

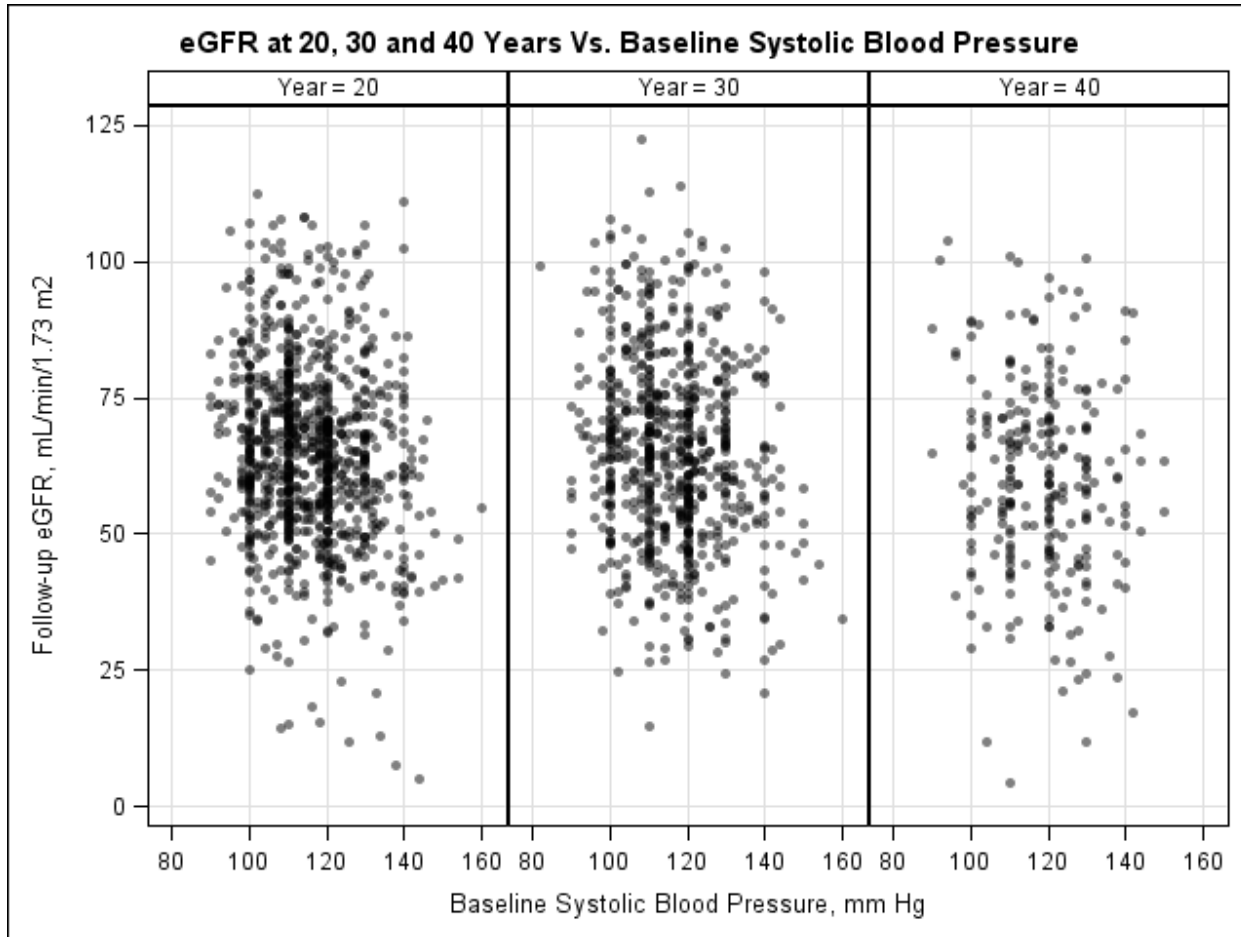
# Renal Function Profile in White Kidney Donors: The First 4 Decades

