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Supplementary webappendix

This webappendix formed part of the original submission and has been peer reviewed. We post it as supplied by the authors.

Supplement to: Chronic Kidney Disease Prognosis Consortium. Association of estimated glomerular filtration rate and albuminuria with all-cause and cardiovascular mortality in general population cohorts: a collaborative meta-analysis. *Lancet* 2010; published online May 18. DOI:10.1016/S0140-6736(10)60674-5.

Web Appendix for "Association of estimated glomerular filtration rate and albuminuria with all-cause and cardiovascular mortality: a collaborative meta-analysis of general population cohorts"
Lancet 2010; 375:

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Web Table 1. Distribution of participants* and outcomes according to 28 categories of eGFR and ACR across studies.

Study	Total N	eGFR	% Participants ACR (mg/g)				% Total deaths ACR (mg/g)				% CVD deaths ACR (mg/g)			
			<10	10-29	30-299	300+	<10	10-29	30-299	300+	<10	10-29	30-299	300+
Overall		105+	12.3%	3.8%	1.6%	0.2%	5.2%	3.2%	2.2%	0.4%	3.4%	2.5%	2.1%	0.2%
Participants	105715	90-104	14.6%	3.9%	1.6%	0.2%	7.2%	4.1%	2.2%	0.6%	5.9%	3.9%	2.3%	0.7%
Total deaths	10983	75-89	21.7%	6.0%	2.4%	0.3%	12.9%	7.5%	4.5%	0.7%	10.9%	7.7%	4.5%	1.0%
CVD deaths	3811	60-74	15.1%	4.8%	2.2%	0.4%	11.5%	7.8%	5.3%	1.2%	10.7%	8.2%	6.1%	1.6%
		45-59	3.7%	1.7%	1.2%	0.3%	5.4%	4.7%	4.4%	1.3%	5.8%	5.7%	5.7%	1.7%
		30-44	0.6%	0.4%	0.5%	0.3%	1.3%	1.4%	2.2%	1.2%	1.8%	1.4%	2.4%	1.4%
		15-29	0.0%	0.1%	0.1%	0.2%	0.2%	0.2%	0.5%	0.8%	0.4%	0.2%	0.7%	0.8%
Individual studies														
ARIC		105+	8.5%	1.8%	1.0%	0.2%	8.1%	2.4%	2.0%	0.7%	5.5%	1.6%	2.5%	0.2%
Participants	11392	90-104	18.9%	2.9%	1.4%	0.2%	14.4%	3.7%	3.1%	0.9%	11.2%	3.7%	4.6%	1.8%
Total deaths	1224	75-89	25.2%	3.4%	1.4%	0.3%	15.8%	4.5%	2.8%	0.8%	13.5%	3.2%	2.3%	1.6%
CVD deaths	438	60-74	21.7%	2.9%	1.5%	0.4%	15.5%	3.5%	2.9%	1.5%	13.5%	2.7%	4.6%	2.5%
		45-59	4.7%	0.9%	0.9%	0.2%	5.7%	2.4%	2.9%	0.8%	6.6%	3.7%	4.8%	0.9%
		30-44	0.6%	0.1%	0.3%	0.2%	1.2%	0.4%	1.6%	1.3%	1.4%	0.7%	2.3%	2.1%
		15-29	0.0%	-	0.0%	0.1%	0.2%	-	0.2%	0.9%	0.5%	-	0.5%	1.8%
AusDiab		105+	3.8%	0.8%	0.3%	0.0%	2.3%	0.6%	0.3%	0.2%	1.2%	0%	0.6%	0%
Participants	11240	90-104	12.6%	2.2%	0.8%	0.1%	5.0%	1.5%	0.3%	0.3%	2.4%	1.2%	0%	0.6%
Total deaths	664	75-89	31.6%	5.6%	1.6%	0.2%	14.2%	6.6%	3.8%	0.2%	9.6%	4.8%	6.0%	0%
CVD deaths	166	60-74	25.1%	4.6%	1.8%	0.1%	16.1%	10.2%	6.9%	0.6%	14.5%	11.4%	5.4%	1.2%
		45-59	4.6%	1.7%	1.0%	0.2%	6.5%	5.9%	6.5%	1.5%	6.6%	10.2%	9.0%	1.8%
		30-44	0.4%	0.3%	0.2%	0.1%	1.5%	2.9%	2.1%	1.2%	2.4%	1.8%	1.8%	1.8%
		15-29	0.0%	0.0%	0.1%	0.1%	0.2%	0.5%	1.5%	0.9%	0.6%	1.2%	2.4%	1.2%
Beijing		105+	8.7%	1.5%	0.3%	0.1%	0%	3.4%	0%	0%	-	-	-	-
Participants	1563	90-104	19.1%	1.3%	1.2%	0.2%	6.8%	3.4%	3.4%	3.4%	-	-	-	-
Total deaths	59	75-89	35.9%	3.3%	1.7%	0.3%	18.6%	3.4%	5.1%	1.7%	-	-	-	-
CVD deaths	-	60-74	16.8%	2.7%	1.1%	0.3%	22.0%	11.9%	5.1%	1.7%	-	-	-	-
		45-59	4.1%	0.6%	0.4%	-	5.1%	3.4%	0%	-	-	-	-	-
		30-44	0.2%	0.1%	0.1%	0.1%	0%	0%	1.7%	0%	-	-	-	-
		15-29	-	-	-	-	-	-	-	-	-	-	-	-
CHS		105+	6.6%	3.7%	1.7%	0.2%	4.1%	2.8%	2.4%	0.3%	3.2%	1.8%	2.5%	0.2%
Participants	3218	90-104	6.5%	3.1%	1.6%	0.1%	5.3%	3.5%	1.8%	0.1%	3.9%	2.7%	2.2%	0.4%
Total deaths	1476	75-89	21.4%	8.9%	4.7%	0.4%	16.2%	7.5%	6.2%	0.5%	12.9%	8.1%	6.8%	0.9%
CVD deaths	557	60-74	12.4%	6.5%	3.2%	0.6%	10.0%	8.1%	5.1%	0.8%	9.2%	8.4%	6.5%	0.9%
		45-59	6.4%	3.9%	2.8%	0.3%	5.9%	5.2%	5.0%	0.7%	6.1%	5.4%	6.8%	1.1%
		30-44	1.0%	1.3%	1.2%	0.6%	1.4%	2.2%	2.2%	1.4%	1.3%	2.5%	2.2%	2.2%
		15-29	0.1%	0.1%	0.2%	0.4%	0.2%	0.1%	0.4%	0.7%	0.4%	0.4%	0.7%	0.5%
COBRA		105+	42.2%	8.1%	2.7%	0.4%	21.2%	7.7%	4.8%	0%	9.5%	9.5%	7.4%	0%
Participants	2866	90-104	18.7%	2.6%	1.5%	0.4%	11.5%	5.3%	2.4%	1.9%	11.6%	8.4%	1.1%	2.1%
Total deaths	208	75-89	10.6%	2.3%	1.3%	0.0%	11.5%	3.4%	2.4%	0%	14.7%	3.2%	4.2%	0%
CVD deaths	95	60-74	3.6%	1.1%	1.1%	0.3%	6.7%	1.4%	4.3%	1.4%	7.4%	2.1%	2.1%	2.1%
		45-59	0.8%	0.4%	0.3%	0.5%	1.9%	1.4%	0.5%	1.9%	4.2%	2.1%	0%	1.1%
		30-44	0.1%	0.1%	0.2%	0.3%	0.5%	0.5%	1.4%	1.9%	0%	1.1%	1.1%	1.1%
		15-29	0.1%	-	0.1%	0.1%	1.4%	-	1.0%	1.4%	3.2%	-	1.1%	0%
Framingham		105+	10.6%	4.6%	1.6%	0.1%	5.0%	4.7%	1.7%	0%	4.3%	4.3%	2.2%	0%
Participants	2954	90-104	14.6%	4.7%	1.8%	0.2%	8.0%	5.3%	2.7%	1.0%	7.5%	6.5%	4.3%	3.2%

