

## Allergies: Can specific immunotherapy injections reduce hay fever and other forms of allergic rhinitis?



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The medical term for hay fever is "seasonal allergic rhinitis". This common allergy is usually triggered by certain kinds of pollen or mould in the air that are found in greater amounts in the springtime and summer. Some people have allergic rhinitis symptoms all year round ("perennial allergic rhinitis"). They are often allergic to house dust mites, pet dander or some other airborne allergy triggers (allergens). These conditions are also sometimes called allergic rhinoconjunctivitis.

Rhinitis means inflammation of the membranes in the nose, and conjunctivitis is a certain kind of eye inflammation. The body over-reacts to one or more specific allergens such as particular pollens. The allergic reaction is a chain of chemical processes that includes cells releasing antibodies and chemicals like histamines into the tissues around the nose and eyes. This can cause sneezing, itching, a runny and/or blocked nose (rhinitis), and red and watery eyes. The reaction could be mild or it could make the person miserable for days or weeks at a time.

It is impossible to completely avoid airborne allergens. Allergic symptoms can be relieved by medication, including antihistamines and steroids (corticosteroids). You can read more about some of the commonly used antihistamines [here](http://www.informedhealthonline.org/index.378.en.html) (URL: <http://www.informedhealthonline.org/index.378.en.html>) . For many people, using medications is enough for them to cope with their allergies. Another option is specific allergen immunotherapy, also called SIT (short for "specific immunotherapy"). This treatment involves exposing the person to the substance to which they react in order to desensitise them. It is also sometimes called desensitisation or hyposensitisation. It is like trying to immunise a person against their own allergy. Immunotherapy can be an option for people who are allergic to specific substances for which there is an extract that can be used for the treatment. You can read more about specific allergen immunotherapy [here](http://www.informedhealthonline.org/index.375.en.html) (URL: <http://www.informedhealthonline.org/index.375.en.html>) .

The original form of SIT involves regular injections under the skin (subcutaneous), usually over a period of at least 2

to 3 years. To find out how effective it is and what the risk of adverse effects is, researchers from the Cochrane Collaboration reviewed the trials of this treatment for hay fever. In these trials, two groups of people were compared. One group of people in each trial had injections of the allergen extracts, and the comparison group had injections of an inactive substance (placebo).

The researchers found 51 trials. There were almost 2,900 people in the trials. Most of the people experienced an improvement in their allergy symptoms, and could reduce their use of allergy medications. However most of them had adverse reactions. About 6 out of 10 people (around 60%) had local reactions where they were injected - usually a mild rash. Only about 2 out of every 10 people (around 20%) had other kinds of allergic reactions or asthma-like symptoms. The adverse reactions were temporary, and often relieved by treatment.

The biggest concern with SIT, though, is that there will be an overwhelming, difficult-to-control physical reaction to the injection called anaphylactic shock ("anaphylaxis"). People who have SIT injections need to be under medical observation for at least 30 minutes after treatment so that the doctor can immediately treat them if they do have this kind of reaction. If you have had an allergic reaction to injections in the past, tell your doctor about it before starting SIT.

Anaphylactic shock after SIT has led to some deaths in the past. However, investigations of these deaths found that people who died were usually people who had poorly controlled asthma, poor medical treatment during the injection treatment, or both. You can read more about this, as well as SIT for people with asthma, [here](http://www.informedhealthonline.org/index.375.en.html) (URL: <http://www.informedhealthonline.org/index.375.en.html>) .

In the trials mentioned above, fewer than 100 people who had SIT experienced a potentially dangerous allergic reaction. All of these people recovered well after immediate medical treatment for the reaction.

Overall, the researchers concluded that SIT can reduce symptoms and the need for allergy medications as well as improve the quality of life of people with seasonal allergic rhinitis. It is only an option for people who have a test confirming that they have a specific allergen that can be treated this way.

Another newer option is sublingual immunotherapy. This

involves having drops, tablets or a spray under the tongue instead of an injection, which should avoid the more dangerous adverse effects of injecting the allergen under the skin. Sublingual immunotherapy can also help against hay fever, but it is not yet known how well it compares with the injection treatment. You can read more about this here (URL: <http://www.informedhealthonline.org/index.375.en.html>) .

## Glossary

### Cochrane Collaboration

The Cochrane Collaboration is an international network of thousands of researchers and others. They work together in teams called Cochrane Review Groups to answer questions about health care by doing systematic reviews of evidence. To achieve this, the members of the Collaboration have developed systems and methods for systematically finding and analysing the results of trials of health care interventions. The goal of the Cochrane Collaboration is to help patients, health care practitioners and others make more informed decisions about health care. You can read more about the Cochrane Collaboration at their website.

### allergy

An allergy is the body's overly sensitive reaction to a foreign substance. The body produces antibodies just as it would if the substance were a germ, although it is not dangerous to the body. The symptoms of the allergy partly depend on the substance causing it, the allergen. People with allergies often have symptoms like running nose, watery eyes, itching, rashes, stomach and bowel problems or asthma. Typical allergens are pollen, animal hair, proteins in certain food or house dust mite excrement.

### asthma

Asthma (asthma bronchiale) is a permanent (chronic) disease with symptoms like coughing and breathlessness often occurring in acute attacks. In asthma, the airways are overly sensitive. The development of asthma is often associated with an overreaction to foreign substances or physical stimuli, frequently in connection with an allergy.

### inflammation

An inflammation is a (defense) reaction of the body to an injury, irritation or infection. More blood is brought to the respective body part to protect the body. This is why this body part feels warmer, becomes swollen and red and is usually more sensitive. If the inflammation affects the mucous membranes, they secrete more fluid than usual. This helps to wash out the germs that have entered.

**Sources**

Calderon MA, Alves B, Jacobson M, Hurwitz B, Sheikh A, Durham S. Allergen injection immunotherapy for seasonal allergic rhinitis. *Cochrane Database Systematic Reviews* 2007, Issue 1. [Cochrane summary (URL: <http://www.mrw.interscience.wiley.com/cochrane/clsysrev/articles/CD001936/frame.html> ) ]

## **The German Institute for Quality and Efficiency in Health Care (IQWiG)**

The German Institute for Quality and Efficiency in Health Care (IQWiG) was established by legislation to provide evaluations of the effectiveness, quality and efficiency of healthcare services. This includes the assessment of medicines as well as the publication of health information for consumers and patients.

## **Evidence basis of our health information**

Our information is based primarily on systematic reviews of the effects of health care. Systematic reviews are necessary to gain an objective picture of health care. In order to do this, a clear question is formulated. Researchers then find all the relevant studies that could answer this question. They then evaluate those studies.

You can find a list of the evidence and other scientific literature on which this information is based at [\*\*www.informedhealthonline.org\*\*](http://www.informedhealthonline.org)

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