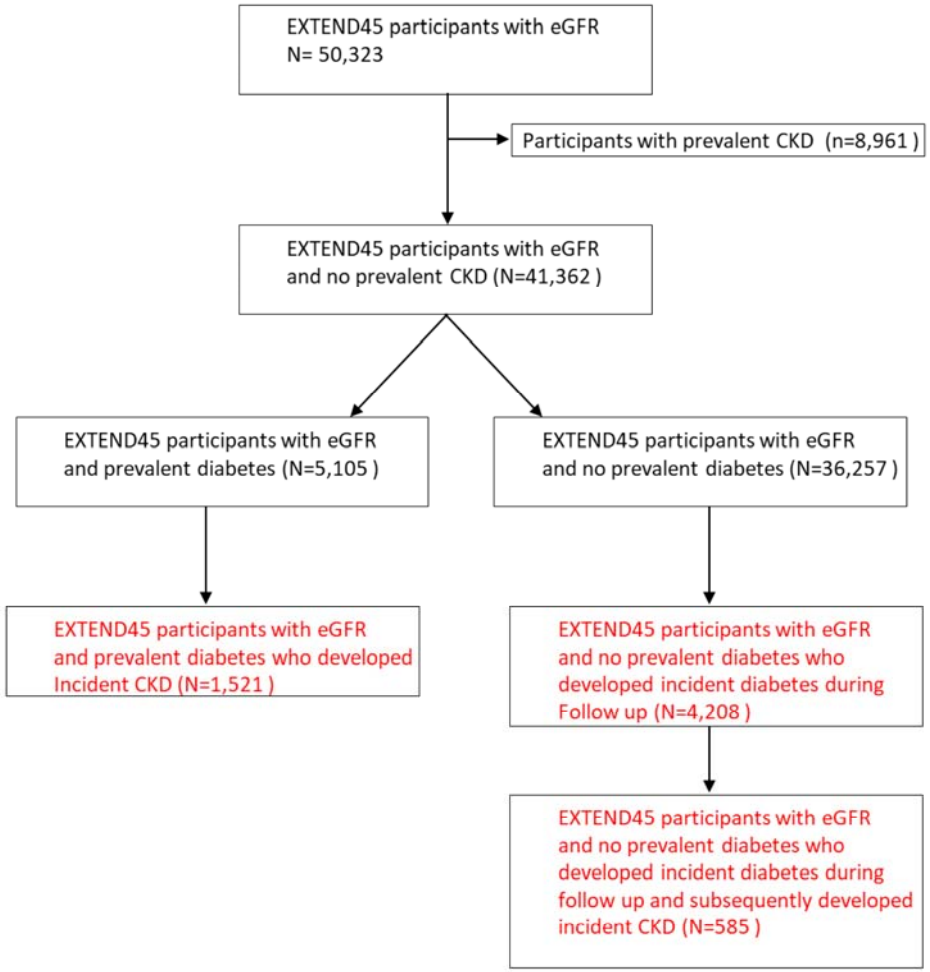
SUPPLEMENTARY DATA

Supplementary Figure 1. Derivation of the study cohort



SUPPLEMENTARY DATA

Supplementary Table 1. ICD-10AM codes for the diagnosis of baseline comorbidities

Disease	Relevant ATC codes used to define disease
Hypertension	C02A, C02C, C02D, C03, C04, C07, C08, C09
Hyperlipidaemia	C10
Coronary heart disease	ICD 10 AM codes: I21.0, I21.1, I21.2, I21.3, I21.4, I21.9, I22.0, I22.1, I22.8, I22.9
Coronary artery bypass graft	MBS procedure codes 38497-00, 38497-01, 38497-02, 38497-03, 38497-04, 38497-05, 38497-06, 38497-07, 38500-00, 38500-01, 38500-02, 38500-03, 38500-04, 38500-05, 38503-00, 38503-01, 38503-02, 38503-03, 38503-04, 38503-05, 38505-00, 90201-00, 90201-01, 90201-02, 90201-03
Stroke	ICD 10 AM codes: I61.0, I61.1, I61.2, I61.3, I61.4, I61.5, I61.6, I61.8, I61.9, I62.0, I62.1, I62.9, I63.0, I63.1, I63.2, I63.3, I63.4, I63.5, I63.6, I63.8, I63.9, I64, I69.0, I69.1, I69.2, I69.3, I69.4, I69.8

SUPPLEMENTARY DATA

Supplementary Appendix Table 2. Minimally adjusted (Age and sex) Cox regression model for development of incident eGFR<60ml/min/1.73m^2.