Total deaths	300	75-89	21.1%	7.7%	2.9%	0.2%	13.0%	8.3%	4.3%	0.3%	9.7%	5.4%	4.3%	0%
CVD deaths	93	60-74	13.2%	5.2%	2.5%	0.2%	10.3%	7.0%	5.7%	0.7%	9.7%	8.6%	7.5%	2.2%
		45-59	3.6%	2.2%	1.4%	0.4%	6.0%	5.7%	4.3%	0.7%	3.2%	0%	5.4%	2.2%
		30-44	0.4%	0.2%	0.4%	0.1%	1.0%	0%	2.3%	0.3%	1.1%	0%	6.5%	0%
		15-29	-	0.0%	0.1%	0.1%	-	0.3%	0.7%	0.7%	-	1.1%	0%	1.1%
Gubbio		105+	1.5%	0.9%	0.1%	0.1%	5.0%	3.4%	0%	0.8%	-	-	-	-
Participants	1684	90-104	7.4%	4.6%	0.2%	0.1%	7.6%	5.9%	0%	0.8%	-	-	-	-
Total deaths	119	75-89	24.7%	13.7%	1.4%	0.1%	19.3%	16.8%	2.5%	0%	-	-	-	-
CVD deaths	-	60-74	21.1%	17.3%	1.9%	0.2%	14.3%	18.5%	0.8%	0.8%	-	-	-	-
		45-59	2.4%	2.3%	0.2%	0.1%	2.5%	0.8%	0%	0%	-	-	-	-
		30-44	-	-	-	-	-	-	-	-	-	-	-	-
		15-29	-	-	-	-	-	-	-	-	-	-	-	-
HUNT		105+	10.8%	3.5%	0.9%	0.1%	2.6%	2.2%	1.3%	0.2%	2.1%	1.9%	0.8%	0.2%
Participants	9525	90-104	14.5%	4.8%	1.6%	0.2%	6.3%	5.0%	2.2%	0.7%	6.5%	4.3%	1.9%	0.5%
Total deaths	1916	75-89	19.0%	7.4%	2.6%	0.2%	10.4%	8.7%	4.5%	0.5%	9.0%	9.3%	3.4%	0.6%
CVD deaths	981	60-74	13.3%	5.8%	2.9%	0.5%	11.1%	9.7%	6.0%	1.5%	11.2%	9.8%	6.0%	1.5%
		45-59	4.3%	2.6%	1.6%	0.4%	6.1%	6.5%	4.6%	1.6%	6.5%	6.6%	5.5%	2.0%
		30-44	1.0%	0.6%	0.6%	0.4%	2.3%	1.5%	2.0%	1.2%	3.1%	1.3%	2.2%	1.6%
		15-29	0.1%	0.1%	0.2%	0.1%	0.2%	0.2%	0.6%	0.4%	0.1%	0.1%	1.1%	0.6%
MESA		105+	5.9%	2.3%	1.1%	0.2%	4.5%	3.6%	3.2%	0.9%	-	-	-	-
Participants	6727	90-104	14.5%	3.5%	1.4%	0.2%	7.2%	2.3%	1.8%	0.9%	-	-	-	-
Total deaths	221	75-89	26.2%	5.9%	2.2%	0.3%	19.5%	6.3%	7.7%	0.9%	-	-	-	-
CVD deaths	-	60-74	20.3%	4.6%	1.9%	0.2%	15.4%	4.5%	4.5%	0.5%	-	-	-	-
		45-59	5.1%	1.4%	1.2%	0.2%	3.2%	3.6%	3.6%	0%	-	-	-	-
		30-44	0.5%	0.3%	0.3%	0.1%	0.5%	0%	2.3%	1.4%	-	-	-	-
		15-29	0.0%	0.1%	0.1%	0.2%	0%	0.5%	0%	1.4%	-	-	-	-
NHANES III		105+	32.8%	8.2%	3.4%	0.4%	9.2%	6.5%	3.6%	0.9%	5.4%	4.5%	3.5%	0.6%
Participants	15842	90-104	17.4%	3.9%	1.8%	0.3%	7.6%	5.1%	2.7%	0.6%	5.6%	4.7%	2.5%	0.7%
Total deaths	2112	75-89	11.8%	3.4%	1.9%	0.3%	9.7%	7.1%	4.7%	1.2%	9.2%	7.6%	5.7%	1.5%
CVD deaths	909	60-74	5.3%	2.1%	1.2%	0.3%	7.1%	5.0%	4.3%	1.5%	7.9%	4.8%	5.1%	1.5%
		45-59	1.6%	1.1%	0.9%	0.3%	5.0%	4.4%	4.5%	1.5%	5.1%	6.1%	5.6%	2.1%
		30-44	0.3%	0.3%	0.4%	0.2%	1.4%	1.5%	2.3%	1.2%	1.7%	2.0%	3.0%	1.5%
		15-29	0.0%	0.0%	0.1%	0.1%	0.3%	0.2%	0.3%	0.8%	0.6%	0.2%	0.3%	1.0%
PREVEND		105+	3.2%	1.2%	0.5%	0.0%	1.1%	1.1%	0.9%	0%	0%	1.5%	0%	0%
Participants	8367	90-104	13.4%	4.2%	1.6%	0.1%	4.1%	5.0%	2.1%	0%	2.3%	3.8%	0%	0%
Total deaths	436	75-89	28.0%	9.3%	3.4%	0.3%	13.5%	11.0%	7.8%	0.7%	9.9%	11.5%	4.6%	2.3%
CVD deaths	131	60-74	18.5%	7.1%	3.1%	0.3%	13.1%	10.8%	11.0%	1.1%	11.5%	13.7%	15.3%	2.3%
		45-59	2.5%	1.3%	1.1%	0.3%	3.4%	3.2%	4.1%	1.8%	3.8%	4.6%	6.1%	4.6%
		30-44	0.1%	0.1%	0.3%	0.1%	0%	0.9%	1.6%	0.9%	0%	0%	2.3%	0%
		15-29	-	0.0%	0.0%	0.0%	-	0%	0.2%	0.2%	-	0%	0%	0%
Rancho Bernardo		105+	2.4%	3.2%	1.0%	0.1%	1.7%	2.2%	1.9%	0.2%	1.7%	1.7%	1.7%	0%
Participants	1759	90-104	5.6%	6.6%	0.7%	0.2%	3.2%	3.6%	1.4%	0.2%	3.4%	2.6%	1.7%	0%
Total deaths	587	75-89	13.4%	12.1%	3.1%	0.2%	10.4%	11.9%	3.1%	0.2%	6.9%	10.7%	3.0%	0%
CVD deaths	233	60-74	15.3%	14.8%	4.4%	0.5%	13.1%	15.7%	6.5%	0.9%	12.4%	16.7%	7.7%	2.1%
		45-59	5.2%	4.9%	2.8%	0.5%	5.1%	6.3%	4.8%	1.4%	5.2%	9.0%	5.6%	1.3%
		30-44	0.5%	1.0%	1.1%	0.2%	1.0%	1.4%	2.7%	0.5%	1.7%	1.3%	2.6%	0%
		15-29	-	0.2%	0.1%	0.1%	-	0.5%	0.3%	0%	-	0%	0.9%	0%
REGARDS		105+	10.0%	4.5%	2.2%	0.3%	4.6%	2.9%	3.1%	0.4%	-	-	-	-
Participants	27458	90-104	14.0%	4.8%	2.1%	0.3%	7.2%	4.1%	2.6%	0.5%	-	-	-	-
Total deaths	1194	75-89	20.6%	6.2%	2.8%	0.4%	9.8%	6.3%	3.8%	0.8%	-	-	-	-

CVD deaths	-	60-74	13.1%	4.9%	2.4%	0.5%	10.2%	6.5%	5.1%	1.8%	-	-	-	-
		45-59	3.7%	1.9%	1.5%	0.5%	5.4%	4.5%	5.2%	2.3%	-	-	-	-
		30-44	0.8%	0.6%	0.8%	0.4%	1.3%	1.6%	3.8%	2.2%	-	-	-	-
		15-29	0.1%	0.1%	0.2%	0.4%	0.3%	0.5%	1.3%	1.8%	-	-	-	-
ULSAM		105+	0.6%	0.2%	0.2%	-	0.6%	0%	0.2%	-	0%	0%	0%	-
Participants	1120	90-104	5.2%	2.1%	1.5%	0.4%	4.3%	2.1%	2.4%	0.4%	3.4%	3.4%	2.4%	0%
Total deaths	467	75-89	25.5%	9.2%	4.1%	0.6%	23.8%	8.1%	4.7%	0.9%	21.6%	8.2%	3.4%	1.4%
CVD deaths	208	60-74	25.0%	10.2%	6.0%	0.7%	20.1%	11.6%	7.3%	0.9%	15.9%	13.9%	7.7%	1.4%
		45-59	4.5%	1.5%	1.8%	0.3%	5.4%	2.6%	3.4%	0.6%	5.8%	3.4%	6.3%	0.5%
		30-44	0.1%	-	0.2%	0.1%	0%	-	0.2%	0%	0%	-	0.5%	0%
		15-29	-	-	-	0.2%	-	-	-	0.4%	-	-	-	1.0%

*Participants with eGFR <15 were excluded.

- Indicates no record in the cell; 0%, no events in the cell; 0.0%, >0% and <0.05%.

Web Table 2. Distribution of participants* and outcomes according to 28 categories of eGFR and dipstick across studies.

Study	Total N	eGFR	% Participants Dipstick				% Total deaths Dipstick				% CVD deaths Dipstick			
			-	±	+	≥++	-	±	+	≥++	-	±	+	≥++
Overall		105+	8.4%	0.5%	0.2%	0.1%	4.0%	0.6%	0.6%	0.3%	1.5%	0.4%	0.2%	0.1%
Participants	1126774	90-104	18.8%	0.9%	0.4%	0.1%	8.3%	0.9%	0.6%	0.3%	6.8%	1.2%	0.3%	0.2%
Total deaths	27893	75-89	34.1%	1.6%	0.7%	0.2%	18.4%	2.2%	1.2%	0.7%	17.0%	3.3%	1.1%	0.5%
CVD deaths	3001	60-74	24.0%	1.2%	0.6%	0.2%	22.8%	3.0%	2.0%	1.1%	26.0%	3.9%	1.7%	0.8%
		45-59	5.5%	0.4%	0.3%	0.2%	14.4%	2.4%	2.0%	1.5%	17.7%	3.4%	1.8%	1.4%
		30-44	0.8%	0.1%	0.1%	0.1%	5.3%	1.1%	1.4%	1.4%	4.9%	1.5%	1.0%	0.9%
		15-29	0.1%	0.0%	0.0%	0.1%	1.5%	0.4%	0.6%	1.1%	0.8%	0.4%	0.3%	1.0%
Individual studies														
AKDN		105+	7.3%	0.4%	0.3%	0.1%	4.5%	0.7%	0.9%	0.3%	-	-	-	-
Participants	690445	90-104	17.0%	0.7%	0.5%	0.2%	7.6%	0.8%	0.8%	0.4%	-	-	-	-
Total deaths	14536	75-89	33.6%	1.3%	0.8%	0.3%	15.0%	1.7%	1.6%	0.8%	-	-	-	-
CVD deaths	-	60-74	26.3%	1.0%	0.7%	0.3%	20.3%	2.3%	2.5%	1.3%	-	-	-	-
		45-59	6.5%	0.4%	0.3%	0.2%	15.1%	1.9%	2.7%	1.8%	-	-	-	-
		30-44	1.0%	0.1%	0.1%	0.1%	7.3%	1.2%	1.9%	1.8%	-	-	-	-
		15-29	0.2%	0.0%	0.1%	0.1%	2.3%	0.4%	0.9%	1.3%	-	-	-	-
AusDiab DIP		105+	4.1%	0.4%	0.3%	0.1%	2.3%	0.3%	0.5%	0.3%	1.3%	0%	0.6%	0%
Participants	11151	90-104	13.2%	1.3%	0.9%	0.3%	5.8%	0.6%	0.5%	0.3%	2.5%	1.3%	0%	0.6%
Total deaths	653	75-89	32.9%	3.5%	2.2%	0.5%	18.4%	3.2%	2.6%	0.8%	11.9%	5.0%	3.8%	0%
CVD deaths	160	60-74	26.6%	2.8%	1.8%	0.5%	24.0%	5.2%	3.4%	1.2%	23.1%	5.6%	2.5%	1.3%
		45-59	5.6%	0.7%	0.7%	0.3%	10.9%	2.6%	4.3%	2.1%	15.6%	2.5%	6.3%	2.5%
		30-44	0.6%	0.1%	0.2%	0.1%	4.0%	0.8%	1.7%	1.2%	4.4%	1.3%	0.6%	1.9%
		15-29	0.1%	0.0%	0.0%	0.1%	0.9%	0.3%	0.6%	1.2%	1.9%	0%	1.9%	1.9%
Beaver Dam		105+	4.6%	0.5%	0.1%	0.1%	4.0%	0.6%	0.2%	0.4%	2.1%	0.7%	0.3%	0.3%
Participants	4919	90-104	13.2%	1.1%	0.3%	0.1%	10.0%	1.4%	0.4%	0.1%	8.8%	1.7%	0.3%	0.1%
Total deaths	1569	75-89	30.7%	2.2%	0.6%	0.3%	21.7%	2.5%	0.8%	0.6%	18.9%	2.7%	1.3%	0.7%
CVD deaths	708	60-74	25.4%	2.5%	0.9%	0.2%	22.6%	3.6%	1.6%	0.4%	22.9%	3.4%	0.7%	0.6%
		45-59	10.8%	1.2%	0.4%	0.4%	15.3%	2.2%	1.0%	1.1%	16.7%	2.8%	1.3%	1.0%
		30-44	2.7%	0.5%	0.2%	0.2%	5.4%	1.1%	0.6%	0.6%	7.6%	1.6%	1.0%	0.7%
		15-29	0.4%	0.1%	0.1%	0.1%	1.1%	0.3%	0.3%	0.2%	1.3%	0.6%	0%	0.1%
ESTHER		105+	16.6%	1.2%	2.1%	0.4%	12.4%	3.0%	5.3%	0.6%	-	-	-	-
Participants	9351	90-104	14.2%	0.8%	1.6%	0.4%	11.2%	0.6%	4.7%	1.8%	-	-	-	-
Total deaths	169	75-89	22.1%	0.9%	2.0%	0.6%	16.6%	1.2%	3.6%	3.0%	-	-	-	-
CVD deaths	-	60-74	17.1%	0.6%	1.7%	0.5%	14.2%	0%	3.0%	1.8%	-	-	-	-
		45-59	9.9%	0.6%	1.2%	0.3%	4.7%	0%	1.8%	1.2%	-	-	-	-
		30-44	4.0%	0.2%	0.5%	0.4%	5.3%	0%	1.8%	1.2%	-	-	-	-
		15-29	0.2%	0.0%	0.0%	0.1%	0.6%	0%	0%	0.6%	-	-	-	-
MRC Older People	**	105+	0.5%		0.0%	0.0%	0.6%		0.0%	0.0%	0.4%		0%	0%
Participants	12142	90-104	1.8%		0.1%	0.0%	1.5%		0.1%	0.0%	1.3%		0.1%	0.0%
Total deaths	6911	75-89	9.3%		0.3%	0.3%	8.5%		0.3%	0.3%	7.4%		0.2%	0.2%
CVD deaths	2928	60-74	30.0%		1.5%	0.7%	27.4%		1.5%	0.7%	26.1%		1.5%	0.5%
		45-59	35.8%		1.8%	0.9%	34.8%		1.9%	1.1%	35.9%		1.9%	1.2%
		30-44	13.3%		0.8%	0.6%	15.8%		1.1%	0.9%	17.0%		1.0%	1.1%
		15-29	2.0%		0.2%	0.2%	2.8%		0.3%	0.3%	3.4%		0.3%	0.4%
Ohasama		105+	4.8%	0.3%	0.2%	-	3.5%	0%	0%	-	1.6%	0%	0%	-
Participants	1466	90-104	16.4%	0.5%	0.8%	0.2%	10.4%	0%	0%	0%	11.5%	0%	0%	0%
Total deaths	201	75-89	38.7%	2.6%	1.8%	0.3%	29.9%	3.0%	3.0%	0.5%	23.0%	3.3%	0%	0%

