Supplementary material for: White Rice, Brown Rice and the Risk of Type 2 Diabetes: A Systematic Review and Meta-Analysis.

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Supplemental Table 1: Search terms used in literature search of databases

Steps	Search terms
1	'Oryza sativa'[MeSH] OR 'oryza sativa'[tiab] OR 'rice'[tiab] OR 'grain'[tiab] OR 'grains'[tiab] OR 'brown rice'[tiab] OR 'white rice'[tiab]
2	'Diabetes Mellitus'[MeSH] OR 'diabetes'[tiab] OR 'diabetes mellitus'[tiab]
3	'insulin'[tiab] OR 'glucose'[tiab] OR 'HDL'[tiab] OR 'high-density lipoprotein'[tiab] OR 'LDL'[tiab] OR 'low-density lipoprotein'[tiab] OR 'cholesterol'[tiab] OR 'triglyceride'[tiab] OR 'triglycerides'[tiab] OR 'glycosylated hemoglobin'[tiab]
4	#2 OR #3
5	#1 AND #4
6	Result (Limit to #5 to Human Studies)

Supplemental Table 2: Relative risk estimates and covariate adjustment of included cohort studies of white rice and brown rice and risk of type 2 diabetes

Author	Location and study population	Relative Risk (95% CI) [intake level][ǂ]	Adjustments
White rice			
Hodge, 2004	Australia. Melbourne Collaborative Cohort Study (MCCS)	1.0 (ref.) [<23g/d]; 0.77 (0.56 to 1.07) [23-22g/d]; 0.91 (0.67 to 1.22) [33-55g/d]; 0.93 (0.68 to 1.27) [≥56g/d]	Age, sex, country of birth, physical activity, family history of diabetes, alcohol, total energy intake, education, 5-year weight change, body mass index (BMI), and waist-hip ratio (WHR)
Villegas, 2007	China. Shanghai Women's Health Study (SWHS)	1 (ref.) [<500g/d]; 1.04 (0.86, 1.25) [500-622.5g/d]; 1.29 (1.08, 1.54) [625-747.5g/d]; 1.78 (1.48, 2.15) [≥750g/d]	Age, daily kilocalories consumption, BMI, WHR, smoking status, alcohol consumption, physical activity, income level, education level, occupation, diagnosis of hypertension
Nanri, 2010	Japan. Japan Public Health Center-based Prospective Study (JPHC)	1 (ref.) [<315g/d]; 1.24 (1.00, 1.55) [315-420g/d]; 1.25 (0.93, 1.67) [420-560g/d]; 1.19 (0.85, 1.68) [>560g/d]	Age, study area, smoking status, alcohol consumption, family history of diabetes, total physical activity, history of hypertension, occupation, total energy intake, coffee consumption, dietary intakes (calcium, magnesium, fiber, fruit, vegetables, fish, rice, bread, and noodles), BMI
Nanri, 2010	Japan. Japan Public Health Center-based Prospective Study (JPHC)	1 (ref.) [<278g/d]; 1.15 (0.85, 1.55) [280-417g/d]; 1.48 (1.08, 2.02) [420-420g/d]; 1.65 (1.06, 2.57) [≥437g/d]	Same as above
Sun, 2010	United States. Health Professionals Follow-up Study (HPFS)	1 (ref.) [<5.3g/d]; 1.09 (0.96, 1.24) [5.3-15.8g/d]; 1.07 (0.93, 1.23) [15.9-45g/d]; 1.30 (1.12, 1.50) [45.1-112.9g/d]; 1.02 (0.77, 1.34) [≥112.9g/d]	Age, ethnicity, BMI, smoking status, alcohol intake, multivitamin use, physical activity, family history of diabetes, total energy and intake of red meat, fruits and vegetables, whole grains, and coffee
Sun, 2010	United States. Nurses' Health Study (NHS)	1 (ref.) [<5.3g/d]; 1.00 (0.90, 1.11) [5.3-15.8g/d]; 1.07 (0.96, 1.20) [15.9-45g/d]; 1.09 (0.97, 1.23) [45.1-112.9]; 1.11 (0.87, 1.43) [≥112.9g/d]	Same as above, with the further adjustments of postmenopausal status, hormone use, and oral contraceptive use
Sun, 2010	United States. Nurses' Health Study II (NHS II)	1 (ref.) [<5.3g/d]; 0.93 (0.81, 1.07) [5.3-15.8g/d]; 0.94 (0.81, 1.10) [15.9-45g/d]; 0.95 (0.81, 1.11) [45.1-112.9g/d];	Same as above

		1.40 (1.09, 1.80) [≥112.9g/d]	
Soriguer, 2013	Spain. Pizarra study (PS)	1 (ref.) [≤22.57g/d]; 0.41 (0.17, 0.98) [45.1-67.7g/d]	Age, sex, obesity and abnormal glucose regulation at baseline, carbohydrate consumption
Golozar, 2017	Iran. Golestan Cohort Study (GCS)	1 (ref.) [≤71.1g/d]; 1.00 (0.78, 1.29) [71.2-120g/d]; 1.03 (0.77, 1.38) [120.1-210g/d]; 1.11 (0.83, 1.49) [>210g/d]	Age, sex, ethnicity, wealth score, education, marital status, employment status, opium, alcohol, occupational physical activity, smoking, quartiles of daily meat intake, quartiles of daily calorie intake, BMI
Golozar, 2017	Iran. Golestan Cohort Study (GCS)	1 (ref.) [≤71.1g/d]; 0.70 (0.50, 0.98) [71.2-120g/d]; 0.85 (0.61, 1.18) [120.1-210g/d]; 0.95 (0.69, 1.30) [>210g/d]	Same as above
Golozar, 2017	Iran. Tehran Lipid and Glucose Study (TLGS)	1 (ref.) [<250g/d]; 0.88 (0.42, 1.83) [250g/d]; 1.52 (0.57, 4.07) [>250g/d]	Age, sex, family history of T2D, education, marital status, employment status, total physical activity, smoking, quartiles of daily meat intake, quartiles of daily calorie intake, BMI
Golozar, 2017	Iran. Tehran Lipid and Glucose Study (TLGS)	1 (ref.) [<250g/d]; 0.88 (0.42, 1.83) [250g/d]; 1.52 (0.57, 4.07) [>250g/d]	Same as above
Seah, 2018	Chinese living in Singapore. Singapore Chinese Health Study (SCHS)	1 (ref.) [238.1g/d]; 1.05 (0.94, 1.18) [333.7g/d]; 1.02 (0.91, 1.14) [402.7g/d]; 0.97 (0.86, 1.09) [474.4g/d]; 1.03 (0.90, 1.17) [570.2g/d]	Sex, father's dialect, year of interview, cigarette smoking, education level, physical activity, BMI, history of hypertension, Alternative Healthy Eating Index -- 2010
Seah, 2018	Chinese living in Singapore. Singapore Chinese Health Study (SCHS)	1 (ref.) [234.0g/d]; 0.92 (0.79, 1.06) [334.1g/d]; 0.96 (0.83, 1.11) [404.0g/d]; 0.99 (0.86, 1.15) [473.8g/d]; 0.94 (0.83, 1.07) [683.2g/d]	Same as above
Bhavadharini, 2020	21 countries. Prospective Urban Rural Epidemiology Study (PURE)	1 (ref.) [<150g/d]; 1.12 (1.01-1.24) [150-300g/d]; 1.25 (1.10-1.43) [300-450g/d]; 1.20 (1.02-1.40) [>450g/d]	Age, sex, BMI, WHR, family history of diabetes, smoking, location, education, wealth index, physical activity, energy intake, whole grains, refined grains, fruit and vegetables
Brown rice			
Sun, 2010	United States. Health Professionals Follow-up Study (HPFS)	1 (ref.) [<6.5g/d]; 0.96 (0.89, 1.04) [6.5-27.86g/d]; 0.96 (0.82, 1.12) [≥55.7g/d]	Age, ethnicity, body mass index, smoking status, alcohol intake, multivitamin use, physical activity, family history of diabetes, total energy and intake of red meat, fruits and vegetables, whole grains, and coffee

Sun, 2010	Nurses' Health Study (NHS)	1 (ref.) [<6.5g/d]; 0.92 (0.87, 0.98) [6.5-27.86g/d]; 0.83 (0.72, 0.96) [≥55.7g/d]	Same as above, with the further adjustments of postmenopausal status, hormone use, and oral contraceptive use
Sun, 2010	Nurses' Health Study II (NHS II)	1 (ref.) [<6.5g/d]; 0.95 (0.87, 1.04) [6.5-27.86g/d]; 0.89 (0.75, 1.07) [≥55.7g/d]	Same as above

ǂ Serving size assumption of cooked rice is 158 g; conversion of raw rice to cooked rice by multiplying 2.5

Supplemental Table 3: Mean difference and standard error (SE) in T2D risk factors between brown rice and white rice groups from included RCTs

Author	HbA1c ± SE (%)	TC ± SE (mmol/L)	LDL ± SE (mmol/L)	HDL ± SE (mmol/L)	TG ± SE (mmol/L)	FBG ± SE (mmol/L)	HOMA-IR	SBP ± SE (mmHg)	DBP ± SE (mmHg)	WC ± SE (cm)
Zhang, 2011	-0.07 ± 0.09	0.29 ± 0.15	0.3 ± 0.13	0.07 ± 0.04	-0.05 ± 0.1	0.13 ± 0.18	0.04 ± 0.22	-0.21 ± 1.35	0.42 ± 0.86	0.27 ± 0.35
Wang, 2013	0 ± 0.08	NA*	-0.181 ± 0.25	0.052 ± 0.13	-0.26 ± 0.45	0.222 ± 0.17	-0.2 ± 0.40	-9 ± 5.07	-4 ± 2.64	-5 ± 2.64
Kazemzadeh, 2014	-0.04 ± 0.05	0.09 ± 0.1	0.49 ± 0.1	0.08 ± 0.06	0.15 ± 0.1	0.09 ± 0.08	NA*	0.14 ± 0.26	0.8 ± 0.35	2.38 ± 0.92
Bui et al 2014	-0.88 ± 0.28	-0.88 ± 0.37	-0.47 ± 0.25	0.13 ± 0.11	-0.67 ± 0.71	-0.9 ± 0.309	NA*	-3.7 ± 7.36	-4.5 ± 3.72	-5.5 ± 2.89
Shimabukuro et al 2014	-0.07 ± 0.2	-0.14 ± 0.08	-0.1 ± 0.06	-0.02 ± 0.04	-0.06 ± 0.17	-0.9 ± 0.45	-1.7 ± 1.93	-7 ± 2.01	-2 ± 1.27	-1.7 ± 1.26
Geng, 2016	NA*	-0.52 ± 0.19	-0.76 ± 0.17	0.16 ± 0.06	-0.26 ± 0.17	-0.17 ± 0.15	NA*	-11.4 ± 3.12	-8.8 ± 1.93	-0.6 ± 1.67
Araki, 2017	0 ± 0.06	0.166 ± 0.17	0.158 ± 0.14	0.08 ± 0.05	-0.001 ± 0.01	0.194 ± 0.13	0.1 ± 0.47	NA*	NA*	-2.7 ± 0.71
Malik, 2019	-0.04 ± 0.05	-0.069 ± 0.1	-0.061 ± 0.10	-0.002 ± 0.02	-0.024 ± 0.10	-0.006 ± 0.10	-0.2 ± 0.33	NA*	NA*	-0.01 ± 0.55
Kuroda, 2019	0.1 ± 0.2	-0.233 ± 0.37	-0.161 ± 0.34	0.08 ± 0.17	-0.33 ± 0.43	0.733 ± 0.82	NA*	4 ± 9.85	-1 ± 5.49	NA*
Mai, 2020	NA*	-0.2 ± 0.29	0.1 ± 0.29	0.34 ± 0.10	-0.3 ± 0.42	-0.6 ± 0.29	-1 ± 0.498	-2.1 ± 4.90	-3.4 ± 4.16	NA*
Ren, 2020	NA*	0.1 ± 0.47	-0.11 ± 0.33	-0.08 ± 0.05	0.36 ± 0.27	-0.28 ± 0.51	NA*	NA*	NA*	NA*

* NA not available

T2D = Type 2 diabetes; HbA1c = Hemoglobin A1C; TC = Total cholesterol; LDL = low-density lipoprotein cholesterol; HDL = high-density lipoprotein cholesterol; TG = Triglycerides; FBG = Fasting blood glucose; HOMA-IR = Assessment of insulin resistance; SBP = Systolic blood pressure; DBP = Diastolic blood pressure; WC = Waist circumference.

Conversion of glucose in mg/dl to mmol/l by multiplying 0.0555. Conversion of TAG in mg/dl to mmol/l by multiplying 0.0113. Conversion of cholesterol in mg/dl to mmol/l by multiplying 0.0259.

