



## Vital Program of Prevention and Treatment of Old Age as a Set of Chronic Diseases in the Conditions of Antibiotic Crisis

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**Abstract:** synonyms are often used for the word old age: wear and tear, infirm old age, weakness, and rarely - the golden autumn of life, maturity. Each period corresponds to its own level of physiological and psychological indicators of the body, and, just as importantly, its own level of comfort, quality of life. Unfortunately, the transition to the next age group is accompanied by a deterioration of these indicators, a violation and loss of important body functions. There is no single theory of old age that most scientists would accept. The latest discoveries of molecular biology, fundamental immunology, bioinformatics and genetics show that the theory of age-related inflammatory processes is the most complete today. According to her, during aging, chronic mild inflammation develops, which causes diseases and geriatric syndromes. An increase in the proportion of senescent cells leads to local and systemic inflammation, to pathological aging with a higher risk of diseases and the quality of life, which deteriorates, reducing its duration. Elevated levels of inflammation are present in the elderly even without infection or injury and lead to the development of metabolic disorders and age-related diseases. We believe that one of the main causes of aging that can be successfully combated is the presence of chronic diseases, polymorbidity of pathological conditions (the presence of two or more chronic diseases that coincide in time in one patient) and complications with long-term use of medicines. The purpose of the work is to develop a program for the prevention and treatment of premature aging, transferring it to a physiological state that is not burdened by diseases; ensuring a normal level of quality in old age, preventing relapses of diseases, increasing functional activity, ensuring a comfortable physical and mental state of a person. The main idea of the proposed therapy is to prevent the changes underlying the development of age-related pathology, to eliminate damage from accumulated damage, that is, to treat old age as a complex of chronic diseases. The material basis of this is the use of propolis, royal jelly, wax moth, zabrus - natural medicines. The obtained results indicate that the developed drugs provide a therapeutic effect where other means have been used without success, and recovery occurs earlier and in the absence of toxicity and side effects. And, most importantly, they do not cause the development of resistance to their influence. Although this study has many strengths (high efficiency, low budget of drugs, their availability, the possibility of parallel use of pharmaceutical drugs, lack of complications), there are both objective and subjective limitations. The objective ones include: an allergic reaction to beekeeping products in approximately 5-7% of the population and a limited scope of clinical research. To the subjective: in medicine - effective prevention of diseases will significantly reduce the amount of pharmacological drugs and services sold, in industry - it is technologically difficult to put the proposed products on the assembly line, that is, to achieve their high profitability. And, most importantly, these are people, most of whom hopes for a magic pill or a "corner", does not understand and does not want to understand that the rescue of a drowning person is the work of the drowning person himself. Therefore, this work is addressed to people who understand and accept full responsibility for their own health and the health of their loved ones.

"Do not rely on a miracle pill or a needle - the salvation of a drowning person is by the hands of the drowning person himself."



## INTRODUCTION

The quality of life of the elderly depends not so much on the number of existing chronic diseases, but on creating a satisfactory clinical condition and reducing the risk of adverse outcomes. The modern system of providing medical care is practical aimed at the treatment of one, primary disease, poorly takes into account the presence of several serious chronic diseases. At the same time, more than 82% of the elderly have several chronic diseases [1]. On average, a patient over the age of 60 can be diagnosed with 4-5 different chronic diseases [2, 3], their number increases with age and reaches the maximum level in elderly patients (over 65 years old [4,5]. The main goals of treatment for such patients is to slow down the progression of diseases and reduce the severity of existing disorders; it is better to prevent or slow down than to treat them for a long time polypharmacy (simultaneous prescription of more than 5 drugs) increases the risk of multidirectional drug interaction in the elderly, in combination with polymorbidity increases the probability of death: polymorbidity - polypharmacy - undesirable effects (6). The use of chemically synthesized, foreign medicines requires the additional prescription of other medicines, which increases the resistance of pathogens to them and causes a number of serious diseases. Unfortunately, the search for new drugs lags behind the speed of getting used to them (7). Scientists recognized the importance of alternative methods of fighting infections as a practical solution to the antibiotic therapy crisis (8). The use of natural biologically active substances allows reducing the progression of the pathological process already in the early stages of the disease. Based on this, we developed and tested a program for the prevention and treatment of old age as a set of chronic diseases. It consists of the following components: 1. Prevention and treatment of viral diseases. 2. Normalization of sleep thanks to the use of developed means. 3. Prevention and treatment of urological diseases. 4. Treatment of ulcers. 5. Application of complex suspension SR-21 by postoperative patients, as well as, as an effective adjuvant

in the therapy of neoplasms. 6. Prevention of age-related skin changes and treatment with the help of biogenic stimulants. 7. Intensive painless treatment of combined, scalped wounds and burns. 8. Information and Internet community.

## MATERIALS

Propolis (also called "bee glue") is a plasticine-like substance produced by bees. Approximately 50-60% of propolis consists of resins and pollen balsam. It includes: resins, waxes and essential oils that have an antiviral effect, tannins that have an anti-inflammatory effect, help regenerate damaged tissues; terpene acids, which have pronounced antifungal and antimicrobial and wound-healing effects. Bee glue also contains organic acids, in particular: benzoic, caffeic, brown, which effectively stop the development of bacteria, and also have pain-relieving properties. In total, the composition of this product includes about 50 active substances. The ability of propolis to actively eliminate a wide range of harmful microorganisms, to suppress their activity, including even the tubercle bacillus, various types of viruses, fungi, candidiasis, and, most importantly, to protect the body from viral attacks, has been established. Due to the fact that the composition of the substance propolis differs and is collected thanks to different plants, microorganisms do not develop habituation to it. Royal jelly is a strong biological stimulant of all types of metabolism. Its composition has no analogues in nature. The composition of royal jelly includes: 65% water, 14-18% proteins, 9-19% carbohydrates, 2-5% fats, mineral salts, trace elements, vitamins of group B, H, PP, folic acid, pantothenic acid, nucleic acid, biostimulants. Royal jelly proteins are rich in essential amino acids and are complete. They contain 21 amino acids (glycine, alanine, valine, cysteine, tyrosine, aminobutyric acid and others). Milk contains a large number of free sulfhydryl groups. Along with the so-called proteinogenic amino acids, which are part of protein molecules,  $\gamma$  - aminobutyric acid is of great importance, which plays an important role in the transmission of nerve impulses and improves metabolism in the brain. In milk, in addition to bound proteins, there are free amino acids, as well as amines and amides. The main groups of protein substances are simple proteins - albumins and globulins in a ratio of 2:1. The presence of  $\gamma$ -globulin in royal jelly was confirmed by electrophoretic analysis of globulins. The presence of complex proteins of glycoproteins, lipoproteins and nucleoproteins was also established. It also contains 14-15 different trace elements. With the systematic use of royal jelly, the process of protein formation in the body is stimulated, the synthesis of  $\gamma$ -globulins, the fraction of which contains most of the antibodies, is enhanced. Some milk proteins have enzymatic activity, catalyze the processes of hydrolytic splitting of sucrose, starch, choline esters, proteins, oxidation of glucose, ascorbic acid and other organic compounds. Royal jelly has antibacterial, antiviral and antitumor effects. Wax moth larvae - only these living creatures of all the existing ones feed on wax. Larvae extract contains enzymes (unique - cerase digestive enzyme, with which the insect digests wax), free amino acids, mono- and disaccharides, nucleic bases and their derivatives, fatty acids, biologically important macro- and microelements (a lot of zinc and magnesium) . The preparation contains biologically active substances produced by bees, as well as components that stimulate the growth and development of cells. But the most important thing is the enzyme contained in it. Cerase, it helps to clean the respiratory tract and actively resists lung diseases. When studying the pharmacological parameters of the extract of wax moth larvae, it was established that the product is non-toxic, stable during storage and does not produce unwanted side effects. The

alcohol extract of wax moth larvae is successfully used for the treatment of chronic lung diseases (including in pediatrics), when conventional treatment (antibiotics or other chemotherapeutic methods) does not give a positive result. Valuable properties of the tincture (extract) of wax moth larvae are the absence of toxicity, high efficiency, absence of pharmacological and medicinal risks; compatibility when used with pharmacological drugs and stability during storage (up to 5 years). Numerous scientific studies have been conducted on wax moth tincture, as a result of which no undesirable side effects were detected. The main contraindication to the use of wax moth tincture is individual intolerance to beekeeping products. Zabrus is the upper parts of the lids that remain from cutting off the sealed combs. IS a highly effective agent in the treatment of bacterial and viral diseases, the absence of allergies and the causative agent's habituation to this natural product favorably distinguishes it from conventional medications. Recovery most often occurs quickly and without complications, without the transition of the disease into a chronic form. The chemical composition of zabrus is very rich, diverse, but unstable, as it depends on weather conditions and the harvest of certain plants. The composition of zabrus necessarily includes propolis, flower pollen, perga, wax and, of course, honey. This beekeeping product contains vitamins A, C, E and group B, protein, chitin, macro- and microelements, organic acids, essential oils, various enzymes, resins, balms, fats, carbohydrates, etc. Hence the medicinal properties of zabrus - antimicrobial and anti-inflammatory action. After thorough chewing and swallowing of zabrus, its active components are detected in the blood, lymph and intercellular space after 2 hours. The use of this concentrated beekeeping product accelerates the metabolism process in the body. The only contraindication to use is individual intolerance to wax. What these natural products have in common is that they provide treatment where other remedies have failed, and recovery occurs sooner than with conventional remedies and without toxicity and side effects. And, most importantly, they do not cause the development of resistance to their influence. This is caused by the fact that the composition of these beekeeping products has a unique feature - it changes continuously, because it depends on the factors of their formation that change: on the variety of honey plants used by bees, changes in the morphological features of the worker bee, fluctuations in climatic conditions, weather conditions and seasons year The chemical composition of these biologically active substances has not yet been fully established. To date, all attempts by scientists to synthesize any of the products of beekeeping have failed.