CVD deaths	61	60-74	21.1%	1.9%	2.0%	0.4%	22.4%	3.0%	6.5%	1.0%	18.0%	4.9%	13.1%	3.3%
		45-59	5.4%	0.5%	1.2%	0.2%	9.5%	1.5%	2.5%	1.0%	14.8%	1.6%	1.6%	1.6%
		30-44	0.3%	-	0.1%	-	1.0%	-	0.5%	-	0%	-	0%	-
		15-29	-	-	-	0.1%	-	-	-	1.0%	-	-	-	1.6%
Severance		105+	9.7%	0.9%	0.5%	0.1%	8.9%	1.4%	1.2%	0.3%	6.7%	0.8%	1.3%	0%
Participants	42623	90-104	18.9%	1.5%	0.8%	0.2%	16.0%	1.6%	1.1%	0.2%	14.2%	2.5%	1.3%	0%
Total deaths	1286	75-89	30.5%	2.3%	1.2%	0.3%	24.8%	2.7%	2.0%	0.9%	20.9%	2.9%	3.3%	1.3%
CVD deaths	239	60-74	24.8%	1.9%	1.1%	0.4%	21.8%	2.3%	1.9%	1.1%	21.3%	1.7%	3.8%	2.1%
		45-59	3.9%	0.3%	0.2%	0.2%	7.5%	0.7%	1.0%	0.9%	10.5%	1.3%	0.8%	0.4%
		30-44	0.1%	0.0%	0.0%	0.1%	0.4%	0.2%	0.4%	0.5%	1.3%	0.4%	0.4%	0.4%
		15-29	0.0%	0.0%	0.0%	0.0%	0%	0.1%	0%	0.3%	0%	0%	0%	0.4%
Taiwan		105+	10.4%	0.5%	0.1%	0.0%	2.5%	0.3%	0.1%	0.1%	1.4%	0.3%	0.1%	0.1%
Participants	366819	90-104	22.5%	1.2%	0.1%	0.1%	8.2%	0.9%	0.2%	0.2%	5.3%	0.9%	0.2%	0.2%
Total deaths	9479	75-89	35.7%	2.2%	0.2%	0.1%	21.9%	2.9%	0.5%	0.5%	15.9%	3.4%	0.5%	0.4%
CVD deaths	1848	60-74	19.8%	1.6%	0.2%	0.1%	26.8%	4.0%	1.0%	0.7%	28.1%	4.2%	1.3%	0.5%
		45-59	3.7%	0.5%	0.1%	0.1%	14.8%	3.4%	1.2%	1.3%	19.2%	4.1%	1.7%	1.5%
		30-44	0.3%	0.1%	0.1%	0.1%	3.0%	1.2%	0.8%	1.0%	4.5%	1.7%	1.1%	0.9%
		15-29	0.0%	0.0%	0.0%	0.0%	0.6%	0.4%	0.4%	0.9%	0.7%	0.4%	0.4%	1.2%

* Participants with eGFR <15 were excluded.
** MRC Older People is not added to overall, since dipstick - and ± were combined in this study.
- Indicates no record in the cell; 0%, no events in the cell; 0.0%, >0% and <0.05%.

Web Table 3: Statistical significance for interaction between eGFR splines and age (continuous) in the models adjusted for covariates including log ACR for all-cause and cardiovascular mortality.

	N	All-cause mortality		Cardiovascular mortality	
		Cases	P-value for interaction	Cases	P-value for interaction
ACR studies					
ARIC	11,408	1,235	0.226	443	0.662
AusDiab	11,244	667	0.081	166	0.452
Beijing	1,563	59	NA*	-	-
CHS	3,230	1,487	0.650	562	0.114
COBRA	2,872	212	0.212	95	0.114
Framingham	2,956	301	0.078	93	0.008
Gubbio	1,684	119	0.865	-	-
HUNT	9,525	1,916	0.968	981	0.911
MESA	6,705	222	0.625	-	-
NHANES III	15,853	2,119	<0.001	910	0.189
PREVEND	8,370	438	0.532	132	0.002
Rancho Bernardo	1,759	587	0.710	233	0.395
REGARDS	27,583	1,380	0.151	-	-
ULSAM	1,120	467	0.728	208	0.833
Dipstick studies					
AKDN	690,680	14,628	<0.001	-	-
AusDiab DIP	11,244	667	0.035	166	0.453
Beaver Dam	4,926	1,576	0.174	709	0.423
ESTHER	9,350	171	0.151	-	-
MRC Older People	12,158	6,927	<0.001	2,936	0.196
Ohasama	1,466	201	0.356	61	NA*
Severance	42,637	1,291	0.622	239	0.087
Taiwan	367,093	9,581	<0.001	1,869	<0.001

* Model did not converge.

Web Table 4: Statistical significance for interaction between eGFR splines and albuminuria (ordinal) in the models adjusted for covariates for all-cause and cardiovascular mortality.

	N	All-cause mortality		Cardiovascular mortality	
		Cases	P-value for interaction	Cases	P-value for interaction
ACR studies					
ARIC	11,408	1,235	0.690	443	0.236
AusDiab	11,244	667	0.079	166	0.098
Beijing	1,563	59	0.486	-	-
CHS	3,230	1,487	0.688	562	0.593
COBRA	2,872	212	0.706	95	0.252
Framingham	2,956	301	0.974	93	0.942
Gubbio	1,684	119	0.255	-	-
HUNT	9,525	1,916	0.417	981	0.223
MESA	6,705	222	0.465	-	-
NHANES III	15,853	2,119	0.034	910	0.056
PREVEND	8,370	438	0.962	132	0.050
Rancho Bernardo	1,759	587	0.516	233	0.771
REGARDS	27,583	1,380	0.837	-	-
ULSAM	1,120	467	0.042	208	0.105
Dipstick studies					
AKDN	690,680	14,628	<0.001	-	-
AusDiab DIP	11,244	667	0.870	166	0.896
Beaver Dam	4,926	1,576	0.787	709	0.340
ESTHER	9,350	171	0.400	-	-
MRC Older People	12,158	6,927	0.597	2,936	0.528
Ohasama	1,466	201	0.434	61	NA*
Severance	42,637	1,291	0.515	239	0.273
Taiwan	367,093	9,581	<0.001	1,869	0.409

* Model did not converge.

