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Nasal Spray Protects Against Deadly Lung Infections

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A nasal spray protects mice against lethal pneumococcal pneumonia and other deadly lung infections, and may someday protect humans with compromised immune systems to ward off lung infections as well, say researchers at The University of Texas M.D. Anderson Cancer Center. Their findings were reported at the American Society for Cell Biology meeting Dec. 3 in Washington D.C.

“This aerosol stimulates an innate immune system response in the lung- lining fluid that kills the invading pathogens virtually on contact,” says Brenton Scott, Ph.D., postdoctoral fellow in M.D. Anderson’s pulmonary medicine department and first author of the abstract presented at the meeting. Senior author is Burton Dickey, M.D., professor and chair of pulmonary medicine at M.D. Anderson.

In the experiment, untreated mice exposed to the most common form of bacterial pneumonia died within days. But mice treated with the researhers’ Aerosolized Lung Innate Immune Stimulant two hours before exposure had an 83 percent survival rate. All the mice treated between four and 24 hours before exposure survived.

The team got similar results testing the nasal spray against several other types of pneumonia, as well as the influenza virus, the mold aspergillus, and bioterrorism agents anthrax, bubonic plague, and tularemia.

The nasal spray is made from a purified extract of a common bacterium known as Haemophilus influenzae that causes ear and sinus infections in children. To make the nasal spray, researchers break open the bacterium, purify it, and administer it as an aerosol.

Early clinical trials in humans are at least a year away, researchers say.

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