



The **Anaphylaxis** campaign
Helping people with severe allergies live their lives

Allergic potential of processed tomato products

Commercially processed tomato products – such as those that are canned or made into puree – are likely to trigger reactions in some people with tomato allergy despite the processing that takes place. That is the conclusion of a newly published study carried out by a team of experts based in Milan.

Their findings show there are tomato allergens that remain stable even when heated and processed, contradicting the general misconception that all fruit allergens (including other members of the rosaceae family) are generally considered heat labile.

Tomato has become a well-known allergen and several studies have confirmed that there is an association between people with birch pollen allergy and oral allergy syndrome caused by tomato. Several allergens have been identified in fresh tomato such as Lyc e 1 (which is a profilin) and Lyc e 2 and Lyc e 3 (which are a lipid transfer proteins – LTPs).

One of the aims of the study was to look at the allergy potential of processed tomato products and the clinical relevance of tomato LTP. The authors recruited about 40 people with confirmed tomato allergy, diagnosed either from skin prick tests or from medical history. The severity of the allergy varied within the group.

Ten people reported allergic reactions to cooked tomatoes. In immunoblotting tests, their sera reacted only to LTPs. In commercial products, such as canned and peeled tomatoes and tomato puree, LTP was the only detectable allergen. The team also found that LTPs were present in peel, pulp and seed of the tomato.

Only people with LTP-sensitisation were found to have allergic reactions to the tomato derivative products. The authors felt that this was to be expected, as thermal processing which occurs during production of these derivatives would denature many of the other allergenic proteins, but not LTP. Although some people with tomato allergy suffer only mild reactions, the authors conclude that people allergic to the LTPs may have severe reactions to tomato derivatives as well as fresh tomato. Using these derivatives in skin prick tests could prove to be an effective method of identifying those with severe allergy.

The team was led by Valerio Pravettoni of the Clinical Allergy and Immunology Unit, IRCCS in Milan. The paper has been published in the Journal of Agricultural and Food Chemistry. Go to <http://pubs.acs.org/doi/abs/10.1021/jf9022367>

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