune mechanisms (for instance, with Revilab SL 03) and to use epilepsy tactics, that is to administer **minimum doses** of peptide brain tissue medications («Cerluten») and choline-containing drugs. They don't cause overarousal of the CNS (due to which neurons die), but balance the functions of neurons.

Vision

In what way are visual organs related to the CNS? Through retina. Optic nerves collect information from the retina, their chiasm occurs in the hypophysis area, and then oculomotor nucleuses form a visual image in the occipital region. To have a sharp image, the occipital region and optic nerves should be damage-free, eye muscles should function well, and this depends on the nerve center. The definition of an image depends on muscles, transparency of the ocular media, lens shape and flexibility, vitreous body length and, of course, retina state.

We can effectively work with the brain tissue, and what about visual impairments? We can offer a number of solutions in this department, too. If there is mild corneal damage, we recommend taking «Pinalex».

The next question: is it possible to improve vision acuity? The answer: it is partially possible by changing the tone of the lens muscles, optimizing the work of the retina (using «Visoluten»), or by administering revilab anti-A.G.E. (it is possible to slow down its opacity). As for the flexibility of the lens, we can only influence the muscles that hold it. The muscle spasm develops over time, and that can be neutralized only by «Visoluten». However, in case of vitreous body changes, there is hardly anything to be done.

The condition of the retina mostly depends on the state of vessels that nourish it, visual and nervous load (hypertonicity of muscles that hold the eye ball). Due to the load, the retina vessel tone undergoes changes. In diabetes or atherosclerosis they are narrowed and inflexible.

They are too flexible and able to generate aneurisms in places (as a result of the wall defect). When blood pressure increases, aneurism may rupture, and hemorrhage occurs. What can be done? If the patient is hospitalized, it can be stopped with drugs or a surgery. In such cases only one drug can be used to improve the condition of the retina — «Visoluten», despite the fact that we have Revilab SL 02 and even «Vizulingual» — a highly concentrated sublingual drug created upon request of some ophthalmologists.

In edema or detachment of the retina it is necessary to make injections that block the vessel growth (ranibizumab and its analogs). Sometimes prednisolone is used to reduce the swelling and further retinal detachment. Only «Visoluten» should be prescribed. NO VESSEL WALL PEPTIDES! That is why if a patient had ruptures, edema, retinal detachment or hemorrhage over the last 24 months, I NEVER prescribe vessel wall peptides and complex medications with it.

Macular Dystrophy

Macular dystrophy is a very common problem. Patients often bring a series of colour tomographic images which display retina depletion, or degeneration. If it is a dry form of macular dystrophy, we can use products of the Revilab SL/ML series, «Vizulingual lingual», «Pinalex» and a combined scheme of medications containing vessel, brain and retina peptides. However, if it is a wet form (edema, druses, retinal detachment), the above mentioned products are ineffective. Furthermore, keeping in mind the edema, the use of vessel wall and retina peptides is controversial.

Glaucoma

Ocular hypertension may result in glaucoma, it develops due to the fact that blood flow and plasma filtration become excessive, but run-off is weak. Fluid hyperproduction occurs that pressures the eye ball internally. The cornea is rather firm and doesn't protrude, but the intraocular fluid pressures the vitreous body that, in its turn, damages the retina. Retina cells gradually start dying due to the pressure. Ophthalmologists can make a laser vision correction of the intraocular tension in eye chambers when seeking timely medical assistance. It is necessary to promptly use eye drops that reduce intraocular tension.

We can only delay retinal dysfunction by administering retina, vessel wall and brain tissue peptide drugs («Cerluten», «Visoluten», «Pinealon» and Revilab ML and SL series), until the intraocular tension is balanced.

Myopia and Hypermetropia

In myopia and hypermetropia it is possible to improve the condition of the retina and normalize the lens muscle tone, but it is impossible to significantly change the situation. In certain cases half a diopter visual acuity correction can be achieved.

In general, eyes must be taken care of, since after 40 the retina experiences overtension and is badly affected by vessel changes. Vision acuity is blurred once in a while, especially in the evening. This is the first sign that you should pay attention to the vessels, retina and brain tissue.

PEPTIDE COMPLEX INFLUENCE ON GENERAL WELL-BEING OF PATIENTS WITH CEREBRAL ATHEROSCLEROSIS (percentagewise)

Study period — 2010–2012

Location — Russia, Moscow, Moscow office of the Peptides Research and Production Center of Revitalization and Health

Actual enrollment — 1249 participants

Age — 55–65 y.o.

Dosage regimens:

Ventfort — 2 capsules a day for 3 months;

Cerluten — 2 capsules a day for 3 months;

Svetinorm — 2 capsules a day for 3 months;

Endoluten — 1 capsule a day (in the morning) for 2 months.

Period of administration — 4 months

Parameter	Before treatment, 1249 participants	Standard regimen, 281 participants	Standard regimen and a complex: Ventfort®, Cerluten®, 430 participants	Standard regimen and a complex: Ventfort®, Cerluten®, Svetinorm®, Endoluten®, 538 participants
Headache	73,5	59,5	45,1*	29,8*
Sleep disorder	57,3	48,4	30,4	18,5*
Emotional lability	68,0	32,3	24,8	16,6
Memory impairment	69,8	42,6	32,0*	14,2*
Difficulty focusing	57,2	43,8	29,5*	11,.3*
Rapid fatigability	75,6	64,0	32,3	12,9*

* Accurate in comparison with Group I (standard regimen).

RESEARCH OF EFFECTIVENESS OF MULTIFUNCTION PEPTIDE SUPPLEMENT REVILAB ML 03

Study period — april 2017 – August 2019

Location — Russia, Moscow, Moscow office of the Peptides Research and Production Center of Revitalization and Health

Actual enrolment — 80 participants

Age — 42–54 y.o.

Dosage regimen — 1 capsule in the morning a.c. daily

Period of administration — 4 months

EFFECTIVENESS OF REVILAB ML 03

Parameter	Placebo group before research, 42 patients	Placebo group after research, 42 patients	ML 03 group before research, 38 patients	ML 03 group after research, 38 patients
Unstable blood tension	34 (81%)	28 (67%)	31 (82%)	12* (32%)
Sleep onset disorder	38 (90%)	30 (71%)	34 (89%)	14* (37%)
Rapid fatigability	42 (100%)	36 (86%)	38 (100%)	9* (24%)
Headache	26 (62%)	24 (57%)	29 (76%)	12* (32%)
Vision impairment (blurred vision in the evening)	31 (74%)	29 (69%)	32 (84%)	13* (34%)

* Accurate changes in comparison with the placebo group.

RESEARCH OF EFFECTIVENESS OF REVILAB ML 03

Study period — august 2018 – august 2019
Location — Russia, Moscow, Moscow office of the Peptides Research and Production Center of Revitalization and Health
Actual enrolment — 57 participants
Age enrolment — 41–52 y.o.
Dosage regimen — 1 capsule in the morning a.c. daily
Period of administration — 4 months
Number of test sessions — 32 (twice a week)

The study assessed the drug's ability to improve the adaptive capabilities of the brain tissue in middle-aged patients when learning mnemonics using the patented methods of Matveev and Dumchev

EFFECTIVENESS OF REVILAB ML 03

Parameter	Norm	Placebo group before research, 29 patients	Placebo group after research, 29 patients	ML 03 group before research, 28 patients	ML 03 group after research, 28 patients
Average speed of memorizing pictures (for 20 s)	10-12	9	16	9	22*
Average reading speed (words per minute)	130	126	144	128	162*
Improvement of audiomotor and visual calculation	—	—	11 (38%)	—	26 (93%)
Increase in attention focusing and set-shifting	—	—	14 (48%)	—	26 (93%)

* Accurate changes in comparison with the placebo group.

The Reproductive System

The problems of infertility and reproductive health are among the most long-standing in society and affect a wide variety of people: rich and poor, young and mature.

The Male Reproductive System

The most common problems of the male reproductive system are erectile impairments caused by infected microflora that can be treated with antibacterial medications, of course, if the sensitivity is determined. Such a therapy is conducted by way of immune stimulation, and the task of health practitioners is to create a form of «airbag», or a factor of safety, for the immune system. Before using immune stimulators, it is necessary to balance T- and B-cells of the immune system. Our range of products includes «Vladonix», a T-cell drug based on natural peptides, and «Crystagen», based on synthesized peptides. There is a certain combination of T- and B-cells peptides in multifunction medications Revilab ML 01 and ML 02. In addition, sublingual Revilab SL 03 for the pineal gland and both cells of the immune system may be used. It should be administered once per 2–3 days, «Vladonix» may be used at the same time.

When urologists and venereologists carry out immunostimulation with antibacterial therapy, it is necessary to take care of the condition of the prostate gland with the testicles with the help of «Libidon» and «Testoluten». If erectile dysfunction is not expressed and spermogram values are normal, Revilab SL 09 can be used.

In fact, it is difficult to fight the raging opportunistic microflora, but it is necessary and quite possible. It is better to do this in a timely manner, since symptoms appear when the microflora begins to actively grow and have a strong negative impact. It all starts with prostate dysfunction, that can cause erectile dysfunction, and later the testicles are involved in the process, which leads to conception problems. For this reason, it is better not to delay the therapy and remember to additionally use several of our supporting drugs at once. In general, it should be kept in mind that prostatitis can be caused by staphylococcus. Unfortunately, fighting this pathogen is extremely difficult. Only supportive therapy is prescribed. There is also congestion prostatitis. The first subtype of such prostatitis is associated with venous stasis in the pelvic region, the second one — with dysrhythmia of sexual activity. In these cases, we recommend preparations containing peptides of the prostate gland and blood vessels («Libidon» and «Ventfort») and, of course, leading an active lifestyle and a regular sex life. Not so long ago we got the drug «Proteston», which solves problems in the male reproductive system in a complex. It contains a specific set of peptides that increase endurance and sexual constitution. The components of antlers and hemolens improve men's health. Carnitine increases sperm motility.

