

## MUD THERAPY (MITTI CHIKITSA): CHEMISTRY AND ITS SIGNIFICANCE IN NATUROPATHY

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### ABSTRACT

One of the five components with a significant influence on the human body is earth. It has become popular as a therapeutic approach, or mud therapy in naturopathy. It is a straightforward, affordable, and successful medication used to treat a variety of illnesses. Since numerous references to its medicinal properties can be found in ancient books, mud has been utilized as medicine for a very long time. Mud contains a number of medicinal qualities that are very beneficial in the treatment of many different illness situations. This review paper emphasizes the therapeutic applications of mud as a therapy and its chemistry, significance, potential function, and use in contemporary times.

**KEYWORDS:** Mud bath, Naturopathy, Mud therapy, Mud mask, Panchamahabhutas.

### INTRODUCTION

Any medication for a physical or mental health difficulty is referred to as therapy generally.<sup>[1]</sup> People who are struggling with their physical or mental health have access to a variety of therapies.<sup>[2]</sup> In all therapies alternative therapies are treatments that do not involve taking any oral medications. It includes acupressure, acupuncture, massage, yoga etc. Mud therapy is one of them.<sup>[3]</sup> Mud is a symbol for prithvi (earth), one of the panchamahabhutas elements. It is regarded as some of the first universal knowledge for healing illness and restoring health. In Naturopathy, the usage of mud is done properly and scientifically in order to improve the body from the inside out. In mud therapy whole body or a particular part of body is coated with mud. Mud has various beneficial properties including absorbing power, cicatrizing action, stimulating capacity, antimicrobial effect and many others.

According to history, people have used mud for medicinal purposes since the early middle ages. It served as a helpful therapeutic tool at that time. German therapist Emanuel Felke attempted to revive mud therapy and gave it the moniker "Clay Pastor." One of the early proponents of natural medicine, Adolf Just, thought that lying down and sleeping would heal all illnesses. Italian researchers treated arthritis patients with thermal mud from hot springs. Mud therapy, which uses mineral waters and mudpacks to treat chronic illnesses, rose in popularity in Europe during the 17th and 19th centuries. The concept of mud therapy was created in pharmacology during the later part of the 20th century and is now employed in spa treatments and alternative

medicine. Since many millions of years ago, Israel has used Dead Sea mud as a treatment for psoriasis and arthritis. Cleopatra, the Egyptian Queen, had her own spa on the beaches of the Dead Sea and experimented constantly with beauty products made from natural ingredients.<sup>[4,5]</sup>

### Ways to use mud therapy<sup>[3][6][7]</sup>

#### 1. Mud mask

To transform previously cleaned mud into a thin flat brick, the muslin fabric should be held as tight as possible. Use that on your body as a mud pack. It takes 20 to 30 minutes to complete. The abdomen, forehead, eyes, back and spine area, feet, as well as the anal area may all be treated with the mud pack.

#### 2. Mud massage

In this therapy massage is done with mud and with the help of this all the toxins is removed out of body pores.

#### 3. Mud Nap

Patients with stress anxiety sleeplessness may benefit from sleeping in mud. It promotes psychological stability.

#### 4. Mud bath

It helps with cell renewal and blood circulation. This can be used to treat skin conditions like psoriasis, urticaria, and leukoderma. The results on chickenpox and small pox are astounding.

For a mud bath, mud is formed by soaking it in water. Then, whether in a seated or lying down position, it is applied to the whole body. It is cleaned with water after 45 to 60 minutes.

## 5. Mud walk

Walking bare foot in mud is beneficial for proper functioning of kidneys. It is good for the eyes.<sup>[3]</sup> Mud walking also enhances balance and exercises the majority of the upper body muscles. Additionally, splashing around in muddy fields enhances cardiovascular fitness.<sup>[6]</sup>

### Types of mud used in mud therapy<sup>[3][8][9]</sup>

Mud has diverse characteristics depending on where it is found in the world. The origin of the mud affects the composition of the mud. First off, the mineral content of mud differs depending on the type of rocks present in the area and the method used to create soil. Second, the local flora and wildlife have an impact on mud properties. So, before taking advantage of mud's advantages, it is crucial to understand its qualities. It is crucial to remember that any form of mud should be dried, pulverized, and sieved before use to get rid of any impurities like stones, grasses, etc.

