Supplementary Table SI. Summary results of the 5 genetic loci of coffee intake

SNP	Nearest gene	GX	GX SE	EA	OA	EAF
rs2472297	CYP1A2	0.14	0.01	T	C	0.24
rs4410790	AHR	–0.1	0.01	T	C	0.37
rs7800944	MLXIPL	–0.5	0.01	T	C	0.72
rs17685	POR	0.07	0.01	A	G	0.29
rs9902453	EFCAB5	–0.03	0.01	A	G	0.54

All of the coffee intake markers were associated at genome-wide significance ($p < 5 \times 10^{-8}$).EA – effect allele, OA – other allele, EAF – effect allele frequency, GX – the per-allele effect on standard deviation units of coffee intake, GX SE – standard error of GX.

Supplementary Table SII. Full search terms and strategy for papers indexed in PubMed

No.	Concept	Search terms
1	Coffee	"coffee" [Mesh] OR "caffeine" [Mesh]
2	Renal function	chronic kidney disease [tiab] OR chronic kidney disease *[tiab] OR CKD[tiab]
3	Combination Exposure And Outcome	#1 AND #2
4	Limit	Rats[Mesh:NoExp]) OR Mice[Mesh:NoExp]) OR rat[Title/Abstract]) OR rats[Title/Abstract]) OR mouse[Title/Abstract]) OR mice[Title/Abstract]) OR vivo[Title/Abstract]) OR vitro[Title/Abstract])
5	Limit	#7 NOT #4

For Supplementary Table SIII:

NEWCASTLE–OTTAWA QUALITY ASSESSMENT SCALE COHORT STUDIES

Note: A study can be awarded a maximum of one star for each numbered item within the Selection and Outcome categories. A maximum of two stars can be given for Comparability.

Selection

1) Representativeness of the exposed cohort:
   a) truly representative of the average *healthy adults* in the community ★
   b) somewhat representative of the average *healthy adults* in the community ★
   c) selected group of users *e.g. nurses, volunteers, vegetarian*
   d) no description of the derivation of the cohort
2) Selection of the non-exposed cohort:
   a) drawn from the same community as the exposed cohort ★
   b) drawn from a different source
   c) no description of the derivation of the non-exposed cohort
3) Ascertainment of exposure:
   a) secure record (*e.g. 7 day food diary)* ★
   b) structured interview/≥ 2 *dietary recalls/diet history/ food frequency questionnaire validated for dairy components* ★
   c) written self-report (*e.g. < 2 dietary recalls/non-validated food frequency questionnaire or not reported whether food frequency questionnaire was validated*)
   d) no description
4) Demonstration that outcome of interest was not present at start of study:
   a) yes ★
   b) no

Comparability

1) Comparability of cohorts on the basis of the design or analysis:
   a) study controls for *age, sex, smoking, total energy intake, and body mass index* ★
   b) study controls for any additional factor (*e.g. physical activity, alcohol intake, family history of diabetes, dietary factors*) ★

Outcome

1) Assessment of outcome:
   a) independent blind assessment (e.g. clinical diagnosis/complete medical information available). ★
   b) record linkage/*medical record or validated self-report* ★
   c) non-validated self-report
   d) no description
2) Was follow-up long enough for outcomes to occur?
   a) yes/ *follow up period for outcome of interest is 10 years or over* ★
   b) no
3) Adequacy of follow-up of cohorts
   a) complete follow-up – all subjects accounted for ★
   b) subjects lost to follow-up unlikely to introduce bias – small number lost ≤ *20%* follow-up, or description provided of those lost ★
   c) follow-up rate < *80%* or no description of those lost
   d) no statement

Supplementary Table SIII. Quality assessment of included cohort studies*

Studies	Selection				Comparability		Outcome		Total score
	Representativeness of the exposed cohort	Selection of the non-exposed cohort	Ascertainment of exposure	Outcome not present at start of study	Comparability of cohorts on the basis of the design or analysis	Assessment of outcome	Follow-up long enough for outcomes to occur	Adequacy of follow-up of cohorts	
Trovato (2010) [1]	C	A★	B★	A★	A★ B★	B★	A★	B★	8
Pham (2010) [2]	C	A★	B★	A★	B★ B★	B★	B★	B★	7
Nakajima (2010) [3]	C	A★	B★	A★	A★ B★	B★	A★	B★	8
Kim (2013) [4]	C	A★	B★	A★	A★ B★	B★	A★	B★	8
Jhee (2018)	C	A★	B★	A★	A★ B★	B★	A★	B★	8

**The 6th study included in the systematic review is based on the results of the current NHANES analysis.*

Supplementary Table SIV. Characteristics of the studies that were included in the meta-analysis

