

U of Alberta researchers discover important mechanism in fighting infection

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Richard Lamb and his post doctoral fellow Virginie Mieulet, in the Faculty of Medicine & Dentistry, may be able to explain why proper nutrition is so vital in fighting infection.

They have discovered an amino acid, called arginine, is required to let the body know that it's being attacked by an infection.

It is still early in their work but this discovery could have implications for the millions of people in third world countries that do not get enough food and consequently become ill with infection.

It may also be the mechanism involved in chronic inflammation, like arthritis because if you have too much arginine it may cause the body to be in a constant state of thinking it is being attacked.

In a healthy person, macrophages are the first cells to arrive at the site of infection. They eat the infected cells and present a molecule that is recognized by the immune system on the surface of the infected cell which attracts more immune fighting cells to the area. According to Lamb it is known that arginine is essential for the function of macrophages but until now no one realized that arginine has a much bigger role.

In their most recent work, Lamb and Mieulet presented arginine to a laboratory model. These models were better able to fight [infection](#) even if they were malnourished.

"This is a major work," said Lamb. "If this holds true in humans it shows that one aspect of nutrition that is critical is the level of amino acids."

More information: The study, which is published in the August edition of journal *Science Signalling*, has taken the research group from the University of Alberta three years.

Provided by University of Alberta

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