

Allergy vaccine is nothing to sneeze at

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Monash University researchers are working on a vaccine that could completely cure asthma brought on by house dust mite allergies.

If successful, the vaccine would have the potential to cure sufferers in two to three doses.

Allergies to house dust mites is a leading cause of asthma and the respiratory condition affects more than 2 million Australians and costs more than \$600 million in health expenditure each year.

Currently, people allergic to house dust mites must continually clean their environments to remove the microscopic creatures from soft furnishings to avoid an allergic attack. Medications can bring relief for some sufferers, but must be taken regularly. Others respond less well to medications.

Professor El Meeusen, who is working with Professor Robyn O'Hehir, both from the Faculty of Medicine, Nursing and Health Services, believes that a vaccine for people with house dust mite allergies will have a range of health and financial benefits for patients and the government.

"We are aiming to develop a vaccine that can be completely delivered in two to three doses. That means a person suffering from a house dust mite [allergy](#) will be able to breathe easily from their final dose," Professor Meeusen said.

"Allergies cost the Australian economy approximately seven billion dollars every year. The potential reduction in cost to the patient and to the government by eradicating a common allergy such as this is immense."

Professor O'Hehir has also made significant gains in developing a vaccine for people with peanut allergies. Currently there is no specific treatment for [peanut allergy](#) with avoidance and emergency treatment of anaphylaxis with adrenaline as the only options. Allergen [immunotherapy](#) is available for selected patients with house dust mite allergy but typically injections need to be given regularly for three to five years.

"This method of immunisation is quite precarious, because modern medicine still isn't entirely sure how it really works," Professor Meeusen said.

"The immunisation is administered in small doses. Too much can cause anaphylactic shock. It's a very fine line."

Laboratory testing has shown that a genetic predisposition exists to be allergic to more than one allergen.

"We have already found that being allergic to peanuts also represents the likelihood of developing an allergy to house [dust mites](#)," Dr Meeusen said.

"In humans it is difficult to look at how the very early stages of allergy occur, because you don't get to see the patient until it is well developed in their allergic response. Our testing enables us to look at the very first time that our models are exposed to the allergen."

From there, the scientists can see which models are going to develop an

allergy and which are not, to determine the difference between them.

This research involves using the scientist's knowledge of normal vaccines for infectious diseases to better understand how allergy vaccines work in order to develop more effective and safer products.

Provided by Monash University

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