Supplementary Materials

Supplementary File 1. Detailed method of search strategy, inclusion criteria, data extraction and quality assessment

Literature Search Strategy

We systematically searched PubMed, EMBASE, and Web of Science up to Apr 11, 2020 to identify studies published in English that investigated the association between fried-food consumption and risk of cardiovascular disease and all-cause mortality. For additional publications, the reference lists of eligible articles and previous systematic reviews were manually searched. Two investigators (PQ and MH) conducted the literature search and the assessment of articles based on titles and abstracts and then reviewed the full text of articles according to inclusion and exclusion criteria. Any disagreements were discussed with a third author (MZ).

Study Selection

Studies were included in the current meta-analysis if they 1) were population-based studies; 2) involved the adult general population (greater than or equal to 18 years); 3) were original articles investigating the association of fried-food consumption and cardiovascular disease or all-cause mortality; 4) reported odds ratios (ORs), relative risks (RRs) or hazard ratios (HRs) with corresponding 95% confidence intervals (CIs). For the dose–response analyses, the risk estimated for at least 3 categories of fried-food intake had to be provided. If more than one article was based on the same data, the study with the largest number of incident cases was chosen. We excluded reviews, comments, letters and editorials. The authors of one study [1] were contacted for clarification of the amount of fried-food intake, which was reported as Q1-Q4 in the publication. In another study [2], the authors were contacted for clarification of the RRs for all-cause mortality in 4 categories, which was reported in the figure without RR values in each category. However, we did not receive a

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reply, so the 2 studies were excluded from the dose–response analysis. The outcomes of interest for this meta-analysis were major cardiovascular events, coronary heart disease, stroke, heart failure, cardiovascular mortality, and all-cause mortality. In this meta-analysis, major cardiovascular events were defined as any of coronary heart disease, stroke, heart failure, and cardiovascular mortality. Coronary heart disease was defined as coronary artery disease, fatal or nonfatal myocardial infarction or ischemic heart disease. Stroke was defined as total stroke, fatal or nonfatal ischaemic or haemorrhagic stroke, or unspecific stroke.

Data extraction and quality assessment

The following information about the included studies was recorded: first author's name, publication year, study location, study design, study name, mean age or age range of participants at baseline, sex, number of participants, number of cases or deaths, follow-up period, assessment of interested outcomes, type of fried food, measurement of fried food, categories of fried-food consumption at baseline, number of cases and person-years/number of participants per fried food category, most adjusted risk estimates (OR, RRs or HRs) with 95% CIs for each category, and potential confounders adjusted for. Two investigators (PQ and MH) independently extracted data by using a standard data extraction form, and any potential disagreements were discussed with a third investigator (DL). The NOS score [3], used to assess the quality of the included studies, has a total score of 9 points (highest quality) for 8 aspects. Scores of 0-3, 4-6 and 7-9 were considered poor, fair, and good quality, respectively.

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Supplementary File 2. Detailed method of data transformation and calculation, heterogeneity, subgroup analysis, sensitivity analysis, Meta-regression analysis, and publication bias in data synthesis and analysis

Most studies [2, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15] reported HRs as measures of the association between fried-food consumption and risk of CVD and all-cause mortality and HRs in these studies were directly considered as RRs [16]. Five studies [1, 17, 18, 19, 20] reported ORs to measure the association; because the incidence of outcomes in the general population for the including articles were all < 1% [21], we considered ORs as approximate estimates of RRs based on the rare outcome assumption (<10% suggested by Zhang and Yu [22]), which has also been adopted in previous meta-analyses [23, 24]. If studies reported data stratified by gender, categories of fried food (e.g., inside home or outside fried food), or other subgroups based on the same data source, we first used the fixed-effects model [25] to pool the RRs before inclusion in the meta-analysis. Moreover, for meta-analysis of major cardiovascular events, a fixed-effects model [25] was used to pool the RRs of different types of cardiovascular disease, if one article reported only risk estimates for different types of cardiovascular disease, but not the overall risk estimates.

For the dose−response meta-analyses per one additional serving/week of fried-food, doses of fried-food consumption with the frequency reported as servings or times (per month or per day) were converted to grams per week. We assumed 85 g as a serving size for fried fish [7], 117 g for fried potato or French fries [26], and 114 g for total fried-food, which was estimated by the mean values for 3 popular fried foods, including fried chicken (1 serving size = 140 g [26]), fried fish, and fried potato/French fries. The missing number of cases in each category was calculated by using the reported ORs/RRs/HRs and number of total cases [27]. If the number of exposed person-years or participants was not reported for each category, categories were assumed to be of equal size [27]. Median or mean fried-food intake

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values were used for each category if reported [27], or the midpoint of the lower and upper bound in each category was estimated [27]. The interval width was assumed to be the same as the closest category if the highest or lowest category for fried-food intake was open-ended [28].

Cochran's Q (P<0.10) [29] was used to test the heterogeneity between studies and I^2 statistic to quantify the proportion of total variation due to heterogeneity. I^2 values of 25%, 50%, and 75% represented low, moderate, and high heterogeneity. We performed subgroup analysis stratified by gender, age (mean or median ≥60 and <60 years), region (America, Europe, Asia, or other), type of study design (prospective/cohort and case–control study), number of cases (≥1000 and <1000), duration of follow-up (mean or median ≥10 and <10 years), study quality (Newcastle-Ottawa Scale [NOS] score ≥7 and <7), exposure assessment (self-administered and structured interview), and adjustments (body mass index [BMI; kg/m^2], energy intake, and physical activity) to investigate the potential sources of heterogeneity and robustness of the findings. Meta-regression analysis was used to calculate the P values for heterogeneity between subgroups. We further performed a sensitivity analysis by excluding one study at a time to assess the stability of findings. Publication bias (small-study effect) was evaluated by Egger's linear-regression test [25] and funnel plots (10 or more studies). The trim-and-fill method was used to correct publication bias if detected.

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Supplemental Table 1. Systematic literature review search terms and strategy.

