

# Clay Packs

## Quantum-State Clay/ Moor Mud Packs

Applied externally to draw out deeply embedded toxins, including heavy metals (mercury, etc.), dioxin, petrochemicals, aniline residues (from injected anesthetics) and much more

### Clay Packs

- External packs made with therapeutic clay, moor mud, peat magma and shilajit and other agents; used for thousands of years in many cultures
- Helps increase circulation, boosts the immune system, eases muscle tension, rejuvenates the body\*
- Helps rapidly clear whole body burden of toxic bioaccumulation
- Initiates the “thermal effect”; an increased, deep intrinsic cleansing effect
- Avoid *oxidized peat, no weak or toxic clays, no irradiated/pesticided herbs*

### Spectacular Results

- **Easy to Apply. Very Safe**
- **Wholesale Toxin Release:** can eliminate up to 50% of the local bioaccumulation of toxic elements at a target body site in a single application
- **Quick Resolution** of many aches and pains; e.g., hand pain, frozen shoulder, hip problems, foot neuralgia, etc.
- **Drainage:** Apply the pack to the problem area but also include the drainage areas (e.g., for a neck problem, apply the pack to neck area and shoulder area)
- **Scar Therapy:** excellent for resolution of scar interference fields
- **Organ/Gland Detox:** apply externally to organ and gland areas

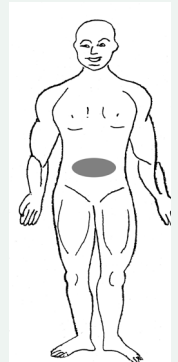


The Four Download Sites (hands and feet) are treated with clay packs first to allow drainage from congested body areas

### Step into the realm of Effective Detox

#### Get Great Results with every patient

- **A key overlooked factor in literally every disease:** hidden, deep-seated toxicity in the ground substance of the body (i.e., the external meridians and connective tissue) that prevents normal nerve and “chi” flow. These embedded toxins can mean years of delayed healing – *or none at all.*
- But how do you quickly eliminate years of these hidden toxins?  
Do what the ancients did: Therapeutic Clay Packs



An example of a C-section scar treated with a clay pack



A clay pack applied over the liver area (a key detox organ)

#### Practitioner Comments

“In my opinion, the main reason the magnificent body detox therapies of the past using clay and moor mud are so little used today is the lack of *therapeutic-grade* ingredients (i.e., some clays are even toxic).

With the clay packs, doctors can finally offer their patients deep-seated, whole body cleansing of the ground substance of the entire body. After using these with hundreds of patients, my wake-up call was that the meridian channels and connective tissue are routinely saturated with toxic “biogargage” which commonly prevents the full return to health. This embedded toxicity is often little affected by oral supplements.”

“In a single application of a clay packs to my left TMJ, all symptoms cleared (after years of therapies), I’ve seen many others with similar spectacular “overnight” results. What a great concept! Deep local cellular cleansing with mud packs to draw out “stuck” toxics. **Definitely one of the most overlooked therapies today.**”

# The Use of Moor Mud (Peat) in Health Therapies

## *Balneology (Balneotherapy) or Therapeutic Baths*

**The Arts and Science of Medicinal Bathing** is one of the oldest medical treatments according to documentation by Hippocrates (460-375 B.C.) Therapeutic bathing involves the application of hot and cold water to the body, used from very ancient times (as a key therapy in ancient Ayurvedic practices), and onward to the Roman time of Caracalla, and onward through the research studies by Lersch in 1863, to modern scientific research and recent documented double-blind studies.

Throughout its history, the benefits of therapeutic bathing have been recognized as preventative, palliative and curative. They were used to improve the general well-being of the body and spirit. In fact, the effectiveness of balneotherapy is perhaps best documented by the fact that dozens of Europe's spas have enormously longer continuous histories than any other type of medical institution known.

**Peat baths** were used in ancient Greece, and have been used in central Europe for the last 200 years, primarily for treating arthritis and gynecological disorders. In 1820, peat baths for the whole body were introduced in Europe. During the second half of the century, the chemical characteristics were intensively studied.

It soon became apparent that these peat products were able to achieve impressive results by the absorption of its various substances into the body. And thus, the manufacturing of peat extracts as admixtures to baths began. Today, peat preparations are used in a variety of diseases, from internal medicine to sports injuries, and from dermatology to cosmetology.

