**Supplementary material**

**Protocol for estimating Renal Functional Reserve in detail:**

Both resting GFR and stress GFR were calculated using endogenous creatinine clearance (Cl Cr), and were corrected for body surface area using the Dubois method. Urine collection was performed by supervised voiding and confirmed for completeness by bladder scanning. For estimating Cl Cr the procedure is described below:

The subject is asked to drink water (20ml/kg of body weight) within 30 minutes. Then the subject is asked to void completely and the urine volume is noted (time 0 min). The urine is discarded and replaced with equal amount of water. Bladder scanning confirms the completeness of voiding.

At time 30 min the first blood sample is taken for estimating serum Cr and at time 60 minutes the subject voids completely again and ultrasound confirms the completeness of voiding. The urine volume is noted, sampling for urine Cr is done and the urine is discarded and replaced with equal water volume.

At time 90 minutes the second blood sample is taken for estimating serum Cr and at time 120 minutes the subject voids, the urine volume is noted, sampling for urine Cr is obtained while an ultrasound confirms the completeness of voiding Then, the urine is discarded and replaced with equal water volume. The subject then receives the protein load (\*) as cooked red meat which should be ingested in 30 minutes. The subject voids at time 180 min completely and the urine volume is noted and an ultrasound confirms the completeness of voiding. The urine is discarded and replaced with equal amount of water. The third and fourth blood samples are taken in times 210 min and 270 min for measuring serum Cr.

At times 240 and 300 min the subject is asked to void completely (an ultrasound confirms the completeness of voiding), the urine volume is noted and replaced with equal amount of water while urine sampling is obtained for measuring urine Cr.

Resting and stress glomerular filtration rates (ml/min/1.73 m2) were calculated from serum creatinine using the following formula:

Corrected creatinine clearance = urine creatinine × urine volume/collection time (min) × serum creatinine x 1.73 m2/body surface area, where body surface urea was calculated by the DuBois method. At the end of the procedure, bioimpedance analysis is redone to confirm that the hydration status has been constant

**Fig. S1** summarizing the protocol followed:

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120\*min

240min

270min

Time: 20ml/kg water ingestion

0 min

60min

30min

90min

180min

210min

300min

*(Uv: urine volume, UCr: urine creatinine, SCr: serum creatinine, B1: baseline GFR1, B2: baseline GFR2, S1: Stress GFR1, S2: Stress GFR2)*

**Fig. S2:** Clearance Creatinine time curve

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*Fig.S2 showing the trend of Clearance creatinine across time for the total sample in red line, for the subjects with RFR ≥30ml/min/1.73m2 in grey line and for the subjects with RFR<30ml/min/1.73m2 in blue line. As also shown in this graph, the protein meal (120min\*) mobilizes the renal reserve. (RFR: Renal Functional Reserve expressed as ml/min/1.73m2, ClCr: Clearance Creatinine expressed as ml/min/1.73m2)*

**Fig. S3**: Figure presenting the normal distribution of patients’ sample



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\*Mean value: 28.6 ml/min/1.73m2

*RFR: Renal Functional Reserve expressed as ml/min/1.73m2*