#### 1. Black mud

Due to its mineral content and long-lasting water retention, dark cotton soil with a slight greasiness is appropriate for mud therapy. It ought to never be contaminated or polluted in any form.

#### 2. Mud from Dead Sea

More than 20 different types of salts and minerals, including magnesium, calcium, potassium bromide, silicates, natural tar, and organic components, can be found in Dead Sea mud. The presence of silicates in these helpful minerals makes their masks extremely effective for softening and washing skin, even though they are useful for treating all types of skin diseases. The mud improves blood flow and gives the body a nice glow.

#### 3. Moor Mud

It is mud formed over thousands of years from the organic leftovers of flowers, grasses, and herbs. Over time, this residue converted into a fine paste containing fulvic acids, micronutrients, amino acids, phytohormones, and humic acids in a form that the human body can readily absorb. The mud possesses anti-inflammatory and anti-aging properties. It is also beneficial in situations like Arthritis and sports - related injuries rehabilitation.

#### 4. Ant hill soil

In alternative therapies, ant hill dirt is utilized in mud therapies. When applied to the skin, it aids in the removal of toxins from the body's tissues. When used topically, it also helps to ease discomfort on the body.

### Chemistry of mud

Organically grown substances that have bioactivity are widely employed to treat a variety of ailments and are very valuable as both natural ingredients and building blocks for synthetic chemicals.<sup>[10]</sup>

The healing properties of the mud from the salty Lake Tinaki-1 were investigated by Sal'nikova et al. Bacteria, 250 million/g, were responsible for the organic matter's breakdown in the beneficial mud from this lake. The therapeutic mud, which may be thought of as a biological stratum of the soil profile under investigation, has a high level of the microbial community (0.06 mg/g). From 0.5 to 1.4 percent of the carbon in the mud's organic material came from microbial biomass.<sup>[11]</sup>

The healing potential of water and mud from Romania's Salt Lake (Lacu Sarat) was studied by Semaghiul and Dobrinas. They examined the sapropelic mud's overall Fe, Cu, and Cr concentration. The findings demonstrate that there is epithelial-level ionic interaction between the human body and the curative mud. The findings demonstrate that there is epithelial-level ionic interaction between the human body and the curative mud.<sup>[12]</sup>

By calculating the phosphatase, dehydrogenase, and catalase activities in the mud from the eight lakes, Ognean et al. investigated the relationship between the mud's three enzymatic activities and the therapeutic impact in various seasons of the year. The sampling took place in February and June, respectively. The experimental outcomes revealed seasonal differences in the activities of dehydrogenase and catalase activities (higher action in summer) and phosphatase (greater action in cold).<sup>[13]</sup>

Mud has been used to cure a number of neurological dysfunction since it includes both natural and mineral elements. It has recently been suggested that the positive benefits of mud are due to both its chemical constituents and its local thermal effects. The lipophilic constituents of the mud extract have not yet been fully characterized, in contrast to the hydrophilic components. Gas chromatography-mass spectrometry was used to investigate three distinct mud species, including krenogen, tone, and fango. The chemical examination of mud reveals organic compounds made of fatty acids in addition to hydrophilic compounds including humic, fulvic, and ulmic acids.<sup>[14]</sup>

### Benefits of Mud-therapy

#### 1. Skin related problems

Naturally, the skin benefits most from mud therapy treatments. It has a cooling impact on the body and circulation, which aids in reducing Pitta's negative consequences. It softens the skin and eliminates dead skin cells. Mud treatment is also among the finest methods of detoxification since it allows the skin's pores to remove harmful toxins that have been accumulated there.

#### 2. Eye related problems

Mud treatment improves eyesight and relieves tension on the eye. Mud can also be applied to the eyes to treat a variety of eye conditions, including stye, glaucoma, allergic responses, hemorrhaging, conjunctivitis, and eye

infections. Regular mud treatment can aid in preserving wellness, particularly for the younger youth who utilizes a lot of time looking at computers.

### 3. Digestives problems

Mud treatment aids in strengthening all connected organs and soothing the digestive system. Mud packs applied to the belly provide relief for a variety of digestive issues, including indigestion, acidity, bowel passing difficulty, and abdominal discomfort. Additionally, the treatment increases metabolism by absorbing gastrointestinal heat.