Balneotherapy utilizes the best of natural elements such as earth, water, and climatic factors; synchronized by chronological and circadian rhythmic phases. There are a variety of applications in balneotherapy involving full or partial immersion of the body, varying water temperatures, and regular time intervals, depending on the indication. The technique and proper application dictates the results.

### **The Use of Peat Hyperthermia**

In modern society, people are obliged to live under various injurious and stressful conditions to the body, such as constant air-conditioning, continuous artificial illumination, noxious air pollution, night-shift work, socio-psychological stress, and so on. Each day we are exposed to a multitude of toxins in the environment- through the water, ground, air and even our food. Our bodies try to process and eliminate these toxins but studies have shown that human tissues contain 400-600 different chemical residues.

Moreover, there is a remarkable rapid increase in the population of the elderly living under these circumstances, and with a high incidence of chronic diseases. Many forms of cancer and chronic disease have been clearly linked to environmental toxins, and the incidence of these diseases has increased dramatically over times. Heavy metal toxicities impair our immune systems, affect our cognitive functioning, and can cause skin reactions and disease. Toxins accumulate in our tissues and organ systems, impairing proper functioning, and even causing cell death and cell mutations

There is increasing need for preventing diseases, maintaining and promoting health, and establishing wellness, in which the body and mind are in balance. Clearly, with the large levels of chemicals and toxins in the environment, our bodies are not able to keep up with such a toxic load. Detoxification is essential.

Peat hyperthermia therapy plays an essential role in detoxification of the body. The local and systemic healing effects of Balneotherapy, helps to improve the body's self-healing potential and normalizes the body's systems and rhythms by affecting the autonomic and metabolic functions of the body in a positive manner. This makes medicinal Balneotherapy one of the most pertinent techniques from the past, present and future for the health of mankind.

In addition to general detoxification effects, Peat Hyperthermia Therapies also have numerous other beneficial effects on the body. Peat therapies allow people to heal faster and return to their daily activities with out the use of drugs to mask pain and their side effects. Pain relief can be immediate after just one peat treatment, and can last for up to three days. After several baths, pain relief can become longer term and often lasts for years.

### **Peat: 500,000 years in the making!**

A certain type of highly effective peat was formed at the end of the last ice age. It is extremely rich in highly bioavailable minerals, free of pollutants and has a high content of biologically active substances.

Peat, the cornucopia of natural earth elements and matter, contains a variety of essential natural minerals, trace minerals, organic acids and other natural substances that are products of natural earth environments, composed by biochemical degradation of organic materials such as herbs, grasses, and flowering plants. These biochemical processes occur over approximately 50,000 years. The unique molecular structure of peat substances are able to maintain either hot or cold temperatures.

Peat substances are dark colored, predominantly aromatic, acidic, hydrophilic, molecularly flexible poly electrolytes. While mud consists mostly of inorganic sediments, most peat has about 50% organic matter. High-moor peats are composed almost entirely of organic matter. Low-moor peats are deep level vascular peats, which are also make up of organic material formed by humification of vegetable matter. In addition, high quality peat is also minerals rich and pollutant-free.

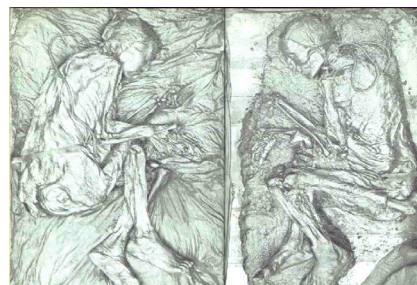
### Substances in peat include the following:

acetic acid	galactan	malic acids	purine bodies
albumin	glucosides	manganese compounds	resins
alkali salts	glutamic acids	mannan	rhamnose
aluminum hydrates	hemicelluloses	metasilic acid	salicylates
amino acids	hexosans	methane	salts
ammonium	hormones	monosaccharides	saponins
antibiotics	humic acids	nitrates	silica acid
arabinose	humins	nitrogen compounds	silicon compounds
balsam	humolignin	oils	sodium compounds
biopterin	humus	organic sulfates	starch
bitumen	hydrogen sulfides	organic sulfides	succinic acid
butyric acid	hyper-sulphides	oxalic acid	tannic acid
calcium oxide	inorganic sulphur	pantothenic acid	trace elements (e.g. boron, barium, chromium, cop- per, titanium, vanadium, zirconium, strontium)
carbonic acid	inosites	pectins	valeriana
carotenes	iodine salts	penicillin (e.g. aureomycin, streptomycin, terramycin)	various sugars
cellulose	iron salts	pentosans	vitamins
chlorates	iron acids	phosphoric acid	volatile oils
chlorides	iron II	phyto-hormone substances	waxes
fats	iron III	potassium oxide	xylose
fatty acids	iron oxides	propionic acid	
folic acids	levulinic acid	protein	
formic acid	lignin		
fructose	magnesium salts		

