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THERMAL TREATMENTS IN ABANO TERME



MIONIPEZZATO & SPA



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Euganean Hot Springs: from antiquity to the present.

The **Hotel Mioni Pezzato & SPA** is located in Abano Terme (Padova), within the largest **hot springs centre of Europe**, specialized in mud bath therapy: the **Euganean Hot Springs**.

The Euganean Hot Springs are internationally known for their preventive and therapeutic treatments carried out with **hyperthermal waters and high quality mud that is certified and patented**.

The effectiveness of the treatments and cures, proven today through the **continuous research carried out by the Pietro d'Abano Research Centre**, and the extraordinary nature of the area, had already manifested themselves to the eyes of the ancient Venetians, as evidence of divine intercession. In pre-Roman times, the numerous pools of hot and cold water, enveloped by acrid-smelling fumes, surfaced naturally from the ground, impressing and fascinating local populations.

Dedicating the entire area to the cult of Aponus, it was, however, the Romans who made it one of the most important places for treatments and sojourn in the empire: *the aquae Patavinae* (waters of Padua).

Remains of this past, which are yet so modern, have emerged with the excavations carried out by the University of Padua and, today, fit into the grand project of the **Archeological Park of the Euganean Hot Springs**.



Hot Springs Study Centre: between scientific research and innovation.

In addition to this is the constant commitment of the **Centro Studi Termali Pietro d'Abano** (Pietro d'Abano Hot Springs Study Centre) which, through the in-depth study of the primary components of the thermal resources, the systematic research on thermal medicine, and the effects of thermal mud therapy, guarantees the absolute **quality of the treatments** offered and their scientific and therapeutic validity.

The Study Centre has developed a protocol that recommends to spa facilities how to intervene on a wide range of physical parameters, in order to obtain a high quality mud with a superior effectiveness. The endemic cyan bacteria that colonize the surface of the mud produce substances known as active ingredients, which the Study Centre, in collaboration with other research institutions, **has proven to have anti-inflammatory benefits equal to those of reference medications, but without the relevant side effects**.

To provide more qualified services, the Study Centre works in synergy with other public and private institutions (universities and researchers) to promote research activities through awards and scholarships.

The primary research carried out is oriented towards three scientific branches: clinical, biological, and chemical-physical. Over the years, the Centre's constant activity has guaranteed and tested the scientific and therapeutic importance of hot spring treatments, now recognized as medical therapies worldwide.

Precisely in 2013, the Pietro d'Abano Study Centre reached another important step in the protecting the uniqueness of the Euganean thermal mud by obtaining a **European patent**.

The patent application, n.05100038.8, "Antiinflammatory active principles in the Euganean thermal mud", filed in 2005 with the European Patent Office (EPO), and supplemented over the years by substantial supporting data, was now granted Patent No.1571203, extending to more than 30 European countries a similar guarantee obtained in Italy in 2010 (Patent N.0001355006).





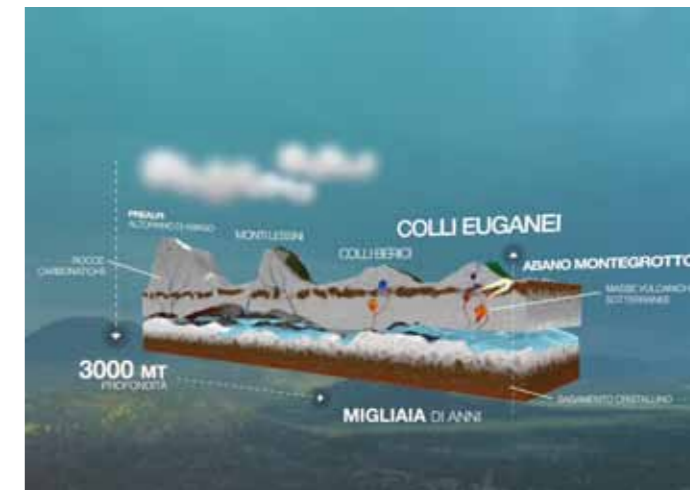
The hot spring waters of the Euganean basin, of meteoric origin, gather in the uncontaminated basins of the **Lessinian Mountains** of the Venetian Pre-Alps, at an altitude of about 1,500 meters.

