

# Treatment with Parafango

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Water, warmth and movement are not only the fundamental elements of living substance, but they are the cornerstones upon which physical therapy, the treatment by physical factors such as warmth, pressure, electricity, etc., is based.

As a natural therapy, thermal applications of different kinds were practiced in ancient times. Extensive use of hot springs can be traced for more than 4,000 years through the Cretan, Hellenic and Roman spheres of civilization. The once-flourishing Roman bathing culture further evidences appreciation of thermo and hydrotherapy. The city on the Tiber had no less than 940 in its hey-day, the largest covering an area of more than 35 acres.

In these, use was made not only of hot baths and steam-sweating procedures, but hot packs were applied as well. Nothing is known of the kind of materials used for this purpose. However, Plinius (23-79 AD) mentioned the use of the Fango mud from the thermal ponds of Battaglia near Padua in North Italy. The observed cures caused the famous Galen (131-200 AD) to occupy himself with the definition of the indications of this treatment. He drew special attention to the great benefit provided in cases of chronic inflammatory changes, arthritis and rheumatism. (The extensive bathing facilities of Asclepieion of Pergamum, where Galen himself practiced for some time, have been preserved.)

In Battaglia itself, on the shores of the volcanic Crater Lake, there were extensive bathing facilities for the roman emperors at those times. They later fell into ruin, just as the knowledge of the benefits of this form of therapy did, with the decline of the Roman Empire.

Although isolated references to the use of the thermal mud of Battaglia can be traced back to the 14th Century, the use of the Fango di Battaglia, for treatments on a larger scale again, dates only from the turn of the century. In addition to these, coastal slime, mud from inland lakes and peat are used for packs. The whole group is termed peloids.

Investigation aimed at improving the thermo physical conditions, making the application easier and raising the basic hygienic conditions when applying thermal packs led to the development of Parafango "Battaglia" by Prof. Hesse in Hamburg. Introduced as a treatment in 1952, the preparation has since become widely known in practice and literature in Europe.

Parafango "Battaglia" is compounded of the dried Fango di Battaglia and paraffins with different fusing points. It further contains minute additions of talcum and magnesium oxide in order to prevent the Fango from precipitating in the melted paraffins, as well as to heighten the plasticity and the malleability of the material. Parafango "Battaglia" melts at 60°C-70°C to an easy-to-spread paste that, exactly within the range of its temperature of application, constitutes an extremely plastic mass that is easily molded to any part of the body at 122°F.

**The application of hot Parafango packs on parts of the body's surface is a purely thermal process. Neither transmineralization nor absorption of the constituent substances of Parafango by the skin takes place.** It could even be shown that the skin-irritating substances incorporated in Parafango have no effect on the skin, as the material does not give them off.

In the use of many peloids, in view of application temperatures and heat transmission by way of convection, the moisture content of the packs plays a major role. These two elements can cause individual particles of the heat-emitting medium to change their positions and thereby take their inherent heat with them. In the same sense, the share of heat transmission by way of conjunction is augmented, this being bound to the material and the heat exchange only takes place by direct mutual contact of the individual particles.

However, if the pack is completely dehydrated, as it is the case with Parafango "Battaglia", the heat exchange takes place exclusively via conduction. The heat transition resistance of the packing material being extremely high, the flow of heat over the surface of the body is, therefore, very constant and continuous. This means that Parafango packs can be applied at a substantially higher temperature, 50°C (122°F), than hydrated materials with which it is hardly possible to exceed 45°C (113°F).

The slow continuous flow to heat from the Parafango pack also guarantees something else. Whereas, hydrated packing materials in layers about 2 cm thick have substantially cooled after an application period of barely 30 minutes and produce no further therapeutic effect, Parafango packs of the same thickness can remain applied for an hour and longer without the patient noticing an unpleasant cooling of the pack. Parafango "Battaglia" not only can be applied at a higher temperature than other hydrated peloids, but also – if necessary – remain applied considerably longer.