**Peat's amazing preservation qualities** have been well documented by the discovery of the **Tollund Man** (The Bog People, *Discover Magazine*); a body so well preserved since his tragic death 2000 years ago that scientists were even able to extract his last meal, consisting of rice, grain, burnt bread. The Tollund man is one of hundreds of amazing (human mummy)

discoveries found by peat cutters as they were harvesting peat for medicine and fuel.

One of its most striking characteristics is peat's ability to interact with metal ions, oxides, hydro-oxide and organic c compounds to form water soluble and insoluble associations of widely differing chemical and biological stabilities.



**Tollund Man**

Notice the amazing effect of the peat: very well preserved skin that is over 2,000 years old!



# Moor Mud (*Peat Therapy*)

PubMed Research (*Over 840 research citations*)

Vopr Kurortol Fizioter Lech Fiz Kult 1989 Mar-Apr;(2):35-7. **Sulfide ooze mud and sodium chloride baths in treating osteoarthritis patients**, Novikova NV. [Article in Russian] Humoral immunity initially affected in patients with osteoarthritis returns to normal under the influence of a multiple-modality treatment involving application of sulfide moor in combination with sodium chloride baths. PMID: 2756651

Vopr Kurortol Fizioter Lech Fiz Kult 1998 May-Jun;(3):37-8. **Changes in the mineral metabolic indices of osteoarthritis patients with the use of radon therapy and mud therapy**. [Article in Russian] Dicheva MA, Khyshtkuev BS, Anikina LV, Popov VM. As shown by investigations of alkaline phosphatase, plasma levels of calcium, non-organic phosphorus, coefficient Ca/P in 58 patients with osteoarthritis deformans before and after radon baths, mud applications or their combination, the highest biochemical effect was achieved in a group of patients on mud therapy. PMID: 9771145

Vopr Kurortol Fizioter Lech Fiz Kult 1996 Sep-Oct;(5):26-8. **The optimization of the duration of the sanatorium-health resort treatment of patients with neurological manifestations of spinal osteochondrosis (I)**, [Article in Russian], Levitskii EF, Shustov LP, Kapilevich LV, Zaitsev AA, Abdulkina NG. Short-term mud therapy (10 daily peat [correction of moor] applications) has been performed in patients with neurological symptoms of spinal osteochondrosis. Such short-term courses are indicated in the absence of exacerbation of the basic and associated diseases under domination of the radicular and reflex syndromes. High efficacy and good tolerance of the treatment are confirmed by vertebroneurological investigations and functional diagnostic tests. PMID: 9036662

Biomed Pharmacother 1998;52(9):408-9. **Thermal mud-pack as an anti-inflammatory treatment**. Galzigna L, Ceschi-Berrini C, Moschin E, Tolomio C. Clinical Trial. PMID: 9856289

Fortschr Med 1989 Aug 10;107(23):24-5. **Therapeutic possibilities with moor components**, [Article in German], Zimmerman W. PMID: 2767601

Morfologija 2002;122(4):56-7. **Morphological and functional changes in lymphoid organs after mud treatment**, [Article in Russian], Savel'eva LV, Siberian State Medical University, Tomsk. Course application of curative mud results in changes structure and cellular composition of all the lymphoid organs studied: thymus, mesenterial and popliteal lymph nodes. These changes are mainly unidirectional and are characterized by increased reactions of humoral immunity. PMID: 12596554

Vopr Kurortol Fizioter Lech Fiz Kult 2002 Jul-Aug;(4):18-21. **Pelotherapy in combined aftertreatment of patients with chronic bronchitis**, [Article in Russian], Ivanov EM, Shakirova OV, Zhuravskaia NS. A therapeutic complex based on pelotherapy given as mud applications or electrophoresis of squeezed mud on the area of lung root projection (a total of 10-12 procedures, each other day) was tested in 99 patients with chronic bronchitis (CB). 68 CB controls received the above complex but no peloids. The results were assessed by clinical changes, clinical biochemical indices, immunograms, changes in external respiration function. The pelotherapy was found to have a corrective effect on CB pathogenesis and a stimulating action on sanogenic mechanisms of the body.