Variable	Level	Hazard ratio, adjusted for age and sex HR (95%CI)
Age 5 year change	Continuous	1.42 (1.39 - 1.45)
Sex	Male	Reference
	Female	1.08 (0.99 - 1.18)
Country of birth	Australia	Reference
	Inadequately described or missing	0.83 (0.55 - 1.26)
	Europe	0.81 (0.72 - 0.91)
	NZ and surrounding islands*	0.65 (0.45 - 0.96)
	Africa and the Middle East	0.73 (0.53 - 0.99)
	Asia	0.59 (0.47 - 0.74)
	Americas	0.66 (0.42 - 1.03)
Remoteness category vs major city	Major City	Reference
	Inner Regional	1.30 (1.18 - 1.43)
	Outer Regional and remote	1.50 (1.30 - 1.72)
Highest Qualification	No qualification	Reference
	School certificate	1.02 (0.89 - 1.16)
	High school certificate	0.91 (0.77 - 1.08)
	Trade qualification	0.98 (0.83 - 1.15)
	Certificate/diploma	0.87 (0.75 - 1.01)
	University degree	0.77 (0.67 - 0.90)
Annual household income	less then $5,000 per year	Reference

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Variable	Level	Hazard ratio, adjusted for age and sex HR (95%CI)
	$5,000-$9,999 per year	1.09 (0.76 - 1.55)
	$10,000-$19,999 per year	1.25 (0.91 - 1.73)
	$20,000-$29,999 per year	1.32 (0.94 - 1.84)
	$30,000-$39,999 per year	1.06 (0.75 - 1.50)
	$40,000-$49,999 per year	0.95 (0.66 - 1.37)
	$50,000-$69,999 per year	1.03 (0.72 - 1.46)
	$70,000 or more per year	0.90 (0.64 - 1.26)
	I would rather not answer the question	1.09 (0.79 - 1.51)
Partner status	Not in relationship	Reference
	In relationship	0.88 (0.80 - 0.97)
Disadvantage index†	Q1 Most Disadvantaged	Reference
	Q2	1.00 (0.88 - 1.14)
	Q3	0.87 (0.76 - 0.99)
	Q4	0.82 (0.71 - 0.94)
	Q5 Most Advantaged	0.74 (0.65 - 0.85)
Smoking status	Never smoker	Reference
	Current smoker	0.89 (0.72 - 1.09)
	Previous smoker	1.06 (0.97 - 1.17)
Alcohol consumption (standard drinks/week)	0	Reference
	1-6	0.86 (0.77 - 0.96)
	7-13	0.74 (0.64 - 0.85)
	14-20	0.76 (0.64 - 0.91)

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Variable	Level	Hazard ratio, adjusted for age and sex HR (95%CI)
	21+	0.84 (0.70 - 1.01)
BMI (kg/m^2)	BMI 18.5-<25.0	Reference
	BMI <18.5	0.99 (0.56 - 1.76)
	BMI 25.0-<30.0	1.39 (1.22 - 1.58)
	BMI 30.0-<35.0	1.66 (1.44 - 1.91)
	BMI 35.0-<40.0	1.96 (1.64 - 2.35)
	BMI >40.0	1.98 (1.59 - 2.45)
Hypertension	No	Reference
	Yes	1.88 (1.66 - 2.13)
Hyperlipidemia	No	Reference
	Yes	1.21 (1.10 - 1.33)
Coronary Heart Disease	No	Reference
	Yes	1.31 (1.19 - 1.44)
Previous stroke	No	Reference
	Yes	1.14 (0.96 - 1.34)
Cancer	No	Reference
	Yes	1.36 (1.19 - 1.56)
Depression or Anxiety	No	Reference
	Yes	1.21 (1.09 - 1.35)
Diabetes duration over 5 years	No	Reference
	Yes	1.45 (1.31 - 1.61)
Baseline eGFR (ml/min/1.73m^2)	Continuous	0.93 (0.92 - 0.93)

*surrounding Islands: New Caledonia, Papua New Guinea, Solomon Islands, Vanuatu, Cook Islands, Fiji, Niue, Samoa, Tokelau, Tonga, Tuvalu.

