

1 year, the control (manual toothbrush) group exhibited significantly more severe DIGO than the intervention (sonic toothbrush plus oral-hygiene instruction) group (odds ratio 4.5, 95% CI 1.2–16.0; $P=0.03$), with DIGO worsening from baseline in 45% and 21% of patients, respectively. Boys were more likely to have poor DIGO scores than girls (odds ratio 6.1, 95% CI 2.3–16.1; $P=0.03$).

Sonic toothbrushing and oral hygiene instruction are likely to reduce the need for invasive clinical procedures to counter severe DIGO. In addition, the cosmetic benefits of sonic toothbrushing might lead to fewer cases of nonadherence to medical regimens—a major risk factor for graft rejection in adolescent transplant recipients. Further investigation is needed, however, before a direct relationship between use of a powered toothbrush and reduced risk of graft rejection can be confirmed.

Original article Smith JM *et al.* (2006) Sonic tooth brushing reduces gingival overgrowth in renal transplant recipients. *Pediatr Nephrol* 21:1753–1759

Redox-active iron level predicts viability of renal grafts from non-heart beating donors

A shortage of organs for transplantation has increased interest in the use of kidneys from non-heart-beating (NHB) donors; however, up to one-fifth of these grafts fail in the immediate post-transplantation period as a result of warm ischemic damage incurred before or during harvest and preservation. Redox-active iron (RAI), which catalyzes the generation of highly reactive oxygen species, contributes to renal ischemia–reperfusion injury in mice. Now, de Vries *et al.* report that ischemically injured NHB donor kidneys release RAI to the perfusion fluid during preservation. Further, pretransplantation RAI concentration reflects graft viability, a finding that—if validated in other centers—could optimize selection of marginal kidneys for transplantation.

The authors analyzed RAI concentration in perfusate samples collected from 231 deceased donor kidneys (205 from NHB and 26 from heart-beating brain-dead donors) during hypothermic machine pulsatile perfusion. Significantly more RAI was released into perfusate by ischemically injured NHB donor

kidneys than by heart-beating donor kidneys not subject to warm ischemia (3.9 ± 1.1 vs $2.8 \pm 1.0 \mu\text{mol/l}$; $P=0.001$). The increase in RAI occurred during the first hour of perfusion; therefore, warm ischemia, rather than cold ischemia during hypothermic machine perfusion, seems to be the underlying cause.

RAI concentration independently predicted post-transplantation graft function, with a $1 \mu\text{mol/l}$ increase raising the odds of primary nonfunction nearly 1.7-fold ($P=0.01$). The addition of RAI concentration to prognostic models based on other donor and graft characteristics enabled graft function to be predicted with greater sensitivity and specificity, particularly in uncontrolled NHB category 2 donors.

Original article de Vries B *et al.* (2006) Redox-active iron released during machine perfusion predicts viability of ischemically injured deceased donor kidneys. *Am J Transplant* 6: 2686–2693

Comparing neuropsychological functioning before and after kidney transplantation

Patients with end-stage renal disease on dialysis often have mild to moderate cognitive impairment, but two prospective studies have indicated that neuropsychological performance is normal or near-normal after patients have undergone kidney transplantation. These studies were very small, however, and Griva *et al.* have performed a larger prospective study to compare neuropsychological functioning before and after transplantation in patients with end-stage renal disease.

The study included 28 dialysis patients aged ≥ 18 years who received a successful kidney transplant. All patients were assessed before transplantation (while receiving adequate dialysis) and approximately 6 months after transplantation. Nine neuropsychological tests were used, assessing attention and executive functions, memory and learning, and psychomotor functions.

Mean performance in the verbal memory task and in one of the nonverbal memory tasks improved significantly from baseline to 6 months after transplantation ($P=0.0001$ and $P=0.006$, respectively), and just two patients showed no improvement in memory scores. One test that assessed attention and executive functions showed a trend towards