The quality of an erection depends directly not only on the prostate, but also on the hormonal profile (testosterone level). The formation and release of nitrous oxide into the blood depends on it. It causes vasodilatation, and therefore, filling of the cavernous bodies of the penis with blood. Another factor affecting male potency is the state of the blood vessels. Smoking, varicose veins have a negative effect on the quality of sex life. We can (if this abnormality is moderate) solve the problem of the blood vessels with the help of our peptide preparations —«Vesugen» and «Ventfort».

But if the abnormality is serious, and there is an outflow of blood from the cavernous bodies of the penis during sexual intercourse, a surgery is unavoidable.

If there are no serious diseases, and a patient merely wants to improve the quality of sex life, we recommend either «Endoluten» or «Glandokort» (1 capsule once in 3 days, must not be combined with each other);

«Ventfort» (a preparation containing vessel peptides), «Testoluten» (containing peptides of the testes) and «Libidon» (containing peptides of the prostate gland). The regimen «adrenals — testes — prostate — vessels» has proved effective.

If a patient has a bad spermogram, we prescribe medications for the testes, in particular, «Testoluten». Now it is possible to use drugs with synthesized peptides — Revilab SL 09. Ultimately (at the end of the therapy course) we prescribe cytomaxes. In the process of taking «Testoluten», at first, a moderate decrease in spermogram values is possible, but after the end of the course, the values reach the proper and expected level. As a rule, we are approached by patients whose spermograms show a small number of active spermatozoa. It is quite possible to change the situation for the better with preparations containing testes peptides.

However, it also happens that those who have good test results still cannot conceive children. Such cases can sometimes be associated with inapparent infections. Mycoplasmas and ureaplasmas can influence the morphology of spermatozoa. Chlamydial infection leads to a missed miscarriage, damage of the mucous membranes and joints. But, in fact, mentioned earlier what can be done in case of infections.

But what if no infections are detected, there are no erectile disorders, and the semen analysis results look good? There can be one hidden factor that causes this — agglutination (or clumping) of spermatozoa. There are many spermatozoa, they seem to be mobile, but they have clumped into a conglomerate that cannot move. Agglutination is associated with the reaction of antibodies with the surface of spermatozoa. If there are antibodies, then this is an attack of one's own cells, and this is an autoimmune reaction. Naturally, there should be no antibodies to spermatozoa, but they appear and make them agglutinate.

The causes of agglutination may vary:

- genital trauma;
- hormonal changes;
- infections, inflammatory diseases of the genitourinary system (poorly treated);
- immune system disorders.

What is our tactic in identifying these reasons? We prescribe «Endoluten» every three days for 4 months or Revilab SL 03 (once every 2 days) and add the testicular preparation («Testoluten»). Finally, we add «Vladonix» and «Libidon». What do we get? Month 1 and 2: «Endoluten» (Revilab SL 03) plus «Testoluten» (daily). Month 3: «Endoluten» (Revilab SL 03) plus «Testoluten», then we add «Libidon» (2 capsules daily). Month 4: the same, plus «Vladonix» (1 capsule daily). This regimen granted more than 60 desperate families the joy of parenthood. Age-related problems with male reproductive health start at age 50 and above.

Prostate adenoma is an increase in size of the prostate gland. It grows in the central part of the prostate gland, narrows the lumen of the urethra, then presses the bladder, and problems with urination appear.

Adenoma begins to grow at age 25, but it reaches a critical size at 55. The reason is that the hormonal profile in men changes with age, and it turns out that a lot of unclaimed active testosterone remains. It stimulates the growth of the prostate gland cells.

What are the symptoms of prostate adenoma? Gradually, over time, there is a feeling of incomplete emptying of the bladder, frequent urination, frequent night trips to the toilet, a weak urine stream. Ultimately, the urethra narrows, and the bladder needs to strain to push urine through the constriction. As a result, prolonged tension and proliferation of the bladder walls are replaced by decompensation, and residual urine accumulates. Such a patient should be operated on.

In case of moderate urination disorders, urologists prescribe preparations with an

extract of the bark of a dwarf palm tree or another plant — pigeum (African plum). It relieves swelling of the prostate well. We also prescribe «Aktiman», «Proteston». The growth of adenoma, however, does not stop, only slightly slows down. Yes, in medical practice there are symptomatic drugs and even inhibitors of the formation of active testosterone. They are the most powerful blocking agents of adenoma growth, but they are not a panacea. And sooner or later one has to resort to surgical intervention. What about our drugs? Cytomaxes can improve the quality of life, relieve the condition of the prostate gland («Libidon») and the bladder wall («Chitomur»). The problem can be solved in combination with Revilab SL 08 and Revilab ML 07. Let me stress it again: the problem can be completely resolved only through surgery.

Prostatic cancer is a malignant hormone-dependent tumor of the prostate gland. It doesn't grow in the center of the prostate, but in the transition zone, sometimes on the periphery of the gland.

The symptoms are the same as in adenoma. The diagnosis remains indeterminate until a patient does a blood test for the PSA tumor marker. This test should be taken once a year after the age of 50 and always before an ultrasound examination and visiting an urologist, because after pressing the gland with a finger or an ultrasound rectal probe, there will be a false positive increase in the PSA level. Then, according to the indications, X-ray and tomography are prescribed. If, according to the PSA, there is a suspicion of a tumor, and, in addition, a node in the prostate is detected, the patient is indicated a puncture biopsy with histological examination. Then everything becomes clear — the diagnosis is distressing. It is required to start treating as soon as possible. The treatment is too radical with hormonal profile knockdown. Fortunately, in recent years we have learned to preserve the function of urinary continence and, in some cases, the possibility of an erection.

What can we offer in this case? The main emphasis is placed on «Endoluten», «Revifort» and the T-cell «Vladonix». They contribute to the PSA level decreasing and the nodes reabsorbing. Be prepared for the PSA level to rise in the first months (due to the destruction of tumor cells). Such a therapy really gives an opportunity to improve the 5-year survival value. Naturally, it cannot be considered as an alternative to the main treatment, only as an essential and effective additive.

The Female Reproductive System

Quite often, women see doctors with the following problems: infertility, myoma and endometriosis, oncopathology (tumors of the mammary gland and pelvic organs). I propose to gain insight step by step.

Female reproductive health is directly affected by stress. The hormonal status depends on this, and a woman may experience menstrual irregularities in stress (when the organs of the neuroendocrine system are involved).

We do not consider cases when women who have not yet had their period at the age of 25—30. In this case, we can only talk about primary infertility, when peptide preparations of the pineal gland and ovaries rarely produce an effect. Usually these are women over 35 who want to relieve pain in the joints, not to gain weight and to take care of their skin. In addition, they may have breast cysts, myoma, or endometriosis in their medical history, and they can't get pregnant.

Let's imagine what a woman can expect with age.

Everything related to the state of blood vessels, joints and skin is associated with collagen, which is directly related to the function of the ovaries. While they are functioning (producing estrogens), collagen is renewed.

As soon as menopause starts, a loss of collagen occurs. This manifests itself not only in appearance, but also in the state of blood vessels and blood coagulability value changes. Of course, arthrosis begins to develop, especially in the hip joints. What other problems does collagen loss cause? If the function of the ovaries is reduced, the prolapse of the pelvic organs begins, as the quality of the connective tissue changes. It implies prolapse of the vagina and uterus, along with this, the position of the bladder changes. This leads to frequent split urination and stress urinary incontinence, for example, when coughing or frightened.

In menopause, we recommend «Zhenoluten», «Endoluten» and, of course, prescribe a drug for the bladder wall «Chitomur». You can also take Revilab SL 10, but since it contains no ovarian fraction, it must be taken together with «Zhenoluten». If there is an obvious problem with the connective tissue, then it's time to pay attention to the drugs «Cartalax»/«Sigumir», Revilab SL 04/Revilab ML 09, various chondroprotectors.

Decreased ovarian function also entails the problem of bone density — osteoporosis. The functions of the ovaries decrease, the parathyroid glands functioning changes. The depletion of calcium and collagen forming trabeculas in bones is accelerated. What to do? The preparation of the parathyroid gland «Bonothyrk» (only if the tests show the increased level of parathyroid hormone) should be added to the already known regimen of peptides of the epiphysis, ovaries and osteocartilaginous tissue. The administration regimen is individual, based on the response to the drug (absence of aching in the bones) and tests for parathyroid hormone.

What can we advise women of reproductive age, who want to look good, prolong ovarian function, normalize their cycle and get pregnant? Their appearance depends on the level of estrogen and neuroendocrine status, respectively, once every 3 days, we prescribe «Endoluten» or Revilab SL 03 (Revilab ML 08) containing the epiphysis peptide. Any of them, by the way, can be added to cosmetics and applied externally. For their intended purpose, the administration course is 4 months. Subsequently, a 2 months break should be made; then again the preparations should be taken for 2 months. This regimen should be followed for a long time. For the first 3–4 months (in combination with the drug with epiphysis peptide) «Zhenoluten» is administered to normalize ovarian functions. A slight imbalance of estrogen and progesterone, follicular and endometrial cysts — all this begins to reabsorb. The quantity of antral follicles according to ultrasound data increases at least twice.

In 40–50% of cases, we record an increase in Anti-Mullerian hormone level, which indicates the reserve capacity of the ovaries. Notwithstanding, Anti-Mullerian hormone isn't such a clear marker of the functionality of the female body. We have witnessed many times how pregnancy occurred at its level of only 0.25–0.40, although the norm is more than one. In general, the above mentioned regimen has repeatedly proved its effectiveness and made it possible to forget about the accelerated aging of the ovaries, and, of course, helped to get pregnant.

There is «Femalin» preparation that is needed mainly at age 40 and above in a slight estrogen deficiency. But in case of estrogen excess and mastopathy, such a preparation may be unsuitable. In this case, it is better to administer «Mamiton» — a preparation specially designed for such cases. We rarely use «Indosine», which has a mild anti-estrogenic effect.

