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## Outcome of the living kidney donor

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### Abstract

Renal transplantation from living kidney donors is still relatively marginal in most of the European countries. However, this source of kidney grafts may help to overcome in part the organ donor shortage of cadaveric donors. The living donor strategy implies correct and objective information about donation risks and completely free acceptance of the living candidate of the donation. In this paper, we reviewed the consequences of kidney donation on the living donor health, considering very short term (linked to the surgery), short term (effect of nephrectomy on glomerular filtration rate) and long term (risk of mortality, chronic kidney disease, proteinuria and hypertension) consequences of kidney donation.

**Keywords:** glomerular filtration rate; hypertension; living kidney donor; proteinuria

### Introduction

The first kidney transplantation (KT) was performed in 1954 from a living donor [1]. Due to limitations in immunologic knowledge, the first transplantations were actually performed between homozygote twins. With the progress in immunology and development of anti-rejection

therapies, there was an increase in deceased donor transplantation. However, KT from living donors was continued because it brings with it several advantages. Advantages of the transplantation from living kidney donors compared to deceased donors are numerous but beyond the scope of this review [2].

The prevalence of KT from living donors varies widely throughout the world. For example, the proportion of KT from living kidney donors is 3.3% in Finland, 8% in France, 12% in Belgium, 21.6% in Germany, 47% in the UK [3], 49.5% in the USA [4], 63.8% in the Netherlands and 80% in Japan [5]. In some countries like Egypt and Pakistan, this kind of KT is the sole method of escaping from the dialysis treatment [6, 7].

In living KT, the priority should be not to harm the living kidney donors who must be carefully selected to limit the risks, especially the risk of developing chronic kidney disease (CKD). Living kidney donor criteria are beyond the scope of this review [8, 9]. Nevertheless, the first rule for living donation is, of course, having a normal glomerular filtration rate (GFR). However, GFR normality is not clearly defined, especially in elderly patients [9]. The range of normal GFR references varies according to the method used to measure (which must probably be recommended) or estimate GFR [8–10]. From a theoretical point of view, an optimal kidney donor should not suffer from arterial hypertension (HTA) or proteinuria. These living kidney donors are actually often