Excipients. Cocoa butter, which is a mixture of diglycerides and triglycerides mixed with fatty acids (oleic stearic, lauric, palmitic and linoleic acids). The use of cocoa butter as a fat base ensures active absorption of the mucous membrane of biologically active substances that are part of the candle. It also has an anti-inflammatory and regenerating effect. An important feature of cocoa butter is its optimal melting temperature, which is close to the natural body temperature. Plum seed oil containing up to 3% stearic acid, 60-80% oleic acid, up to 1% palmitoleic acid, 15-25% linoleic acid, and up to alpha-linolenic acid was used as the fat base of SR-18 suspension ointment. 0.5%. Also contains vitamins E and F in active form. The biological action of the oil is determined by the presence of vitamin E and sitosterol, which regulates the permeability of the skin barrier. For the basis of SR-21 suspension, white acacia honey was chosen, as a hypoallergenic product (the product has low or zero allergenicity, that is, it is not capable of causing allergies), a preservative, not only preserves the unique properties of substances, but also enriches them with useful properties (it is an antioxidant, has antimicrobial properties, increases immunity, is an energy booster). It should be noted that as a result of the spread of efficient household

refrigeration equipment, possible mass individual use of natural medicinal products (primarily royal jelly), which lose their therapeutic properties under the influence of sunlight, plus temperature and natural oxidation.

## METHODS

Method in the development of drugs for the comprehensive prevention and treatment of chronic diseases, we relied on the following properties of the mentioned materials: mobilization of the body to fight the disease, inhibition of tumor growth, improvement of the immune system, anti-inflammatory and antioxidant properties, destruction of free radicals, inhibition of premature aging of the body, restoration of immunity. The proposed substances are natural in the body, not foreign chemical compounds, like most medicines. Their essential advantage is that they do not have side effects and toxicity, do not cause drowsiness, maintain adequate response, do not disturb simple reflexes even in the upper range of therapeutic doses. They do not cause movement coordination disorders, decrease in muscle tone and muscle strength, do not have a sedative and amnesic effect, but, on the contrary, have a positive effect on memory, increase tone, appetite, and mood. When used together, the effect of traditional medicines is enhanced. With an increase in the dose to the level, an increase in action is usually observed. The range of therapeutic doses is quite wide and varies in the experiment, for example, royal jelly from 200 (prophylaxis) to 800 mg (treatment). As the dose increases, the expressiveness and duration of the effect increases. The principles of the developed drug therapy for elderly patients differ from standard approaches, and these differences imply not only the characteristics of the materials of the drugs, but also necessarily the age of the patient, the condition of the kidneys and liver, the presence of other geriatric syndromes, as well as the severity of cognitive impairments. that complicate the correct administration of drugs. The proposed therapy is complex and at the same time staged, which prevents polypharmacy. The use of a combination of drugs affecting the main pathogenetic mechanisms of pathological processes allows solving these problems without harming the body. The main problem at present is the lack of uniform therapy protocols for patients with several chronic diseases. "Treating each disease individually is an outdated strategy," said Katie Dane, executive director of the Alliance for Noncommunicable Diseases. The program of complex prevention and treatment of old age as a set of chronic diseases consists of eight components. The measures started with education, motivation to carry out treatment courses and further preventive measures. The clinical and immune status of each volunteer was taken into account, measures were selected individually for each patient. For treatment, drugs with a pleiotropic effect were selected, which affect several symptoms or pathogenetic mechanisms at once. "We need to take a comprehensive approach within the health care system and do it now," said Kavaldeep Sekhmi, chief executive officer of the International Alliance of Patient Organizations. The program of comprehensive prevention and treatment of old age contains an outline of practical recommendations and advice developed by the author, brief information about chronic diseases that are common, and proven methods of overcoming them using currently available tools and resources. Its task is to prevent the exhaustion of the body, eliminate the consequences of overstrain and depressive states, stabilize the autonomic nervous system, improve the work of the digestive organs, support the cardiovascular system, protect the heart from damage and reduce the severity of existing ones, strengthen the heart muscle and improve the blood supply of triglycerides in

the blood, reduce the cholesterol level; stimulate hematopoiesis, restore libido, stabilize blood pressure, increase work capacity and reduce fatigue, improve appetite.

**The first main component:** the risk of infection with viral diseases, including COVID-19, a severe course of the disease or death from them threatens any person, regardless of age. Distribution of people infected with COVID-19 in Ukraine by age: 0-17 years - 5.00%; 18-29 years old-11.00%; 30-49 years old-37.00%; 50-69 years old-38.00%; 70 years and older -9.00% (9). At the same time, the risk of death in case of infection with COVID-19 for a person by age is as follows: 0-9 years-; 10-19 years - 0.2%; 20-29 years old - 0.2%; 30-39 years-0.2%; 40-49 years-0.4%; 50-59 years-1.3%; 60-69 years-3.6%; 70-79 years-8.0%; 80 years and older - 14.8% (10). More than 80% of those who died from the coronavirus in Ukraine are people over 60 years old. Moreover, the older a person is, the higher the risk of death. Modern methods of treatment of viral diseases, including the coronavirus, do not provide the expected effectiveness, moreover, their use may be associated with serious negative side effects, especially after 60 years. The problem of treatment of viral diseases, including coronavirus, based on the use of pharmacological drugs is currently not solved. Effective drugs have not been created, prevention schemes have not been developed, which allow to quickly and effectively fight against the named diseases. The constant medical need has led to renewed interest in the prevention of viral diseases based on the phenomenon of antiviral and antimicrobial activity of beekeeping products. We developed (11) and tested viral disease prevention regimens, including COVID-19, using volunteers (who gave oral consent) during 2020-2022. Groups of volunteers (8 groups of 100 people, age group: 30-60 years-40% and 61-82 years-60%) took the recommended products during the autumn-spring period for 1.5 months (twice a year) according to the proposed scheme:

1. Royal jelly (figure 1.1) - on an empty stomach (0.25-0.50 g), 30 minutes before the morning meal, sublingually (by absorption under the tongue).



**Figure 1.1: (royal jelly in the royal jelly).**

2. Zabrus (figure 1.2) - after the morning meal (30-40 g), chew thoroughly for 15-20 minutes. In addition, chewing zabrus helps to disinfect the oral cavity and is an effective means of strengthening gums and teeth.



**Figure 1.2: (zabrus - cut lids of sealed honeycombs).**

3. Tincture of wax moth (figure 1.3) - 2 times a day (2 drops/10 kg of human body weight 30 minutes before the lunch meal + 2 drops/10 kg of human body weight 30 minutes before the evening meal), previously diluted in 1-2 tablespoons of water.
4. Propolis oil (figure 1.4) - it is necessary to lubricate (1-1.5 g) the mucous membrane of the nose before going outside or going to work).



**Figure 1.3: (tincture (extract) of wax moth larvae).**

4. Propolis oil (figure 1.4) - it is necessary to lubricate (1-1.5 g) the mucous membrane of the nose before going outside or going to work).



