

HALOTHERAPY IN THE TREATMENT OF SKIN DISEASES

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Abstract: Salt has been utilized for countless years in different regions worldwide for its health-promoting and therapeutic properties. Halotherapy is a dry salt therapy administered in settings with specialized equipment known as a halogenerator. In recent decades, halotherapy has gained the trust of an increasing number of people worldwide and spread rapidly throughout many countries. The positive effects of the treatment last longer than one year. Drug-free treatments for dermatoses and skin rejuvenation are gaining popularity in the health and beauty industry. Rehabilitative dermatology, cosmetic surgery, anti-ageing procedures, and detoxification regimens all use these techniques. Skin diseases are a significant public health issue that affects a large number of people all over the world. Halotherapy is the treatment of choice for some skin diseases due to the potential for combining it with additional physical forms of therapy as well as pharmacological therapies. The treatment's minimal negative effects, combined with its delivery in a soothing setting, are beneficial to the mental and emotional health of both adults and kids. The re-profiling of post-mining areas benefits greatly from the growth of different kinds of mining tourism, including medical tourism. Even in today's salt mining, which frequently combines conventional rock salt extraction with public access to the mine, these types of facilities remain popular. Halotherapy shows promise in treating a wide range of skin conditions thanks to the dry sodium chloride aerosol's adaptable physiological effect. The healing and cosmetic effects of halotherapy on the skin have been confirmed by scientific studies, but despite the incontestable advantages of halotherapy, additional and more in-depth research on the curative effects of salt on a variety of skin conditions is currently required. The halocomplex serves as the foundation for this technological platform.

This article aims to demonstrate the advantages of halotherapy as a complementary therapy for certain skin diseases and discusses the distinction between halotherapy and salt therapy, the technology behind halotherapy, the different application methods, its health benefits in dermatology, the most common indications for using halotherapy in skin treatment and cosmetology programs, the most common skin diseases that it can be used to treat, certain contraindications, as well as the possible negative effects of using halotherapy.

Keywords: halotherapy, salt therapy, application, skin diseases, side effects
Field of the paper: Medical Sciences and Health

INTRODUCTION

Salt has been utilized for countless years in different regions worldwide for its health-promoting and therapeutic properties. This was first demonstrated by the Polish therapist Felix Boshkowski in 1843. Despite the harsh working conditions and lack of adequate food, he observed that those who worked in the salt mines in Poland were in excellent health. In addition, they rarely experienced common illnesses such as colds and respiratory conditions. The phenomenon prompted the investigator to conduct a study, from which he determined that the miners' constant inhalation of salty air caused it. As a result, the salt mines of Poland and Eastern Europe are gaining popularity as health resorts, drawing visitors from all over the world. Halotherapy (treatment with salt) emerged as a novel form of treatment. Recently, artificial salt rooms and spas have been created in many locations, especially in Eastern Europe, to escape the unpleasant sensations associated with visiting salt mines, as well as their difficult accessibility and exorbitant cost (1).

In addition, the growth of various types of mining tourism, such as medical tourism, has a high economic and social impact on the act of re-profiling post-mining areas. This is because mining tourism can help to offset the negative effects of mining on the local community. Even in modern salt mining, which frequently combines the extraction of rock salt in the traditional manner with the public's access to parts of the mine to the general public, the allure of such facilities is clear to be seen (2).

In the field of alternative medicine, halotherapy plays a significant role. The healing effects of halotherapy, also known as salt therapy and cave therapy, have been the subject of numerous scientific investigations (3)

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In recent decades, halotherapy has gained the attention of an increasing number of people worldwide and is spreading rapidly in Western Europe, Japan, Israel, North America, and numerous other nations. Numerous studies demonstrating its efficacy and applicability in treating various diseases have been published.

For skin conditions, salt has been used as a treatment method since ancient times. After the development of contemporary medicine, this common agent has been the most underappreciated substance. Despite its widespread application in both conventional and alternative medicine, it is crucial to comprehend its connection to the skin to maximize its overall benefit (4).

WHAT DISTINGUISHES HALOTHERAPY FROM SALT THERAPY?

Dry or wet salt therapy may be used. Halotherapy is a dry salt therapy administered in rooms fitted with a specialized device known as a halogenerator. In the salt chamber, the halogenerator disperses a precise dry salt aerosol. There are two types of salt rooms, according to the Salt Therapy Association: active and passive. Active salt chambers are equipped with a device called a halogenerator, which disperses pure sodium chloride into microscopic particles in the salt chamber's air. The term for this kind of salt therapy is halotherapy. Wet salt therapy consists of gargling, ingesting salt water, bathing in salt water, and nasal rinses (5).