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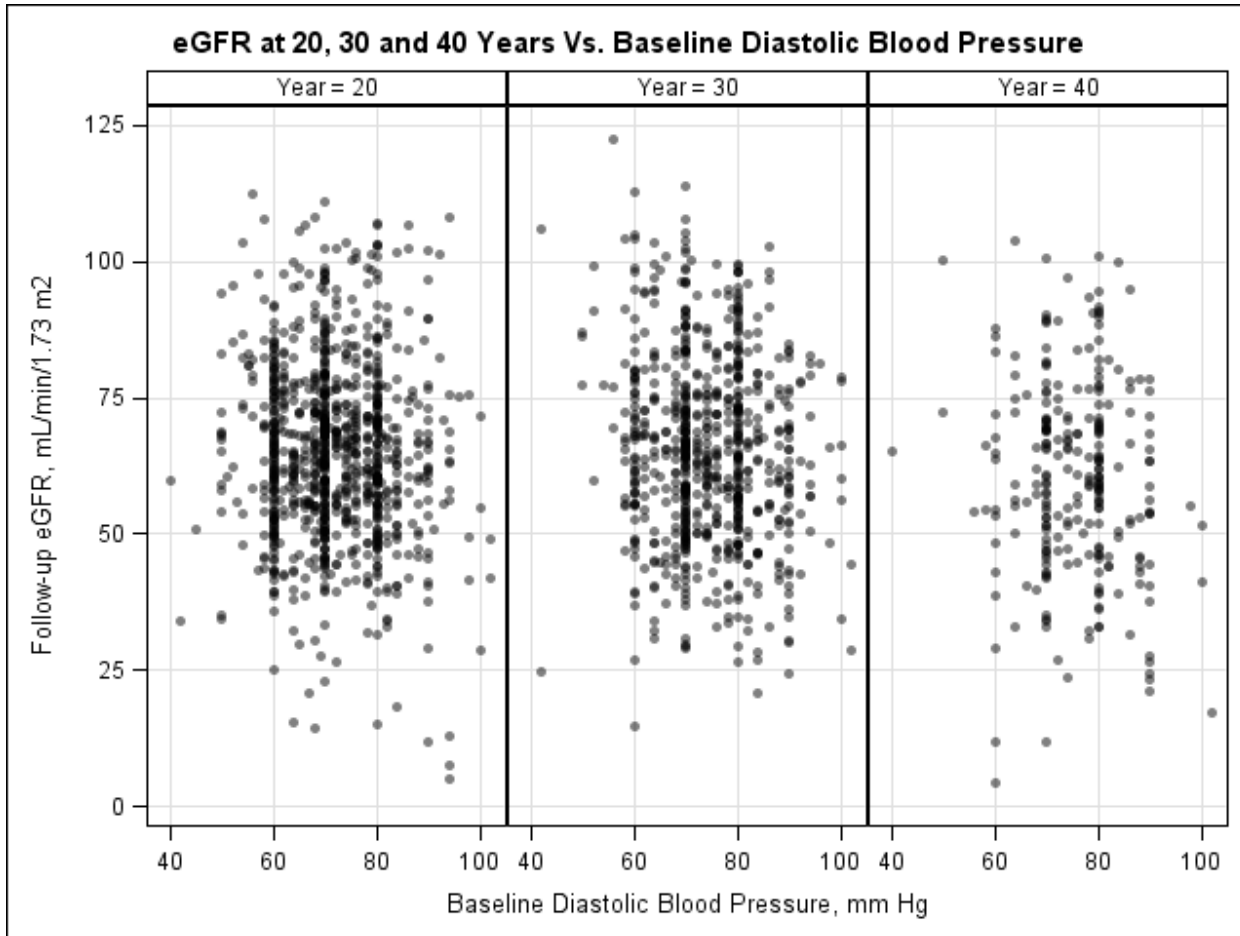
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**Relationship between baseline features of postdonation eGFR at 20, 30, and 40 years**

