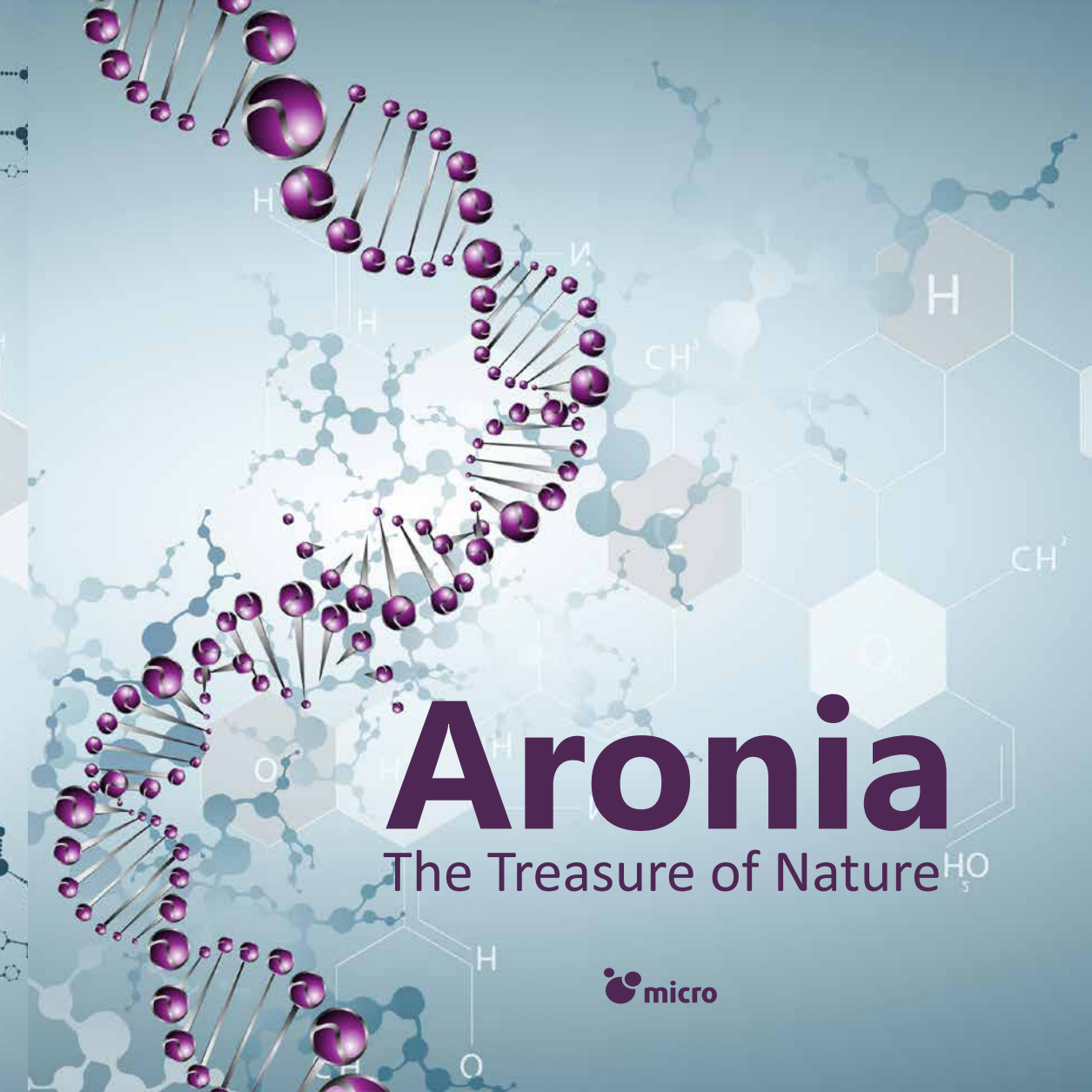

Aronia
The Treasure of Nature
micro


micro
SUPER BERRY
ORGANIC JUICE
Aronia
100%
750ml

What is Aronia?

Aronia (*Aronia melanocarpa*) is a medicinal plant, the consumption of which is extremely beneficial for our health. Poland is currently the largest producer of aronia in the world. This plant has a lot of biologically active compounds, which are involved in metabolic processes of living organisms. Their absence from the diet has a negative impact on our health.

