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Food allergies better understood

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Scientists have taken a step closer to explaining food allergies, especially those in children.

The new research shows how food antigens stimulate immune cells in the gut that prevent the immune system rejecting food.

Dr Surh, from the La Jolla Institute in California, said: "The immune system evolved to protect us from things that are not ourselves, like viruses or pathogens, yet we consume nutrients, which are themselves foreign.

"Our work shows food tolerance is acquired and involves specific populations of T cells that develop following its consumption. Without them, we would mount a strong immune response to macromolecules contained in food."

Scientists have found antigen-free mice raised in a germ-free environment and only fed amino acids were depleted of T-regulatory (Tregs) cells. However their counterparts who were fed a 'normal' protein diet had a large number of these cells. Tregs cells control the immune system, and prevent autoimmune disease.

This study is the first to demonstrate the effect a normal diet has on gut cells that suppress rejection of food by the immune system. Researchers believe this can explain why children are more susceptible to food allergies as they have more limited exposure to novel foodstuffs.

As well as demonstrating this, researchers looked into what happens when immune cells ignore harmless antigens. Antigen-free mice were exposed to ovalbumin (a protein) and a massive immune reaction was observed.

The researchers proposed this occurred as the antigen-free mice did not have a population of immunosuppressive Tregs that would usually reduce the inflammatory response to food.

Surh said: "We are now examining the cellular and molecular details of how the 'default' strong T cell response to food is regulated, in this context, we plan to pay particular attention to certain foods, such as peanut, egg and other foods that cause food allergy."

The research was published in [Science](#).

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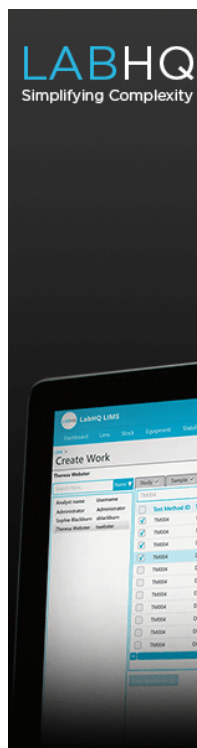
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