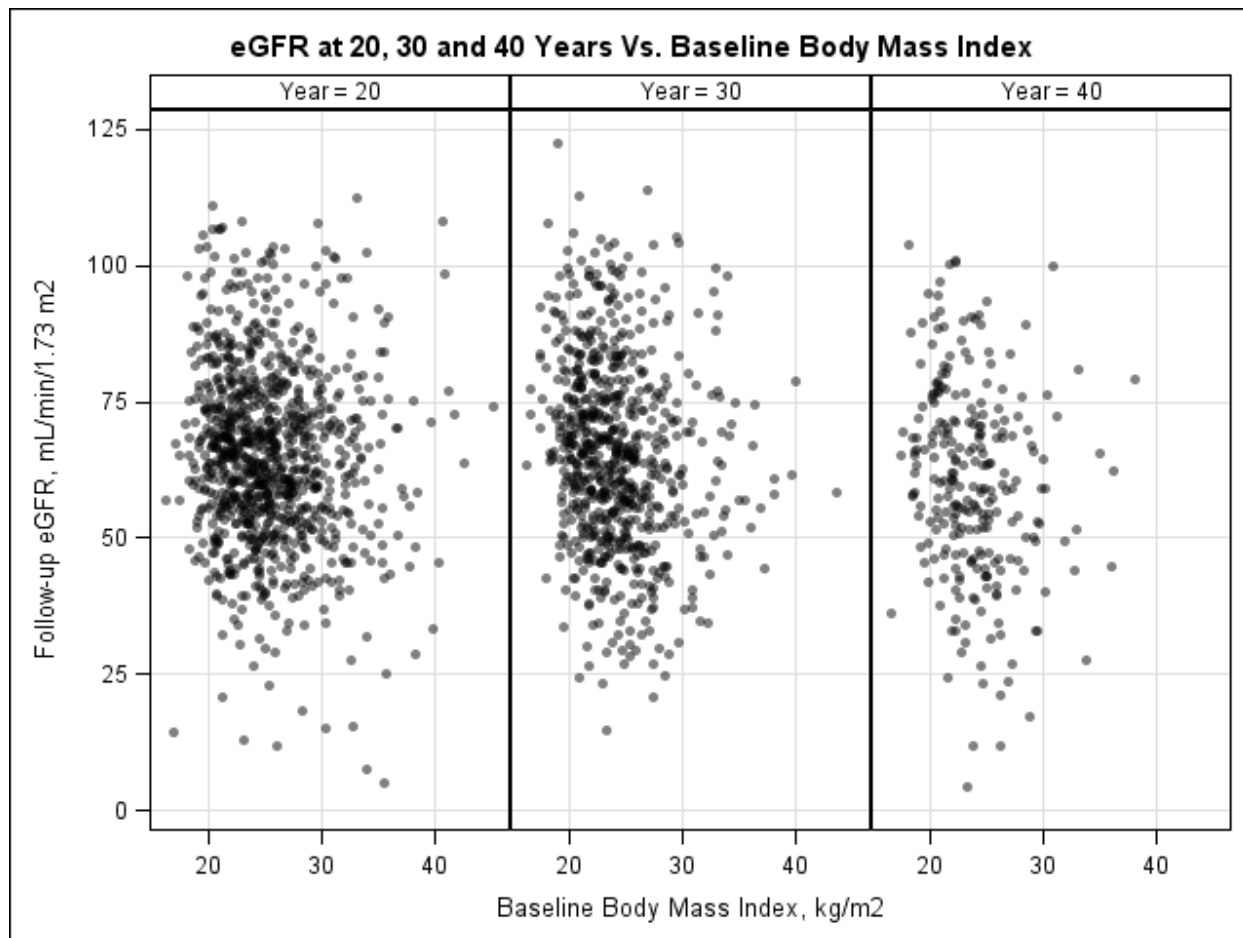
**Figure S1a.** Relationship between systolic blood pressure at donation and eGFR at 20, 30, 40 years postdonation