Vopr Kurortol Fizioter Lech Fiz Kult 1998 Mar-Apr;(2):15-6. **The pelotherapy of patients with periodontitis**. [Article in Russian] Gerasimenko MIu, Nikitin AA, Gordienko VG, Volkov EB. 90 patients with periodontitis have received peloid therapy. Mineral mud from Lake Goreloye deposits was applied by means of a specially developed device providing good contact of the mud with the gingiva and teeth. A good clinical response was achieved. PMID: 9643137

Int J Tissue React 2002;24(2):57-64. **Both serum receptors of tumor necrosis factor are influenced by mud pack treatment in osteoarthrotic patients**. Bellometti S, Galzigna L, Richelmi P, Gregotti C, Berte F. Pietro d'Abano Research Centre, Padova, Italy. [simonab@intercity.it](mailto:simonab@intercity.it) Several authors have demonstrated the pivotal role of proinflammatory cytokines in inducing progressive cartilage degradation and secondary inflammation of the synovial membrane in osteoarthritis (OA). It has recently been established that tumor necrosis factor (TNF)-alpha plays a well-defined role in the pathophysiology of inflammatory joint diseases and that binding to circulating soluble TNF-alpha receptors can inactivate it. We investigated the influence of mud pack treatment, which is able to diminish TNF-alpha serum values, on specific TNF receptor (sTNF-R) levels. Thirty-six patients with OA were enrolled and randomized into two groups. Group A underwent mud pack treatment and group B underwent thermal bath treatment. A group of 20 healthy untreated subjects was used as a control. Blood samples were collected at baseline and after treatment, and assays of sTNF-R55 and sTNF-R75 were performed in both groups. We found small changes in sTNF-Rs serum values but these were

not statistically significant. sTNF-R55 serum values decreased by 0.4% after the therapy in group A, while in group B the decrease was -17.7%. sTNF-R75 was reduced by -21.17% in group A and by -10.6% in group B. In conclusion, through its thermic and anti-inflammatory activity mud pack treatment shows complex interaction with the most common factors of inflammatory and cartilage degradation. Our results suggest that the thermic component of this natural treatment is mainly involved in modulating inflammatory reaction and cartilage damage through binding of the circulating TNF, which controls the activation of the cells responsible for the production of proinflammatory cytokines. Randomized Controlled Trial. PMID: 12182234

Vopr Kurortol Fizioter Lech Fiz Kult 2002 Mar-Apr;(2):48-51. **Conservative therapy of chronic cystitis patients**, [Article in Russian], Karpukhin IV, Li AA. PMID: 12132233

Vopr Kurortol Fizioter Lech Fiz Kult 1998 Mar-Apr;(2):37-8. **A comparative evaluation of the effect of different types of sapropel on dynamic liver function in intact rats and in the modelling of toxic hepatitis**. [Article in Russian] Kuz'menko DI, Sidorenko GN, Levitskii EF, Laptsev BI, Dzhuraeva EI. A course of silicic sapropel applications compared to calcareous sapropel induced a reversible fall of total lipid concentration in blood serum of intact rats. Sapropels of different kinds and of the same kind but obtained from different depths of the same deposit varied by their ability to correct hepatic function in rats with toxic hepatitis. The highest benefit was registered in application of carbonate sapropels taken from the depth of 1.5-2.5 m. PMID: 9643147

Vopr Kurortol Fizioter Lech Fiz Kult 1998 Mar-Apr;(2):35-6. **The effect of the combined action of applications of sapropel and of a nonuniform permanent magnetic field on the dynamics of the recovery processes in damage to the liver parenchyma (experimental research)** [Article in Russian] Levitskii EF, Kuz'menko DI, Sidorenko GN, Laptsev BI, Dzhuraeva EI. Effectiveness of applications of saprol and nonuniform constant magnetic field (NUCMF) used alone and in combination was studied on the model of experimental toxic rat hepatitis. NUCMF had no advantages over saprol in correction of hepatic tissue function. However, combination of these two modalities was more effective than each of them. Possible mechanisms of such effect are discussed. PMID: 9643146

