

An Introduction to the Carbon Dioxide Bath of Kapuvár

In the Lumniczer Sándor Hospital in Kapuvár, patients with peripheral vascular lesions has been successfully treated and rehabilitated with carbon dioxide bath therapy since 1967.

Carbon dioxide bath has a several-century tradition in countries with gas wells and gas discharges.

Even the Romans used this treatment method.

Several publications explain the beneficial usage of Transylvanian mofettes (gas discharges) in folk medicine.

Near Kapuvár, in the villages of Mihályi and Répcelak, carbon dioxide springs have been in operation since the 1940s, providing an opportunity for carbon dioxide baths to be built with the implementation of balneotherapeutic methods.

In order to create a gas volume with adequately high concentration, hot water is poured on -79 °C carbonic acid snow, thus a milk-white carbonic acid fog is created that is one and a half times heavier than air. The specially designed treatment tub will be filled up with gas from bottom to top to the adjusted height.

The appropriate dosing ensures the parameters needed for achieving the chemospecific physiological effects of the bath, at the same time, inhalation of hazardous amounts of carbon dioxide can be avoided by covering the treatment tub.

A low carbon dioxide concentration can be ensured in the air of the bathing chamber by using adequate ventilation equipment.

If the treatment technique is applied accurately, the bath is comfortable and safe.

As opposed to water bath, carbon dioxide bath is gentle and protects the skin, because there is no encumbering hydrostatic pressure. Bath temperature and dosing is easily adjustable, and substantially larger carbon dioxide concentration can be reached compared to water bath therapy. Carbon dioxide bath in Kapuvár has a carbon dioxide concentration of 92 vol.%.

Carbon dioxide is absorbed through the skin in accordance with the rules of diffusion, its quantity depending on the bath's carbon dioxide concentration, degree of humidity, temperature and duration. Absorbed carbon dioxide has local as well as general chemospecific physiological effects.

As the effect of carbon dioxide, which plays a physiologically important part in the regulation of circulation and respiration, circulatory efficiency increases due to the utilization of reserve capacities, local blood vessels of the dermis dilate, circulation of the heart, brain and kidneys improve, blood repositories empty, breathing deepens, blood distribution of the peripheral circulation improves.

Administering bath treatment as a therapy has aspecific neurohumoral effects which are enhanced by a nice and calm environment and clean air.

The hospital's Division of Angiology and Rehabilitation offers a complex rehabilitation therapy that includes carbon dioxide bath applied as a therapeutic treatment on patients with peripheral vascular disorders.

Vascular patients – who have undergone an angiologic examination, treatment, vascular surgery or invasive intervention – are admitted from various parts and clinics of Hungary, or take part in ambulant treatment.

A three-week rehabilitation therapy includes the treatment of dangerous and accompanying diseases by specialists, movement therapy, physiotherapy, dietotherapy, lifestyle therapy, psychotherapy and a special balneotherapy: the carbon dioxide bath.

Depending on their condition and the severity of their vascular disease, patients take a 10 or 20-minute carbon dioxide bath.

Patients report a warm feeling in their abdomen as well as a pleasant tingling sensation in their extremities during bath, and easier movement as well as an increase in walking distance after the treatment.

The therapy consists of 15 bath treatments.

Based on several decades of experience and the results of nearly 30,000 patients, it can be established that walking distance increased significantly in 80% of the cases and the Doppler Index shows significant improvements in 72% of the cases.

Crural ulcer due to chronic venous insufficiency is effectively treated with bath therapy.

The excellent results were confirmed by the multicentric follow-up tests carried out by the Hungarian Cardiology Institute between 1981 and 1984.

Carbon dioxide bath is indicated in the following cases:

- peripheral artery disease
- chronic venous insufficiency
- chronic lymphedema
- acroneurosis.

Annual repetition of the bath therapy helps prevent the progression of vascular diseases, the development of complications as well as disability.

Carbon dioxide bath has a calming effect on and improves the performance of healthy but exhausted people.

Dr. Farkas Ballagi