

## Case Report

# Yoga and Naturopathy in Stress-Associated Atopic Dermatitis: A Case Report

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## ABSTRACT

Atopic dermatitis (AD) is a chronic, relapsing inflammatory skin condition that significantly impairs quality of life. Conventional treatment often provides incomplete relief and is associated with adverse effects. Complementary approaches such as yoga and naturopathy are increasingly explored for their holistic benefits. We report a case of a 24-year-old female with severe AD over both legs for six months. She had a limited response to prior allopathic therapy and subsequently underwent an integrative yoga and naturopathy protocol with dietary modification, neutral water enema, mud pack, sunbath, oil pulling, herbal paste applications, Epsom salt foot bath, and yoga practices comprising pranayama, relaxation techniques, and meditation. Clinical outcomes were assessed using serum IgE, complete blood count, Eczema Area and Severity Index (EASI), Scoring of Atopic Dermatitis (SCORAD), and Perceived Stress Scale (PSS). After three months, there was marked clinical and biochemical improvement. Photographic evidence corroborated the remission of lesions. The patient tolerated the therapy well with no adverse effects. This case highlights the potential of yoga and naturopathy as safe, cost-effective, and holistic modalities in the management of AD, warranting larger controlled trials to substantiate these findings.

**Key words:** Atopic dermatitis, Yoga, Naturopathy, Complementary medicine, Case study, Stress reduction.

Atopic dermatitis (AD), sometimes referred to as atopic eczema characterized by flare-ups of eczematous, pruritic, and painful lesions over large or sensitive areas of the body, which can include skin dryness, cracking, redness, crusting, and oozing [1]. Intense and persistent itching is one of the most debilitating symptoms, causing long-lasting, extreme pain, with more than 60% of moderate-to-severe patients reporting itch at least 12 hours a day [2]. It is currently estimated that 10-20% of children and 1-3% of adults in developed countries are affected by the disorder. AD often starts in early infancy; approximately 45% of all cases begin within the first 6 months of life, 60% during the first year, and 85% before 5 years of age. Up to 70% of these children outgrow the disorder before adolescence [3].

Yoga and Naturopathy, the safe and cost-effective non-pharmacological remedies encompassing a holistic approach in the prevention and treatment of diseases that are widely used to treat atopic dermatitis [4]. Yoga, pranayama, and other naturopathic practices have been effective in producing physical and mental relaxation, influencing almost all systems in the body and improving the quality of life [5]. These treatments focus on herbal remedies, cleansing methods, stress

reduction through pranayama and asanas, therapeutic baths, and dietary adjustments. They are typically regarded as safe, free of side effects, and becoming more widely acknowledged as useful adjuvant therapy for chronic inflammatory illnesses, including dermatological disorders, in contrast to pharmaceutical approaches [6]. It shows the efficacy of naturopathy treatment modalities, including the application of Epsom salt and turmeric combination in the management of AD [7]. This case study aims to explore the effectiveness of Yoga and Naturopathy intervention on AD.

## CASE PRESENTATION

A 24-year-old female presented with complaints of severe itching, erythema, pain, swelling, and small papular lesions with oozing, predominantly on both legs, persisting for six months. The lesions were associated with local tenderness, elevated temperature, and surrounding induration. Before presentation, the patient had received allopathic treatment for one month without significant clinical improvement. She subsequently sought yoga and naturopathy interventions. On examination revealed erythematous, swollen, and oozing papular lesions were revealed on the anterior aspects of both legs. Diagnostic assessment included measurement of serum

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IgE levels, complete blood count (CBC), Eczema Area and Severity Index (EASI), and the Scoring of Atopic Dermatitis (SCORAD). EASI evaluates erythema, excoriation, swelling, and lichenification with scores ranging from 0 to 72, where higher scores indicate greater severity [8, 9].

SCORAD incorporates six signs: erythema, excoriation, swelling, oozing/crusting, lichenification, and dryness, across eight body sites, in addition to pruritus and sleep loss, with a range of 0 to 103 [4]. Personal stress can be determined by using a variety of instruments that have been designed to help measure individual stress levels, called the Perceived Stress Scale (PSS). Individual scores on the PSS can range from 0 to 40, with higher scores indicating higher perceived stress [10]. Following a detailed case history and consultation, an integrative therapeutic protocol was planned, consisting of naturopathy and yoga interventions. The naturopathy regimen included dietary modification, neutral water enema, mud pack application to the eyes and abdomen, sunbath, oil pulling, rice gruel with turmeric, external application of neem and kupaimeni herbal paste, and neutral foot bath with Epsom salt and Yoga practices. Detailed interventions are summarized in Table 1, while dietary modifications are presented in Table 2.