Therefore, in case of conception problems, a woman over 35 years old needs two drugs: «Endoluten» (1 capsule once every 3 days) and «Zhenoluten» (2 capsules daily) for 4 months. Then we take a break for 2 months and repeat the course again. As a rule, the first 3–4 months are enough to achieve the

desired effect. Such regimens are prescribed during preparation for pregnancy, and sometimes as part of the protocol of in vitro fertilization. The advantage of this regimen is the possibility of creating a so-called reserve factor of the ovaries, since missed miscarriages also occur.

- The positive aspects of the above regimen include the normalization of the menstrual cycle. The interval between periods is stabilized. Ovulation becomes regular.
- Ovarian cysts may decrease in size and quantity, even if they were endometrial. «Endoluten» is to be taken once every 72 hours.
- In 50% of cases, regression of myoma of the uterus is possible. It is advisable to use Revilab SL 03 and «Zhenoluten» (but 1 capsule, not 2 capsules). Myoma can be estrogen-dependent, progesterone-dependent and mixed. It grows due to any (even positive) imbalance in the hormonal profile. Of course, in this case it is necessary to take preparations in reduced doses and strictly under the supervision of an ultrasound study. If myoma grows, a patient should stop taking pineal gland medications, use «Zhenoluten» only and monitor the behavior of the myoma. Growth of myomatous nodes is dangerous, but the myoma itself does not lead to an oncological process.
- The correct administration of the above mentioned preparations contributes to the decrease of endometriosis manifestations that interferes with the implantation of a fertilized ovum. Endometriosis does not «go away» completely, but its significant regression is observed during therapy. It is believed that endometriosis is less dangerous than myoma, so, pineal gland preparations can be used.

What are the consequences of thyroid gland disorders for women? First of all, these are ovarian cysts and fibrocystic mastopathy. In this case, we include «Thyreogen» in the regimen. By the way, sometimes it is another way of influencing endometriosis. When it comes to cysts and mastopathy, we need «Vladonix» — a T-cell medication that has a systemic effect on the organism. Over the age of 50, it can slightly increase the level of estrogen, thin the blood and be a means of preventing cancer. There is evidence that it reduces the risk of hormone-dependent breast tumors by 80%.

However, it must not be used in autoimmune thyroiditis that is accompanied by hypothyroid symptoms. In most cases it is a post-stress condition (or there is massive injury or burn).

The immune system, which «was either strongly disturbed or tortured for a long time» under stress, becomes hyperactive, antibodies appear. The thyroid gland begins to suffer from the attacks of the immune system. The level of thyroxin decreases, but the level of thyreotrophin increases. Most often, we are approached with high levels of thyreotrophin and antibodies to thyroid peroxidase. We prescribe «Endoluten» in the hope of lowering antibody titers (once every 3 days). Revilab SL 03 is a preferable preparation, since it contains peptides of the epiphysis, thymus and B-cells. This is the most successful preparation for allergies and autoimmune processes in the organism. «Thyreogen» is not that effective on its own, only in combination with Revilab SL 03 or «Endoluten». What other drug may be added? — «Revifort»: it also has an anti-autoimmune effect (albeit, at half a dose). Experienced users understand that they need to take drugs that affect the 1st phase of detoxification, for example, «Indosine».

The combination of a myoma and thyroiditis is a dangerous thing. We analyze examinations and test results, try thyroiditis therapy and administer half a dose of «Zhenoluten». We do this because there are mixed myomas (they don't react to medications) in combination with mixed thyroiditis (atypical: hypofunction in the morning — hyperfunction in

the evening). Often, if a myoma is growing rapidly, it is better to see a good gynecologist and undergo a surgery. The main task for a doctor in this case is to preserve the organ and leave the patient a chance to give birth by cesarean section.

Cancer processes in the female body require prompt cation. This may be a surgical or chemoradiation treatment, sometimes in combination with antiestrogen drugs. Concomitant therapy aimed at significantly increasing the treatment effectiveness and the survival rate consists of peptide preparations of the epiphysis and thymus («Endoluten» and «Vladonix»). They are used without treatment-free intervals in courses.

There are also non-standard cases. In case of increased prolactin, we prescribe «Endoluten» and «Zhenoluten». If the menstrual cycle changes (becomes longer or shorter), and prolactin level does not decrease, follicle-stimulating hormone stays at the same level, there is no response from the ovaries, so, «Endoluten» is not suitable in this case. We can only use «Zhenoluten» then. If women outside pregnancy and lactation have increased prolactin levels, this is a case of pituitary microadenoma, which requires specialized drug treatment that is not always effective. Another case is not so dangerous, but it creates certain obstacles for conception — this is the so-called hypothalamic syndrome. «Endoluten» is ineffective in this case. However, there is another regimen: Revilab SL 03, «Zhenoluten» and «Cerluten» (as it is obtained from all brain tissue), which is very effective in a number of cases.

To conclude with, the basis of therapy for men is «Endoluten» and «Testoluten», for women — «Endoluten» and «Zhenoluten». With age, they are supplemented with «Chitomur» or Revilab SL 08 with peptides of the bladder wall, plus, of course, peptide preparations for blood vessels, joints and bone tissue.

In addition, we have developed complex preparations for men and women. This is Revilab ML 07 (for men) combined with a preparation with prostate peptides («Libidon»). Revilab ML 07 contains peptides of the pineal gland, blood vessels, testes and urinary bladder.

Then there is Revilab ML 08 (for women) combined with «Zhenoluten» containing ovarian peptides as well as peptides of the pineal gland, cartilage, vessels and bladder. These components guarantee optimal performance of the male and female reproductive systems.

COMPLEX USE OF PEPTIDES FOR CORRECTING THE FUNCTIONS OF THE REPRODUCTIVE SYSTEM IN WOMEN IN THE SECOND HALF OF THE FERTILE PERIOD

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The advances in molecular biology and genetics open up tremendous prospects for the development of industries such as anti-aging medicine. One of its priorities in Russia is the use of a complex of low-molecular-weight peptides that correct errors in the genome functioning. The studies of the past five decades and colossal clinical experience (more than 15 million observations) enable us to state confidently that peptide drugs have proved effective in preventing premature aging and expanding active longevity. Anti-aging medicine today is, first of all, a set of measures aimed at synchronized adjustment of all organs and systems, which makes it possible to achieve a long-lasting effect in body revitalization. These are also non-invasive aesthetic programs based on various methods of peptide administration and subsequent correction of biological age. It should also be mentioned that current anti-aging medicine is based on hormonal data and genetics. It enables health practitioners to select individual revitalization programs in order to prevent age-related diseases that mainly occur in the second half of life.

One of the particularities of working with patients is their age (30–60 years old). Often, already by the age of 35, the body has a whole complex of disorders, which was previously typical of people 15–20 years older. A similar situation is observed with women aged 34–38. Every year the number of patients who have problems with conception is growing, while, during the examination, we often observe a premenopausal period, i.e. their hormonal profile and ovary reserve correspond to those who were 6–8 years older in the past. This tendency has become quite commonplace today. Among other factors, it can be caused by long-term use of oral contraceptives, frequent stress, an unhealthy lifestyle and a preservative-based diet, consumption of trans fats and genetically modified foods.

Today, the Russian Anti-Age Society is actively involved in collaborative work aiming to revise, correct and develop new improved regimens and methods of using anti-aging drugs.

The time has come to share the experience of work in gynecology, in particular, the programs of preparation for pregnancy for women who have entered the second phase of reproductivity.

Traditionally, the management and treatment of this category of patients by reproductive specialists and gynecologists includes a course of hormone replacement therapy (HRT). This is done in the hope that during the period of hormonal drug withdrawal the ovaries will react by increased functionality. In practice, in most cases, the ovarian function remains low. In this case, patients are recommended to resume HRT, or undergoing a course of homeopathic treatment with elements of ovarian extracts to prepare them for hormonal stimulation and in vitro fertilization. Unfortunately, many health practitioners are oblivious of the fact that there are physiological drugs that correct the functions of the ovaries and the endocrine system as a whole, and they proved effective long ago.

MATERIALS AND METHODS

We have studied the efficacy of therapy with ovaries peptides («Zhenoluten») and pineal gland peptides («Endoluten») in 214 patients aged 34 to 38 years old with a moderate decrease in reproductive function. The study did not include patients with:

- unstable menstruation,
- chronic adnexitis,
- polycystic ovarian disease,
- endometriosis,
- tubal obstruction,
- uterine myoma,
- autoimmune thyroiditis,
- pituitary microadenoma,
- a slight or moderate increase in the level of prolactin, indicating the possible presence of the so-called hypothalamic syndrome.

In the latter case, the use of pineal gland drugs may shorten or lengthen the menstrual cycle and increase hypophysis stimulation, which is most often expressed in an increase in the level of follicle-stimulating hormone (FSH) and less often in fluctuations in the level of luteinizing hormone (LH).

The study of the effectiveness of the complex of peptide medications was carried out from September 2013 to June 2018 at the Moscow office of the Peptides Center of Revitalization and Health. All patients were examined before the start of the therapy, as well as after 2 and 4 months from the beginning of the use of peptides of the pineal gland and ovaries.

All peptide preparations participating in the study were developed by the St. Petersburg Institute of Bioregulation and Gerontology and are, in essence, parapharmaceutical complexes of low-molecular-weight peptides with a molecular weight of up to 5000 Da, produced from organs and tissues of young animals – calves up to 12 months of age.

EARLIER OBTAINED DATA OF THE STUDY OF THE EFFECTIVENESS OF THE PRESENTED DRUGS WERE USED AS THE JUSTIFICATION FOR THE PRESENT STUDY.

Zhenoluten

The preparation has a tissue-specific regulatory effect on ovarian tissue cells, metabolic processes in them; helps to reduce the severity of pathological changes in them, normalize hormonal status and menstrual function.