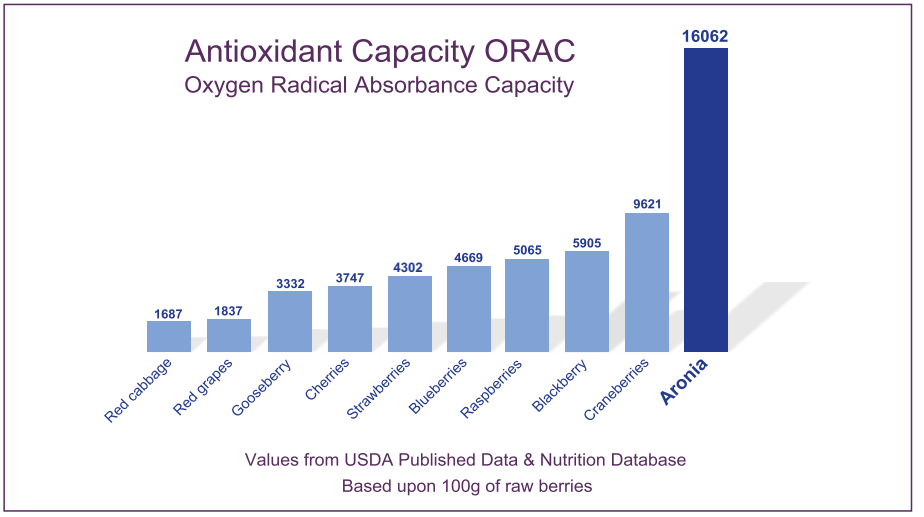
The number of DNA damage incidents in a human cell is estimated at ten thousand per day. Oxygen and nitrogen radicals cause DNA damage leading to mutations, they react with amino acids, and they also oxidize lipids in cell membranes.

Reactions of radicals with DNA, proteins and lipids, and especially the accumulation of their products - damaged biopolymers, is the beginning of degenerative processes, followed by many diseases and aging of the body. Aronia contains a large amount of

antioxidants, i.e. substances which effectively inhibit oxidation processes because they have the ability to react with free radicals. Their goal is to meet the radical and react with it faster than other molecules are able to. By neutralizing (scavenging) free radicals, antioxidants protect proteins, DNA, lipids and polysaccharides from oxidation damage.

Aronia also contains phytamins, i.e. "vitamins of the new Millennium"; anthocyanins, which are responsible for the saturated, dark purple color of the fruit, and so-called tannins with a harsh-bitter taste. Therefore, its fruits are not a dessert raw material for direct consumption but are suitable for preventive use as a medicine.

These compounds have anti-inflammatory, anticancer, antiviral and antibacterial properties. Procyanidins of aronia combined with anthocyanin molecules are probably



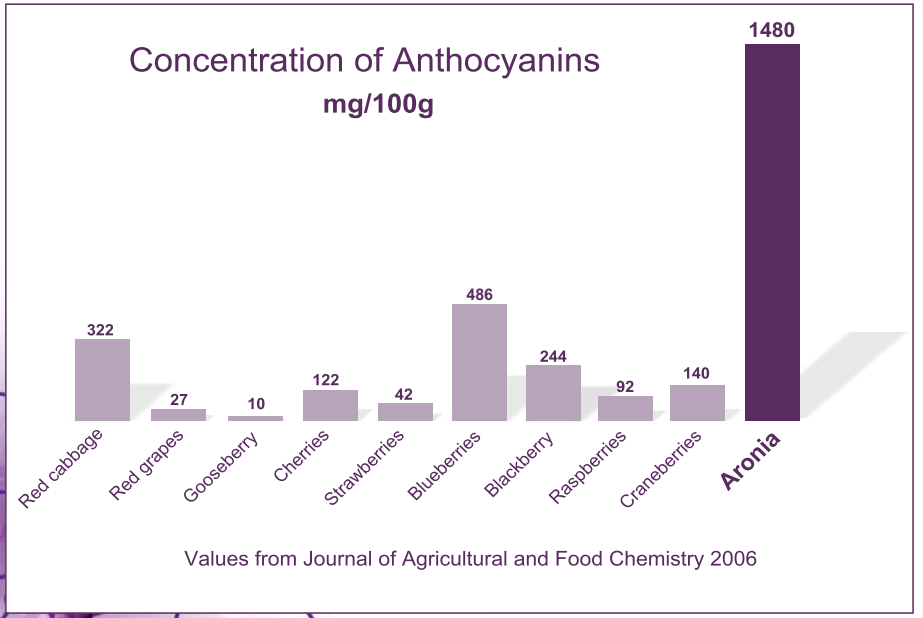
the cause of better bioavailability of these compounds.
Aronia, in comparison with other fruits such as blackberries, blackcurrants or cherries, is a record-breaker in terms of anthocyanin content and the total amount of polyphenols in fruit (10-20 g/ kg polyphenols, 4.0-8.5 g /kg anthocyanin).