### 4. Stress, fever and headache

The feeling of applying mud to the head is really soothing. It eases anxiety, despair, and stress while promoting restful sleep. When mud is applied on body it lower down the body heat and body temperature decreases. In some cases, naturopathic doctors would prescribe it to treat nerve system problems including macroglia, leg pain, seizures, post-traumatic immobility, etc.

### 5. Muscles and joints problems

Therapy is an easy way to manage the severe pain and swelling surrounding the afflicted area in disorders like rheumatoid. Experts in naturopathy may also recommend treatment for conditions including gout, rheumatoid arthritis, osteoarthritis, and peri-arthritis. It greatly aids in providing relief from osteoarthritis of the knee and reduced mobility.<sup>[15]</sup>

### 6. Blood circulation

Mud treatment enhances blood flow throughout the body. Mud can aid in releasing stale air and moving lymph fluid during massaging. This enhances general health by aiding in the removal of pollutants from the body. Mud contains anti-inflammatory qualities as well, which can help ease achy joints and aching muscles.<sup>[16]</sup>

Also, mud has anti-inflammatory, anti-aging and analgesic action. It is also helpful in management of diarrhea and vomiting.

## Things to remember during mud baths<sup>[17][18]</sup>

### 1. Temperature

Remember that the mud would probably be maintained at warmth of between 100 and 104 degrees Fahrenheit, or roughly that of a hot bath. The body's circulation is aided by this.

### 2. Avoid Eyes And Mouth

Ask the staff members at a mud bath spa about the type of mud used and how frequently it has been changed for hygienic purposes. If you're near a lake or the ocean and the mud isn't deep enough for you to fully submerge yourself, grab liberal handfuls of it and smear it over your exposed skin, being careful to keep it out of your mouth and eyes. Follow the example of others around you who are applying mud on themselves. Once applying

the mud, lie in the sun for a while so that it may dry on your body and be removed more easily.

### 3. Rinsing

When you don't have availability to soap, don't worry; a complete rinse will get rid of all the mud on your skin. The typical shower routine should be resumed after the mud bath, though. Have the mud bath just before massaging if you are getting many spa services.

### 4. Limitations on People with Medical Conditions

Prior beginning any mud therapy, pregnant women and those with elevated or low blood flow, cardiac problems, skin infections or damaged skin (with rashes like dermatitis or psoriasis), or heating intolerance should discuss with a specialist.

### 5. Smell

Remember that mud's primary minerals frequently contain a lot of sulphur, which accounts for whatever odour the mud may have.

## Top 5 Natural Mud Baths around the World<sup>[19]</sup>

### 1. Soap Lake, Washington State, USA

Soap Lake has one of the greatest mineral levels in the worldwide among lakes. There are 23 distinct minerals in Soap Lake's water. The dirt in the lake is also quite helpful, in addition to the mineral water itself. Magnesium, carbonate, and potassium are a few of the principal minerals present in Soap Lake.

- Magnesium revitalises the skin, making it seem young. Additionally, it has been demonstrated to enhance bone strength, boost immunity, reduce the risk of stroke, and enhance sleep.
- In addition to treating skin and nail infections, indigestion and heartburn, carbonate can also relieve skin irritation.
- In addition to treating bacterial and fungal infections, potassium helps to repair skin disorders.

### 2. Dead Sea, Israel

The waters of the Dead Sea are renowned for being very saline. Among other things, the salt and ions in the water may assist with heart issues, reduce joint and muscular discomfort, and skin issues. The mud itself has a reputation for cleansing the body and tending to minor injuries

3. Hell's Gate, New Zealand
4. Milky Way Lagoon, Palau
5. Volcán El Totumo, Colombia

## CONCLUSION

Earth is a component of the human body since it is one of the Pancha Mahabhootas. A highly important substance, black mud transports all the colors of the sun to the body by absorbing them. The four impacts of it—thermal, mechanical, chemical, and electrical—help in the prevention, promotion, and treatment of several illnesses. Although it has historical precedents, more in-

depth research that is both focused and scientific is still needed to determine the effectiveness and value of mud therapy in treating a variety of diseases.

#### Conflict of Interest

The authors declare that the review was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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