

# Machine perfusion of kidneys protects against delayed graft function

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For brain-dead organ donors, therapeutic hypothermia is inferior to

machine perfusion of the kidneys for reducing delayed graft function after transplantation, according to a study published in the Feb. 2 issue of the *New England Journal of Medicine*.

Darren Malinoski, M.D., from the Oregon Health & Science University in Portland, and colleagues randomly assigned brain-dead kidney donors to undergo [therapeutic hypothermia](#), ex-situ hypothermic machine perfusion, or both to examine the impact on outcomes after [kidney transplantation](#). A total of 1,349 kidneys from 725 enrolled donors were transplanted: 359, 511, and 479 kidneys in the hypothermia, machine-perfusion, and combined-therapy groups, respectively.

The researchers found that delayed graft function occurred in 30, 19, and 22 percent of patients in the hypothermia, machine-perfusion, and combined-therapy groups, respectively. The adjusted risk ratios for delayed graft function were 1.72 (95 percent confidence interval, 1.35 to 2.17) and 1.57 (95 percent confidence interval, 1.26 to 1.96) for hypothermia versus machine perfusion and combined therapy, respectively, and 1.09 (95 percent confidence interval, 0.85 to 1.40) for [combination therapy](#) versus machine perfusion. The frequency of graft survival was similar in the three groups at one year.

"We found that machine perfusion of kidneys obtained from brain-dead donors provided better protection against delayed graft function than targeted mild hypothermia alone," the authors write.

**More information:** Darren Malinoski et al, Hypothermia or Machine Perfusion in Kidney Donors, *New England Journal of Medicine* (2023). [DOI: 10.1056/NEJMoa2118265](https://doi.org/10.1056/NEJMoa2118265)

Paulo N. Martins et al, To Cool or Not to Cool—Organ-Preservation Strategies in Transplantation, *New England Journal of Medicine* (2023). [DOI: 10.1056/NEJMe2214715](https://doi.org/10.1056/NEJMe2214715)

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