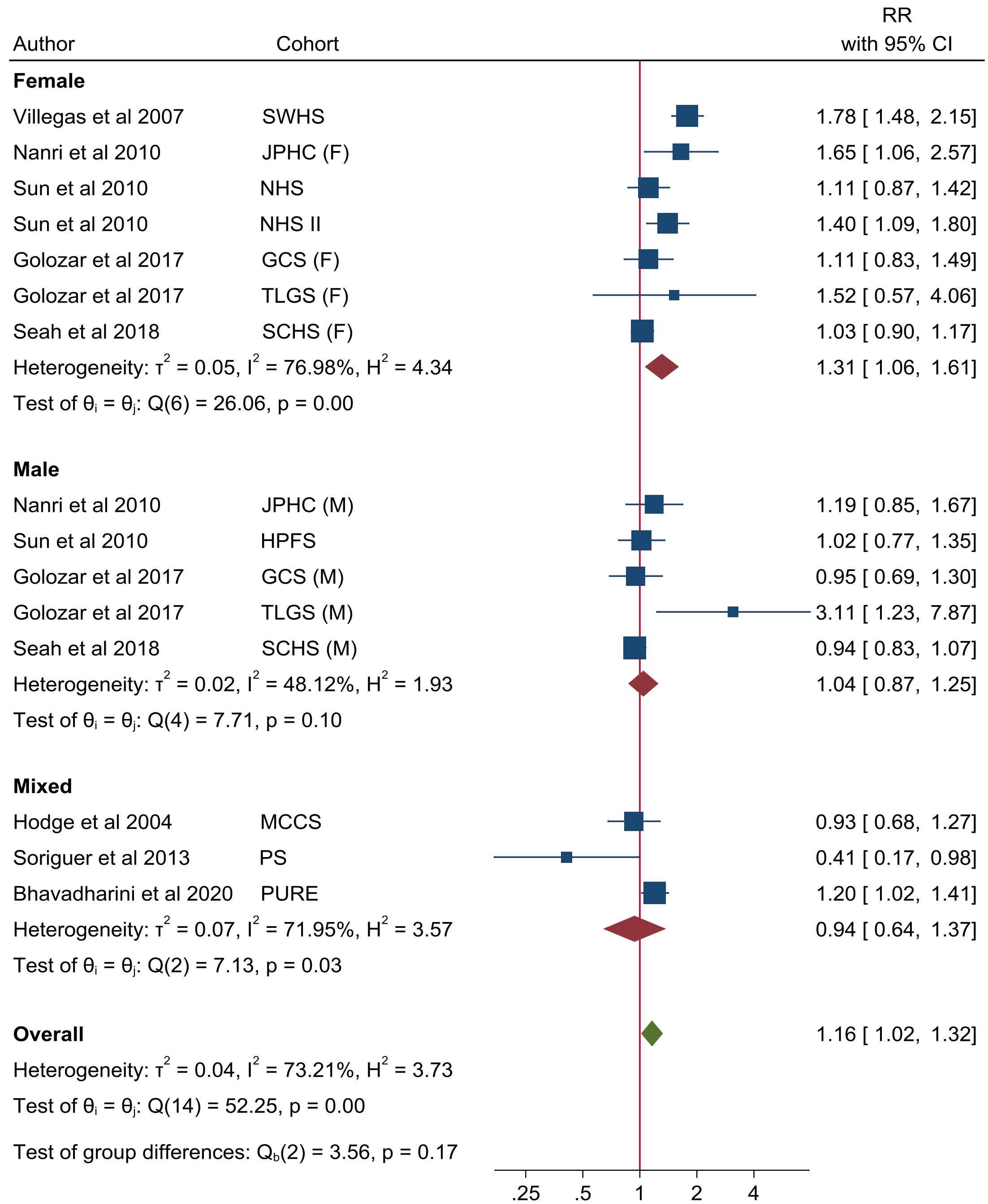
Supplemental Table 4: Overall meta-evidence quality assessment using NutriGrade

Study	*Risk of bias*	*Precision*	*Heterogeneity*	*Directness*	*Publication bias*	*Funding bias*	*Effect size*	*Dose-response*	*Overall*	*Assessment*
Cohort - BR	2	1	0.4	1	0	1	0	1	6.4	Moderate meta-evidence
Cohort -WR	1	1	0.3	1	1	1	0	1	6.3	Moderate meta-evidence

Study	*Risk of bias*	*Precision*	*Heterogeneity*	*Directness*	*Publication bias*	*Funding bias*	*Study design**	*Overall*	*Assessment*
RCTs - LDL cholesterol	1.5	0	0.4	1	1	0.5	2	6.4	Moderate meta-evidence
RCTs –HDL cholesterol	1.5	1	0.4	1	0.5	0.5	2	6.9	High meta-evidence
RCTs - TGs	1.5	0	0.8	1	1	0.5	2	6.8	Moderate meta-evidence
RCTs - FBG	1.5	0	0.4	1	0.5	0.5	2	5.9	Moderate meta-evidence

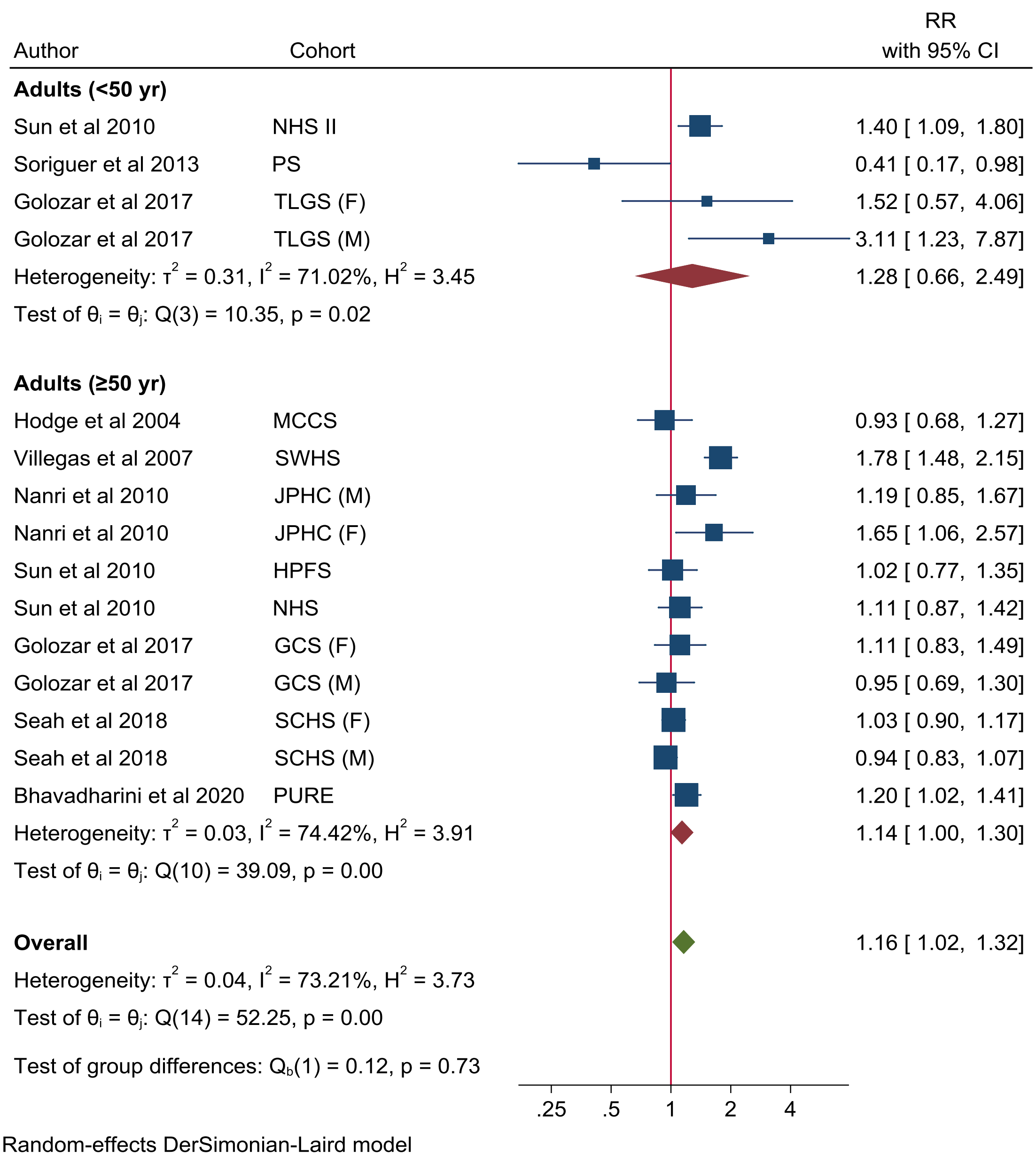
The assessment is based on the overall score: 0-3.99 = very low meta-evidence; 4-5.99 = low meta-evidence; 6-7.99 = moderate meta-evidence; ≥8 = high meta-evidence. BR, brown rice; WR, white rice; TGs, triglycerides, FBG, fasting blood glucose.
* For the randomized control trials, 2 points are automatically gained for the study design

Supplemental figure 1: Forest-plot of white rice intake and risk of T2D stratified by sex



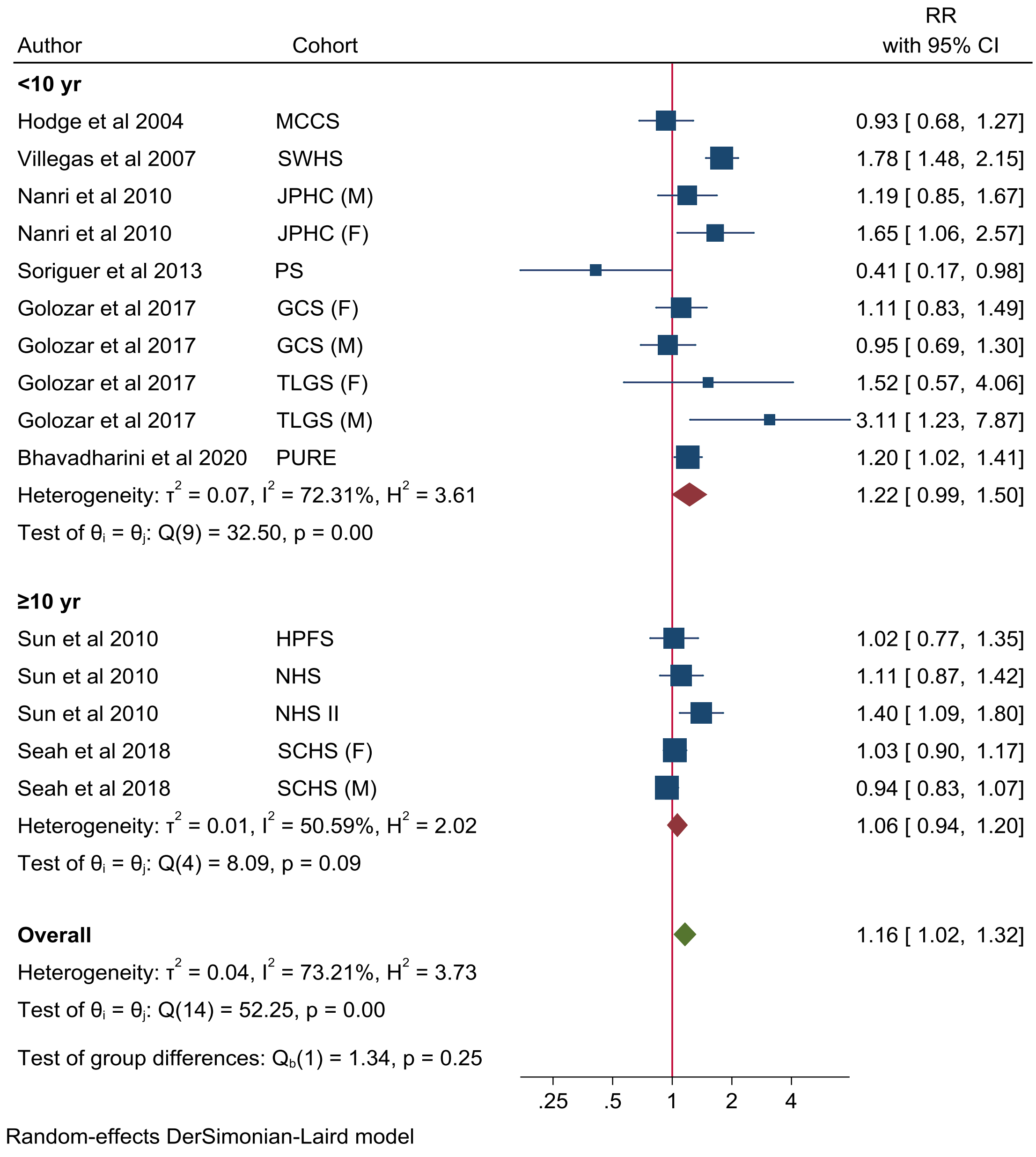
Risk of type 2 diabetes (T2D) (RR and 95% CI) comparing extreme categories of white rice intake from prospective cohort studies stratified by sex and overall. Horizontal lines denote 95% CIs; solid squares represent the point estimate of each study with the size proportional to study weight. Open diamonds represent pooled estimates from the random-effects model (DerSimonian-Laird). Study weights are from the random-effects analysis. The I^2 and P values for heterogeneity are shown. The red line represents unity. M, male; F, female; MCC, Melbourne Collaborative Cohort Study; SWHS, Shanghai Women's Health Study; JPHC, Japan Public Health Center-based Prospective Study; HPFS, Health Professionals Follow-up Study; NHS, Nurses' Health Study; PS, Pizarra study; GCS, Golestan Cohort Study; TLGS, Tehran Lipid and Glucose Study; SCHS, Singapore Chinese Health Study; PURE, Prospective Urban Rural Epidemiology Study. No significant differences between groups (p-value, 0.12).

Supplemental figure 2: Forest-plot of white rice intake and risk of T2D stratified by age



Risk of type 2 diabetes (T2D) (RR and 95% CI) comparing extreme categories of white rice intake from prospective cohort studies stratified by age and overall. Horizontal lines denote 95% CIs; solid squares represent the point estimate of each study with the size proportional to study weight. Open diamonds represent pooled estimates from the random-effects model (DerSimonian-Laird). Study weights are from the random-effects analysis. The I^2 and P values for heterogeneity are shown. The red line represents unity. M, male; F, female; MCC, Melbourne Collaborative Cohort Study; SWHS, Shanghai Women's Health Study; JPHC, Japan Public Health Center-based Prospective Study; HPFS, Health Professionals Follow-up Study; NHS, Nurses' Health Study; PS, Pizarra study; GCS, Golestan Cohort Study; TLGS, Tehran Lipid and Glucose Study; SCHS, Singapore Chinese Health Study; PURE, Prospective Urban Rural Epidemiology Study. No significant differences between groups (p-value, 0.52).