Oxidative Stress

Oxidative stress (oxygen stress, oxygen load) is a state of imbalance between free radicals and antioxidants in the organism. Both free radicals and antioxidants naturally occur in the body, as they are essential for the proper course of numerous life processes. As long as there is a balance between them, the body functions properly. However, when the production of free radicals increases, or the activity of antioxidants decreases, so-called antioxidative stress occurs. Free radicals are formed during each breath. When oxygen is converted into energy in the body, some of its molecules are released in the form of so-called free oxygen radicals - compounds which destroy everything they encounter on their way. How do they do this? Oxidants have an unpaired electron, so they are constantly striving to retrieve one electron from another cell in order to attach it to this electron. This process leads to the disintegration and

damage of the cells, and thus to the disruption of their functioning. Reactive oxygen forms can cause damage to all bio-molecules present in the body, including proteins, fats and the DNA of cells, leading to mutations. In extreme cases, oxidants can lead to cell death. The destructive action of free radicals is prevented by antioxidants, which give them their free electron, and thus remove their excess from the body.

Food is the primary source of most antioxidants, such as carotenoids, polyphenols and vitamins C, A and E. These vitamins are not synthesized in the body and need to be provided with food.



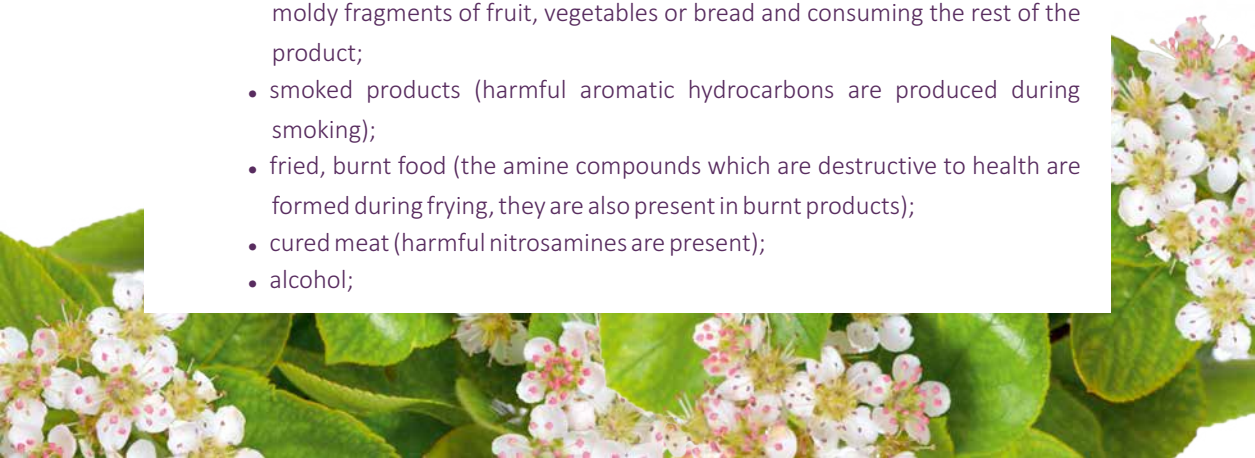
Oxidative stress is usually caused by external factors:

- stress;
- intensive, regular exercise;
- environmental pollution;
- excessive exposure to sunlight (excessive sunbathing);
- smoking;
- contact with heavy metals: lead, cadmium and mercury, as well as with nitrogen oxides through food or car emissions;
- taking certain medicines - contraception, antidepressants, steroids and anticoagulants;

Age is also important, as the body's defense mechanisms against excess free radicals are significantly weakened over the years.