They flow through the subsoil, to a depth of **2,000-3,000 meters**, where they are then enriched by **minerals** and, after traveling approximately the 80 km needed to reach the Euganean Hot Springs, they flow back to the surface at **high temperatures**, even higher than 85°C. It is assumed that they have been in the subsoil about **tens of thousands of years**.

These waters, due to their **chemical, physical, and therapeutic properties**, are defined according to a consolidated medical classification from the 1930s, which is still in use today: **sodium chloride-bromine-iodine hyperthermal waters**.

The dissolved electrolytes, such as sodium and chloride, in addition to the high nitrogen content, which can reach 90% of total gases, are required for the so-called maturation stage of the mud.

in fact, over a period of about two months, due to the constant flow of the hyperthermal water, the clay matrix becomes mud with superior anti-inflammatory qualities.



Balneotherapy... an experience of well-being

Balneotherapy (baths in hot spring waters) consists in **immersing the body in a tub containing hot spring water enriched with ozone.**

Water is an extraordinary element because it facilitates all activities of the body joints: **movements are looser, the muscles relax, pain decreases.** Moreover the bubbles developed by the ozone ensure an intense vasodilatation because they stimulate blood circulation.

Balneotherapy is performed in individual tubs using sodiobromiodic thermal waters at a temperature of 36-38°C. Treatments involve 15 minute cycles for a total of 12 baths (1 a day).

Thanks to the pressure exerted by the water, thermal baths are ideal for the **joints, for the treatment of pain and muscular atrophy.** These treatments are extremely important in **rehabilitation after traumas, fractures and surgery.**

Moreover, the chemical composition of the water helps cure chronic inflammatory processes and many types of dermatosis.

Water analysis average values

Air temperature	12°
Water temperature	77°
PH	7,1
Electrical conductivity at 18°	70 micro-simens
Fixed residue at 180°	5,050 g/l
Fixed residue at 550°	4,34 g/l
Sodium ions	1,239 g/l
Potassium ions	0,088 g/l
Calcium ions	0,366 g/l
Magnesium ions	0,080 g/l
Ammonium ions	0,0027 g/l
Iron ions	< 0,05 p.p.m.
Nitrate ions	absent
Nitrite ions	absent
Sulfate ions	0,980 g/l
Chloride ions	2,176 g/l
Sodium bicarbonate ions	0,169 g/l
Bromide ions	13,6 g/l
Iodide ions	0,82 g/l
Sulfuric acid	1,67 mg/l
Silica	0,051 g
Alkalinity	27,7
Total hardness	120° F
Oxidizability	7,40 mg/l
Organic substances	0,3310 g/l
Cryoscopic Delta	- 0.23 C°
Osmotic pressure	3.10 atm.

Hydrokinesitherapy... natural rehabilitation

Hydrokinetics exploits the physical-chemical properties of the water for therapeutic purposes.

When submerged in the pool, the body weighs nearly 90% less so that the person can handle the rehabilitation exercises with significantly less effort, thus achieving excellent results more quickly.



The specific chemical composition and temperature of the thermal waters also facilitates easy, gradual recovery of muscle exercise.

Hydrokinetic therapy is the **ideal treatment for patients with a deficit in muscular strength**, it improves, or maintains existing, physical strength prior to surgery for patients with **arthritis, neurological disorders and for the aged who find moving on land difficult and painful.**

The treatment in the pool is fun, relaxing, joining the beneficial effects of the hot thermal waters with those of physical exercise. This leads to a significant improvement in joint mobility and deambulation, alleviates pain and spasms.

Therefore, **hydrokinetic therapy is a natural, effective treatment** not only to recover and maintain locomotory function, but also to reduce the recovery time for over-fatigued or traumatized joints.