This peculiarity does not rest entirely on the high thermal capacity of Parafango "Battaglia". It is also related to the fact that exactly within the range of the application temperature, a substantial part of the carefully balanced paraffin's fusing heat is released.

A survey of the cooling curves of water, **Fango and Parafango** easily demonstrates that water and Fango leave their range of application through cooling in 20-30 minutes. Whereas Parafango, due to the sustaining effect caused by the gradually released fusing heat, **retains its temperature of application for nearly 1 1/2 hours.**

Even at the optimum temperature of application, the slow and gentle heat transition guarantees that the limits of skin compatibility are not exceeded. Burns or the like are not to be feared when applying a Parafango pack at 50°C (122°F).

At St. George's Hospital, Hamburg, Dr. Jahnke has thoroughly tested the effect of Parafango packs on human and animal organisms. The duration of the packs that were applied at 50°C (122°F), was 30 minutes. Jahnke divided the results into the following categories: local packs, part packs, entire packs.

**Local Packings** (i.e., one or two larger joints, a small area of torso, quantity of Parafango up to 4 kilograms, 88 lbs.):

Local hyperemia, elevation of skin heat by 6°F, local sweats secretion and acceleration of the blood and lymph stream in the region of the packing are the main factors. Body temperature rises only by .4°-.45°C. The circulation remains without significant alteration. In addition to these effects, Jahnke has proved the antiphlogistic and lymph-activating effects by Parafango application with experiments upon rabbit.

**Part Packs** (three or four large joint, entire extremities, back and abdomen, pectoral or pelvic packings, quantity of packing 5-20 kilograms, 11-44 lbs.):

Represent a more penetrating treatment. Apart from the local effects already described, reflective depth-hyperemia, opening up of the arterio-venous anastomoses take place. The body temperature rises up to .75°C (12°F). An outbreak of perspiration can be observed and the slight affection of the circulation increases the pulse rate by 10-20 beats per minute. An unspecific irritation effect with short-term increase of white corpuscles in the peripheral bloods is noticeable.

**Entire Packs** (entire extremities, back eventually with abdomen in addition of packing material 30-40 kilograms, and 66-88 lbs.):

General reactions dominate the picture. The effects can be compared with mild to moderately strong fever therapy. Body heat rises to an average of 37.8°C (100°F) and returns back to normal in the course of an hour. The affection of the circulation shows an increase of the pulse rate up to 105 beats per minute and an increase of the blood pressure. Thus causing an increase of the heartbeat volume at the expense of the diastolic blood pressure in reduction of the speed of the blood circulation by 35 seconds on average and in an arterialization of the venous blood. Total throughout increases by 30 percent. The increase in leukocyte count peaks after 2 1/2 hours. A drop in eosinophils of the order of 59 percent, as well as the slightly increased number of 17 kesteroids in the urine can be considered as a stimulation of the supra-renal activity. Entire packings with Parafango "Battaglia" lead by way of a stimulation of the anterior lobe of hypophysis/suprarenal capsule system with an increase of hormone, to a physiological cortisone therapy. This very diverse reaction must also be taken into account, though in modified form, in the case of the local and part packings. The therapeutic possibilities resulting therefore call for graduation and exact dosage of the Parafango heat stimulation in accordance with the situation of illness.

***The fields of application for Parafango "Battaglia" include all such cases where an intensive heat therapy is indicated.***

Here are general directives for a few typical groups of diseases as to possible ways of proceeding in the individual case.

- **Inflammatory Rheumatism**

French, Austrian, Swiss and German authors recommend joint packing three times per week in the case of declining acute rheumatism and rheumatoid arthritis in the declining stage. Following the packs, remedial gymnastic exercises appear profitable. On the other days movement and baths are carried out. Ankylosis spondylitis (M. Bechterew) is treated in the same sense with back and pelvic packs and with movement baths. The duration of treatment depends on the remission tendency, on average it is about four to six weeks.

