LUND UNIVERSITY

Biologiska institutionen
Lund Vision Group

Bumblebee Risk Assessment

The health risks of bumblebee stings

The bumblebee is a stinging insect. Some humans can have, or develop a severe allergic reaction to bumblebee venom.

An initial sting by a bumblebee may cause a person to become sensitised. It may take a long time (weeks, months, or even years) for someone to become fully reactive. This means their first sting may have no ill effects, but subsequent stings are likely to cause an allergic reaction.

An enzyme in sting venom provokes the allergic reaction. Bumblebees and wasps can inflict multiple stings, while a honeybee leaves its stinger in the skin and dies immediately.

Most stings induce localised pain and swelling due to a toxic non-allergic reaction from the venom. The victim then recovers with no special treatment.

Mild allergic sting reactions present with redness and pain over a large area of skin. More generalised reactions with swelling, urticaria (hives) and redness spanning two joints may also occur.

In more severe reactions, there may be whole-body hives and swelling, with breathing difficulties, a 'feeling of dread' and generalised anaphylaxis with low blood pressure and shock.

Venom allergic reactions usually occur within ten minutes of the sting. Life-threatening reactions may occur in highly allergic individuals, older people and those with heart and respiratory diseases, especially if someone experiences multiple stings.

Stings on the face and neck may react worse than stings on a finger or toe.

The longer the time between stings, the less likely it is a severe reaction will occur. Young children are more likely than adults to outgrow insect sting allergies.

How to minimise the likelihood of being stung:

When working closely with bumblebees, there is always a chance of being stung; no matter what precautions you take. If you are concerned about being stung or think that you might be allergic to bumblebee stings, do not enter a room where bumblebee experiments are being conducted.

At all times when working in the cage with the bumblebees, you should wear a protective bee suit with the net hood fastened securely, rubber gloves and rubber boots. The gloves should be fitted with long arm extensions that sit tight on the arm with elastic. This will prevent the bees from crawling into your clothing and stinging you.

Be aware that bumblebees can sting through clothing, so there is always a risk of being stung when working with the bees.

To avoid aggravating the bumblebees (which increases the chance of being stung), you should always move around the cage carefully, making slow movements. Whenever you pick up objects in the cage (such as the feeder or a camera), always check around the entire object for bees that may be sitting there. To remove the bees from an object, gently brush them away with your gloved hand. DO NOT blow on the bees to move them as the carbon dioxide in your breath will aggravate them and increase the risk of being stung.

What to do if you are stung:

Mild reactions require no more than antihistamine medication. This medication is available in all bumblebee labs in the first aid kit, along with creams that, when put on the site of the sting, minimise the pain.

More severe reactions and anaphylaxis require resuscitation with adrenaline by injection, antihistamines, steroids and intravenous fluids.

No matter how severe or mild your reaction to a bumblebee sting is, you should always inform a co-worker immediately if you have been stung. This precaution is necessary so that if you develop an allergic reaction, there is someone who can help you.

All wasp and bee allergic people should wear a MedicAlert bracelet and carry an adrenaline auto-injector.

Never exercise or take a hot bath after a sting as this may accentuate the reaction.

If someone you're with is stung and has an anaphylactic reaction, immediately call for help (dial emergency services on 112). If trained in resuscitation, maintain their airway and circulation and inject adrenaline, if available, into the thigh muscle.

I have read this document and understand the risks associated with working with bumblebees and what to do if I get stung.

Signed Date

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