

Zimmer
MedizinSysteme

-110°C

Fascination
Cryotherapy

Zimmer

 **icelab**
-110° celsius

Your visit
to the icelab



EXPERIENCE

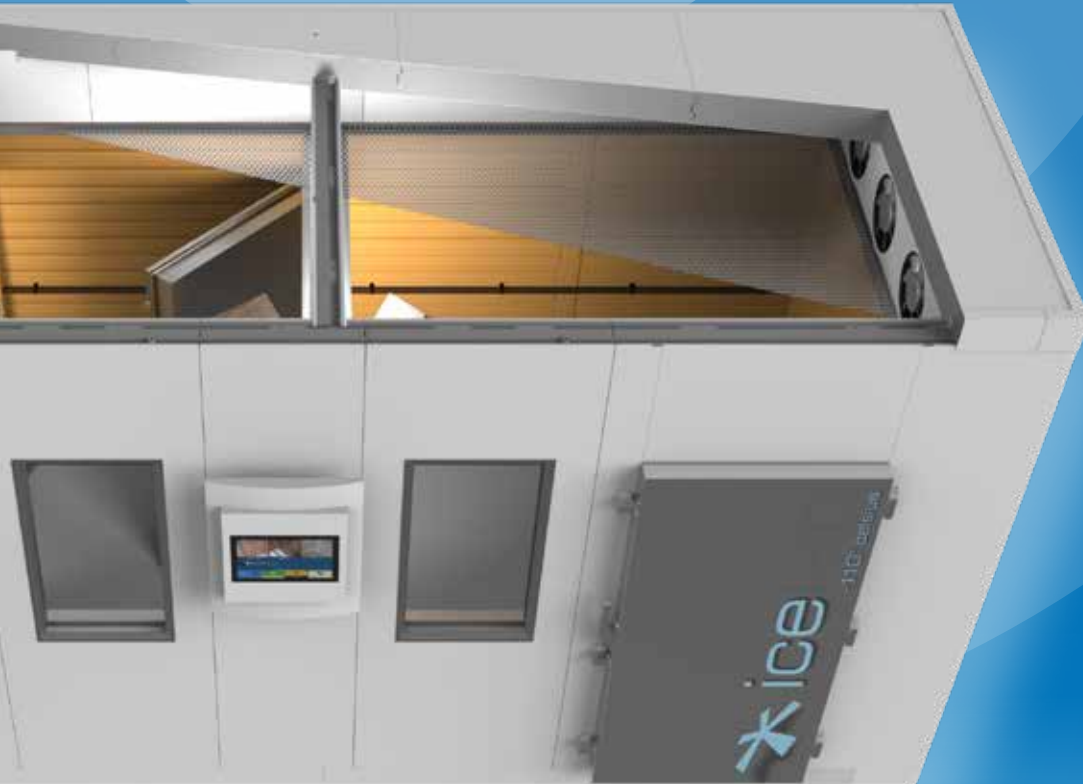
In the **icelab** you will find a special climate – one found neither on earth nor in space.

You can remain at -110°C from one to three minutes. This is possible because at this temperature the air no longer contains moisture and there are no air currents. You do not perceive the cold to be as extreme as it is. There is more: at -110°C the air volume shrinks by 45% compared with room temperature. This means that you inhale almost twice the amount of oxygen per breath. The two antechambers through which you pass without stopping stabilize the temperature and prevent the formation of heavy fog in the main chamber.

Spending time in the **icelab** is a unique experience, surprising you with the spontaneous surge of well-being that is created. The positive effects of the **icelab** climate on health and performance have been the subject of numerous scientific studies and have been fully documented over the past 24 years.

The technology for the procedure was developed in Germany during this period and is perfected in the new hi-tech product **icelab**.

-110°C



In the **icelab** the patient experiences immediate pain relief that lasts several hours. This time span is perfect for conducting movement physical therapy and manual treatments. A series of **icelab** visits, for example, 1–2 times daily with a total of 20–30 visits or weekly ongoing treatments, is beneficial.

It helps to erase the hypersensitive pain memory formed in patients suffering chronic pain, and the central pain sensors are desensitized. Inflammatory processes are inhibited and mobility is improved.

