Immune regulation is fundamental to any immune response to ensure that it is appropriate for the perceived threat to the host. We have demonstrated that human regulatory T cells expanded ex vivo can protect human allografts (skin and vessels) from rejection. The identification and characterisation of Treg that can control immune responsiveness to alloantigens has opened up exciting opportunities for new therapies in transplantation. Phase 1/2a clinical trials are in progress – [www.onestudy.org](http://www.onestudy.org).