

## **CRYOTHERAPY - STATE OF ART**

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One of the most efficient methods of physical medicine used in the treatment of many diseases of the motional system is cryotherapy using extremely low temperatures (below  $-100^{\circ}\text{C}$ ) applied for a short time (2-3 minutes) to stimulate physiological reactions of the human organism, in order to make more effective pharmacological treatment and kinesitherapy. Cryogenic temperatures may be used as local cryotherapy and whole-body cryotherapy.

The action of cryogenic temperatures causes in human organisms several favorable, physiological reactions as: analgesic effect, neuro-muscular effect, anti-inflammatory and antiedematous effect, as well as circulatory effect.

The actual indications for cryotherapy include among others: autoimmunologic diseases of joints and periarticular tissues (ankylosing spondylitis, rheumatoid arthritis, psoriatic arthritis, myositis and fibromyositis), degenerative, posttraumatic and overloading lesions of motional system, fibromialgia, osteoporosis, gout, diseases of central nervous system with muscular hypertension, disseminated sclerosis, radicular syndromes, diseases of peripheral nervous system, depressive syndromes and vegetative neurosis, as well as vital restitution, assistance of endurance and force training and acceleration of post-exertion restitution in active sportsmen.

The contraindications for cryotherapy are: intolerance of cold, cryoglobulinemia, Raynaud's disease, hypothyroidism (increasing a risk of hypothermia), acute diseases of respiratory tract, neoplastic disease (due to adaptative intensification of local blood supply), instable angina pectoris, severe valvular heart defects (in stage of insufficiency of circulation), cardiac failure, severe arrhythmias, purulent-gangrenous skin lesions, vegetative neuropathies (due to predisposition to hyperhidrosis), local blood flow disturbances, cachexia and hypothermia, as well as claustrophobia and mental diseases (due to inability to comply with safety rules in cryogenic chamber).