



RESEARCH ARTICLE

A Study of Environmental and Health Benefits of Mud and Clay

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ABSTRACT

Out of the five constituent elements of this universe mud (soil) has a pivotal role to play in our well-being. The dark color of mud helps in absorbing different colors and conveying them to the body, giving it therapeutic properties. Mud is an important element of nature in our environment. It contains important minerals which have positive effects on human health. Mud can absorb toxins from human body therefore is very useful in preventing many diseases. It is also known for its healing properties. Mycobacterium vaccae is a natural soil bacterium which people likely ingest or breath in when they spend time in nature. Apart from the natural soil bacterium other benefits of muds include mud baths, mud packs etc. one may think that lolling in dirt can't offer any real benefits, but mud baths are a relaxing way to unwind- and they're good for us, too. For thousands of years, mud baths have been touted as a cure-all for a number of health ailments. Mud baths do have anti-inflammatory properties that make them beneficial. It also helps in cooling and relaxing body as it can hold moisture for a long time. They also contain many minerals that can soothe itchy, irritated skin. Mud packs other hand involves frequent application of packs of mud. It helps in improving skin complexion and acts on skin spots and patches to reduce them. Apart from mud bath and clay treatments it is a proven fact that researchers have discovered that children who play more in our natural environment and are involved in mud play activities tend to be less vulnerable to diseases and infections as compared to those who don't. This paper examines the benefits of natural mud, clay and soil in our environment on our health and their importance in our daily life for our well-being.

Key Words: Mud, sustainable, soil erosion, health benefits, mud bath, clay spa

INTRODUCTION

Our environment constitutes of five main elements out of which mud (earth) has a very important role to play in our well-being. It cleans the skin of elements, exfoliates and moderates the body, removes acne, releases tension and pressure, and has been known to help with ache. Also, its shape and consistency may be modified with ease, just by changing the water content, which makes it easy to use. A mud pack is advantageous over a cold compress (cold water therapy) as it retains the coolness over a longer period of time. Therefore, it is recommended whenever a prolonged cold application is required. Moreover mud is easily available and a cost effective treatment option. Mud found in different parts of the world has different properties. Mud composition varies with the place of origin. Firstly, mineral constituents of mud vary with the kind of rocks found in the region and the process of soil formation (Barbieri 1996). Secondly, mud property is influenced by kind of flora and fauna of the region. Some of The various types of mud include-

1. BLACK MUD

Dark cotton soil having some greasiness is suitable for mud therapy as it is rich in minerals and also retains water for long time. It should always be free from contamination and any kind of pollution (Cara *et al.* 1996).

2. MUD FROM DEAD SEA

Black mud of Dead Sea has beautifying and therapeutic powers (ASTM 1984). It contains more than 20 kinds of salts and minerals including Magnesium, Calcium, Potassium Bromide,

Silicates, Natural Tar and organic elements. While these beneficial minerals are useful for healing any kind of skin disorders, the presence of silicates make its masks very beneficial for softening and cleansing skin. The mud enhances blood circulation and leaves the skin with a glow. In older times Cleopatra and Queen Sheeba used it for enhancing beauty (EPA 1983).

3. MOOR MUD

It is mud produced over thousands of years from organic residue of flowers, grasses and herbs. This residue transformed over several years to fine paste which contains fulvic acids, vitamins, amino acids, plant hormones, humic acids in a form which could be easily absorbed by human body. The mud has chelatic properties which enables its top layer to filter out impurities/pollutants and preserve purity of the mud. This mud has therapeutic properties and is useful in detoxification, healing, beautification, nourishing human body. The mud has anti-inflammatory and anti-aging effects. It is also useful in conditions such as Arthritis and recovery from injury in sports.

THE HEALTHY BENEFITS OF MUD

What if It is told that one could drink a simple drink consisting of very pure volcanic clay would do the following: vacuum up many toxins, yeasts, molds and poisons from the body, Create an alkaline environment due to its PH, Sooth and heal the intestines and reduce acid reflux and reduce the toxic load on all systems of the body. According to an article by Ed Jones Clays have been used by indigenous tribes since before recorded history and medicine men would use it for its healing and drawing powers from even poisonous snake bites. This is all from a simple volcanic ash called bentonite clay powder. Bentonite is literally like a massive sponge that adsorbs anything it comes in contact with into itself and allows it to be discharged from the body. Because of the change in PH, it also increases the energy and overall well-being of users. All of us are in a sea of chemical toxins every minute we are alive on this earth and it is vital to use something daily that can assist our body in ridding ourselves of these poisons (Ferrand and Yvon 1991). Bentonite clay is the most powerful product that offers the potential of safe, inexpensive detox for all of us including our pets (Cara *et al.* 2000a). Many women have also found that using bentonite clay masks as facial offers the most powerful method of drawing out all excess unhealthy oils and impurities from the skin, and stimulates circulation and cellular revitalization.

