Technology of second chances

In 2024 my grandma had a failing liver and we didn't know if she would get a donor in time but we got lucky and she found one that was a good match. We didn't know if her body would reject the new liver, but thanks to the new Organ Transplant technology it saved her. Without the Organ Transplant my grandma wouldn't have made it. If I could go back to a major scientific event that was very important to the scientific community I would go back to when they invented technology for Organ Transplantation.

Organ Transplant technology was invented in 1954. The first successful organ transplant was performed by Dr. Joseph Murray in 1954 on two twins when one of them had a failing kidney, the same problem my grandma had. The transplant ended successfully and saved the twin. They both ended up dying of natural causes at around the age of 80. This is what started the organ transplant idea and how to make it better

After the first successful organ transplant they had to fix the rejection problem. Most organ transplants would fail if it was not a perfect match which was very rare. So they had to invent drugs to reduce the rejection chances, this drug was called azathioprine. Over the next few years they invented new drugs to fix the problem efficiently. The new drugs included cyclosporine, tacrolimus, and mycophenolate which reduced the rate of rejection to over 80% (Immunosuppressive Treatment) making it less rejected by the human immune system.

The rate of success of the organ transplant was down to 50% in 1964, with their body rejecting the new body part, or not getting a donation in time. But today Around 17 people die daily in the U.S. over 6,000 annually from Organ Transplantation the rate of success of the Organ Transplant is over 80% (“Organ Shortage Crisis”).This shows massive improvement from 1964, Organ Transplantation has saved many lives for people with failing organs. In 2025 Organ Transplants have saved around tens of thousands of lives over 48,000 U.S. transplants in 2024 (“Organ Donation Statistics”). This shows how many people have been saved by this with Organ Transplants.

Organ Transplant Technology has upgraded over the years into things like seeing if humans can accept pig organs, using AI to find perfect matches for donors, and transplanting things other than organs. My grandma's life was saved and it has saved so many other lives, so I think it would be really cool to go back to 1954 and see all of the progress that they have made in that scientific field from that point on as well as how many lives they have saved.

Evidence

Health Resources & Services Administration. “Organ Donation Statistics.” *Www.organdonor.gov*, Health Resources & Services Administration, May 2025, www.organdonor.gov/learn/organ-donation-statistics.

“The Organ Shortage Crisis: Are Pigs the Answer? – Health Law & Policy Brief.” *Healthlawpolicy.org*, 14 Apr. 2025, www.healthlawpolicy.org/2025/04/13/the-organ-shortage-crisis-are-pigs-the-answer/.

Research sites

"First Gene-Edited Pig Kidney Transplant Clinical Trial Begins at NYU Langone Health." *NYU Langone News*, 2025, nyulangone.org/news/first-gene-edited-pig-kidney-transplant-clinical-trial-begins-nyu-langone-health.

Lyn, Mary, and Roy D Bloom. "Immunosuppressive Therapy." *Elsevier EBooks*, 1 Jan. 2019, pp. 591-604.e3, https://doi.org/10.1016/b978-0-323-52978-5.00038-0. Accessed 1 May 2023.

"Immunosuppression: Practice Essentials, History, Drugs." *EMedicine*, 9 Sept. 2021, emedicine.medscape.com/article/432316-overview?form=fpf.

"The Fight for Life | Harvard Medicine Magazine." *Magazine.hms.harvard.edu*, magazine.hms.harvard.edu/articles/fight-life.