Web Table 5. Pooled estimates of adjusted hazard ratios (95% CI) for all-cause mortality according to categories of eGFR and ACR among participants aged < and ≥65 y.

eGFR (ml/min/1.73 m^2)	ACR (mg/g)							
	<10		10-29		30-299		≥300	
				<65 y				
≥105	1.26	(1.02-1.55)	1.72	(1.39-2.14)	2.56	(2.01-3.26)	4.34	(2.17-8.65)
90-104		reference	1.62	(1.27-2.08)	1.46	(1.06-2.02)	6.18	(3.16-12.07)
75-89	0.92	(0.79-1.08)	1.52	(1.22-1.88)	1.88	(1.44-2.47)	2.87	(1.72-4.80)
60-74	1.13	(0.89-1.43)	1.43	(1.11-1.86)	2.07	(1.53-2.80)	5.61	(3.39-9.27)
45-59	1.86	(1.40-2.47)	3.57	(2.04-6.26)	3.28	(1.93-5.58)	5.85	(3.51-9.77)
30-44	2.82	(1.15-6.95)	9.52	(3.02-30.05)	6.05	(3.48-10.51)	6.21	(3.82-10.11)
15-29	28.01	(8.44-92.90)	20.13	(2.70-149.87)	7.37	(0.62-88.10)	11.83	(5.12-27.30)
				≥65 y				
≥105	1.00	(0.86-1.17)	1.39	(1.13-1.71)	2.13	(1.75-2.59)	3.73	(2.43-5.72)
90-104		reference	1.38	(1.19-1.59)	1.62	(1.34-1.96)	2.98	(1.72-5.17)
75-89	1.02	(0.91-1.13)	1.32	(1.17-1.49)	1.69	(1.47-1.94)	2.61	(1.89-3.62)
60-74	0.98	(0.87-1.09)	1.46	(1.29-1.65)	1.90	(1.61-2.23)	2.74	(2.22-3.40)
45-59	1.21	(0.99-1.49)	1.80	(1.56-2.08)	2.36	(1.97-2.84)	3.96	(3.22-4.86)
30-44	1.90	(1.55-2.31)	2.45	(2.01-2.99)	3.62	(2.70-4.85)	5.77	(3.99-8.35)
15-29	5.99	(2.81-12.78)	3.49	(2.16-5.63)	4.78	(3.13-7.31)	6.14	(4.66-8.08)

Adjusted for age, race, gender, CVD history, systolic blood pressure, diabetes, smoking, total cholesterol.
Abbreviations: eGFR: estimated glomerular filtration rate; ACR: urine albumin-to-creatinine ratio; CVD: cardiovascular disease.

Web Table 6. Pooled estimates of adjusted hazard ratios (95% CI) for cardiovascular mortality according to categories of eGFR and ACR among participants aged < and ≥65 y.

eGFR (ml/min/1.73 m^2)	ACR (mg/g)							
	<10		10-29		30-299		≥300	
				<65 y				
≥105	0.97	(0.67-1.41)	1.43	(0.87-2.34)	3.04	(1.73-5.35)	2.27	(0.78-6.63)
90-104		reference	2.42	(1.37-4.26)	1.74	(0.92-3.32)	6.54	(3.20-13.38)
75-89	1.05	(0.69-1.59)	1.82	(0.90-3.65)	2.83	(1.66-4.81)	4.88	(1.85-12.84)
60-74	1.44	(1.01-2.05)	1.60	(0.94-2.75)	3.56	(2.12-5.97)	8.74	(4.51-16.96)
45-59	1.34	(0.56-3.23)	8.81	(4.74-16.40)	4.86	(2.60-9.10)	5.00	(1.45-17.16)
30-44	16.84	(2.11-134.27)	30.57	(0.36-2593.59)	4.11	(1.38-12.24)	8.71	(3.91-19.39)
15-29	97.42	(19.37-489.92)	61.62	(7.50-506.54)	20.40	(2.19-190.38)	15.27	(6.81-34.24)
				≥65 y				
≥105	0.85	(0.64-1.14)	1.25	(0.93-1.69)	2.25	(1.60-3.16)	2.52	(1.02-6.23)
90-104		reference	1.28	(1.00-1.65)	1.81	(1.23-2.66)	4.01	(2.35-6.84)
75-89	0.97	(0.80-1.19)	1.36	(1.10-1.67)	1.59	(1.08-2.34)	3.88	(2.46-6.12)
60-74	0.97	(0.80-1.18)	1.51	(1.22-1.88)	2.06	(1.49-2.83)	3.39	(2.23-5.16)
45-59	1.44	(1.17-1.78)	2.03	(1.63-2.54)	3.06	(2.12-4.41)	4.84	(3.52-6.65)
30-44	2.32	(1.72-3.13)	2.76	(1.55-4.90)	4.19	(2.67-6.60)	6.24	(3.84-10.13)
15-29	19.65	(6.32-61.11)	7.94	(1.33-47.53)	5.37	(3.44-8.39)	9.60	(4.58-20.13)

Adjusted for age, race, gender, CVD history, systolic blood pressure, diabetes, smoking, total cholesterol.
Abbreviations: eGFR: estimated glomerular filtration rate; ACR: urine albumin-to-creatinine ratio; CVD: cardiovascular disease.

Web Table 7. Pooled estimates of adjusted hazard ratios (95% CI) for all-cause mortality according to categories of eGFR and dipstick among participants aged < and ≥65 y.

eGFR (ml/min/1.73 m^2)	Dipstick							
	-		±		+		≥++	
	<65 y							
≥105	1.29	(0.89-1.88)	2.34	(1.04-5.25)	3.13	(1.37-7.11)	5.18	(3.43-7.82)
90-104	reference		1.44	(0.98-2.10)	1.82	(1.16-2.87)	2.64	(1.37-5.09)
75-89	0.71	(0.56-0.90)	1.49	(1.27-1.75)	1.58	(1.32-1.89)	3.09	(2.51-3.80)
60-74	0.71	(0.51-1.00)	1.34	(1.19-1.52)	1.70	(1.44-2.01)	2.28	(1.85-2.82)
45-59	0.90	(0.64-1.25)	1.95	(1.64-2.33)	2.13	(1.70-2.67)	3.93	(2.92-5.28)
30-44	2.10	(1.60-2.75)	2.80	(2.04-3.85)	4.92	(3.49-6.94)	4.82	(3.81-6.09)
15-29	6.28	(4.41-8.94)	6.68	(2.96-15.07)	6.49	(4.12-10.23)	7.62	(5.05-11.50)
	≥65 y							
≥105	1.48	(1.00-2.19)	2.87	(1.53-5.37)	3.96	(2.69-5.83)	5.58	(3.79-8.22)
90-104	reference		1.86	(1.49-2.32)	2.30	(1.26-4.19)	2.60	(1.36-4.96)
75-89	0.93	(0.69-1.24)	1.34	(1.10-1.63)	1.74	(1.49-2.04)	1.88	(1.52-2.32)
60-74	0.87	(0.62-1.23)	1.18	(1.04-1.33)	1.51	(1.22-1.86)	1.79	(1.30-2.46)
45-59	1.01	(0.68-1.48)	1.31	(1.01-1.69)	1.53	(1.35-1.72)	2.08	(1.54-2.80)
30-44	1.58	(1.03-2.42)	1.90	(1.23-2.96)	2.01	(1.44-2.79)	2.58	(1.76-3.80)
15-29	2.06	(1.46-2.91)	3.33	(1.72-6.45)	2.76	(1.80-4.25)	6.33	(3.55-11.29)

Adjusted for age, race, gender, CVD history, systolic blood pressure, diabetes, smoking, total cholesterol.
Abbreviations: eGFR: estimated glomerular filtration rate; CVD: cardiovascular disease.

Web Table 8. Pooled estimates of adjusted hazard ratios (95% CI) for cardiovacular mortality according to categories of eGFR and dipstick among participants aged < and ≥65 y.

eGFR (ml/min/1.73 m^2)	Dipstick							
	-		±		+		≥++	
				<65 y				
≥105	0.95	(0.68-1.34)	2.33	(1.22-4.43)	6.59	(0.43-101.15)	4.12	(0.94-17.99)
90-104	reference		1.64	(1.05-2.57)	1.59	(0.74-3.44)	4.46	(1.62-12.29)
75-89	0.79	(0.64-0.98)	2.32	(1.70-3.18)	1.64	(0.90-2.97)	2.33	(1.16-4.68)
60-74	1.00	(0.81-1.23)	1.31	(0.92-1.87)	2.61	(1.66-4.09)	1.70	(0.83-3.49)
45-59	1.28	(0.89-1.83)	2.33	(1.50-3.61)	2.49	(1.35-4.59)	3.16	(1.61-6.23)
30-44	4.02	(2.22-7.28)	4.24	(2.26-7.97)	4.26	(1.95-9.29)	3.50	(1.75-7.01)
				≥65 y				
≥105	0.91	(0.52-1.59)	1.82	(0.56-5.92)	7.22	(2.57-20.24)	14.79	(1.92-113.78)
90-104	reference		2.13	(1.16-3.91)	2.92	(0.40-21.52)	2.91	(0.59-14.41)
75-89	0.82	(0.61-1.10)	1.50	(0.79-2.86)	2.39	(1.36-4.17)	2.19	(0.93-5.19)
60-74	0.93	(0.70-1.23)	1.38	(0.94-2.03)	1.34	(0.66-2.72)	2.58	(1.01-6.60)
45-59	1.30	(0.98-1.74)	1.77	(1.20-2.61)	2.47	(1.56-3.92)	2.52	(1.49-4.27)
30-44	2.05	(1.47-2.86)	2.56	(1.60-4.10)	2.35	(1.38-3.99)	3.13	(1.73-5.66)
15-29	2.98	(1.27-7.03	3.36	(1.48-7.63)	7.26	(0.65-81.65)	14.49	(3.63-57.79)

Adjusted for age, race, gender, CVD history, systolic blood pressure, diabetes, smoking, total cholesterol.
Abbreviations: eGFR: estimated glomerular filtration rate; CVD: cardiovascular disease.

Web Table 9. HRs for all-cause mortality according to eGFR splines in the model adjusted for covariates including log-ACR.