Apart from this bentonite clay in drinking purpose mud is useful for mudpacks. Mud packs are typically used for local application (Gomes 2002). The construct and usage of a mudpack is similar for all applications on the thickness and the size varies as per the usage. Mud is first soaked in water for 30 minutes and then is applied to thin wet muslin cloth to form a uniform thin layer of half to one inch in thickness and its sides are folded in order to make it a compact pack. There are various types of mudpacks for different areas of applications.

1. MUDPACK FOR EYES

Mud soaked in water is spread to make a half inch thick layer. The pack is typically 9 in X 6 in, enough to cover eyes completely. It is placed on the eyes for 20 to 30 minutes. An eye mud pack helps in relaxing the eyes. Therapeutically, it reduces irritation, itching or other allergic conditions such as conjunctivitis and hemorrhage of the eye ball. It also helps in correcting refractive errors like short/long sightedness. It is effective in Glaucoma, where it works to reduce the eye ball tension (Gomes and Silva 2001).

2. MUDPACK FOR HEAD

A head mud pack is normally a thick narrow band. It is applied over the fore head and helps to heal congestive headache relieves pain immediately.

3. MUDPACK FOR FACE

Fine mud is used for face and a smooth paste is first made using cold water. Apply this paste evenly on the face and leave it to dry for 30 minutes. After 30 minutes one must thoroughly

wash the face with cold water. It helps in improving the complexion of the skin. In cases of acne it helps by absorbing excess oils and toxins from the skin. It also helps in reducing dark circles around the eyes.

4. MUDPACK FOR ABDOMEN

The size of a mud pack for abdomen is generally 10 in X 6 in X 1 in for adults. The mud pack should be applied for 20-30 minutes. The body and the mud pack should be covered with blanket, if applied during the cold weather. An abdomen mud pack helps in all kinds of indigestion. It is very helpful in decreasing intestinal heat and stimulates peristalsis.

Mycobacterium vaccae is a natural soil bacterium present in our environment which people likely ingest or breathe in when they spend time in nature. Creating learning environments in schools that include time in the outdoors where *Mycobacterium vaccae* is present may decrease children's anxiety and improve the ability to learn new tasks.

MUD BATH

This involves application of special kind of mud rich in natural salts and mineral over the entire body (except head). Mud baths are useful in many skin diseases such as Psoriasis, Urticaria, and leucoderma. For thousands of years, people all over the world have believed in the healing powers of mud, and natural hot springs were popular long before the creation of the modern health spa. First the mud is prepared by soaking it in water. The mud is then applied to the full body either in sitting or lying down position. Mud is kept for 45 to 60 minutes and ideally be exposed to sun light, at least intermittently. The head is always covered when exposing the body to sunlight. Afterwards, the person is thoroughly washed with cold to lukewarm water. Dry the person quickly and transfer to a warm bed. A mud bath helps in increasing the blood circulation and energizing the skin tissues. These treatments are fun and are used today more for a relaxing and luxurious experience, the practice has actually been used for centuries throughout Europe to treat rheumatism and various skin conditions. The use of natural occurring mud baths to help with these ailments is known as fango therapy, which belongs to the wider spectrum of balneotherapy. The name may be misleading, though- mud baths don't contain everyday backyard soil. Spas and salons typically use a soil composed of seaweed, volcanic ash, clay and other mineral-rich substances mixed with mineral or spring water (Ferrand and Yvon 1991). The mud is usually heated to about 100 degrees Fahrenheit, the heat relaxes muscles. Natural mud baths can be found anywhere that there are hot springs or volcanoes which will also contain volcanic ash. Some of the more popular natural mud bath locations include the Zorritos mud bath in Peru, the volcanoes Miravalles and Tabacon in Costa Rica, the volcanic mud bath in Cartagena Spain, the Dalyan channels of Turkey, the thermal mud baths of Rotorua in New Zealand and of course the volcanic ash laden mud baths of Calistoga, California where Mt. Konocti erupted and where one will find the most famous geyser, Old Faithful (Cara *et al.* 2000b).