Endoluten

The preparation has a tissue-specific regulating effect on epiphysis cells, normalizes the synthesis and excretion of endogenous serotonin and melatonin, which is manifested in the restoration of the pulse rhythm of FSH and LH secretion; normalization of the nervous, endocrine, reproductive and immune systems; correction of menstrual function, lipid and carbohydrate metabolism; antiatherogenic, antidiabetic and antiautoimmune effects.

The following regimen was used:

2 capsules (20 mg) a day in the morning for 4 months

1 capsule (10 mg) in the morning once every 72 hours for 4 months

The use of the pineal gland drug in a reduced dose and with an interval of 72 hours is based on a huge number of observations that showed the dependence of the drug's effects on its dose and frequency of administration. When using the pineal gland drug in a «standard dose» (20 mg daily in the morning), fluctuations in arterial tension levels, sleep disturbances, acute fluctuations in blood sugar levels are observed in about 40% of cases. The female reproductive system also reacts quite sharply to such a regimen. The menstrual cycle changes. Dysfunctional uterine bleeding may occur or vice versa — complete temporary cessation of menstruation. There were frequent cases of formation of multiple follicular ovarian cysts, proliferation of the endometrium and stimulation of the growth of myomatous nodes.

The situation is quite opposite when using the pineal gland preparation in a reduced dose (10 mg) with the interval of 72 hours (48 hours for the synthesized pineal gland peptide analogs).

With such an adapted regimen, the effect of self-adaptation and calibration of the function of the adrenals, hypothalamus and hypophysis is observed, since they are all functionally related to the work of the pineal gland. Therefore, this administration regimen is considered the most physiologically correct.

CRITERIA FOR ASSESSING THE EFFECTIVENESS OF THE PEPTIDE COMPLEX:

1

the level of ovarian stimulation (blood FSH and LH);

2

the level of ovarian estrogen-producing function (blood estradiol);

3

functional ovarian reserve (the level of Anti-Mullerian hormone (AMH) and the quantity of antral follicles in the ovaries are measured during ultrasound screenings).

Table 1

VALUES OF THE HORMONAL STATUS AND REPRODUCTIVE FUNCTION IN 214 PATIENTS AFTER THE USE OF PEPTIDE DRUGS OF THE OVARIES AND PINEAL GLAND

Parameter	Norm (follicular phase)	Before treatment	2 months after treatment	4 months after treatment
Follicle-stimulating hormone, mIU/l	1,37-9,90	6,38±0,42	8,19±0,54*	4,96±0,29*
Luteinizing hormone, mIU/l	1,68-15,00	3,76±0,24	9,06±0,41	8,91±0,36*
Estradiol, pmol/l	68-1269	183,14±16,92	894±112,31*	916,24±89,42*
Anti-Mullerian hormone, ng/ml	1,00-12,6	0,74±0,12	0,86±0,09	1,16±0,18*
Antral follicles according to ultrasound (right ovary)	10-25	8 (rounded value)	8 (rounded value)	12* (rounded value)
Antral follicles according to ultrasound (left ovary)	10-25	7 (rounded value)	9* (rounded value)	11* (rounded value)

*Accurate in comparison with the group before treatment.

It was found out that the use of a complex of peptide preparations in patients with decreased reproductive capacity improved overall health and laboratory parameters. These dynamics are shown in Table 1.

STUDY RESULTS

As can be seen from the table above, the complex of ovarian and pineal gland peptides has a prominent positive effect on the hormonal status of the reproductive system. Moreover, at the initial stages of therapy, there is a moderate stimulation of ovarian function (an increase in FSH levels) with the subsequent stabilization of values of their central regulation. In the course of the therapy, the level of estradiol increases and remains in the range of optimal values for several months after the end of the course of peptides. The values of the functional reserve of the ovaries also change, and this is more relevant in relation to the antral follicles of the ovaries. If in the first 2 months of the therapy there is only a tendency towards an increase in their number, then after 4 months these changes are relevant and significant. The dynamics of the AMH level is less sharp, but also occurs in 68% of cases. The results are shown in Tables 1 and 2.

Table 2

Dynamics of values of ovarian functional reserve in 214 patients after the use of peptide preparations of the ovaries and pineal gland

Parameter	2 months after treatment	4 months after treatment
Increase in the number of antral follicles	119 participants (56%)	209 participants (98%)*
Increase in the level of Anti-Mullerian hormone	97 participants (45%)	146 participants (68%)*

* Accurate in comparison with the group before treatment.

Another important aspect is not just the normalization of a woman's hormonal status and its adjustment to the age norm, but the onset of pregnancy. Analyzing the data, we can say that the course use of peptide preparations of the ovaries and pineal gland significantly increases the chances of conception. The results are presented in Table 3.

The effectiveness of the therapy amounted to 84%. To improve the results, it makes sense to undergo either a longer course (6 months), or a repeated 4-month course of drugs after a break of 1-2 months.

Table 3

Frequency rate of natural pregnancy after a course of bioregulatory therapy with ovarian and pineal gland peptides

Parameter	4–6 months after treatment	6–8 months after treatment	Total
Pregnancy onset without the use of hormonal stimulation	152 participants (56%)	28 participants (98%)*	180 participants (84%)

* Accurate in comparison with the group before treatment.

Zhenoluten

2 capsules a day for 4 months

Endoluten

1 capsule in the morning once every 72 hours for 4 months

Based on the data obtained, it can be concluded that the complex of peptides of the ovaries and pineal gland helps regulate the work of the reproductive system, its biological age, functional reserve, and also contributes to the improvement of fertility. Such a therapy may be of particular relevance for the prevention of aging of blood vessels, skin, bones and joints, since hemorheology, its lipid spectrum, as well as the state of collagen and elastin are partially associated with the hormonal function of the ovaries. Thus, the results of the study indicate the effectiveness and appropriateness of the use of a complex of peptides of the ovaries and epiphysis in the composition of the preparation for conception. The drugs, when taken correctly, do not cause side effects, complications and addiction. There are no absolute contraindications to their use.

CONCLUSION

Based on the data obtained in the course of the study, the conclusion is that the existing traditional regimens for correcting hormonal balance and menstrual function require revision and a new approach. The latter is associated with the use of highly effective, physiological peptide medications of central and targeted action aimed at expanding the reserve capabilities of organs and tissues of the neuroendocrine and reproductive systems.

RESEARCH OFEFFECTIVENESS OF THE PEPTIDE COMPLEX ADMINISTRATION IN AUTOIMMUNE

Study period — May 2014 – March 2016
Location — Russia, Moscow, Moscow office of the Peptides Research and Production Center of Revitalization and Health

Actual enrolment — 218 participants

Age— 39–51 y.o

Dosage regimen:

Endoluten — 1 capsule a day once every 3 days;

Thyreogen — 2 capsules a day daily.

Period of administration — 4 months.

Parameter	Norm	Before examination, 218 participants	Group 1. Standard therapy, 89 participants	Group 2. Standard therapy + "Thyreogen", 42 participants	Group 3. Standard therapy + "Thyreogen" and "Endoluten", 87 participants
Ultrasonography	Not available	Not available	–	–	+*
Infrared thermography	Not available	Not available	–	+*	+*
Thiroxin, nmol/l	0,8–2,1	0,85±0,16	0,92±0,11	0,98±0,06	1,16±0,06*
Thyreotrophin, mIU/l	0,35–4,5	8,84±1,09	7,14±0,86	4,09±0,12*	3,94±0,12*
Antibodies to thyroglobulin, IU/l	0–4,1	87,1±7,14	83,32±3,28	77,41±1,18*	18,91±1,65*
Antibodies to thyroid peroxidase, IU/l	0–5,61	371,2±22,6	361.24±12.4	357.23±11.41	29,16±2,54*

*Statistically significant data in comparison with Group 1.

"+" — positive changes.

RESEARCH OF EFFECTIVENESS OF THE PEPTIDE COMPLEX IN MALE INFERTILITY

Research period — 2012–2019

Location — Russia, Moscow, Moscow office of the Peptides Research and Production Center of Revitalization and Health

Actual enrolment — 64 patients

2 groups: control group — 18 patients (placebo use) and test group — 46 patients (administration of the peptide complex).

Age — 29–42 y.o.

Selection Criteria and Input Data

- inability to conceive during regular sexual activity without the use of contraceptives for 5 years or more;
- conventionally "normal" spermogram with reduced values and sperm agglutination — an autoimmune pathology caused by blood-testis barrier (trauma, infection, vaccination).

Assessment Criteria

- main values of spermogram;
- successful conception (as a rule, it is achieved already by the end of the 2nd month of the therapy — earlier than the estimated period of 72 days or more).

Bioregulators:

Endoluten (pineal gland peptide) causes a temporary increase in FSH and LH in the body, provides moderate stimulation of spermatogenesis and restores interrelations between the hypothalamus, hypophysis, adrenals and testes. The most important point is that it has an anti-autoimmune effect, neutralizing the phenomena of agglutination and thus making it possible for the translational advance motion of spermatozoa to the ovum no longer as part of a chaotically moving conglomerate.

Testoluten (testicular peptide) causes the testes response to the stimulation of spermatogenesis, normalizes the integrity and functionality of testicular tissue, restores the blood-testis barrier and improves the processes of testosterone synthesis and spermatogenesis.

Libidon (prostate gland peptide) normalizes the function of the prostate gland, contributes to an increase in libido and improves the composition of the prostate secretion, which ensures the mobility of sperm in the ejaculate.

Vladonix (thymus peptide) balances the ratio of maturing T-helpers and T-suppressors in the thymus, has a moderate anti-autoimmune effect (in the use of reduced doses) and accelerates tissue repair processes.

Bioregulator regimen is presented in Table 1.

Table 1

Dosage Regimen of Peptide Supplements for Preparation to Conception (protocol 2012—2019)

Medication (dosage)	Month 1	Month 2	Month 3	Month 4
Endoluten (1 capsule in the morning once every 3 days)	+	+	+	+
Testoluten (2 capsules in the morning daily)	+	+	+	+
Libidon (2 capsules in the morning daily)			+	+
Vladonix (1 capsules in the morning for 20 days in row)			+	

The results of the research are presented in Table 2.