	eGFR														
	15		45		60		75		90		95	105		120	
	HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI		HR	95% CI	HR	95% CI
ARIC	2.51	1.63, 3.86	1.95	1.49, 2.56	1.00	0.82, 1.23	0.89	0.73, 1.08	0.97	0.89, 1.06	REF	1.05	0.89, 1.25	1.26	1.07, 1.47
AusDiab	4.67	2.53, 8.63	1.08	0.76, 1.54	0.99	0.75, 1.31	0.91	0.67, 1.24	1.04	0.86, 1.26	REF	0.93	0.63, 1.36	1.76	1.10, 2.81
Beijing	0.45	0.00, 1456	1.06	0.22, 5.21	1.91	0.82, 4.45	0.95	0.39, 2.31	1.00	0.60, 1.67	REF	1.00	0.36, 2.74	0.67	0.18, 2.56
CHS	2.33	1.59, 3.41	1.82	1.47, 2.25	1.26	1.06, 1.50	1.11	0.93, 1.32	1.00	0.92, 1.08	REF	1.01	0.86, 1.17	1.11	0.95, 1.30
COBRA	10.45	5.04, 21.67	1.26	0.58, 2.73	1.39	0.70, 2.73	1.38	0.79, 2.43	1.00	0.83, 1.20	REF	1.01	0.69, 1.46	1.09	0.77, 1.54
Framingham	3.88	1.45, 10.41	1.15	0.66, 2.03	1.18	0.81, 1.72	0.75	0.49, 1.14	1.06	0.89, 1.26	REF	0.90	0.63, 1.27	0.91	0.67, 1.24
Gubbio	0.11	0.00, 5.88	0.11	0.00, 5.88	1.01	0.50, 2.04	0.65	0.36, 1.17	0.92	0.69, 1.23	REF	1.19	0.66, 2.13	2.62	1.35, 5.09
HUNT	2.04	1.28, 3.24	1.58	1.30, 1.92	1.35	1.16, 1.58	0.90	0.77, 1.06	1.07	0.99, 1.17	REF	0.87	0.74, 1.03	1.02	0.86, 1.22
MESA	3.46	1.22, 9.81	0.77	0.36, 1.63	0.83	0.52, 1.32	0.91	0.58, 1.42	0.89	0.74, 1.07	REF	1.26	0.88, 1.82	1.46	1.02, 2.09
NHANES III	2.68	1.81, 3.97	1.83	1.51, 2.21	1.31	1.12, 1.54	1.03	0.87, 1.21	1.01	0.95, 1.08	REF	0.97	0.86, 1.10	1.12	1.01, 1.25
PREVEND	2.07	0.74, 5.81	1.08	0.64, 1.83	0.92	0.66, 1.29	1.05	0.76, 1.45	0.91	0.75, 1.10	REF	1.22	0.83, 1.80	1.19	0.73, 1.96
Rancho Bernardo	1.80	0.68, 4.75	1.65	1.14, 2.40	0.90	0.68, 1.18	1.16	0.86, 1.56	1.01	0.87, 1.18	REF	0.98	0.72, 1.33	1.12	0.85, 1.47
REGARDS	4.24	3.10, 5.80	1.79	1.42, 2.26	1.65	1.35, 2.01	1.00	0.80, 1.26	1.06	0.96, 1.17	REF	0.89	0.73, 1.08	1.05	0.88, 1.24
ULSAM	13.31	1.13, 156	1.46	0.76, 2.79	1.25	0.88, 1.79	0.88	0.62, 1.24	1.17	0.88, 1.56	REF	0.73	0.41, 1.28	0.72	0.38, 1.37
Pooled	**3.14**	**2.39, 4.13**	**1.57**	**1.39, 1.78**	**1.18**	**1.05, 1.32**	**0.98**	**0.91, 1.05**	**1.01**	**0.98, 1.05**	**REF**	**0.97**	**0.92, 1.04**	**1.13**	**1.04, 1.23**
Heterogeneity χ^2 (df)	29.22 (13)		20.11 (13)		28.95 (13)		11.12 (13)		8.65 (13)		REF	8.65 (13)		19.77 (13)	
p-value	0.006		0.092		0.007		0.601		0.799		REF	0.799		0.101	
I^2	56%		35%		55%		0%		0%		REF	0%		34%	

Web Table 10. HRs for cardiovascular mortality according to eGFR splines in the model adjusted for covariates including log-ACR.

	eGFR														
	15		45		60		75		90		95	105		120	
	HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI		HR	95% CI	HR	95% CI
ARIC	2.37	1.34, 4.21	2.44	1.64, 3.63	1.33	0.96, 1.83	0.80	0.57, 1.12	1.10	0.94, 1.29	REF	0.83	0.60, 1.13	0.95	0.71, 1.27
AusDiab	5.62	1.76, 17.92	1.70	0.84, 3.47	1.31	0.70, 2.43	1.20	0.60, 2.43	1.28	0.75, 2.16	REF	0.62	0.21, 1.77	1.33	0.31, 5.77
CHS	2.63	1.50, 4.62	2.06	1.47, 2.90	1.68	1.27, 2.23	1.15	0.85, 1.55	1.08	0.95, 1.24	REF	0.86	0.65, 1.12	1.05	0.81, 1.36
COBRA	6.26	1.57, 24.92	1.47	0.45, 4.77	1.68	0.65, 4.35	1.23	0.55, 2.75	1.25	0.96, 1.63	REF	0.64	0.37, 1.08	0.78	0.48, 1.26
Framingham	2.55	0.49, 13.35	0.83	0.31, 2.23	0.88	0.43, 1.77	0.74	0.34, 1.64	0.89	0.65, 1.22	REF	1.25	0.67, 2.35	1.27	0.72, 2.24
HUNT	2.83	1.60, 5.00	1.76	1.35, 2.29	1.49	1.20, 1.84	0.84	0.67, 1.07	1.08	0.95, 1.22	REF	0.86	0.67, 1.10	1.01	0.78, 1.31
NHANES III	2.04	1.12, 3.72	2.20	1.69, 2.87	1.27	1.01, 1.60	1.08	0.85, 1.38	1.07	0.97, 1.18	REF	0.87	0.72, 1.07	0.94	0.79, 1.13
PREVEND	1.30	0.13, 12.67	1.73	0.70, 4.29	1.56	0.82, 2.95	1.41	0.73, 2.72	1.20	0.76, 1.90	REF	0.69	0.28, 1.74	0.93	0.39, 2.23
Rancho Bernardo	1.23	0.26, 5.87	2.00	1.12, 3.59	1.13	0.72, 1.78	1.52	0.92, 2.49	0.89	0.68, 1.17	REF	1.26	0.73, 2.16	1.42	0.87, 2.30
ULSAM	29.20	2.38, 359	2.45	1.04, 5.79	1.58	0.88, 2.86	0.88	0.49, 1.56	1.42	0.82, 2.45	REF	0.50	0.17, 1.48	NA*	NA*, NA*
Pooled	**2.66**	**2.04, 3.46**	**1.99**	**1.73, 2.28**	**1.40**	**1.25, 1.57**	**1.01**	**0.88, 1.15**	**1.08**	**1.02, 1.14**	**REF**	**0.86**	**0.77, 0.96**	**1.00**	**0.90, 1.11**
heterogeneity χ^2 (df)	8.84 (9)		6.22 (9)		5.73 (9)		9.94 (9)		6.14 (9)		REF	6.14 (9)		4.51 (8)	
p-value	0.452		0.718		0.767		0.355		0.726		REF	0.726		0.808	
I^2	0%		0%		0%		9%		0%		REF	0%		0%	

* Unreliable estimates.

Web Table 11. HRs for all-cause mortality according to eGFR splines in the model adjusted for covariates including dipstick.

	eGFR														
	15		45		60		75		90		95	105		120	
	HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI		HR	95% CI	HR	95% CI
AKDN	1.83	1.65, 2.03	0.72	0.67, 0.77	0.50	0.47, 0.53	0.51	0.48, 0.55	0.76	0.74, 0.79	REF	1.73	1.62, 1.85	2.41	2.27, 2.56
AusDiab DIP	7.26	3.90, 13.52	1.05	0.73, 1.51	0.95	0.72, 1.26	0.90	0.66, 1.22	1.01	0.83, 1.22	REF	0.98	0.67, 1.44	1.85	1.16, 2.96
Beaver Dam	3.30	2.15, 5.06	1.31	1.06, 1.62	0.96	0.81, 1.14	0.85	0.71, 1.03	0.95	0.86, 1.05	REF	1.10	0.90, 1.34	1.68	1.39, 2.03
ESTHER	5.29	1.96, 14.29	0.57	0.29, 1.12	0.93	0.53, 1.65	0.59	0.33, 1.05	1.04	0.85, 1.27	REF	0.93	0.62, 1.40	0.80	0.55, 1.17
MRC Older People	2.64	2.17, 3.22	0.98	0.86, 1.12	0.88	0.78, 1.00	0.83	0.72, 0.97	0.83	0.75, 0.93	REF	1.45	1.17, 1.79	1.43	1.16, 1.77
Ohasama	16.47	1.62, 168	2.13	0.87, 5.22	1.77	1.07, 2.91	1.00	0.63, 1.57	1.05	0.81, 1.35	REF	0.91	0.55, 1.51	1.32	0.61, 2.87
Severance	3.52	1.81, 6.82	1.62	1.10, 2.37	0.90	0.74, 1.09	0.77	0.65, 0.92	0.97	0.90, 1.05	REF	1.05	0.90, 1.23	1.21	1.04, 1.41
Taiwan	3.72	3.23, 4.28	1.61	1.46, 1.76	0.97	0.90, 1.04	0.90	0.83, 0.97	0.95	0.91, 0.99	REF	1.11	1.02, 1.20	1.22	1.12, 1.34
Pooled	**3.44**	**2.42, 4.89**	**1.13**	**0.82, 1.57**	**0.91**	**0.68, 1.21**	**0.78**	**0.62, 0.98**	**0.93**	**0.83, 1.03**	**REF**	**1.16**	**0.94, 1.44**	**1.44**	**1.06, 1.95**
heterogeneity χ^2 (df)	82.98 (7)		204.69 (7)		253.32 (7)		141.91 (7)		101.24 (7)		REF	101.24 (7)		217.77 (7)	
p-value	<0.001		<0.001		<0.001		<0.001		<0.001		REF	<0.001		<0.001	
I^2	92%		97%		97%		95%		93%		REF	93%		97%	

Web Table 12. HRs for cardiovascular mortality according to eGFR splines in the model adjusted for covariates including dipstick.

	eGFR														
	15		45		60		75		90		95	105		120	
	HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI		HR	95% CI	HR	95% CI
AusDiab DIP	10.46	3.25, 33.68	1.85	0.90, 3.80	1.28	0.68, 2.41	1.28	0.63, 2.61	1.22	0.72, 2.08	REF	0.67	0.23, 1.94	1.42	0.33, 6.17
Beaver Dam	2.88	1.57, 5.30	1.61	1.18, 2.19	1.03	0.80, 1.34	0.86	0.64, 1.14	0.96	0.81, 1.13	REF	1.09	0.79, 1.51	1.33	0.93, 1.89
MRC Older People	3.30	2.43, 4.48	1.26	1.01, 1.56	1.04	0.84, 1.29	0.87	0.68, 1.12	0.87	0.72, 1.05	REF	1.32	0.91, 1.91	1.27	0.87, 1.84
Ohasama	13.07	0.31, 546	3.34	0.70, 15.99	2.97	1.07, 8.21	1.55	0.58, 4.15	1.70	0.83, 3.48	REF	0.35	0.08, 1.45	2.62	0.88, 7.80
Severance	1.67	0.24, 11.85	1.29	0.58, 2.87	1.08	0.71, 1.63	0.71	0.47, 1.08	1.08	0.90, 1.31	REF	0.86	0.59, 1.25	1.12	0.79, 1.60
Taiwan	4.38	3.19, 5.99	2.08	1.69, 2.57	1.30	1.09, 1.54	0.96	0.80, 1.16	0.93	0.83, 1.04	REF	1.15	0.92, 1.44	1.29	1.02, 1.64
Pooled	**3.86**	**2.90, 5.12**	**1.64**	**1.27, 2.10**	**1.16**	**1.00, 1.34**	**0.91**	**0.80, 1.03**	**0.97**	**0.89, 1.06**	**REF**	**1.07**	**0.90, 1.28**	**1.28**	**1.10, 1.49**
heterogeneity χ^2 (df)	6.36 (5)		11.87 (5)		6.88 (5)		3.96 (5)		6.03 (5)		REF	6.03 (5)		2.23 (5)	
p-value	0.272		0.037		0.23		0.555		0.303		REF	0.303		0.816	
I^2	21%		58%		27%		0%		17%		REF	17%		0%	

Web Table 13. HRs for all-cause mortality according to ACR splines in the model adjusted for covariates including spline eGFR.