**Figure 1.4: (propolis oil is a natural antibiotic).**

We also developed and tested a practical scheme for the treatment of viral diseases, including the coronavirus. 1. Applied to patients at the initial stage of the disease. On the first day of detection of symptoms of a viral disease, the mucous membrane of the nose was lubricated with propolis oil at least 5 times with an interval of about 2 hours; On the second day, respectively, 4 and 3 times, on the third and, if necessary, on the fourth day - 2 and 1 times each. 2. Applied to patients of moderate severity. To detect an allergic reaction, the patient takes 5 ml of wax moth tincture before breakfast for the first two days, and 15-18 ml of tincture on the third day. In the case of good tolerability of the drug, a minimum of 150-180 mg of the drug is taken the next day (15-18 ml once every hour, a total of at least 10 doses). On the fourth day, starting in the morning, it is recommended to take 20-30 g of activated carbon in the form of an aqueous suspension. On the fifth or sixth day, 5 ml before dinner. All 52 patients have laboratory-confirmed coronavirus, of which 35 have an initial stage of the disease and 17 have an average severity of the syndrome (SARS-CoV-2). The patient cohort is organized from volunteers who gave an oral report. The main result was almost complete recovery - in the first group - for 4-5 days and in the second group - for 6-7 days (2 patients stopped taking wax moth tincture due to an allergic reaction of the body). Not a single case of the disease was noted among the volunteers who underwent prophylaxis. Timely treatment (12) made it possible to stop the progression of the disease and reduce the duration of treatment to 3-5 days.

**Results:** The drug has demonstrated therapeutic efficacy in the mild course of the disease, their clinical safety and tolerability are quite well studied. During the short follow-up period, the majority of patients showed significant improvement and subsequent full recovery, while no serious adverse reactions or significant abnormalities were observed. The use of wax moth tincture in the recommended doses made it possible to stabilize the condition of patients with moderate severity, and in the future ensured almost complete recovery. It should be noted the absence of serious undesirable effects. The use of wax moth tincture is an alternative possibility of effective treatment of viral diseases, including coronavirus in patients with no development of an allergic reaction to its use. The minimal risk of developing adverse reactions, the absence of toxic effects, high clinical effectiveness in mild and moderate severity of the viral disease puts preparations of wax moth and propolis tincture among the most sought-after medicinal products. A rational combination of the mentioned means, depending on the phase and severity of the course of the disease, is a guarantee of effective treatment and stabilization of the patient with corona virus. Careful prevention (13,14) carried out in the spring-autumn period of a group of volunteers made it possible to reduce the risk of morbidity to almost zero. The obtained indicators for the period from 2020 to 2023 are convincing evidence of the effectiveness of the developed scheme for the prevention of viral diseases, including the coronavirus. The results of research conducted in the last 4 years have demonstrated the effectiveness of the preventive use of beekeeping products in reducing the incidence of viral diseases, including coronavirus. This approach should become a paradigm shift in therapeutic tactics during a viral pandemic. In addition to the advantages indicated in the clinical effect and economic advantages section, the claimed drugs have a wider range of applications, are non-toxic, and their production is environmentally safe.

**The second main component** everyone knows about the importance of sleep, but it is especially important for the elderly, as regeneration processes are launched in the body during sleep, immunity is strengthened. Scientists have established that a person's life

expectancy largely depends on the ability to recover from stress (the final loss of this ability occurs before 120-150 years). A person cannot avoid acute psychological stress, but thanks to healthy sleep, it is possible to prevent the transition of acute stress to chronic stress. Therefore, insomnia in the elderly becomes the root cause of most diseases. A third of people over the age of 65 have problems related to sleep. Sleep disturbance is one of the important factors in assessing the quality of life of the elderly. Psychologists from the University of British Columbia in Canada determined that lack of sleep dulls a person's ability to enjoy ordinary things and feel positive emotions. After the age of 75, the frequency of insomnia in the elderly doubles compared to middle-aged people and causes general weakness, decreased reaction and memory, increases the risk of falls and the risk of death by almost 3 times. More than 25% of elderly people who suffer from insomnia regularly or often use sleeping pills, often this leads to their abuse and addiction. Insomnia can cause the development of mental disorders, depression and alcoholism. The main reasons are the accelerating pace of life, information overload, stress, television. For the elderly, all this is multiplied by the presence of chronic diseases. Insomnia of the elderly includes constant persistent complaints of insomnia, constant difficulty falling asleep, repeated awakenings during the night and waking up too early in the morning, poor quality of sleep (superficial and intermittent sleep, the presence of vivid, multiple dreams, often of difficult content; lack of a feeling of rest from sleep). Secondary sleep disorders are caused by the presence of cardiovascular insufficiency, bronchial asthma, lung disease, polyosteoarthritis, diabetes, inflammation of the prostate gland, taking certain medications, and the presence of other chronic diseases. Many ways and techniques have been developed to improve sleep - from prevention to drug treatment. Practice shows that their efficiency is rather low, and most often they have a negative effect. Changes in sleep with age are a natural process. Nevertheless, the quality of sleep should not become bad and should not be tolerated. Instead of taking sleeping pills, we offer a developed method of restoring sleep with the help of a wax biomodule, which will ensure "clean sleep" - conscious healthy rest. The main priority is to eliminate sleep problems in a person suffering from chronic diseases and thereby extend the time of his active life and improve his quality. The recommended method of prevention (15) is based on the action of microwaves and microvibration, as well as heat coming from the bee family, which allows to stabilize the pressure and improve the blood circulation of the brain. The procedure is carried out in a biomodule on a comfortable bed, under which bee families are kept (3-4 hives, each can contain up to 60 thousand bees). Inside the biomodule, everything is hermetically isolated from bees, safety from direct contact with insects is ensured; the fly through which the bees fly into the hives is located outside the biomodule, i.e., being inside, a person is completely protected and does not need protective clothing and a face mask; can fully relax. The patient is placed as if inside a bee colony, in the biomodule heat and air exchange constantly circulates between the bee colonies and the space, creating a special microclimate; the air is saturated with aromas of honey, wax, propolis, royal jelly, and has a unique aroma. It is essentially an inhaler inside which you are. Such a microclimate quickly improves the condition of patients, which increases the quality of sleep and appetite, and lifts the mood. The main principles of therapy are micro-vibration (bees constantly work with their wings to evaporate moisture from the hive, producing approximately 250 vibrations per second, this kind of therapeutic vibration massage has a beneficial effect on various organs and systems of the body and stimulates their recovery), the temperature effect is a hive in which more for part of the year, bees maintain an air temperature of 34-35 ° Celsius), acoustic influence (the

monotonous hum of bee colonies relieves fatigue, creates a calming effect), inhalation (volatile fractions from the beehive have a stimulating effect on the pulmonary, digestive, cardiovascular systems, improve the condition of the nervous system). In 2008, scientists of the Zaporizhia State Medical University conducted a study of the influence of apitherapy factors on the cardiovascular and respiratory systems and indicators of human neurohormonal regulation at an apiary in the village of Mala Tokmachka, Orihiv District, Zaporizhia Region. 30 patients were examined, who were placed on a beehive bed for 30 minutes during 10 days. The research results showed a positive effect of the sessions on indicators of the cardiovascular system and neurohormonal regulation of the patients' body. Everyone who has experienced a dream in beehives notes a significant improvement in their condition after two or three sessions. After 10-15 minutes of such a rest, a person feels a sense of peace, carelessness, and at the same time a desire to sleep and immersion in a deep, healthy sleep. After waking up in a few hours, one feels a surge of strength and vigor. To achieve a lasting effect, 15 sessions of an hour or more are recommended. With good tolerance, it is advisable to spend the night in the biomodule, because the maximum effect is achieved late in the evening, when all the bees are in the hives (from 150 to 250 thousand bees "work" on the patient!). Acoustic perception is a special sensation, incomparable to any other sensation of ours. The physical parameters of sound (intensity, unit of measurement - decibel; frequency of oscillations, unit of measurement - hertz, spectrum, duration, phase) of a bee colony in a specific biomodule are determined by the complex interaction of "own sound" and the mass of impressions of this sound from the walls, floor and ceiling of this room. In order to obtain high-quality sound, to reduce the distorting effect on the sound of the room's acoustic problems, in addition to the presence of healthy, full bee colonies, it is necessary to minimize the distorting effect of the biomodule's acoustic environment on its own sound. In an acoustic, poorly designed biomodule, even the best bees will only sound at half their potential. An uncomfortable acoustic environment quickly causes fatigue, irritation and auditory insensitivity, which does not allow adequate perception of sound information. We carried out calculations of the optimal dimensions of the bee biomodule and the location of the beehives in it in order to enhance the acoustic effect on the hearing organs. The work performed with the help of the MSC Nastran programs - acoustic analysis (internal acoustics) allowed a more conscious approach to the creation of the bioenergy information biomodule. You can also use the axial mode calculator (<http://www.acoustic.ua/forms/calculator8.html>). At its core, the bee biomodule is a housing of an acoustic system that performs a variety of functions. That is why it is necessary to pay great attention to the choice of configuration. The case affects the intensity of the sound, both in low frequencies and in the area of medium and high frequencies. The oscillations of the enclosure walls determine the amount of linear and non-linear distortions and the sound quality of the acoustic system. The acoustic features of the biomodule room affect the frequency response of the sound pressure, and therefore the sound quality. The same hive will sound differently in rooms with different configurations. The acoustic features include: the shape of the room, its volume and sound absorption coefficients of the surfaces enclosing the room (ceiling, floor, walls). So, for example, a smooth ceiling and walls absorb little sound and reflect it to a large extent. The creation of a comfortable acoustic environment in the biomodule was solved by using decorative acoustic sound absorbers that reduce reverberation time are wall and ceiling wax panels. A principle that can be observed by placing the sound source in a mug was used to amplify the sound. The sound is amplified as the mug becomes a resonant chamber. In the conditions of a closed