Search terms for PubMed (n=1447), until 11 Apr 2020
#1 (“fried” [Title/Abstract] OR “fries” [Title/Abstract] OR “fry*” [Title/Abstract])
#2 (“cerebrovascular disorders” [Mesh] OR “Cardiovascular Diseases”[Mesh] OR “cerebrovascular disorders” [Title/Abstract] OR “cardiovascular disease” [Title/Abstract] OR “cardiovascular diseases” [Title/Abstract] OR “CVD” [Title/Abstract] OR “coronary disease” [Title/Abstract] OR “coronary artery disease” [Title/Abstract] OR “coronary heart disease” [Title/Abstract] OR “CHD” [Title/Abstract] OR “ischemic heart disease” [Title/Abstract] OR “ischaemic heart disease” [Title/Abstract] OR “stroke” [Title/Abstract] OR “cerebrovascular disease” [Title/Abstract] OR “cerebrovascular disorders” [Title/Abstract] OR “heart disease” [Title/Abstract] OR “myocardial infarction” [Title/Abstract] OR “MI” [Title/Abstract] OR “heart failure” [Title/Abstract] OR “cerebral vascular accident” [Title/Abstract] OR “CVA” [Title/Abstract] OR “cardiovascular” [Title/Abstract] OR “coronary” [Title/Abstract] OR “myocardial” [Title/Abstract])
#3 (“mortality” [Mesh] OR “death” [Mesh] OR “survival” [Mesh] OR “mortality” [Title/Abstract] OR “death*” [Title/Abstract] OR “fatal” [Title/Abstract] OR “surviv*” [Title/Abstract])
#4 (#2 OR #3)
#1 AND #4
Search terms for Embase (n=1455), until 11 Apr 2020
#1 frying/ or fried.mp. or "fry (fish)"/ or fries.mp.
#2 cerebrovascular disorders.mp. OR cerebrovascular disease/ or cardiovascular diseases.mp. or cardiovascular disease/ or coronary heart disease.mp. or heart disease.mp. or heart disease/ or ischemic heart disease.mp. or ischaemic heart disease.mp. or ischemic heart

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disease/ or ischemic heart disease/ or coronary artery disease/ or CHD.mp. or myocardial infarction.mp. or heart infarction/ or stroke.mp. or cerebrovascular accident/ or ischemic stroke.mp. or brain ischemia/ or haemorrhagic stroke.mp. or brain hemorrhage/ or hemorrhagic stroke.mp. or brain hemorrhage/ or CVD.mp. or coronary disease.mp. or heart failure.mp. or heart failure/ or cerebral vascular accident.mp. or cerebrovascular accident/ or cardiovascular.mp. or coronary.mp. or myocardial.mp.
#3 mortality/ or death/ or survival/ or mortality.mp. or death.mp. or deaths.mp. or fatal.mp. or survival.mp. or survive.mp.
#4 (#2 OR #3)
#1 AND #4
Search terms for Web of Science (n=8125), until 11 Apr 2020
TS= (“fried” OR “fries” OR “fry*”) AND ((“cerebrovascular disorders” OR “cerebrovascular disease” OR “cardiovascular disease” OR “cardiovascular disease” OR “coronary heart disease” OR “heart disease” OR “heart disease” OR “ischemic heart disease” OR “ischaemic heart disease” OR “ischemic heart disease” OR “ischemic heart disease” OR “coronary artery disease” OR “CHD” OR “myocardial infarction” OR “heart infarction” OR stroke OR “cerebrovascular accident” OR “ischemic stroke” OR “brain ischemia” OR “haemorrhagic stroke” OR “brain hemorrhage” OR “hemorrhagic stroke” OR “brain hemorrhage” OR “CVD” OR “coronary disease” OR “heart failure” OR “heart failure” OR “cerebral vascular accident” OR “cerebrovascular accident”) OR (“mortality” OR “death” OR “deaths” OR “survival” OR “fatal” OR “survive”))

Supplemental Table 2. Characteristics of studies included in meta-analysis of associations of fried-food intake with risk of cardiovascular disease and mortality

First author (year)	Outcome	Outcome measurement	Adjustment
Mozaffarian (2003)	Total IHD death (fatal MI and coronary heart disease death), arrhythmic IHD death, nonfatal MI	Events were identified during annual examinations and interim 6-month telephone interviews, with review and adjudication by a centralized committee composed of internists using interviews, medical records, death certificates, medical examiner forms, and Health Care Financing Administration hospitalizations.	Age, sex, education, diabetes, current smoking, pack-years of smoking, and tuna/other fish and fried fish/fish sandwich consumption, BMI, SBP, LDL-C, HDL-C, triglycerides, C-reactive protein, and intake of saturated fat, alcohol, beef/pork, fruits, and vegetables.
Mozaffarian (2005)	Congestive heart failure	Events were identified through annual examinations, six-month phone contacts, and hospitalization discharge summaries.	Age, sex, race, enrolment site, education, diabetes, BMI, prevalent coronary heart disease, prevalent stroke/transient ischemic attack, total caloric intake (kcal/day), and intake of either fried fish or tuna/other fish, smoking, leisure-time physical activity, and intakes of saturated fat, fruits, vegetables and alcohol.
Mozaffarian (2005)	Total stroke, (ischemic and hemorrhagic stroke)	Events were identified through annual examinations, six-month phone contacts, and hospitalization discharge summaries.	Age, sex, education, diabetes, prevalent coronary heart disease, smoking status, pack-years of smoking, and aspirin use, BMI, leisure-time physical activity, alcohol use, and total caloric intake
Hamideh (2007)	Acute MI	Acute MI was diagnosed by typical electrocardiograph changes or cardiac catheterization	NA
Iqbal (2008)	Acute MI	Acute MI was diagnosed by typical electrocardiograph changes or cardiac catheterization	Age, sex, region, education, household income, physical activity, smoking, BMI, psychosocial factors, and ApoB/ApoA1 tertiles.
Belin (2011)	Heart Failure	Heart failure was diagnosed by medical history, electrocardiogram readings, and results of cardiac enzyme/troponin determinations,	Age, ethnicity, education, physical activity, smoking, alcohol, diabetes, hypertension, AF, MI/CABG/PTCA, BMI, time-dependent MI, fiber, fruit/vegetable servings, fried fish servings, saturated fat intake, DHA+EPA, linolenic acid, linoleic acid, non-fried food servings, sodium intake.
Guallar-Castillón (2012)	CAD	Events was identified by a telephone questionnaire (at three years after recruitment) and through record linkage with three sources of information: hospital discharge databases, population based myocardial infarction registries (available in Murcia, Navarra, and	Age, sex, centre, and energy intake, ethanol consumption, educational level, smoking, physical activity at work, physical activity at home, physical activity in leisure time, diabetes mellitus, hyperlipidaemia, cancer, oral