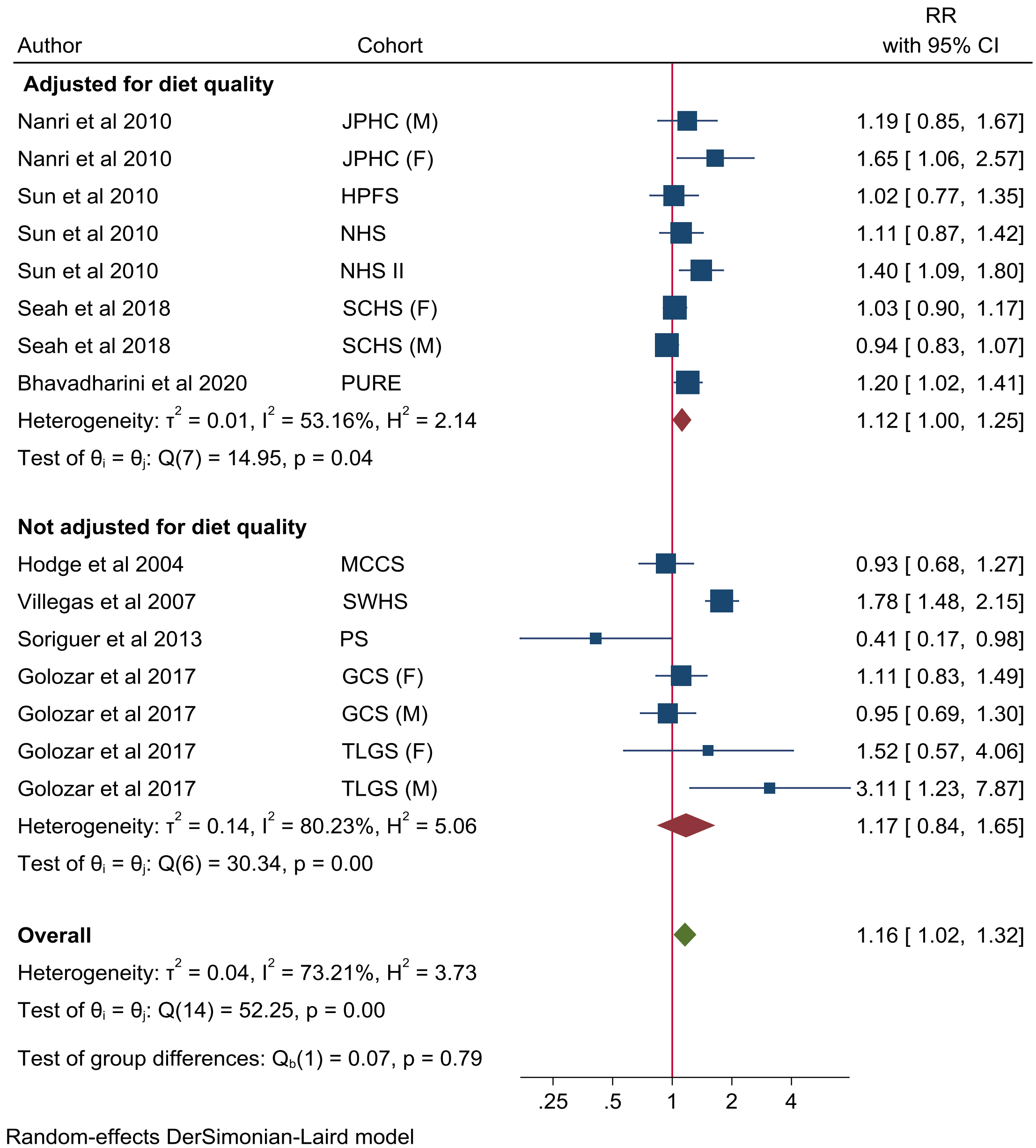
Supplemental figure 3: Forest-plot of white rice intake and risk of T2D stratified by duration of follow-up



Risk of type 2 diabetes (RR and 95% CI) comparing extreme categories of white rice intake from prospective cohort studies stratified by duration and overall. Horizontal lines denote 95% CIs; solid squares represent the point estimate of each study with the size proportional to study weight. Open diamonds represent pooled estimates, from the random-effects model (DerSimonian-Laird). Study weights are from the random-effects analysis. The I^2 and P values for heterogeneity are shown. The red line represents unity. M, male; F, female; MCC, Melbourne Collaborative Cohort Study; SWHS, Shanghai Women's Health Study; JPHC, Japan Public

Health Center-based Prospective Study; HPFS, Health Professionals Follow-up Study; NHS, Nurses' Health Study; PS, Pizarra study; GCS, Golestan Cohort Study; TLGS, Tehran Lipid and Glucose Study; SCHS, Singapore Chinese Health Study; PURE, Prospective Urban Rural Epidemiology Study. No significant differences between groups (p-value, 0.40).

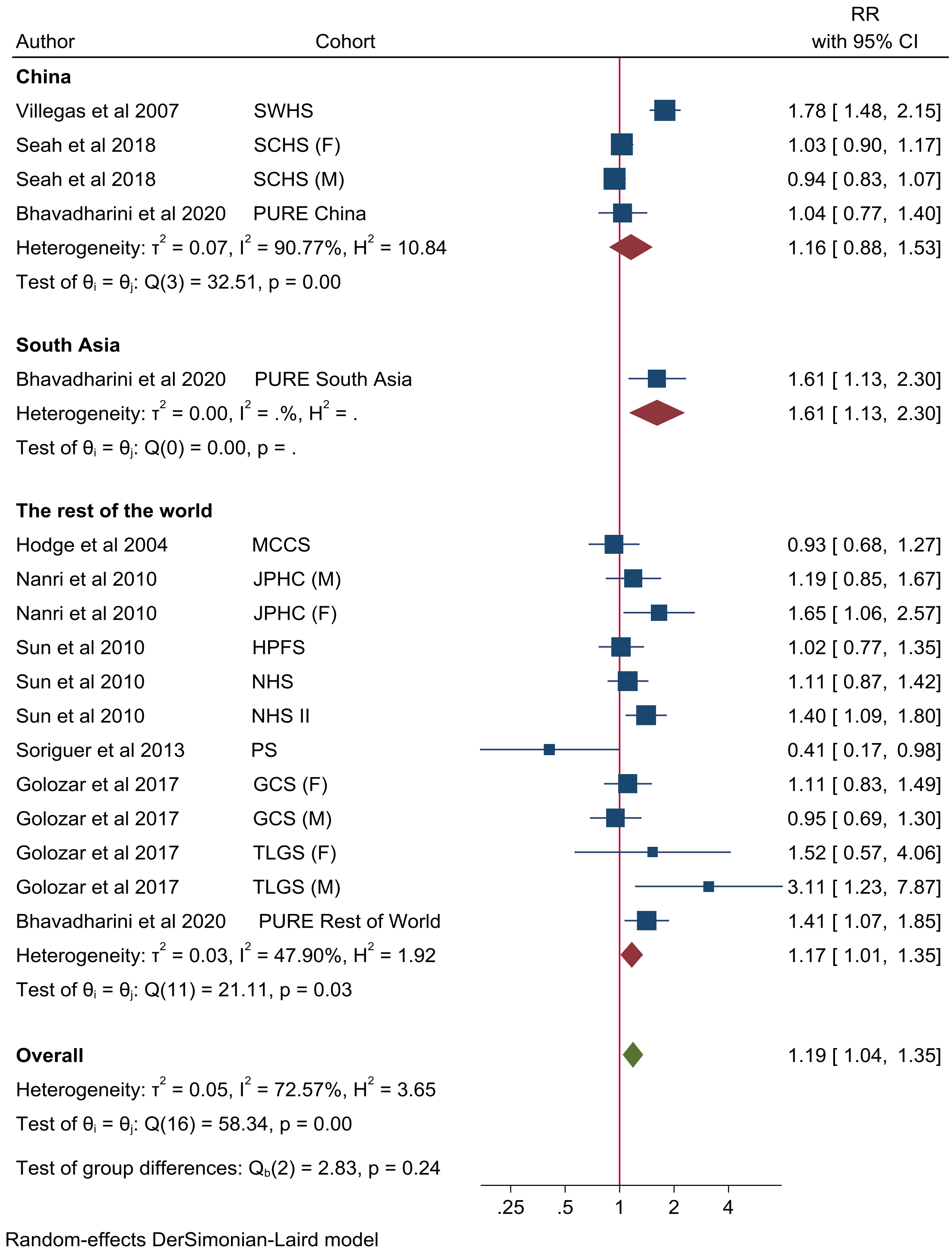
Supplemental figure 4: Forest-plot of white rice intake and risk of T2D stratified by adjustment for diet quality



Risk of type 2 diabetes (T2D) (RR and 95% CI) comparing extreme categories of white rice intake from prospective cohort studies stratified by adjustement for diet quality and overall. Horizontal lines denote 95% CIs; solid squares represent the point estimate of each study with the size proportional to study weight. Open diamonds represent pooled estimates from the random-effects model (DerSimonian-Laird). Study weights are from the random-effects analysis. The I^2 and P values for heterogeneity are shown. The red line represents unity. M, male; F, female; MCC, Melbourne Collaborative Cohort Study; SWHS, Shanghai Women's Health Study;

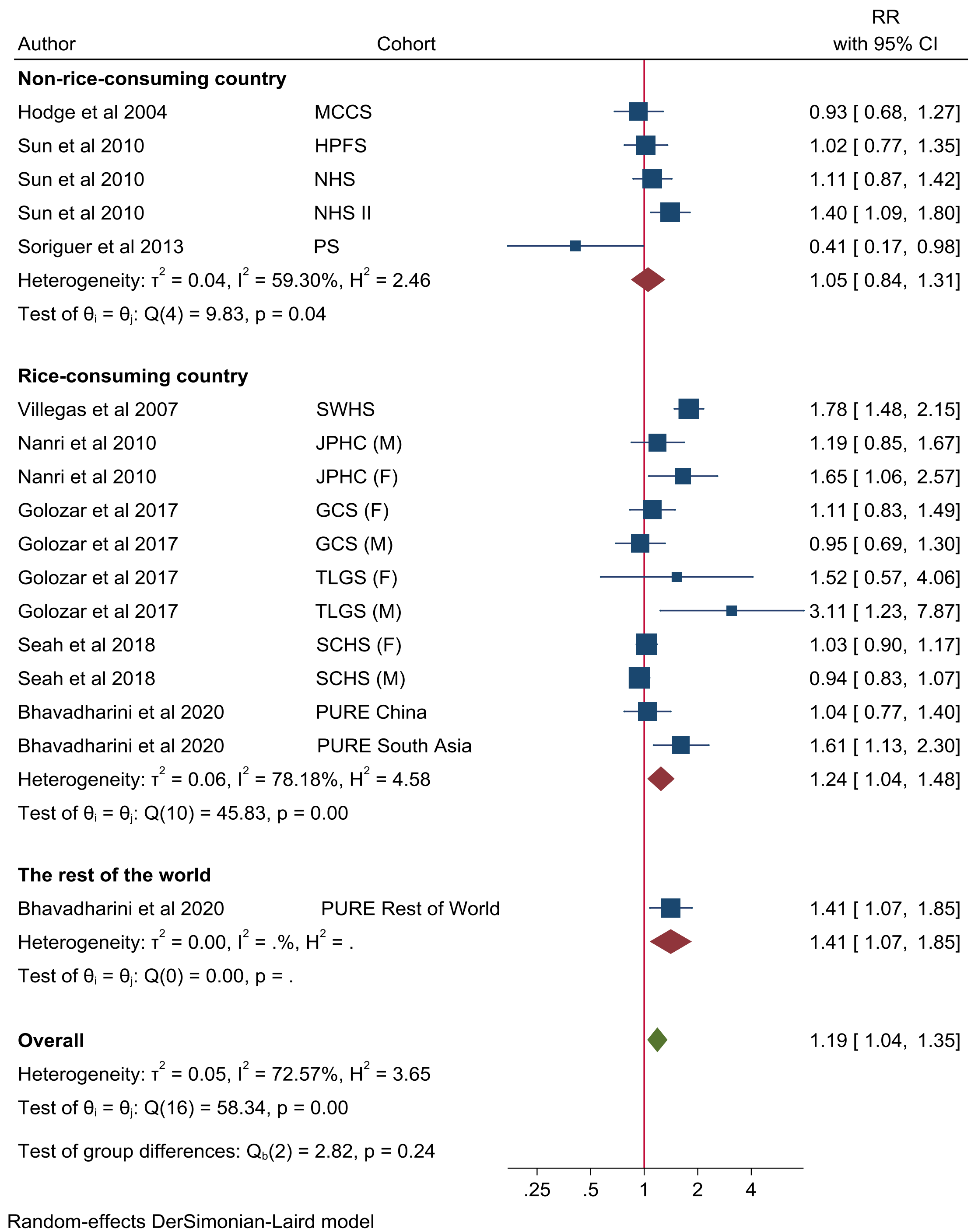
JPHC, Japan Public Health Center-based Prospective Study; HPFS, Health Professionals Follow-up Study; NHS, Nurses' Health Study; PS, Pizarra study; GCS, Golestan Cohort Study; TLGS, Tehran Lipid and Glucose Study; SCHS, Singapore Chinese Health Study; PURE, Prospective Urban Rural Epidemiology Study. No significant differences between groups (p-value, 0.81).