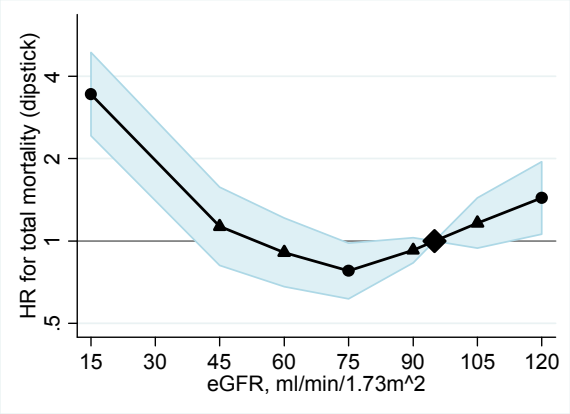
	ACR										
	2.5		5	10		30		300		1000	
	HR	95% CI		HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI
ARIC	0.89	0.84, 0.94	REF	1.13	1.07, 1.19	1.46	1.17, 1.82	2.28	1.78, 2.92	2.63	2.04, 3.38
AusDiab	0.68	0.58, 0.81	REF	1.46	1.23, 1.74	1.65	1.29, 2.12	2.54	1.77, 3.64	3.78	2.39, 5.96
Beijing	0.68	0.50, 0.94	REF	1.47	1.06, 2.02	1.52	0.58, 4.01	7.21	2.60, 19.98	1.11	0.03, 41.25
CHS	0.80	0.72, 0.89	REF	1.24	1.12, 1.38	1.66	1.41, 1.96	2.37	1.89, 2.97	2.60	2.00, 3.37
COBRA	0.87	0.67, 1.15	REF	1.14	0.87, 1.50	1.12	0.68, 1.85	2.19	1.23, 3.92	2.87	1.67, 4.92
Framingham	0.81	0.72, 0.91	REF	1.24	1.10, 1.39	1.42	1.00, 2.02	1.39	0.80, 2.43	1.92	1.06, 3.49
Gubbio	0.92	0.70, 1.22	REF	1.09	0.82, 1.43	2.22	1.13, 4.35	1.52	0.27, 8.59	4.60	1.31, 16.16
HUNT	0.79	0.71, 0.87	REF	1.27	1.15, 1.42	1.94	1.68, 2.23	1.98	1.61, 2.44	3.45	2.56, 4.63
MESA	1.02	0.81, 1.28	REF	0.98	0.78, 1.23	2.16	1.41, 3.31	2.85	1.63, 4.99	6.86	3.73, 12.59
NHANES III	0.88	0.83, 0.94	REF	1.13	1.06, 1.21	1.59	1.39, 1.81	1.93	1.61, 2.32	2.33	1.95, 2.79
PREVEND	0.72	0.55, 0.94	REF	1.39	1.06, 1.83	1.86	1.37, 2.53	3.67	2.40, 5.61	3.00	1.55, 5.78
Rancho Bernardo	0.93	0.71, 1.22	REF	1.08	0.82, 1.42	1.33	1.00, 1.77	2.59	1.64, 4.10	2.58	1.28, 5.18
REGARDS	0.81	0.71, 0.93	REF	1.23	1.07, 1.41	1.80	1.50, 2.15	2.08	1.66, 2.62	2.82	2.27, 3.50
ULSAM	0.84	0.69, 1.01	REF	1.20	0.99, 1.44	1.21	0.89, 1.65	1.56	1.01, 2.41	1.44	0.70, 2.97
Pooled	**0.83**	**0.80, 0.87**	**REF**	**1.20**	**1.15, 1.26**	**1.63**	**1.50, 1.77**	**2.22**	**1.97, 2.51**	**2.81**	**2.44, 3.23**
heterogeneity χ^2 (df)	20.55 (13)		REF	20.55 (13)		19.35 (13)		21.43 (13)		21.78 (13)	
p-value	0.082		REF	0.082		0.113		0.065		0.059	
I^2	37%		REF	37%		33%		39%		40%	

Web Table 14. HRs for cardiovascular mortality according to ACR splines in the model adjusted for covariates including spline eGFR.

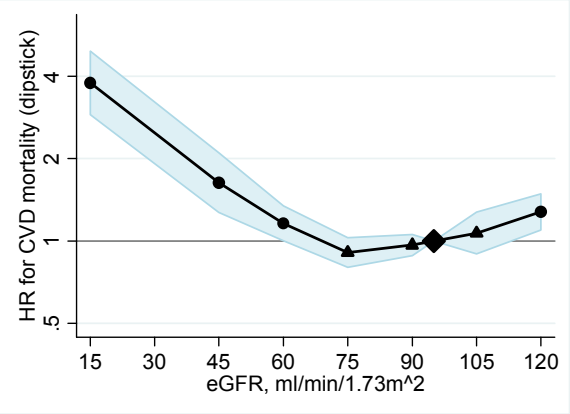
	ACR											
	2.5		5	10		30		300		1000		
	HR	95% CI		HR	95% CI	HR	95% CI	HR	95% CI	HR	95% CI	
ARIC	0.84	0.75, 0.93	REF	1.20	1.08, 1.33	1.90	1.35, 2.67	2.93	2.04, 4.21	3.23	2.23, 4.67	
AusDiab	0.58	0.40, 0.84	REF	1.73	1.18, 2.53	1.55	0.95, 2.52	2.23	1.13, 4.43	2.87	1.23, 6.68	
CHS	0.73	0.61, 0.88	REF	1.37	1.14, 1.65	1.96	1.51, 2.54	2.91	2.07, 4.09	3.15	2.14, 4.66	
COBRA	0.85	0.56, 1.29	REF	1.18	0.78, 1.79	1.97	1.01, 3.82	0.52	0.17, 1.63	1.18	0.48, 2.88	
Framingham	0.81	0.64, 1.02	REF	1.24	0.98, 1.57	1.38	0.71, 2.65	3.68	1.68, 8.02	5.94	2.78, 12.72	
HUNT	0.69	0.59, 0.81	REF	1.44	1.24, 1.69	1.86	1.52, 2.27	2.28	1.72, 3.02	3.20	2.14, 4.80	
NHANES III	0.86	0.78, 0.96	REF	1.16	1.04, 1.29	1.63	1.33, 1.99	2.13	1.63, 2.77	2.17	1.66, 2.83	
PREVEND	0.81	0.47, 1.41	REF	1.24	0.71, 2.15	2.20	1.26, 3.85	4.00	1.92, 8.35	3.55	1.19, 10.59	
Rancho Bernardo	0.85	0.53, 1.35	REF	1.18	0.74, 1.87	1.49	0.93, 2.37	2.61	1.28, 5.35	2.38	0.71, 8.00	
ULSAM	0.71	0.52, 0.96	REF	1.41	1.04, 1.92	1.66	1.06, 2.59	1.76	0.95, 3.26	2.08	0.85, 5.09	
Pooled	**0.79**	**0.74, 0.85**	**REF**	**1.27**	**1.18, 1.36**	**1.77**	**1.60, 1.96**	**2.43**	**2.01, 2.94**	**2.81**	**2.27, 3.46**	
heterogeneity χ^2 (df)	10.51 (9)		REF	10.51 (9)		3.79 (9)		14.29 (9)		12.88 (9)		
p-value	0.311		REF	0.311		0.925		0.112		0.168		
I^2	14%		REF	14%		0%		37%		30%		

Web Figure 1. HRs for all-cause (A) and cardiovascular (B) mortality according to eGFR with the adjustment for dipstick and covariates. The reference is GFR 95. Dots represent statistically significant and triangles represent not significant.

A

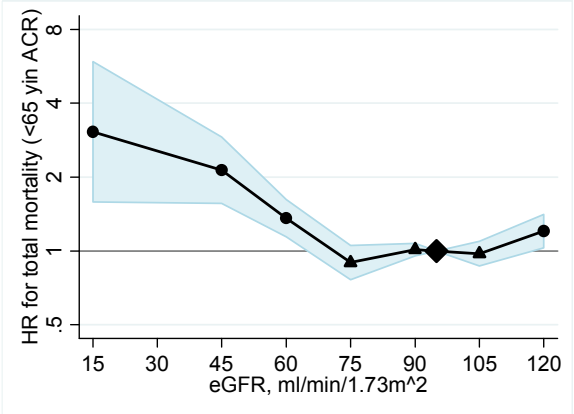


B

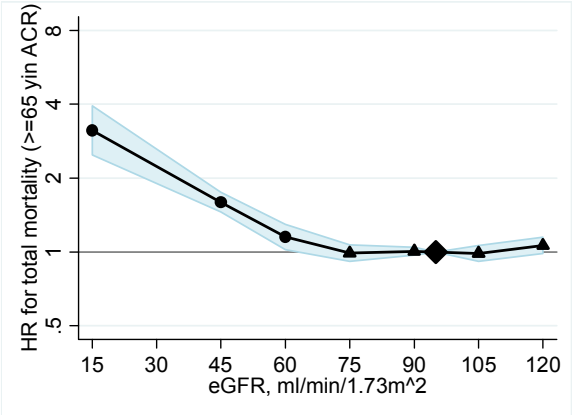


Web Figure 2. HRs according to eGFR adjusted for covariates including log-ACR for all-cause mortality in participants aged <65 (A) and ≥65 y (B) and for cardiovascular mortality in participants aged <65 (C) and ≥65 y (D). The reference is eGFR 95. Dots represent statistically significant and triangles represent not significant.