An important cause of oxidative stress is also improper nutrition, including the consumption of:

- highly processed food, pesticide-sprayed and artificially fertilized fruit and vegetables;
- products with mold (mainly vegetables and fruits) - cutting off bruised or moldy fragments of fruit, vegetables or bread and consuming the rest of the product;
- smoked products (harmful aromatic hydrocarbons are produced during smoking);
- fried, burnt food (the amine compounds which are destructive to health are formed during frying, they are also present in burnt products);
- cured meat (harmful nitrosamines are present);
- alcohol;



Excess of free radicals during oxidative stress contributes to vascular damage, as well as to the oxidation of "bad" LDL cholesterol in the endothelium of blood vessels, leading to the development of atherosclerosis and related diseases of the cardiovascular system, such as myocardial infarction, stroke, or coronary disease. During oxidative stress, fatty acids (lipids) of the skin's cell membranes and structural proteins (especially collagen) are also oxidized, which causes premature aging of the skin.

Oxidative stress can also cause many skin diseases, including the very dangerous melanoma. This is only one of the many cancers which can develop. Excess of free radicals leads to DNA damage, i.e. the genetic material of the cell, which can lead to the formation of any cancer. Oxidative stress can also be one of the causes of neurodegenerative diseases (Parkinson's disease, Alzheimer's disease), as neurons are more susceptible to oxidative damage than other cells. In addition, oxidative stress can lead to the development of diseases of the eyes, lungs, stomach, kidneys, urinary tract, and any other system and organ.

Heart Health

Atherosclerosis, hypertension and consequently heart attack or stroke are the main causes of premature death. Hypertension is caused by the accumulation of atherosclerotic plaque and bad cholesterol, which are symptoms of chronic oxidative stress. Research shows that it can be prevented by physical activity and maintaining a proper diet based on fruit and vegetables. The consumption of antioxidants inhibits the formation of atherosclerotic foci. Anthocyanins contained in aronia reduce the total concentration (TC) of LDL cholesterol (LKDL-C) and triglycerides (TG), and slow down the rate of fat mass gain. After two months of aronia extract therapy and clinical trials in

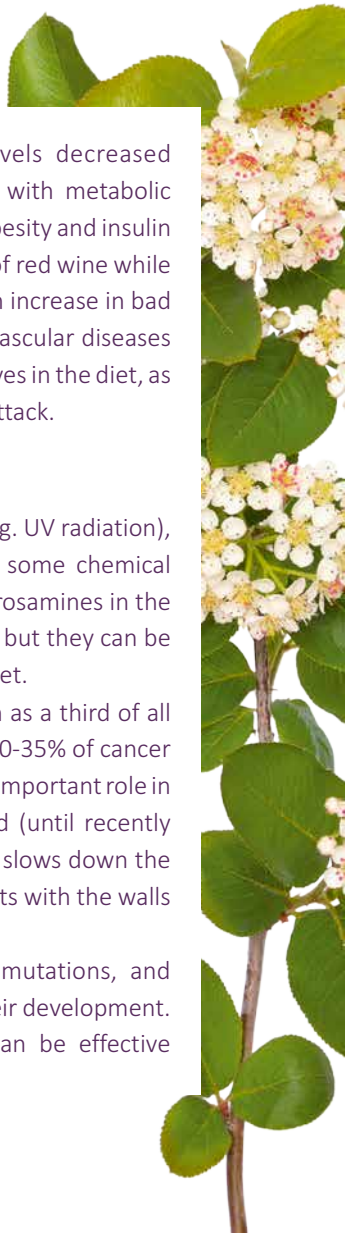
patients with hypertension, blood pressure and cholesterol levels decreased significantly. Aronia preparations are effective in treating patients with metabolic syndrome. The characteristic feature of this syndrome is abdominal obesity and insulin resistance. Just like the "French paradox", in which the consumption of red wine while consuming a large amount of saturated animal fats does not cause an increase in bad cholesterol, the role of aronia in the prevention of heart and cardiovascular diseases may turn out to be a "Polish antioxidant paradox". More aronia preserves in the diet, as well as supplementation with aronia extract, reduces the risk of heart attack.

