

Saline use on the decline at Vanderbilt following landmark studies

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Vanderbilt University Medical Center is encouraging its medical providers to stop using saline as intravenous fluid therapy for most patients, a change provoked by two companion landmark studies released today that are anticipated to improve survival and decrease kidney complications.

Saline, used in medicine for more than a century, contains high concentrations of sodium chloride, which is similar to table salt. Vanderbilt researchers found that patients do better if, instead, they are given balanced fluids that closely resemble the liquid part of blood.

"Our results suggest that using primarily balanced fluids should prevent death or severe [kidney](#) dysfunction for hundreds of Vanderbilt patients and tens of thousands of patients across the country each year," said study author Matthew Semler, MD, MSc, assistant professor of Medicine at Vanderbilt University School of Medicine.

"Because balanced fluids and saline are similar in cost, the finding of better patient outcomes with balanced fluids in two large trials has prompted a change in practice at Vanderbilt toward using primarily balanced fluids for intravenous fluid therapy."

The Vanderbilt research, published today in the *New England Journal of Medicine*, examined over 15,000 intensive care patients and over 13,000 emergency department patients who were assigned to receive saline or balanced fluids if they required intravenous fluid.

In both studies, the incidence of serious kidney problems or death was about 1 percent lower in the balanced fluids group compared to the saline group.

"The difference, while small for individual patients, is significant on a population level. Each year in the United States, millions of patients receive [intravenous fluids](#)," said study author Wesley Self, MD, MPH, associate professor of Emergency Medicine.

"When we say a 1 percent reduction that means thousands and thousands of patients would be better off," he said.

The authors estimate this change may lead to at least 100,000 fewer patients suffering death or kidney damage each year in the US.

"Doctors have been giving patients IV fluids for over a hundred years and saline has been the most common [fluid](#) patients have been getting," said study author Todd Rice, MD, MSc, associate professor of Medicine.

"With the number of patients treated at Vanderbilt every year, the use of balanced fluids in patients could result in hundreds or even thousands of fewer patients in our community dying or developing kidney failure. After these results became available, medical care at Vanderbilt changed so that doctors now preferentially use balanced fluids," he said.

Provided by Vanderbilt University Medical Center

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