First author (year)	Outcome	Outcome measurement	Adjustment
		Gipuzkoa), and regional mortality registries and the national mortality database.	contraceptives, menopause, hormone replacement therapy, and consumption of fruit , nuts, and dairy products, and non-fried foods: vegetables, meat, and fish, BMI, waist circumference , and hypertension.
Cahill (2014)	CAD	For newly reported MI, medical records and autopsy reports were examined for confirmation by study physicians blinded to the participant's exposure status. Nonfatal MI was defined by WHO criteria, which require clinical symptoms and either diagnostic changes on electrocardiogram or elevated cardiac enzymes. Deaths were identified from state vital records and the National Death Index or reported by the participant's next of kin or the postal system. Fatal CAD was confirmed by hospital records or autopsy.	Age, white, family history of diabetes, smoking status, alcohol intake, physical activity, total energy intake, and diet quality as represented by the AHEI, hypertension hypercholesterolemia, BMI.
Cahill (2014)	CAD	For newly reported MI, medical records and autopsy reports were examined for confirmation by study physicians blinded to the participant's exposure status. Nonfatal MI was defined by WHO criteria, which require clinical symptoms and either diagnostic changes on electrocardiogram or elevated cardiac enzymes. Deaths were identified from state vital records and the National Death Index or reported by the participant's next of kin or the postal system. Fatal CAD was confirmed by hospital records or autopsy.	Age, sex, centre, and energy intake, ethanol consumption, educational, smoking, physical activity at work, physical activity at home, physical activity in leisure time, diabetes mellitus, hyperlipidaemia, cancer, oral contraceptives, menopause, hormone replacement therapy, and consumption of fruit , nuts, and dairy products, and non-fried foods: vegetables, meat, and fish, BMI, waist circumference , and hypertension.
Djousse (2015)	Heart Failure	Self-reported	Age, smoking, exercise, energy intake, alcohol, and diet score.
Nahab (2016)	CVD events (MI, ischemic stroke, cardiovascular mortality)	CVD events were identified through every 6 months by telephone to identify hospitalizations, emergency department visits, overnight stays in nursing homes or rehabilitation centres, or death during the previous 6 months. Medical records were then reviewed by at least two physician members of a committee of stroke experts to validate and classify potential ischaemic strokes. Disagreements were resolved by full committee review.	Age, race, sex, region, income and education, physical activity, smoking status, Mediterranean diet score, aspirin use and total energy intake and hypertensive medication use, diabetes status, SBP, BMI and dyslipidaemia.
Larsson	Major	Nonfatal and fatal cases of CVD	Age, sex, education, family

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First author (year)	Outcome	Outcome measurement	Adjustment
(2016)	cardiovascular events, MI, heart failure, total stroke, cardiovascular mortality	were identified by linkage with the Swedish National Patient Register and the Swedish Cause of Death Register by using the following International Classification of Diseases, 10th Revision, codes	history of MI before 60 y of age, smoking status and pack-years of smoking, aspirin use, walking or bicycling, exercise, BMI, history of hypertension, history of hypercholesterolemia, alcohol consumption, total energy intake, and mDASH diet score.
Hu (2018)	Nonfatal acute MI	All cases met the World Health Organization criteria for MI, which require typical symptoms plus either elevations in cardiac enzyme levels or diagnostic changes in the electrocardiogram	Age, sex, area of residence, history of diabetes, hypertension, smoking, waist circumference, physical activity, income, educational years, intake of alcohol and occupation, saturated fatty acid, fiber or total energy intake individually, saturated fatty acid, fiber and total energy intake.
Sun (2019)	Cardiovascular mortality	Deaths were ascertained by reviewing death certificates, medical records, autopsy reports, and by linkage to the national death index	Age, race/ethnicity, education, annual income, whether they were from the observational study or the clinical trial, unopposed estrogen use, estrogen+ progesterone use, smoking, physical activity, coffee intake, total energy intake, diet quality score, baseline diabetes status, baseline cardiovascular status, and baseline cancer status, BMI.
Durga (2019)	Total stroke	Stroke was confirmed by computed tomography scan or magnetic resonance imaging of the brain. Ischemic stroke was confirmed by a neurologist.	Age and sex
Zhao (2019)	CAD	CAD is usually diagnosed by computed tomography, radiography, or coronary angiography. The diagnosis was based on the diagnostic criteria for coronary atherosclerotic heart disease issued by the China Health and Family Planning Commission in 2010.	Age, sex, waist circumference, smoking, and drinking
Honerlaw (2020)	CAD	Non-fatal MI or CAD events, defined as presence of International Classification of Diseases (ICD) 9 codes 410-414 and ICD-10 codes I20-I25 except I25.2 in the EHR. Fatal and non-fatal coronary events, coronary angioplasty and coronary revascularization defined by CPT and ICD-9 procedure codes. Date and cause of death was obtained from the National Death Index.	Age, sex, race, and education, exercise, smoking, and alcohol consumption.
All-cause			

First author (year)	Outcome	Outcome measurement	Adjustment
mortality			
Guallar-Castillón (2012)	All-cause mortality	NR	Age, sex, centre, energy intake, ethanol consumption, educational level, smoking, physical activity at work, physical activity at home, physical activity in leisure time, diabetes mellitus, hyperlipidaemia, cancer, oral contraceptives, menopause, hormone replacement therapy, and consumption of fruit , nuts, and dairy products, and non-fried foods: vegetables, meat, and fish, BMI, waist circumference , and hypertension.
Villegas (2015)	All-cause mortality	Deaths were ascertained through the Social Security Administration, and the National Death Index provided cause of death information through 2011	Age, total caloric intake, BMI, sex, race, smoking history, income, education, chronic disease at baseline (i.e., prior history of diabetes, myocardial infarction, heart attack or coronary artery by-pass surgery, or stroke), physical activity level, total meat intake, and regular alcohol consumption.
Nahab (2016)	All-cause mortality	Deaths were ascertained through the participants' next of kin, reviewing medical records and death certificates, and from searching online databases such as the National Death Index and the Social Security Death Index.	Age, race, sex, region, income and education, physical activity, smoking status, Mediterranean diet score, aspirin use and total energy intake, hypertensive medication use, diabetes status, SBP, BMI and dyslipidaemia.
Veronese (2017)	All-cause mortality	Deaths were ascertained through autopsy report, coroner's report, death certificate, medical records, National Death Index, obituary, or Social Security Death Index	Age, sex, race/ethnicity, BMI, education, smoking habits, yearly income, Physical Activity Scale for Elderly score, Charlson comorbidity index, daily energy intake, alcohol consumption, adherence to a Mediterranean diet, and Center for Epidemiologic Studies-Depression scale.
Sun (2019)	All-cause mortality	Deaths were ascertained through reviewing death certificates, medical records, autopsy reports, and by linkage to the national death index	Age, race/ethnicity, education, annual income, whether they were from the observational study or the clinical trial, unopposed estrogen use, estrogen+ progesterone use, smoking status, physical activity, coffee intake, total energy intake, diet quality score, baseline diabetes status, baseline cardiovascular status, and baseline cancer status, BMI.

First author (year)	Outcome	Outcome measurement	Adjustment
Hashemian (2019)	All-cause mortality	Vital status and cause-specific mortality were ascertained through probabilistic matching to the National Death Index Plus.	Age, sex, use or non-use of pipes or cigars, the number of cigarettes smoked per day, time of smoking cessation, alcohol drinking, ethnicity, BMI, education, physical activity, self-report history of diabetes, calories, red meat intake, white meat intake, whole grain intake, fruit intake, and vegetable intake.