space, echoes from protective structures, the issue of placing the sound source, in our case beehives, becomes important, as well as the issue of observing acoustic symmetry. Optimum placement of hives in the biomodule will allow to form an imaginative sound stage, improve the sound quality due to some weakening of the influence of early impressions, mainly from the side walls; will provide a component of multidimensionality in a small closed room. Determination of the optimal placement of beehives in the biomodule can be carried out using the Listening Room computer program from Sitting Duck Software. After making the calculations, we do not recommend placing hives in close proximity to the walls and, especially, in the corners of the room, since almost all indoor fashions are found there. The optimal placement of 4 hives in a biomodule with a width of 220 cm, a depth of 107 cm, a height of 157 cm is as follows: the distance of the bottom of the hives from the floor of the room is 17 cm, from the side walls - 5 cm, from the outer wall (where the hives are located) - 8 cm, from the opposite entrance - 25 cm. Beehives are located close together, overall size: width-210cm, depth-74cm, height-40cm. The resonant acoustics of the calculated biomodule does not cause fatigue, promotes the strengthening of the body's restorative and protective functions, and has a significant positive effect on the psychophysiological state of a person. The beehive itself is a natural inhaler. In addition, instead of traditional wooden blankets (on which a sheet or a thin mattress is placed) to increase the intensity of aeration, we recommend using combined roofs (the upper shelter of the nest of the bee family, this is the ceiling of the bee dwelling) (see figures 2.1 and 2.2).



**Figure 2.1: (ceilings with slots for ventilation).**



**Figure 2.2: (slots closed with a bee net).**

The use of our developments made it possible to increase the efficiency of the biomodule several times. In 2012, a device for energy and biological impact "Wax tile L.O." was developed. Valiguri". This device of energy and biological impact consists of a layer of porous material (wood) with an ordered arrangement in space of cavities made in the shape of bee combs filled with wax melted with the help of solar energy from wax caps (cells of bee combs). This model refers to devices for the prevention and restoration of active human activity by influencing the biologically active effect of beeswax on the body. Making the cells in the form of wax honeycombs made it possible to increase the energy effect of the device. The therapeutic effect is explained by the fact that the wax obtained by heating with the help of solar energy from the wax caps (bars) of honeycomb cells contains up to 80% lysozyme, which contains the maximum amount of therapeutic and biologically active

substances. The panel is hung on a wall or other vertical surface in a residential or rehabilitation treatment room. The beeswax in the cells emits healing ethers that saturate the closed space of the therapeutic room. During the design and manufacture of the biomodule, we used panels made of wood (a type of linden tree), with cavities in the form of hexagonal honeycombs and filled with wax. It should be clarified that the wax melting temperature must be strictly maintained within 65-68 degrees Celsius. When the temperature rises, the quality of the obtained wax deteriorates, and the color changes. Wax panels were located inside the biomodule on the walls and ceiling (Figure 2.3).

Being in such a wax biomodule contributes to the restoration of immunity, mucous membranes of the entire human body with the help of the aroma of wax and the effect of propolis as an antibiotic. Visiting the wax biomodule is indicated, first of all, for people with diseases of the respiratory system. Already after a few sessions, the patient's coughing and snoring weakens or disappears completely, and the lungs and respiratory tract are cleared. Wax therapy (heat treatment with wax) and propolisotherapy (treatment of wounds and inflammatory processes) allow you to suppress inflammatory processes, achieve an antiseptic effect, restore the damaged mucous membrane in throat diseases, reduce pain, dry and reduce stagnation of mucus and pus in sinusitis, relieve throat irritation in dry cough, contributes to the acceleration of rehabilitation after diseases and surgical interventions. Being in the wax biomodule accelerates metabolism (promotes weight loss), provides a high therapeutic effect in the fight against prolonged depression, depressed mood, nervous excitability. The air in the wax biomodule seems to be thicker and more saturated, it helps to improve general well-being and mood already after the first visit, it is a completely natural, highly effective and safe method of prevention and treatment. The aroma of wax is intoxicating, the microvibration of bees, their quiet buzzing noise soothes and gives a feeling of peace and relaxation. The effectiveness of the existing method, solving the problem of the quality of sleep of the elderly, was significantly increased thanks to the calculation of the optimal (from the point of view of acoustics) dimensions of the biomodule (as an acoustic system) and the location of the beehives in it. A therapy technique using a wax biomodule was developed and tested from 2015 to 2023.



**Figure 2.3:** (a wooden panel in the form of honeycombs filled with wax from a zabrus).

Every season, 8 patients were in wax biomodules from 11:00 p.m. to 7:00 a.m. for a month (from May to September). The age group is 60+. Positive and reliable changes were observed in the form of a decrease in the heart rate, an increase in the stroke volume of

the heart and the power of the heart muscle, a decrease in the peripheral resistance of blood vessels, and optimization of blood pressure. A stable broncholytic effect with improvement of forced breathing indicators was established.

**Results:** All who experienced sleep in the wax biomodule did not suffer from acute respiratory viral diseases during the year and noted a significant improvement in sleep quality, increased appetite and mood. The use of wax status, adaptation biomodules has a positive effect on the state of the main systems of the human body, reactivity and immunological capabilities; psycho-emotional sphere, cognitive functions of the elderly. This is confirmed by the results of a comparative clinical, laboratory and psychological study.

**The Third Main Component:** The condition of men's sexual, cardiovascular, urinary, nervous and other systems, the quality of their life and its comfort is largely determined by the work of the prostate gland, which is called "the second heart of a man" for good reason.

The basis of health is regular medical examinations by a urologist and preventive measures for mature and elderly men. But if regular examinations are ignored and the disease is not detected in time, it is guaranteed to lead to chronic prostatitis, and in some cases to surgical intervention. Chronic prostatitis develops in men between the ages of 20 and 50 (almost every third), and after the age of 60 it occurs more than 2 times more often and leads to a significant decrease in life comfort, making a man's life inferior.



**Figure 3.1:** (rectal candles with a recess for milk).



**Figure 3.2:** substances - Propolis, 100% Native Royal Jelly, basis - Cocoa butter natural. The weight of the unit is 3.24 g.

Treatment of chronic prostatitis should be complex and include antibiotic therapy, physical therapy, diet, anti-inflammatory therapy, phytotherapy, prostate massage, immunocorrective therapy, etc. as needed. Antimicrobial drugs are the mainstay of treatment. However, the effectiveness of their use is steadily decreasing. Scientists recognized the importance of alternative methods of combating bacterial infections as a

practical solution to the antibiotic therapy crisis. The advantage of suppositories in the treatment of urological, proctological, gynecological diseases in that they act in close proximity to the focus of the disease, and due to the dense network of blood and lymphatic vessels of the rectum, medicinal substances are well absorbed from the surface of its mucous membrane and quickly enter the blood. Active substances from suppositories are absorbed much faster than when taking tablets, because they bypass the stomach and liver without being destroyed under the influence of gastric juice. The effect of candles is almost the same as the effect of injections, only more targeted. In addition, suppositories are convenient for patients to use on their own. We have developed (16) the composition and design of candles (figures 3.1 and 3.2), which ensures the "delivery" of live royal jelly directly to the prostate gland. Active