Vopr Kurortol Fizioter Lech Fiz Kult 2001 Sep-Oct;(5):8-11. **Low-temperature peloids in rehabilitating osteoarthritis patients**, [Article in Russian], Grigor'eva VD, Orus-ool VK, Fedorova NE. A comparative trial was made of a therapeutic effect of low-temperature (10-24 degrees C) and hot (37 degrees C) applications of mud in osteoarthritis (OA) patients. Hot applications are highly effective in OA but are contraindicated for patients with synovitis because of the risk of exacerbations. Low-temperature peloids have advantages over standard hot peloids in the treatment of synovitis, in concomitant lymphovenous insufficiency, cardiovascular diseases. PMID: 11785344

Clin Chim Acta 2001 Dec;314(1-2):209-14. **Effects of mud-pack treatment on plasma cytokine and soluble adhesion molecule levels in healthy volunteers**. Basili S, Martini F, Ferroni P, Grassi M, Sili Scavalli A, Strega P, Cusumano G, Musca A, Battista Rini G. Department of Medical Therapy, University of Rome La Sapienza, Viale Del Policlinico, 155 00161 Rome, Italy. [stefania.basili@uniroma1.it](mailto:stefania.basili@uniroma1.it) BACKGROUND: The suggested hypothesis of a direct anti-inflammatory property of mud-pack treatment has led us to speculate that its action on the cytokine network might counteract the heat-stress-related effects on platelet and endothelial cell function often reported following hot-spring baths. Therefore, the present study was designed to investigate the effects of a cycle of 12 daily mud-pack treatments on bio-humoral markers of inflammation, as well as on markers of in vivo platelet and/or endothelial cell activation, in plasma samples obtained from healthy volunteers. METHODS: Blood samples were obtained before (T(0)), at the end of the first treatment (T(1)) and after a cycle of 12 daily mud-pack treatments (T(2)). Plasma cytokines (TNF-alpha, IL-1beta, and IL-6) and adhesion molecules (sP-selectin, sE-selectin and sVCAM) levels, as well as hematocrit and complete and differential blood cell counts were determined at every time point. RESULTS: Plasma sP-selectin levels were not modified during treatment, as were not sE-selectin or sVCAM. Similarly, IL-1beta and TNF-alpha levels were unchanged through a 12 daily mud-pack treatment. Conversely, plasma IL-6 levels were significantly lowered at the end of a 20-min 47 degrees C mud-pack treatment (p<0.01). CONCLUSIONS: The lack of effects on in vivo platelet and/or endothelial cell activation suggests that hot mud-pack treatment might be used as a relatively safe procedure in patients with atherothrombotic disorders. Clinical Trial. PMID: 11718697

Lik Sprava 2000 Sep;(6):86-9. **Peloid application to the area of the adrenal glands projection in the rehabilitation therapy of patient with viral hepatitis A and B**, [Article in Russian], Belichenko TA, Panenko AV. Submitted in the paper are data secured in investigations designed to study efficacies of peloid applications to the area of projection of the adrenal glands in patients with the history of viral hepatitis A and B presenting with a high risk of chronization of the illness. The analysis of the therapy effect was performed on the basis of examination of 45 VH convalescents with making use of clinical, biochemical and immunological investigational techniques. The findings obtained suggest restoration during the above therapy of the functional state of the liver as well as immunomodulating effect of the method, moderation of autoimmunoaggression, and expediency of its employment in the rehabilitative period of VH in those patients presenting with signs of disfunction of the immunity system, history of allergoses and presence of concomitant pathology. PMID: 11455930

Int J Clin Pharmacol Res 2000;20(3-4):69-80. **Mud bath therapy influences nitric oxide, myeloperoxidase and glutathione peroxidase serum levels in arthritic patients.** Bellometti S, Poletto M, Gregotti C, Richelmi P, Berte F. P. d'Abano Scientific Research Centre, Via P. d'Abano 11, 35031 Abano T., PD, Italy. [terme@studitermali.org](mailto:terme@studitermali.org)