Abbreviation: BMI, body mass index; CAD, coronary artery disease; CVD, cardiovascular disease; MI, myocardial infarction; IHD, ischemic heart disease, SBP, systolic blood pressure; NR, not reported.

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Supplemental Table 3a. Assessment of quality of included cohort studies.

First author (year)	Study Selection				Comparability of cohorts		Outcome			Total
	a	b	c	d	e	f	g	h	i	
Cardiovascular disease events										
Mozaffarian (2003)	0	1	1	1	1	1	1	1	0	7
Mozaffarian (2005)	0	1	1	1	1	1	1	1	0	7
Mozaffarian (2005)	0	1	1	1	1	1	1	1	0	7
Belin (2011)	0	1	0	1	1	1	1	1	0	6
Guallar-Castillón (2012)	1	1	1	1	1	1	1	1	0	8
Cahill (2014)	0	1	0	1	1	1	1	1	0	6
Cahill (2014)	0	1	0	1	1	1	1	1	0	6
Djousse (2015)	0	1	0	1	1	1	0	1	0	5
Nahab (2016)	0	1	0	1	1	1	1	1	0	6
Larsson (2016)	1	1	0	1	1	1	1	1	0	7
Sun (2019)	0	1	0	1	1	1	1	1	0	6
Honerlaw (2020)	0	1	0	1	1	1	1	0	0	5
All-cause mortality										
Guallar-Castillón (2012)	1	1	1	1	1	1	1	1	0	8
Villegas (2015)	1	1	1	1	1	1	1	1	0	8
Nahab (2016)	1	1	1	1	1	1	1	1	0	8
Veronese (2017)	0	0	1	1	1	1	1	1	0	6
Sun (2019)	0	1	0	1	1	1	1	1	0	6
Hashemian (2019)	1	1	0	1	1	1	1	1	0	7

a. Representativeness of the exposed cohort;

b. Selection of the non-exposed cohort;

c. Ascertainment of exposure;

d. Demonstration that outcome of interest was not present at start of study;

e. Comparability of cohorts on the basis of the design or analysis (adjusted for the most important factor);

f. Comparability of cohorts on the basis of the design or analysis (adjusted for a second important factor);

g. Assessment of outcome;

h. Was follow-up long enough for outcomes to occur;

i. Adequacy of follow-up of cohorts.

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Supplemental Table 3b. Assessment of quality of included case–control studies.

First author (year)	Study Selection				Comparability of cohorts		Exposure			Total
	a	b	c	d	e	f	g	h	i	
Cardiovascular disease events										
Hamideh (2007)	1	1	1	1	1	1	0	1	0	7
Iqbal (2008)	1	1	1	1	1	1	0	1	0	7
Hu (2018)	1	1	1	1	1	1	1	1	0	8
Durga (2019)	1	1	0	0	1	1	1	1	0	6
Zhao (2019)	0	1	0	0	1	1	1	1	0	5

a. Adequate definition of case;

b. Representativeness of the cases;

c. Selection of Controls;

d. Definition of Controls;

e. Comparability of cohorts on the basis of the design or analysis (adjusted for the most important factor);

f. Comparability of cohorts on the basis of the design or analysis (adjusted for a second important factor);

g. Ascertainment of exposure;

h. Same method of ascertainment for cases and controls;

i. Non-Response rate.

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Supplemental Table 4. Subgroup analyses of major cardiovascular events per one additional serving/week increase in fried-food intake.

Subgroups	Major cardiovascular events				
	No. of studies	RR (95% CI)	I^2 %	P^1	P^2
All	13	1.03 (1.01-1.04)	75.6	<0.001	
Study design					0.596
Cohort	12	1.03 (1.01-1.04)	77.4	<0.001	
Case–control	1	1.02 (1.00-1.04)	-	-	
Type of fried food					**0.001**
Total fried food	7	1.02 (1.01-1.03)	57.8	0.027	
Fried fish	5	1.24 (1.16-1.33)	0	0.921	
Other	1	1.00 (0.99-1.02)	-	-	
Region					0.260
America	11	1.04 (1.02-1.06)	78.0	<0.001	
Europe	2	1.00 (0.99-1.01)	0	0.983	
Sex					0.873
Men & women	8	1.02 (1.00-1.04)	72.2	0.001	
Men	2	1.04 (0.99-1.10)	84.3	0.012	
Women	3	1.03 (0.99-1.07)	85.3	0.001	
Age (years)					0.303
<60	5	1.03 (1.01-1.04)	32.0	0.208	
≥60	8	1.04 (1.01-1.07)	83.7	<0.001	
No. of cases					0.122
<1000	6	1.12 (1.04-1.21)	88.3	<0.001	
≥1000	7	1.01 (1.00-1.03)	65.5	0.008	
Follow-up years					0.699
<10	4	1.07 (1.01-1.14)	79.0	0.003	
≥10	8	1.02 (1.00-1.04)	77.0	<0.001	
NA	1	1.02 (1.00-1.04)	92.1	<0.001	
Study quality score					0.829
<7	7	1.03 (1.01-1.05)	78.7	<0.001	
≥7	6	1.03 (1.00-1.06)	75.3	0.001	
Exposure assessment					0.275
Self-administered	7	1.02 (1.01-1.03)	77.0	<0.001	
Interview	6	1.07 (1.02-1.13)	78.0	<0.001	

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BMI					0.517
Adjusted	10	1.02 (1.01-1.04)	76.5	<0.001	
Not adjusted	3	1.03 (1.01-1.06)	73.1	0.024	
Energy intake					0.730
Adjusted	9	1.03 (1.01-1.04)	75.6	<0.001	
Not adjusted	4	1.03 (1.00-1.07)	81.5	0.001	
Physical activity					0.335
Adjusted	12	1.02 (1.01-1.04)	75.9	<0.001	
Not adjusted	1	1.19 (1.01-1.40)	-	-	

NR, not reported. BMI, body mass index; RR, relative risk; CI, confidence interval.

***P*[1]**: P value for heterogeneity within each subgroup.

***P*[2]**: P value for heterogeneity between subgroups with meta-regression analysis

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Supplemental Table 5. Subgroup analyses of coronary heart disease for the highest versus lowest category and per one additional serving/week of fried-food intake.

