

Immune Cells Are More Paranoid Than We Thought

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The best immune systems thrive on a healthy dose of paranoia. The instant that defensive cells spot something unfamiliar in their midst—be it a living microbe or a harmless mote of schmutz—they will whip themselves into a frenzy, detonating microscopic bombs, sparking bouts of inflammation, even engaging in [some casual cannibalism](#) until they are certain that the threat has passed. This system is built on alarmism, but it very often pays off: Most of our encounters with pathogens end before we ever notice them.

The agents of immunity are so risk-averse that even the dread of facing off with a pathogen can sometimes prompt them to gird their little loins. Ashley Love, a biologist at the University of Connecticut, has seen this happen in birds. A few years ago, she stationed healthy canaries within eyeshot of sick ones, infected with a bacterium that left the birds sluggish and visibly unwell. The healthy canaries weren't close enough to catch the infection themselves. But the mere sight of their symptomatic peers revved up their immune systems all the same, Love and her colleagues [report today in *Biology Letters*](#).

Love, who did the research as a graduate student at Oklahoma State University, had an inkling that the experiment would work before she did it. In 2010, the psychologist Mark Schaller, at the University of British Columbia, and his colleagues [described a similar reaction in humans](#) looking through photos of people who were sneezing or covered in rashes. The study subjects' immune cells then reacted aggressively when exposed to bits of bacteria, a hint that the pictures had somehow whipped the body into fighting form, Schaller told me.

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