

The brain genetics behind feeling sick

Infections are often associated with symptoms that aren't directly tied to the pathogen, such as lethargy and loss of appetite. Scientists have long been interested in understanding where these so-called 'sickness behaviors' are ultimately controlled, as that information could shed light on the brain's influence on the immune system and potentially lead to new treatments to speed recovery from myriad illnesses. Now, research in mice published earlier this month in [Nature](#) has tracked much of that control to a set of neurons deep in the brainstem.

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In June, a different group of scientists, also publishing in [Nature](#), identified neurons located in the hypothalamus that act as a kind of control hub to coordinate fever, loss of appetite, and warmth-seeking behavior. To see the two papers come out so close to each other—and in the same journal—“was exciting, but also surprising,” says [biologist Patricia] Lopes. Both the brainstem and the hypothalamus had been previously identified as important to sickness behaviors but being able to identify the cell populations is remarkable, she says. “The specificity to which they’re getting is unprecedented.”

Lopes did note an interesting wrinkle in both papers: All the animals used were male. This is not uncommon in mouse studies, as female mice show large fluctuations in body temperature related to estrus (a potentially confounding factor scientists may want to avoid), but it means that any potential differences due to sex are unknown.

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