Subgroups	Highest versus lowest					Per one serving/week				
	No. of studies	RR (95% CI)	I^2 %	P[1]	P[2]	No. of studies	RR (95% CI)	I^2 %	P[1]	P[2]
All	11	1.22 (1.07-1.40)	77.9	<0.001		7	1.02 (1.01-1.02)	0	0.726	
Study design					0.300					-
Prospective†	8	1.16 (1.05-1.29)	44.6	0.082		7	1.02 (1.01-1.02)	0	0.726	
Case-control	3	1.91 (1.05-3.47)	93.9	<0.001		0	-	-	-	
Type of fried food					0.486					
Total fried food	8	1.23 (1.04-1.45)	84.2	<0.001		5	1.02 (1.01-1.02)	0	0.734	
Fired fish	2	1.56 (1.12-2.17)	0	0.775		1	1.15 (0.91-1.46)	0	0.831	
Other	1	1.03 (0.88-1.19)	-	-		1	1.01 (0.99-1.03)	-	-	
Region					0.936					0.325
America	6	1.13 (1.05-1.22)	1.6	0.406		4	1.02 (1.01-1.03)	0	0.752	
Asia	2	9.31 (0.33-263.25)	95.7	<0.001		3	1.01 (1.00-1.02)	0	0.537	
Europe	2	1.04 (0.91-1.18)	0	0.750		0	-	-	-	
Other	1	1.13 (1.02-1.25)	-	-		0	-	-	-	
Sex					0.615					0.945
Men & women	9	1.28 (1.08-1.52)	81.8	<0.001		5	1.01 (1.01-1.02)	0	0.540	
Men	1	1.04 (0.88-1.22)	-	-		1	1.02 (1.00-1.04)	-	-	
Women	1	1.18 (0.93-1.48)	-	-		1	1.02 (1.00-1.04)	-	-	
Age (years)					0.727					0.870
<60	6	1.11 (1.04-1.20)	0	0.800		4	1.01 (1.00-1.03)	0	0.412	
≥60	4	1.24 (1.02-1.51)	70.6	0.017		3	1.02 (1.01-1.02)	0	0.694	
NR	1	54.6 (14.39-61.90)	-	-		0	-	-	-	
No. of cases					0.180					0.301
<1000	5	2.19 (1.20-3.96)	88.3	<0.001		2	1.02 (0.93-1.12)	26.3	0.244	
≥1000	6	1.11 (1.05-1.17)	0	0.801		5	1.02 (1.01-1.02)	0	0.918	
Follow-up years					0.206					0.476
<10	3	1.28 (1.01-1.62)	39.2	0.193		2	1.01 (1.00-1.02)	0	0.592	
≥10	4	1.06 (0.97-1.16)	0	0.784		4	1.02 (0.97-1.09)	0	0.458	
NA	4	1.82 (1.13-2.96)	92.1	<0.001		1	1.02 (1.00-1.04)	-	-	
Study quality score					0.633					0.194
<7	5	1.19 (1.04-1.37)	50.2	0.090		5	1.02 (1.01-1.03)	0	0.790	
≥7	6	1.29 (1.00-1.67)	86.5	<0.001		2	1.01 (0.99-1.02)	0	0.869	
Exposure assessment					0.544					0.570
Self-administered	6	1.17 (0.98-1.40)	85.7	<0.001		4	1.02 (1.01-1.02)	0	0.849	
Interview	5	1.32 (1.06-1.63)	51.5	0.083		3	1.01 (0.99-1.03)	18.8	0.292	
BMI					0.533					0.545
Adjusted	7	1.11 (1.03-1.19)	5.3	0.386		5	1.01 (1.00-1.02)	0	0.539	
Not adjusted	3	1.22 (1.00-1.50)	65.3	0.056		2	1.02 (1.01-1.03)	0	0.750	
NR	1	54.6 (4.30, 61.90)	-	-		0	-	-	-	
Energy intake					0.290					0.831
Adjusted	5	1.07 (0.98-1.17)	0	0.599		4	1.02 (1.01-1.03)	0	0.586	
Not adjusted	5	1.20 (1.06-1.36)	51.4	0.084		3	1.01 (1.01-1.02)	0	0.439	
NR	1	54.6 (4.30-61.90)	-	-		0	-	-	-	
Physical activity					**0.017**					0.626

Adjusted	8	1.11 (1.05-1.17)	0	0.816	6	1.02 (1.01-1.02)	0	0.644
Not adjusted	2	1.73 (1.30-2.29)	0	0.736	1	1.02 (1.00-1.04)	-	-
NR	1	54.6 (4.30-61.90)	-	-	0	-	-	-

NR, not reported. BMI, body mass index; RR, relative risk; CI, confidence interval.

P[1]: P value for heterogeneity within each subgroup.

P[2]: P value for heterogeneity between subgroups with meta-regression analysis.

†: Prospective studies included cohort and nested case–control studies.

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Supplemental Table 6. Subgroup analyses of stroke for the highest versus lowest category and per one additional serving/week of fried-food intake.

Subgroups	Highest versus lowest					Per one serving/week				
	No. of studies	RR (95% CI)	I^2 %	P^1	P^2	No. of studies	RR (95% CI)	I^2 %	P^1	P^2
All	4	1.37 (0.97-1.94)	80.7	0.001		3	1.13 (0.95-1.34)	74.6	0.020	
Study design					0.328					-
Cohort	3	1.21 (0.87-1.69)	77.3	0.012		3	1.13 (0.95-1.34)	74.6	0.020	
Case-control	1	2.01 (1.27-3.19)	-	-		0	-	-	-	
Type of fried food					0.766					
Total fried food	0	-	-	-		0	-	-	-	0.221`
Fired fish	2	1.39 (1.11-1.73)	0	0.342		2	1.24 (1.07-1.43)	0	0.627	
Other	2	1.33 (0.64-2.79)	89.3	0.002		1	1.01 (0.99-1.03)	-	-	
Region					0.628					0.221`
America	2	1.39 (1.11-1.73)	0	0.342		2	1.24 (1.07-1.43)	0	0.627	
Europe	1	0.94 (0.81-1.10)	-	-		1	1.01 (0.99-1.03)	-	-	
Asia	1	2.01 (1.27-3.19)	-	-		0	-	-	-	
Sex					-					-
Men & women	4	1.28 (1.08-1.52)	81.8	<0.001		3	1.13 (0.95-1.34)	74.6	0.020	
Men	0	-	-	-		0	-	-	-	
Women	0	-	-	-		0	-	-	-	
Age (years)					0.174					0.523
<60	2	1.94 (1.34-2.81)	0	0.811		1	1.32 (0.98-1.76)	-	-	
≥60	2	1.11 (0.79-1.55)	82.6	0.016		2	1.09 (0.91-1.29)	78.7	0.030	
No. of cases					0.165					0.221`
<1000	3	1.57 (1.18-2.07)	32.2	0.229		2	1.24 (1.07-1.43)	0	0.627	
≥1000	1	0.94 (0.81-1.10)	-	-		1	1.01 (0.99-1.03)	-	-	
Follow-up years					0.237					0.523
<10	1	1.83 (0.99-3.39)	-	-		1	1.32 (0.98-1.76)	-	-	
≥10	2	1.11 (0.79-1.55)	82.6	0.016		2	1.08 (0.91-1.29)	78.7	0.030	
NA	1	1.82 (1.13-2.96)	-	-		-	-	-	-	
Study quality score					0.174					0.523
<7	2	1.94 (1.34-2.81)	0	0.811		1	1.32 (0.98-1.76)	-	-	
≥7	2	1.11 (0.79-1.55)	82.6	0.016		2	1.08 (0.91-1.29)	78.7	0.030	
Exposure assessment					0.165					0.221`
Self-administered	1	0.94 (0.81-1.10)	-	-		1	1.01 (0.99-1.03)	-	-	
Interview	3	1.57 (1.18-2.07)	32.2	0.229		2	1.24 (1.07-1.43)	0	0.627	
BMI					0.328					-
Adjusted	3	1.21 (0.87-1.69)	77.3	0.012		3	1.13 (0.95-1.34)	74.6	0.020	
Not adjusted	1	2.01 (1.27-3.19)	-	-		0	-	-	-	
Energy intake					0.328					-
Adjusted	3	1.21 (0.87-1.69)	77.3	0.012		3	1.13 (0.95-1.34)	74.6	0.020	
Not adjusted	1	2.01 (1.27-3.19)	-	-		0	-	-	-	
Physical activity					0.328					-
Adjusted	3	1.21 (0.87-1.69)	77.3	0.012		3	1.13 (0.95-1.34)	74.6	0.020	
Not adjusted	1	2.01 (1.27-3.19)	-	-		0	-	-	-	

