

## Supplementary file 1. Literature search strategy for Pubmed

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- #1** "Non-alcoholic Fatty Liver Disease "[Mesh]
- #2** ((((((Non-alcoholic Fatty Liver Disease[Text Word]) OR Non-alcoholic steato-hepatitis[Text Word]) OR NAFLD[Text Word]) OR NASH[Text Word]) OR steatohepatitis[Text Word]) OR steatosis[Text Word]) OR fatty liver[Text Word]) OR Liver fat[Text Word]
- #3** #1 OR #2
- #4** ("Renal Insufficiency, Chronic"[Mesh]) OR "Kidney Failure, Chronic"[Mesh]
- #5** (((((chronic kidney disease[Text Word]) OR chronic kidney failure[Text Word]) OR chronic renal insufficiency[Text Word]) OR chronic renal dysfunction[Text Word]) OR end-stage kidney disease[Text Word]) OR end-stage renal disease[Text Word]
- #6** #4 OR #5
- #7** #3 AND #6
- #8** animals[MeSH Terms]
- #9** humans[MeSH Terms]
- #10** #8 NOT #9
- #11** #7 NOT #10
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## Supplemental file 2. Confounders adjusted in the included studies

Study	Maximal confounders adjusted	Adequate adjustment†
Kaps 2020	Age, sex, index year, physician, diabetes, hypertension, obesity, ischemic heart diseases, glomerular diseases, and renal tubulo-interstitial diseases	No
Krahn 2020	Age, sex, ethnicity, DM, nucleoside reverse transcriptase inhibitors	No
Wilechansky 2019	Age, sex, smoking, drinks, SBP, DBP, use of antihypertensive medications, HDL, TC, aspirin use and DM, BMI.	Yes
Park 2019	Age, sex, DM, hypertension, obesity, hyperlipidemia, CAD, peripheral vascular disease, cerebrovascular disease, heart failure and chronic obstructive pulmonary disease, angiotensin-converting-enzyme inhibitors and angiotensin II receptor blockers, cirrhosis, decompensated cirrhosis and hepatocellular carcinoma.	Yes
Sinn 2017	Age, sex, year of visit, smoking, alcohol, BMI and baseline eGFR, SBP, HbA1c, LDL-C, use of antihypertensive medications, antidiabetic medications, and lipid lowering medications, time-varying development of DM and hypertension	Yes
Huh 2017	Age, sex, smoking, alcohol, baseline eGFR, regular exercise, protein intake, SBP, DM, TC and hsCRP.	Yes
Shen 2017	Age, sex, smoking, BMI, SBP, TG, FPG, HLD-C, hemoglobin, platelet, history of hypertension, DM, and CAD, metabolic syndrome, sleep quality	Yes
Targher 2014	Age, sex, duration of DM, hemoglobin A1C, hypertension, and baseline eGFR, excluding those with microalbuminuria at baseline	Yes
Jenks 2014	Age, sex, BMI, duration of DM, HbA1c and SBP	No
Chang 2008	Age, eGFR, TG, and HDL-C	No
Targher 2008	Age, sex, BMI, waist circumference, SBP, DM duration, HbA1c, baseline eGFR, microalbuminuria, LDL-C, TG, smoking history, and current use of medications.	Yes

