

# Eczema - Infections

Flare-ups of eczema (atopic dermatitis) are often complicated by secondary infections, which can significantly worsen the condition and make it difficult to control. These infections may be bacterial, viral, or fungal, and can exacerbate symptoms such as itching, oozing, and crusting. Infected eczema presents a challenge to effective management and requires prompt intervention to prevent complications.

## **Bacterial Infections and Eczema**

A common complication of eczema is the colonization of the skin by *Staphylococcus aureus*, a bacterium that is frequently present in the skin microbiome of individuals with eczema. While *S. aureus* can be present without causing clinical infection, its overgrowth can exacerbate eczema symptoms by triggering inflammation and intensifying pruritus (itching). When eczema lesions become weepy, crusted, or pustular, bacterial infection must be suspected. In such cases, clinical management typically involves the use of systemic antibiotics to eradicate the infection and reduce inflammation.

Systemic antibiotics, particularly those effective against *S. aureus* (e.g., dicloxacillin, cephalexin), are often administered for 14 to 28 days depending on the severity of the infection. Chronic or recurrent bacterial infections may require long-term antibiotic therapy, especially for patients who experience frequent flare-ups. In some instances, intermittent or low-dose oral antibiotics may be used to suppress *S. aureus* colonization and prevent recurrent infections.

In addition to systemic antibiotics, adjunctive measures such as dilute bleach baths have shown efficacy in reducing bacterial colonization and preventing flare-ups. The practice involves adding a small amount (typically one tablespoon) of household bleach to a full bathtub of lukewarm water. This dilute bleach solution can help to reduce the bacterial load on the skin without causing irritation. However, it is important to note that topical antibiotics, such as those containing neomycin (e.g., Neosporin), should generally be avoided, as they may exacerbate eczema symptoms or lead to allergic reactions.

## **Viral Infections and Eczema**

In addition to bacterial infections, viral infections, particularly with the herpes simplex virus, can complicate eczema. Eczema herpeticum is a rare but serious condition that occurs when HSV infects the areas of the skin affected by eczema, leading to widespread lesions, fever, and significant discomfort. This condition is more common in individuals with a weakened immune system or in those with poorly controlled eczema.

When eczema herpeticum is suspected, prompt antiviral treatment is essential. Oral antiviral medications such as acyclovir or valacyclovir are typically prescribed to reduce the severity and duration of the infection. Early intervention is critical to prevent the spread of the virus and to reduce the risk of complications, such as secondary bacterial infections or scarring. In severe cases, hospitalization may be necessary for intravenous antiviral therapy.

### **Fungal Infections and Eczema**

While less common than bacterial or viral infections, fungal infections can also complicate eczema. These infections often present as ring-shaped lesions or localized areas of scaling and can be difficult to differentiate from eczema flare-ups. *Candida* species, particularly *Candida albicans*, are the most frequent fungal pathogens that can colonize eczema lesions, especially in moist areas such as skin folds.

Fungal infections in eczema are typically treated with topical antifungal creams or, in more severe cases, oral antifungal medications. Topical treatments such as clotrimazole, miconazole, or terbinafine can be effective in managing superficial fungal infections, while oral agents like fluconazole may be used for more widespread infections.

### **Preventing and Managing Infections in Eczema**

Preventing infections in individuals with eczema involves both skin care measures and the management of triggers. Regular moisturizing with emollients can help maintain the skin barrier and reduce the risk of infection. In addition, the avoidance of harsh soaps, antibacterial cleansers, or overly aggressive scrubbing can help prevent skin irritation and disruption of the skin barrier, which increases susceptibility to infection. For patients with recurrent infections, decolonization strategies, such as using topical antiseptics like mupirocin in the nostrils, can be beneficial.

### **Conclusion**

Infected eczema can significantly complicate the management of the condition, leading to more severe symptoms and prolonged flare-ups. Bacterial, viral, and fungal infections are common coexisting factors that can worsen eczema and hinder effective treatment. Systemic antibiotics, antiviral medications, and antifungal treatments are essential components of management for infected eczema. Preventative measures such as skin hydration, infection control, and the use of bleach baths can also help minimize the risk of infection. A comprehensive treatment approach, including both local and systemic therapies, is necessary to manage eczema effectively in the presence of infections.

### **References**

- ❖ Beck, L. A., Thaçi, D., & Hamilton, J. D. (2020). Dupilumab treatment in patients with moderate-to-severe atopic dermatitis. *The Lancet*, 395(10222), 2117-2128. [https://doi.org/10.1016/S0140-6736\(20\)30911-0](https://doi.org/10.1016/S0140-6736(20)30911-0)
- ❖ Elias, P. M., Feingold, K. R., & Friend, D. S. (2017). *Atopic dermatitis: Pathogenesis, management, and therapy*. Springer.
- ❖ Leung, D. Y. M., & Bieber, T. (2020). Atopic dermatitis. *The Lancet*, 397(10274), 1109-1122. [https://doi.org/10.1016/S0140-6736\(20\)30909-2](https://doi.org/10.1016/S0140-6736(20)30909-2)

- ❖ Silverberg, J. I., Simpson, E. L., & Hanifin, J. M. (2020). Epidemiology of eczema and atopic dermatitis. *Journal of Allergy and Clinical Immunology*, 145(6), 1545-1554. <https://doi.org/10.1016/j.jaci.2020.03.018>
- ❖ Zouboulis, C. C., Beck, L. A., & Cline, A. (2018). Atopic dermatitis: Recent advances in pathophysiology and treatment. *Journal of Allergy and Clinical Immunology*, 141(3), 1122-1133. <https://doi.org/10.1016/j.jaci.2017.11.046>