Pain mitigation is appreciable and effective for up to one year, accompanied by a reduction in the use of analgesics and a significant improvement in the quality of life.

This is the basis for the successful utilization of **icelab**, particularly in:

- Acute traumatic and postoperative situations and rehabilitation
- Inflammatory and degenerative rheumatic diseases
- Chronic headache
- Fibromyalgia

Immune-Modulating Effect of Cryotherapy

There is a reduction in inflammatory and irritative stimuli in hypersensitive immune reactions. **icelab** may therefore also be used successfully to treat:

- Neurodermatitis
- Bronchial asthma

PAIN THERAPY

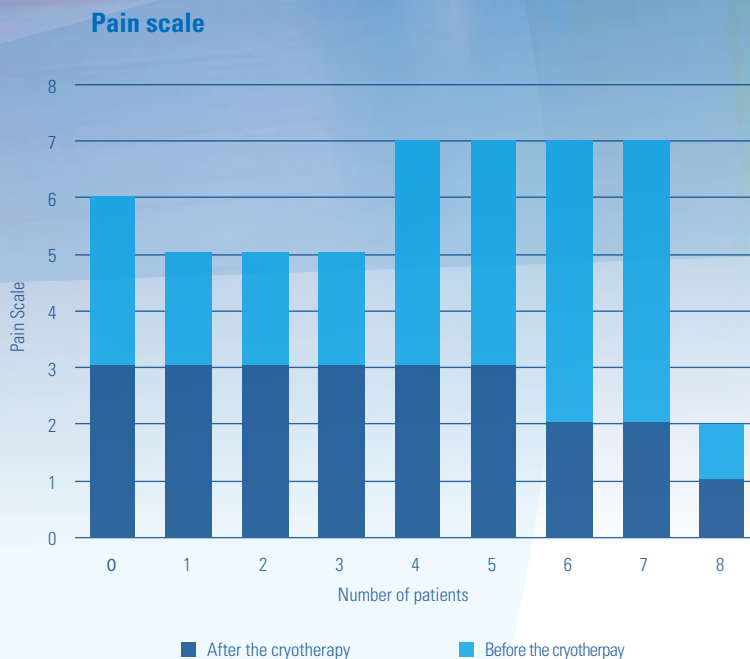


Cryotherapy

conquers the pain

"The short-term (2–3 minute) cold stimulus working intensively on almost the entire body surface during -110°C whole-body cryotherapy activates a short-term series of reflexive activities in the central nervous system with fast-acting analgesia and inhibition of inflammation as well as improved blood circulation and oxygen utilization by the muscles. In the long term, suppression of excessive immune reactions and hypersensitivity to pain is achieved."

Prof. Winfried Papenfuß, M.D.



"Pain scale for Bechterew disease before and after cryotherapy" from the study of D. Kargus, K. Blum, T. Täuber, J. Teuber »Whole-body-cryotherapy in Inflammatory and Non-inflammatory Rheumatic Disease.«, Bayreuth.

"Whole-body cryotherapy at -110°C for 2.20 minutes leads immediately to a reduction of 0.4°C in the tympanic temperature and of 5.1°C in the skin temperature. Improvements in running time (at 95% of the maximum running speed) of up to 18.6% were obtained in association with whole-body cryotherapy at -110°C. The longer duration of exercise after whole-body cryotherapy at -110°C is accompanied by a significantly lower tympanic temperature, while heart rate, lactate threshold and subjective stress do not differ from the control values."

Prof. Winfried Joch, M.D., University of Münster
Sandra Ückert, M.D., University of Dortmund

The **icelab** has been used by CERS (Centre Européen de rééducation du sportif) since 2004 for recovery of performance, particularly in athletes exposed to high muscular loads through concentric and eccentric power exercises. In such cases it is generally used in the recovery stage after exercise, according to information from E. Barbiche, who states that applications of whole-body cryotherapy prevent the development of muscle soreness and improves both toleration of muscle soreness and sleep quality by reducing the accumulation of harmful metabolic byproducts.