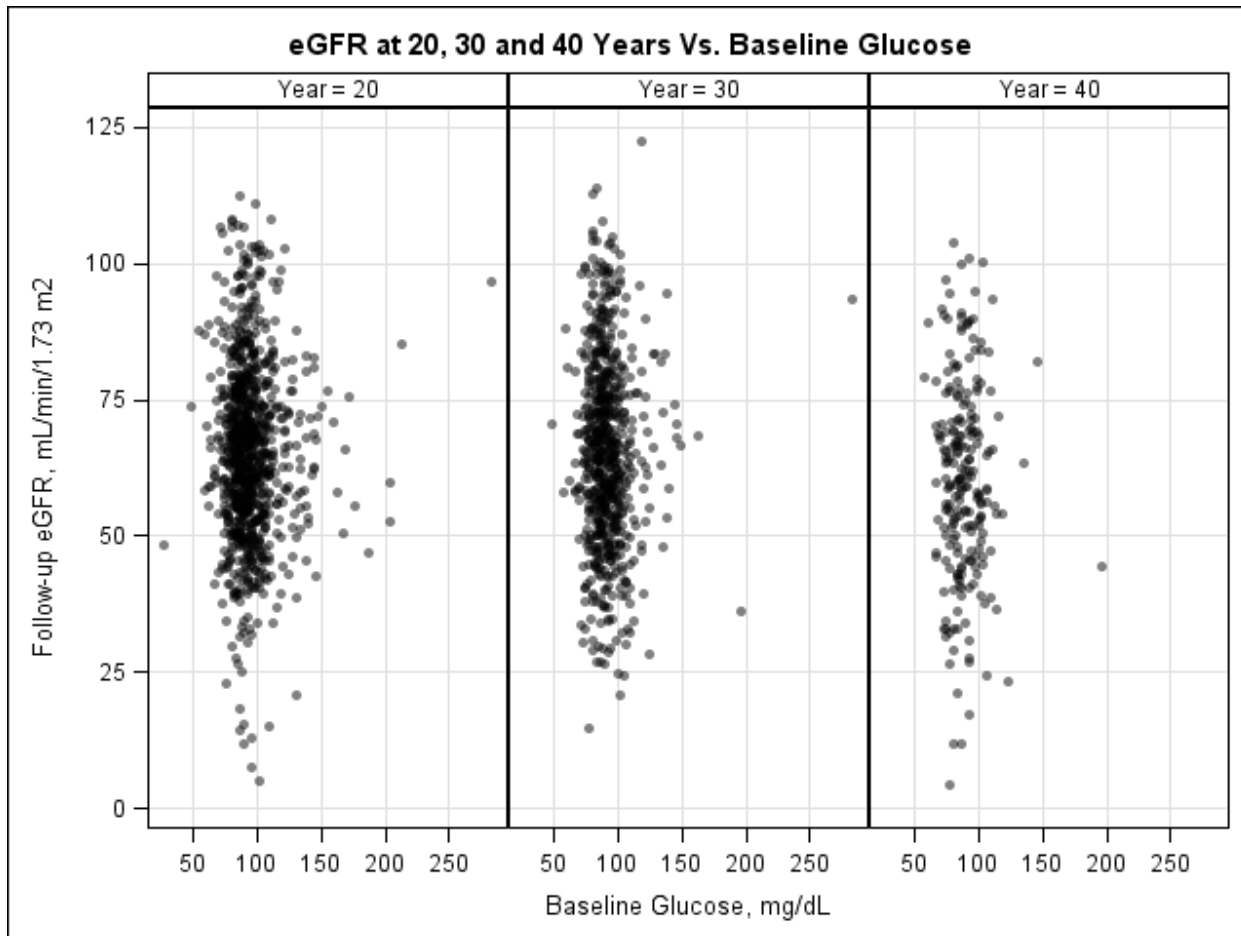
**Figure S1b.** Relationship between diastolic blood pressure at donation and eGFR at 20, 30, 40 years postdonation



**Figure S1c.** Relationship between body mass index at donation and eGFR at 20, 30, 40 years postdonation



**Figure S1d.** Relationship between glucose at donation and eGFR at 20, 30, 40 years Postdonation



**Risk Calculator for White Donors (separate excel attachment)**

## Outcomes in White and non-White donors

**Table S1a.** Characteristics at donation, entire cohort (n = 4,187)

Variable	% or mean (SD)
Age, years	39.0 (11.6)
Related to recipient	80.6
Female gender	56.8
Smoker	31.0
Body mass index, kg/m <sup>2</sup>	25.9 (4.4)
Serum creatinine, mg/dL	0.9 (0.2)
eGFR, ml/min/1.73 m <sup>2</sup>	93.5 (16.5)
Serum glucose, mg/dL	93.4 (14.8)
Systolic blood pressure, mm Hg	119.9 (13.2)
Diastolic blood pressure, mm Hg	73.4 (10.0)
Hemoglobin, g/dL	14.1 (1.3)
Race	
<i>White</i>	94.5
<i>American Indian</i>	1.8
<i>Asian</i>	1.2
<i>Black</i>	2.5
Recipient kidney disease	
<i>Glomerulonephritis</i>	24.5
<i>Type 2 diabetes</i>	4.1
<i>Other</i>	71.4