**Results:** Suppositories were tested in 2018-2023 in the treatment of chronic bacterial prostatitis and accompanying decreases in sexual potency in men who underwent standard therapy and did not receive the expected result. It is established that the application the use of live royal jelly candles improves blood microcirculation in the area of the prostate and its surrounding tissues, relieves the feeling of pain and dissolves fibrosis that was in the prostate, reduces swelling and inflammation, has a complex immunomodulating and immunostimulating effect, helps restore the functional activity of the prostate, which increases indicators quality of life of patients. Their use in chronic prostatitis provides quick relief of pain syndrome, pain passes after 2-3 procedures (the maximum delayed positive reaction was observed in 1 patient - after 14 procedures). At the same time, it was reliably established that out of 43 chronically ill patients (age of patients from 42 to 81 years old, oral informed consent was obtained) 38 patients were completely cured with the restoration of libido, 5 patients, after a significant improvement in their physical and emotional state, interrupted the course of treatment and further prevention . Five-year experience of approbation of treatment and prevention of chronic bacterial prostatitis has shown that in no case should preventive measures be abandoned after relief. The initial success must be consolidated and continued. The following method of application and dosage is suggested. A suppository with royal jelly is administered rectally (on the empty intestine) in the morning for 5 days, during the next 20 days - 1 suppository with milk in the morning, 1 suppository without milk at night before going to bed (its composition is 20% propolis and 80% cocoa oil); the next five days - 1 candle without milk at night. Provided that it is necessary to enter in the morning before an active day, it is advisable to lie in a quiet position for 30-40 minutes. At the beginning of use, burning, itching, discomfort are possible. A monthly course of treatment with live royal jelly suppositories effectively eliminates the symptoms of chronic bacterial prostatitis. However, the positive effect of the therapy gradually decreased within 6 months after its termination. These data indicate the expediency of long-term use of suppositories with live mother's milk in patients of this category. To prevent the development of prostatitis and increase the period between exacerbations, it is recommended to carry out prophylactic procedures twice a year with live royal jelly suppositories for 20 days in one period. In addition, methods of using candles for urological, proctological and gynecological diseases, as well as their optimal dosage, were worked out. Candles with propolis and live royal jelly have shown good results in the prevention and treatment of gynecological (inflammatory diseases of the female genital organs, colpitis (vaginitis), white, endocervicitis, erosion of the cervix, fibroids, fibroids), proctological and other urological diseases (adenoma of the prostate gland, sexual disorders associated with diseases of the prostate gland, urethritis, urolithiasis, the condition after

operations on the prostate gland and bladder), after surgery and serious diseases (strokes, heart attacks and chemotherapy), infertility, with increased physical and mental stress . Their intake is recommended in order to normalize blood pressure and heart function, normalize metabolism and restore the work of the sexual and endocrine systems. Practice has confirmed that propolis suppositories with live royal jelly are an ideal antibacterial, multimodal drug for the treatment of chronic bacterial prostatitis, as it is weakly alkaline, fat-soluble, with a dissociation factor that contributes to the maximum concentration of active substances in the prostate and, unlike other antibacterial drugs, has the ability to overcome the effect of resistance to antibacterial drugs of biofilms in prostate tissue. And - low-budget. The use of live royal jelly suppositories is a promising way of treating patients with chronic prostatitis and other urological, proctological and gynecological diseases.

**The fourth main component** taking into account the high need for new effective drugs that have a comprehensive effect on the course of the pathological process, the need to improve the immunodeficiency state, concomitant diseases, including chronic ones, we have developed(17) the composition and technology of a complex suspension of SR-21 with native (it was not exposed to external intervention and retained its appearance and properties) with royal jelly, ginseng and coenzyme Q 10. While developing the SR-21 suspension, we were based on the main effect of royal jelly - it is the mobilization of the body to fight the disease; ginseng - suppression of tumor growth, improvement of the immune system, anti-inflammatory and antioxidant properties; of coenzyme Q 10 - destruction of free radicals, inhibition of premature aging of the body, restoration of immunity. In order to achieve the set goals, when developing the composition of the SR-21 combined suspension, the ratio and number of components of the composition were selected in such a way as to ensure the necessary preventive and therapeutic properties, as well as their quick and long-lasting effect. When mixing the components with the base, the suspension samples did not delaminate, which allowed further experimental studies to be carried out with them. In this regard, native royal jelly was chosen as one of the main medicinal substances for the preparation being developed, the optimal concentration of which in the developed suspension, according to the results of the study of antitumor and anti-inflammatory activity, is a concentration of 2% (for prevention) and 4% ( during treatment). The next substance that is part of the developed drug to eliminate or reduce pain is ginseng. Its restorative and strengthening action, stimulation of the central nervous system, reduction of fatigue and exhaustion, normalization of the hormonal background, stimulation of appetite are important for seriously ill patients. The main component of the next active ingredient of coenzyme Q10, which is included in the developed suspension, is a coenzyme, a unique trace element present in every cell of the human body. An element with strong antioxidant properties protects cells from the destructive effects of oxidative processes, viruses and bacteria. With age and illness, the processes of microelement generation slow down, and a lack of coenzyme is observed. This leads to increased fatigue, muscle pain, chronic fatigue syndrome, reduced work capacity, feeling of lack of energy, subjective or objective feeling of lack of strength, deterioration of sleep quality. Increasing the coenzyme level will also strengthen immune protection, improve the work of the heart muscle, normalize fat metabolism, increase physical activity and support cognitive functions. The results of practical use of SR-21 suspension show that a single dose for prophylactic purposes of a standardized substance (2% royal jelly, 1.5% ginseng, 1.5% coenzyme Q 10, 95% white acacia honey) is 18 ml. A group of volunteers (45 people, age group: 30-60 years-20% and 61-82 years-80%) took the recommended suspension for 14 days

once every three months for 2 years. A stable increase in tone and performance is noted. For people over 60, there is an increase in tolerance to physical exertion, and in people who lead a sedentary lifestyle, there is an increase in resistance to hypodynamia. The use of the suspension did not cause any negative effects or addiction. The use of SR-21 suspension in addition to existing treatment regimens for lymphoblastic leukemia (ALL) allows to reduce the intensity of the disease and gives additional time. A practical scheme of treatment applied to patients of moderate severity. All 3 patients with laboratory-confirmed acute lymphoblastic leukemia. At the same time as the standard treatment protocol, SR-21 suspension with the following composition was taken: - native royal jelly (4%), ginseng root powder (1.5%), coenzyme Q 10 (1.5%), auxiliary substance - white acacia honey ( 93 %) daily dose - about 20 ml. The use of the developed suspension provides a new and superior treatment option for acute lymphoblastic leukemia (ALL) in adults. The exact dose will depend on the purpose of the treatment and can be determined by a person skilled in the art. The duration of taking the suspension was 4 weeks, followed by repeated cycles after a 2-week interval.

**Results:** The use of the suspension by cancer patients increased the therapeutic effect of the main drugs, reduced the toxicity and reduced the side effects of chemotherapy drugs, increased the immune status and resistance of the body. It can also be used as an adjuvant in the treatment of neoplasms of the gastrointestinal tract and an additional agent in the treatment of precancerous conditions and oncological diseases, used in the therapy of radiation sickness, prevention of anemia, antitumor effect in leukemia, lymphosarcoma, adenocarcinoma and Ehrlich carcinoma. Improved appetite and maintained a cheerful mood. For the elderly, it is important to prevent heart arrhythmia using antiarrhythmics of natural origin, devoid of negative side effects typical of synthetic drugs. The use of SR-21 suspension for preventive purposes significantly reduces the duration of arrhythmia, increases the electrophoretic mobility of erythrocytes and lowers the malondialdehyde in the blood, normalizes blood parameters, has a positive effect on the energy level of the myocardium, accelerates the recovery process and ensures the normalization of the heart rhythm. Its use is of particular importance during the rehabilitation period after heart attacks, strokes, chemotherapy, in the presence of cardiovascular pathologies, nervous disorders, stress, depression, epilepsy, to restore the hormonal background, treat female/male infertility, to increase lactation, immunity and health I, when exhausted and weakened. Its use by postoperative patients is appropriate, as it increases the physical activity of convalescents during the rehabilitation period, stimulates tissue regeneration, stabilizes blood pressure and heart function in patients with unstable hemodynamics, normalizes metabolism and restores the work of the reproductive and endocrine systems. It can be used for early enteral feeding of patients who have undergone surgery, as well as when the body is weakened due to aging.

**The fifth main component** trophic ulcers occur in Europe in 1 person out of 1,000, in the elderly, whose age is closer to 80 years, much more often - 20 people out of 1,000. In half of them, the ulcer healing period exceeds 9 months, and in 75% of cases, they repeatedly relapse , the period between the appearance of subsequent unhealed wounds is shortened and requires longer treatment. According to the International Diabetes Federation, the formation of foot ulcers in 9.1-26.1 million diabetic patients is registered annually in the world (by 2050, the number of people suffering from diabetes will increase 2.6 times in the world)(18) . The frequency of formation of foot ulcers is found in more than

11% among all patients with diabetes. The development of insufficiency of blood circulation of the lower limbs often leads to long-term healing and amputation of the limbs. Unfortunately, the number of amputations in the world increases annually, both in absolute and relative terms. The main causes of ulcers are primarily progressive infections, the danger of which is that the wound does not heal and often recurs. The lack of timely and adequate therapy of an unhealed ulcer on the leg leads to serious complications: restriction of movement, inability to perform daily duties, gangrenous limbs. Treatment of a trophic ulcer on the leg should be aimed at restoring blood circulation, eliminating the purulent-inflammatory process and healing the wound and, most importantly, should be accompanied by treatment of the underlying disease. To protect the ulcer from the penetration of infection, special wound-healing agents are used, the effectiveness of which decreases. Many proposed treatment methods have not yet allowed to completely solve this complex problem. Taking into account the high need for new effective drugs that have a comprehensive effect on the course of the pathological process, we have developed (19) the composition of SR-19 ointment - suspension with native royal jelly and propolis. Its (SR-19) difference is the absence of auxiliary substances, which made it possible to achieve the maximum effectiveness of medicinal substances. Since the concentration of active substances in the dosage form is considered one of the factors affecting the further pharmacological action of the medicinal product, in order to determine the optimal composition of the SR-19 ointment, at the first stage of experimental research, a comparative analysis of the composition of the developed medicinal products for external use was carried out - native royal jelly-30-35%, propolis-70-65%. A group of volunteers (8 people, age 61-82 years) with purulent-necrotic complications of diabetic foot syndrome applied the recommended ointment for 14 days 3 times a day in the first year - quarterly, the second - if necessary. At the same time, preventive measures were carried out, which consisted in taking the SR-21 suspension developed by us. The appearance of a clear clinical effect depended on the severity of the purulent process, intoxication and ranged from 5 to 10 days (see Figure 4.1, January 16, 2022; Figure 4.2, January 25, 2022; Figure 4.3 January 28, 2022).