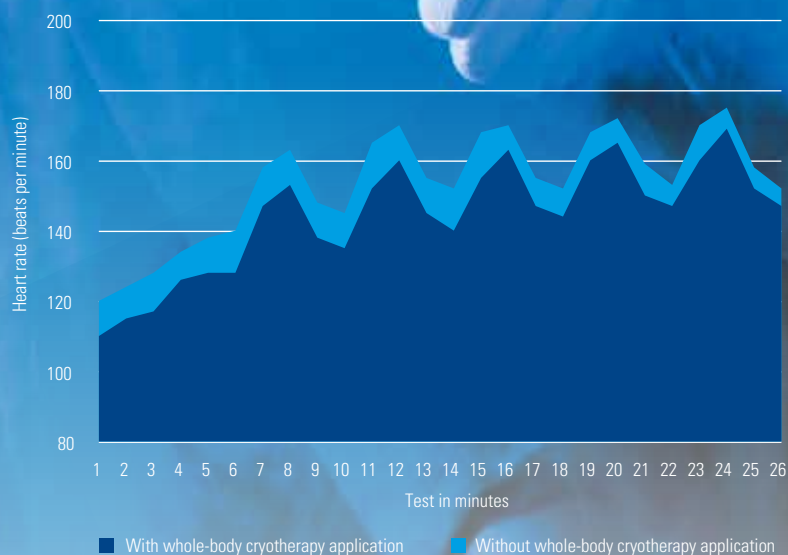
IMPROVED PERFORMANCE

Performance surpass and maintain





Heart rate



Faster Recovery

Bringing top performers back to peak fitness as quickly as possible after the event is the most important topic in performance sports. Use of the **icelab** creates the conditions needed for more intensive training episodes – an important contribution with no harmful side effects.

Improvement of Athletic Performance

The performance-enhancing effect of cryotherapy has been scientifically demonstrated. Its use in performance sports increases stamina while reducing the heart rate. Mental stimulation in preparation for performance is clearly also important. These effects may be used successfully across the entire spectrum of sports from fitness maintenance to high performance athletics.

Shortening of the Traumatic and Postoperative Rehabilitation Stages

In addition to pain relief, acceleration of healing is also important. This makes **icelab** an ideal supplement to conventional physical therapy.

From the study "Effects of whole-body cryotherapy at -110°C on the heart rate in endurance exercises and at rest"
Prof. Winfried Joch, M.D., University of Münster
Sandra Ückert, M.D., University of Dortmund

The **icelab** climate affects both body and psyche. The increase in physical performance in combination with a general activation and improvement of psychological profile quickly turn a visit to the **icelab** into a favorite ritual.

The visitor experiences exceptional results in the treatment of:

- **Burn-out syndrome**
- **Fatigue and exhaustion**
- **Circulatory disorders**
- **Depression**
- **Sleep disorders**

Thermal stimuli influence the level of psychophysical activity. High environmental temperatures lead to inertia, lack of interest in exercise, and finally tiredness, weakness, and exhaustion. In contrast, cold promotes feelings of freshness and alertness – all the more so if it can act over the entire body surface as a powerful stimulus. Expectations are enhanced, tiredness evaporates, associational and coordination capabilities are improved. In cases of an elevated state of arousal, a state of calmness sets in after cryotherapy.

icelab is an important upgrade for the Medical Wellness facility and will remain one of its core features.

WELLNESS



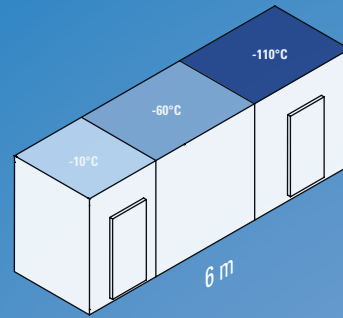
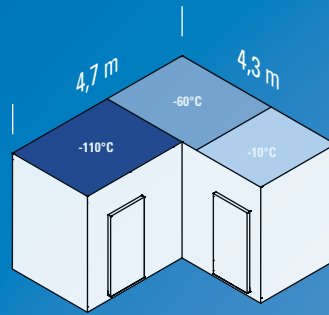
Cryotherapy

