

Human Bladder Transplant: Innovation in the Regenerative Surgery of the Urinary System

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For the first time ever, a multidisciplinary group from the University of Southern California (USC) and University of California, Los Angeles (UCLA), successfully performed a human bladder transplant in May 2025. The recipient was a 41-year-old man with prior oncologic surgeries and end-stage renal failure. He underwent an eight-hour surgery at the Ronald Reagan UCLA Medical Center where he received both a bladder and kidney transplant.

This first attempt at bladder transplantation has been the result of more than four years of preparation. There has been preclinical simulation for robotic-assisted techniques on deceased, immunologic feasibility studies and more. The principal investigators Dr. Inderbir Gill from USC and Dr. Nima Nassiri from UCLA reported that the transplanted bladder showed signs of immediate vascular integration and the kidney produced urine during the operation which confirmed integrated function leading to metabolic management.

The conventional methods for reconstructing bladder loss, particularly enterocystoplasty, have a high long-term morbidity burden. This transplant model provides a more biologically and functionally optimal solution, which may further reduce the metabolic complications and infection risks.

Although short-term graft survival and recovery have shown promise, the team has begun a clinical trial at UCLA to assess bladder function over time, immune response, graft-host integration, and patient-reported outcomes. This single case contributes to a major leap in the development of composite organ transplantation, profoundly advancing the scope of regenerative medicine, surgical technology, and prospects for lower urinary tract reconstruction.

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