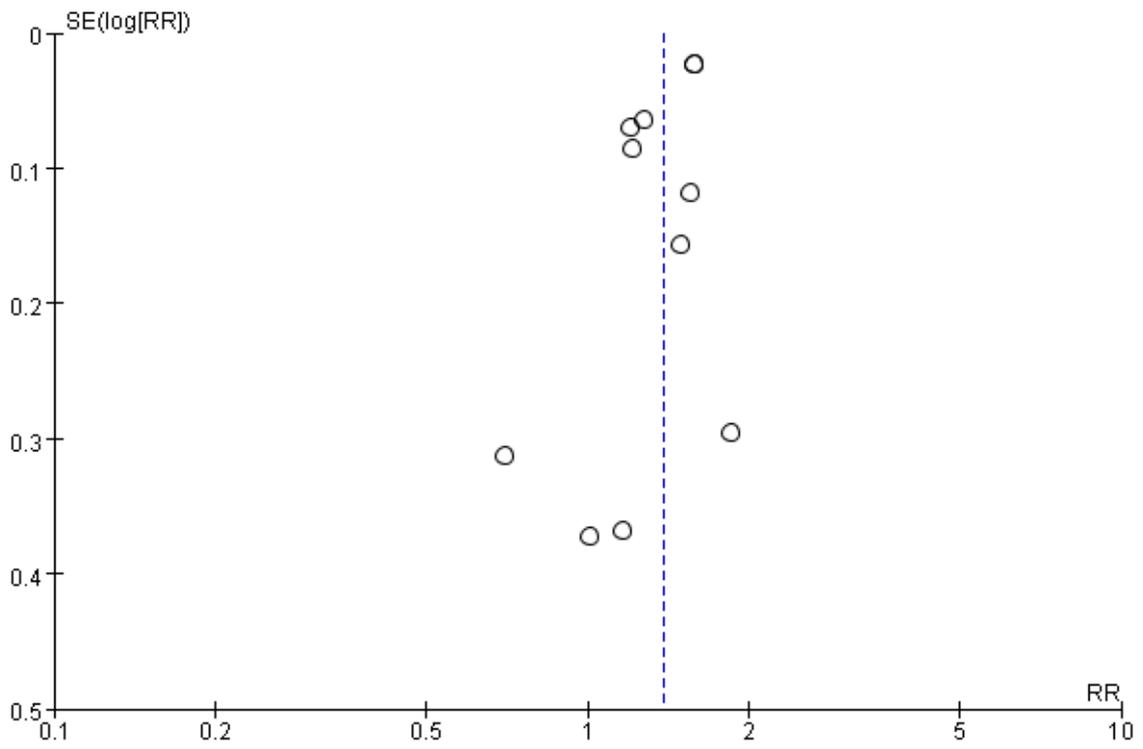
†Adequate adjustment denoted adjustment of at least six of eight confounders including sex, age, smoking, hypertension or blood pressure or antihypertensive treatment, BMI or other measure of overweight/obesity, cholesterol, blood glucose or diabetes and baseline eGFR

BMI: body mass index; CAD: coronary artery disease; DBP: diastolic blood pressure; DM: diabetes mellitus; eGFR, estimated glomerular filtration rate; FPG: fasting plasma glucose; HbA1c: hemoglobin A1c; HDL-C: high-density lipoprotein cholesterol; HF: heart failure; LDL-C: low-density lipoprotein cholesterol; NA: not available; SBP: systolic blood pressure; TC: total cholesterol; TG: triglycerides

### Supplementary file 3. Quality assessment of the included studies

<b>Study</b>	<b>Selection (points)</b>	<b>Comparability (points)</b>	<b>Outcome (points)</b>	<b>Quality (total points)*</b>
Kaps 2020	2	2	3	7
Krahn 2020	2	2	2	6
Wilechansky 2019	4	2	3	9
Park 2019	3	2	3	8
Sinn 2017	3	2	2	7
Huh 2017	4	2	3	9
Shen 2017	3	2	3	8
Targher 2014	3	2	3	8
Jenks 2014	2	2	2	6
Chang 2008	2	2	2	6
Targher 2008	3	2	3	8

\* Included studies were graded in quality as good if awarded with  $\geq 7$  points or fair if 4-6 points.



