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Protein may slow progression of emphysema, study finds

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A protein generated as part of our body's immune response to intestinal worms could slow the progression of emphysema, according to a Rutgers study.

The study appears in the journal *Cell Reports*.

Past studies have shown that harmful inflammation associated with activated immune cells can contribute to the development of emphysema, a chronic lung disease that causes shortness of breath. Currently, there is no cure, but there are treatments to manage the disease.

The Rutgers study suggests that a protein, RELM-alpha, produced in response to an infection with parasitic worms can suppress the harmful inflammation linked to emphysema and control its progression.

"When the parasite first enters the lungs, it induces production of the inflammatory cytokine IL-17, which can cause emphysema," said lead author William Gause, director of the Center for Immunity and Inflammation at Rutgers New Jersey Medical School. "But subsequently the parasite also triggers this specific component of the immune response that can reduce the IL-17 and thereby limit the severity of the emphysema."

Gause said the study is one of many worldwide looking at immune responses triggered by these parasites to identify new treatments to

control inflammation and promote tissue repair. This study is an example of the identification of one of these molecules that holds this potential to reduce tissue damage, he said.

Future studies will examine whether direct administration of this molecule can reduce the severity of emphysema and also how harmful inflammation driven by IL-17 results in the immune-mediated tissue damage that contributes to this lung disorder.

"Harmful inflammation is such a serious problem in disease," Gause said. "This protein produced by immune cells during parasitic worm infections reveals the complexity of the immune response and indicates how we can unleash beneficial components of our own immune system to control the harmful inflammation that contributes to many chronic diseases."

Provided by Rutgers University