SUPPLEMENTARY DATA

Supplementary Table 3. Baseline characteristics of EXTEND 45 cohort with diabetes and a serum creatinine result compared to those with diabetes without a serum creatinine result.

	Diabetes and insufficient serum creatinine records (n=11943)	**Diabetes and sufficient serum creatinine records (n=12487)**	**All (n=24430)**
Age at inception			
N	11943	12487	24430
Mean (SD)	66.50 (10.493)	68.07 (10.548)	67.30 (10.550)
Median (IQR)	65.89 (58.59; 74.19)	67.69 (60.04; 76.00)	66.84 (59.30; 75.09)
Sex			
45-54 yrs	2041/11943 (17.1%)	1905/12487 (15.3%)	3946/24430 (16.2%)
55-64 yrs	3797/11943 (31.8%)	3760/12487 (30.1%)	7557/24430 (30.9%)
65-74 yrs	3465/11943 (29.0%)	3749/12487 (30.0%)	7214/24430 (29.5%)
75-84 yrs	2237/11943 (18.7%)	2601/12487 (20.8%)	4838/24430 (19.8%)
85+ yrs	403/11943 (3.4%)	472/12487 (3.8%)	875/24430 (3.6%)
Sex			
Male	6535/11943 (54.7%)	6909/12487 (55.3%)	13444/24430 (55.0%)
Female	5408/11943 (45.3%)	5578/12487 (44.7%)	10986/24430 (45.0%)
Country of origin			
Inadequately described or missing	158/11943 (1.3%)	134/12487 (1.1%)	292/24430 (1.2%)
Europe	2084/11943 (17.4%)	2250/12487 (18.0%)	4334/24430 (17.7%)
Australia	8288/11943 (69.4%)	8703/12487 (69.7%)	16991/24430 (69.5%)
NZ, Melanesia, Micronesia, Polynesia	247/11943 (2.1%)	241/12487 (1.9%)	488/24430 (2.0%)
Africa and the Middle East	346/11943 (2.9%)	311/12487 (2.5%)	657/24430 (2.7%)

SUPPLEMENTARY DATA

	Diabetes and insufficient serum creatinine records (n=11943)	Diabetes and sufficient serum creatinine records (n=12487)	All (n=24430)
Asia	682/11943 (5.7%)	701/12487 (5.6%)	1383/24430 (5.7%)
Americas	138/11943 (1.2%)	147/12487 (1.2%)	285/24430 (1.2%)
ARIA+ Remoteness			
Major City	7581/11766 (64.4%)	8156/12344 (66.1%)	15737/24110 (65.3%)
Inner Regional	3343/11766 (28.4%)	3128/12344 (25.3%)	6471/24110 (26.8%)
Outer Regional and remote	842/11766 (7.2%)	1060/12344 (8.6%)	1902/24110 (7.9%)
Highest qualification			
No school certificate or other qualification	2011/11662 (17.2%)	2065/12205 (16.9%)	4076/23867 (17.1%)
School or intermediate certificate	2675/11662 (22.9%)	2970/12205 (24.3%)	5645/23867 (23.7%)
Higher school or leaving certificate	1125/11662 (9.6%)	1212/12205 (9.9%)	2337/23867 (9.8%)
Trade or apprenticeship	1484/11662 (12.7%)	1556/12205 (12.7%)	3040/23867 (12.7%)
Certificate or diploma	2255/11662 (19.3%)	2185/12205 (17.9%)	4440/23867 (18.6%)
University degree or higher	2112/11662 (18.1%)	2217/12205 (18.2%)	4329/23867 (18.1%)
Income			
less then $5,000 per year	271/11115 (2.4%)	268/11691 (2.3%)	539/22806 (2.4%)
$5,000-$9,999 per year	799/11115 (7.2%)	807/11691 (6.9%)	1606/22806 (7.0%)
$10,000-$19,999 per year	2379/11115 (21.4%)	2337/11691 (20.0%)	4716/22806 (20.7%)
$20,000-$29,999 per year	1261/11115 (11.3%)	1350/11691 (11.5%)	2611/22806 (11.4%)
$30,000-$39,999 per year	891/11115 (8.0%)	889/11691 (7.6%)	1780/22806 (7.8%)
$40,000-$49,999 per year	753/11115 (6.8%)	766/11691 (6.6%)	1519/22806 (6.7%)