**Figure 4.1: (before using SR-19 ointment).**



**Figure 4.2: (day 9 of using SR-19 ointment).**



**Figure 4.3: (12th day of SR-19 ointment use).**

It should be noted that in this case wound dressings impregnated with wax from zaburus in combination with SR-19 ointment were used. In all patients, dressings were performed painlessly and without injuries. Zabrusny beeswax is a 100% natural product, the highest quality, first-class wax obtained after pumping out honey from the beeswax. Such wax has bactericidal, anti-inflammatory and wound-healing properties; has a stimulating effect on the reparative processes in the wound, due to which the healing processes proceed more intensively. Beeswax wax has a stronger healing effect than ordinary wax, as it contains the maximum amount of useful substances. Its structure is cleaner and more homogeneous than that of ordinary beeswax. Contains up to 300 different compounds (esters, acids, alcohols, provitamin of vitamin A), is considered a natural preservative. Modern medical science has confirmed the presence in the composition of wax of substances that delay the growth and development of a number of pathogenic microorganisms, as well as substances whose action is similar to that of antibiotics. It is recognized that due to the presence of carotene and vitamin A, wax, mixed with other medicinal products, is useful in the treatment of skin diseases, pneumonia, bronchitis, inflammation of the mucous membrane of the oral cavity and throat (with gingivitis, tonsillitis, stomatitis, glossitis). It is a medicine in itself.

**Results:** The complex use of SR-19 suspension ointment in the recommended doses allowed to stabilize the condition of the patients and contributed to their recovery. The maximum therapeutic effect was provided with minimal impact on the body of the patient, who, as a rule, suffers from serious concomitant diseases. There is a stable increase in tone and work capacity, an increase in tolerance to physical exertion, an improvement in appetite and sleep quality, and maintenance of a cheerful mood. The prophylaxis carried out strengthened the therapeutic effect of the main drugs, reduced toxicity and side effects of chemotherapeutic drugs, increased the immune status and resistance of the body. The use of the developed SR-19 ointment and SR-21 suspension provides a comprehensively new and superior option for the treatment and prevention of recurrent ulcers against the background of diabetes, which provides additional time for the treatment of the underlying disease. The inclusion of SR-19 ointment and SR-21 suspension in the complex of treatment of trophic venous ulcers leads to improvement of recovery processes, which also allows patients to be prepared for operations on the veins of the lower extremities in the shortest possible time.

**The sixth main component:** Continuation of the aesthetic side of life is the sixth component of the developed program. Careful skin care should become an integral part of a comprehensive approach to the prevention of signs of aging. The relevance of the problem of aging is due to the significant impact of the appearance of the facial skin on social well-being, adaptation in society and the quality of life of a person. Aging is always understood as an external phenomenon. The first signs of aging on the surface of the skin appear from about the age of 25. After 35 years, the situation worsens, skin regeneration slows down, it needs abundant hydration. After 50 years, the skin becomes thinner, wrinkles become more pronounced. By the age of 70, the skin is so depleted that a fat layer is visible in it, as a result of which the face acquires a yellowish tint. Aging is a natural process that cannot be stopped, but the visible signs of general skin aging can be reduced. Some causes can be changed, others can be controlled. The timeliness of rejuvenating procedures depends only on a person's desire. The most noticeable decrease in volume and loss of clear contours of the face (which is caused by a decrease in the body's production of its own elastin and collagen and the presence of inflammatory processes). In dermatology and cosmetology, the following methods of correction of involutinal skin changes have been developed:

hardware, injection, methods of cosmetology care. However, it is impossible to achieve a sustained significant effect with their help. The key to the success of correcting age-related changes in the skin is to provide the skin with the necessary treatment, hydration and nutrition it needs. A promising direction for the correction of age-related skin changes is the use of SR-18(20) suspension ointment, which provides comprehensive treatment of inflammatory processes and skin regeneration. All patients who voluntarily participated and gave verbal consent (15 people, age group: 5 people 40-50 years old, 10 people 60+), to correct age-related changes in the skin of the face, SR-18 ointment was applied daily to the skin of the face and hands (removed in 2 hours). The course of therapy consisted of 20 procedures with an interval of 3 months during the year. If desired, the course was repeated annually. It was established that in all patients, the use of SR-18 ointment helped to improve the structural and functional organization of the epidermis and dermis, and to increase the thickness of the dermal layer. Reduction of clinical signs of aging was observed in almost all women, but mainly the clinical effect was expressed in the age group from 40 to 50 years. In the 2nd group (60+), a 90% reduction in clinical signs of aging was observed after the course of procedures. The absolute majority of patients were satisfied with the result obtained after a course of procedures. It has been practically established that the main effective method of preventing skin aging is the use of SR-18 ointment based on plum oil (unrefined), propolis, royal jelly and cocoa butter (unrefined), which allows you to cure chronic inflammatory processes, ensure its hydration and supply with the necessary nutrients, vitamins and minerals; in turn, this activates regenerative processes and enables positive external changes. The restorative effect of SR-18 ointment-suspension is explained by the fact that it gets into the skin propolis and royal jelly provide a full-fledged treatment of inflammatory processes, and also stimulate the production of collagen - a useful element for skin elasticity and elastin, which restores the contour of the skin; wrinkles are smoothed out, the skin regains its healthy color, dryness and irritation disappear. Two patients had dyshidrotic eczema on the elbows and hands. The first episodes of the disease occurred in childhood, and then in adolescence they passed, but after the age of 20, the recovery of the disease was noted, which took on a chronic form. The patients were informed about the research that was being conducted, and gave voluntary consent to participate in it. They were prescribed a treatment that included external application of SR-18 ointment-suspension to the affected skin areas twice a day for 21 days using bandages soaked in wax from the zaburus. The symptoms of dyshidrotic eczema in a 45-year-old female patient significantly decreased 5 days after the use of SR-18 ointment-suspension, and a positive clinical result was achieved after the end of the treatment. During the year, the patient underwent a preventive course twice. During the next 4 years, there were no relapses. In the second patient, 77 years old, symptoms significantly decreased by the end of the treatment period, but a full positive effect was not achieved. Three months later, repeated treatment was carried out with the use of SR-18 ointment suspension in the morning, SR-19 ointment suspension in the evening with the use of bandages with wax from zaburus. Within 21 days, a positive result was obtained, until the end of the treatment, the disease did not affect the patient's quality of life. During the next 2 years, prophylaxis was carried out (1 time in 6 months), after that there were no relapses, the tolerability of the drugs was good. The revealed effectiveness of SR-18 and SR-19 ointment-suspension in the treatment of dyshidrotic eczema is due to the properties of the components included in their composition - propolis (a natural broad-spectrum antibiotic) and royal jelly (stimulator of skin regeneration). This also explains the absence of undesirable phenomena. The results of

research on pharmaceutical compositions SR-18 and SR-19 indicate the expediency of using active substances with antifungal, antimicrobial and keratolytic action, in particular propolis and royal jelly, with the aim of developing new therapeutic and preventive means for use in dermatological practice.

**Results:** Ointment - SR-18 suspension for 5 years of use has proven itself as an effective, safe tool that improves not only the metabolism and blood supply of the skin, but also the restoration of all its three layers. Ointment SR-18 as a powerful energy corrector, antioxidant, its therapeutic effect is manifested at the cellular level by improving cellular metabolism. Applying a comprehensive holistic approach can help both minimize the effects of aging and prevent premature and further aging of the skin. The correct selection of the necessary active components, such as royal jelly, propolis, plum oil and cocoa butter, allows you to achieve significant improvements in the appearance of the skin. The use of SR-18 and SR-19 suspension ointment by patients with dyshidrotic eczema has a pronounced effect and improves the quality of life of patients. As a result of the treatment, complete or partial elimination of skin manifestations of the disease is achieved. Application of SR-18 and SR-19 suspension ointment after further clinical studies can be considered as a component of anti-eczema therapy.

