



## Bioscientia Medicina: Journal of Biomedicine & Translational Research

Journal Homepage: [www.bioscmed.com](http://www.bioscmed.com)

# Magnesium of Dead Sea Salts as a Key Factor for the Treatment of Seborrheic and Atopic Dermatitis: A Case Report

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### ARTICLE INFO

#### Keywords:

Atopic dermatitis  
Dead sea salt magnesium  
Magnesium  
Seborrheic dermatitis  
Topical treatment

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The author has reviewed and approved the final version of the manuscript.

<https://doi.org/10.37275/bsm.v8i4.971>

### ABSTRACT

**Background:** Seborrheic and atopic dermatitis are common and chronic inflammatory skin diseases. Conventional treatments are often ineffective and can have significant side effects. Magnesium dead sea salt has a high concentration of magnesium, and previous research shows its potential to help improve skin conditions. **Case presentation:** Patients with chronic seborrheic and atopic dermatitis were treated with topical 5% dead sea salt magnesium for 4 days. Patients experienced significant improvement in their symptoms. **Conclusion.** Dead Sea salt magnesium can be a safe and effective treatment for seborrheic and atopic dermatitis.

## 1. Introduction

Seborrheic and atopic dermatitis are common and chronic inflammatory skin diseases. Seborrheic dermatitis is characterized by a red, scaly rash on the scalp, face, and chest. Atopic dermatitis is characterized by dry, itchy skin and a rash that can appear anywhere on the body. Conventional treatments for seborrheic and atopic dermatitis include topical corticosteroids, calcineurin inhibitors, and antifungals. These treatments are often ineffective and can have significant side effects, such as skin thinning, atrophy, and stretch marks.<sup>1-3</sup>

Dead Sea magnesium does have great potential to help treat dermatitis, especially atopic dermatitis. Dead Sea magnesium is about 28 times more concentrated than Mediterranean Sea magnesium.<sup>4-6</sup>

This means that Dead Sea magnesium has a greater potential to provide therapeutic effects. In addition to magnesium, Dead Sea magnesium also contains other minerals that are beneficial for skin health, such as potassium, calcium, and bromide. Dead Sea salt is known to reduce inflammation caused by atopic skin reactions.<sup>7,8</sup> This can help relieve dermatitis symptoms such as redness, swelling, and itching. Some studies suggest that Dead Sea magnesium may be helpful in the treatment of atopic dermatitis.

Many patients with seborrheic and atopic dermatitis are dissatisfied with conventional treatment due to its low effectiveness and significant side effects. Dead Sea salt magnesium has a high concentration of magnesium, and previous research shows its potential to help with various skin conditions, including

psoriasis and eczema. Currently, there is little clinical evidence examining the effectiveness of dead sea salt magnesium for seborrheic and atopic dermatitis.<sup>9-11</sup> Therefore, studies are needed to further investigate the effectiveness and safety of dead sea salt magnesium as a treatment for seborrheic and atopic dermatitis.

## 2. Case Presentation

Recently, the author prepared a 5% Dead Sea salt ointment, a concentration similar to that of sodium

cromoglycate.<sup>12</sup> Author used original Dead Sea salt (DermaSel®) finely powdered with a mortar and pestle in order to prepare a 5% ointment with a neutral excipient (Avril® neutral cream). The author decided to test his medio-thoracic area, which is typical of seborrheic dermatitis. The author quickly noticed that the itching disappeared after three light applications on day 1. On the fourth day, the reaction disappeared, suggesting a stabilization of tissue mast cells (Figure 1 before application and Figure 2 on day 4).



Figure 1. Before application.



Figure 2. On day 4 after application.