Supplemental figure 5: Forest-plot of white rice intake and risk of T2D stratified by geographic region



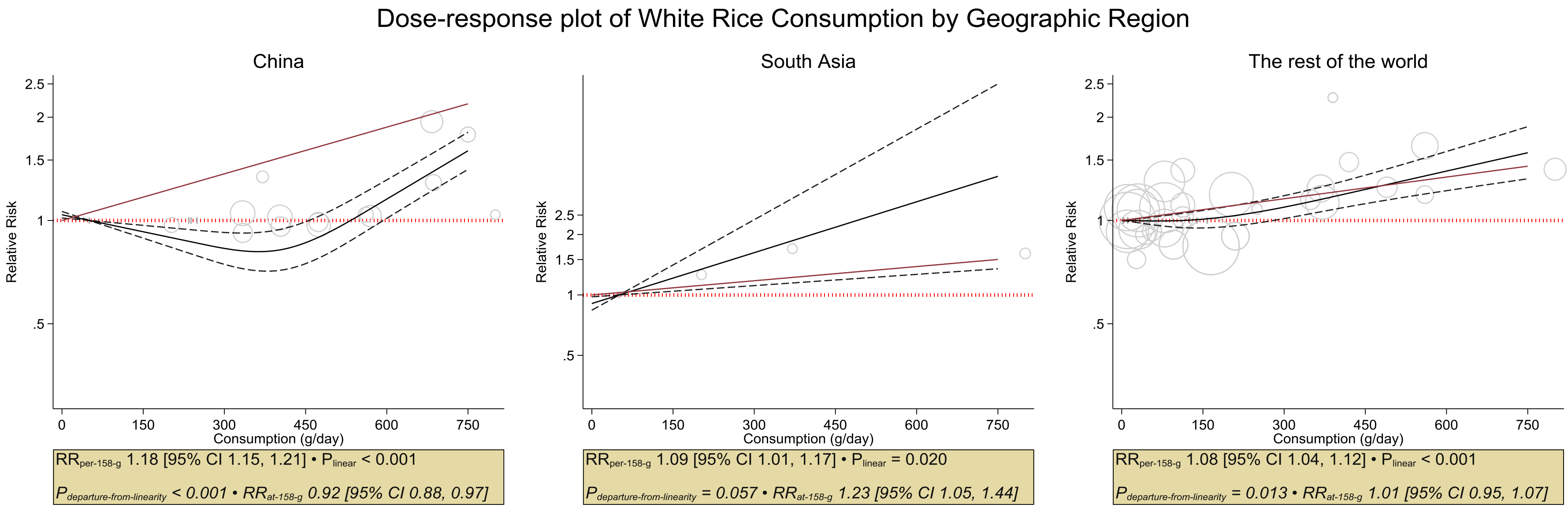
Risk of type 2 diabetes (T2D) (RR and 95% CI) comparing extreme categories of white rice intake from prospective cohort studies stratified by geographic region based on the categorization in Bhavadharini et al 2020[13]. Horizontal lines denote 95% CIs; solid squares represent the point estimate of each study with the size proportional to study weight. Open diamonds represent pooled estimates from the random-effects model (DerSimonian-Laird). Study weights are from the random-effects analysis. The I^2 and P values for heterogeneity are shown. The red line represents unity. M, male; F, female; MCC, Melbourne Collaborative Cohort Study; SWHS, Shanghai Women's Health Study; JPHC, Japan Public Health Center-based Prospective Study; HPFS, Health Professionals Follow-up Study; NHS, Nurses' Health Study; PS, Pizarra study; GCS, Golestan Cohort Study; TLGS, Tehran Lipid and Glucose Study; SCHS, Singapore Chinese Health Study; PURE, Prospective Urban Rural Epidemiology Study. No significant differences between groups (p-value, 0.99).

Supplemental figure 6: Forest-plot of white rice intake and risk of T2D stratified by typical rice consuming habits



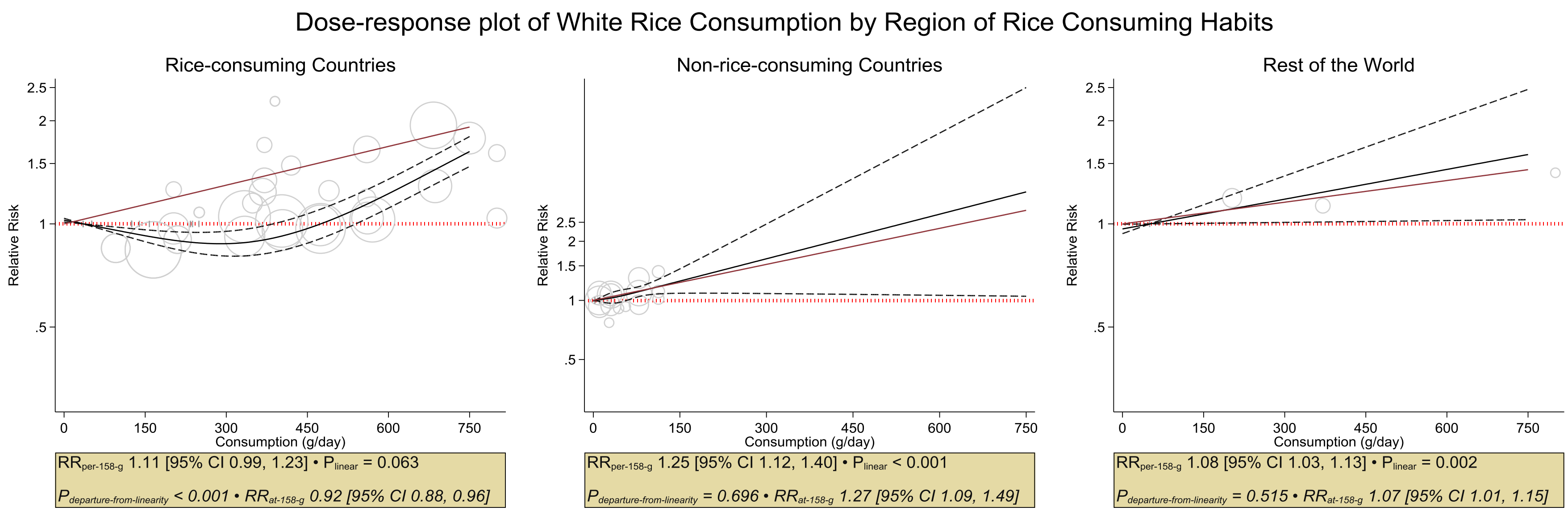
Risk of type 2 diabetes (T2D) (RR and 95% CI) comparing extreme categories of white rice intake from prospective cohort studies stratified by typical rice consumption habits. Horizontal lines denote 95% CIs; solid squares represent the point estimate of each study with the size proportional to study weight. Open diamonds represent pooled estimates from the random-effects model (DerSimonian-Laird). Study weights are from the random-effects analysis. The I^2 and P values for heterogeneity are shown. The red line represents unity. M, male; F, female; MCC, Melbourne Collaborative Cohort Study; SWHS, Shanghai Women's Health Study; JPHC, Japan Public Health Center-based Prospective Study; HPFS, Health Professionals Follow-up Study; NHS, Nurses' Health Study; PS, Pizarra study; GCS, Golestan Cohort Study; TLGS, Tehran Lipid and Glucose Study; SCHS, Singapore Chinese Health Study; PURE, Prospective Urban Rural Epidemiology Study. No significant differences between groups (p-value, 0.23).

Supplemental Figure 7: Fixed-effects cubic spline for intake of white rice in relation to risk of T2D stratified by geographical region.



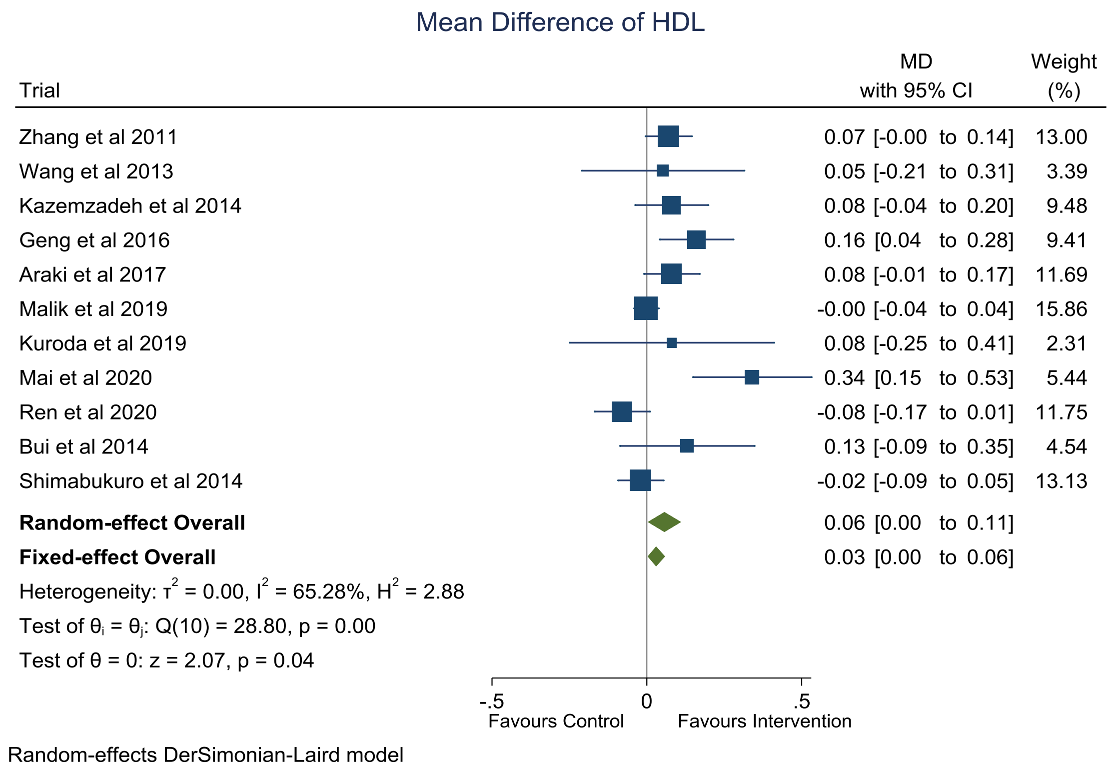
Fixed-effects cubic spline for intake of white rice in relation to risk of T2D stratified by geographic region. One-stage fixed-effects dose-response model using restricted cubic splines was applied for the analysis of studies conducted in China and the rest of the world. One-stage fixed-effects dose-response model assuming a linear trend was fitted for the analysis of studies conducted in South Asia due to the limited number of observations. Black solid line represents the point estimates and the black dashed lines represent the corresponding 95% CI's. The red solid line indicates the exact linear relationship and red dashed line represents unity. Four cohorts were from China: SWHS (Villegas 2007), SCHS (Seah 2018, for both male and female), PURE (Bhavadharini 2020, China subgroup). One cohort, PURE (Bhavadharini 2020, South Asia subgroup) was from South Asia. Thirteen cohorts were included in the rest of the world: MCCS (Hodge 2004), JPHC (Nanri 2010, for both male and female), HPFS (Sun 2010), NHS (Sun 2010), NHS II (Sun 2010), PS (Soriguer 2013), GCS (Golozar 2017, for both male and female), TLGS (Golozar 2017, for both male and female), PURE (Bhavadharini 2020, The rest of the world subgroup).

Supplemental Figure 8: Fixed-effects cubic spline for intake of white rice in relation to risk of T2D stratified by rice consumption habits of region



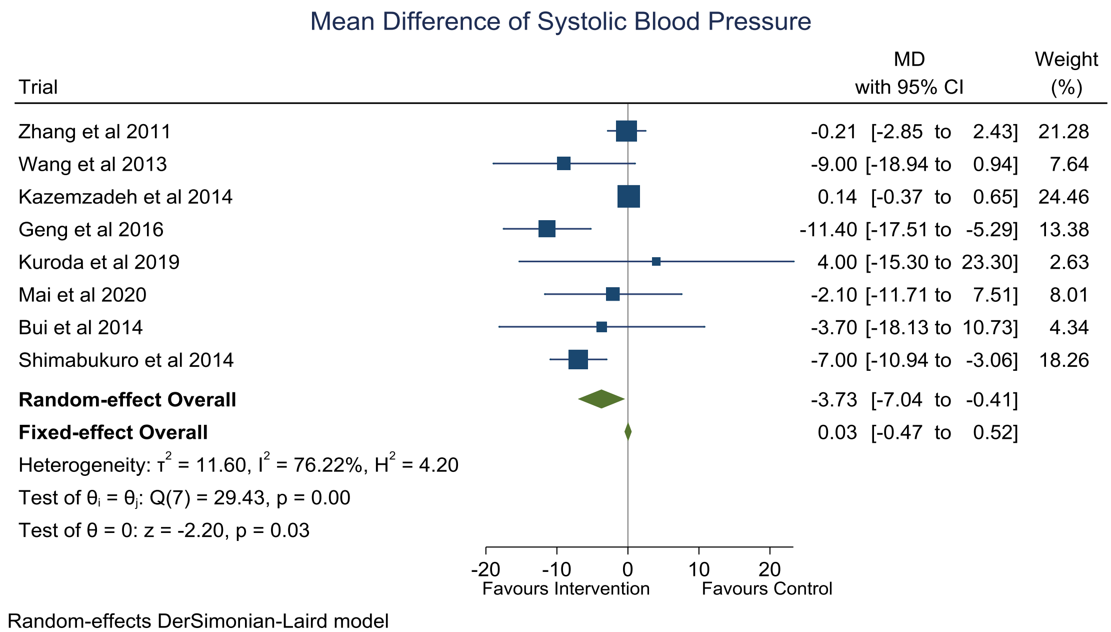
Fixed-effects cubic spline for intake of white rice in relation to risk of T2D stratified by rice consumption habits of region. One-stage fixed-effects dose-response model using restricted cubic splines was applied for the analyses in rice-consuming countries and non-rice-consuming countries. One-stage fixed-effects dose-response model assuming a linear trend was fitted for the analysis in the rest of the world due to the limited number of observations. Black solid line represents the point estimates and the black dashed lines represent the corresponding 95% CI's. The red solid line indicates the exact linear relationship and red dashed line represents unity. Eleven cohorts were from rice-consuming countries: SWHS (Villegas 2007), JPHC (Nanri 2010, for both male and female), GCS (Golozar 2017, for both male and female), TLGS (Golozar 2017, for both male and female), SCHS (Seah 2018, for both male and female), PURE (Bhavadharini 2020, subgroups of China and South Asia). Five cohorts were from non-rice-consuming countries: MCCS (Hodge 2004), HPFS (Sun 2010), NHS (Sun 2010), NHS II (Sun 2010), PS (Soriguer 2013). One cohort was from the rest of world: PURE (Bhavadharini 2020, The rest of the world subgroup).