Nitric oxide (NO) has recently been proposed as an important mediator in inflammatory phases and in loss of cartilage. In inflammatory arthritis NO levels are correlated with disease activity and articular cartilage is able to produce large amounts of NO with the appropriate inducing factors such as cytokines and/or endotoxin. Neutrophils also play an important role in inflammatory reactions and the level of myeloperoxidase, a constituent of neutrophil granules, is related to the intensity of the inflammation. Because there is evidence that suggests that mud packs influence the main cytokines involved in cartilage damage, we tried to determine whether NO and myeloperoxidase are involved in the mechanisms of action of mud bath treatment. We enrolled 37 subjects and randomly assigned them to two groups: 19 patients underwent mud bath treatment (group A) while 18 patients underwent bath treatment alone. Blood samples were obtained before and after the treatment cycles to assay serum levels of NO, myeloperoxidase (MPO) and glutathione (GSH)-peroxidase. The results showed a statistically significant decrease in NO and myeloperoxidase serum values in groups A and B, while GSH-peroxidase was not significantly increase in either of the groups; no correlation was found between NO, myeloperoxidase and GSH-peroxidase serum values. Mud bath treatment can exert beneficial effects on cartilage homeostasis and inflammatory reactions, influencing NO and decreasing myeloperoxidase serum values. The increase in GSH-peroxidase was not correlated with the reduction of other biochemical markers, suggesting that mud bath treatment has different mechanisms of action. Randomized Controlled Trial. PMID: 11314241

Minerva Med 2000 Oct;91(10):239-45. **Beta-endorphin and stress hormones in patients affected by osteoarthritis undergoing thermal mud therapy.** [Article in Italian] Pizzoferrato A, Garzia I, Cenni E, Pratelli L, Tarabusi C. Laboratorio di Patologia Clinica Istituti Ortopedici Rizzoli, Bologna. **BACKGROUND:** Thermal mud is a therapeutic agent widely used in the treatment of painful arthritic processes. The mechanism by which mud therapy works is still not well known. Its effect continues for months after completion of treatment. In order to verify whether thermal mud treatment brings about changes in the production of hormone peptides from proopiomelanocortin, the levels of plasma beta-endorphin and some hormones of the pituitary-adrenal glands (ACTH and cortisol) were determined in patients affected by osteoarthritis undergoing thermal mud therapy. **METHODS:** The levels of plasma beta-endorphin and some hormones of the pituitary-adrenal glands (ACTH and cortisol) were assessed by radiometric methods in seventeen males affected by osteoarthritis. The patients underwent a cycle of twelve sessions of thermal mud therapy. The tests were carried out immediately before thermal treatment, immediately after the first session, twelve days after the start of treatment, and again one month after completion of the treatment. **RESULTS:** beta-endorphin levels decreased significantly twelve days after the start of treatment. The level was still lower, although not significantly, even thirty days after completion of the treatment. Plasma ACTH also decreased during treatment. The decrease of this hormone was progressive and persisted after completion of treatment. Significant variations compared to baseline were found only thirty days after completion of treatment. Plasma cortisol decreased significantly after only one session of mud therapy. This hormone did not decrease any further during treatment, however, after twelve days it was still significantly lower than baseline. After completion of treatment, cortisol slightly increased, but thirty days later it was still lower, although not significantly, than baseline. **CONCLUSIONS:** It may be suggested that thermal treatment, by reducing inflammation, reduced pain and therefore diminished the cause of stress.

Forsch Komplementarmed Klass Naturheilkd 2000 Oct;7(5):233-6. **Analgesic efficacy of the serial application of a sulfurated mud bath at home.** Kristof O, Gatzel M, Hellenbrecht D, Saller R. Abteilung Naturheilkunde, Departement für Innere Medizin, Universitätsspital, Zurich, (Switzerland). The purpose of this randomized controlled trial was to evaluate the analgesic efficacy of a series of applications of sulfurated mud baths in outpatients suffering from back pain. Within 2 weeks 13 patients took 6 sulfurated mud baths (group A) and 12 patients 6 tap water baths (group B) at home. Before the bath and over 48 h after starting the 1st and the 6th bath, pain intensity was evaluated by the patients according to a visual analogue scale (VAS). The main outcome parameter was the weighted (for time of observation) sum of pain intensity (SPI) after the 6th bath. The mean SPI in group A was 741 mm x h (95% CI 594-864 mm x h) and in group B 1,112 mm x h (95% CI 929-1,252 mm x h) ( $p = 0.009$ ), suggesting a significantly stronger analgesic effect of a series of sulfurated mud baths than of a series of tap water baths. Copyright 2000 S. Karger GmbH, Freiburg. Randomized Controlled Trial. PMID: 11096262