Vascular therapy

Cycle of recommended treatments for peripheral vascular disease:
12 therapeutic baths with whirlpool

Pathologies treatable with hot spring treatments

AFTER-EFFECTS OF CHRONIC VASCULAR PATHOLOGIES

- After-effects of chronic vascular diseases
- After-effects of chronic phlebitis
- Outcome and after-effects of peripheral vascular surgery
- Chronic venous insufficiency (varicose veins)
- Varicose veins of the lower limbs
- Chronic lower limb vasculopathy (if venous)
- Functional peripheral vascular disorders

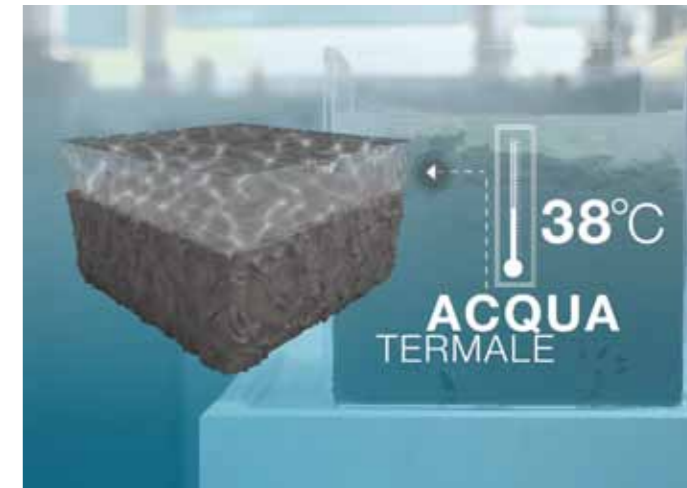




The therapeutic mud of the Euganean hot springs consists of two main components: clay, from Costa, the small lake in the town of Arquà Petrarca, and the hot springs water.

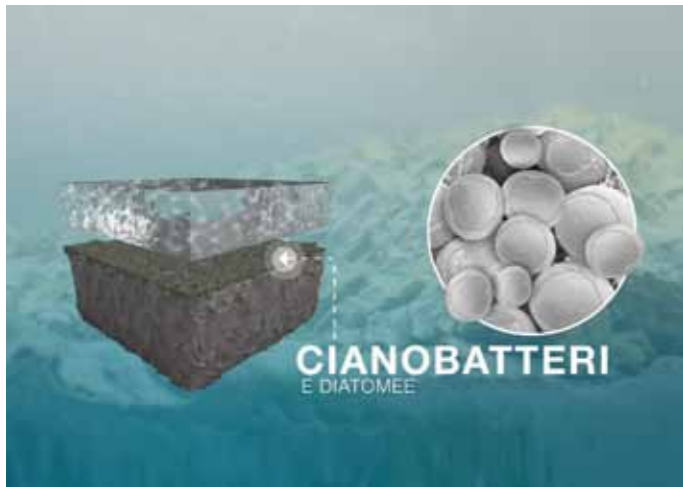
It is commonly believed that the effectiveness of the mud is related to temperature, meaning the heat released from the clay mass during the mud therapy treatment. The Study Centre, thanks to its research has, however, proven that there is a fundamental **component of organic origin in the mud.**

If you leave the mud immersed in the hot springs water at an optimum **temperature of 35-38°C** in special tanks or silos, **after about 60 days**, or the so-called "maturation period", on the surface in contact with the liquid phase, a complex aggregate of microorganisms is formed.



This is a blue-green colour superficial biofilm, created mainly by the proliferation of **cyanobacteria and diatoms**, once considered "simple" algae, present in the ecosystem that characterizes the Homogenous Hydro-Mineral Basin of the Euganean Hills (BIOCE) .

Due to it being naturally rich in minerals and dissolved gases, the hot springs water appears to be a fundamental component of this process, but so are the environmental conditions to which the maturation tanks are exposed.



One of cyanobacterium present in greater amounts in the hot springs mud of the territory belongs to the PHORMIDIUM sp. ETS05, for the first time isolated in the Euganean district.

The ETS05 produces glycolipidic substances with high anti-inflammatory properties, also characterized by the absence of side effects, even after repeated treatments.

The particular process of maturation used for the Euganean hot springs mud promotes the growth of many other strains of microorganisms that can, in turn, contribute to the therapeutic effectiveness of mud baths, along with heat and the chemical-physical component of the matrix (ex. minerals).

The phases of mud bath therapy

Mud bath therapy is comprised of four basic steps:

- application of mud
- bath in hot springs water
- sweating
- toning massage

The mud is applied directly to the skin at a temperature between 38°C. and 42°C. for a period of time that varies from 15 to 20 minutes.