Table 2

Effectiveness of the Peptide Complex in Male Infertility

Main parameters	Norm	Before treatment (control group of 18 patients taking placebo)	After treatment (control group of 18 patients taking placebo)	Before treatment (experiment group of 46 patients taking a peptide complex)	After treatment (experiment group of 46 patients s taking a peptide complex)
Total spermatozoa concentration in 1 ml, mln	>15 (>50 — an old norm)	38,4±3,1	42,2±3,9	37,2±3,3	56,1±2,8*
Progressive motility, %	>32	35,3±1,8	39,1±2,2	35,6±1,9	54,7±1,3*
Normal morphology, %	>14	16,3±0,9	18,2±0,8	16,6±1,1	42,8±3,1*
Living spermatozoa, %	>58	48,6±1,2	49,4±0,8	49,1±1,2	63,2±1,6*
Pathologic forms, %	<86	83,7±0,8	81,8±0,7	83,4±1,1	57,2±2,9*
Immature forms, %	<10	11,2±0,3	11,3±0,3	11,4±0,6	4,6±0,2*
Agglutination	None	+++	+++	+++	+*
Aggregation	None	+	+	+	–*
Successful conception within 4 months	Not available	—	3 patients (17%)	—	42 patients (91%)*

*Statistically significant changes.
«+…+++» — manifestation degree.

There is an alternative, equally effective scenario of using peptides with an emphasis on the anti-autoimmune effect. It is presented in Table 3.

Table 3

Alternative Medication Dosage Regimen for Preparation to Conception (2018 — to date)

Medication (dosage)	Month 1	Month 2	Month 3	Month 4
Revilab SL 03 (8 drops in the morning once every 2 days)	+	+	+	+
Testoluten (2 capsules in the morning daily)	+	+	+	+
Libidon (2 capsules in the morning daily)			+	+

The results of the research are presented in Table 2.

A Few Words on Joints

Everyone knows there are a variety of diseases of the joints and spine. However, most of us are sure that we will be spared of them, and we are brought down with a bang when the time comes. To get a clear understanding of musculoskeletal disorders, you must first understand how connective tissues work.

What is connective tissue? This is almost 50% of the body weight and its support. This is one of the participants in the processes of repair and even detoxification. Connective tissue includes blood and adipose tissue. Therefore, the aging process of the whole organism is associated, among other things, with dysfunctions and reactivity of the connective tissue.

Connective tissue functions:

- supportive — the base of bones, cartilage, ligaments and tendons;
- protective — protection against damage, a barrier in the form of membranes, participation in the healing process;
- intercellular matrix function — provides interaction between cells in the structure of the organ;
- uptake function — the accumulation of calcium and magnesium in the bones.

The structure of connective tissue includes:

- fibroblasts fixed in the intercellular matrix (cells function only under load in the form of "stretching"). At rest, collagen and elastin are not renewed;
- intercellular matrix, generated by fibroblasts (collagen, elastin, proteoglycans);
- macrophages — cells that provide immune protection and detoxification;
- integrins — proteins that function in the form of hooks to fix cells and matrix.

As for proteoglycans that make up the gel base of the intercellular matrix, the following should be distinguished in their structure and hierarchy: hyaluronan (a polymer of hyaluronic acid), adapter proteins, CORE — proteins that adhere to the hyaluronic axis, chondroitin sulfate, glucosamine sulfate, keratan sulfate. All these sulfates bind and retain water in the connective tissue in the form of a so-called gel. Water in this form is the basis of life and beauty.

What is Collagen?

Collagen is the strongest protein in our body that provides activity of connective tissue cells. It is presented in all organs and systems of the body and exists in the form of a triple fibrillar braided strand. 80% consists of lysine and proline amino acids that are necessary for the proper functioning of the connective tissue.

There are approximately 28 types of collagen. The majority is represented by Types I, II, III, and IV. Collagen Types I, II and IX are important for bones and joints.

1. Collagen can naturally age and degrade. Its renewal is necessary, provided that lysine and proline prevail in the diet.

2. Damage to collagen occurs as a result of the actions of the immune system (systemic collagenoses develop).

3. Damage to collagen also occurs as a result of glycation (collagen cross-links are formed that troubles the function of the matrix and the activity of fibroblasts). As a result, "wrinkles" appear, disrupting the structure and architectonics of organs, and, therefore, their function.

What is Elastin?

Elastin is a protein that provides the ability to temporarily deform tissue without rupture with a return to the original structure. It is well stretchable, contains a lot of lysine. Elastin molecules firmly cling to each other through the end groups of this amino acid, creating an elastic net. If collagen is bound to cells, then elastin molecules are bound together.

Let's Talk About Joints

Joints provide the mobility of articulations of the bones with each other and shock absorption. They consist of the synovial membrane (joint capsule), cartilaginous surfaces (sliding between each other) and synovial fluid (the so-called lubricant). The structure of the cartilage contains cells (chondrocytes, chondroblasts), collagen, elastin, glycosaminoglycans. The cells occupy only 10% of the volume and mass of the cartilage structure, everything else is the intercellular environment. Cartilage nourishes through the vessels of the bones and grows from the bone outward (towards the sliding surface). The cartilaginous surfaces are abraded despite the so-called lubrication and therefore must regenerate thanks to the growth plate. Friction products, in turn, enter the synovial fluid and are utilized by macrophages. What a wise decision of nature, but there are nuances. The metabolism in cartilages is extremely slow, and the renewal cycle can reach several years. That is why, when patients with joint problems visit us, we honestly tell them that the correction of the condition in arthrosis will take a long period. Furthermore, patients with arthrosis should be considered as patients with a large number of concomitant pathologies, since they have a "chronic inflammation syndrome". Such is the opinion of many professional nutritionists convinced of the relationship between atherosclerosis and arthrosis, as "lying on the same pathogenetic layer". By the way, there is no such term as arthrosis in Europe. All joint pathologies are arthritis. Hence the conclusion: the presence of arthrosis significantly aggravates the course of other concomitant pathologies in the organism, due not only to similar biochemical problems, but also to the accelerated degradation of the body during immobilization. But this is a completely different story described in manuals on geriatrics…

An interesting fact — even 30–40 years ago there was no arthrosis in people under 70. What about now? Nowadays, arthrosis has become a disease of very much younger people. This is a problem of modernity, stress, physical inactivity, preservatives in food and malnutrition in general. The joint must constantly train, and with a sedentary lifestyle it quickly degrades, since the cartilage is nourished by passive diffusion of substances from the synovial fluid. On the contrary, it absorbs active substances and maintains its properties with cyclic changes in shape and structure (moderate loads).

Factors accelerating aging and cartilage degradation:

- obesity (increased stress on the joints);
- menopausal changes in the body (age-related hormonal degradation of collagen);
- congenital and acquired connective tissue dysplasia (result of unnecessary vaccinations);
- past diseases of the joints (trauma, arthritis, rheumatism);
- excessive occupational stress on the joints;
- metabolic disorders (hypertension, glycation affected by diabetes, hyperparathyroidism, hypothyroidism);
- hyperactive glycation (lifestyle, unhealthy diet).

When a joint is damaged, inflammatory mediators are released into the synovial fluid, which slow down the activity of chondrocytes by signaling (the same mediators are associated with atherosclerosis). But if the joint is damaged, it must be urgently restored, and chondrocytes, on the contrary, begin to release enzymes that dissolve the matrix of connective tissue. How can we accelerate the activity of chondrocytes and the regeneration of the joints?

1 First, by suppressing the activity of cytokines and inflammatory prostaglandins, because inflammation is accompanied by active hydrolysis of Type I collagen in the body as a whole.
This can be "seen" by the condition of

the skin and the vessel wall. Chondroprotectors («Regenart») and sources of omega-3 polyunsaturated fatty acids («Olecap») are relevant here. Antioxidants in their pure form are contraindicated in the acute inflammatory phase, as they cause the process to become chronic.

2 Secondly, by avoiding immobilization, leading to fast degradation of cartilage tissue.

3 Thirdly, by using specific high-tech targeted peptide preparations («Sigumir», «Cartalax», Revilab SL 04) and chondroprotectors («Chondromix», «Regenart»). There are also complex preparations influencing cartilages, blood vessels, inflammation and even containing chondroprotectors and antioxidants — Revilab ML 09.

Thus, first we use sources of omega-3 polyunsaturated acids, classical chondroprotectors and monopeptides, and only after a few weeks we add powerful antioxidants and complex multi-preparations.

What regimen can we offer? «Olecap» should be taken from the first day for 6–8 months. «Reviform Oil Coupage» is not used in the first six months! Only «Olecap» should be administered. The «Oil Blend» can be added only after the marker of systemic inflammation — C-reactive protein — has been normalized. We prescribe «Regenart» for 1 month as it helps to improve the condition of the synovial fluid of the joint. In addition, cartilage tissue monopeptides — «Sigumir» and «Cartalax» should be useda. In the 2nd month we add «Chondromix» (a source of building material for the joint, methylsulfonylmethane to reduce pain, catalase and SOD to suppress collagen oxidation).

In 3–4 months we continue using «Olecap» and «Sigumir» (half a dose) and add Revilab ML 09. In some cases, the treatment starts with Revilab ML 09 and the drug «Olecap».

What else can be added to this regimen? Of course, it is a drug with a delicate effect on the neuroendocrine and the immune systems — Revilab SL 03, and if this is still relevant, drugs for correcting the functioning of the reproductive system — «Zhenoluten» and «Testoluten». The state of collagen in the skin, bones, blood vessels and joints directly depends on the reproductive system. The most advanced users prefer to support all correction regimens with antiglycants (revilab anti-A.G.E.).

