

Statins may stave off septic lung damage says new research study

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Statins may be best known for their ability to reduce cholesterol, but a research report appearing in the May 2011 issue of the *Journal of Leukocyte Biology* shows that these same drugs could also play a crucial role in the reduction of lung damage resulting from severe abdominal sepsis and infection.

"We hope that this study will not only provide new knowledge about the complicated pathophysiology behind abdominal [sepsis](#), but also form the basis for more effective and specific treatment options for patients with severe infections," said Henrik Thorlacius, M.D., Ph.D., a researcher involved in the work from the Department of Surgery at Skane University Hospital at Lund University, Malmo, Sweden.

To make this discovery, the researchers studied mice with a punctured intestinal bowel and treated half with a statin drug, simvastatin, and the others with only water. The animals treated with simvastatin had much less [lung injury](#) than those only given water. Additionally, the simvastatin-treated group demonstrated significantly fewer [inflammatory cells](#) in the lung, as well as reduced levels of pro-inflammatory substances. These findings suggest that treatment with statins may be of clinical value for patients with severe abdominal infections.

"Sepsis is a serious medical problem for which few good treatments exist," said John Wherry, Ph.D., Deputy Editor of the [Journal of Leukocyte Biology](#), "This research is very exciting because statins are

readily available and have a well established safety profile, making them a prime candidate for efficacy testing."

According to the National Institute of General Medical Sciences, NIH, Sepsis is a major challenge in the [intensive care unit](#), where it is one of the leading causes of death. It is caused when immune chemicals released into the blood to combat infection trigger widespread inflammation, resulting in impaired blood flow, which damages the body's organs by depriving them of nutrients and oxygen. In the worst cases, the heart weakens and multiple organs—lungs, kidneys, liver—may quickly fail and the patient can die. Each year, severe sepsis strikes about 750,000 Americans, and as many as half die, which is more than the number of U.S. deaths from prostate cancer, breast cancer and AIDS combined.

More information: Su Zhang, Milladur Rahman, Songen Zhang, Zhongquan Qi, and Henrik Thorlacius. Simvastatin antagonizes CD40L secretion, CXC chemokine formation, and pulmonary infiltration of neutrophils in abdominal sepsis. *J Leukoc Biol* May 2011 89:735-742; [doi:10.1189/jlb.0510279](https://doi.org/10.1189/jlb.0510279)

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