After this time, and after a shower is given to remove the mud, you immerse yourself in a hot springs bath at a temperature of 36-38°C. for about 8-15 minutes.

After drying off with warm towels, you relax and wait for the sweating phase to begin, which completes the biological effects of the mud bath therapy.

The treatment can be concluded with a massage that reactivates cutaneous circulation.



Mud bath therapy

Cycle of treatment recommended in 12 sessions:
12 mud treatments + 12 therapeutic baths
or
12 therapeutic baths

Pathologies treatable with hot spring treatments

**EXTRA-ARTICULAR
RHEUMATISM**

- Extra-articular rheumatism
- Inflammatory Rheumatism (dormant)
- Fibrosis of rheumatic origin
- Tendinitis of rheumatic origin
- Lumbago of rheumatic origin
- Fibrositis
- Fibromyositis

Pathologies treatable with hot spring treatments

OSTEOARTHRITIS AND OTHER DEGENERATIVE CONDITIONS



- Osteoarthritis
- Osteoporosis and other degenerative processes
- Widespread arthrosis
- Cervicoarthrosis
- Lomboarthrosis
- Arthrosis of the limbs
- Discopathy without herniation and without symptoms of nerve irritation or compression
- Post slipped-disk surgery
- Trachelodynia of rheumatic origin
- Scapulohumeral periarthritis (not including acute forms)
- Quiescent rheumatoid arthritis
- Arthroses, poliarthroses, ostearthroses (with widespread or localized osteoporosis)
- Articular rheumatism
- Osteoarthroses and other degenerative processes
- Periarthritis
- Ankylopoietic spondylitis
- Spondylexarthrosis
- Spondylexarthrosis and spondylolisthesis

Fangotherapy and osteoarthritis

Osteoarthritis is the most common joint disease in the world. It tends to appear later in life and significantly limits independent function: agility, tolerance to physical exercise, personal hygiene, daily chores. The symptoms involve objective limitation in movement, independence and thus the quality of life and can be divided into:

- pain and muscle spasms in and around the involved joints, accompanied by spasticity and stiffness of the periarticular muscle groups;
- limitation in movement due to pain, poor distribution of the load and inconsistencies between the articular heads;
- hypotrophy of the muscle groups for the joints involved in the arthritic process, as a result of the search for both static and dynamic analgesic positions;
- functional limitations or incapacity that can even impede all movement, particularly during acute inflammation.

The application of thermal mud is particularly effective in limiting inflammation and relieving joint pain.

Research has shown that a cycle of mud bath therapy significantly lowers circulating levels of substances that locally accelerate and aggravate damage of an inflammatory and degenerative nature to cartilage.

It is observed that the active ingredients produced by the microorganisms that colonize the "mature" mud act in a positive and direct manner on the metabolism of the chondrocyte, the cell that constitutes cartilage.

The effects of a mud bath therapy, therefore, have a protective role in degenerative arthropathies.





Mud bath therapy and osteoporosis

It has been scientifically proven that **fango-balenotherapy facilitates the recovery of bone tissue metabolism, acting on some of the substances affecting the trend.**

After the age of forty, the bone mass begins to decrease due to a parapsychological imbalance between reabsorption and deposition.

Mud bath therapy, when combined with exercise, enables you to preserve a correct mineral density, inducing an anabolic effect.

Research has shown that this type of treatment produces an increase in bone mass comparable to that obtained with pharmacotherapy, but that the combined action maximizes results. The moderate physical activity that is practiced daily in the thermal pools during your stay, along with thermal treatments, will help you regain your physical and psychological well-being, as well as improve quality of life.

Mud bath therapy and rheumatism

In certain pathologies of rheumatic origin, the pain component is particularly intense. This, often associated with other symptoms such as fatigue, sleep disorders, or gastrointestinal problems, impact negatively on the quality of life, causing depression and transitory disabilities. A study of the Pietro d'Abano Hot Springs Study Centre regarding fibromyalgia demonstrates, in order to reduce sensitivity to pain, mud bath therapy, which **does not have gastrointestinal side effects**, can be associated with drug therapy.