eGFR = estimated glomerular filtration rate; SD = standard deviation

**Table S1b.** Risk factors for adverse clinical outcomes

	Risk factor	Hazard ratio	<i>P</i>
Proteinuria	Body mass index*	1.09 (1.06-1.12)	< 0.001
	Male gender	1.48 (1.14-1.93)	< 0.001
	White race	0.52 (0.31-0.86)	0.01
	Related to recipient	0.60 (0.37-0.97)	0.04
eGFR < 60 ml/min/1.73 m <sup>2</sup>	Older age at donation*	1.05 (1.04-1.06)	< 0.001
	Body mass index*	1.03 (1.01-1.04)	< 0.001
	Systolic blood pressure*	1.01 (1.00-1.02)	< 0.001
	Diastolic blood pressure*	0.99 (0.98-1.00)	< 0.001
	White race	0.73 (0.54-0.98)	0.04
	Type 2 diabetes	1.56 (1.18-2.07)	< 0.001
	Related to recipient	0.56 (0.48-0.65)	< 0.001
	eGFR (CKD-EPI)*	0.98 (0.98-0.98)	< 0.001
eGFR < 45 ml/min/1.73 m <sup>2</sup>	Older age at donation*	1.06 (1.05-1.08)	< 0.001
	Body mass index*	1.03 (1.01-1.06)	< 0.001
	Systolic blood pressure*	1.01 (1.01-1.02)	< 0.001
	Related to recipient	0.51 (0.38-0.69)	< 0.001
	eGFR (CKD-EPI)*	0.97 (0.96-0.97)	< 0.001
eGFR < 30 ml/min/1.73 m <sup>2</sup>	Older age at donation*	1.08 (1.06-1.10)	< 0.001
	Body mass index*	1.09 (1.04-1.14)	< 0.001
eGFR < 30 or ESRD	Older age at donation*	1.06 (1.05-1.08)	< 0.001
	Body mass index*	1.08 (1.04-1.13)	< 0.001
	Systolic blood pressure*	1.02 (1.00-1.03)	0.03
	White race	0.42 (0.2-0.87)	0.02
ESRD	Body mass index*	1.1 (1.02-1.18)	0.01
	White race	0.25 (0.09-0.74)	0.01

CI = confidence interval; CKD-EPI = Chronic Kidney Disease Epidemiology Collaboration equation; eGFR = estimated glomerular filtration rate; RRT = renal replacement therapy; SD = standard deviation

\*per increment of 1 unit, i.e., per year increment (for older age at donation), per kg/m<sup>2</sup> increment for body mass index; per mmHg increment for blood pressure; per ml/min/1.73m<sup>2</sup> increment for eGFR



**Table S1c.** Cumulative incidence of ESRD (per 10,000)

Subgroup	15 years	30 years	40 years
All	12.8 (4.8-34.1)	77.4 (49.5-121.1)	88.4 (56.5-138.2)
Male	7.5 (1-52.8)	94.5 (51-175)	107.5 (58-198.8)
Female	16.8 (5.4-52.1)	64.5 (33.6-123.6)	73.8 (38.5-141.4)
White	13.5 (5.1-35.9)	68.7 (42.2-112)	78.7 (48.3-128.2)
Non-white	Inestimable	238.1 (77.4-720)	255.3 (83.1-770.6)
≤ 50	11.7 (3.8-36.2)	73.9 (44.6-122.4)	85.6 (51.7-141.6)
> 50	18 (2.5-126.8)	94.1 (35.4-248.8)	100.6 (37.9-265.9)
Related to recipient	11.3 (3.6-34.9)	88 (55.5-139.3)	103.3 (65.2-163.5)
Not related to recipient	21.6 (3-152.5)	24.5 (3.5-172.7)	24.5 (3.5-172.9)

