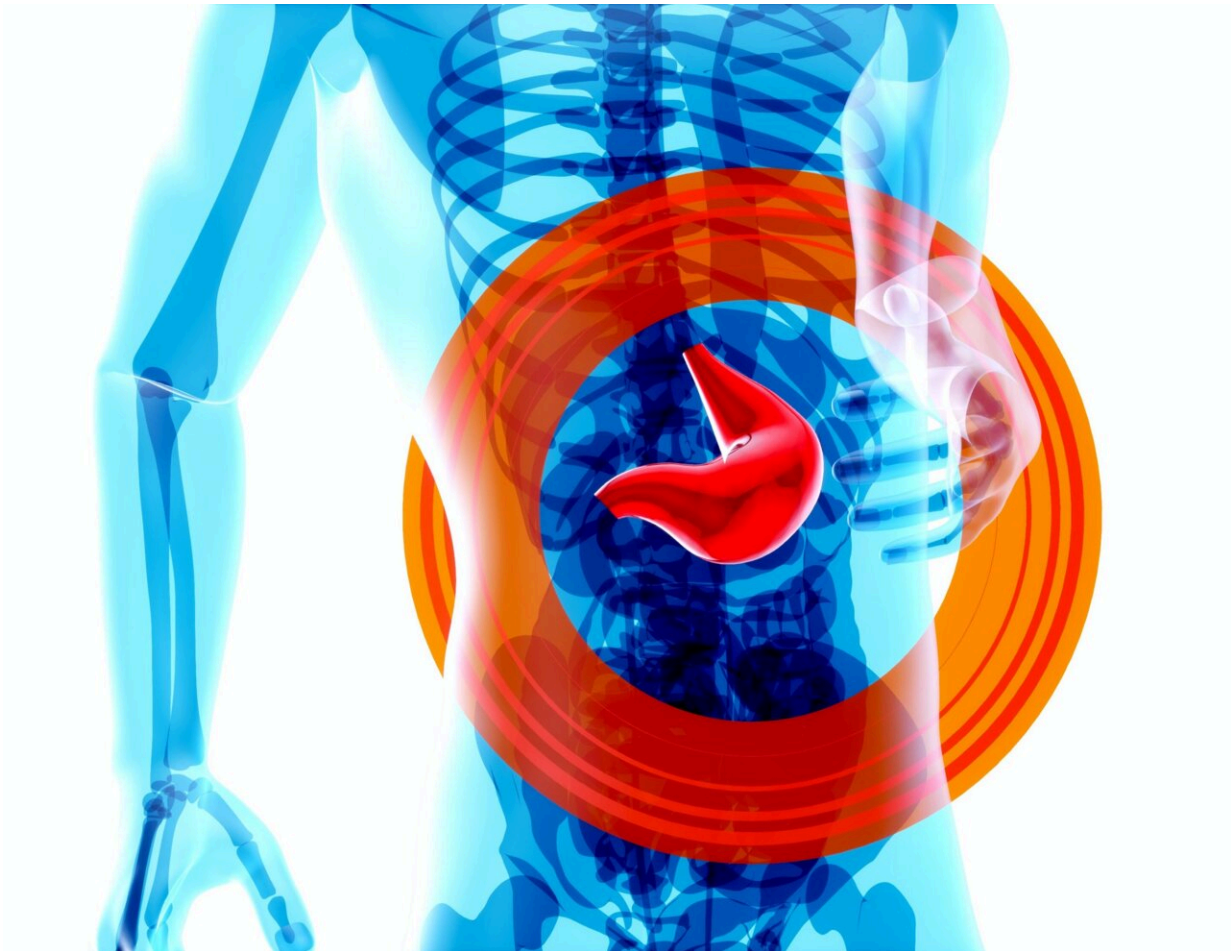


Explaining why people do not have an immune response to food

July 19 2022, by Bob Yirka



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A team of researchers at the University of Minnesota Medical School

has looked into the question of why most people do not develop an immune response after consuming food. In their paper published in the journal *Nature*, the researchers attempted to answer the question by conducting experiments with mice.

The immune system in humans has evolved to generate various responses meant to render harmless foreign elements that have made their way inside the body. One of the most common responses is instigation of inflammation, sometimes seen as symptoms associated with allergies. But, as the researchers with this new effort note, why then does the immune system not generate a response to the foods that are eaten every day? They are all, after all, foreign substances.

The experiments involved first raising several lab mice from pups on [gluten-free](#) diets. Next, they were given different foods to allow the researchers to see how their immune system would respond. Some of the main foods tested were those that contained one or more gluten protein types known as gliadin—prior research has shown that such foods tend to elicit an immune response in both humans and mice.

The researchers fed the different types of foods to the test mice for a week and then measured their immune response. They found that after consuming food with the gliadin peptide, the mice saw a slight increase in T cell numbers in their guts and a small number of them generated a weak antibody response—notably, many of them were regulatory T cells, known as Treg cells, which tend to be immunosuppressive, which could partially explain the lack of a general response to the food found in the gut. The researchers also found some T cells that appeared to be different than the type of T cells normally found in an immune response, though they noted, they could have been Treg cell precursors. In their experiments, they found that none of the T cells that presented themselves in the gut in response to the presence of food were of a type that could incite inflammation.

The researchers suggest their experiments show that the reason T cells do not attack food is that exposure to food antigens by naïve T cells leads to the development of T cell subsets that are not able to instigate inflammatory functions but are still able to produce T cells that suppress [inflammation](#).

More information: Sung-Wook Hong et al, Immune tolerance of food is mediated by layers of CD4+ T cell dysfunction, *Nature* (2022). [DOI: 10.1038/s41586-022-04916-6](#)

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