**Seventh main component:** The mechanization of domestic work has caused a significant increase in the number of domestic injuries. The rate of growth in the number of household injuries is ahead of the rate of decrease in the number of industrial injuries. Combined injuries, which can combine signs of two or more types of injuries, are dominant among household injuries. This determines the complexity of their treatment and the frequent occurrence of severe complications. Our goal was to evaluate and determine the effectiveness of the ointment and suspension we developed in the treatment of combined wounds. Presentation of the case. The considered case of household injury occurred on September 21, 2020 in the garden when the author (67 years old) of this study was cutting a fruit tree with an electric band saw. The branch that was cut, crushed and threw away the tire of the working band saw. The blow fell on the interphalangeal joint of the index finger of the left hand. Bleeding was stopped by pressing the edges of the wound with the fingers. The nature of the wound was established - cut-torn, with partial (approximately 30%) scalping of the joint. The wound was thoroughly explored for foreign bodies and possible damage. Visually, it was established that the wound is relatively clean, not infected, torn collateral ligaments, bone damage and joint penetration did not occur. Therefore, the wound was closed immediately, its cleaning was not carried out, as well as local anesthesia and immunization against tetanus (no need). The deadline was less than 20 minutes. The wound is located above the joint. Classifications: by number - multiple, by localization - index finger, by type of injuries - combined injuries, by circumstances of receipt - domestic, by depth - partial (partially deep), by nature of tissue damage - from external influences - mechanical; according to the type of wounding agent - torn - scalped, according to appearance (color) - pale - pink, according to the degree of wound exudation - medium exudative, in relation to body cavities - does not penetrate, according to the shape of the wound cavity - deep, according to the shape - wounds with uneven contours, according to the size of the wound - small (up to 50 square centimeters), according to the level of contamination - not bacterially contaminated, according to the duration of the course of the wound process - acute, according to the nature of the course of the wound process - not complicated. The length of the two main wounds is 3.5 cm. The depth is about

0.5 cm, the total area is about 5 sq. cm. We have developed a composition of SR-19 ointment with native (which has not undergone external interference and has preserved its appearance and properties) royal jelly and propolis. The absence of a medicinal base of the ointment made it possible to achieve the maximum effectiveness of medicinal substances. The main components of the ointment are royal jelly and propolis. After the bleeding stopped, a bandage with a therapeutic component - a unique SR-19 ointment - was applied, which allowed the body to compensate for the damage caused by the injury by starting the wound healing process and closing the injury as soon as possible. While developing the SR-19 ointment, we started from the main action of royal jelly - it is the mobilization of the body to fight against diseases, propolis - it has anti-inflammatory and antioxidant properties. To achieve the set goals, when developing the composition of the combined SR-19 ointment, the ratio and number of components of the composition were selected in such a way as to ensure the necessary therapeutic properties, as well as their quick and long-term effect. As a result of experimental studies, it was established that native royal jelly, unlike sublimated royal jelly, exhibits a more pronounced pharmacological effect, in addition, its effect is significantly enhanced in combination with propolis. How the bandage was used fabric (with a density of up to 200 g/m<sup>2</sup>) impregnated with wax from the bar. Such a bandage provided: healing of the wound surface, simplification and acceleration of the dressing process, made it painless, maintenance of a moist environment; prevented infection from entering the wound area, created a favorable environment that accelerated the healing process; does not stick to the wound, does not injure granulation tissue, is easily removed after healing, does not stick when touching medical gloves, its components are non-toxic. Such a bandage itself has antimicrobial activity against gram-positive microorganisms. Ointment SR-19 with a bandage with wax from behind the bar (21) was applied daily: the first and second day - 4 times with an interval of 2 hours, the third and fourth day - 3 times with the same interval (see figure 5.1. and figure 5.2. - September 23 (third day); and figure 5.4 - September 24, 2020 (fourth day); 2 times (see figure 5.5 and figure 5.6 - September 27, 2020 (fifth day) and figure 5.7. and figure 5.8. - September 28, 2020 (sixth day); seventh and eighth days - 1 time (see figure 5.9 and figure 5.10 - September 29, 2020 (seventh day); figure 5.11 and figure 5.12. - September 30, 2020 (eighth day).



Figure 5.1: (third day).



Figure 5.2: (third day.)



Figure 5.3: (fourth day).



Figure 5.4: (fourth day).



Figure 5.5: (fifth day).



Figure 5.6: (fifth day).



Figure 5.7: (sixth day).



Figure 5.8: (sixth day).



Figure 5.9: (seventh day).



Figure 5.10: (seventh day).



Figure 5.11: (eighth day).



Figure 5.12: (eighth day).



**Figure 5.13: (seventeenth day).**



**Figure 5.14: (seventeenth day)..**



**Figure 5.15: (a month later).**



**Figure 5.16: (after three years).**

The wound infection did not develop. The healing process took place: the bleeding stop phase - with the help of direct pressure on the wound, the inflammation phase lasted 2 days after the injury (usually 4-5 days in the absence of complications) (see figures 5.1 and 5.2); the regeneration and proliferation phase lasted 3 days (see figures 5.3 and 5.4, 5.5 and 5.6, 5.7 and 5.8. (usually depending on the morphology of the tissues it lasts from a month to a year). Healing took place by primary tension, without suppuration, with the formation of a linear scar without the formation of an intermediate tissue, normally the wound heals in 8 weeks, in our case - in 2 weeks (see figures 5.13 and 5.16). There was no need to take painkillers. that the adequacy of the inflammatory reaction, the ability of the body to resist the addition of secondary infection, the healing time to a large extent depends on the state of immunity. Therefore, the support of the body is an important component of the healing of injuries, regardless of the nature of their occurrence. For this purpose, the SR-21 suspension was developed in 2020. Its composition: native (live) bee queen milk (100% Native Royal Jelly), powder from crushed ginseng roots (Pánax), coenzyme Q10, auxiliary substance - white acacia honey (as hypoallergenic). For patients who are undergoing recovery or antibacterial therapy, the use of this mixture - suspension enhances the therapeutic effect of antibiotics (in our case, natural ones), accelerates wound healing, reduces toxicity, and reduces the side effects of chemotherapeutic drugs. The results confirm that a single dosage for prophylactic purposes of a standardized substance (2% royal jelly, 1.5% ginseng, 1.5% coenzyme Q, 10.95% white acacia honey) is 18 ml. For injuries and diseases, it is recommended to take SR suspension -21 of the following composition: - native

royal jelly-4%, ginseng root powder-1.5%, coenzyme Q 10 -1.5%, excipient - white acacia honey-93%, daily dose - about 20 ml. The duration of taking the suspension was 4 weeks with repeated cycles after a 2-week interval. Complication. Patients with scalped wounds are faced with two types of undesirable consequences - suppuration and necrosis of tissues and due to collateral damage. In our case, the scalped wound was accompanied by damage to the collateral ligament of the interphalangeal joint of the index finger, which made it impossible to bend it. After some time, a pain syndrome appeared, the finger became crooked, the victim could not bend it, there was swelling near the bone joint. After conservative treatment, rehabilitation activities were primarily aimed at restoring the range of motion in the joint, restoring sensitivity and fine motility, biomechanics of grasping and coordination of movements. The time for full recovery with the help of active exercises was about a month. Wax bandages with SR-19 ointment were also applied to lacerated wounds inflicted by a dog of the "wolf dog" breed (a cross between a wolf and a dog, hence the specificity of the wounds). Wounds (hand brush, depth 10-15 mm) were washed with hydrogen peroxide, tightly bandaged and closed 1 hour after the injury. Ointment SR-19 on a bandage with wax from the plaster was applied daily: the first and second day - 4 times with an interval of 2 hours, the third and fourth day - 3 times with the same interval, the fifth day - 1 time. No wound infection developed. Treatment of wounds with the help of SR-19 ointment and bandages with wax from zabrus lasted for 5 days, during which 15 changes of bandages were made. The use of SR-19 ointment together with bandages with wax and a bar in the treatment of burns turned out to be very successful. An example can be the treatment of a victim of a boil. After receiving care, the victim was taken to an inpatient medical facility in 1 hour, where he was given emergency medical care to relieve the acute condition. In the future, the patient underwent systemic drug therapy to reduce pain, intoxication of the body, treatment (burns of the III degree) or prevention of complications. The wound was infected, the patient underwent a full course of antibiotic therapy. On the 14th day, there was a high temperature, significant swelling, constant severe pain, heavy intermittent sleep, depression. The wound process was in the inflammatory phase (figure 6.1 and figure 6.2). After the first day of treatment with SR-19 ointment, the body temperature normalized, the swelling decreased, the pain went away, the patient fell asleep without sleeping pills for the first time, and on the second day he started to smile. On the fourth day, the wound process reliably entered the regeneration phase (figure 6.3 and figure 6.4).