Vopr Kurortol Fizioter Lech Fiz Kult 2000 Jul-Aug;(4):31-4. **An experimental and clinical validation of a method for treating acute inflammatory diseases of the adnexa uteri by using the electrophoresis of a therapeutic mud preparation.** [Article in Russian] Tikhonovskaia OA, Evtushenko ID, Logvinov SV. Experimental and clinical investigations have demonstrated that the addition of abdominal-sacral electrophoresis of esobel 1% solution to combined therapy of acute inflammation of the uterine appendages improves treatment results. Bioantioxidants bring about the antiinflammatory action of the mud preparation esobel while its high-polar lipids prevent structural-metabolic impairment of the appendages' tissue elements as shown by a pronounced antiexudative effects and weak secondary alteration. PMID: 11008572

Morfologija 2000;117(2):68-72. **The ultrastructural changes to the ovaries and oviducts in experimental inflammation under the influence of eplir phonophoresis.** [Article in Russian] Logvinov SV, Tikhonovskaia OA, Petrova MS, Evtushenko ID, Nevostuev SA. Department of Histology and Embryology, Siberian State Medical University, Tomsk. Ultrastructural

changes of blood vessels of ovaries and oviducts, destruction of the part of follicular epitheliocytes and disruption of other structures of blood-follicular barrier occur at the early period of experimental inflammations of appendage uterus on the background of traditional antibiotic therapy. All changes lead to atresia of growing follicles. Fibrotic-sclerotic changes develop on the 30th day and during later period. Course of eplir phonophoresis decreases ultrastructural disruptions of vessels, follicular apparatus of ovaries and oviducts epithelium. Effect of physiotherapy is manifested though activity of fibroclasts and macrophages, that regulate collagen production/ resorption ratio thus preventing the development of fibrotic changes of ovary stroma and oviduct wall. PMID: 10853255

Clin Ter 1998 Jul-Aug;149(4):271-5. **Effect of thermal mud baths on normal, dry and seborrheic skin.** [Article in Italian] Carabelli A, De Bernardi di Valserra G, De Bernardi di Valserra M, Tripodi S, Bellotti E, Pozzi R, Campiglia C, Arcangeli P. Universita di Pavia, Italia. **PURPOSE:** To investigate the curative effects of thermal water and thermal muds in various cutaneous pathologies. **PATIENTS AND METHODS:** Modifications of phmetry and sebometry using sulphur thermal muds in normal, dry and seborrheic skin have been studied. The three groups of patients have been submitted to a 14 day treatment with thermal muds. **RESULT:** The application of thermal mud normalized the value of cutaneous pH and sebometry. **CONCLUSIONS:** These beneficial effects are long-lasting in individuals who have a prolonged treatment with thermal muds. PMID: 9866888

Int J Clin Pharmacol Res 1997;17(4):149-53. **Cytokine levels in osteoarthritis patients undergoing mud bath therapy.** Bellometti S, et al., Abano Terme, Italy. Osteoarthritis is an important rheumatic condition characterized by the progressive destruction of cartilage. The pathophysiologic phenomena leading to the pathologic changes in the joint appear to result from biomechanical factors and activation of final common pathways of tissue damage influencing chondrocyte homeostasis and a functional program. Several cytokines and growth factors are reported to be responsible for inflammation and cartilage degradation. Among these, IL-1 and TNF alpha have been suggested as important in promoting cartilage inflammation and tissue destruction, while IGF I has a protective influence on cartilage structure. Chondrocytes and their metabolism have gained interest as targets of drug intervention; the results of this study confirm that mud bath therapy is also able to influence chondrocyte activities. Our data suggest that mud bath therapy influences cytokines related to osteoarthritis pathomechanism and maintenance, and encourage further investigations to evaluate possible synergism between pharmacological treatment and mud bath therapy. Clinical Trial. PMID: 9526176