

allergies & metabolic diseases

Microcirculation

Small vessels – huge significance

By Nadine Effert

Arteries and veins get a lot of attention, especially in preventive medicine. The small vessels, on the other hand, are often neglected. Impaired blood circulation in the microvessels can be responsible for a range of chronic diseases, such as diabetes mellitus.

What does the human organism need in order to exist? What does the body need in order to be efficient? That's right, oxygen that is absorbed from the air into the blood. But that alone is not enough: Only if the blood circulation is able to supply all of the body's cells with sufficient oxygen and nutrients can the body even begin the processes that create health, vitality and wellbeing. What it needs are functioning blood vessels. Most people know the possible consequences of not having functional blood vessels – a heart attack – which is the result of a coronary vessel that is blocked by "calcification" and reducing blood flow to the heart muscle.

In focus: the smallest vessels

However, our blood vessel system also consists of very small vessels, such as capillaries, which make up about 74 percent of the vascular system and enable the circulation of blood through the entire body. These microvessels supply the body's cells and transport metabolic and degradation products. If there are problems with the blood flow, then a loss of functionality is inevitable. But very few people suspect that complaints or disorders could be related to disturbed microcirculation. Especially since the changes are gradual and often go unnoticed for a long time. According to Erhard Hackler, Managing Director of the German Federal Association for Health Information and Consumer Protection (Bundesverband für Gesundheitsinformation und Verbraucherschutz- Info Gesundheit e. V., "BVG"), even doctors give the topic too little attention: "Although there is a recognizable connection between impaired microcirculation and various disorders and complaints, this fact has so far been given little consideration in diagnostic investigation and therapy."

Possible effects of impaired microcirculation

In order to get a better understanding, let's take a look at a widespread disorder: diabetes mellitus, which affects around seven million Germans. Chronically elevated blood sugar levels not only affect the larger blood vessels, but can also damage the microvessels, resulting in serious disorders such as eye, kidney and nerve damage. The microvessels also supply the retinas of the eyes with nutrients and oxygen. In the long run, diabetes can damage the micro-vessels to such an extent that an adequate supply can no longer be ensured. Diabetic retinopathy is the main cause of middle-aged blindness in industrialized countries.

Protection and targeted stimulation

"However, there are things that everyone can do to keep their arteries, veins and microvessels fit for a longer period of time," Hackler explains. But what exactly? First of all: Prevention. That means: avoiding anything that could damage the vessels. This includes, above all, not smoking and maintaining a healthy body weight. Sufficient exercise and a healthy, balanced diet also help to protect the blood vessels. And secondly: In addition to treating the primary disease, it is also important to stimulate microcirculation. While it is possible to regulate blood flow in the larger vessels using medication, this does not work in circulatory disorders of the microvessels due to a lack of receptors. Alternatives: According to studies, taking ginkgo extracts, for example, can be beneficial. So can physical vascular therapy, in which the vessels or muscle cells in the vessel walls are biorhythmically stimulated – which, according to the BGV, supports both the general state of health and conventional medical therapies.

Further information ...

... can be found in the brochure "Microcirculation" and on the homepage of the German Federal Association for Health Information and Consumer Protection (BGV):
www.bgv-info-gesundheit.de
Information brochure for patients and consumers

MICROCIRCULATION

The importance of the smallest blood vessels for healthy circulation

German Federal Association for Health Information and Consumer Protection (Bundesverband für Gesundheitsinformation und Verbraucherschutz InfoGesundheit e.V.)

focus interview

"Physically stimulating vessels"

Dr. Ralf Uwe Peter, Medical Administrative Director of the Capio Blaustein Clinic, has spent many years researching the effects of ionizing radiation on the skin and the vascular system.

What is special about the microvascular system?

Its vessels are not influenced by conventional pharmacotherapy, such as antihypertensive drugs that lower blood pressure. The microvessels demonstrate an autonomous pulsation, in part with tissue-specific frequencies, and they react to a wide range of external influences in a way that has not yet been fully explained. At the same time, they play a major role in immune defense and in the development and treatment of inflammatory processes. Diagnostically, analyzing the microvascular blood flow in the oral mucosa provides a non-invasive way to estimate an intensive care patient's probability of survival.

What possibilities are there for therapeutic intervention in cases of impaired microcirculation?

Alongside traditional physical therapy approaches, there have been innovative developments that take advantage of electromagnetic effects. These have produced verifiable effects in studies. In these treatments, the microvascular system is stimulated by physical impulses and the vessels are reactivated so that they perform the necessary exchange from the arterial to the venous system – a very modern and very interesting solution. Microcirculation is and will continue to be an exciting field of research with a lot of new scientific ground that is yet to be explored.