Therefore, it is possible to reduce the dose of the medication taken and still achieve the same results. Mud bath therapy is able to influence the physiological control system regarding responses to stress, contributing synergistically to rebalancing the system.

Fangotherapy: things to know.

Application of the muds requires substantially **adequate cardiocirculatory and renal function**. If this is not the case, **partial applications can be used** to limit the impact on the body.

Fangotherapy is contraindicated for patients with:

- cardiac disorders
- ischemic cardiopathy
- severe cerebral and peripheral vasculopathy
- nefropatie con insufficienza renale

Other contraindications are: **tuberculosis, acute phases of inflammatory diseases, epilepsy, hyperthyroidism and malignant tumors.**





Inhalation therapy with hot springs water is used and recognized by the health care system for its **effectiveness in treating respiratory diseases and in preventing relapses.**

Special instruments nebulize particles of hot springs water and transform them into an effective treatment for acute or chronic pathologies involving the upper and lower respiratory tracts.

This therapy is not only related to the induced fluidification of mucus, but also to the direct anti-inflammatory action on the epithelium of the airways.

Following inhalation therapy, a reduction of the pathogenic microbial species present in the respiratory tract was also observed, all in favor of an increase in those reside there physiologically.

In synthesis, the multiple **therapeutic objectives** that can be reached through inhalation therapies are:

- Antiseptic action
- Ciliary apparatus stimulation
- Secretion fluidification
- Respiratory mucous normalization
- Reduction of non physiological microbiological component.



Inhalation Therapy

Cycle of treatment recommended in 12 sessions:
12 inhalations + 12 aerosol inhalations

Pathologies treatable with hot springs water therapy

**VASOMOTOR RHINITIS
(NON-ALLERGIC RHINOPATHY)**

- Vasomotor rhinitis
- Allergic rhinitis
- Chronic rhinitis
- Simple catarrhal chronic rhinitis
- Purulent chronic rhinitis
- Atrophic chronic rhinitis
- Catarrhal rhinitis
- Hypertrophic rhinitis
- Hyperergic rhinitis
- Secretory rhinitis
- Constant rhinitis

Pathologies treatable with hot springs water therapy

**SIMPLE CHRONIC
BRONCHITIS OR
ASSOCIATED WITH
OBSTRUCTIVE COMPONENTS**

- Simple chronic bronchitis
- Bronchiectasis
- Chronic bronchitis from occupational exposure to irritants and dust (opinion of the Board of Health of dated April 13, 1994)
- Hypersecretive chronic bronchitis
- Relapsing chronic bronchitis
- Emphysematous chronic bronchitis
- Spastic or asthmatic bronchitis
- Chronic asthmatic bronchitis
- Catarrhal chronic bronchitis
- Spastic or asthmatic bronchopathy
- Chronic bronchopathy
- Obstructive bronchopathy
- Chronic bronchopulmonary disease
- Spastic or asthmatic chronic bronchopulmonary disease
- Chronic obstructive pulmonary disease (COPD)
- Chronic bronchitis associated with an obstructive component
- Chronic tracheobronchitis
- Non-specific chronic bronchopulmonary disease without signs of severe respiratory failure and not during acute relapse

Pathologies treatable with hot springs water therapy

CHRONIC PHARYNGOLARYNGITIS

- Chronic pharyngitis
- Chronic laryngitis
- Recurrent tonsillitis
- Rhinopharyngitis involving the adenoid
- Chronic adenoiditis
- Corditis (various types)
- Pharyngolaryngitis
- Chronic pharyngotonsillitis
- Adenotonsillar hypertrophy

CHRONIC SINUSITIS OR CHRONIC RHINOSINUSITIS SYNDROME

- Chronic sinusitis
- Allergic Sinusitis
- Pansinusitis
- Polyps/sinusitis
- Polysinusitis
- Rhinoethmoiditis
- Rhinosinusitis (sinusitis)
- Recurrent chronic sinusitis
- Hyperplastic sinusitis

SINUSITIS BRONCHIAL SYNDROME

- Chronic sinusitis bronchial syndromes
- Sinusitis bronchial syndromes
- Chronic rhino-bronchial syndromes
- Chronic sinus bronchial syndromes
- Chronic sinusitis bronchial syndrome





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