Supplemental figure 9: Forest plot of mean difference in high-density lipoprotein cholesterol level between white rice and brown rice groups in RCTs.



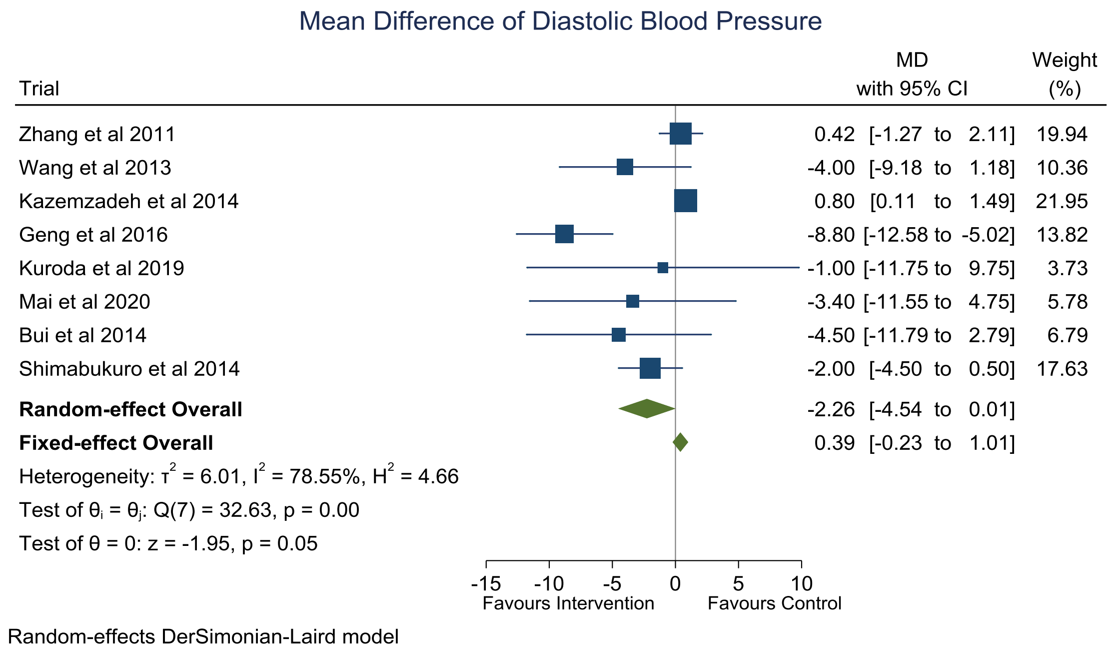
Mean difference in change from baseline (95% CI) of HDL-cholesterol (mmol/L) between brown rice and white rice (control) regimens from RCTs. Trials evaluated the effect of replacing white rice with brown rice. Horizontal lines denote 95% CIs; solid squares represent the point estimate of each study with the size proportional to study weight. Open diamonds represent pooled estimates from the random-effects model (DerSimonian-Laird) and fixed-effects model. Study weights are from the random-effects analysis. The I^2 and P values for heterogeneity are shown.

Supplemental figure 10: Forest plot of mean difference in systolic blood pressure between white rice and brown rice groups in RCTs



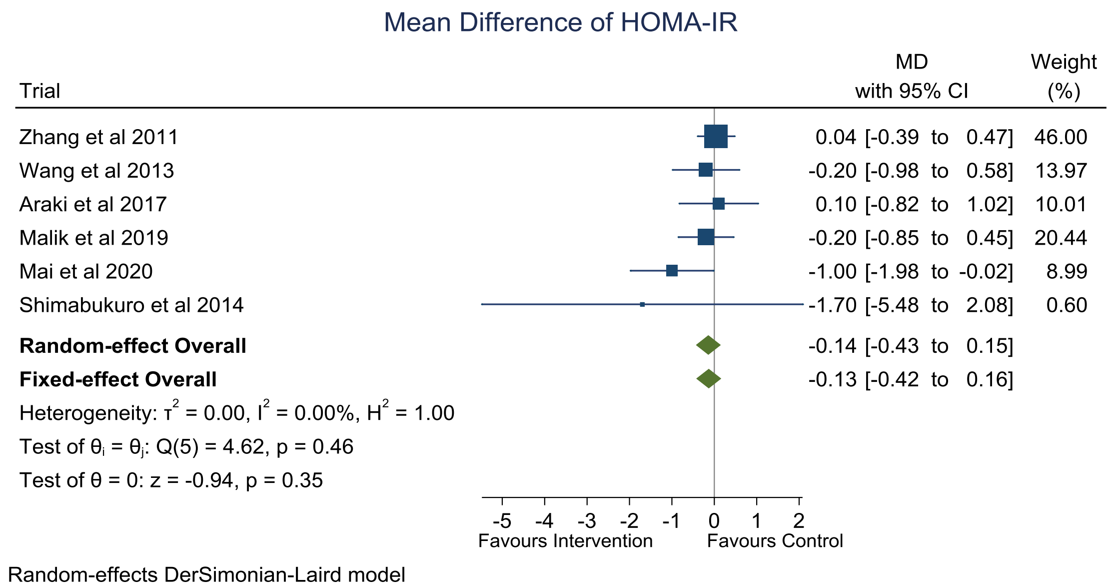
Mean difference in change from baseline (95% CI) of systolic blood pressure (mmHg) between brown rice and white rice (control) regimens from RCTs. Trials evaluated the effect of replacing white rice with brown rice. Horizontal lines denote 95% CIs; solid squares represent the point estimate of each study with the size proportional to study weight. Open diamonds represent pooled estimates from the random-effects model (DerSimonian-Laird) and fixed-effects model. Study weights are from the random-effects analysis. The I^2 and P values for heterogeneity are shown.

Supplemental figure 11: Forest plot of mean difference in diastolic blood pressure between white rice and brown rice groups in RCTs



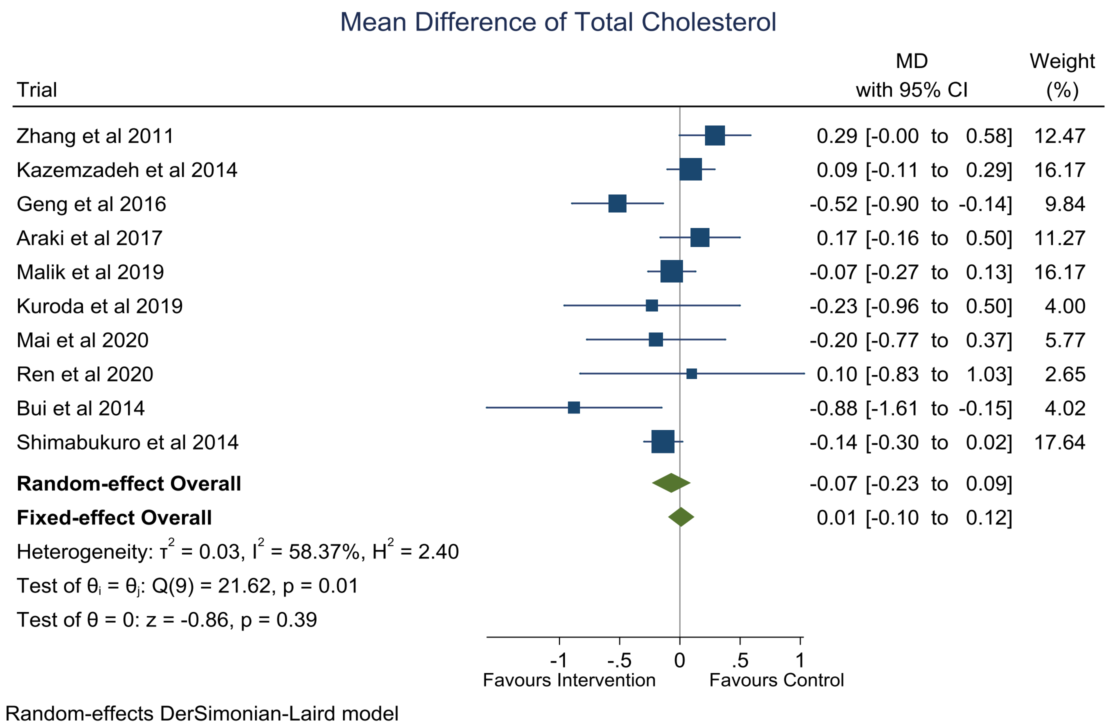
Mean difference in change from baseline (95% CI) of diastolic blood pressure (mmHg) between brown rice and white rice (control) regimens from RCTs. Trials evaluated the effect of replacing white rice with brown rice. Horizontal lines denote 95% CIs; solid squares represent the point estimate of each study with the size proportional to study weight. Open diamonds represent pooled estimates from the random-effects model (DerSimonian-Laird) and fixed-effects model. Study weights are from the random-effects analysis. The I^2 and P values for heterogeneity are shown.

Supplemental figure 12: Forest plot of mean difference in insulin resistance, HOMA-IR between white rice and brown rice groups in RCTs.



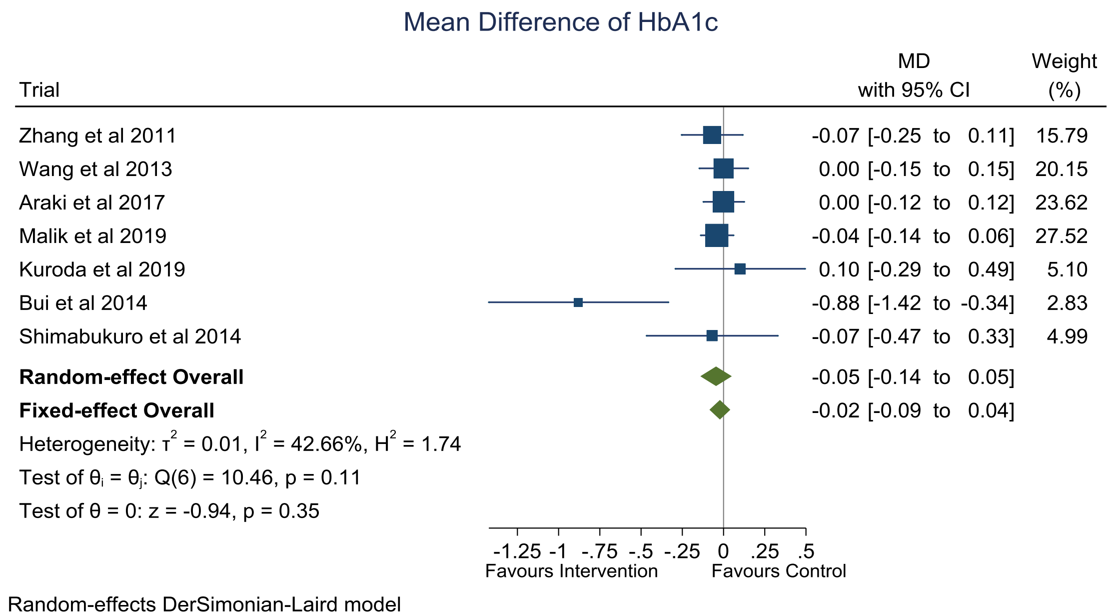
Mean difference in change from baseline (95% CI) of insulin resistance, HOMA-IR between brown rice and white rice (control) regimens from RCTs. Trials evaluated the effect of replacing white rice with brown rice. Horizontal lines denote 95% CIs; solid squares represent the point estimate of each study with the size proportional to study weight. Open diamonds represent pooled estimates from the random-effects model (DerSimonian-Laird) and fixed-effects model. Study weights are from the random-effects analysis. The I^2 and P values for heterogeneity are shown.

Supplemental figure 13: Forest plot of mean difference in total cholesterol between white rice and brown rice groups in RCTs.