Author, year and reference	Country, region/ cohort	Coffee consumption measurement	Design	Sample size	Definition of CKD	Main confounders
Trovato (2010) [1]	Italy,	Interviewer-administered food frequency questionnaire	Cross-sectional	221	RRI > 0.65 Renal color Doppler echocardiography used to evaluate RRI	Hemoglobin, albumin, free-fat mass, hypertension, HOMA and renal insufficiency
Pham (2010) [2]	Japan,	Self-reported food frequency	Cross-sectional	11,662	GFR<60 ml/min/1.73 m^2	None
Nakajima (2010) [3]	Japan,	Self-reported food frequency	Cross-sectional	342	GFR < 60 ml/min/1.73 m^2	Age, smoking, sex, tea consumption, alcohol drinking, medications, BMI, blood pressure, LDL, TAG, HDL, fasting glucose, proteinuria
Kim (2013) [4]	Korean, Korea National Health and Nutrition Examination Survey	Household interview with self-reported questionnaire	Cross-sectional	2,673	GFR < 60 ml/min/1.73 m^2	Age, alcohol intake, total energy intake, hypertension, antidyslipidemic drug use, BMI, diabetes
Jhee (2018) [5]	Korean, Korean Genome and Epidemiology Study	food frequency questionnaire	Cohort	8,717	GFR < 60 ml/min/1.73 m^2	Age, sex, BMI, mean arterial pressure, smoking status, alcohol status, income, CRP, hemoglobin, albumin, total cholesterol, eGFR, and proteinuria, mean arterial pressure, history of hypertension and cardiovascular events, HbA_{1c} and history of diabetes, daily intake amount of tea and chocolate
Mazidi (2019)	USA, National Health and Nutrition Examination Surveys	24 h recall	Cross-sectional	18,436	GFR < 60 ml/min/1.73 m^2	Age, sex, race, income to poverty, alcohol intake, energy intake, smoking, BMI, HTN, TG and DM

eGFR – estimated glomerular filtration rate, BMI – body mass index, SBP – systolic blood pressure, DBP – diastolic blood pressure, PP – pulse pressure, FFM – fat-free mass, FM – fat mass, ECW – extracellular water, ICW – intracellular water, BUN – blood urea nitrogen, GFR – glomerular filtration rate, HDL – high-density lipoprotein, LDL – low-density lipoprotein, RRI – renal resistive index, TG – triglyceride, HOMA-IR – homeostatic model assessment of insulin resistance.

References for Supplemantary Tables SIII and SIV

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2. Pham NM, Yoshida D, Morita M, et al. The relation of coffee consumption to serum uric acid in Japanese men and women aged 49-76 years. J Nutr Metabol 2010; 2010: 930757.
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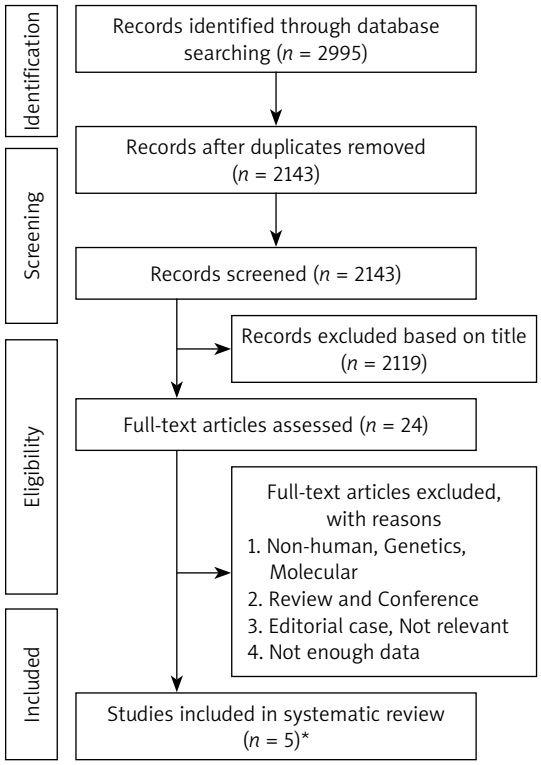
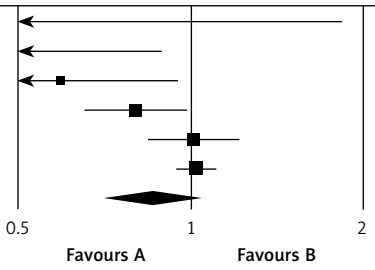
4. Kim BH, Park YS, Noh HM, Sung JS, Lee JK. Association between coffee consumption and renal impairment in korean women with and without diabetes: analysis of the Fourth Korea National Health and Nutrition Examination Survey in 2008. Korean J Fam Med 2013; 34: 265-715.
5. Jhee JH, Nam KH, An SY, et al. Effects of coffee intake on incident chronic kidney disease: a community-based prospective cohort study. Am J Med 2018; 131: 1482-90.e3.



Supplementary Figure S1. Flow chart diagram of study selection

**The 6th study included in the systematic review is based on the results of the current NHANES analysis.*

Study name	Statistics for each study				Odds ratio and 95% CI	Relative weight
	Odds ratio	Lower limit	Upper limit	*P*-value		
Nakajima 2010	0.740	0.298	1.838	0.516		3.54
Trovato 2010	0.460	0.239	0.886	0.020		6.21
Kim 2013	0.590	0.368	0.945	0.028		10.23
Jhee 2018	0.800	0.652	0.982	0.033		23.43
Pham 2010	1.010	0.842	1.212	0.915		25.02
Mazidi 2019	1.020	0.943	1.103	0.621		31.57
	0.855	0.714	1.025	0.090		



Supplementary Figure S2. Forest plot of coffee consumption and chronic kidney disease