**Supplementary file 4. Funnel plot of chronic kidney disease associated with NAFLD.**

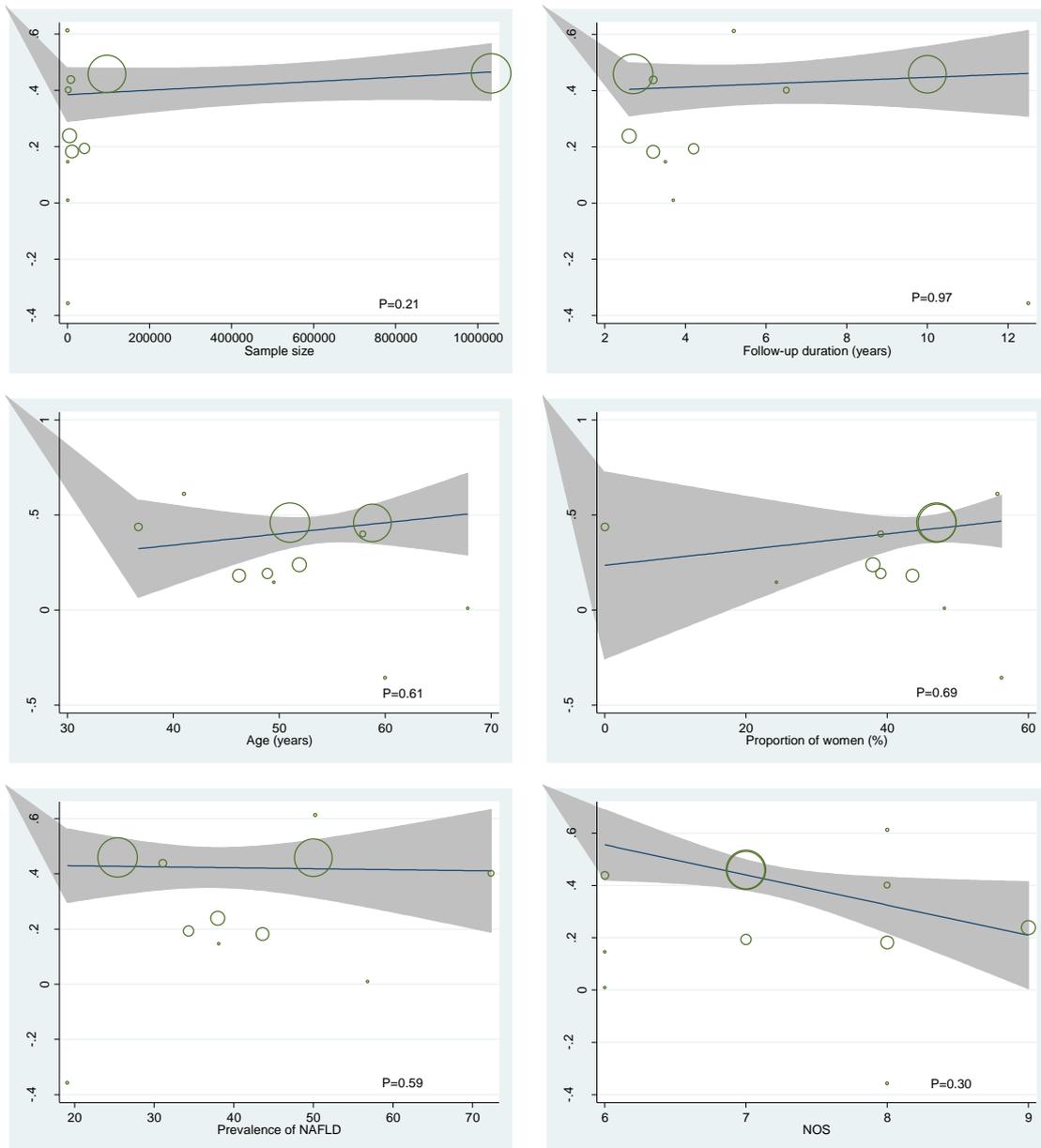
NAFLD: nonalcoholic fatty liver disease

### Supplementary file 5. Absolute risk of chronic kidney disease in included studies

Study	Event Rate* (non-NAFLD)	Event Rate* (NAFLD)
Kaps 2020	11.6	17.1
Krahn 2020	26.2	28.2
Wilechansky 2019	11.3	12.3
Park 2019	5.5	8.2
Sinn 2017	2.8	4.7
Huh 2017	13.1	18.4
Shen 2017	39.7	71.1
Targher 2014	21.4	70.5
Jenks 2014	52.7	54.6
Chang 2008	11.3	24.7
Targher 2008	18.9	58.3
<b>Median</b>	13.1	24.7

\* Per 1,000 patient-years.

NAFLD: nonalcoholic fatty liver disease



**Supplementary File 6. Study characteristics and the risk of CKD associated with**

**NAFLD**

NAFLD: nonalcoholic fatty liver disease