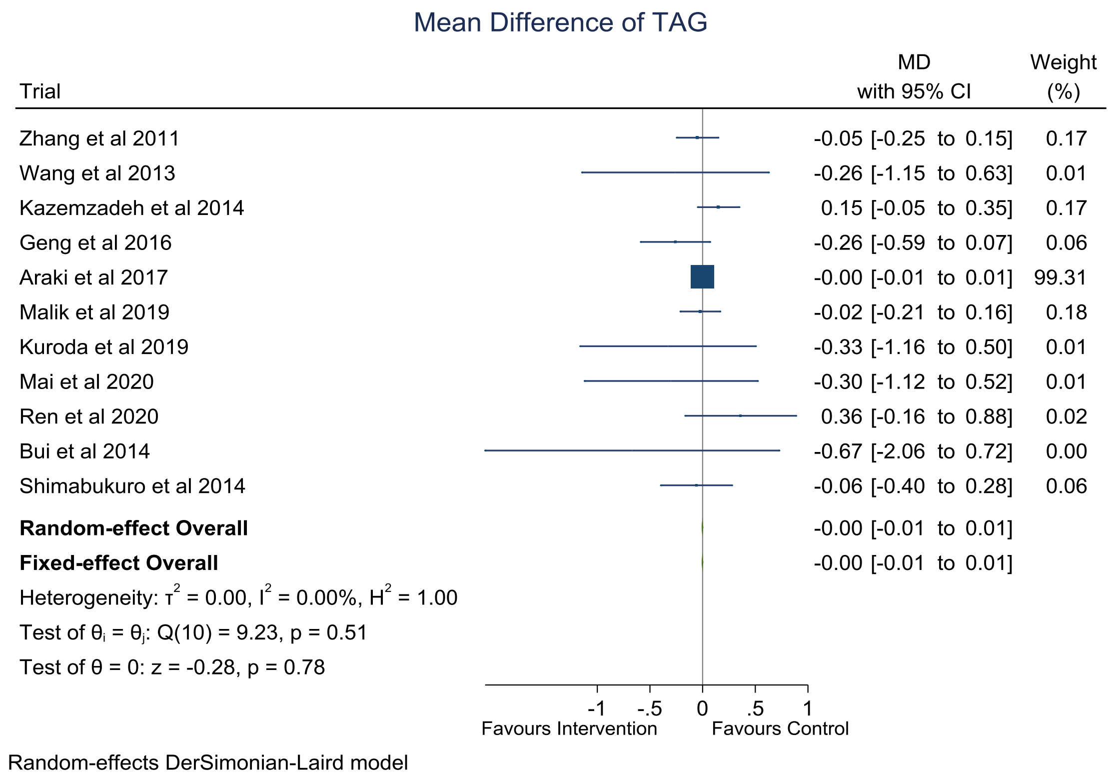
Mean difference in change from baseline (95% CI) of total cholesterol (mmol/L) between brown rice and white rice (control) regimens from RCTs. Trials evaluated the effect of replacing white rice with brown rice. Horizontal lines denote 95% CIs; solid squares represent the point estimate of each study with the size proportional to study weight. Open diamonds represent pooled estimates from the random-effects model (DerSimonian-Laird) and fixed-effects model. Study weights are from the random-effects analysis. The I^2 and P values for heterogeneity are shown.

Supplemental figure 14: Forest plot of mean difference in HbA1c between white rice and brown rice groups in RCTs



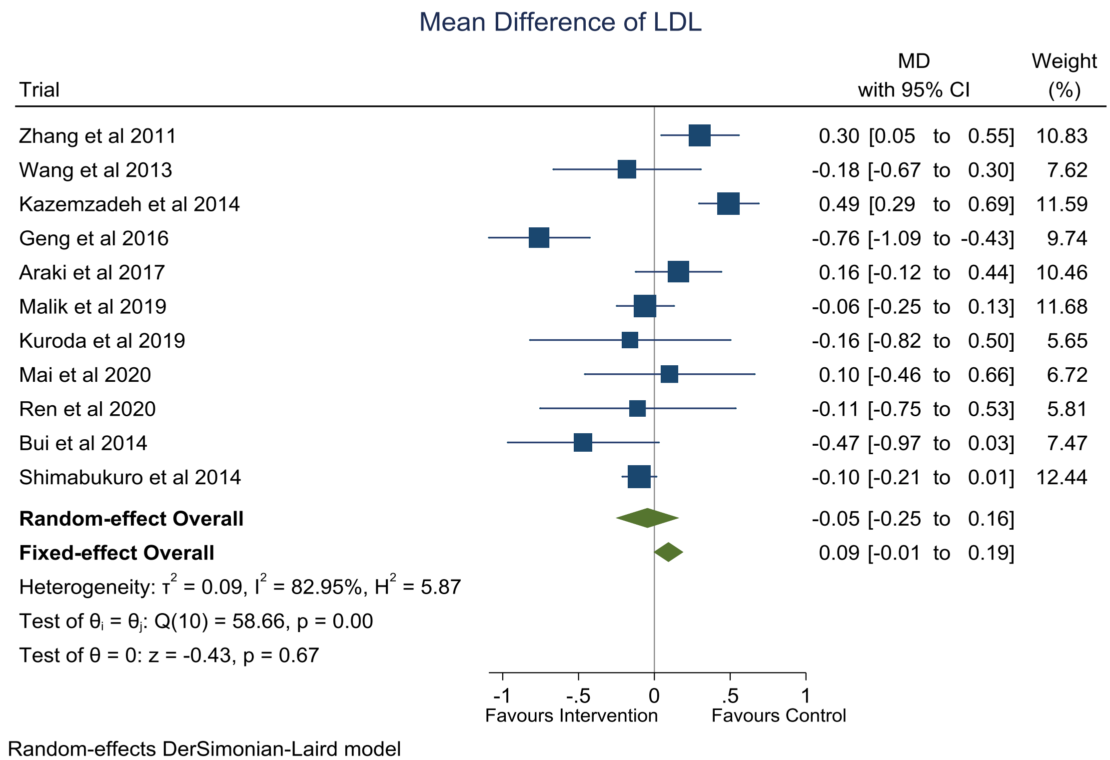
Mean difference in change from baseline (95% CI) of HbA1c (%) between brown rice and white rice (control) regimens from RCTs. Trials evaluated the effect of replacing white rice with brown rice. Horizontal lines denote 95% CIs; solid squares represent the point estimate of each study with the size proportional to study weight. Open diamonds represent pooled estimates from the random-effects model (DerSimonian-Laird) and fixed-effects model. Study weights are from the random-effects analysis. The I^2 and P values for heterogeneity are shown.

Supplemental figure 15: Forest plot of mean difference in triglycerides between white rice and brown rice groups in RCTs



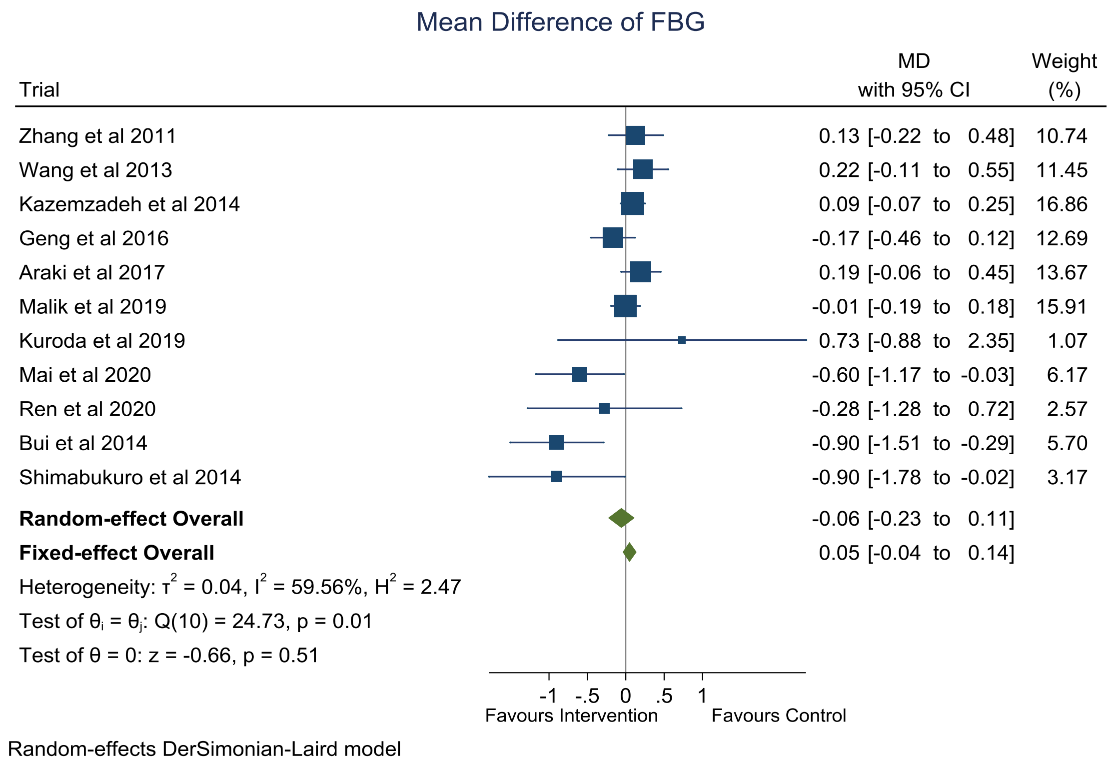
Mean difference in change from baseline (95% CI) of triglycerides (mmol/L) between brown rice and white rice (control) regimens from RCTs. Trials evaluated the effect of replacing white rice with brown rice. Horizontal lines denote 95% CIs; solid squares represent the point estimate of each study with the size proportional to study weight. Open diamonds represent pooled estimates from the random-effects model (DerSimonian-Laird) and fixed-effects model. Study weights are from the random-effects analysis. The I^2 and P values for heterogeneity are shown.

Supplemental figure 16: Forest plot of mean difference in LDL-cholesterol between white rice and brown rice groups in RCTs



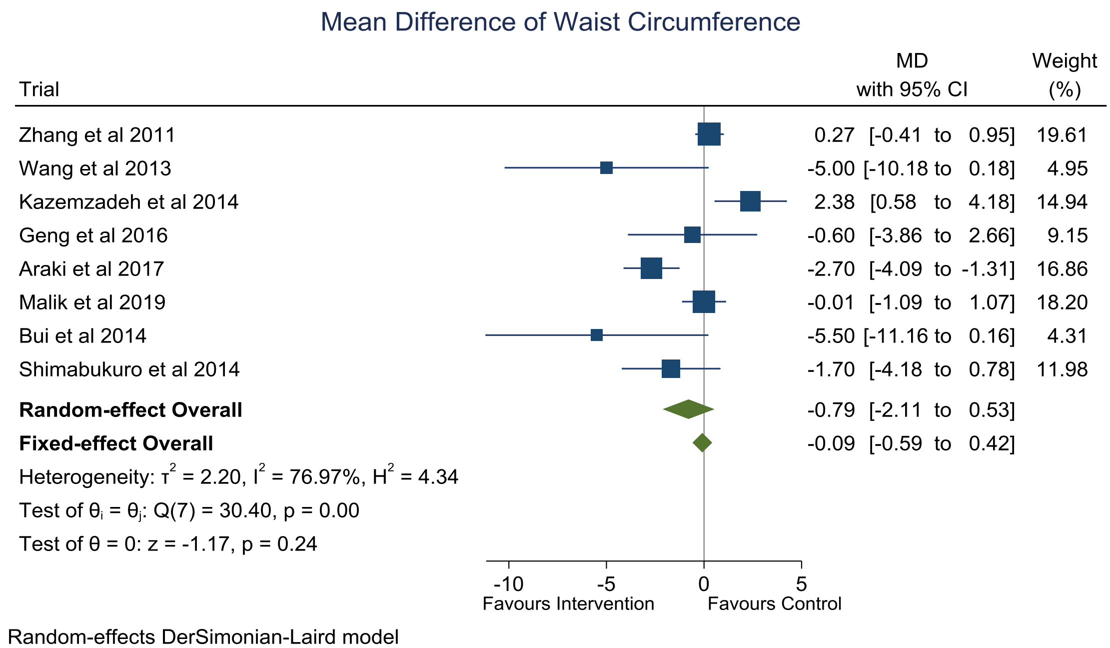
Mean difference in change from baseline (95% CI) of LDL-cholesterol (mmol/L) between brown rice and white rice (control) regimens from RCTs. Trials evaluated the effect of replacing white rice with brown rice. Horizontal lines denote 95% CIs; solid squares represent the point estimate of each study with the size proportional to study weight. Open diamonds represent pooled estimates from the random-effects model (DerSimonian-Laird) and fixed-effects model. Study weights are from the random-effects analysis. The I^2 and P values for heterogeneity are shown.

Supplemental figure 17: Forest plot of mean difference in fasting blood glucose (FBG) between white rice and brown rice groups in RCTs



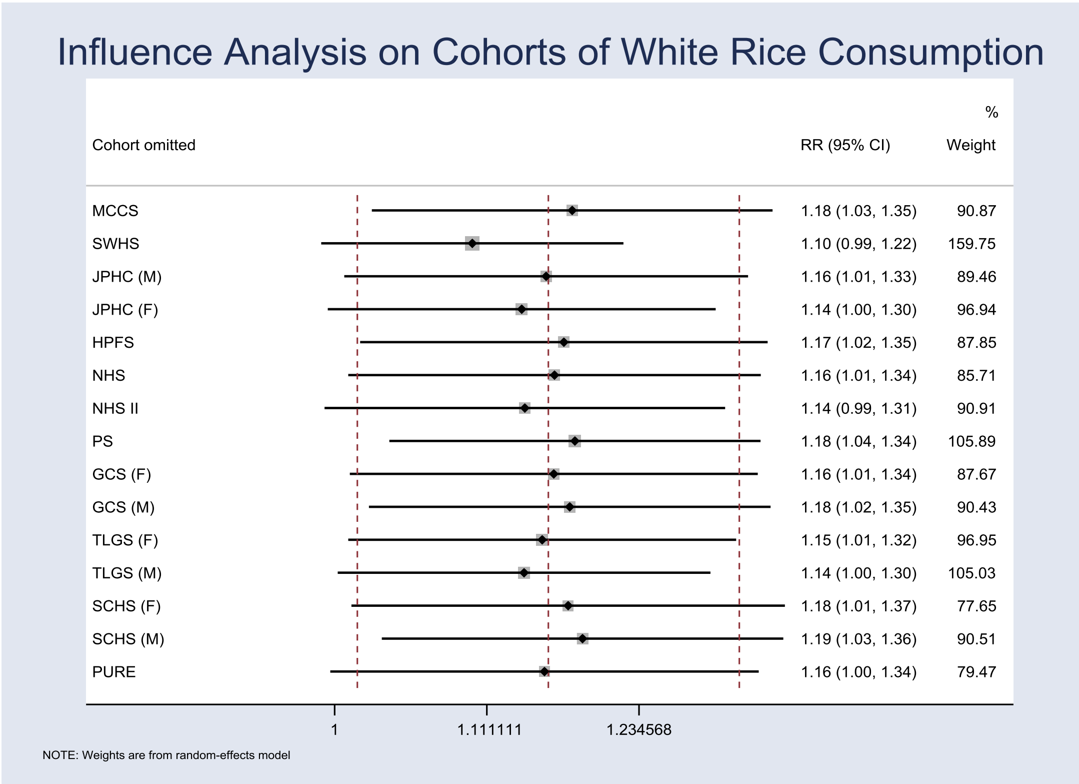
Mean difference in change from baseline (95% CI) of fasting blood glucose (FBG) (mmol/L) between brown rice and white rice (control) regimens from RCTs. Trials evaluated the effect of replacing white rice with brown rice. Horizontal lines denote 95% CIs; solid squares represent the point estimate of each study with the size proportional to study weight. Open diamonds represent pooled estimates from the random-effects model (DerSimonian-Laird) and fixed-effects model. Study weights are from the random-effects analysis. The I^2 and P values for heterogeneity are shown.

