



Kidney Assist

The only device for ex vivo kidney perfusion at temperatures ranging from hypothermic to normothermic

XVIVO

Kidney Assist

The only device for ex vivo kidney perfusion at temperatures ranging from hypothermic to normothermic

XVIVO's Kidney Assist is a dedicated device for pressure controlled, oxygenated, ex vivo perfusion of donor kidneys.

An integrated heater/cooler provides perfusion ranging from hypothermic to normothermic temperatures. XVIVO's Kidney Assist allows clinicians to choose the protocol, including HMP, COR and NMP.

Table

Table top with sterile drape to allow back-table work with an ergonomic working height.

Dedicated disposable organ chamber

Kidneys are submerged in a perfusion medium. The organ chamber has an integrated urine drainage.

Sampling port

Direct sampling is available for perfusate and urine analysis. Integrated sensors monitor real-time flows, pressures and temperatures.

Thermo unit

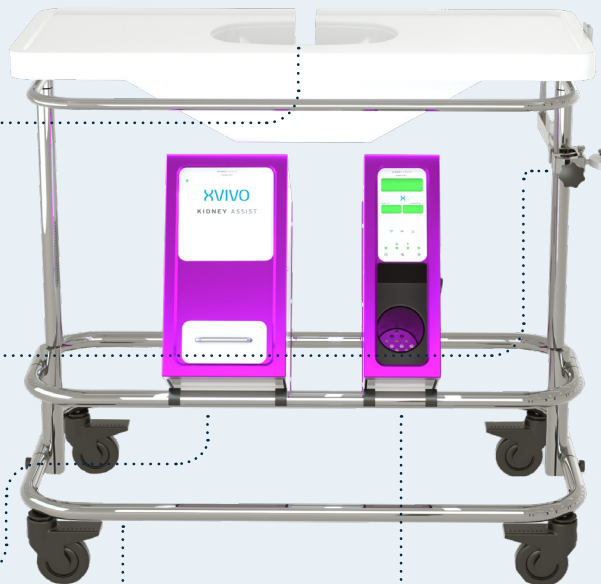
Control of perfusion temperature within a flexible range of 12-37°C.

Trolley

Allows for easy in-hospital transportation with 360° rotating wheels with brakes.

Renal artery pump unit

Pressure controlled centrifugal pump generating pulsatile perfusion.



Hollow fiber oxygenated perfusion with integrated heat exchanger



Perfusion at a flexible temperature range (12-37°C)



True pulsatile perfusion pattern (60bpm) through renal artery generated by a dedicated pressure controlled pump unit



Assess function and viability of the kidney graft by perfusion and perfusate characteristics as well as urine production

Hypothermic machine perfusion (HMP) of kidneys slows down metabolism and reduces detrimental effects of ischemia

Results from clinical trials suggest that non-oxygenated hypothermic machine perfusion (HMP) compared to static cold storage leads to:

- Reduced risk of delayed graft function^{1,2}
- Improved graft survival at 1 and 3 years^{1,3}

Further it is suggested that HMP of kidneys donated after circulatory death (DCD) leads to:

- Reduced risk of delayed graft function^{4,5,6,7,8}
- Improved graft survival at 1^{6,8} and 3 years^{6,7}

The COMPARE-trial shows that supplemental oxygen during hypothermic machine perfusion of DCD kidneys leads to⁹:

- Improved renal function
- Reduction in graft failure
- Lower incidence of acute rejection

Normothermic Machine Perfusion (NMP) of kidneys restores the cellular metabolism and allows for assessment of organ function

Results from clinical trials suggest that normothermic machine perfusion of kidneys lead to:

- Reduced risk of delayed graft function in Extended Criteria Donor (ECD) kidneys¹⁰
- Similar graft and patient survival at 1 year post-transplant with ECD kidneys after normothermic machine perfusion¹⁰
- Increased use of DCD kidney transplants¹¹

XVIVO

References:

1. Moers C et al. Machine perfusion or cold storage in deceased-donor kidney transplantation. *N Engl J Med* 2009; 360:7-19.
2. Kox J et al. The Benefits of Hypothermic Machine Preservation and Short Cold Ischemia Times in Deceased Donor Kidneys. *Transplantation*. 2018 Aug 1;102(8):1344-135.
3. Moers C, et al. Machine Preservation Trial Study Group. Machine perfusion or cold storage in deceased-donor kidney transplantation. *N Engl J Med*. 2012 Feb 23;366(8):770-1.
4. Jochmanns I, et al. Machine perfusion versus cold storage for the preservation of kidneys donated after cardiac death: a multicenter, randomized, controlled trial. *Ann Surg*. 2010 Nov;252(5):756-64.
5. Wang W, et al. Effect of Hypothermic Machine Perfusion on the Preservation of Kidneys Donated After Cardiac Death: A Single-Center, Randomized, Controlled Trial. *Artif Organs*. 2017 Aug;41(8):753-758.
6. Treckmann J, et al. Machine perfusion versus cold storage for preservation of kidneys from expanded criteria donors after brain death. *Transpl Int*. 2011 Jun;24(6):548-54.
7. Zhong Z, et al. Outcome Improvement for Hypothermic Machine Perfusion Versus Cold Storage for Kidneys From Cardiac Death Donors. *Artif Organs*. 2017 Jul;41(7):647-653.
8. Brat A, et al. Hypothermic Machine Perfusion as a National Standard Preservation Method for Deceased Donor Kidneys. *Transplantation*. 2021 Jun 23.
9. Jochmanns I, et al. Oxygenated versus standard cold perfusion preservation in kidney transplantation (COMPARE): a randomised, double-blind, paired, phase 3 trial. *The Lancet*. November 2020;396(10263):1653-1662.
10. Nicholson M and Hosgood S. Renal transplantation after ex vivo normothermic perfusion: the first clinical study. *Am J Transplant*. 2013 May;13(5):1246-52.
11. Hosgood S, et al. Normothermic machine perfusion for the assessment and transplantation of declined human kidneys from donation after circulatory death donors. *Br J Surg*. 2018 Mar;105(4):388-394.

Nobody should die waiting for a new organ

Founded in 1998, XVIVO is the only medical technology company dedicated to extending the life of all major organs - so transplant teams around the world can save more lives.

Our solutions allow leading clinicians and researchers to push the boundaries of transplantation medicine.

Scan this QR-code to get in touch with us!

