

Anesthetic drug sevoflurane improves sepsis outcomes, animal study reveals

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Patients with sepsis often require surgery or imaging procedures under general anesthesia, yet there is no standard regimen for anesthetizing septic patients. Of volatile (inhaled) anesthetics, sevoflurane and isoflurane are the most commonly used drugs, despite their undetermined mechanisms of action. A novel study in *The FASEB Journal* suggests that the type of drug used in general anesthesia could be critical to the survival of patients with sepsis.

To conduct the experiment, researchers induced sepsis in a [mouse model](#). They then separated the mice into three groups: the first received sevoflurane, the second received isoflurane, and the third acted as a control, receiving no anesthetic. Compared with the control, the first group exposed to sevoflurane displayed improved [survival rates](#), less bacteria in their organs, and less splenic neutrophil apoptosis (i.e., the process through which immune cells die). The second group exposed to isoflurane, on the other hand, displayed worsened sepsis outcomes than the control.

"With the prevalence of sepsis on the rise and the mortality rates of severe sepsis already extremely high, it is crucial that our findings are validated in a human model," said Koichi Yuki, MD, an associate professor of anesthesia at Boston Children's Hospital, Department of Anesthesiology, Critical Care and Pain Medicine, Cardiac Anesthesia Division. "We are hopeful that one day, the findings from this study will improve the outcomes of patients with sepsis."

"The clinical importance of this study cannot be overstated," said Thoru Pederson, Ph.D., Editor-in-Chief of *The FASEB Journal*.

Provided by Federation of American Societies for Experimental Biology

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