Supplemental figure 18: Forest plot of mean difference in waist circumference between white rice and brown rice groups in RCTs



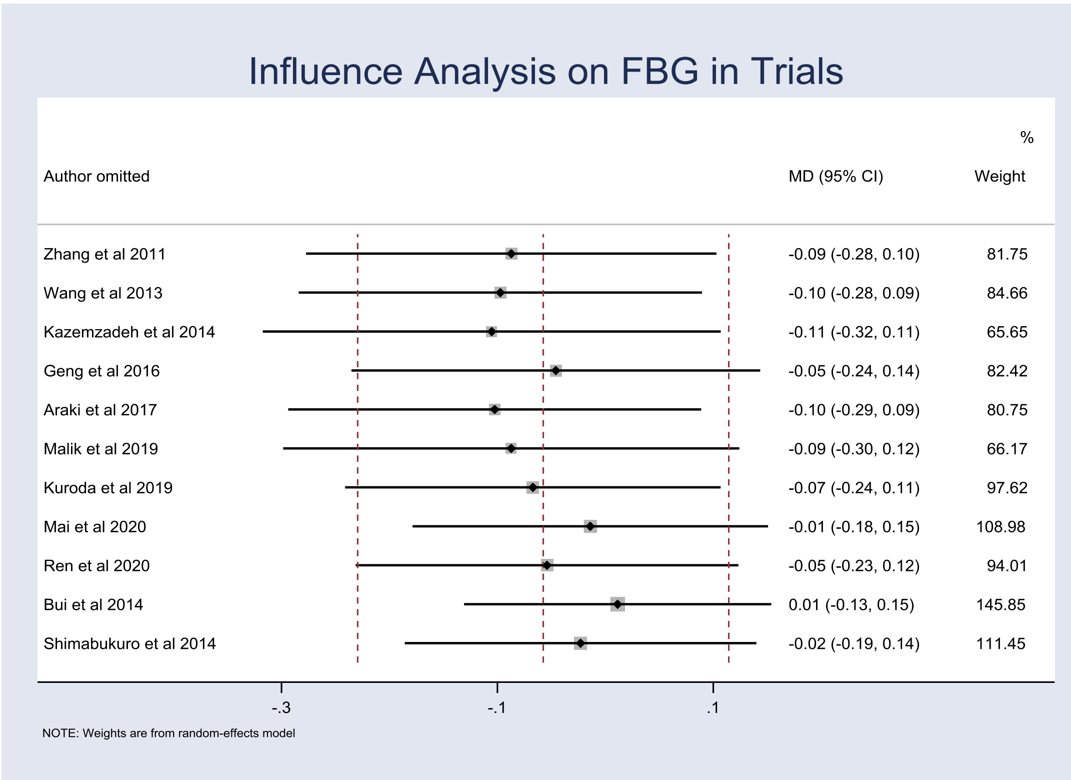
Mean difference in change from baseline (95% CI) in waist circumference (cm) between brown rice and white rice (control) regimens from RCTs. Trials evaluated the effect of replacing white rice with brown rice. Horizontal lines denote 95% CIs; solid squares represent the point estimate of each study with the size proportional to study weight. Open diamonds represent pooled estimates from the random-effects model (DerSimonian-Laird) and fixed-effects model. Study weights are from the random-effects analysis. The I^2 and P values for heterogeneity are shown.

Supplemental figure 19: Influence analysis of individual prospective cohort studies in the meta-analysis of white rice intake and risk of T2D



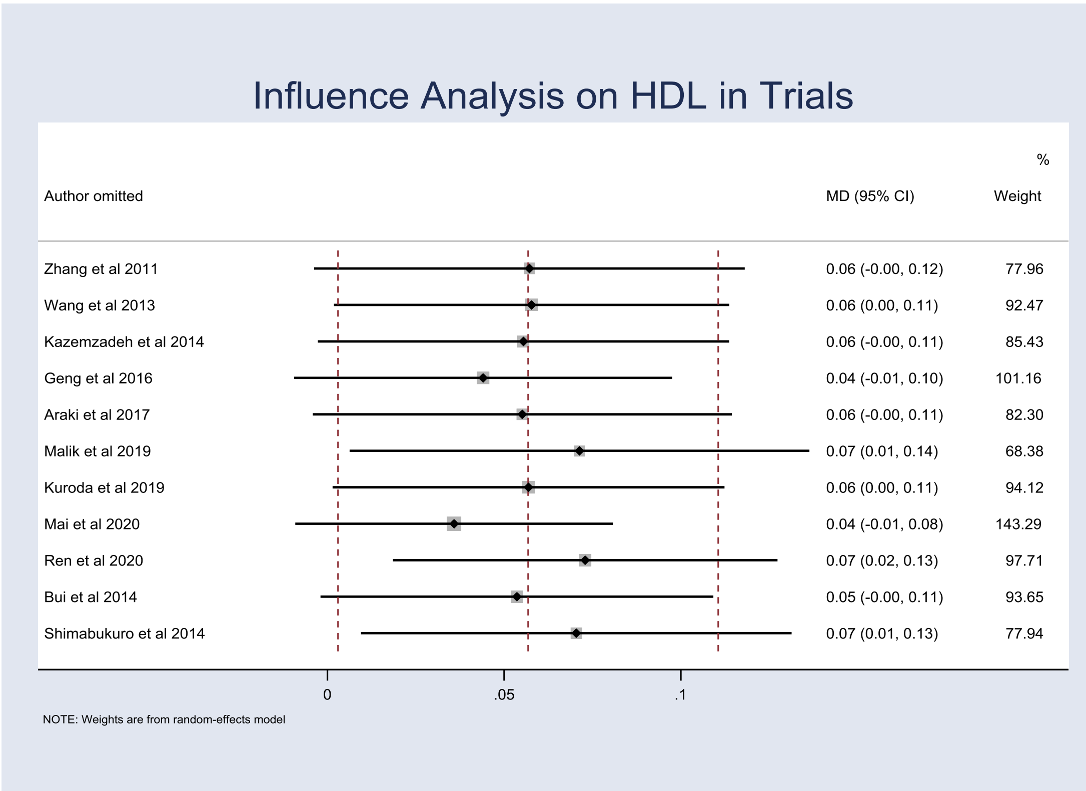
Influence of individual cohorts on the pooled RR of white rice intake and risk of T2D. The squares with the horizontal lines represent the pooled RR and corresponding 95% CI with the removal of the individual cohorts. The vertical dashed lines indicate the lower 95% CI, overall pooled RR, and upper 95% CI (from left to right). M, male; F, female; MCC, Melbourne Collaborative Cohort Study; SWHS, Shanghai Women's Health Study; JPHC, Japan Public Health Center-based Prospective Study; HPFS, Health Professionals Follow-up Study; NHS, Nurses' Health Study; PS, Pizarra study; GCS, Golestan Cohort Study; TLGS, Tehran Lipid and Glucose Study; SCHS, Singapore Chinese Health Study; PURE, Prospective Urban Rural Epidemiology Study. Weights are from the random-effects model and represent the percent weight of the effect estimate after an individual study has been removed relative to the overall summary estimate.

Supplemental figure 20: Influence analysis of individual RCTs replacing white rice with brown rice in the meta-analysis of FBG



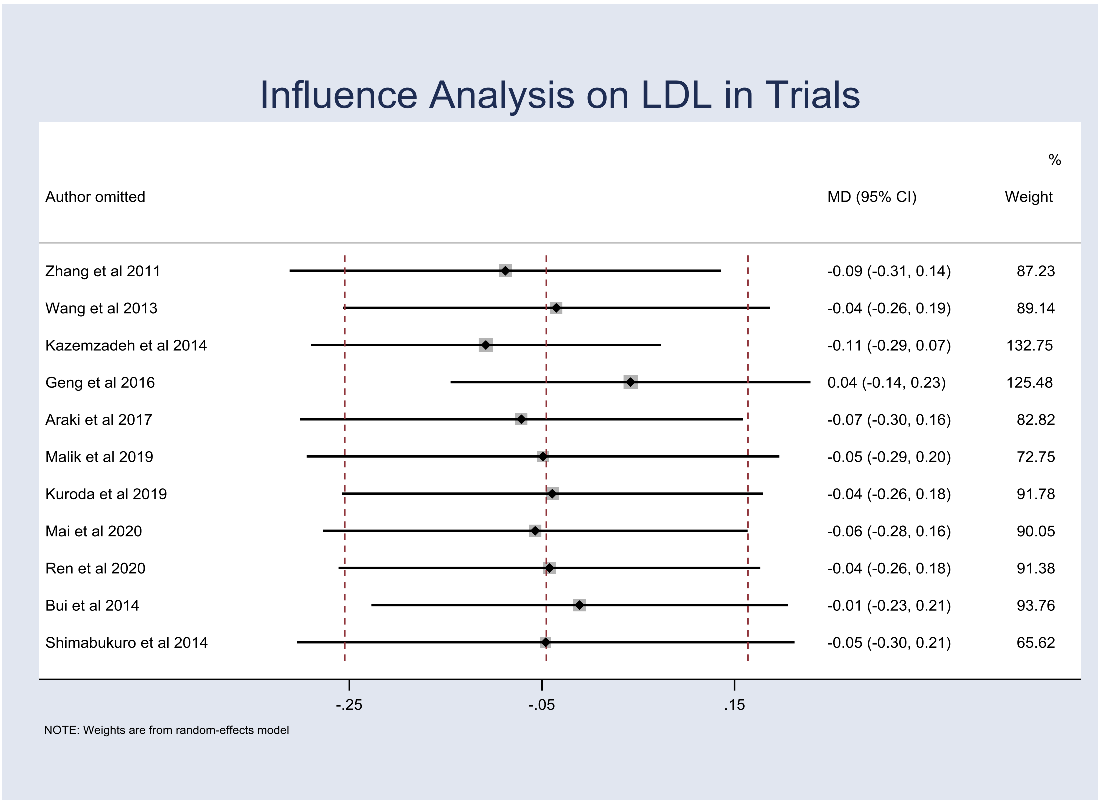
Influence of individual RCTs on the pooled estimate for fasting blood glucose (FBG). The squares with the horizontal lines represent the pooled estimate and corresponding 95% CI with the removal of the individual RCTs. The vertical dashed lines indicate the lower 95% CI, overall pooled estimate, and upper 95% CI (from left to right). Weights are from the random-effects model and represent the percent weight of the effect estimate after an individual study has been removed relative to the overall summary estimate.

Supplemental figure 21: Influence analysis of individual RCTs replacing white rice with brown rice in the meta-analysis of HDL cholesterol



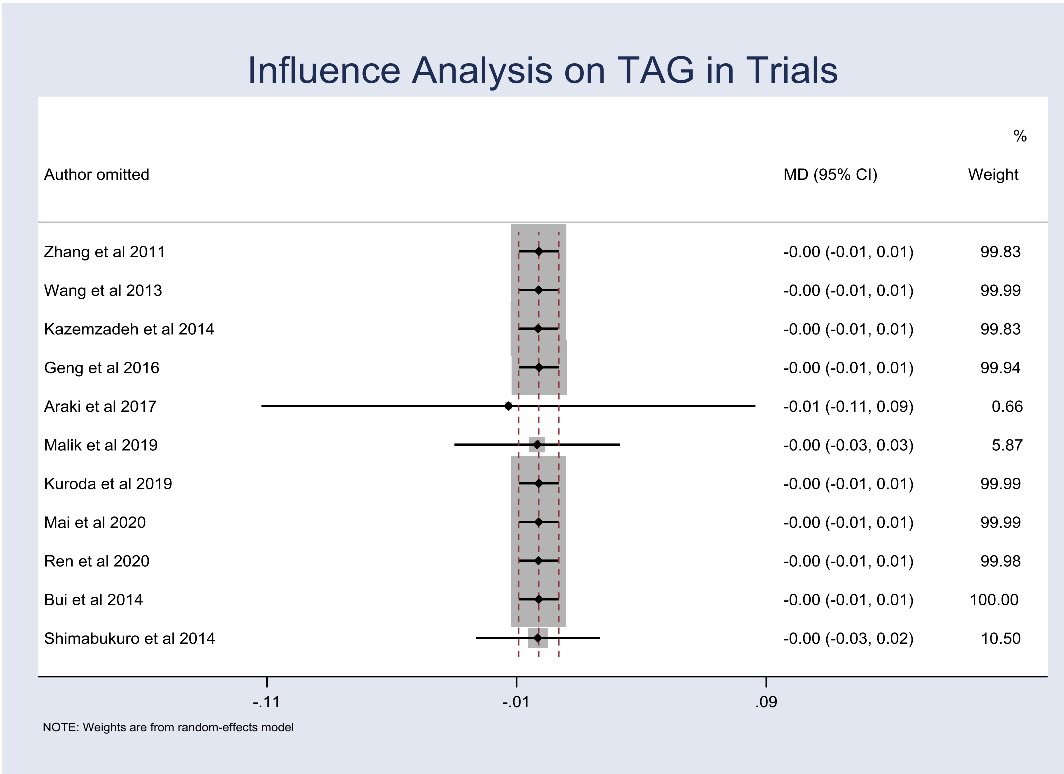
Influence of individual RCTs on the pooled estimate for HDL cholesterol. The squares with the horizontal lines represent the pooled estimate and corresponding 95% CI with the removal of the individual RCTs. The vertical dashed lines indicate the lower 95% CI, overall pooled estimate, and upper 95% CI (from left to right). Weights are from the random-effects model and represent the percent weight of the effect estimate after an individual study has been removed relative to the overall summary estimate.