- a wellness generator

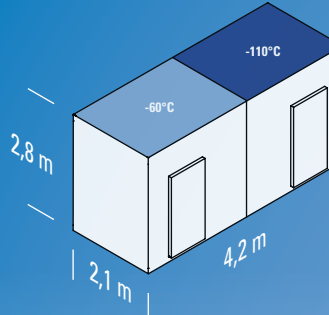
"Whole-body cryotherapy was incorporated as a USP in our health concept. After almost 2 years it has proved to be essential for our chances of success as a "medical hotel" in the health market. In addition to conventional applications for rheumatism, osteoarthritis and recovery programs, we are also using it successfully for the treatment of burn-out conditions and sleep disorders."

Hannes Seyrling, proprietor AlpenMedHotel Lamm

3-chamber corner model



3-chamber standard model



2-chamber standard model

TECHNOLOGY



Non-standard dimensions for custom installations

Facts

at a glance

icelab Operation

icelab is incredibly simple to use – switch on the light and microphone. The system is controlled automatically using preset operating times. In the standby mode the chamber temperature is returned to -40°C to minimize energy consumption. Chamber de-icing is automated and does not require switching off the chamber.

Safety

A few limitations on use must be observed while using the **icelab**, for example, in persons with coronary heart disease, hypertension, Raynaud syndrome. If these contraindications are observed, short-term exposure to cryotherapy in the **icelab** does not present any special risk, but supervision by qualified personnel is necessary. Blood pressure measurement before use and protection of ears, hands and feet are obligatory.

The **icelab** safety technology is subject to international standards, which ensures that hazards to the user are eliminated.

These include:

- heated safety door in the main chamber
- Large heated viewing windows for external monitoring combined with the intercom system
- Large color LCD screens for complete visual monitoring of the chamber and display of operational data
- Plain text display of failures in key system components
- Central factory monitoring of technical data by modem or Internet

Technical data

- Electrical connection 400 V, 3-phase, 50 A
- Power consumption in standby mode 8 kW, during therapy 18 kW maximum
- Maintenance interval of 4,200 hours of compressor operation

Comfort

Few materials can withstand low temperatures of -110°C. Nevertheless, very careful attention has been given to user sensitivities in the icelab through the selection of precious woods and colors. Direct voice communication is used to provide the user with relaxed guidance during the icelab visit. The audio equipment enables transmission of music on iPhone/iPod-Dockingstation.

Heat Recovery

The waste heat from the icelab facility can be beneficially re-used through heat recovery for heating swimming pools, for example.

Chambers

The variable modular design of the icelab allows it to be adapted easily to practically any spatial arrangement. icelab comes with a standard layout for 4 persons per visit but can be enlarged as desired.

130 partners worldwide



With more than 50 years experience, Zimmer MedizinSysteme is a leading supplier of systems solutions in cardiovascular diagnostics and physical therapy.

As a medium-sized company we cultivate a special culture of close relationships with clients and employees. And it is exactly this that makes a decisive difference to our partners.

The Company

We use our competence and drive to promote human health, and in doing this we take our bearings equally from medical science, modern technology and the user's needs.

We pursue these principles with a wealth of ideas and commitment – and we have been doing so ever since the company was founded in 1969.

Research & Development

We have always held research and development in the highest regard. Each of our products is developed in strict accordance with scientific principles while still being based on clinical use. Close collaboration with universities and technology institutes distinguishes us as much as our habit of always peeking over the user's shoulder. Scientific studies and practical experience complement each other to provide additional benefits for our clients in their everyday work routine.

Medical advances, reliable technology, good design, user friendliness and an excellent standard of customer service are the typical features of all our systems.

Made in Germany

We are an independent medium-sized company located in Germany, with our headquarters in the innovative region of Ulm / Neu-Ulm. We consider certification of our company to be simply an outward expression of our quality-conscious mentality. All employees are obliged to follow our quality management plan, which covers everything from product development in our facilities to on-site client service.

The legendary durability of Zimmer products is final add-on benefit for our clients in hospitals and practices.

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