

## LAKE HEVIZ - an unique thermal resort



Located just 6 kilometers away from Lake Balaton's western shore, Heviz is home to Europe's biggest and most unique thermal lake. The lake's surface area spans 47 sq. m. and is covered in stunning scarlet water lilies, imported directly from India.

During summer, the water temperature in Heviz's resort reaches 36 degrees Celsius, while in winter it never falls below 25 degrees

Celsius, allowing visitors to swim in open-air pools throughout the year and enjoy a unique microclimate.

Every second, a whopping 420 liters of radon, sulphurous, gas and mineral-rich water are released onto the surface of the lake, which is completely refreshed within just 48 hours. Heviz's therapeutic mud from the bottom of the lake is especially noteworthy, as it has proven to be highly effective in treating musculoskeletal, rheumatic and inflammatory diseases.

Count Festetics established the first balneary on the lake in 1795, although the healing power of the lake's waters has been known since ancient times. Legend has it that the waters of the lake cured the paralysis of the legs of Theodosius Flavius, the future emperor of the Roman Empire.

The lake is an excellent treatment option for those with rheumatic diseases, musculoskeletal disorders, spinal issues, gynecological conditions, inflammation of nerves and muscles, or venous circulation disorders.

# Indications for treatment:

- chronic limb diseases
- rheumatism
- osteochondrosis
- inactive form of gout
- nervous exhaustion and disorder of the autonomic nervous system
- functional neuralgic diseases
- gynecological disorders (eg, uterine adhesions, infertility, menstrual disorders)
- post-traumatic and post-operative rehabilitation





#### Contraindications:

- malignancy
- cardiovascular Заболевания
- hypertension, arteriosclerosis
- venous thrombosis
- leukemia
- asthma
- eczema
- Thyroid gland diseases
- diabetes
- pregnancy

The composition of the water in Lake Heviz:

## Cations mg/l

- Potassium 6.8
- Sodium 27
- Ammonium 0,32
- Calcium 81
- Magnesium 36
- Iron 0,04
  - Sum of cations 151

### Anions mg/l

- Chlorides 23
- Bromides 0,11
- Iodides 0,021
- Fluorides 1,4
- Sulphates 64
- Bicarbonate 378
- Sulfides 3,2
  - Anion sum 470

- Metaboric acid 0,5
- Metasilicic acid 43
- Free carbon dioxide 86
- Dissolved oxygen 3,6
- Total mineralization 754
- Radon content (Bq/I) in water 3,8-0,8

# **MEDICAL PROPERTIES OF LAKE HEVIZ**

# Natural features of the lake:

## Lake flow:

- Healing water with radial jets out of land, spreads in a semi-cone-shaped channel of the lake;
- Cooling on the surface and smoothly rotating in the form of a cylinder, the water slowly falls under a fresh stream of warm water;
- A huge amount of water measuring 127.000 m<sup>3</sup> is in constant circular motion clockwise (in accordance with the laws of geophysics);





- Thus, a constant temperature of the water and a uniform distribution of mineral substances in it are ensured;
- Due to the constant movement, the lifting force of the water is much greater than in the case of an ordinary lake with stagnant water, therefore it is easier to stay on the surface and swimming requires correspondingly less physical effort;
- The lake itself is a hydropathic resort with a dispersion system containing therapeutic mud: the mechanical action of the mud particles in constant motion causes resistance during friction, an increase in lift and hydrostatic pressure, as a result of which the floating body acquires a vertical position, which favorably affects blood circulation.

### Microclimate of the lake:

- The surface of the lake, with an area of 4,5 hectares, emits a huge column of water vapor, being a large inhalation;
- The protected forest almost completely protects the lake from the wind;
- The effect of the scorching sun should be taken into account (ultraviolet radiation is also enhanced due to reflection on the surface of the water);

## Gas content in healing water:

- The human body absorbs radon and hydrogen sulfide through the lungs more efficiently than through the skin;
- Once upon a Time balneologists taught us that the patient should splash on the water around him in order to intensify the release of radon from the water;
- Gas bubbles, touching the surface of the body, cause a special over-stimulating effect.

## Water composition:

- Thermal karst water of the Triassic period containing dolomite, consisting of Ca, Mg, CO<sub>3</sub>HCO<sub>3</sub>, having absorbed all the mineral substances (trace elements), is stored in the Pannonian sedimentary upper rocks of the Neolithic;
- The 13.000-year-old thermal karst water and the 2800-year-old cold karst water mix at the source of the cave, forming an even temperature in 39°C and this mixture comes in the marsh-peat ice age lakebed (Riess-Wurm interglacial);
- There is an exchange of mineral substances between the peat bog and healing water: the healing mud of the peat bog is enriched with the substances of the healing water, and the
- healing water, in turn, receives the substances of the peat bog (steroid compounds, terpene hydrocarbons, humic acids), thus forming a unique medical complex in the whole world.





## **Healing effects of Lake Heviz**

## Microbiology:

At the bottom of the lake, peat deposits are decomposed with the help of actinomycetes (coryneform bacteria or radiant fungi), and groups of streptomycetes produce a natural antibiotic (microbiologists from the Lorand Eötvös University found the only group of bacteria in Hungary that produces true streptomycin).

Based on the fact, confirmed by 200 years of experience, that there are no coccoid bacteria in the healing water, wounds from it have never become infected, 100 years ago, hundreds of patients stood under jets of water, washing away blood from wounds obtained as a result of the use of cans (more blood was shed here than during the Napoleonic Wars) but there was not a single case of infection.

#### Main active ingredients:

The main active ingredient is <u>SULFUR</u>: the main element of the cartilage of the joints, in cases of osteoarthritis (wear and tear of the articular tissue) and inflammation of the joints, there are signs of sulfur starvation of the cartilage. The lake contains bacteria of the genus Thiobacillus, which, during metabolism, convert biologically passive sulfate into active sulfide, which is easily absorbed and deposited not only in cartilage tissue, but in the liver, skin, fat, and also becomes an integral part of enzymes. Sulfur from Lake Hévíz has an excellent effect on diabetic itching.

Ca - Has an anti-inflammatory effect.

Mg - Has a side effect of pain relief.

Carbonates: Provide a cosmetic effect; the skin becomes silky-velvety.

Radon - The composition of radon in healing water shows lunisolar drop. Harmful effects of radon have never been observed. Solubility in lipids is associated primarily with the pituitary gland, изза increased secretion of the hormone ACTH, the patient is treated with his own anti-inflammatory hormones of the adrenal glands without any side effects. According to some reports, radon stimulates the production of calcitonin, and this explains the analgesic effect in patients with osteoporosis.





#### A course of treatment:

To achieve the result of balneotherapy, it is recommended to take a course of water procedures.

Expedient and ideal use of the properties of the spa can only be prescribed by a doctor who has many years of practice in Hévíz, not only in the field of rheumatology or physiotherapy, but also in balneology, taking into account natural factors.

After all, medicine is not only a science, but also an art. Therefore, in the process of working in Heviz, we have the opportunity to use medicine not only in scientific terms, but also in terms of healing art.

Dr. Gyarmati Jozsef Chief Physician, Department of St. Andrew's Hospital in Hévíz

The lake is open every day.

Children under 6 years old go to the lake for free.

