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Short Communication

Skin Barrier Dysfunction: Understanding, Prevention and Care

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DESCRIPTION

Skin barrier dysfunction occurs when the outermost layer of the skin loses its ability to protect against environmental factors and maintain moisture. This condition leads to dryness, irritation, redness and increased sensitivity, making the skin vulnerable to infections and prolonged inflammation. It is observed in individuals of all ages and can result from a variety of internal and external factors [1]. Understanding the underlying causes, recognizing the early signs and applying effective care measures are essential for maintaining skin health. Chemical exposure is one of the most common causes of skin barrier dysfunction. Frequent contact with soaps, detergents, solvents or personal care products containing strong preservatives or fragrances can strip the skin of essential oils, weakening its protective layer [2]. Individuals who work in laboratory settings, healthcare or industrial environments may experience repeated exposure to such substances, increasing the risk of long-term barrier impairment. Simple measures, such as using milder cleansing products, wearing protective gloves and limiting direct contact with irritants, can help minimize skin damage.

Physical stress also contributes to barrier dysfunction. Friction, tight clothing and repetitive motion can disrupt the skin's outer layer, allowing moisture loss and increasing sensitivity to environmental triggers. Similarly, environmental conditions such as low humidity, cold temperatures and exposure to air pollution can exacerbate dryness and compromise the skin's protective function [3]. Maintaining proper indoor humidity, using protective clothing and applying moisturizers can reduce the impact of these factors. Medical conditions may influence barrier function as well. Chronic skin disorders such as eczema, psoriasis or certain genetic conditions can impair the skin's natural defense mechanisms. In these cases, the skin is more prone to irritation, redness and cracking, which may lead to secondary infections if left unmanaged. Supporting the skin with suitable topical treatments and avoiding additional stressors can help restore barrier function and improve overall comfort [4]. Symptoms of skin barrier dysfunction vary but commonly include dryness, roughness, itching, redness and sensitivity. In more severe cases, the skin may develop cracks, flaking or thickened patches. Early recognition of these signs is essential, as prompt intervention can prevent worsening of the condition. Ongoing care helps maintain moisture levels, reduces irritation and protects against environmental triggers [5].

Moisturization is a primary strategy for improving barrier function. Regular application of emollients, humectants and occlusive products helps retain water, restore lipid content and strengthen the skin's outer layer. Selecting products that are free from strong fragrances, dyes or harsh chemicals minimizes the risk of additional irritation. Consistent use, particularly after cleansing or exposure to potential irritants, improves skin comfort and reduces flare-ups [6]. Topical treatments may be used to support barrier repair and reduce inflammation. Mild creams or ointments containing soothing agents can help calm redness and restore hydration. Professional guidance ensures that treatments are used appropriately and effectively, avoiding unnecessary irritation or prolonged discomfort [7]. Behavioral measures also play a role in protecting the skin. Avoiding scratching, rubbing or prolonged exposure to harsh substances helps preserve barrier integrity. Using gentle cleansing methods, wearing soft fabrics and limiting contact with abrasive surfaces reduce mechanical stress on the skin. Cooling compresses and soothing lotions can provide temporary relief from discomfort while supporting recovery [8,9].

CONCLUSION

In summary, skin barrier dysfunction arises when the skin's protective outer layer loses its ability to retain moisture and defend against environmental stressors. Chemical exposure, physical stress, environmental conditions and underlying medical conditions all contribute to this problem. Effective management involves moisturizing regularly, avoiding irritants, using appropriate topical treatments and adopting protective behavioral practices [10]. Supportive measures, including proper nutrition, hydration and careful monitoring, help maintain skin health and reduce the risk of chronic irritation. Consistent

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attention and care allow individuals to restore barrier function, improve comfort and maintain resilient skin over time.

REFERENCES

1. Acevedo-Fontanez LA, Sánchez-Feliciano A, Ershadi S, Reichenberg J, Eichenfield LF, Barbieri JS et al. Periorificial Dermatitis: Pathophysiology, Diagnosis and Management. J Am Acad Dermatol. 2025 .
2. Schlösser AR, Kunkeler AL, Hijnen DJ. Real-world Experience with New Systemic Agents for Atopic Dermatitis in the Netherlands. immunol Allergy Clin North Am. 2025 .
3. Yang H, Shu H, Wang LH, Li P, Li YL, Li QF,. Smartphone-Based Digital Eczema Education Program for Atopic Dermatitis in Children Aged 0 to 6 Years: Multicenter, Randomized, Parallel Controlled Clinical Study. J Med Internet Res 2026:79559.
4. Choi S, Shin H. Family management structural model for children with atopic dermatitis. J Pediatr Nurs .2024 ;77:401-410.
5. Davis DM, Frazer-Green L, Alikhan A, Bercovitch L, Cohen DE, Darr JM, Drucker A, et al. Focused update: Guidelines of care for the management of atopic dermatitis in adults. J Am Acad Dermatol. 2025 .
6. Park G, Jun P, Moon BC, Kwon O, Jung SY, Seo CS et al. Anti-pruritic and anti-inflammatory effects of Sopoongsan on atopic or seborrheic dermatitis: A pilot randomized, placebo-controlled clinical trial and translational research using *in vitro* and *in vivo* models. J Ethnopharmacol. 2025:120708.
7. Sparling K, Frieden IJ, Butler DC. Incontinence-associated dermatitis: not just babies. J Am Acad Dermatol. 2025 .
8. Aksoy B, Kahriman I, Değer O, Atayoğlu AT. Evaluation of the efficacy of local application of bee products in the care of diaper dermatitis in infants. J Pediatr Nurs.2026;87:260-269.
9. Begolka WS, Johnson JK, Thibau IJ. Patient burden of atopic dermatitis and opportunities for real-world self-monitoring. Dermatol Clin. 2024;42(4):537-548.
10. Wan L, Wang M, Song Y, Sun G, Zhang R, Chen Z et al. Multifunctional hydrogel for the treatment of atopic dermatitis: current advances and translational challenges. Eur J Pharm Sci. 2025:107288.