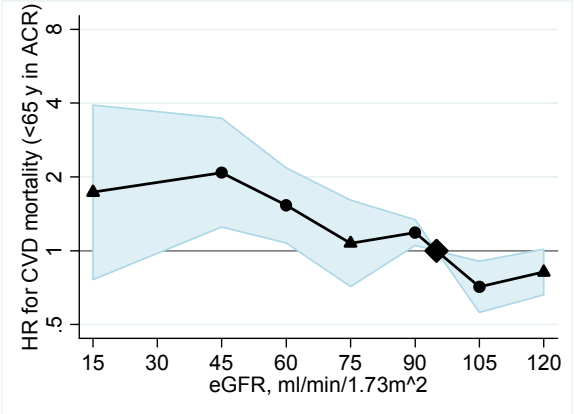
A



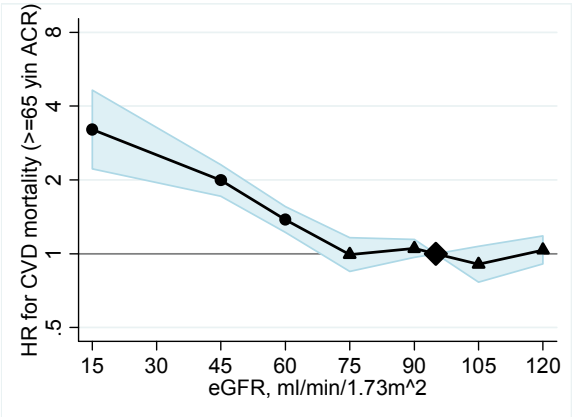
B



C

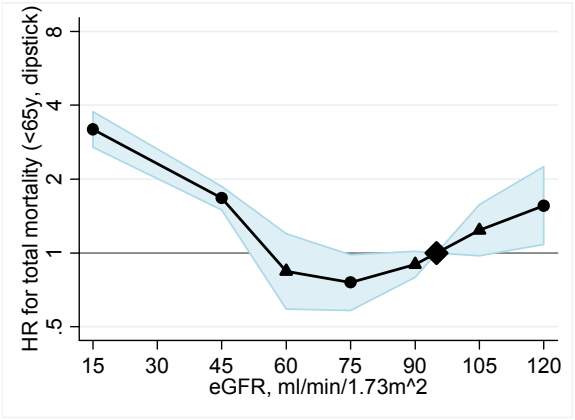


D



Web Figure 3. HRs according to eGFR adjusted for covariates including dipstick for all-cause mortality in participants aged <65 (A) and ≥65 y (B) and for cardiovascular mortality in participants aged <65 (C) and ≥65 y (D). The reference is eGFR 95. Dots represent statistically significant and triangles represent not significant.

A



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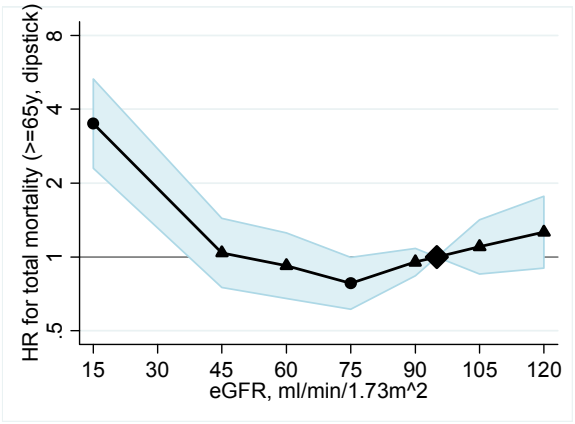

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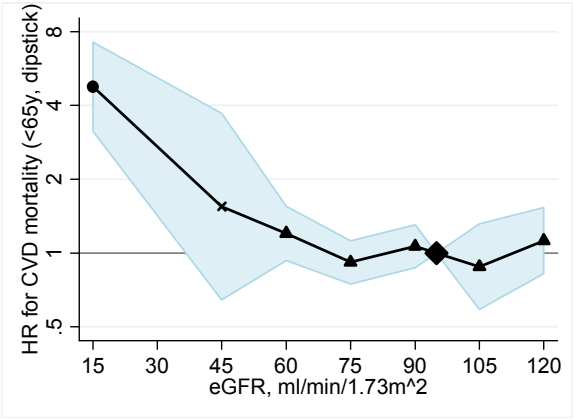

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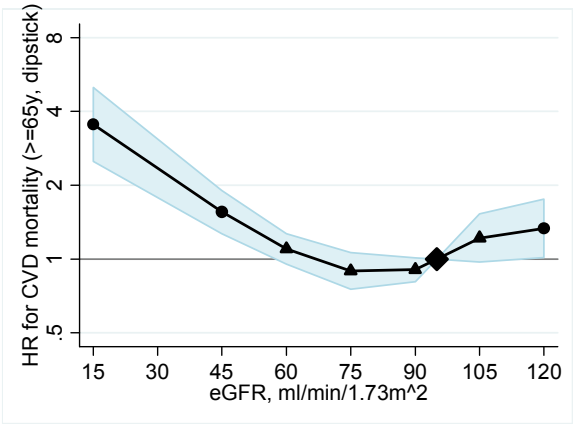
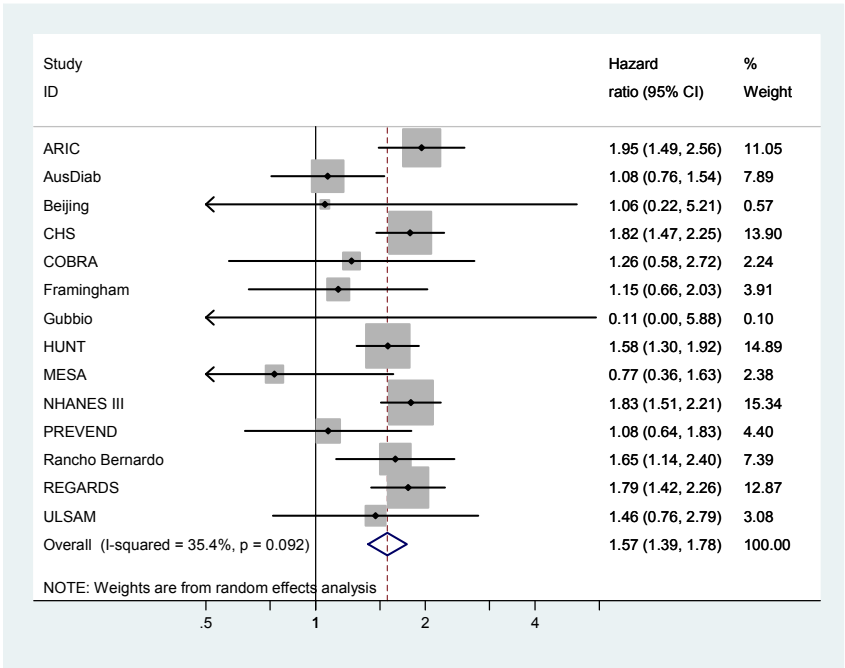
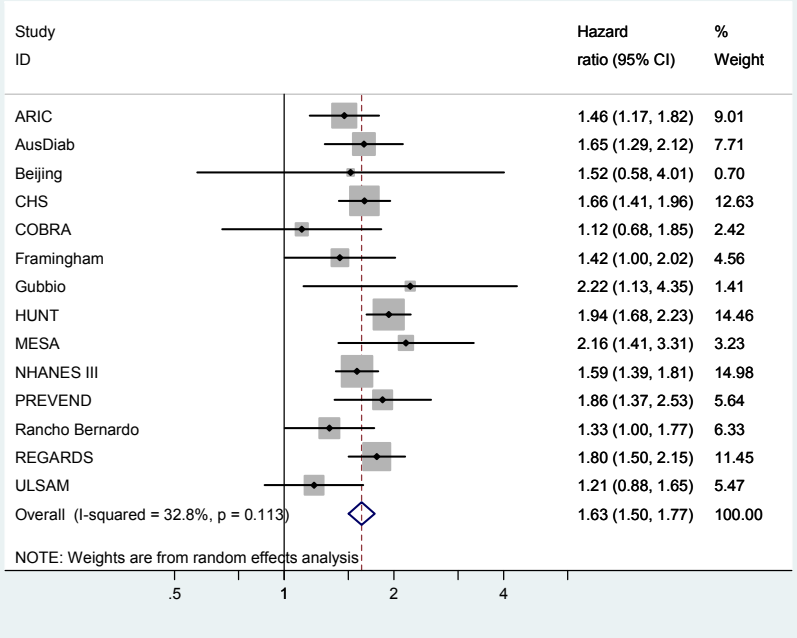


Web Figure 4. Forest plots of HRs for all-cause mortality at eGFR 45 (vs. 95) ml/min/1.73 m^2 (A) and ACR 30 (vs. 5) mg/g (B) in ACR studies.

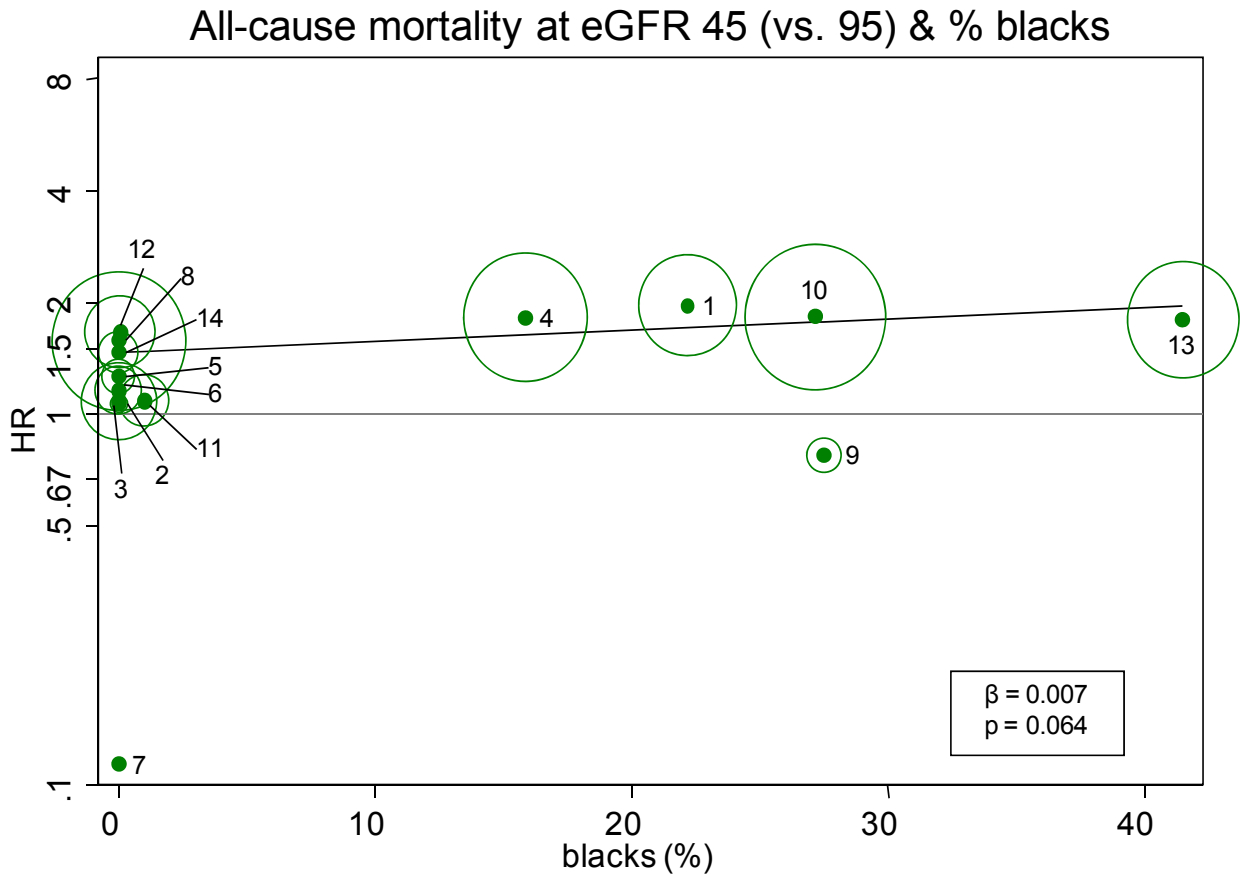
A



B



Web Figure 5. Meta-regression of logHR for all-cause mortality at eGFR 45 (vs. 95 ml/min/1.73 m^2) on % blacks in ACR studies.