CI = confidence interval; eGFR = estimated glomerular filtration rate; ESRD = end-stage renal disease; SD = standard deviation

**Table S1d.** Postdonation events and risk of death, proteinuria, and eGFR < 30 ml/min/1.73 m<sup>2</sup> or ESRD

Outcome	Time-dependent covariate	Hazard ratio	<i>P</i>
Death	Diabetes	0.71 (0.46-1.08)	0.1131
	New-onset hypertension	3.69 (2.88-4.73)	<0.0001
	Proteinuria	2.02 (1.28-3.2)	0.0025
	eGFR < 60	4.41 (3.54-5.5)	<0.0001
	eGFR < 30	2.87 (1.89-4.35)	<0.0001
	eGFR < 30 or ESRD	3.38 (2.37-4.81)	<0.0001
Proteinuria	Diabetes	4.65 (3.28-6.59)	<0.0001
	New-onset hypertension	3.99 (2.62-6.07)	<0.0001
	eGFR < 60	3.93 (2.58-5.97)	<0.0001
	eGFR < 30	6.13 (2.95-12.73)	<0.0001
eGFR < 30 or ESRD	Diabetes	2.21 (1.32-3.69)	0.0026
	New-onset hypertension	2.48 (1.38-4.46)	0.0023
	Proteinuria	3.52 (1.76-7.04)	0.0004
	eGFR < 60	3.89 (2.47-6.13)	<0.0001
	eGFR < 45	6.39 (3.96-10.31)	<0.0001

CI = confidence interval; eGFR = estimated glomerular filtration rate; ESRD = end-stage renal disease; RRT = renal replacement therapy