In contrast, many spas feature rooms with various types of salt, including Dead Sea, Himalayan, rock, Mediterranean, and Caribbean salts, among others. These chambers lack a halogen generator and are designed to resemble natural salt caves, but they are unable to supply the same salt air particles as natural salt caves. These are known as passive salt rooms. Temperature, humidity, and airflow are regulated, but the sodium chloride concentration is less compared to dry salt rooms; therefore, these areas are not considered halotherapy environments. Passive salt rooms provide an environment conducive to meditation and relaxation, thereby enhancing a person's psycho-emotional state (5). Numerous scientific studies have demonstrated that salt therapy is based on the inhaling of salt particles in the upper and lower respiratory tracts as well as the skin absorption of microparticles. This is only attainable with the assistance of halogenerators. This defines the difference between active and passive salt therapy, as well as halotherapy and salt therapy.

TECHNOLOGY OF HALOTHERAPY

The halocomplex serves as the foundation for this technological platform. The halocomplex consists of a chamber with a halogenerator, salt-coated walls and flooring. In the majority of cases, the walls and floors are composed of sea salt and don't provide actual treatment. The coating of special salt on the walls and floor acts as an air buffer. A special nebulizer - a halogenerator - produces the dry sodium chloride by introducing a stream of lean, dry air saturated with highly dispersed, negatively charged sodium chloride particles into the salt room. The halogenerator includes a microprocessor that monitors the chamber's temperature, relative humidity, and concentration of aerosol (6).

METHOD OF USE

Patients spend 45 minutes in a salt room or salt cave, breathing in air that has been saturated with salt and then directed into the nasal passages and the tiniest bronchi. The air in a halotherapy room is low in humidity and comfortable at 22 to 24 degrees Celsius. The relative humidity of the room must be kept low. There's no need to outfit yourself in specialized gear. Exposed areas of the body are best for treating skin diseases. Patients will benefit more from this treatment if they go barefoot. How many sessions a patient needs is determined by their specific health situation and the nature of their disease. The typical recommended number of sessions is 12-20, with each session lasting 45 minutes (7).

Sodium chloride aerosol particles between 2 and 5 micrometers in size are the primary therapeutic agent. Positive effects on the oxidation of free radicals, local immunity, and disease manifestation can all be expected from halotherapy (8,9).

The healing and cosmetic effects of halotherapy on the skin have been confirmed by scientific studies. It improves the skin's protective properties by boosting the electrophysiological activity of skin cells and activating ion channel activity. The skin's pH is normalized through halotherapy, which also increases firmness by stimulating the dermal and epidermal repair and regeneration processes. The anti-inflammatory and anti-ageing effects of dry salt are a direct result of its ability to increase blood flow to the skin and stimulate cell membrane function. The scientific community has found that it helps treat chronic skin conditions like psoriasis, pyoderma, and atopic dermatitis (10).

HALOTHERAPY'S HEALTH BENEFITS

Skin diseases are a significant public health issue that affects a large number of people all over the world (11) three main factors contribute to salt therapy's efficacy. The air in salt rooms is three times as sterile as the cleanest operating room because of three distinct properties:

- its ability to kill bacteria and fungi;
- its ability to emit negative ions that neutralize positive charge;
- its extreme absorbency when dry.

As a result of halotherapy's influence on the epidermis and dermis, the skin's ion channels become more active, electrophysiological activity is stimulated, and the skin's protective properties are enhanced. Thus, halotherapy can help with both health and appearance. There is an increase in skin firmness as a result of the normalization of the skin's pH and the stimulation of repair and regeneration processes in the epidermis and dermis. The anti-inflammatory and anti-ageing effects of dry salt are a direct result of its ability to increase blood flow to the skin and stimulate cell membrane function(6). Additionally, halotherapy lessens the severity of dryness and redness on the skin while also stimulating the skin's natural regeneration processes (12)

Some skin conditions respond well to halotherapy, including:

- Psoriasis
- Eczema
- Dermatitis
- Acne
- Rosacea
- Onychomycosis
- Ageing of the skin

Drug-free treatments for dermatoses and skin rejuvenation are gaining popularity in the health and beauty industry. Rehabilitative dermatology, cosmetic surgery, anti-ageing procedures, and detoxification regimens all use these techniques.

Halotherapy, a form of treatment adapted from the conditions of salt mines' microclimate, is an example of a modern therapeutic approach based on the application of natural factors (13).

Today, dry sodium chloride aerosol concentrations can be used in specialized dermatocosmetic procedures thanks to halogenerators and monitoring devices. In addition to helping the respiratory system, the sodium chloride particles also have a healing and cosmetic effect on the skin and hair. When haloeaerosol is applied to broken skin, it stimulates the electrophysiological activity that determines the skin's protective properties by increasing the activity of the ion channels of the skin cells. After receiving halotherapy, the composition of the superficial auto flora has been shown to normalize in studies of the skin's micro biocenosis. It has also been established that the dry superfine sodium chloride aerosol has bacteriostatic, anti-oedematous, and anti-inflammatory effects.

