

**МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ  
СУМСЬКИЙ ДЕРЖАВНИЙ УНІВЕРСИТЕТ  
КАФЕДРА ІНОЗЕМНИХ МОВ  
ЛІНГВІСТИЧНИЙ НАВЧАЛЬНО-МЕТОДИЧНИЙ ЦЕНТР**

**МАТЕРІАЛИ  
VIII МІЖВУЗІВСЬКОЇ НАУКОВО-ПРАКТИЧНОЇ  
КОНФЕРЕНЦІЇ  
ЛІНГВІСТИЧНОГО НАВЧАЛЬНО-МЕТОДИЧНОГО ЦЕНТРУ  
КАФЕДРИ ІНОЗЕМНИХ МОВ**

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## CRYOMEDICINE

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Cryotherapy is a relatively new form of treatment in which the body is briefly exposed to very cold temperatures in order to promote healing and other therapeutic results. Cryotherapy has been shown to decrease inflammation of the body's tissues, muscles and joints. It can also help improve the body's circulation and healing, and also slow down cellular metabolism and reproduction. Cryotherapy can help to reduce pain and muscle spasms in the body as well as reduce the swelling of injuries. Cryotherapy has also been shown to promote faster healing in joint, muscle and tendon injuries.

### How does Cryotherapy Work?

Cryotherapy works by lowering the skin temperature of the body very rapidly and for a short period of time — usually for just a couple of minutes, and no more than 4 minutes. This is accomplished by spraying the body with a fine mist of safe, non-toxic nitrogen. (Nitrogen actually makes up 80% of our natural atmosphere.) The recipient steps into a cryotherapeutic chamber about the size of a spray-tan booth and receives the treatment while standing up. This dramatic but brief reduction in the body's temperature causes the release of a sudden burst of adrenaline, giving an immediate boost to the body's immune system. This immune system improvement can last for days or even weeks after the treatment. There is also a shorter terms release of endorphins, the body's natural painkiller. This changed physiology within the body can result in accelerated healing and promote increased well being in all of the body's organs, cells and systems.

### What are the Benefits of Cryotherapy?

The reported benefits of cryotherapy include improved circulation, better metabolism, detoxification of the skin, liver and lymph systems, accelerated healing, cellular and tissue repair, and improved immune function. Cryotherapy can promote faster muscle regeneration from injuries and quicker recuperation from fatigue. All of these healing benefits are possible, and cryotherapy is a relatively safe and non invasive procedure. It can also promote increased endurance, speed and strength, result in better skin tone, a reduction

in cellulite, less insomnia and better sleep, lower stress levels and lower levels of anxiety and depression.

### Cryosurgery

Cryosurgery is the application of extreme cold to destroy abnormal or diseased tissue. Cryosurgery has been historically used to treat a number of diseases and disorders, especially a variety of benign and malignant skin conditions. Technical achievements in cryogenic engineering gave the possibility to get the necessary volumes of liquid nitrogen which became the main cryogenic agent in medicine since 1950. Radical cryosurgical operations became possible only after 1980 when fundamental investigations in cryobiology and cryomedicine have been mainly completed. Cryosurgery works by taking advantage of the destructive force of freezing temperature on cells. When their temperature sinks beyond a certain level ice crystals begin forming inside the cells and, because of their lower density, eventually tear apart those cells. Further harm to malignant growth will result once the blood vessels supplying the affected tissue begin to freeze. Cryosurgery has achieved considerable result in complex treating many diseases. Skin tags, warts, small skin cancers are candidates for cryosurgical treatment. Several internal disorders are also treated with cryosurgery, including liver cancer, prostate cancer, lung cancer, oral cancers, cervical disorders. Generally, all tumors that can be reached by the cryoprobes used during an operation are treatable.

### Cryosurgery in dentistry

In dentistry, the method of local freezing has certain and valuable enough advantages as compared with routine surgical interventions. Main periodontal diseases that can be treated by cryosurgery are parodontosis, hypertrophic gingivitis, epulis, papillitis and pericoronitis. On tunica mucosa of the mouth, such diseases as a leukoplakia, red flat herpes, chronic recurrent aphthous stomatitis, trophic ulcers and some other benign and malignant neoplasm are quite often. Cryotherapy in many diseases of tunica mucosa of the mouth, both in elderly and in young age is expedient necessity in comparison with surgical treatment or electrocoagulation.

Cryosurgery is a minimally invasive procedure, and is often preferred to more traditional kinds of surgery because of its minimal pain, scarring and cost. However, there are risks involved as with any medical treatment. Damage to nerve tissue is of a particular concern.