NR, not reported. BMI, body mass index; RR, relative risk; CI, confidence interval.

P^1: P value for heterogeneity within each subgroup.

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$P^{2:}$ P value for heterogeneity between subgroups with meta-regression analysis.

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Supplemental Table 7. Subgroup analyses of heart failure for the highest versus lowest category and per one additional serving/week of fried-food intake.

Subgroups	Highest versus lowest					Per one serving/week				
	No. of studies	RR (95% CI)	I^2 %	P^1	P^2	No. of studies	RR (95% CI)	I^2 %	P^1	P^2
All	4	1.37 (1.07-1.75)	80.0	0.002		4	1.12 (1.01-1.23)	91.6	<0.001	
Study design					-					-
Cohort	4	1.37 (1.07-1.75)	80.0	0.002		4	1.12 (1.01-1.23)	91.6	<0.001	
Case-control	0	-	-	-		0	-	-	-	
Type of fried food					0.660					0.035
Total fried food	1	2.03 (1.37-3.02)	-	-		1	1.08 (1.04-1.12)	-	-	
Fired fish	2	1.40 (1.22-1.61)	0	0.528		2	1.27 (1.15-1.41)	0	0.598	
Other	1	1.01 (0.85-1.19)	-	-		1	0.99 (0.96-1.01)	-	-	
Region					0.143					0.247
America	3	1.50 (1.25-1.80)	40.8	0.185		3	1.19 (1.04-1.36)	79.5	0.008	
Europe	1	1.01 (0.85-1.19)	-	-		1	0.99 (0.96-1.01)	-	-	
Sex					0.454					0.444
Men & women	2	1.16 (0.88-1.55)	81.8	<0.001		2	1.10 (0.87-1.38)	91.7	0.001	
Men	1	2.03 (1.37-3.02)	-	-		1	1.08 (1.04-1.12)	-	-	
Women	1	1.48 (1.19-1.84)	-	-		1	1.31 (1.13-1.53)	-	-	
Age (years)					-					-
<60	4	1.37 (1.07-1.75)	80.0	0.002		0	-	-	-	
≥60	0	-	-	-		4	1.12 (1.01-1.23)	91.6	<0.001	
No. of cases					0.430					0.875
<1000	2	1.59 (1.08-2.36)	70.2	0.067		2	1.14 (0.99-1.31)	76.6	0.039	
≥1000	2	1.21 (0.83-1.77)	86.6	0.006		2	1.13 (0.85-1.49)	92.8	<0.001	
Follow-up years					0.242					0.727
<10	1	2.03 (1.37-3.02)	-	-		1	1.08 (1.04-1.12)	-	-	
≥10	3	1.25 (0.99-1.58)	82.6	0.016		3	1.16 (0.94-1.43)	92.0	<0.001	
NA						0	-	-	-	
Study quality score					0.237					0.686
<7	2	1.66 (1.23-2.23)	46.9	0.170		2	1.17 (0.97-1.42)	83.9	0.013	
≥7	2	1.16 (0.88-1.55)	81.0	0.022		2	1.10 (0.87-1.38)	91.7	0.001	
Exposure assessment					0.928					0.546
Self-administered	1	0.94 (0.81-1.10)	-	-		3	1.09 (0.98-1.20)	0	0.998	
Interview	3	1.57 (1.18-2.07)	32.2	0.229		1	1.25 (1.09-1.42)	-	-	
BMI					0.242					0.727
Adjusted	3	1.21 (0.87-1.69)	77.3	0.012		3	1.16 (0.94-1.43)	0	0.998	
Not adjusted	1	2.01 (1.27-3.19)	-	-		1	1.08 (1.04-1.12)	-	-	
Energy intake					0.842					0.322
Adjusted	3	1.34 (0.97-1.86)	77.3	0.012		3	1.08 (0.98-1.18)	91.7	<0.001	
Not adjusted	1	1.48 (1.19-1.84)	-	-		1	1.31 (1.13-1.53)	-	-	
Physical activity					-					-
Adjusted	4	1.37 (1.07-1.75)	80.0	0.002		4	1.12 (1.01-1.23)	91.6	<0.001	
Not adjusted	0	-	-	-		0	-	-	-	

NR, not reported. BMI, body mass index; RR, relative risk; CI, confidence interval.

P^1: P value for heterogeneity within each subgroup.

P^2: P value for heterogeneity between subgroups with meta-regression analysis.

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Supplemental Table 8. Subgroup analyses of cardiovascular mortality for the highest versus lowest category and per one additional serving/week of fried-food intake.

