

Immunotherapy for treatment of allergy

Allergen immunotherapy switches off allergy

Although medications available for allergy are usually very effective, they do not cure people of allergies. Allergen immunotherapy is the closest thing we have for a "cure" for allergy, reducing the severity of symptoms and the need for medication for many allergy sufferers.

Allergen immunotherapy involves the regular administration of gradually increasing doses of allergen extracts over a period of years. Immunotherapy can be given to patients as an injection or as drops or tablets under the tongue (sublingual).

Allergen immunotherapy changes the way the immune system reacts to allergens, by switching off allergy. The end result is that you become immune to the allergens, so that you can tolerate them with fewer or no symptoms.

Allergen immunotherapy is not, however, a quick fix form of treatment. Those agreeing to allergen immunotherapy need to be committed to 3-5 years of treatment for it to work, and to cooperate with your doctor to minimise the frequency of side effects.

Allergen immunotherapy is beneficial in certain allergic conditions

Allergen immunotherapy is usually recommended for the treatment of potentially life threatening allergic reactions to stinging insects. Published data on allergen immunotherapy injections shows that venom immunotherapy can reduce the risk of a severe reaction in adults from around 60 % per sting, down to less than 10%. In Australia and New Zealand, venom immunotherapy is currently available for bee and wasp allergy. Jack Jumper Ant immunotherapy is available in Tasmania for Tasmanian residents.

Allergen immunotherapy is often recommended for treatment of allergic rhinitis (hay fever) due to pollen or dust mite allergy (and sometimes asthma) when:

- symptoms are severe.
- the cause is difficult to avoid (such as grass pollen).
- medications don't help or cause adverse side effects.
- people prefer to avoid medications.

Allergen immunotherapy is only occasionally recommended for the treatment of atopic eczema as evidence of its effectiveness is limited, although recently published studies have shown good results in some patients. Evidence that food allergy can be controlled in this way is very limited, although research is ongoing. Improvement with allergen immunotherapy does *not* occur immediately. It usually requires at least 4-5 months before symptoms improve, sometimes longer. If you are having treatment because of spring/summer allergic rhinitis, you will usually see improvement quite clearly in the first season.

It is recommended that allergen immunotherapy is continued for about 3-5 years, to reduce the likelihood that your allergies will return. Whilst undergoing allergen immunotherapy, you can still use your allergy medications and you should continue your asthma medications at the same time in the usual way. It is important to note that allergen immunotherapy should only be initiated by a doctor who is fully trained in allergy.

Immunotherapy injections versus sublingual immunotherapy

Immunotherapy has been given by injection for more than 100 years and many studies prove that it is effective. A number of studies published in the last 5 years have shown that very high dose sublingual immunotherapy (SLIT), where allergen extracts (drops or tablets) are retained under the tongue for a few minutes, then swallowed, can also be effective. SLIT has a longer history of use in Europe than in Australia and New Zealand, where it is used more commonly than injected immunotherapy.

The allergen extracts currently available in Australia and New Zealand for oral and injected therapy are very potent, and are NOT the extremely weak and ineffective extracts used by some medical practitioners ten or more years ago.

Immunotherapy injections

Allergy injections start with a very low dose. A small needle is used which may be uncomfortable, but not very painful. The dose is gradually increased on a regular (usually weekly) basis, until an effective (maintenance) dose is reached. This usually takes three to six months. This dose may vary between patients, depending on the degree of sensitivity.

Once the maintenance dose is reached, injections are administered less often, usually monthly, although still on a regular basis. **Immunotherapy injections should always be administered in a medical facility under medical supervision.** You should stay at the medical facility for the time recommended by the allergy specialist (30-45 minutes) after the immunotherapy injection has been given.

Side effects of immunotherapy injections

Some patients develop a localised swelling at the site of the injection. This can be treated with non-sedating oral antihistamines or ice packs and if painful, Paracetamol. If the swelling is significant, your doctor may need to reduce the next dose.

More serious reactions (such as anaphylaxis) are uncommon, however predicting who might have the serious reactions is difficult. Patients are normally advised to:

- **Remain in their doctor's surgery for at least 30 minutes after injection.**
- Avoid exercising for at least 3 hours afterwards.
- Avoid some heart and blood pressure medications (e.g. beta blockers such as metoprolol or propranolol). Must be discussed with prescribing doctor.
- Taking a non-sedating oral antihistamine before the injection may reduce the risk of side effects and may be recommended by your doctor.

It is important to inform your doctor about any reactions you may have experienced after your last injection and any new medications you are taking (such as eye drops, new heart/blood pressure tablets) or if you become pregnant.

Patients who are pregnant (or planning to become pregnant in the near future) are not routinely commenced on allergen immunotherapy until after they have given birth. If the patient is on maintenance doses of allergen immunotherapy and then becomes pregnant, the injections can be continued (unless the patient wishes to stop), but the supervising specialist should be contacted to discuss relevant safety issues.

Sublingual immunotherapy

The potential advantages of sublingual treatment are those of no injections, fewer regular doctor visits, home dosing after the first treatment, and a lower risk of serious reactions. Parents of young children often prefer sublingual immunotherapy as the child does not have to have regular injections.

The main disadvantage of this form of treatment is cost as more allergen needs to be swallowed than injected, resulting in the cost per allergen being more expensive than injected treatments. Some people also dislike the salty taste.

It is not yet clear if sublingual immunotherapy is as effective as allergy injections.

Common methods for taking the allergen extracts:

- Take in the morning on an empty stomach.
- Keep the drops or tablet under the tongue for at least 2 minutes, then swallow.
- Do NOT eat/drink anything for 15 minutes.
- Avoid crunchy cereals as these may cut the tongue and increase the likelihood of mouth irritation from the extracts.
- If you forget to take them in the morning, continue treatment the next morning at the usual dosage.

Currently, sublingual immunotherapy is not available for insect venom immunotherapy.

Side-effects of sublingual immunotherapy

Common side effects include irritation, minor swelling or itching inside the mouth, stomach upset/nausea. This can be controlled by temporarily reducing the dose or taking an oral non-sedating antihistamine beforehand. These side effects generally resolve after the first few weeks.

The risk of potentially dangerous side-effects arising from this form of treatment, such as difficulty breathing, is extremely low.

Unorthodox use of immunotherapy

There is no proven role for allergen immunotherapy to reduce the severity of symptoms related to food intolerance or any perceived adverse reactions to food chemicals, additives, preservatives, artificial colours or smoke. There is no proven role for the addition of bacterial extracts to allergen extracts for immunotherapy, or for the use of bacterial extracts to treat any allergic disease at this time.

At this time, immunotherapy to switch off food allergy is the subject of research, but is yet to enter routine clinical practice. Those who have a diagnosed food allergy must avoid the food trigger unless they are participating in a research study lead by a clinical immunology/allergy specialist.

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