Supplemental figure 22: Influence analysis of individual RCTs replacing white rice with brown rice in the meta-analysis of LDL cholesterol



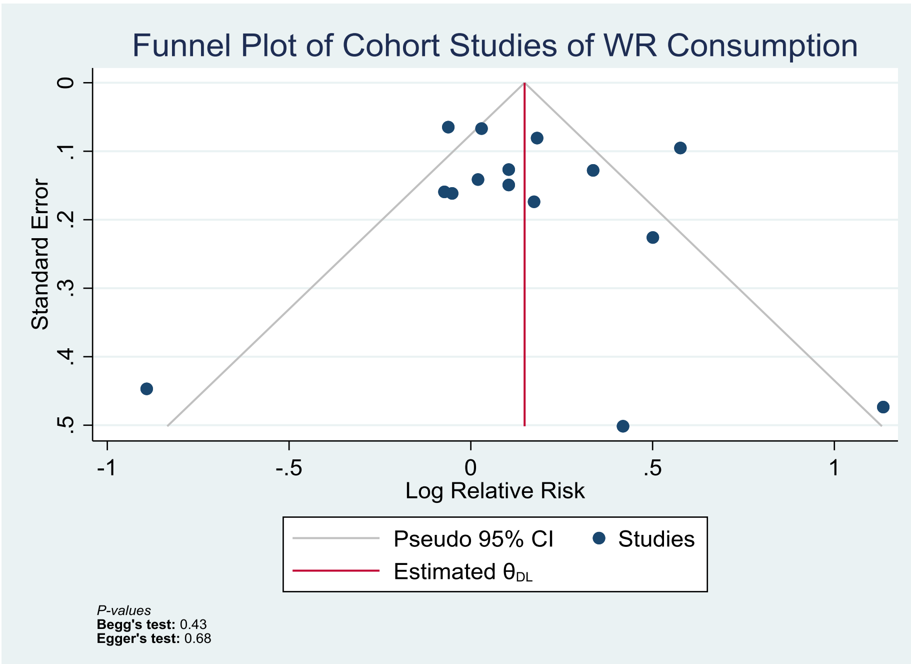
Influence of individual RCTs on the pooled estimate for LDL cholesterol. The squares with the horizontal lines represent the pooled estimate and corresponding 95% CI with the removal of the individual RCTs. The vertical dashed lines indicate the lower 95% CI, overall pooled estimate, and upper 95% CI (from left to right). Weights are from the random-effects model and represent the percent weight of the effect estimate after an individual study has been removed relative to the overall summary estimate.

Supplemental figure 23: Influence analysis of individual RCTs replacing white rice with brown rice in the meta-analysis of triglycerides



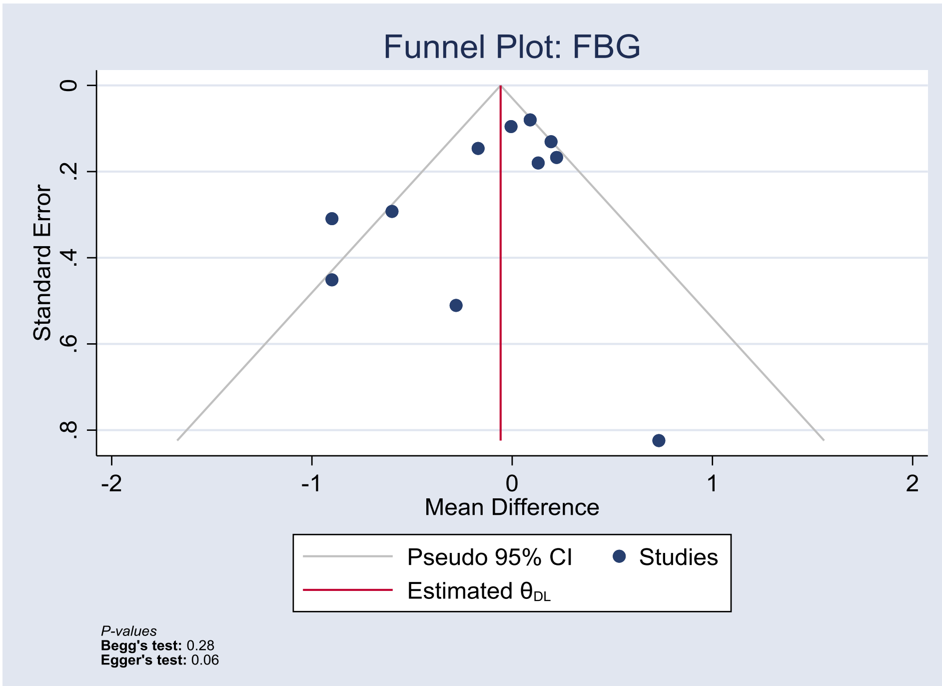
Influence of individual RCTs on the pooled estimate for triglycerides (TAG). The squares with the horizontal lines represent the pooled estimate and corresponding 95% CI with the removal of the individual RCTs. The vertical dashed lines indicate the lower 95% CI, overall pooled estimate, and upper 95% CI (from left to right). Weights are from the random-effects model and represent the percent weight of the effect estimate after an individual study has been removed relative to the overall summary estimate.

Supplemental figure 24: Funnel plot for meta-analysis of prospective cohort studies of white rice (WR) intake and risk of T2D



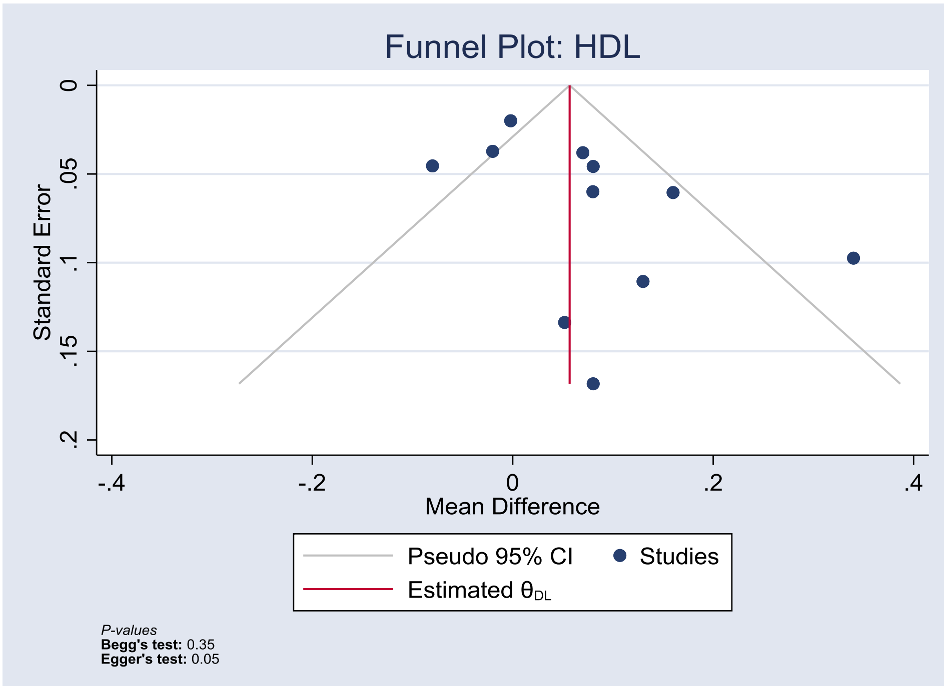
Funnel plot and corresponding Begg’s and Egger’s test for assessment of potential publication bias in meta-analysis of prospective cohort studies of white rice (WR) consumption and risk of T2D.

Supplemental figure 25: Funnel plot for meta-analysis of RCTs replacing white rice with brown rice for FBG



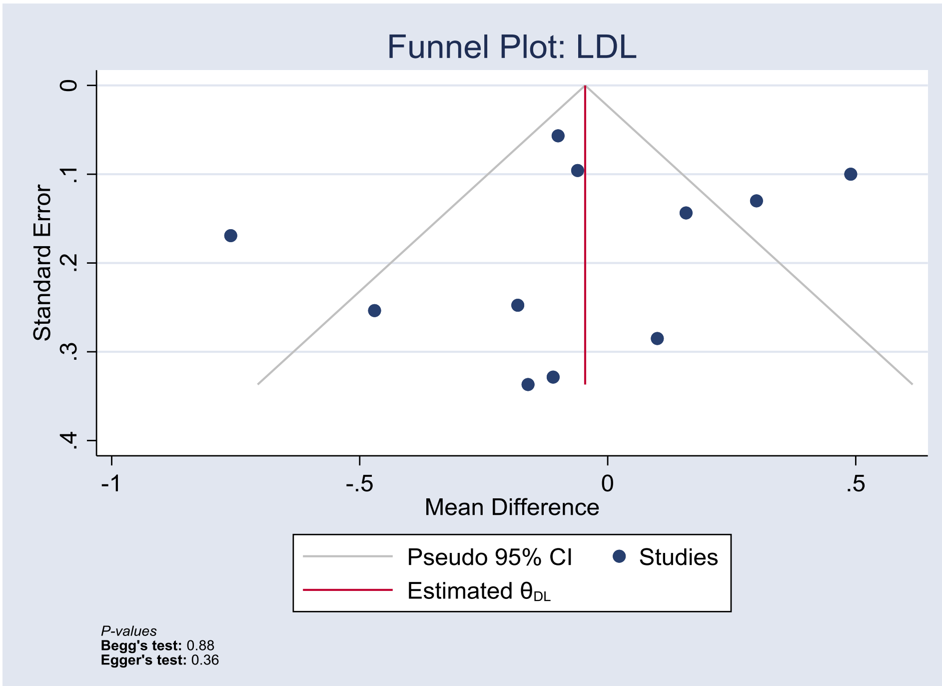
Funnel plot and corresponding Begg's and Egger's test for assessment of potential publication bias in meta-analysis of RCTs replacing white rice with brown rice for fasting blood glucose (FBG).

Supplemental figure 26: Funnel plot for meta-analysis of RCTs replacing white rice with brown rice for HDL cholesterol



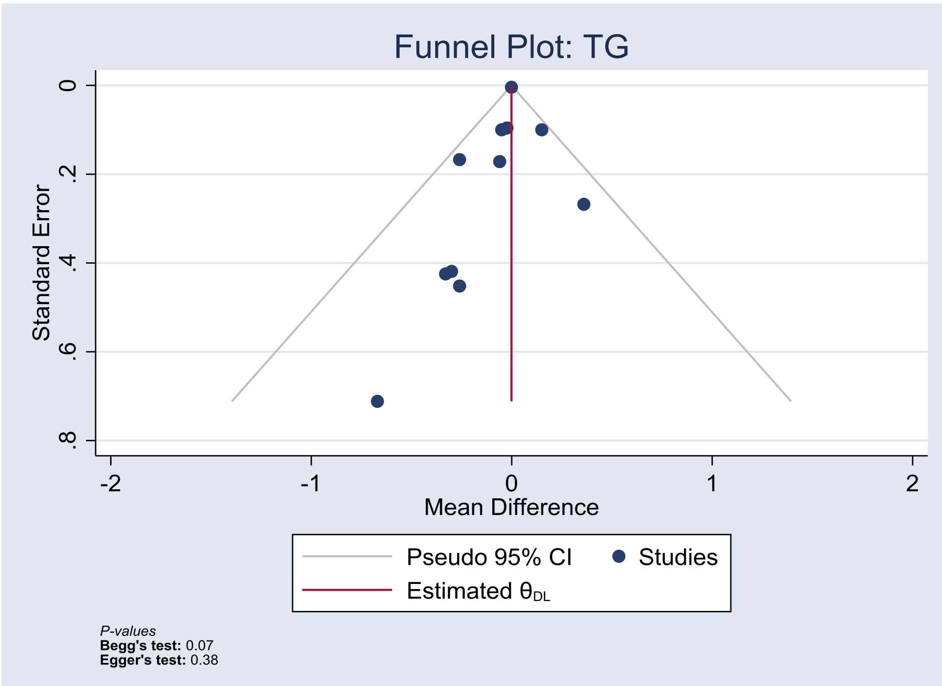
Funnel plot and corresponding Begg's and Egger's test for assessment of potential publication bias in meta-analysis of RCTs replacing white rice with brown rice for HDL cholesterol.

Supplemental figure 27: Funnel plot for meta-analysis of RCTs replacing white rice with brown rice for LDL cholesterol



Funnel plot and corresponding Begg's and Egger's test for assessment of potential publication bias in meta-analysis of RCTs replacing white rice with brown rice for LDL cholesterol.

Supplemental figure 28: Funnel plot for meta-analysis of RCTs replacing white rice with brown rice for triglycerides



Funnel plot and corresponding Begg's and Egger's test for assessment of potential publication bias in meta-analysis of RCTs replacing white rice with brown rice for triglycerides (TG).