Subgroups	Highest versus lowest					Per one serving/week				
	No. of studies	RR (95% CI)	I^2 %	P^1	P^2	No. of studies	RR (95% CI)	I^2 %	P^1	P^2
All	3	1.03 (0.93-1.14)	27.3	0.253		3	1.00 (0.99-1.01)	0	0.517	
Study design					-					-
Cohort	3	1.03 (0.93-1.14)	27.3	0.253		3	1.00 (0.99-1.01)	0	0.517	
Case-control	0	-	-	-		0	-	-	-	
Type of fried food					0.355					0.717
Total fried food	1	0.99 (0.91-1.07)	-	-		1	1.00 (0.99-1.02)	-	-	`
Fired fish	1	0.74 (0.35-1.55)	-	-		1	0.83 (0.60-1.15)	-	-	
Fried potato	1	1.12 (0.97-1.29)	-	-		1	1.01 (0.98-1.02)	-	-	
Region					0.380					0.840
America	2	0.99 (0.91-1.07)	0	0.446		2	0.98 (0.87-1.11)	24.1	0.251	
Europe	1	1.12 (0.97-1.29)	-	-		1	1.00 (0.99-1.02)	-	-	
Sex					0.692					0.840
Men & women	2	1.08 (0.86-1.35)	11.5	0.288		2	0.98 (0.87-1.11)	24.1	0.251	
Men	0	-	-	-		0	-	-	-	
Women	1	0.99 (0.91-1.07)	-	-		1	1.00 (0.99-1.02)	-	-	
Age (years)					0.692					0.840
<60	2	1.08 (0.86-1.35)	11.5	0.288		2	0.98 (0.87-1.11)	24.1	0.251	
≥60	1	0.99 (0.91-1.07)	-	-		1	1.00 (0.99-1.02)	-	-	
No. of cases					0.546					0.456`
<1000	1	0.74 (0.35-1.56)	-	-		1	0.83 (0.60-1.15)	-	-	
≥1000	2	1.04 (0.92-1.16)	51.1	0.153		2	1.00 (0.99-1.01)	0	0.998	
Follow-up years					0.546					0.456
<10	1	0.74 (0.35-1.56)	-	-		1	0.83 (0.60-1.15)	-	-	
≥10	2	1.04 (0.92-1.16)	51.1	0.153		2	1.00 (0.99-1.02)	0	0.998	
NA						0	-	-	-	
Study quality score					0.380					0.840
<7	2	0.99 (0.91-1.07)	0	0.446		2	0.98 (0.87-1.11)	24.1	0.251	
≥7	1	1.12 (0.97-1.29)	-	-		1	1.00 (0.99-1.02)	-	-	
Exposure assessment					0.546					0.456
Self-administered	2	1.04 (0.92-1.16)	82.6	0.016		2	1.00 (0.99-1.01)	0	0.998	
Interview	1	0.74 (0.35-1.56)	-	-		1	0.83 (0.60-1.15)	-	-	
BMI					-					-
Adjusted	3	1.03 (0.93-1.14)	27.3	0.253		3	1.00 (0.99-1.01)	0	0.517	
Not adjusted	0	-	-	-		0	-	-	-	
Energy intake					-					-
Adjusted	3	1.03 (0.93-1.14)	27.3	0.253		3	1.00 (0.99-1.01)	0	0.517	
Not adjusted	0	-	-	-		0	-	-	-	
Physical activity					-					-
Adjusted	3	1.03 (0.93-1.14)	27.3	0.253		3	1.00 (0.99-1.01)	0	0.517	
Not adjusted	0	-	-	-		0	-	-	-	

NR, not reported. BMI, body mass index; RR, relative risk; CI, confidence interval.

P^1: P value for heterogeneity within each subgroup.

P^2: P value for heterogeneity between subgroups with meta-regression analysis.

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Supplemental Table 9. Subgroup analyses of all-cause mortality per one additional serving/week increase in fried-food intake.

Subgroups	All-cause mortality				
	No. of studies	RR (95% CI)	I^2 %	P^1	P^2
All	5	1.00 (0.97-1.02)	76.3	0.002	
Study design					-
Cohort	5	1.00 (0.97-1.02)	76.3	0.002	
Case-control	0	-	-	-	
Type of fried food					0.185
Total fried food	2	1.00 (0.99-1.01)	50.2	0.156	
Fired fish	2	0.97 (0.95-0.99)	0	0.517	
Other	1	1.34 (1.06-1.69)	-	-	
Region					0.918
America	4	1.00 (0.96-1.04)	18.6	0.296	
Europe	1	0.99 (0.98-1.01)	-	-	
Sex					0.605
Men & women	4	0.99 (0.96-1.03)	69.7	0.019	
Men	0	-	-	-	
Women	1	1.01 (1.00-1.01)	-	-	
Age (years)					0.111
<60	2	1.00 (0.98-1.01)	0	0.685	
≥60	2	1.13 (0.86-1.49)	82.5	0.017	
NR	1	0.97 (0.95-0.99)	-	-	
No. of cases					0.227
<1000	2	1.17 (0.91-1.50)	63.6	0.097	
≥1000	3	0.99 (0.98-1.01)	81.7	0.004	
Follow-up years					0.328
<10	3	1.07 (0.90-1.27)	73.6	0.023	
≥10	2	1.00 (0.99-1.01)	50.2	0.156	
Study quality score					0.416
<7	3	1.08 (0.93-1.25)	65.5	0.055	
≥7	2	0.98 (0.96-1.01)	68.2	0.076	
Exposure assessment					0.416
Self-administered	3	1.08 (0.93-1.25)	65.5	0.055	
Interview	2	0.98 (0.96-1.01)	51.5	0.083	
BMI					-

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Adjusted	5	1.00 (0.97-1.02)	76.3	0.002	
Not adjusted	0	-	-	-	
Energy intake					-
Adjusted	5	1.00 (0.97-1.02)	76.3	0.002	
Not adjusted	0	-	-	-	
Physical activity					-
Adjusted	5	1.00 (0.97-1.02)	76.3	0.002	
Not adjusted	0	-	-	-	

NR, not reported. BMI, body mass index; RR, relative risk; CI, confidence interval.

***P*[1]**: P value for heterogeneity within each subgroup.

***P*[2]:** P value for heterogeneity between subgroups with meta-regression analysis

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Supplemental Table 10. Sensitivity analyses of the association of fried-food intake (highest versus lowest category) and major cardiovascular disease events, coronary heart disease, stroke, heart failure, cardiovascular mortality and all-cause mortality.

Excluded study	RR	95% CI	
Major cardiovascular disease events			
Mozaffarian (2003)	1.27	1.14	1.42
Mozaffarian (2005)	1.28	1.14	1.43
Mozaffarian (2005)	1.28	1.14	1.44
Hamideh (2007)	1.23	1.12	1.34
Iqbal (2008)	1.31	1.16	1.48
Belin (2011)	1.27	1.14	1.42
Guallar-Castillón (2012)	1.30	1.16	1.46
Cahill (2014)	1.29	1.15	1.45
Cahill (2014)	1.31	1.17	1.47
Djousse (2015)	1.25	1.13	1.40
Nahab (2016)	1.27	1.14	1.42
Larsson (2016)	1.32	1.17	1.49
Hu (2018)	1.30	1.16	1.46
Sun (2019)	1.32	1.17	1.49
Durga (2019)	1.26	1.13	1.40
Zhao (2019)	1.26	1.13	1.41
Honerlaw (2020)	1.31	1.16	1.48
Coronary heart disease			
Mozaffarian (2003)	1.20	1.05	1.38
Hamideh (2007)	1.14	1.06	1.22
Iqbal (2008)	1.27	1.07	1.50
Guallar-Castillón (2012)	1.25	1.07	1.44
Cahill (2014)	1.24	1.06	1.44
Cahill (2014)	1.26	1.08	1.47
Nahab (2016)	1.21	1.05	1.40
Larsson (2016)	1.27	1.08	1.48
Hu (2018)	1.25	1.08	1.45
Zhao (2019)	1.18	1.03	1.35
Honerlaw (2020)	1.26	1.07	1.50
Stroke			
Mozaffarian (2005)	1.45	0.81	2.58
Nahab (2016)	1.29	0.89	1.88
Larsson (2016)	1.57	1.18	2.07
Durga (2019)	1.21	0.87	1.69
Heart failure			
Mozaffarian (2005)	1.40	0.96	2.04
Belin (2011)	1.34	0.97	1.86
Djousse (2015)	1.25	0.99	1.58
Larsson (2016)	1.50	1.25	1.80
Cardiovascular mortality			
Nahab (2016)	1.04	0.92	1.16
Larsson (2016)	0.99	0.91	1.07