The action of the microcrystals in the salt aerosol leads to the normalization of the Ph level, as well as the initiation of repair and regeneration processes in the skin. Additionally, the microcrystals cause an increase in skin turgor, which leads to an improvement in skin health. The microcirculation of the skin is improved as a result of the application of the dry salt aerosol. The increase in permeability and electrophysiological activity of the cell membrane that is caused by the dry salt aerosol contributes to the penetration of a variety of treatments that are used in dermatology and cosmetology, which in turn increases the efficacy of these treatments (13).

According to research conducted by Chervinskaya, halotherapy shows promise in treating a wide range of skin conditions thanks to the dry sodium chloride aerosol's adaptable physiological effect.

Sixty-five per cent to seventy-five per cent of patients with atopic dermatitis report improvement in symptoms such as itching, lichenification, drying of small cracks and scratches, and reduction in sympathicotonia after completing halotherapy. Patients experiencing the remission phase of acute inflammatory exudative events are more likely to benefit from treatment. Patients with streptoderma who are experiencing secondary manifestations can expect a good and relatively swift effect. Elements of the rash cleared up after just a couple of treatments, and by the end of the course, all traces of streptoderma had vanished. Between 2 and 3 treatments, patients with pyoderma show improvement, as evidenced by the resolution of the exanthematous features. Patients with the exudative form of the disease, particularly during the remitting phase of acute inflammatory exudative events, also benefit from halotherapy (decrease in infiltration and stenosis). Patients with streptoderma who are experiencing secondary manifestations can expect a good and relatively swift effect. Elements of the rash cleared up after just a couple of treatments, and by the end of the course, all traces of streptoderma had vanished. Between 2 and 3 treatments, patients with pyoderma show improvement, as measured by the resolution

of the exanthematous elements. Patients with psoriasis also benefit from halotherapy (less infiltration and central plate dissolution).

There is a close physiological relationship between the respiratory system and the skin. Bronchial asthma and neurodermatitis are just two examples of a common pair of lung and skin disorders. Sodium chloride aerosol has a curative effect on the respiratory system, resulting in detoxification and lymphatic drainage that ultimately leads to better health and less sensitization. These benefits contribute to the skin's cleanliness, restoration of its barrier function, and enhancement of its tone and turgor.

COMMON INDICATIONS FOR THE USE OF HALOTHERAPY IN SKIN TREATMENT AND COSMETOLOGY PROGRAMS

- atopic dermatitis, diffuse and exudative form in the maintenance phase; - recurrent urticaria;
- psoriasis in the maintenance phase;
- eczema;
- sebaceous gland hyperfunction (seborrhoea adiposa); - pyodermatitis;
- onychomycosis;
- thermal cutaneous lesions;
- postoperative conditions (aesthetic surgery);
- comedogenic diseases (acne); - cellulitis; - sallow skin; - trichopathy.

EFFECTS UNWANTED

Increased coughing and secretion during treatment is seen as a positive side effect because it clears the respiratory tract and signals a change and adaptation of the organism to the targeted irritant.

Rarely, a patient might experience some skin irritation, but that should go away by the fifth or sixth session. Conjunctivitis, which occurs in extremely unusual cases and is caused by irritation of the mucous membrane, should not be a cause for skipping any sessions. Patients in this situation are advised to keep their eyes closed throughout the procedure (14).

CONTRAINDICATIONS

The following conditions should not be treated with radioactive iodine: hyperthyroidism; active tuberculosis; high blood pressure; cardiovascular and respiratory insufficiency; acute stages of blood diseases; infectious diseases; fever; open wounds; and malignant diseases. Patients with claustrophobia should be approached with caution when receiving this treatment

CONCLUSION

The wellness and spa industry is becoming increasingly interested in non-pharmaceutical approaches to the treatment of dermatoses and the restoration of the skin's appearance. These procedures are included in a variety of programs, including those for rehabilitation dermatology, cosmetology, rejuvenation, cleansing, and others.

Halotherapy is an example of a contemporary therapeutic method that makes use of the application of natural factors in the treatment process. The use of halotherapy as an alternative form of treatment is currently being researched and developed for a variety of skin conditions. There are no significant adverse effects associated with its use. It is carried out in a setting that the patient finds pleasant and comfortable, which has a beneficial effect on the patient's mental and emotional state. The treatment's beneficial effects typically last for a period of time greater than one year. Halotherapy has proven to be an effective treatment for a variety of skin conditions due to the fact that it can be combined with a variety of other treatments as well as pharmacological therapies. The healing and cosmetic effects of halotherapy on the skin have been confirmed by scientific studies, but despite the incontestable advantages of halotherapy, additional and more in-depth research on the curative effects of salt on a variety of skin conditions is currently required.

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