- **Degenerative Rheumatism**

In cases of osteo-arthritis and complaints based on intervertebral discopathies, and in the special forms of non-articular rheumatism such as fibrositis myalgia, painful shoulder, neuralgia, or neuritis, packs can be applied more often, four to five times per week – as far as the activity of the condition allows application of heat. The same goes for the stress syndromes in the field of sports medicine, such as the knee pains of cyclists, tennis elbow, javelin arm, or periostitis of a runner's shinbone.

- **Chronic Inflammations of the Internal Organs**

In addition to local packs, large part packs are also often prescribed, e.g. in the case of adnexitis, a complete ring pelvic pack; or in the case of diseases of the liver and gall bladder, a ring pack in segment region Th.5-8. In a case of prostratitis, the perineum is packed in addition to the pelvic ring. Abdominal adhesion complaints are mostly locally treated, chronic gastritis mostly dorsally with packs round Head's lines and zones. Even though the diminution of complaints is the most important indicator for the duration of treatment, experience points to a period of four to six weeks as suitable.

- **Traumatology**

Post-traumatic complaints, be they conditions after contusions, dislocations, luxations of fractures, mostly respond very favorably to part packs in the respectively injured regions. Remedial gymnastic treatment is made essentially easier by this preparation. The duration of treatment mainly depends on the extent of the injury.

- **Neurology**

Spastic palsy, irrelevant whether based on hemiplegia, paraplegia or inflammatory change of the central nervous system, spasms and contractions make gymnastic therapy difficult. Parafango packs soothe painful spasms, facilitate the mobility of contracted joints and prove themselves a valuable aid in the efforts for recovery. Application three to four times per week, if necessary for months.

With rarely encountered lancinating pains, in the case of tabes dorsalis, one ought to think of relief by Parafango packs. Treatment of the painful muscular spasms which appear in the beginning of poliomyelitis with Parafango packs has been successful. For the purpose of recovery of old poliomyelitis patients, long dorsal packs show agreeable effects. In this context, Swedish authors are of the opinion that intensive heat application, even years later, can lead to a functional increase of badly damaged anterior horn cells.

In the treatment of flaccid paralysis, as well as of polyneuropaties, whether on a diabetic, alcoholic or other base, Parafango packs make the subsequent electrotherapy easier. The duration of treatment can often run into months.

- **Dermatology**

Not only in cases of psoriatic arthropathy, but also in those of scleroderma, Parafango packs have been of service. Whereas, the first case is comparable to other rheumatic diseases of the joint, in the case of scleroderma one achieves a distinct relaxation of the regions packed. The duration of this relaxation is of course determined by the severity of the condition.

- **Adiposity**

Parafango entire packs with the very strong exudation they trigger lead to a proportionate dehydration. Losses in weight exceed those attained after hot baths. In this way, dietetic and other measures (e.g. permanent gymnastics) can be effectively supported.

### ***Contraindications of Parafango Packs***

- Local packs (up to 4 kilograms, 88 lbs.) do not necessitate contraindications from the part of the circulation. They should not be prescribed in cases of serious disturbances of perceptivity, acute neuritis, in the acute stage of primary rheumatoid arthritis, or in the case of recent thrombophlebitis and eczema.
- Part packs (5-20 kilograms 11-44 lbs.) already constitute a slight loading of the circulation; so that decompensated circulation invalids should be excluded. Due to the unspecific stimulate effect, cases of tuberculosis, cirrhosis of the liver with suspicion of varicosity of the oesophagus and endocarditis are to be excluded as well. Otherwise the above mentioned contraindications are valid.
- Entire packs (30-40 kilograms, 66-88 lbs.) In addition to the above mentioned contraindications – rule out all forms of heart and circulation deficiencies, high grade hypertension, angina pectoris, distinct vegetative dystonia and in cases of convalescence.

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