When is complete joint regeneration possible? It is possible as long as the articular surface is preserved over the greater part of the contact area, there are no pronounced stylosteophytes (marginal osteophytes — calluses on abraded surfaces) and no deforming osteoarthrosis, that is, I, II and sometimes III stages of arthrosis. Take care of collagen as well as blood vessels, skin and joints from youth. This means that they need to be taken care of from 30–35 years old and everything will be well.

RESEARCH ON THE EFFECTIVENESS OF MULTIFUNCTIONAL PEPTIDE PREPARATION REVILAB ML 09 IN OSTEOCHONDROSIS OF THE LUMBOSACRAL SPINE

Study period — April 2016 – November 2018

Location — Russia, Moscow, Moscow office of the Peptides Research and Production Center of Revitalization and Health

Actual enrolment — 83 participants

Age — 43–56 y.o.

Dosage regimen — 1 capsule in the morning a. c. daily

Period of administration — 4 months

The research included patients with general degenerative changes, as well as with Schmorl's nodule and moderate intervertebral disc protrusions.

RESEARCH RESULTS OF THE EFFECTIVENESS OF THE PEPTIDE BIOREGULATOR REVILAB ML 09 IN OSTEOCHONDROSIS OF THE LUMBOSACRAL SPINE

Parameter	Placebo group before treatment, 43 participants	Placebo group after treatment, 43 participants	ML 09 group before treatment, 40 participants	ML 09 group after treatment, 40 participants
Pain and discomfort	39 (91%)	36 (84%)	36 (90%)	12* (30%)
Limitation of motion	24 (56%)	19 (44%)	22 (55%)	9* (23%)
Improvement in infrared thermography	—	None	—	32* (80%)
Improvement in X-ray and computed tomography	—	None	—	27* (68%)

*Accurate changes in comparison with the placebo group.

RESEARCH OF THE EFFECTIVENESS OF THE MULTIFUNCTIONAL PEPTIDE PREPARATION REVILAB ML 09 IN STAGE 2 COXARTHROSIS

Study period — April 2016 – November 2018

Location — Russia, Moscow, Moscow office of the Peptides Research and Production Center of Revitalization and Health

Actual enrolment — 51 participants

Age — 58–66 y.o.

Dosage regimen — 1 capsule in the morning a. c. daily

Period of administration — 4 months

RESEARCH RESULTS OF THE EFFECTIVENESS OF REVILAB ML 09 IN STAGE 2 COXARTHROSIS

Parameter	Placebo group before treatment, 29 participants	Placebo group after treatment, 29 participants	ML 09 group before treatment, 22 participants	ML 09 group after treatment, 22 participants
Pain and discomfort	26 (89%)	26 (89%)	19 (86%)	6* (27%)
Limitation of motion	18 (62%)	17 (59%)	18 (82%)	7* (32%)
Improvement in infrared thermography	—	None	—	16* (73%)
Improvement in X-ray and computed tomography	—	None	—	14* (64%)

*Accurate changes in comparison with the placebo group.

On «Ayurveda» Teas

The «Ayurveda» line of herbal teas of the last generation was created on the basis of both Ayurvedic and traditional herbs and spices — close to us in microelement composition and bioenergetics, and, therefore, the most physiological for us. These are traditional herbs that make up the majority of the active ingredients in this tea line. This, of course, guarantees a positive effect boosts our body's self-regulatory abilities.

There are a number of herbs and spices of the so-called "royal" category, which were brought to Europe from Asia in ancient times and were used not only by court chefs, but also by healers and alchemists who created a lot of highly effective recipes, unfortunately, forever kept secret.

Today, we are rediscovering the amazing world of oriental spices and herbs and can't help wondering how the eastern sages built a model of the world using the theory of interaction of five primary elements and three driving principles in nature. This model simply and succinctly explained not only the obvious causes of ailments and illnesses, but also those that, at first glance, have nothing to do with illnesses. Accordingly, the ways of influencing organs and tissues, which, at first glance, had nothing to do with the disease, were also simply and succinctly proposed. But this model not only worked, but is still working today! This model is the progenitor of European medicine. Today there is more and more evidence of the correctness of the worldview of the Vedic sages and healers, and Ayurveda, the science of health, is gaining a second birth.

Unfortunately, not all oriental formulae produce an equally good effect, therefore, over the past 15 years we have repeatedly tried to combine the oriental and traditional approaches to the correction of disorders in the body. At first, we introduced basic Ayurvedic herbs and spices into the tea composition based on traditional formulations, relying on the positive experience of our foreign colleagues. This certainly had an effect, but over time and due to accumulation of clinical material, we realized that the use of those first prototypes of teas did not always go smoothly. Therefore, we undertook a number of consistent actions, and as a result, combined Ayurvedic formulations based on oriental and traditional herbs appeared, and we started to create a line of teas in 2009, in which traditional herbs take up more than 80%. This is how several groups of teas appeared.

1. Basic teas, consisting mainly of Ayurvedic herbs and spices well known in Russia, work just as effectively as "exotic" Indian or Tibetan teas. The targets of these teas are different. «Vedomiks» tea is aimed at detoxification, removal of waste and toxins from the body, and stimulation of regeneration. «Relanorm» tea increases the adaptive capabilities of the nervous system and reduces stress load on it without suppressing and inhibiting it, unlike many modern drugs. The aims of «Gelmaks» tea are to stimulate digestion, remove toxins, to produce antiparasitic and immunomodulatory effects.

2. The second-line teas are created with Ayurvedic principles in mind, but consist of almost 100% traditional herbs. We recommend pairing these teas with first-line products for maximum impact and a long-lasting effect.
   «Alvenorm» tea improves the work of the respiratory system.
   «Bilinorm» tea improves the work of the liver and the condition of joints.
   «Dianorm» tea improves the work of the stomach, duodenum and pancreas gland (both for pancreatitis and diabetes mellitus).
   «Korgiton» tea supports the cardiovascular system.
   «Flonorm» tea supports the kidneys.

3 «Ideal Form» — this line is aimed at very smooth correction of digestion processes and body mass indexes. It contains one basic composition, enriched with blueberry or pineapple flavours.

I hope that you will like all the teas, and each of you will find in them something special, due to which they will become household names.

Principles of Detoxification in Oriental Medicine

Practically all remedial and health-improving activities begin with improvement of the intestines. It is the intestine that is the basis of health, and whose functional disorders lead to disease. People knew it thousands of years ago. In the organism, there are three metabolic, or (to be more precise in this case) energy systems (fundamentals), that govern the physiological processes. I spoke about them in my lecture on the gastrointestinal tract. Nevertheless, it is better for you and me to refresh our understanding of the fundamental elements (doshas) in nature.

The first fundamental element (Vata) sets in motion absolutely all processes in nature. It is associated with the functioning of the nervous system, large intestine and respiratory organs. Its imbalance can lead to disorders of the nervous system, cold-related diseases, inflammation in the upper urinary tract, peptic ulcer, biliary dyskinesia, intestinal atony and constipation.

The second (Pitta) is a mobile element and is associated with the splitting of substances and the production of energy. It is mainly associated with digestion, blood, immunity and liver. An imbalance of the second element leads to inflammation, ulcers, gastroduodenitis, colitis, hemorrhoids and hepatitis.

The third (Kapha) is a non-mobile element and is associated with the consumption of energy and the synthesis of substances. It is also associated with the functioning of the stomach, pancreas gland, spleen. Its imbalance leads to the formation of stones in kidneys and bile ducts, joint diseases, accumulation of mucus, toxins and allergens, the development of diabetes, atherosclerosis, allergies and asthma.

If the functioning of these three fundamental elements (their combination in Ayurveda is called «Tridosha») is coordinated and balanced, then the organism functions properly. But, as a rule, as a result of an erratic lifestyle, which also includes an unhealthy diet, products of incomplete metabolism are formed. They are called toxins in oriental medicine. They prevent the interaction of active components of food with the so-called receptor zones associated with three metabolic systems (energetic principles, doshas). The consequence of this is a disorder of the complex process of digestion, which increases intoxication. Over time, intoxication reaches such an extent that organs and tissues try to get rid of toxins on their own. During this period, symptoms of one or another disease appear, and a person goes to a doctor who, as a rule, prescribes symptomatic treatment. Thus, the course of the disease is “blurred” or “overwritten”, but a huge sea of its causes remains unaffected.

Most diseases develop based on similar mechanisms. Therefore, in order to prevent and combat them, it is necessary to remove toxins out of the organism. Ayurveda actively uses methods of gentle detoxification and gross physical removal of toxins from the body.

The gross methods include: repeated therapeutic vomiting (vamana), loosening (virichan) and enemas (basti). However, it should be remembered that these procedures must be carried out only after prolonged preparation, according to certain indications and under the strict supervision of specialists. Nevertheless, there is a decent alternative.

Thousands of years of practice have shown that the systematic implementation of preparatory measures (mild detoxification) is not inferior in ultimate efficiency to gross manipulations to remove toxins from the body. Their combination with other methods of bringing energy and biochemical processes into balance allows a person to remain healthy, young and attractive for a long time.

Speaking about the combination of methods, it is necessary to outline the basic principles of health improvement in oriental medicine and the sequence of their application.

1. Purgation of the intestines and balancing the activity of the three active principles in the body.

2. Normalization of the immune status (remval of helminths and immunomodulation).

3. Work with "problem" organs. The sequence of actions is as follows: liver, blood, kidneys, pancreas gland, lungs.

If we transform the 3rd principle into monthly courses of using Ayurveda teas, we get the following sequence:

1. «Vedomiks» + «Bilinorm»;
2. «Vedomiks» + «Flonorm»;
3. «Vedomiks» + «Dianorm»;
4. «Vedomiks» + «Alvenorm».

Of course, it is not necessary at all to carry out all the above activities and herbal therapy courses to correct the functioning, for example, of the lungs. It is possible to simply combine «Vedomiks» and «Alvenorm» teas. This simplified regimen is applied by the majority of consumers most often. However, a more stable and pronounced effect is achieved if the basic principles of bringing the processes of the organism into balance are observed.

