



# Living with Atopic Dermatitis: Skin Barrier Dysfunction, Care Strategies, and Long-Term Management

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## DESCRIPTION

Atopic dermatitis is a chronic inflammatory skin condition characterized by dry skin, persistent itching, and recurring eczematous lesions. It often begins in early childhood but may persist into adolescence or adulthood. The condition varies in severity, with some individuals experiencing mild intermittent irritation while others face frequent flare-ups that affect sleep, daily comfort, and overall quality of life. Although it is not contagious, its visible symptoms and persistent itch can create significant physical and emotional discomfort.

The condition is closely associated with dysfunction of the skin barrier. In healthy skin, the outer layer acts as a protective shield that prevents moisture loss and blocks entry of irritants and allergens. In atopic dermatitis, this barrier is weakened, allowing increased water loss and easier penetration of environmental triggers. This leads to dryness and heightened sensitivity. Immune system activity also plays a role, as inflammatory responses contribute to redness, swelling, and itching.

Symptoms of atopic dermatitis often include dry patches of skin, redness, scaling, and intense itching that may worsen at night. Scratching can lead to further irritation, skin thickening, and sometimes secondary infections caused by bacteria entering broken skin. In infants, symptoms commonly appear on the face, scalp, and extensor surfaces of limbs, while in older children and adults, the condition frequently affects the folds of elbows, knees, wrists, and neck.

The causes of atopic dermatitis are multifactorial, involving genetic predisposition, immune system imbalance, and environmental influences. Individuals with a family history of allergic conditions such as asthma or allergic rhinitis are more likely to develop the disorder. Environmental triggers may include dry weather, heat, sweat, harsh soaps, detergents, wool fabrics, dust mites, and stress. Food allergens may contribute in some pediatric cases, although they are not a universal cause.

Diagnosis is primarily clinical and based on patient history and skin examination. Physicians evaluate symptom patterns, distribution of lesions, and associated allergic conditions. In some cases, allergy testing may be conducted if external triggers are suspected. Differential diagnosis is important to distinguish atopic dermatitis from other skin disorders such as contact dermatitis, seborrheic dermatitis, psoriasis, or fungal infections.

Skin hydration plays a central role in management. Regular use of emollients helps restore moisture, improve barrier function, and reduce itching. These moisturizers are often applied multiple times daily, especially after bathing, to lock in hydration. Bathing practices also influence symptom control, with lukewarm water and gentle, fragrance-free cleansers being recommended to avoid further skin irritation.

Topical anti-inflammatory treatments are commonly used during flare-ups. Corticosteroid creams help reduce redness and itching by suppressing local inflammation. In some cases, non-steroidal topical agents such as calcineurin inhibitors are prescribed for sensitive areas or long-term use. These treatments must be used according to medical guidance to avoid side effects or improper application. Environmental management is another important aspect of care. Maintaining moderate indoor humidity may help reduce skin dryness. Avoiding known irritants such as scented products, rough fabrics, and strong detergents can reduce flare frequency. Clothing made from soft, breathable materials like cotton is often better tolerated than synthetic or wool fabrics.

## CONCLUSION

Recent research in atopic dermatitis has focused on understanding immune dysregulation and skin barrier genetics. Studies have identified mutations affecting structural skin proteins, which may contribute to increased vulnerability. Advances in targeted therapies have improved treatment options for moderate to severe cases, offering more individualized approaches based on disease severity and immune profile. Long-term management of atopic dermatitis requires consistent skin

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care, trigger avoidance, and medical follow-up. The condition often follows a fluctuating course, with periods of remission and recurrence. Patient education is essential for recognizing early signs of flare-ups and applying preventive measures promptly.

With appropriate care and adherence to treatment strategies, many individuals are able to maintain improved skin comfort and reduce the frequency of exacerbations.