SUPPLEMENTARY DATA

	Diabetes and insufficient serum creatinine records (n=11943)	Diabetes and sufficient serum creatinine records (n=12487)	All (n=24430)
$50,000-$69,999 per year	925/11115 (8.3%)	1040/11691 (8.9%)	1965/22806 (8.6%)
$70,000 or more per year	1719/11115 (15.5%)	2004/11691 (17.1%)	3723/22806 (16.3%)
I would rather not answer the question	2117/11115 (19.0%)	2230/11691 (19.1%)	4347/22806 (19.1%)
Relationship status			
Not in relationship	3280/11869 (27.6%)	3422/12397 (27.6%)	6702/24266 (27.6%)
In relationship	8589/11869 (72.4%)	8975/12397 (72.4%)	17564/24266 (72.4%)
SEIFA quintile			
Q1 Most Disadvantaged	2945/11668 (25.2%)	2887/12252 (23.6%)	5832/23920 (24.4%)
Q2	2648/11668 (22.7%)	2303/12252 (18.8%)	4951/23920 (20.7%)
Q3	2079/11668 (17.8%)	2212/12252 (18.1%)	4291/23920 (17.9%)
Q4	1811/11668 (15.5%)	2023/12252 (16.5%)	3834/23920 (16.0%)
Q5 Most Advantaged	2185/11668 (18.7%)	2827/12252 (23.1%)	5012/23920 (21.0%)
Smoking status			
Current smoker	911/11895 (7.7%)	847/12443 (6.8%)	1758/24338 (7.2%)
Previous smoker	5120/11895 (43.0%)	5173/12443 (41.6%)	10293/24338 (42.3%)
Never smoker	5864/11895 (49.3%)	6423/12443 (51.6%)	12287/24338 (50.5%)
Alcoholic drinks per week			
0 drinks/week	5244/11543 (45.4%)	5417/12077 (44.9%)	10661/23620 (45.1%)
1-6 drinks/week	3036/11543 (26.3%)	3170/12077 (26.2%)	6206/23620 (26.3%)

SUPPLEMENTARY DATA

	Diabetes and insufficient serum creatinine records (n=11943)	Diabetes and sufficient serum creatinine records (n=12487)	All (n=24430)
7-13 drinks/week	1525/11543 (13.2%)	1642/12077 (13.6%)	3167/23620 (13.4%)
14-20 drinks/week	992/11543 (8.6%)	1050/12077 (8.7%)	2042/23620 (8.6%)
21+ drinks/week	746/11543 (6.5%)	798/12077 (6.6%)	1544/23620 (6.5%)
BMI category			
BMI <18.5	66/11020 (0.6%)	76/11506 (0.7%)	142/22526 (0.6%)
BMI 18.5-<25.0	2193/11020 (19.9%)	2271/11506 (19.7%)	4464/22526 (19.8%)
BMI 25.0-<30.0	4018/11020 (36.5%)	4393/11506 (38.2%)	8411/22526 (37.3%)
BMI 30.0-<35.0	2815/11020 (25.5%)	2920/11506 (25.4%)	5735/22526 (25.5%)
BMI 35.0-<40.0	1220/11020 (11.1%)	1158/11506 (10.1%)	2378/22526 (10.6%)
BMI >40.0	708/11020 (6.4%)	688/11506 (6.0%)	1396/22526 (6.2%)
BMI			
N	11020	11506	22526
Mean (SD)	29.95 (6.198)	29.81 (6.187)	29.88 (6.193)
Median (IQR)	29.00 (25.68; 33.07)	28.92 (25.71; 32.84)	28.98 (25.69; 32.92)
Hypertension			
No	2723/11943 (22.8%)	2749/12487 (22.0%)	5472/24430 (22.4%)
Yes	9220/11943 (77.2%)	9738/12487 (78.0%)	18958/24430 (77.6%)
Lipidemia			
No	4063/11943 (34.0%)	3895/12487 (31.2%)	7958/24430 (32.6%)
Yes	7880/11943 (66.0%)	8592/12487 (68.8%)	16472/24430 (67.4%)

