

Lab mice fed processed food found to fare worse against flu than those eating grains

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A team of researchers at the University of Sydney working with a colleague from Shenzhen University School of Medicine has found that lab mice are more likely to survive a flu infection if they are fed grain-

based foods rather than processed food. The paper is published in *Cell Reports*.

In recent years, [medical researchers](#) have reported evidence that diet plays a larger role in illness recovery than was thought. Some studies have shown, for example, that caloric density and the concentration of nutrients consumed while recovering from an infection can have a major impact on the severity of the infection. In this new effort, the researchers found evidence suggesting that other characteristics of food can also play a role in illness recovery, at least in mice.

In this new effort, the researchers were studying how mammals such as mice fight off influenza infections. As part of that effort, they inadvertently fed two groups of [lab mice](#) slightly different meals that were thought to be equivalent in [nutritional value](#) and hence unlikely to have an impact on disease recovery. More specifically, they fed one group of mice a diet consisting mostly of grains. The other mice were fed a highly processed diet.

Both groups were subsequently infected with the [influenza virus](#) and were kept on the same diets they had prior to being infected. The researchers note that prior studies had shown that mice fed either diet when not battling an infection displayed little difference in health or behavior. But when infected with influenza, the researchers found that all of those fed the highly processed diet died. They also found that those fed the highly processed diet failed to regain weight lost due to the illness. In sharp contrast, all of the mice on the grain-based diet began regaining weight within 10 days of initial infection, and all of them recovered.

The researchers note that the difference in survival was not due to differences in an [immune response](#), but was instead due to recovery issues. They note that the mice on the highly processed food [diet](#) ate less

than those given grains and wound up getting less nutrients. They also had cooler body cores. The researchers also found some evidence that suggested IFN- γ , a signaling protein, played a role in the outcomes for the mice.

More information: Taylor A. Cootes et al, The quality of energy- and macronutrient-balanced diets regulates host susceptibility to influenza in mice, *Cell Reports* (2022). [DOI: 10.1016/j.celrep.2022.111638](https://doi.org/10.1016/j.celrep.2022.111638)

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