Allergic Reactions to Bites and Stings
Frequently Asked Questions

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For patient or carer support contact Allergy & Anaphylaxis Australia or Allergy New Zealand.

Q 1: Do stinging insects cause severe allergic reactions?

Allergies to venoms from stinging insects are one of the most common causes of severe allergic reactions (anaphylaxis) in Australia and New Zealand. Anaphylaxis to insects is usually caused by stings from bees and wasps or the Australian Jack Jumper ant. Insect bites are a less common cause of anaphylaxis than insect stings.

Anaphylaxis is the most severe type of allergic reaction and should always be treated as a medical emergency. Anaphylaxis requires immediate treatment with adrenaline (epinephrine) which is injected into the outer mid-thigh muscle. Delayed treatment can result in fatal anaphylaxis.

Anaphylaxis from stinging insect allergy results in an average of three deaths per year in Australia. Older people and those with difficult breathing are at greatest risk and should be seen by a clinical immunology/allergy specialist to develop a strategy for managing future stings. This may include treatment using venom immunotherapy.

Q 2: What stinging insects cause allergic reactions?

- The major cause of anaphylaxis from ant stings is the Australian Jack Jumper Ant (Myrmecia Pilosula), a medium sized black bull ant found in eastern Australia, Tasmania, and South Australia. It can be recognised by its hopping motion when it walks. It is an aggressive ant, and its sting can cause severe pain.
- The Honeybee is the most common cause of allergic reactions to insects in Australia.
- The Paper Wasp is responsible for the most serious stings and the European Wasp is becoming an increasing problem in Australia. They both sting multiple times.
- Native Australian Bees and the Green Ant of Queensland also cause allergic reactions.
- Allergy to one type of stinging insect does not usually increase the risk of an allergic reaction to another. Although stinging insects belong to the order of *hymenoptera* (membranous winged insects), their venoms are very different.

Q 3: How common are allergic reactions to insect bites?

Anaphylaxis to biting insects is rare, but common bull ants have been known to cause anaphylaxis.

Local allergic reactions to biting insects such as mosquitoes, midges, and March flies, tend to become less severe with time. Caterpillars can cause severe irritation from touching their spines, which are attached to venom sacs underneath the skin. In rare cases they can trigger anaphylaxis.

Ticks are arachnids that bite, rather than insects. Tick bites can cause large local swelling and inflammation at the site of a bite which lasts several days. These reactions are usually due to mild allergy to the tick. Anaphylaxis can occur from the Australian paralysis tick, Ixodes holocyclus when the tick is disturbed, so ticks should be freeze dried before they are removed.

Q 4: What are the different allergic reactions to stinging insects?

Most insect bites and stings result in a localised itch and swelling that settles in a few days.

Isolated local reactions

- People who have had a rash or large local swelling alone have less than 10% chance of developing anaphylaxis with further stings.
- Venom immunotherapy is not recommended.

Generalised reactions without life threatening features

- Symptoms of generalised hives (urticaria) without difficulty breathing or a drop in blood pressure are uncomfortable but not dangerous.
- These types of allergic reactions are more common in children than adults and have less than a one in ten chance of progressing to anaphylaxis.
- Venom immunotherapy is not usually indicated in children who have reactions confined to the skin but is indicated in adults.
- People with a history of a generalised allergic reaction to an insect sting should be referred to a clinical immunology/allergy specialist.

Anaphylaxis

- People who are at greatest risk of anaphylaxis are those who have previously had anaphylaxis (signs include abdominal pain, vomiting, difficulty breathing, drop in blood pressure), following a sting.
- Allergic reactions to stinging insects tend to persist, although children are more likely to improve than adults.
- Adults are at greater risk of anaphylaxis than children. Venom immunotherapy is often indicated.
- People with a history of anaphylaxis to an insect sting should be referred to a clinical immunology/allergy specialist.

People at risk of anaphylaxis are usually advised to:

- Have an ASCIA Action Plan for Anaphylaxis and adrenaline injector such as EpiPen or Anapen readily available to treat anaphylaxis.
- Avoid medication that may increase the severity of anaphylaxis or complicate its treatment. Beta blockers and ACE inhibitors fall into this group.
- Seek urgent medical assistance if stung or bitten.

Q 5: How is allergy to bites and stings diagnosed?

A doctor will normally ask questions that may help to narrow down the list of likely cause of reaction. Taking a clinical history will help to exclude conditions that can sometimes be confused with anaphylaxis. Skin testing or blood allergy testing can help confirm or exclude potential triggers.

Q 6: How are minor allergic reactions to bees treated?

Bees usually leave their barbed sting in the skin and die. Flicking the sting out as soon as possible will reduce the amount of venom injected. Use the edge of your fingernail, a car key or credit card. If possible, try not to squeeze the venom sac, as this may increase the amount of venom injected.

Wasps and bull ants rarely leave their sting in the skin. Cold packs and soothing creams often help for minor reactions. Oral antihistamines can be useful for treating itch. Very large and uncomfortable local reactions may need cortisone tablets to settle the swelling.

Q 7: How can bites and stings be prevented?

Bites and stings are best avoided by covering up as much as possible:

- Stings and bites often occur on bare feet, so people with allergies to bites or stings should always wear shoes when outdoors.
- Honeybees normally only sting in self-defence. The best protection is light coloured clothing, covering much of the body, including wearing shoes and avoiding perfumes.
- When gardening, wear long sleeves, long pants, and gloves. Tuck shirt into pants and pants into socks to prevent tick bites.

Avoid provoking bees and wasps and their nests:

- Have nearby ant, bee or wasp nests removed by professionals. This is also relevant to schools and early childhood education/care centres services, particularly if they have children enrolled with stinging insect allergy.
- Wasps tend to nest in logs, walls or underground. They are generally more aggressive than bees and attracted to food and drink. It is important not to drink from open drink cans when outdoors.

Other measures:

- Avoid being outdoors in the early morning or at dusk.
- Use an insect repellent containing DEET.
- After being outdoors, check for ticks if living in an endemic area. Ticks should not be removed from allergic people until the person is in an emergency medical facility. This is because allergic reactions often occur when the tick is removed.

Q 8: Does venom immunotherapy reduce the severity of allergy?

Venom immunotherapy, also known as desensitisation, can help to switch off allergy over time and this is effective treatment for allergies to bee and wasp stings. The duration of treatment is usually three to five years. Rebates are available for this treatment on the PBS in Australia, and by Pharmac in New Zealand.

There is currently only limited access to Jack Jumper Ant Venom immunotherapy**.**

Venom immunotherapy is not yet available for treating tick allergy, or reactions triggered by other species of ants and wasps.

Venom immunotherapy is not helpful in people with large local swellings alone and may not be necessary in people with isolated rashes. For these reasons, people should be evaluated by a clinical immunology/allergy specialist before initiation of treatment is considered.

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For more information go to www.allergy.org.au/patients/insect-allergy-bites-and-stings

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