**Table 1: Details of the Intervention**

Treatment	Duration	Frequency
Neutral water enema	5 minutes	Twice a week.
Mudpack to the eyes and abdomen	20 minutes	Daily morning and evening [twice a day] before food.
Sun bath	20 minutes	Every morning at around 7 am.
Oil pulling	20 minutes	Once a day at day in the morning on an empty stomach
Rice starch (filtered water from boiled rice), along with turmeric, neem, and Acalypha indica (Kuppaimeni) herbal paste application.	30 minutes	Every 3days in a week, once a week at around 10 am
Neutral foot bath with Epsom salt	20 minutes	Every day at around 2 pm.
Nadishodhana, Surya bhedana pranayama	30 minutes	Every day at around 5 pm.
Instant Relaxation Technique (IRT), Quick Relaxation Technique (QRT), and Pranic Energisation Technique (PET) meditation.	30 minutes	Every day, once a time at around 8 pm

**Table 2: Dietary Intervention**

TIME	DIET THERAPY
6:30 – 7 AM	Wheat grass juice / Bermuda grass juice (100ML)
8:30 – 9 AM	Seasonal fruit salad (Muskmelon, Papaya, Pomegranate, Guava, Amla) (1 BOWL) and vegetable soup with buttermilk.
11 AM	1 Whole Fruit (Seasonal Fruit) or cucumber
1 – 2 PM	Boiled Vegetables (Cabbage, Pumpkin, Ivy gourd, Ridge gourd, Radish, and Carrot with turmeric, black pepper, and salt) with grated coconut 200grams.
7 PM	Raw vegetable salad (Cucumber, Cabbage, and Beetroot with salt and black pepper) or boiled green gram.

The therapies were well tolerated, and no adverse effects were reported. After three months of yoga and naturopathy intervention, serum IgE levels were reduced, and CBC showed stable leukocyte counts, with a notable decrease in neutrophils and an increase in lymphocytes. Clinical improvement was corroborated by photographic evidence (Figures 1 and 2). EASI scores declined from severe to almost clear, while SCORAD scores decreased tremendously over the three-month intervention period, reflecting marked remission of symptoms, and further PSS score also reduced, showing reduced stress. These outcomes are given in Table 3.

**Table 3: Investigations and Outcomes**

Investigation	15.08.2022	20.11.2022
Total Serum IGE	540.6 IU/ML	169 IU/ML
WBC	6380 Cells/cu.mm	6450 Cells/cu.mm
Neutrophil	59.9%	45.5%
Lymphocyte	30.1%	43.1%
Monocyte	4.2%	4.5%
Eosinophil	5.3%	6.5%
SCORAD	56	3
EASI	55.1	1.0
PSS	28	12



**Figure 1: The skin lesions on the legs before the interventions.**



**Figure 2: The Skin improvement after 3 months of intervention**

## DISCUSSION

This study found an effective change in the IgE level and other assessments conducted in the body after the intervention of Yoga and Naturopathy. The possible mechanism may include: An enema is a potent hepatic stimulant that aids the liver by removing decomposing matter and swarming microbes from the intestine. This powerful liver flow increases portal circulation activity, mild blood pressure, heart action, and renal secretion, thereby enhancing the liver's function and promoting overall health [11]. Oil pulling is believed to reduce oral microbial load by dissolving lipid-containing microorganisms and facilitating their removal through emulsification. Sesame oil, known for its antibacterial properties, can form a thin emulsion that entraps microbes and debris. This process may interfere with bacterial adhesion to tooth surfaces, aid in the elimination of desquamated epithelial cells, and enhance oral hygiene by clearing superficial deposits and reducing fat-soluble toxins [12].

The study found that nimbidin, a component of neem leaf extract, effectively inhibits inflammation-related functions of macrophages and neutrophils. *Acalypha indica* plant extract, on the other hand, stabilizes erythrocyte membranes by inhibiting hypotonicity-induced lysis, and its ethanolic extract was used to assess wound healing activity [13]. Magnesium ions ( $Mg^{2+}$ ) are transported through skin channels, facilitating topical applications for skin or inflammatory disease treatment. The absorption of  $Mg^{2+}$  and its interaction with immune response mediators are crucial. The permeability of magnesium ions depends on appendage pathways, skin hydration, and stratum corneum integrity, thus reducing skin inflammatory reactions [14].

Yoga promotes inner health and harmony, reducing physical, mental, and emotional tensions. It decreases cortisol, blood glucose, plasma renin, norepinephrine, epinephrine levels, heart rate, and blood pressure. Yoga quiets the Hypothalamic-Pituitary-Adrenal (HPA) axis response to stress [15], while meditation tilts autonomic balance from

sympathetic to parasympathetic and reduces galvanic skin conductance. It also elevates beta-endorphin levels, promoting a relaxed state [16]. Further, yoga improves sleep quality [17] and reduces serum cortisol [18].

Fatty acids, found in fruits, vegetables, nuts, seeds, and whole grains, play a crucial role in cell signalling, inflammatory processes, skin barrier function, hydration, and the alleviation of inflammation [19]. Plant-based diets can alleviate inflammation and oxidative stress in skin diseases, such as Alzheimer's, by decreasing immune parameters like Lactate Dehydrogenase 5 (LDH5) activity and peripheral eosinophil count, thereby improving skin symptoms [20]. Numerous human clinical studies have evidenced the phytotherapeutic efficacy of natural herbal medicines for the treatment of mild-to-severe AD [4]. This case study is limited by its single-patient design, which restricts the generalizability of the findings. However, the strength lies in the integrative use of yoga and naturopathy with measurable improvements in validated clinical indices, highlighting its potential as an adjunct in atopic dermatitis care.

## CONCLUSION

The present case demonstrates that yoga and naturopathy interventions can yield significant symptomatic and biochemical improvements in atopic dermatitis. The integrative approach addressed both physiological and psychosocial dimensions, leading to remission of lesions, reduction in serum IgE, and improvement in stress scores. While encouraging, these findings require validation through larger, controlled clinical trials to establish reproducibility and long-term benefits.

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