

The Desensitization of Peanut Allergies

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An allergy to peanuts involves an immune system response. Even a tiny amount of peanuts may trigger a serious allergic reaction. When one is allergic, his or her immune system reacts to a protein found in the peanuts and may cause reactions such as: swelling, itching, hives, redness, wheezing, shortness of breath, nausea, loss of consciousness, or abdominal pain. Allergic reactions to peanuts usually occur within minutes after being exposed, although reactions within an hour or so after ingestion are possible.

The most serious and deadliest allergic reaction to peanuts is called an anaphylactic shock, which can develop immediately after peanut exposure. This reaction is due to the constriction of the bronchi, and dropped blood pressure sometimes resulting in a loss of consciousness. Anaphylactic shock can be identified by the symptoms listed above or diarrhea, bluish skin, and vomiting. Allergies are caused by immune system malfunction which works like this: your immune system identifies the peanuts as a danger and activates production of immunoglobulin E antibodies to neutralize the protein in the peanuts. This trait stores and recognizes the protein the next time you come into contact with peanuts (either directly, cross contact, or via inhalation) and it triggers your immune system to release histamine which causes a range of allergic signals.

There are two ways of being diagnosed, via a skin test where the skin is pricked and exposed to a small amount of the peanut protein and if allergic a small red bump will appear or with a Blood test: If responsive to the skin test, a blood test is given, to measure the amount that your immune system can deal with the peanuts. It measures the amount of immunoglobulin E antibodies and the blood sample is sent to the lab to test for severity.

In a study completed in 2003, a drug which raised the threshold at which allergic people react to peanuts was the first successfully demonstrated preventative treatment. 84 people ages 12-60 with peanut allergy were given four injections over a four month period. 4 people

were given placebo and the rest were given the drug called "TNX-901". 2-4 Weeks after the final injection, the volunteers were brought to a clinic and given increasing doses in 40 minute intervals until an allergic reaction was had. The volunteers receiving the placebo could only withstand ½ of a peanut without reacting but the people who had received the highest dosages of the drug could withstand 9 peanuts without having a reaction according to the study coauthor Donald Y.M. Leung of the National Jewish Medical and Research Center in Denver. Some managed the equivalent of 24 peanuts, he says. He estimated that the average accidental exposure to peanuts is equal to one to two peanuts. TNX-901 is a manmade antibody that latches onto the IgE antibodies and prevents them from binding to mast cells. People getting TNX-901 showed a significant drop in IgE antibodies in their blood.

Immunotherapy is a way of developing a tolerance by injection of tiny amounts of the allergens. In a study presented February 24th 2007. The oral immunotherapy study began by giving 8 children with known peanut allergies doses of peanut protein in the form of peanut flour mixed with applesauce. This trial erupted into 3 phases:

- (1) A day in the hospital with escalating doses given throughout the course of the day
- (2) A four month period that involved daily doses
- (3) And a home maintenance phase lasting 18 months that maintained the daily dose of 300mg, approximately 1 peanut



- <http://www.mayoclinic.com/health/peanut-allergy/DS00710/DSECTION=2>
- <http://www.sciencenews.org/articles/20030315/fob1.asp>
- [http://152.1.118.33/Files/Food%20Technology%202003%2057%20\(12\)%2024-29.pdf](http://152.1.118.33/Files/Food%20Technology%202003%2057%20(12)%2024-29.pdf)
- <http://www.webmd.com/content/Article/132/118244.htm?pagenumber=2>
- N Engl J Med. 2003 Mar 13;348(11):1046-8.