Prevents Cancer

Carcinogenic factors occur in our environment in a natural way (e.g. UV radiation), but their level is increased by pollution (environmental poisoning, some chemical industry products, car exhaust fumes, smoking, heavy metals and nitrosamines in the diet, etc.). It is difficult to avoid these threats when living in a big city but they can be minimized by using products with anti-carcinogenic properties in the diet.

An increase in risk is linked to age, a sedentary lifestyle, but as much as a third of all cancers have dietary causes and dietary changes can prevent them; 30-35% of cancer cases are related to smoking. Other components of plant food have an important role in the prevention of cancer, i.e. dietary fibers which are not absorbed (until recently treated as unnecessary). Today, it is known that their lack in the diet slows down the passage of food masses and causes longer contact of their components with the walls of the stomach and intestines.

Polyphenols contained in aronia reduce the frequency of gene mutations, and if neoplastic changes occur, the use of polyphenol extracts inhibits their development. Polyphenols with strong antioxidant and anti-radical properties can be effective



in prevention, because they work towards reducing the effect of carcinogens on the body. They neutralize free radicals before they can damage biomolecules in the cell.

Improves Brain Function

According to the radical aging hypothesis, oxidative damage caused by free radicals begins to accumulate in the body around forty years of age, as enzymatic mechanisms work less effectively. This leads to tissue degeneration, the development of pathologies, diseases, and finally to death. At the root of neurodegenerative diseases and normal aging lies the oxidation of proteins in the brain, which means that with age the cognitive functions of the brain related to memory and learning are reduced.

The compounds obtained from phytamine plants with antioxidant properties are helpful in inhibiting or slowing down the process of protein oxidation, i.e. aging, as they bind free radicals involved in the process of neuronal degeneration. Daily delivery of an appropriate dose of aronia antioxidants helps to reduce neuronal mortality and thus the risk of neurodegenerative diseases. Aronia is therefore

a wonderful plant, which has the ability to reduce aging changes in the body. The antioxidant properties of aronia prevent the negative effects of free radicals in the body and cell damage.

Nutrition for Eye

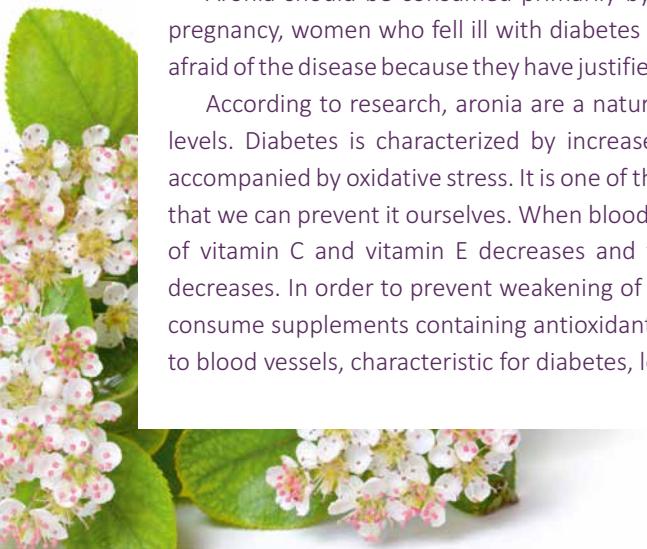
After the age of 40, the eyes start to age, and approx. 10 % of the population aged 65-75 suffers from a dramatic reduction in vision caused by age-related macular degeneration (AMD), 2.5 times more often as a result of cigarette smoking, which suggests that it may be associated with oxidative stress and damage caused by free radicals. All visual complications such as far-sightedness, short-sightedness, uneven perception of signals by the left and right eye, color blindness, slow adaptation of the eyes to darkness, cause numerous problems at work and in everyday life. More serious diseases, such as diabetes or glaucoma, often condemn patients to permanent

