

First US patient receives specially processed donor lungs at the University of Maryland

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Surgeons at the University of Maryland Medical Center have transplanted the first lungs treated in the United States with an experimental repair process before transplantation. The procedure is part of a five-center national clinical research trial to evaluate the efficacy of repairing, before transplant, lungs that might otherwise have been passed over as unsuitable for organ donation. The results of this study, if successful, could significantly expand the number of transplantable lungs available to patients awaiting transplants.

Currently, only 15-20 percent of [donor lungs](#) are transplantable; most do not meet [transplant](#) criteria. The research focuses on an external perfusion technique using a fluid called STEEN Solution.

Over 1,700 people are on the [lung transplant waiting list](#) in the U.S., including nearly 30 in Maryland, according to the United Network for Organ Sharing.

"We are excited about the prospect of what this ex vivo, out-of-the-body perfusion technique could mean for our many [transplant candidates](#) who often spend years waiting for lungs to become available," says the principal investigator, Bartley P. Griffith, M.D., professor of surgery at the University of Maryland School of Medicine and chief of cardiothoracic surgery at the University of Maryland Medical Center. "This research is part of our ongoing goal to develop innovative procedures and rapidly improve our patients' quality of life."

Lungs in this clinical trial are recovered using current donor [lung](#) retrieval techniques. Once brought to the study transplant center, the lungs are re-assessed by the transplant team. The lungs are then physiologically assessed during ex vivo perfusion with STEEN Solution over a period of three to four hours. During this time, the transplant team evaluates abnormalities inside the lungs, oxygenation levels and overall health of the lungs. At the end of the process, the transplant team determines if the lungs meet the high standards necessary for transplantation.

"Our goal is to constantly advance science and medicine in order to better serve our patients," says E. Albert Reece, M.D., Ph.D., M.B.A., vice president of medical affairs at the University of Maryland and dean of the University of Maryland School of Medicine. "[Clinical trials](#), such as this ex vivo lung perfusion, are an important tool to help us apply discovery from the laboratory to patient care at the bedside."

"Studies from other sites outside the U.S. have demonstrated that the results after transplantation using this ex vivo technique were at least as good as lungs that had not required perfusion," says Griffith. "These findings, plus the expertise from within our own center, give me great confidence in the future use of this ex vivo perfusion technique as an option to potentially increase our pool of transplantable lungs and reduce long wait times for our transplant candidates."

STEEN Solution™ is a product of Xvivo Perfusion, part of the Vitrolife Group, Goteborg, Sweden.

Provided by University of Maryland Medical Center

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