**Figure S2a.** Sample output for average white donor

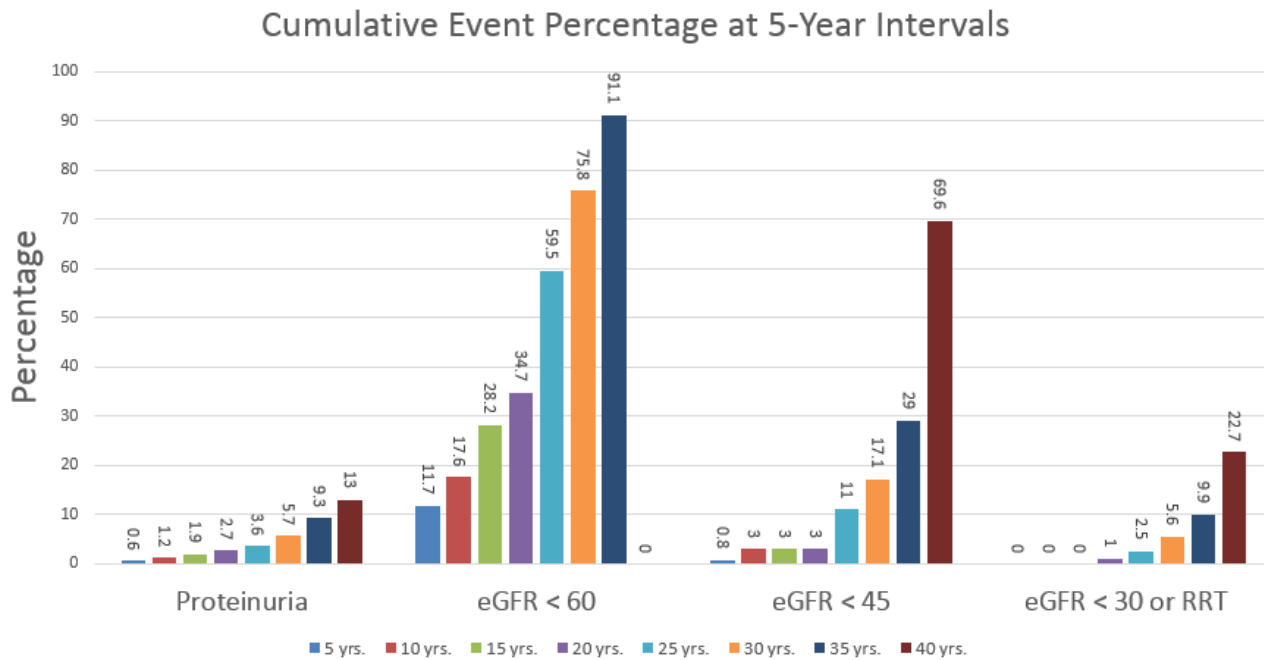
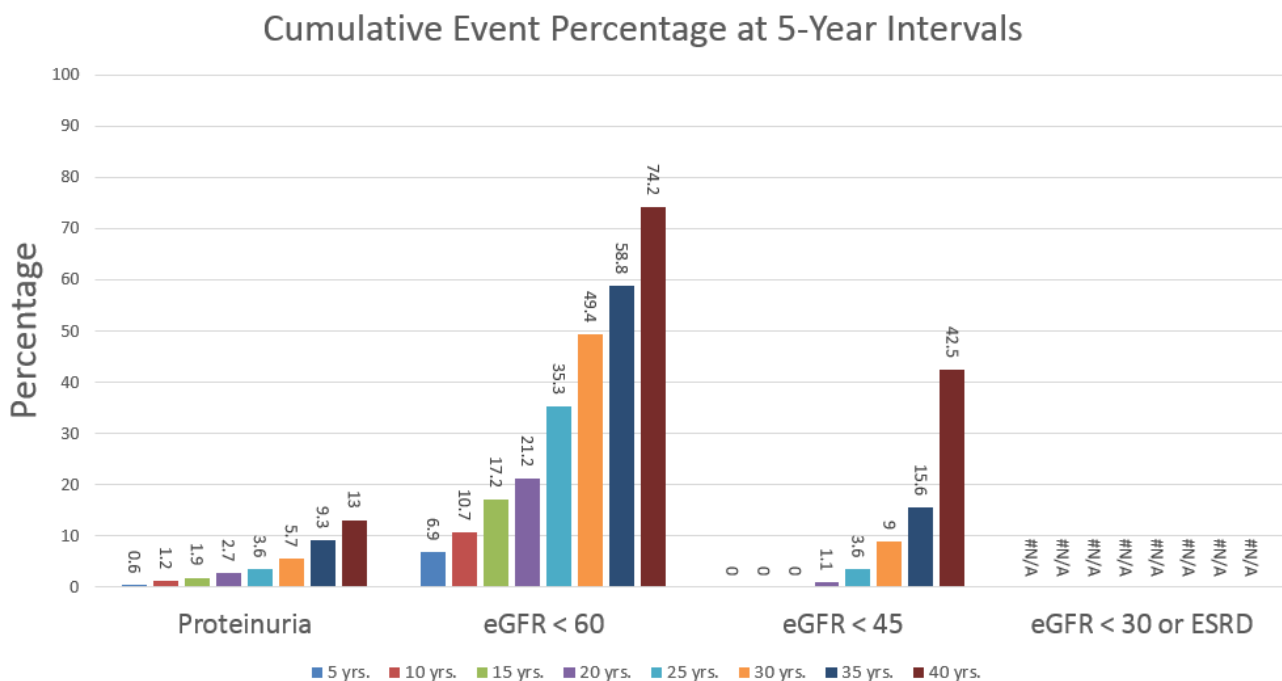


Figure S2a. Sample output for average white donor (i.e., a 40-year-old white female nonsmoker with an eGFR of 94 ml/min/1.73 m<sup>2</sup>; serum glucose, 93 mg/dL; body mass index, 26 kg/m<sup>2</sup>; baseline blood pressure, 120/73 mm Hg; and related to a recipient who does not have type 2 diabetes)

**Figure S2b.** Sample output for donor identical to that in Figure 1 except a 20-year-old woman whose recipient does have type 2 diabetes



## Kidney donor follow-up survey

### 1. Did a doctor ever tell you that you have or had any of the following health conditions?

(Check one box on each line)

