

Mayo Clinic Minute: 'Liver in a box' is saving lives with new technology

April 20 2022, by Jason Howland



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It is new technology called "liver in a box," and it's improving outcomes for patients who receive lifesaving transplants.

April is National Donate Life Month, which helps raise awareness about the importance of organ donation. According to Lifesource, more than 11,000 people in the U.S. are waiting for a lifesaving liver donation.

"The technical name for it is 'normothermic mechanical perfusion,'" says Dr. Amit Mathur, a Mayo Clinic transplant surgeon.

Also known as "liver warm perfusion" or "liver in a box," it was approved by the Food and Drug Administration in late 2021 for use in the U.S.

"It describes a way of storing a liver when it is in the process of being recovered from the organ donor—from a deceased donor—to an organ transplant recipient," says Dr. Mathur.

In the past, the only way to do that was using cold preservation—keeping the liver on ice to slow down its metabolism. But liver warm perfusion preserves the organ differently.

"We're actually able to keep the liver alive in a box with oxygenated blood flowing through the [blood vessels](#) that supply the liver," says Dr. Mathur. "We're able to observe the organ being metabolically active, meaning the organ is still working."

Transplant teams at Mayo Clinic using liver warm perfusion say the early results are promising.

"We have found that [patients](#) are more stable during surgery, particularly at that critical moment when we restore [blood](#) flow to the new organ after extracting the old liver," says Dr. Mathur.

And in the postoperative phase, patients who receive a "[liver](#) in a box" are spending less time in the ICU. The technology also is being used for

heart and lung transplants.

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Citation: Mayo Clinic Minute: 'Liver in a box' is saving lives with new technology (2022, April 20) retrieved 7 May 2024 from <https://medicalxpress.com/news/2022-04-mayo-clinic-minute-liver-technology.html>

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