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NEWSRELEASE

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Immune Cells Need Each Other to Combat Deadly Lung-Invading Fungus, Study Finds

NEWARK, N.J.—Although long recognized as an essential defense against the lung-invading fungus *Asperfillus fumigatus,* Neutrophils actually require a little help from fellow immune cells, according to a study by Amariliz Rivera, her colleagues at Rutgers New Jersey Medical School and scientists at the Fred Hutchinson Cancer Research Center in Seattle. The study recently appeared in the journal *PLoS Pathogens*.

The environmental fungus *Aspergillus fumigatus* floats harmlessly in the air, posing no threat to healthy humans. But it's a different story for transplantation patients and others with compromised immune systems, such as patients with leukemia, where inhalation of *Aspergillus* spores can lead to invasive and life-threatening disease. The body's primary defense against this fungus is provided by immune cells called neutrophils, which race to the lungs and quickly engulf and kill invading spores.

But these cells don't act alone, according to Rivera's new work. In fact, their fungus-killing prowess depends on another type of immune cell called inflammatory monocytes. Without the help of these monocytes, neutrophils still ingested spores in the lungs of mice, but their ability to deliver the final death blow was impaired. Indeed, mice lacking inflammatory monocytes were just as susceptible to deadly *Aspergillus* infection as those lacking neutrophils. Rivera suggests that although neutrophils alone may contain the fungus initially (these cells are the first on the scene), they need help from inflammatory monocytes for sustained control of infection.

If these results hold true in humans, approaches designed to boost the function of inflammatory monocytes may help to ward off deadly infections in clinical settings.

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