

FACTS about risk group and solution, positive effects by Balneology CARDIOVASCULAR DISEASE:

Patients with long-term coronary artery disease and those with risk factors for atherosclerotic cardiovascular disease have a heightened risk of developing an acute coronary syndrome during acute infections, which has been shown previously in epidemiologic and clinical studies of influenza. They acknowledge the many recent observations 1-5 that patients with preexisting cardiovascular disease are susceptible to the most adverse complications of COVID-19, including death. Patients with long-term coronary artery disease and those with risk factors for atherosclerotic cardiovascular disease have a heightened risk of developing an acute coronary syndrome during acute infections, which has been shown previously in epidemiologic and clinical studies of influenza.

The study *Development of Selected Cardiovascular Parameters in Patients With Type 2 Diabetes Mellitus During a Spa Treatment* was carried out in Mariánské Lázně where several balneological sources were used for the spa treatment: water springs (drinking cures and mineral baths which contain free CO₂ that is dissolved in water in a dissociated form), carbon dioxide gas springs (used as dry gas envelopes or gas injections) and bog. Apart from the above stated balneological procedures, the patients' plan included physiatric procedures, dietary measures and exercise therapy. The results proved favorable changes in the ANS cardiovascular control of patients with DM II after a spa treatment, especially in terms of reducing the sympathoadrenal system activity (decreased IRSA), improving electrical stability of the myocardium and increasing centrally controlled heart rate variability (increased IC) without overloading the cardiovascular system (drop of IM).
<http://www.espalibrary.eu/search/1020/>

Carbon Dioxide water baths represent a method used for the prevention and treatment of cardiovascular diseases in some spa resorts in Romania, Czech Republic, Slovakia, Hungary, Italy, Germany. Carbon Dioxide water mineral waters are the result of the filtration of depth waters through volcanic soils that contain carbon dioxide. The most important effect is the direct effect of carbon dioxide, which is absorbed through the skin, with an absorption coefficient of 30-35 ml/min/sqm body surface area. The effects of the carbonated water bath on the cardiovascular system are the following: decrease of peripheral resistance by the direct action of carbon dioxide on arterioles and arteriovenous anastomoses. Carbon Dioxide water baths increase arteriolar blood flow in the skin, the vasodilator effect being directly proportional to the carbon dioxide concentration in the mineral bath. The effect is based on mechanical and thermal action, as well as on the chemical properties of carbon dioxide, its influence being either local or postabsorptive. Carbon Dioxide baths are a therapeutic method in spa resort, under the supervision of medical experts in a pleasant environment close to nature.

Mofettes are natural postvolcanic gas which contain concentrations of 90-98% CO₂ with cutaneous vasodilator effects, increasing cerebral and muscle blood flow. Mofettes have long been used in treatment of several illnesses, as arterial system diseases, heart and cardiovascular diseases, hypertension, different types of heumatic diseases, problems of infertility and impotence. The CO₂ gas has a dilatation effect on the peripheral blood vessels, thus enhances blood circulation in the muscles and connective tissues. The treatment consists CO₂ gas cures, as well as mineral water cures and other treatments of balneology. <http://www.espalibrary.eu/search/1183/>