disability. These diseases can be prevented and their effects mitigated. Take aronia preparations and take care of your eyes! Aronia anthocyanins are used in the treatment of microcirculation disorders in eyeballs, progressive and degenerative short-sightedness, in the so-called retinopathies in diabetics, in senile changes, associated with visual impairment. Active factors from black aronia can be successfully used in the prevention of eye diseases, they also alleviate sight disorders and are a hope for glaucoma patients. Anthocyanes contained in aronia accelerate the regeneration of rhodopsyne, i.e. the pigment present in the retina stamens enabling proper vision of colors, thanks to which the eye quickly registers images and distances of objects, and adapts to twilight and darkness. A significant number of factors causing eye disease concern cardiovascular and nervous system disorders. The use of preparations containing anthocyanins is therefore beneficial in the prevention of these diseases.

Aronia-Blood Sugar Connection

Aronia should be consumed primarily by people suffering from diabetes before pregnancy, women who fell ill with diabetes during pregnancy and all those who are afraid of the disease because they have justified predispositions to it.

According to research, aronia are a natural weapon in the fight for correct sugar levels. Diabetes is characterized by increased glucose levels in the body and it is accompanied by oxidative stress. It is one of the main societal diseases, but it turns out that we can prevent it ourselves. When blood sugar levels increase, the concentration of vitamin C and vitamin E decreases and the antioxidant capacity of body fluids decreases. In order to prevent weakening of the antioxidant barrier, it is advisable to consume supplements containing antioxidants. Aronia anthocyanins prevent damage to blood vessels, characteristic for diabetes, leading to damage to small vessels in the

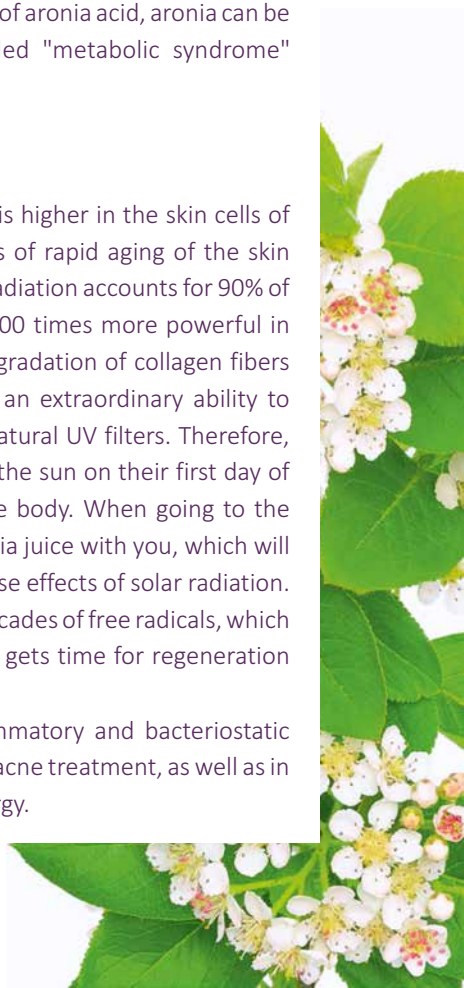


eye (diabetic retinopathy), feet (diabetic foot), and coronary vessels of the heart. Ophthalmologists recommend the inclusion of aronia preparations in the diet of patients with these problems. Anthocyanins also have the ability to stimulate pancreatic cells to produce insulin. Due to the high content of aronia acid, aronia can be a valuable dietary supplement for people with so-called "metabolic syndrome" (obesity, diabetes, hypertension, atherosclerosis).

Skin Benefits

The level of free radicals and reactive oxygen species is higher in the skin cells of aging people, which leads to oxidative stress. The causes of rapid aging of the skin include excess sunlight, smoking and poor nutrition. UVA radiation accounts for 90% of the radiation reaching the earth's surface, but UVB is 1000 times more powerful in causing sun damage and is mainly responsible for the degradation of collagen fibers and skin cancer. Anthocyanins contained in aronia have an extraordinary ability to absorb solar radiation harmful to our body. They act as natural UV filters. Therefore, they protect against photoaging. People who "overdose" the sun on their first day of holiday need to strengthen the antioxidant barrier of the body. When going to the beach or on a trip in sunny weather, it is good to take aronia juice with you, which will make up for the shortages and protect you from the adverse effects of solar radiation. The process of skin renewal is based on the fact that the cascades of free radicals, which cause oxidation of skin proteins, are eliminated. The skin gets time for regeneration processes.

