



## Middleton's Allergy Essentials

2017, Pages 377–393



## Chapter 15 – Insect Allergy

David B.K. Golden

[Show more](#)

Choose an option to locate/access this article:

[Export](#)[Advanced search](#)[Book contents](#) [Chapter contents](#)[Front Matter](#)[Copyright](#)[Foreword](#)[Preface](#)[Contributors](#)[Dedication](#)[Chapter 1 - Introduction to Mechanism...](#)[Chapter 2 - The Origins of Allergic Dise...](#)[Chapter 3 - Epidemiology of Allergic Di...](#)[Chapter 4 - Indoor and Outdoor Allerge...](#)[Chapter 5 - Principles of Allergy Diagn...](#)[Chapter 6 - Allergen-specific Immunoth...](#)[Chapter 7 - Asthma](#)[Chapter 8 - Allergic Rhinitis and Conju...](#)[Chapter 9 - Drug Allergy](#)[Chapter 10 - Urticaria and Angioedema...](#)[Chapter 11 - Atopic Dermatitis and Alle...](#)[Chapter 12 - Food Allergy and Gastroin...](#)[Chapter 13 - Anaphylaxis](#)[Chapter 14 - Occupational Allergy](#)[Chapter 15 - Insect Allergy](#)[Appendix A - Internet Resources](#)[Index](#)

## Abstract

Systemic reactions to insect stings are reported by 3% of adults and can be fatal even on the first reaction. Large local reactions are more frequent than systemic reactions, but rarely dangerous. The chance of a systemic reaction to a sting is low (5–10%) in children and adults with a history of large local reactions and in children with mild (cutaneous) systemic reactions, and varies between 30% and 65% in adults with previous systemic reactions, depending on the severity of previous sting reactions. Venom sensitization can be detected in 20% of normal adults, so the history is most important in clinical evaluation. Venom skin tests are most sensitive for diagnosis but the serum-specific IgE test is an important complementary test. The level of venom-IgE detected by the skin test or serum test does not, however, reliably predict the severity of a sting reaction. Baseline serum tryptase is elevated in many patients with sting anaphylaxis, and should be evaluated as a predictor of severe reactions. Venom immunotherapy is safe and is 75–98% effective in preventing sting anaphylaxis; it also significantly reduces the risk of large local reactions. Most patients can discontinue treatment after 5 years, with very low residual risk of a severe sting reaction.

## Summary of Important Concepts

- Anaphylaxis to insect stings occurs in 3% of adults and 1% of children, and even the first reaction can be fatal.
- Cutaneous systemic reactions are most common in children, hypotensive shock is most common in adults, and respiratory complaints occur equally in all age groups.
- The chance of a systemic reaction to a sting is low in those with large local reactions and in children with mild (cutaneous) systemic reactions; the rate varies from 25% to 70% among adults, depending on the severity of previous systemic sting reactions.
- Venom skin tests are most accurate for diagnosis, but the serum-specific immunoglobulin E (IgE) test is an important complementary test. The degree of sensitivity on skin or serum tests does not predict the severity of a sting reaction. The history is important because venom sensitization can be detected in up to 25% of adults.
- Patients discharged from emergency care for anaphylaxis should be well educated on how to use an epinephrine kit and should understand that using the kit is not a substitute for emergency medical attention. Allergy consultation and preventative treatment should be arranged.
- Venom immunotherapy is 75–98% effective in preventing sting anaphylaxis, and it is as safe as inhalant allergen immunotherapy. Most patients can discontinue treatment after 5 years with a low residual risk of a severe sting reaction.
-

Better tests are needed for markers of susceptibility (e.g., determining who is at high risk for sting anaphylaxis) and markers of tolerance (e.g., determining who can safely discontinue venom immunotherapy).

### Key Terms

Anaphylaxis Bee sting Fire ant sting Hymenoptera Immunotherapy Insect allergy

Insect sting Venom Wasp sting

Copyright © 2017 Elsevier Inc. All rights reserved.

[About ScienceDirect](#)  
[Terms and conditions](#)

[Contact and support](#)  
[Privacy policy](#)

Copyright © 2016 Elsevier B.V. or its licensors or contributors. ScienceDirect® is a registered trademark of Elsevier B.V.

Cookies are used by this site. To decline or learn more, visit our [Cookies](#) page.

[Switch to Mobile Site](#)

#### Recommended articles

[Solid-phase extraction of flavonoids in honey sampl...](#)

2016, Food Chemistry [more](#)

[Nonlinear behaviour of glass fibre reinforced compo...](#)

2016, Composites Part B: Engineering [more](#)

[Risk and Control of Mosquito-Borne Diseases in So...](#)

2016, Trends in Parasitology [more](#)

[View more articles »](#)

---

Citing articles (0)

---

Related book content

---