1. ARIC 2. AusDiab 3. Beijing 4. CHS 5. COBRA 6. Framingham 7. Gubbio 8. HUNT 9. MESA
10. NHANES III 11. PREVEND 12. Rancho Bernardo 13. REGARDS 14. ULSAM

Web Appendix 1. Acronyms or abbreviations for studies included in the current report and their key references linked to the Web references.

ARIC:	Atherosclerosis Risk in Communities Study[1]
AusDiab:	Australian Diabetes, Obesity, and Lifestyle Study[2]
Beijing:	Beijing Cohort Study[3]
CHS:	Cardiovascular Health Study[4]
COBRA:	COBRA Study[5]
Framingham:	Framingham Heart Study[6]
Gubbio:	Gubbio Study[7]
HUNT:	Nord Trøndelag Health Study[8]
MESA:	Multi-Ethnic Study of Atherosclerosis[9]
NHANES III:	Third US National Health and Nutrition Examination Survey[10]
PREVEND:	Prevention of Renal and Vascular End-stage Disease Study[11]
Rancho Bernardo:	Rancho Bernardo Study[12]
REGARDS:	Reasons for Geographic And Racial Differences in Stroke Study[13]
ULSAM:	Uppsala Longitudinal Study of Adult Men[14]
AKDN:	Alberta Kidney Disease Network[15]
Beaver Dam:	Beaver Dam CKD Study[16]
ESTHER:	ESTHER Study[17]
MRC Older People:	MRC Study of assessment of older people[18]
Ohasama:	Ohasama Study[19]
Severance:	Severance Cohort Study[20]
Taiwan:	Taiwan MJ Cohort Study[21]

Web Appendix 2. Distributed data analysis overview and analytic notes for some of individual studies.

Overview:

Programs were written in SAS and STATA by the Analytic Team and piloted in several studies (AKDN, ARIC, Framingham, CHS, NHANES III, MESA, and PREVEND) prior to distribution to all participating studies.

The participating studies were asked to prepare a dataset with 12 variables (follow-up time, event variable, and ten predictors including eGFR and albuminuria). To minimize heterogeneity, we circulated guidelines for definitions of variables (e.g. hypertension, diabetes, smoking) and dataset preparation. We instructed studies to use a complete data analysis for the two key risk factors, eGFR and albuminuria. For other variables we allowed for imputation with the mean value of the covariate or more sophisticated methods, but this was not tracked in the meta-analysis. Standard program (in SAS and STATA) were designed to automatically save all output needed for the meta-analysis including categorical/continuous analyses and tests of interaction. The participating studies sent their results to the Analysis Team, who then pooled the estimates across centers using R and STATA.

Studies were instructed to standardize and calibrate their serum creatinine to their best ability and report the method of standardization. The reported creatinine calibration allows grouping studies into studies that reported using an IDMS traceable method or conducted some serum creatinine calibration to IDMS traceable methods (AKDN, ARIC, AusDiab, Beaver Dam, Beijing, CHS, COBRA, Gubbio, Framingham, HUNT, MESA, NHANES III, PREVEND, Rancho Bernardo, REGARDS, Severance) and studies where the creatinine standardization was either not done or not reported to us (ESTHER, MRC Older People, Ohasama, ULSAM, Taiwan). Retrospective assessment of creatinine calibration without direct collection of laboratory data is limited since substantial creatinine calibration differences have been documented even within a single laboratory using the same method over time.

Urine assays were generally conducted on spot urines but timing varied across studies. A few studies had multiple urine measurements and averaged the results in their measure of albuminuria (HUNT three spot urines, PREVEND two 24-hour urines).

The reference range of eGFR (90-104 ml/min/1.73 m^2) was chosen based on the optimal level of GFR (≥90 ml/min/1.73 m^2) reported in current clinical guidelines[22, 23] and the fact that some studies have reported higher mortality risk at high eGFR.[24-26] The reference point of eGFR (95 ml/min/1.73 m^2) was then arbitrarily chosen within the reference range but not in the knots (90 and 105) used to create splines. The flat risk relationship between eGFR 75 and 104 makes the results quite insensitive to the choice of reference point in this range. eGFR categories were 15 ml/min/1.73m^2 to allow for the possibility that the original categories may need to be split into finer categories. The reference range of ACR (<10 mg/g) was chosen based on the observation that the normal mean value for urine albumin excretion in adults is approximately 10 mg/day.[23] The reference point of ACR (5 mg/g) was then arbitrarily chosen within the reference range at a level thought to be in the optimal range but not in the knot (10 mg/g) used to create the splines.

Interaction models were tested in each cohort, and the coefficients and standard errors were saved. This allowed for a meta-analysis of a combined interaction model. The approach we used does not provide an interaction p-value for the meta-analyzed model.

Following the published results from individual studies, we assumed the proportional hazards model provided the best summary of the data in each study and did not summarize statistics on deviations from proportionality across the covariates.

The points with extremely low HR (<0.025, usually due to zero cells) or extremely high HR (>40) with a wide standard error (≥0.35, corresponding to 2.5 fold higher/lower bounds for 95% CI) and statistically insignificance in each study were not included in the meta-analysis because it was likely that such estimates result from unreliable data such as small numbers of participants or events at the relevant levels of eGFR and/or albuminuria and could unduly influence a random effects meta-analysis.

Notes for individual studies:

AusDiab: This study has measured both ACR and dipstick and thus contributed to the analyses for ACR and dipstick.

Beijing: This study used a Chinese-specific equation for estimating GFR.[27]

CHS: This study consists of participants only aged 65 or older and thus did not contribute to the subgroup analysis of younger population.

COBRA: Current smokers in this study include chewable tobacco.

Gubbio: This study consists of participants aged between 45 and 64 and thus did not contribute to the subgroup analysis of older population.

HUNT: This study is a general-population study overall but measured urine albumin mainly in participants with treated hypertension or diabetes. However, this study was included in this report, since they measured albuminuria in a 5% random sample out of ≈65,000 participants and, thus, the relationship between kidney measures and risk was maintained.

ULSAM: This study measured urinary albumin excretion rate (μg/min), which was converted to mg/day by multiplying 1.44. All participants aged 65 or older and thus this study did not contribute to the subgroup analysis of younger population.

AKDN: Although this study has not collected information on race, the proportion of blacks in the province of Alberta is considered <3%.[15] Other variables that were not collected in this study are systolic blood pressure, total cholesterol concentration, and smoking.

ESTHER: This study only measured urine albumin excretion with the minimum detection value of 11.3 mg/L (equivalent to ACR 17 mg/g) and thus its reference proteinuria group (≤11.3 mg/L) was likely to contain individuals with ACR ≥10 mg/g. Therefore, this study was meta-analyzed with the dipstick studies, translating urine albumin excretion (≤11.3, 11.4-19.9, 20-199 and ≥200 mg/L to -, ±, +, and ≥++.

MRC Older People: This study categorized their dipstick data - and ± into the same group and thus could be only included in meta-analyses for models with eGFR as a continuous variable. This study has not collected total cholesterol. This study consists of participants aged ≥65 years old and thus did not contribute to the subgroup analysis of younger population.

Web Appendix 3: Statistical models¶ used in the study.

Model 1: eGFR splines† + $\log_8$ACR
Used in: Figure 2, Web Table 3, Web Table 9, Web Table 10, Web Figure 2
Model 2: eGFR splines† + ACR splines‡
Used in: Figure 2, Web Table 13, Web Table 14
Model 3: eGFR splines† + $\log_8$ACR + eGFR splines*age (continuous) interaction terms
Used in: Web Table 3
Model 4: eGFR splines† + ACR as an ordinal variable (1=<30, 2=30-299, 3=≥300 mg/g)
Used in: Web Table 4
Model 5: eGFR splines† + ACR as an ordinal variable (1=<30, 2=30-299, 3=≥300 mg/g) + their interaction terms
Used in: Figure 3, Web Table 4,
Model 6: eGFR splines† + dipstick as an ordinal variable (1=-/±, 2=+, 3=≥++)
Used in: Web Table 3, Web Table 4, Web Table 11, Web Table 12, Web Figure 1, Web Figure 3
Model 7: eGFR splines† + dipstick as an ordinal variable (1=-/±, 2=+, 3=≥++) + eGFR splines*age (continuous) interaction terms
Used in: Web Table 3
Model 8: eGFR splines† + dipstick as an ordinal variable (1=-/±, 2=+, 3=≥++) + their interaction terms
Used in: Figure 3, Web Table 4
Model 9: 28 categories by eGFR (15-29, 30-44, 45-59, 60-74, 75-89, 90-104, ≥105) and ACR (<10, 10-29, 30-299, ≥300)
Used in: Table 2, Web Table 5, Web Table 6
Model 10: 28 categories by eGFR (same as Model 9) and dipstick (-, ±, +, ≥++)
Used in: Table 3, Web Table 7, Web Table 8

¶ All models include age, gender, race, smoking, CVD history, systolic blood pressure, diabetes, and serum cholesterol as covariates.
† Knots at eGFR 45, 60, 75, 90, 105 ml/min/1.73 m^2
‡ Knots at ACR 10, 30, 300 mg/g

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