SUPPLEMENTARY DATA

	Diabetes and insufficient serum creatinine records (n=11943)	Diabetes and sufficient serum creatinine records (n=12487)	All (n=24430)
Heart disease			
No	9029/11943 (75.6%)	9226/12487 (73.9%)	18255/24430 (74.7%)
Yes	2914/11943 (24.4%)	3261/12487 (26.1%)	6175/24430 (25.3%)
Cerebrovascular disease			
No	11078/11943 (92.8%)	11665/12487 (93.4%)	22743/24430 (93.1%)
Yes	865/11943 (7.2%)	822/12487 (6.6%)	1687/24430 (6.9%)
Cancer			
No	10957/11943 (91.7%)	11388/12487 (91.2%)	22345/24430 (91.5%)
Yes	986/11943 (8.3%)	1099/12487 (8.8%)	2085/24430 (8.5%)
Depression or Anxiety			
No	9775/11943 (81.8%)	10238/12487 (82.0%)	20013/24430 (81.9%)
Yes	2168/11943 (18.2%)	2249/12487 (18.0%)	4417/24430 (18.1%)
Diabetes status at 45 and Up baseline			
Prevalent	9233/11943 (77.3%)	7126/12487 (57.1%)	16359/24430 (67.0%)
Incident	2710/11943 (22.7%)	5361/12487 (42.9%)	8071/24430 (33.0%)
Diabetes medication			
None	5873/11943 (49.2%)	7384/12487 (59.1%)	13257/24430 (54.3%)

SUPPLEMENTARY DATA

	Diabetes and insufficient serum creatinine records (n=11943)	Diabetes and sufficient serum creatinine records (n=12487)	All (n=24430)
Mono	3663/11943 (30.7%)	3071/12487 (24.6%)	6734/24430 (27.6%)
Dual/Triple	1173/11943 (9.8%)	920/12487 (7.4%)	2093/24430 (8.6%)
Insulin	1234/11943 (10.3%)	1112/12487 (8.9%)	2346/24430 (9.6%)
HbA1C available			
No	9984/11943 (83.6%)	6984/12487 (55.9%)	16968/24430 (69.5%)
Yes	1959/11943 (16.4%)	5503/12487 (44.1%)	7462/24430 (30.5%)
HbA1c at baseline			
N	1959	5503	7462
Mean (SD)	6.95 (1.183)	6.93 (1.153)	6.94 (1.161)
Median (IQR)	6.70 (6.20; 7.40)	6.70 (6.20; 7.40)	6.70 (6.20; 7.40)
HbA1C Group			
<6.5	739/1959 (37.7%)	2235/5503 (40.6%)	2974/7462 (39.9%)
6.5-8.4	1033/1959 (52.7%)	2750/5503 (50.0%)	3783/7462 (50.7%)
8.5+	187/1959 (9.5%)	518/5503 (9.4%)	705/7462 (9.4%)
Diabetes vintage (years)			
N	11943	12487	24430
Mean (SD)	1.71 (1.903)	1.93 (2.497)	1.83 (2.229)
Median (IQR)	1.30 (0.00; 3.00)	0.10 (0.00; 3.50)	0.60 (0.00; 3.10)
Diabetes vintage 5+ years			
No	11039/11943 (92.4%)	10347/12487 (82.9%)	21386/24430 (87.5%)

SUPPLEMENTARY DATA

	Diabetes and insufficient serum creatinine records (n=11943)	Diabetes and sufficient serum creatinine records (n=12487)	All (n=24430)
Yes	904/11943 (7.6%)	2140/12487 (17.1%)	3044/24430 (12.5%)

SUPPLEMENTARY DATA

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