Many people, as a rule, try to combine the first and the second principles. We also consider this to be acceptable in most cases. For these very reasons, we have prepared a number of basic teas. Their combined use allows to normalize the functioning of the nervous system; cleanse the organism not only of toxins, but also of parasites; bring the processes of the organism into balance; normalize the immune status in a fairly short time frame. The complex drinking regimen of the first-line teas is presented in Table 1.

Table 1. Complex Intake of First-Line Teas for Detoxification

Intake regimen	Vedomiks	Gelmaks	Relanorm
Month 1	At night on an empty stomach	In the afternoon (2–4 PM), 15 min before meals	Before noon, 15 min before meals
Month 2	At night on an empty stomach	In the afternoon (2–4 PM), 15 min before meals	Before noon, 15 min before meals
Month 3	At night on an empty stomach	In the afternoon (2–4 PM), 15 min before meals	Before noon, 15 min before meals

When carrying out programs for the correction of body weight, the program for the combined use of teas will slightly differ and look as follows (Table 2).

Table 2. Complete Regimen of Complex Intake of «Ayurveda» Teas for Detoxification and Correction of Body Weight

Regimen	Vedomiks	Gelmaks	Relanorm	Bilinorm	Dianorm	Ideal Form
Month 1	+	+	+			
Month 2	+	+		+		
Month 3	+	+		+	+	+
Month 4	+				+	+
Month 5	+					+

Note:
Vedomiks — at night on an empty stomach;
Gelmaks — in the afternoon 15 min before meals;
Relanorm — before noon (11–12 AM);
Bilinorm — in the afternoon 15 min before meals;
Dianorm — in the morning 15 min before meals;
Ideal Form — 2–3 times a day before meals.

During detoxification and body weight correction, it is necessary to follow certain dietary recommendations that will help the body to get rid of waste, toxins, allergens and excess weight as soon as possible (Table 3).

Table 3. Dietary Advice During Detoxification and Body Weight Correction

Product group	Contribute to detoxification	Exacerbate intoxication
Fruit	Apples, apricots, berries, cherries, cranberries, dried figs, mangoes, peaches, pears, persimmons, pomegranates, prunes, raisins	Avocados, bananas, coconuts, dates, grapefruits, grapes, lemons, melons, oranges, papayas, pineapples, plums
Grains	Barley, corn, millet, dry oatmeal, Basmati rice, rye	Cooked oats, brown rice, white rice, wheat
Grains	Barley, corn, millet, dry oatmeal, Basmati rice, rye	Cooked oats, brown rice, white rice, wheat
Legumes	Excluded	Excluded
Meat and animal proteins	White poultry, boiled eggs, rabbit meat, venison	Beef, lamb, pork, seafood
Nuts	—	All kinds of nuts
Seeds	—	All kinds of seeds
Confections	Honey	The rest confections
Seasoning	Everything, except salt	—
Dairy products	Goat milk only	Milk, sour cream, cheese, yogurt, butter
Vegetable oils	Moderately: almond, corn, sunflower oils	—

First-Line Teas

Vedomiks is a basic tea for detoxification of the organism and very gentle and smooth cleansing of the intestines. By virtue of the action of this tea, the intestinal mucosa is cleansed of toxins. «Vedomix» optimizes the processes of secretion and absorption in the intestine, helps accelerate the healing of wounds, ulcers, cuts, increases the level of blood hemoglobin, contributes to the normalization of immunity and microflora composition. With prolonged use, it helps to stabilize weight and blood pressure values, has antiparasitic effects, contributes to the energy balance (tridoshi balance) and combines with all the other teas.

Relanorm tea is intended for the normalization of the nervous system functioning, increases the sensitivity threshold of the central nervous system, reducing external stress load. It enhances the performance of the nervous system and tones it up, helps

to normalize the "sleep-wake" regime and, in addition, improves the immunity.

Gelmaks tea with immunomodulatory and antiparasitic properties improves the digestion process, accelerates peristalsis, promotes increased secretion of the stomach and duodenum, has a choleretic effect and is effective for intestinal, hepatic and pulmonary helminths.

Second-Line Eeas

Alvenorm is a tea for correcting the functioning of the respiratory system. It helps to increase the elasticity of the lung tissue, improves the discharge of sputum and mucus, has anti-inflammatory and anti-allergic effects. It is used for chronic bronchitis, pulmonary emphysema, respiratory allergies and bronchial asthma.

Bilinorm is a tea for correcting the functioning of the liver and biliary tract. It promotes normalization of metabolic, detoxification and protein-forming functions of the liver. It slows down the rate of progression of fatty hepatosis and liver cirrhosis. It also promotes the regeneration of the cartilaginous tissue, improving the trophism of the joints, reduces swelling and severity of pain in arthrosis and arthritis. It is used for chronic intoxication, hepatitis of various etiologies, work in a hazardous industry, biliary dyskinesia, cholecystitis, cholelithiasis, postcholecystectomy syndrome, skin diseases (eczema, psoriasis, neurodermatitis, vitiligo and acne), arthrosis, arthritis, osteochondrosis of the spine.

Dianorm is a tea for correcting the functioning of the stomach, duodenum and pancreas gland. It has a pronounced reparative effect on their mucous membranes, optimizes the production of pancreatic enzymes, relieves the feeling of heaviness and discomfort in the epigastric region, has a moderate hypoglycemic effect and prevents the development of diabetic angiopathy.

Korgiton is a tea for correcting the functioning of the cardiovascular system. It helps to optimize the load on the myocardium and vascular wall. It has a mild hypotensive effect, normalizes lipid metabolism and microcirculation. It is used for vegetative-vascular dystonia, hypertension, ischemic heart disease.

Flonorm is a tea to correct the kidney functioning. It has anti-inflammatory, antispasmodic, mild diuretic properties, helps to normalize the physicochemical properties of urine, increasing the solubility of salts and calculi in the urinary tract. It is used for chronic pyelonephritis, cystitis, urolithiasis, interstitial nephritis.

«Ideal Form» Teas

The «Ideal Form» teas are intended to correct body weight. They help to reduce the absorption of fats in the gastrointestinal tract, improve intestinal peristalsis, remove toxins and waste from the organism. They have a moderate laxative effect and contribute to the normalization of the quantitative and qualitative composition of microflora. They are based on the same basic formulation and two types of flavours: pineapple and blueberry.

Diagnostic Principles in Oriental Medicine

In order not to wait for the disease to manifest itself threateningly, it is necessary to timely monitor changes in the body and take the necessary preventive measures. Only oriental medicine can boast of early and timely diagnosis. In traditional medicine, diagnosis is associated with the recognition of a disease after the onset of its symptoms.

In oriental medicine, diagnostics is the observation of the ratio of the activity of energetic principles in organs and the body as a whole. The symptoms of ailment always result from an imbalance of tridoshi. There are various diagnostic techniques, but the pulse technique is the most accurate. A daily pulse observation provides the most valuable and clear guidance. By the pulse, we find out what processes are taking place in the body

and where toxins have accumulated.

The pulse on the radial artery is examined on the right and left hands with three fingers: index, middle and ring. The index finger should be on the wrist on the side of the thumb where the pulse is measured.

The pulse must not be examined after exercise, eating and drinking alcohol, as well as during fasting, after taking a bath or attending sauna or when being in fever. To measure the pulse, keep the arm and wrist slightly bent, place three fingers on the wrist, under the radius bone and feel for the pulse. Then release the pressure of your fingers so that you can feel the change in heart rate. With the superficial and profound palpation, one can reveal the state of the organs. The pulse at different points reflects the channels that connect the energy currents in the body. They circulate with the blood through the vital organs.

Superficial palpation of the radial artery pulse (1st level):

large intestine	gallbladder	pericardium	vertebral column	stomach	small bowel
(V)	(P)	(K)	(K)	(P)	(V)

← **RIGHT HAND** **LEFT HAND** →

Deep palpation of the radial artery pulse (7th level):

Lungs	liver	blood circulation	kidneys, bladder	pancreas gland	heart
(V)	(P)	(K)	(K)	(P)	(V)

The arrows indicate the direction of the pulse wave.
V — index finger
P — middle finger
K — ring finger

Right Hand

V POINT — INDEX FINGER

With the index finger on the right wrist, it is possible to examine the activity of the large intestine by superficial touch (the first level of the pulse). It is very important to feel which side of your finger is barely sensing the pulsation. If the index finger detects pulsation from the palm (V side), then there is a high possibility of constipation, flatulence, or diverticulosis.

If the index finger at the same point senses the pulse with a finger-cushion (P side), then the subject may have: colitis, diverticulitis, hemorrhoids, or even polyps. If the index finger at the same point determines the pulsation from the side of the subject's body (K side), then there is a high probability of the presence of mucus in the large intestine or helminths.

With a strong pressing (the maximum pressure at which the pulsation is determined) with the index finger on the V point on the right hand (the 7th level), it is possible to assess the functioning of the lungs. If you feel a strong pulsation with superficial touch of

the index finger on the right wrist, this means that the work of the large intestine is burdened; if the deep pulse is stronger, therefore, the work of the lungs is burdened.

If the index finger feels a pulsation from the V side (the palm side), then most likely there is a recent pneumonia or bronchitis, pneumosclerosis, emphysema, dry cough, or respiratory allergy. In the case where the index finger detects the pulsation with the finger-cushion (P side), tracheitis or bronchitis occurs. And if the index finger detects pulsation from the K side (shoulder), it is likely that there is respiratory tract congestion, allergies and even asthma.

P POINT — MIDDLE FINGER

The middle finger lies on the right wrist and determines the state of the gallbladder with superficial touch (the 1st pulse level). If pulsation is felt from the side of the palm (V side), then, as a rule, there is a deformation of the gallbladder, its atony, or it has already been extirpated. If the middle finger detects the pulse of the gallbladder with a finger-cushion (P side), then there may be cholecystitis, cholecystopancreatitis and a predisposition to duodenal ulcer (when combined with signs of an ulcer in the pulsation of the stomach). In the case when the pulsation of the gallbladder is determined by the middle finger on the side of the patient's shoulder (K side), as a rule, stone formation and thickening of bile take place.

