

- **“The effect of therapeutic hypothermia on deceased donor renal graft outcomes - a randomized controlled trial from the Region 5 donor management goals workgroup”**
- **The Regents of the University of California, San Francisco**
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The number of kidneys available for transplantation in the U.S. (~15,000/yr) does not meet demand (~80,000/yr). This discrepancy will likely worsen given the increasing U.S. prevalence of chronic kidney disease and is compounded by sizable organ attrition once organs have entered the donation process (25-30% attrition in Region 5). Furthermore, worsening renal function in donors after neurologic determination of death (DNDDs, an increasingly important source of allografts) is one of the strongest predictors of delayed graft function (DGF) and slow graft function (SGF) in the recipient. Both DGF and SGF are associated with decreased long-term organ survival and are of major concern to the transplant community.

The goal of this trial is to demonstrate that mild hypothermia (34-35 °C) in the DNDD for approximately 12 hours prior to organ recovery will protect the allograft during the transplant process. Therapeutic hypothermia is an established cytoprotective intervention that has been demonstrated to be highly protective of organs in select critically ill patients. By combining two of the largest donation service areas (CTDN, Northern California and OneLegacy, Southern California), we will have access to approximately 10% of all organ donors in the nation. This study aims to randomize 500 DNDD organ donors, the biggest cohort ever enrolled in a prospective randomized trial.

In the experimental group, cooling will be achieved by using convective warming. No invasive interventional cooling will take place. Based on the use of mild hypothermia in clinical settings as well as basic science rodents models, minimal/no risk to donated grafts and recipients is anticipated.

Exclusion criteria will be hemodynamic instability (high dose vasopressors [greater than 10 mcg/kg/min Dopamine, 10 mcg/kg/min of Norepinephrine, or 60 mcg/min of Neosynephrine] after 12 hours of initiation of donor management, following authorization for donation), DCD donors, and in situ split liver donors. Deceased organ donors that were previously enrolled in out of hospital cardiac arrest hypothermia protocols are eligible for this trial and data will be examined in a sub-analysis.

While not federally mandated, only donors whose families and/or advanced directives (donor registry) have authorized research will be included.