BENEFITS OF MUD BATH

1. DETOXIFICATION

The skin is the largest organ in the body, so needs to be cleansed often and looked after properly. The easiest and quickest way to detox is through the pores in our skin – sweating out toxins is one way, but using mud also helps to draw out impurities which in turn can increase energy and improve our overall health and well-being.

2. SKIN HEALTH

Covering the body in mud not only detoxifies, but also plays a role in improving the skin's general complexion. As toxins are drawn out of the body, acne and spots may reduce, whilst blood circulation improves revitalizing skin tissue.

3. MUSCELES

Below the surface, mud baths work deeper into the body, benefiting the muscles too. It is said that using mud for therapeutic reasons can reduce inflammation, alleviating the pain of arthritis, rheumatism and relax muscle stiffness and tension.

4. RELAXATION

Relaxed muscles also mean a relaxed mind and reduce stresses and anxieties.

5. MINERAL BOOST

Absorbing mud into the skin extracts all of the minerals present, such as, magnesium and potassium. Magnesium plays a vital role in the health of hearts, bones, blood pressure, and helps treat depression. Potassium is similar, stabilizing blood pressure, helping heart and kidney disorders, benefiting brain health, water balance, and boosting the metabolism.

Westland, MI takes seriously the fun value of mud baths. In July every year Wayne County Parks and Recreation Department mixes 200 tons of topsoil and 20,000 gallons of water to create a giant lake of mud for children to play in at the "Mud Day" festival. They are following in the footsteps of spa resorts that for centuries have offered mud baths as a therapeutic treatment, and of children who have always loved to mess around in the earth.

CONCLUSIONS

Research by Soderstrom and Blennow shows those children who spend time out of doors in natural environment, suffer less from allergies and are less frequently sick. This research proposes that not only the fresh air and exercise are important, but that children's natural resilience is strengthened by exposure to a rich diversity of bacteria, building up their natural antibodies, and enabling them to better resist diseases. Laboratory research by Dorothy Matthews and Susan Jenks of The Sage Colleges in Troy, New York supports this hypothesis by showing that mice fed the dirt bacteria *Mycobacterium vaccae* navigated complex mazes twice as fast as those that were not. They also exhibited less anxiety behavior. It is thought the bacteria reduces anxiety by increasing levels of serotonin, and may also stimulate growth in certain neurons in the brain. Bringing children up in a totally antiseptic environment may prevent children's immune system from being challenged sufficiently to develop resistance. Exposure to germs during early childhood primes the body against allergies. Overuse of antibiotics may also be hindering the development of the friendly bacteria found in the intestinal tract that aid the immune system in warding off allergens. Fangotherapy (therapeutic mud baths) has been popular in Europe since Roman times, and is available in some Japanese and North American spas (e.g. Calistoga, CA). Different spas offer different healing treatments, depending on the composition of their local mineral- and nutrition-rich mud from volcanic ash or meat moss. Warmed to 100 degrees, a mud bath is profoundly relaxing, often heals skin conditions, reduces pain and inflammation, and sweats toxins out of the body.

IDEAS FOR A MUD PLAY

Some of the ideas that can encourage more of exposure to children and even adults to mud are as follows:-

1. MUD SLIDES

Kids can jump right in and get all dirty with a mud slide. One completely built of mud could add unique feature to indoor playground. Drench the face of the mound with water until the mud is slide down in the center of the mound. When children start to slide down it, their horseplay will dig the slide deeper.

2. MUD KITCHEN

Mud pies have been imaginatively baked since the first child discovered the flexibility in molding mud. Arts and Crafts, Let kids make casts out of the mud. Make mud pies and cakes.

This is an oldie but a goodie. Use old containers to “bake” in and decorate with small pebbles, flowers, or leaves.

3. SHOWER RINSE

Showers can be installed at the edges of the mud ground playground. Showers can serve a dual purpose. The other purpose is to keep the dirt ground flowing with water to keep the mud moist. Install a drainage system that washes the mud back onto the playground floor.

4. CONSTRUCTION ZONE

Make mud houses using sticks for supports. Include tunnels, secret rooms, and even a moat. Make rivers and dams. Dig a river in the dirt and add water. Build a dam to form a small puddle.

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