

# Kidney health in volunteers recruited as control subjects

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## Background and Aims

In certain study designs, healthy controls are essential for comparison with dialysis patients. Little is known about kidney function in volunteers recruited as healthy controls. The aim of this study was to investigate kidney function within healthy volunteers between 40-80 years old.

## Methods

We solicited the participation of healthy volunteers using public announcements in posters and newspapers in an urban area. Volunteers who phoned a dedicated call center underwent a structured telephone interview which consisted of 22 questions that explored their eligibility as healthy controls.

One to four weeks later, volunteers who passed the telephone interview underwent clinical assessments, that included the following: height, weight, blood pressure, as well as laboratory measurements such as: serum creatinine, BUN and urinalysis. Estimated glomerular filtration rate (eGFR) was computed with the CKD-EPI equation. Albumin-creatinine ratio (ACR) was calculated as urine albumin/urine creatinine (mg/g). Systolic blood pressure (SBP) was recorded three consecutive times in a sitting position; subjects with

average SBP > 140 mmHg were considered hypertensive.

## Results

Based on the phone interview, almost 50% of 180 volunteers were excluded because of renal, cardiac, or malignancy-related conditions. Ninety-one participants (age 57±10 years; 49 female) were eligible. Due to a updated protocol that required blood samples, 18 participants were excluded from the results. Results obtained in the remaining 73 participants are shown in **Table 1**. Age was significantly different between eGFR groups (p = 0.001, 1-way ANOVA).

## Conclusion

Our results indicate the presence of unrecognized kidney impairment in a notable fraction of the volunteers who identify themselves as healthy based on their physical condition and the questionnaire we gave them. Since decreased kidney function of unknown cause is frequent in older people, this should be considered in recruiting apparently healthy volunteers. Laboratory tests are indispensable to verify the absence of kidney function impairment in healthy controls.

	eGFR > 90 (N=20)	eGFR 60-89 (N=43)	eGFR < 60 (N=10)	ACR > 30 (N=5)	Hypertensive (N=9)
Black [N]	10	17	2	1	6
White [N]	10	26	8	4	3
Male [N]	10	21	4	1	5
Female [N]	10	22	6	4	4
Age [years]	50 7	60 9	69 9	62 9	63 12

eGFR in mL/min/1.73 m<sup>2</sup>