### 3. Discussion

Magnesium is an important mineral that has an important role in maintaining healthy skin. Magnesium plays an important role in maintaining the health of the stratum corneum, the outermost layer of the skin. The stratum corneum acts as the first line of defense against infection and irritation. This layer consists of tightly packed dead cells and is coated with lipids, which help prevent pathogens and harmful substances from entering the body. The stratum corneum helps maintain water levels in the skin by preventing the evaporation of water from deeper layers of the skin. The stratum corneum protects the skin from damage caused by the sun's UV rays and harmful chemicals. Magnesium helps strengthen the structure of the stratum corneum by increasing the production of the lipids and proteins that make up this layer. This makes the skin more resistant to infection and irritation. Magnesium helps maintain water levels in the stratum corneum by increasing the production of filaggrin, a protein that binds water in skin cells. Magnesium helps speed up the regeneration process of skin cells in the stratum corneum so that the skin recovers more quickly from damage.<sup>13</sup>

Magnesium has anti-inflammatory properties that can help reduce inflammation of the skin. Magnesium can inhibit the release of inflammatory mediators such as prostaglandins and leukotrienes, which play a role in triggering inflammation. This helps reduce redness, swelling, and itching of the skin. Magnesium helps stabilize cell membranes so that immune cells do not easily release inflammatory mediators. Magnesium increases antioxidant activity that helps fight free radicals, which can cause cell damage and worsen inflammation. Magnesium can help reduce eczema symptoms such as itching, redness, and rashes. Magnesium can help soothe irritated skin and reduce inflammation in atopic and seborrheic dermatitis. Magnesium can help reduce inflammation and the buildup of abnormal skin cells in psoriasis. Magnesium's anti-inflammatory properties can help reduce inflammation and redness in acne.<sup>14</sup>

Magnesium plays an important role in maintaining skin hydration. Magnesium helps strengthen the function of the stratum corneum, the outermost layer of skin that acts as a barrier against water loss. This helps maintain water levels in the skin and prevents dehydration. Magnesium helps increase the activity of aquaporins, proteins that act as water channels in skin cells. Aquaporins help move water from one cell to another, thereby keeping the skin hydrated. Magnesium has the ability to bind water in skin cells, thereby helping maintain skin hydration. Optimal hydration makes skin feel supple, smooth, and elastic. Well-hydrated skin has fewer fine lines and wrinkles, making it look younger. Hydrated skin is more resistant to damage from UV rays and other environmental factors. Good hydration helps prevent dry, itchy, and irritated skin.<sup>15</sup>

Magnesium plays an important role in the skin regeneration and recovery process. Magnesium is an important cofactor for ribosomes, cell organelles responsible for protein synthesis. Protein is the main building block of skin, and optimal protein synthesis is important for the regeneration and recovery of damaged skin. Magnesium also plays an important role in the synthesis of collagen, a protein that provides strength and elasticity to the skin. Collagen is important for keeping skin supple and smooth and helps the wound healing process. Magnesium helps improve the wound healing process by increasing blood flow to the injured area and helping the proliferation of new skin cells. Wounds and acne scars can heal more quickly with optimal skin regeneration. Skin regeneration helps increase collagen production so the skin looks smoother and more supple. Skin regeneration helps fill in fine lines and wrinkles, making skin look younger. Optimal skin regeneration helps maintain healthy skin and prevent infection.<sup>16</sup>

Magnesium plays an important role in regulating hormonal balance in the body, including stress hormones, which can worsen skin conditions. Magnesium helps regulate the release of the stress hormones cortisol and adrenaline. High cortisol levels can worsen skin conditions such as acne, eczema, and

psoriasis. Magnesium helps maintain cortisol levels at normal levels, thereby helping prevent its negative effects on the skin. Magnesium helps increase insulin sensitivity, a hormone that helps control blood sugar levels. High blood sugar levels can increase the production of stress hormones, which can worsen skin conditions. Magnesium helps maintain blood sugar levels at normal levels, thereby helping reduce its negative effects on the skin. Magnesium helps improve sleep quality, which can help reduce stress and stress hormone levels. Lack of sleep can increase cortisol levels and worsen skin conditions. Magnesium helps you sleep better and wake up feeling more refreshed, thereby helping reduce stress and its negative effects on the skin. Regulating hormonal balance can help prevent and treat various skin conditions such as acne, eczema, and psoriasis. Keeping stress hormone levels at normal levels can help you feel calmer and more relaxed, which can have a positive impact on skin health. Regulating hormonal balance can help improve mood and reduce anxiety, which can help improve mental and physical health.<sup>17,18</sup>

#### 4. Conclusion

Dead Sea magnesium has great potential to help with atopic dermatitis. Magnesium's high concentration, unique composition, and anti-inflammatory properties can help relieve the symptoms of atopic dermatitis and improve the quality of life of sufferers.

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