

# Dermatographism

Dermatographism, also referred to as dermographism, is a common form of physical urticaria (hives) characterized by the development of raised, red welts or hives on the skin following pressure, scratching, or friction. The term "dermatographism" literally means "writing on the skin," reflecting the distinctive appearance of the lesions, which often mirror the pattern of the stimulus, such as a scratch mark or pressure. It is estimated to affect approximately 2–5% of the general population, with a higher incidence in young adults and women. The condition is typically benign and transient, although it can be distressing for those affected.

## **Pathophysiology and Etiology**

Dermatographism occurs due to an exaggerated release of histamine from mast cells in response to mechanical stimuli, such as scratching or pressure. Normally, histamine release is triggered by an immune response, but in dermatographism, this release occurs in the absence of a typical immune signal. The histamine causes increased blood vessel permeability, resulting in the characteristic raised welts and hives. These lesions often appear within 5–7 minutes of skin irritation and typically subside within 15–30 minutes, although in some cases, the reaction may last longer.

Several factors can exacerbate dermatographism, including physical stimuli such as heat, exercise, stress, vibration, and cold exposure. While the condition is often idiopathic, it may also be associated with other dermatologic or systemic conditions, such as eczema, atopic dermatitis, or autoimmune disorders.

## **Clinical Features**

The hallmark of dermatographism is the development of raised, erythematous wheals, which appear in response to physical stimuli such as scratching, pressure, or stroking of the skin. These welts generally follow the direction and pattern of the stimulus. For example, scratching the skin may result in linear hives, whereas pressure may cause more widespread or homogeneous hives. The welts are typically pruritic (itchy) and can cause significant discomfort. In some cases, the condition may be associated with dry skin, leading to exacerbation of symptoms.

## **Diagnosis**

The diagnosis of dermatographism is primarily clinical, based on the characteristic presentation of localized hives following mechanical stimuli. A thorough history is essential to differentiate

dermatographism from other forms of urticaria or other dermatologic conditions. The skin test commonly used involves stroking the skin with a blunt object, such as a tongue depressor or dermatographometer, which induces the characteristic welts within minutes.

While the diagnosis is typically straightforward, in cases of uncertainty or atypical presentations, a dermatographometer may be used. This spring-loaded instrument provides a standardized pressure to the skin and can quantify the sensitivity of the skin to mechanical irritation, helping confirm the diagnosis. In rare cases where underlying systemic causes are suspected, additional laboratory tests or skin biopsies may be necessary to rule out other conditions, such as chronic spontaneous urticaria or autoimmune disorders.

## Management

Treatment of dermatographism generally focuses on symptom relief and prevention of triggers. Most cases can be managed with non-prescription interventions, such as antihistamines, which block the action of histamine and relieve the itching and welts. Below is an overview of the treatment options:

- **Antihistamines:** First-line treatment for dermatographism involves H1 antihistamines, such as cetirizine, loratadine, or fexofenadine, which block histamine receptors and reduce the formation of hives. These medications are typically effective in relieving symptoms and preventing new lesions from forming. For more severe cases, sedating antihistamines, such as diphenhydramine, may be used at night to help control symptoms.
- **Skin Care and Moisturization:** Patients are often advised to practice good skin care to minimize dryness and irritation. Routine use of moisturizers containing urea or lactic acid can help improve skin hydration and reduce dryness, which may contribute to increased sensitivity and itching. Avoiding hot showers and using gentle, fragrance-free soaps can also help prevent exacerbations of dermatographism.
- **Cromolyn Sodium:** In cases where antihistamines alone are insufficient, cromolyn sodium may be used. Cromolyn stabilizes the mast cell membrane, preventing the release of histamine and other inflammatory mediators. It is typically used in more persistent cases or when other treatments fail to provide adequate relief.
- **Avoidance of Triggers:** To minimize flare-ups, patients are encouraged to avoid known physical triggers such as extreme temperatures (heat or cold), excessive friction, or emotional stress. Wearing loose-fitting, breathable clothing and using cooling products for the skin during hot weather may help reduce the likelihood of triggering a reaction.
- **Systemic Treatments:** In rare cases of chronic or severe dermatographism, oral corticosteroids or immunosuppressive therapies may be prescribed for short-term use to manage symptoms. However, these treatments are typically reserved for refractory cases due to their side effect profile.

## Prognosis

Dermatographism is generally a benign condition that resolves without long-term health consequences. While the condition can be chronic, many individuals experience a spontaneous reduction in symptoms over time. Although it is often self-limiting, dermatographism can cause significant discomfort during flare-ups, and ongoing management may be required in some patients. With appropriate treatment, most patients can achieve symptom control and maintain a good quality of life.

## Conclusion

Dermatographism is a common, benign form of physical urticaria characterized by the formation of hives in response to skin irritation. The condition is generally transient, and while it can be distressing, it is rarely associated with serious health risks. Diagnosis is primarily clinical, and treatment focuses on managing symptoms with antihistamines, skin care, and avoiding known triggers. In more severe cases, medications like cromolyn sodium or systemic therapies may be required.

## References

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