Figure 6.1: (14 days after injury).



Figure 6.1: (14 days after injury).



**Figure 6.2: (4 days of ointment treatment).**



**Figure 6.3: (Day 5, wound treated with SR-19 ointment).**

After the first day of treatment with SR-19 ointment, the body temperature normalized, the swelling decreased, the pain went away, the patient fell asleep without sleeping pills for the first time, and on the second day he started to smile. On the fourth day, the wound process reliably entered the regeneration phase (figure 6.2 and figure 6.3).

Ointment SR-19 on a bandage with wax from the plaster was applied daily: the first and second day - 4 times with an interval of 2 hours, the third and fourth day - 3 times with the same interval. The phase of the wound process of epithelization and reorganization of the scar came on the eighth-ninth day (figure 6.4 and figure 6.5).



**Figure 6.4: (8 days of treatment with SR-19 ointment).**



**Figure 6.5: (9 days of treatment with SR-19 ointment).**



**Figure 6.6: (10 days of treatment with SR-19 ointment).**

From the fifth to the tenth day, the ointment was applied twice a day. The used bandages maintain a moist environment, which accelerates the healing of damaged tissues. They also contribute to the dissolution and removal of dead tissues. They have good biocompatibility with human skin. They do not stick to the wound and are removed without pain, which is very important for a comfortable dressing change. RESULTS the use of SR-19 ointment on bandages with wax from zaburus allows you to quickly and painlessly treat the wound. A wide spectrum of antimicrobial activity of these agents ensures the neutralization of all microorganisms - viruses, bacteria, fungi and spores. SR-19 ointment components are highly effective natural antibiotics, biogenic stimulants. A wound covered with a wax bandage with SR-19 ointment is protected from secondary infection, which is why the first phase of the wound process is faster and uncomplicated. The injury was not accompanied by complications either immediately after the injury or in the long term. The actual duration

of wound healing phases is many times shorter than the generally accepted ones. The dressing process was almost painless. The use of the developed SR-21 suspension provided an effective addition to the main treatment, enhanced the therapeutic effect of the main drugs, increased the immune status and resistance of the body. The positive results of using the developed preparations based on native royal jelly and propolis are an attractive concept for the development of new pharmaceutical products in the treatment and prevention of recurrent ulcers, open traumatic soft tissue wounds, open fractures with soft tissue defects; wounds developed after surgical treatment, abscesses, postoperative wound purulent complications. The duration of treatment of patients is reduced many times, the painlessness of bandaging procedures is ensured, and the number of amputations is reduced. Although this study has many strengths (high efficacy, low drug cost, availability, possibility of parallel use of pharmaceuticals, lack of complications), there are limitations. First of all, the insufficient amount of clinical research should be attributed to them.

**The eighth auxiliary component:** The use of medicines created on the basis of natural antibiotics has shown its high efficiency in the treatment and prevention of chronic diseases in the conditions of the crisis of antibacterial therapy. But there are factors that prevent their mass use. Objective - non-technology of biological substances containing natural antibiotics, the impossibility of their synthesis at the current level of development of science and technology. And, as a consequence of this, the unreality of the organization of mass production with all its benefits. The solution to this problem can be the organization of the production of such drugs under the conditions of pharmacy organizations. The advantages of extemporaneous production of these drugs include the possibility of individual selection of the composition and dosage taking into account the age, accompanying chronic diseases of the patients, minimizing side effects. Increasing the efficiency of such production is facilitated by technical progress in the field of production of modern laboratory equipment, mobile individual cold accumulators, new types of containers and packaging. Not competing with mass production, the pharmacy will successfully occupy the niche of production of natural antibiotics, and their use will solve the problem of drug resistance to antimicrobial drugs. Subjective factors: in medicine - effective prevention of diseases will significantly reduce the amount of pharmacological drugs and services provided, in trade - operators of retail chains are not interested in working with small producers, and their huge number does not allow artificially raising prices, in public administration - the introduction of prevention requires effort and explanatory work, while there is no possibility of quick PR and a corrupt component (there are hundreds of thousands of manufacturers, you cannot agree with everyone) and, most importantly, it is the population, the majority of which hopes for a magic pill or "corner", does not understand and does not want to understand that the salvation of the drowning man is the work of the drowning man himself. Potential consumers lack knowledge about natural antibiotics, their properties and the effectiveness of their treatment. When choosing medicines, 30% of patients listen to the advice of pharmacists, a quarter make their choice based on personal experience or recommendations from friends, the rest - with the help of family doctors. Based on this, in modern conditions, medical educational work can be carried out with the help of the Internet, family doctors and pharmacy workers. It is necessary to create a special resource that provides access to a comprehensive knowledge base on natural antibiotics and experience in their effective use. It is necessary to share practical knowledge and skills and answer readers' questions. The purpose of the resource is to increase the level of awareness of family medicine doctors, pharmacists, and patients regarding the practical use of natural

antibiotics. Mutual communication in the form of questions and answers is important. This is an opportunity for multilateral discussion (of the difficulties and complications that have arisen), in which every participant can take part. This is an opportunity to choose the main speaker not according to the territorial principle, but from the position of his competence, knowledge of the problem being discussed. The idea of using Internet technologies to obtain knowledge that is created by the joint efforts of numerous network communities, replacing professional knowledge created thanks to individual individuals, is timely and technically feasible. The task of the World Health Organization is to create and finance outside the national Internet - a society of doctors, pharmacists, patients for the use of natural antibiotics in the conditions of the antibacterial therapy crisis.

## CONCLUSIONS

it is not necessary to counteract the processes of aging, but to prevent in time the unwanted phenomena of the mature period of a person's life that arise. The goal is to continue a fulfilling life in all its aspects. Achieving this goal is based on increasing the body's immune protection, its regenerative potential; counteracting genetic mutations and increasing the supply of vitality. By applying the proposed drugs according to the prevention schedule developed by us, a person (not only the elderly or senile) will ensure: improvement of well-being and appearance, increase in concentration and speed of thinking, prevention of liver complications during long-term use of drugs and reliable protection against respiratory infections, including from COVID-19; will be convinced of the possibility of effective fight against old chronic diseases, will feel an influx of energy and, as a result, the opportunity to create comfortable, full-fledged living conditions for yourself without additional pharmacological burden.

**Schedule** for prevention of viral and chronic diseases: January - reception of SR-21 suspension (fourth component), February - reception of SR-19 ointment (sixth component), March - comprehensive antiviral prophylaxis (first component), April - rest, May - sleeping in hives (second component) + propolis candles with bee royal jelly (third component), June - rest, July - taking SR-21 suspension (fourth component), August - taking SR-19 ointment (sixth component), September - sleeping in hives (second component) + propolis candles with bee royal jelly (third component), October - rest, November - comprehensive antiviral prophylaxis (first component), December - rest. It should be noted that the incorrect application of the prevention scheme, without taking into account the individual characteristics of the body, can cause harm, cause disappointment, and cause distrust in its effectiveness. A negative reaction to beekeeping products is a limitation. In the absence of the expected results of the use of pharmacological drugs, we recommend using the previously discussed. In the conditions of a crisis, antibiotic therapy is often the only effective way out. The proposed drugs contribute to the prevention of geriatric problems and are currently effective antiaging drugs. The effect of bioregulatory drugs is operative and effective when used by patients regardless of age group. The available experience of using drugs SR-18, SR-19, SR-21, wax moth tincture, rectal and vaginal suppositories with live bee royal jelly showed that these bioregulatory drugs of natural origin can be considered as an effective and safe therapy for old age as a set of chronic diseases including for multimorbid patients. In addition to the therapeutic effect, taking the proposed drugs increased muscle mass, reduced fatigue during daily activities, strengthened hand muscles,

increased movement speed, increased physical activity, and improved appearance. It should be noted that taking these drugs enhances the therapeutic effect of the main pharmacological drugs, reduces their toxicity and reduces the side effects of chemotherapy; increases the immune status and resistance of the body, stimulates the recovery (regeneration) of tissues, stabilizes blood pressure and heart function; normalizes metabolism and restores the work of the sexual and endocrine systems, prevents the development of atherothrombosis. The therapeutic activity of the proposed anti-inflammatory agents is associated with the prevention of the development or reduction of the intensity of inflammation, as well as with varying degrees of severity of the analgesic effect in the absence of side effects.

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