We assess the state of the liver by pressing deeply (the 7th pulse level). If its pulse is determined from the side of the wrist, then we can talk about dyskinesia of the biliary tract, if in the middle (P side) — a bilirubin metabolic imbalance and a tendency to bleeding (angiasthenia). When the liver pulse is measured from the side of the shoulder, bile stasis, impaired fat metabolism and atherosclerosis can be found.

K POINT — RING FINGER

The ring finger determines the state of the pericardium (emotional state) upon superficial touch. If we feel a pulsation on the V side, then we talk about anxiety, on the P side — about anger and irritation, on the K side — about attachment and desire to possess.

With a strong pressure, we determine the degree of coordination of the work of the cardiovascular system. Feeling the pulsation on the V side, we are talking about poor blood circulation in the legs and varicose veins, on the P side — about poor blood circulation in the arms and Reynaud's disease, on the K side — about poor blood supply to the brain. A strong beating of the pulse at the point corresponding to a particular organ indicates its burdened work (hyperfunction and overstrain).

Left Hand

V POINT — INDEX FINGER

The index finger, lying on the left wrist at the V point, examines the state of the small intestine with a light touch. The pulsating on the shoulder (K side) indicates excess mucus and toxins, slow digestion, or fatty diarrhea. The pulsation felt by the finger-cushion (P side) signalizes about duodenitis and a tendency to ulcers of the duodenum, and the pulsation, detected on the hand (V side), — increased peristalsis or even malabsorption syndrome.

The heart is diagnosed by pressing the index finger (the 7th pulse rate). The pulsation on the K side indicates hypertension, atherosclerosis and blockade of the bundle branch, on the P side —hypertension, endo- and myocarditis, on the V side — a tendency to arrhythmia.

P POINT — MIDDLE FINGER

With a light touch of the middle finger, we assess the functioning of the stomach.

The pulsation of the stomach on the side of the shoulder (K side) indicates the accu-

mulation of mucus and toxins in this organ, gastritis with low acidity, on the P side (finger-cushion) — gastritis with high acidity, erosions of the mucous membrane and peptic ulcer, on the side of the palm (V side) — stenosis, diaphragmatic hernia, reflux esophagitis and abnormal gastric motility.

With a deep pressing of the middle finger at the P point, we assess the functioning of the spleen (it is more correct from a practical point of view to talk about the functioning of the pancreas gland). The pulsation on the side of the palm and corpus will indicate pancreatic enzyme insufficiency, and on the P side (finger-cushion) — pancreatitis.

K POINT — RING FINGER

The ring finger, with a superficial touch, determines the state of the spine. The presence of any pulsation at this point indicates problems with it.

Pressing deeply (the 7th pulse rate) gives information about kidney functioning. The pulsation on the shoulder (K side) will indicate a tendency to form cysts, hydronephrosis, stone formation. The pulsation of the kidneys, felt by the tip of the finger indicates chronic pyelonephritis, cystitis, salts in the kidneys. If we feel the pulse on the side of the palm (V side), then most likely there is either an abnormality in the development of the urinary tract, or prolapse of the kidney (nephroptosis).

Learning this method of measuring the pulse requires attention, development of intuition and daily practice. There are some nuances in this diagnostics. If there is a strong pulsation (hyperfunction) of the pancreas gland and kidneys, then we can talk about a tendency to diabetes mellitus or its presence. If a strong pulsation of the pancreas gland and lungs is detected at the same time, we can talk about allergies, asthma and thyroid dysfunction.

Summarizing the above, I would like to draw your attention to the fact that pulse diagnostics is one of the key points based on the doctrine of meridians and paired organs. By observing the changes in the pulse every day, you can master its reading to perfection.

Recommendations for Use of «Ayurveda» Teas

The most common pathologies are listed below, and recommendations are given to improve cases with the help of «Ayurveda» teas. These regimens will be of great help in those cases when a disease catches at a weak moment. If the disease is not in an acute stage, but in a chronic one, then the problems must be solved starting with the detoxification course discussed earlier.

Alcoholism	Relanorm (twice a day, 2 weeks), then Bilinorm (twice a day, 6 weeks)
Allergy	Dianorm (once in the morning, 2 weeks) + Alvenorm (twice a day, 2 weeks), then Vedomiks (twice a day, 2 weeks)
Arrhythmia	Korgiton (twice a day, 6 weeks) + Relanorm (once in the evening, 3 weeks), then Vedomiks (once before bed, 3 weeks)
Arthritis	Bilinorm (twice in the afternoon, 4 weeks), then Vedomiks (once before bed, 6 weeks)
Atherosclerosis	Vedomiks (twice a day, 3 weeks) + Korgiton (once in the afternoon, 3 weeks), then Bilinorm (twice a day, 3 weeks)
Biliary dyskinesia	Bilinorm (twice a day, 2 weeks), then Vedomiks (twice a day, 2 weeks)
Bronchial asthma	Alvenorm (twice a day, 2 weeks) + Dianorm (once in the morning, 3 weeks), then Vedomiks (once before bed, 3 weeks)
Cholelithiasis	Bilinorm (twice a day, 2 weeks), then «Vedomix» (twice a day, 2 weeks)
Chronic bronchitis	Alvenorm (twice a day, 2 weeks), then Gelmaks (twice a day, 2 weeks), then Vedomiks (twice a day, 2 weeks)
Chronic cystitis and pyelonephritis	Flonorm (twice a day, 2 weeks), then Relanorm (twice a day, 2 weeks), then Vedomiks (once before bed, 3 weeks)
Chronic gastritis	Dianorm (twice a day, 2 months)
Chronic intoxication (smoking, alcohol abuse, chronic medication use)	Bilinorm (twice a day, 2 weeks), then Korgiton (twice a day, 2 weeks), then Vedomiks (twice a day, 2 weeks)
Colitis	Vedomiks (once before bed, 6 weeks) + Ideal Form (twice a day, 1 month)
Constipation	Ideal Form (twice a day, 3 weeks) + Vedomiks (once before bed, 6 weeks) + Relanorm (once in the afternoon, 1 month)
Decreased body defenses	Gelmaks (twice a day, 2 weeks), then Vedomiks (twice a day, 2 weeks)
Diabetes of types 1 and 2	Dianorm (twice a day, unlimited period) + Vedomiks (once before bed, 3 months) + Flonorm (once in the afternoon, 2 months)
Digestive disorder related to poor stomach and pancreas gland functioning	Dianorm (twice a day, 4 weeks), then Vedomiks (twice a day, 2 weeks)
Gastroduodenal ulcers, duodenitis	Dianorm (twice a day, 2 weeks), then Vedomiks (twice a day, 3 weeks). All teas are brewed for 5–7 min in 200 ml of hot water (87–92 °C) and consumed warm 15 min before meals
Gout	Flonorm (twice a day, 2 weeks), then Vedomiks (twice a day, 2 weeks)
Heart defects	Korgiton (twice a day, 4 weeks), then Vedomiks (once before bed, 2 months)
Hepatitis of different etiologies, cirrhosis	Bilinorm (twice a day, 2 weeks), then Vedomiks (twice a day, 2 weeks)
Hypertension	Korgiton (twice a day, 2 weeks), then Relanorm (twice a day, 2 weeks), then Vedomiks (once before bed, 2 months)

Hypotension	Vedomiks (once before bed, 6 weeks)
Inflammatory skin disease	Bilinorm (twice a day, 2 weeks), then Vedomiks (twice a day, 2 weeks)
Influenza	Gelmaks (thrice a day, 3 weeks)
Insomnia, depression and anxiety	Relanorm (twice a day, 2 weeks), then «Vedomix» (once before bed, 2 months)
Ischemic heart disease (angina, postinfarction cardiosclerosis, rehabilitation period after previous myocardial infarction)	Korgiton (twice a day, 2 weeks), then Relanorm (twice a day, 2 weeks), then Vedomiks (once before bed, 2 months)
Menopause, mastopathy	Relanorm (twice a day, 4 weeks) + Dianorm (once in the morning, 4 weeks), then Vedomiks (once before bed, 3 weeks)
Migraine	Relanorm (once in the evening, 1 month), then Vedomiks (twice a day, 2 weeks)
Neurological disorders	Relanorm (twice a day, 6 weeks), then Vedomiks (once before bed, 6 weeks)
Obesity	Ideal Form (twice a day, 2 months), then Korgiton (twice a day, 2 weeks), then Vedomiks (twice a day, 2 weeks)
Osteoporosis	Bilinorm (twice a day, 2 weeks), then Vedomiks (once before bed, 6 weeks)
Painful menstruation and premenstrual syndrome	Relanorm (twice a day, 2 weeks) + Dianorm (once in the morning, 2 weeks), then Vedomiks (once before bed, 3 weeks)
Parasitic invasion	Vedomiks (before bed) + Gelmaks (morning and evening). All for 2 months
Pneumonia	Alvenorm (twice a day, 2 weeks), then Gelmaks (twice a day, 2 weeks), then «Vedomiks (twice a day, 2 weeks)
Psoriasis, neurodermatitis	Bilinorm (twice a day, 2 weeks), then Relanorm (twice a day, 2 weeks) and in the end of the course «Vedomiks (twice a day, 2 weeks)
Rheumatic lesions	Bilinorm (twice a day, 2 weeks), then Vedomiks (twice a day, 2 weeks)
Thyroid disorders	Dianorm (once in the morning, 3 weeks) + Alvenorm (once in the afternoon) + Relanorm (once in the evening, 6 weeks), then Vedomiks (once before bed, 3 weeks)
Urinary stone disease and calculous pyelonephritis	Flonorm (twice a day, 2 weeks), then Vedomiks (twice a day, 2 weeks)
Varicose veins	Korgiton (once in the afternoon, 3 weeks) + Relanorm (once in the morning, 3 weeks), then Vedomiks (once before bed, 6 weeks)

NOTES