Catechins present in aronia extract also have anti-inflammatory and bacteriostatic effects, which brings sensational effects in the situation of acne treatment, as well as in inflammatory states of the skin caused, for example, by allergy.

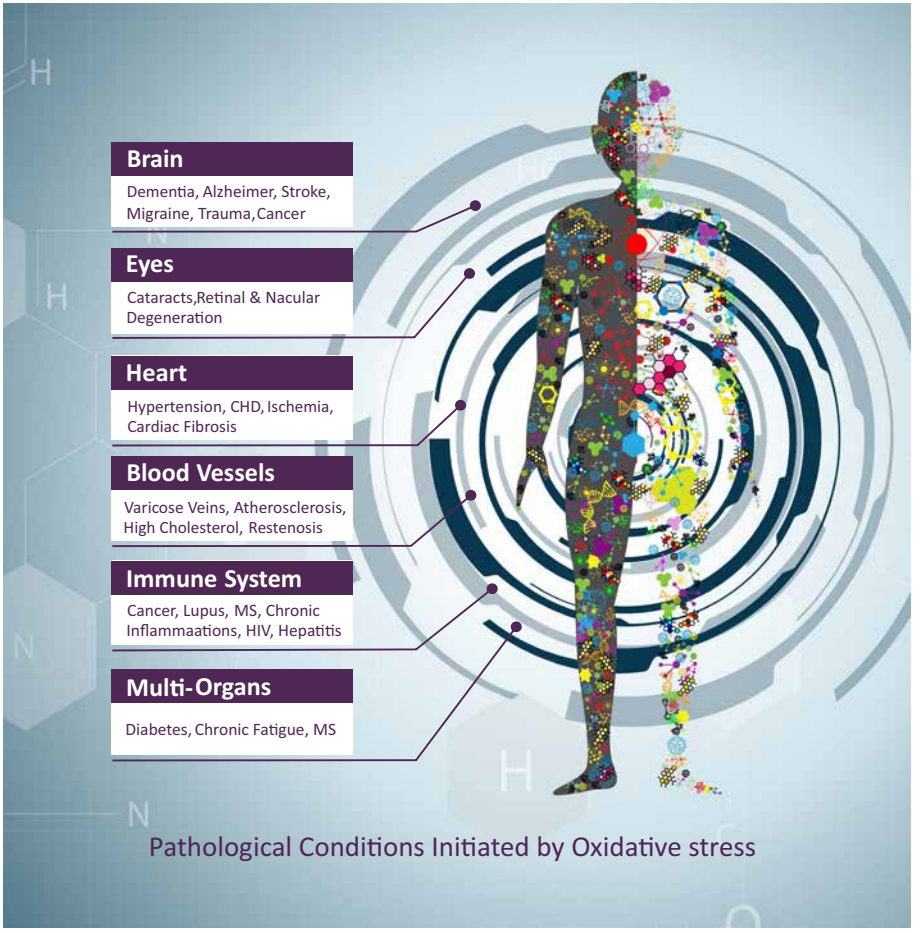


Boosting Immune System

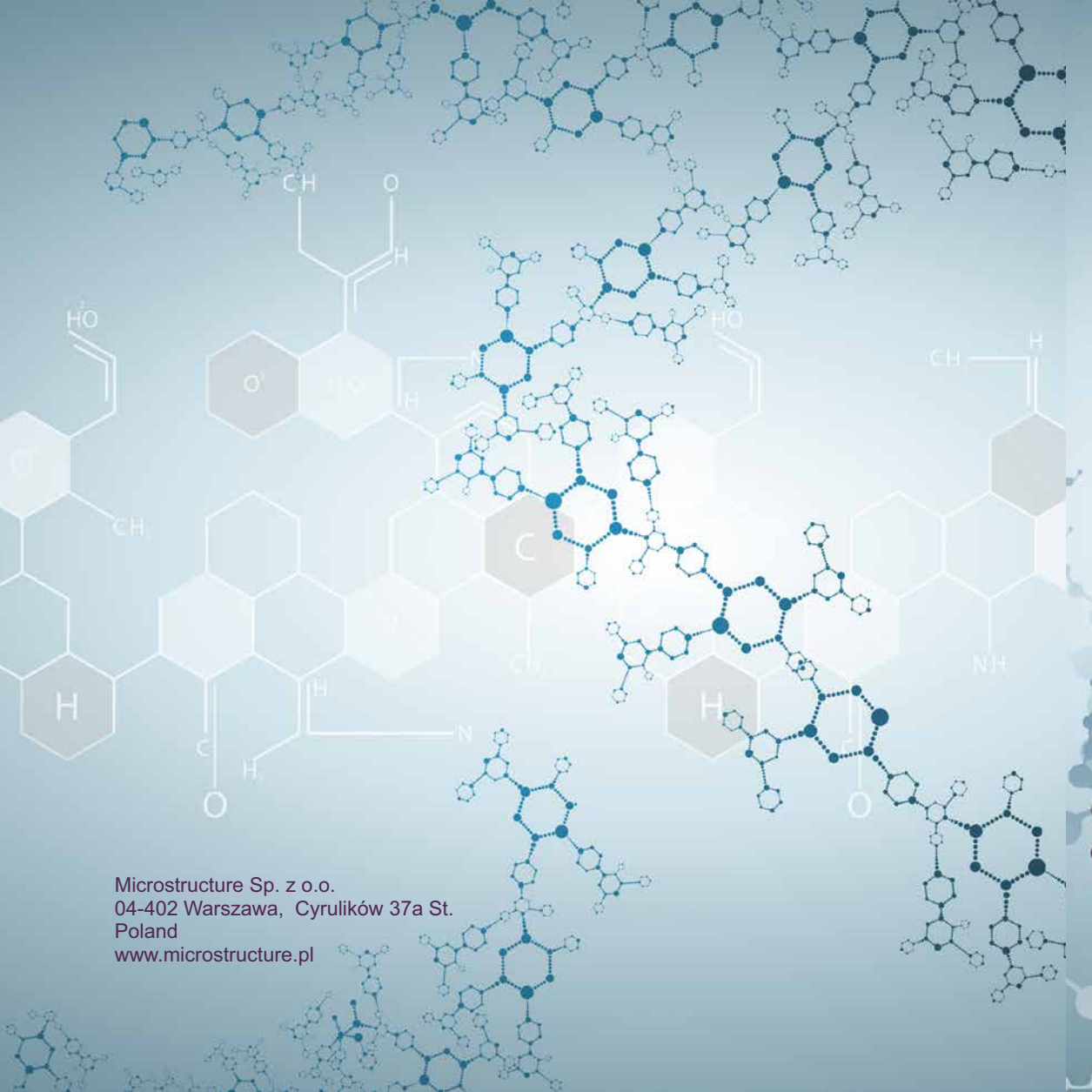
It is advisable to include aronia products in the diet because, as we all know, it is cheaper and better to prevent than to cure. In aronia you will find anthocyanins, leukocyanins, quercetin, rutin, and catechins. This blend of natural antioxidants makes our body perfectly capable of fighting free radicals, bacteria, and viruses. In addition, a special dose of vitamins C, E, PP, and from group B will make our immune system strongly resist cell degeneration. Minerals, vitamins, and antioxidants which contain aronia are easily absorbed and strongly support the cells of the immune system.

Aronia has many advantages, which work well in the prevention of many diseases. It is beneficial for health in any form. There are no contraindications to its use, also with the simultaneous use of medicines of natural or synthetic origin. No aronia interactions or allergy to aronia have been observed so far. No undesirable effects have been reported. Aronia products are available without a prescription, and are not harmful when used according to the manufacturer's recommendations.

Aronia has the highest antioxidant value of all existing fruits!



Pathological Conditions Initiated by Oxidative stress



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