	Yes ▼	No ▼	Approximate Date
a. Decreased kidney function.....	1 <input type="checkbox"/>	2 <input type="checkbox"/>	_____
b. Hypertension (high blood pressure) treated with medication	1 <input type="checkbox"/>	2 <input type="checkbox"/>	_____
c. High cholesterol treated with medication.....	1 <input type="checkbox"/>	2 <input type="checkbox"/>	_____
d. High cholesterol treated with diet.....	1 <input type="checkbox"/>	2 <input type="checkbox"/>	_____
e. Stroke (cerebrovascular accident or CVA).....	1 <input type="checkbox"/>	2 <input type="checkbox"/>	_____
f. Transient ischemic attack (TIA).....	1 <input type="checkbox"/>	2 <input type="checkbox"/>	_____
g. Blood in your urine (hematuria).....	1 <input type="checkbox"/>	2 <input type="checkbox"/>	_____
h. Protein in your urine (proteinuria).....	1 <input type="checkbox"/>	2 <input type="checkbox"/>	_____
i. Bowel obstruction.....	1 <input type="checkbox"/>	2 <input type="checkbox"/>	_____
j. Anemia (low red blood count).....	1 <input type="checkbox"/>	2 <input type="checkbox"/>	_____
k. Heart Failure (congestive heart disease).....	1 <input type="checkbox"/>	2 <input type="checkbox"/>	_____
l. Heart Attack (myocardial infarction).....	1 <input type="checkbox"/>	2 <input type="checkbox"/>	_____
m. Coronary Artery Disease/Angina (chest pain).....	1 <input type="checkbox"/>	2 <input type="checkbox"/>	_____

If Yes, treatment (Check all that apply)

1  None      2  Medication      3  Bypass surgery      4  Balloon angioplasty

n. Cancer..... 1  ..... 2  \_\_\_\_\_

If Yes, describe where \_\_\_\_\_

o. Diabetes..... 1  ..... 2  \_\_\_\_\_

If Yes, treatment (Check all that apply) 1  Diet      2  Oral Pill      3  Insulin

### 2. Do or did any first degree relatives (meaning parents, siblings and children) have diabetes?

(Check one) 1  Yes      2  No      3  Unknown

### 3. Which choice below describes your current cigarette smoking activity? (Check best choice)

1  Every day      2  Some days      3  Used to smoke but currently not smoking

4  Never smoked more than 100 cigarettes in my lifetime      5  Never

If yes, Year Started \_\_\_\_\_ Year Stopped \_\_\_\_\_

### 4. WOMEN ONLY: Have you ever been pregnant?

(Check one) 1  Yes      2  No      If yes, please fill out pregnancy survey included.

**Table S2.** Characteristics at donation: development and validation cohorts

Variable	% or mean (SD)			<i>P</i> split cohort 1 vs. 2
	All (n = 3,956)	Development (n = 1,978)	Validation (n = 1,978)	
Age, years	39.3 (11.6)	39.2 (11.5)	39.3 (11.8)	0.71
Related to recipient	80.3	81.9	78.7	0.01
Female gender	56.7	57.2	56.3	0.54
Smoker	30.3	31.1	29.5	0.28
Body mass index, kg/m <sup>2</sup>	25.8 (4.3)	25.8 (4.3)	25.9 (4.3)	0.56
Body mass index ≥ 30 kg/m <sup>2</sup>	16.5	16.8	16.2	0.63
Serum creatinine, mg/dL	0.9 (0.2)	0.9 (0.2)	0.9 (0.2)	0.57
eGFR (CKD-EPI), ml/min/1.73 m <sup>2</sup>	92.9 (16.2)	92.6 (16.1)	93.1 (16.2)	0.31
Serum glucose, mg/dL	93.4 (14.8)	93.1 (14.5)	93.7 (15.1)	0.21
Systolic blood pressure, mm Hg	120.0 (13.1)	119.7 (13.1)	120.3 (13.2)	0.14
Diastolic blood pressure, mm Hg	73.4 (10.0)	73.3 (10.1)	73.6 (9.9)	0.38
Hemoglobin, g/dL	14.1 (1.3)	14.1 (1.3)	14.1 (1.3)	0.33
Recipient kidney disease				
<i>Glomerulonephritis</i>	24.0	23.7	24.3	
<i>Type 2 diabetes</i>	3.8	3.8	3.8	0.92
<i>Other</i>	72.2	72.5	71.9	

CKD-EPI = Chronic Kidney Disease Epidemiology Collaboration equation; eGFR = estimated glomerular filtration rate; SD = standard deviation