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Sun (2019)	1.08	0.86	1.35
All-cause mortality			
Guallar-Castillón (2012)	1.05	0.97	1.14
Villegas (2015)	1.05	0.96	1.15
Nahab (2016)	1.03	0.95	1.12
Veronese (2017)	1.04	0.99	1.09
Sun (2019)	1.02	0.91	1.14
Hashemian (2019)	1.03	0.93	1.15

RR, relative risk; CI, confidence interval

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Supplemental Table 11. Sensitivity analyses of the association of per one serving/week fried-food intake and major cardiovascular disease events, coronary heart disease, stroke, heart failure, cardiovascular mortality and all-cause mortality.

Excluded study	RR	95% CI	
Major cardiovascular disease events			
Mozaffarian (2003)	1.02	1.01	1.04
Mozaffarian (2005)	1.02	1.01	1.03
Mozaffarian (2005)	1.02	1.01	1.04
Belin (2011)	1.02	1.01	1.03
Guallar-Castillón (2012)	1.03	1.01	1.05
Cahill (2014)	1.03	1.01	1.04
Cahill (2014)	1.03	1.01	1.04
Djousse (2015)	1.02	1.01	1.03
Nahab (2016)	1.02	1.01	1.04
Larsson (2016)	1.03	1.01	1.05
Sun (2019)	1.03	1.01	1.04
Hu (2020)	1.03	1.01	1.05
Honerlaw (2020)	1.03	1.01	1.05
Coronary heart disease			
Guallar-Castillón (2012)	1.02	1.01	1.02
Cahill (2014)	1.01	1.01	1.02
Cahill (2014)	1.01	1.01	1.02
Nahab (2016)	1.01	1.01	1.02
Larsson (2016)	1.02	1.01	1.02
Hu (2020)	1.01	1.01	1.02
Honerlaw (2020)	1.01	1.01	1.02
Stroke			
Mozaffarian (2005)	1.11	0.86	1.42
Nahab (2016)	1.08	0.91	1.29
Larsson (2016)	1.24	1.07	1.43
Heart failure			
Mozaffarian (2005)	1.08	0.98	1.20
Belin (2011)	1.08	0.98	1.18
Djousse (2015)	1.16	0.94	1.43
Larsson (2016)	1.19	1.04	1.36
Cardiovascular mortality			
Nahab (2016)	1.00	0.99	1.01
Larsson (2016)	0.98	0.87	1.11
Sun (2019)	0.98	0.87	1.11
All-cause mortality			
Guallar-Castillón (2012)	1.00	0.96	1.04
Villegas (2015)	1.00	0.98	1.02
Nahab (2016)	1.00	0.97	1.02
Veronese (2017)	0.99	0.98	1.01
Sun (2019)	0.99	0.96	1.03

RR, relative risk; CI, confidence interval

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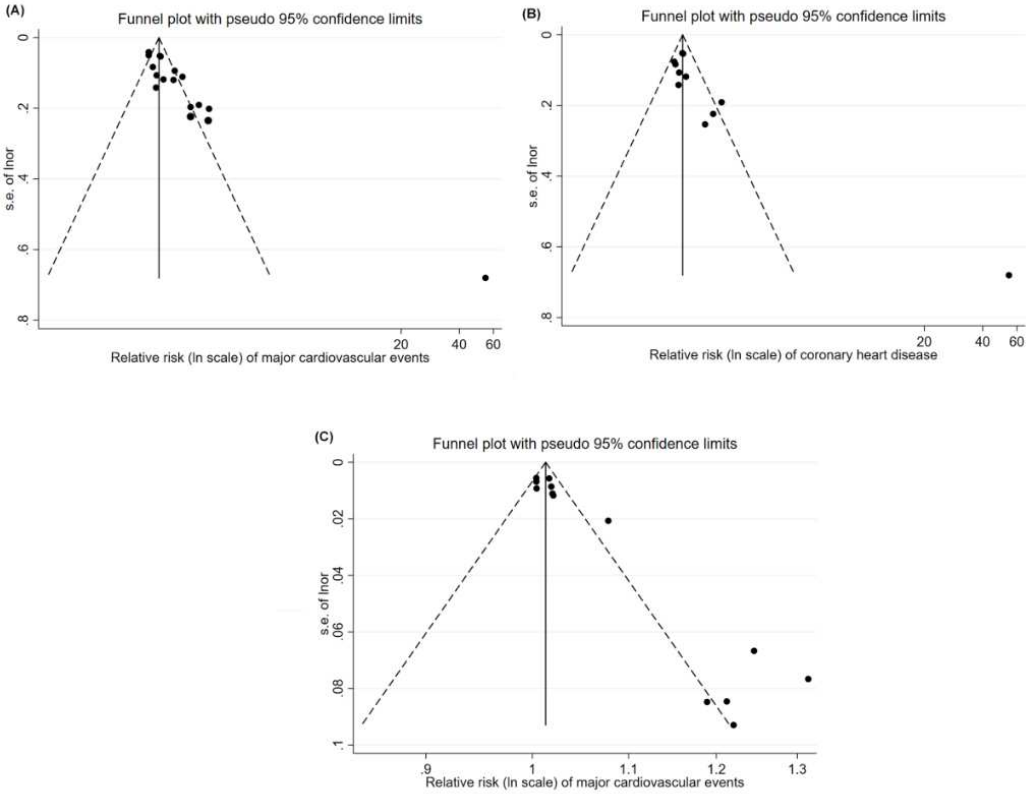
Supplemental Figures



Supplemental Figure 1. Funnel plots (⩾ 10 studies) for detection of publication bias of included studies.

A, studies for major cardiovascular events in the highest versus lowest analysis; B, studies for coronary heart disease in the highest versus lowest analysis;; C, studies for major cardiovascular events in the dose-response analysis

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