Electronic Supplementary Material 1

Title: Dietary inflammatory index significantly increases the risk of central obesity in adults: An updated systematic review and meta-analysis

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Running head: Dietary inflammatory index, obesity

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Table E1. PRISMA checklist for the current meta-analysis *

Section/topic	#	Checklist item	Reported on page #
TITLE			
Title	1	Identify the report as a systematic review, meta-analysis, or both.	Page:1
ABSTRACT			
Structured summary	2	Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number.	Page: 2
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known.	Page: 2,3
Objectives	4	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).	Page: 4, line: 81-82
METHODS			
Protocol and registration	5	Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number.	Page: 1
Eligibility criteria	6	Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.	Page:4, 5 lines: 92-113
Information sources	7	Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched.	Page: 4, 100-104
Search	8	Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated.	Page: 4; lines: 84-91
Study selection	9	State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).	Page: 6; lines 140-146
Data collection process	10	Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.	Page: 5 lines 117-125
Data items	11	List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made.	Page: 5 lines 117-125

Risk of bias in individual studies	12	Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis.	Page: 5, lines: 113-117
Summary measures	13	State the principal summary measures (e.g., risk ratio, difference in means).	Page: 5, 6 lines: 123-137
Synthesis of results	14	Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., I^2) for each meta-analysis.	Page: 5, 6 lines: 123-137
Risk of bias across studies	15	Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies).	Page: 5, 6 lines: 123-137
Additional analyses	16	Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified.	Page: 5, 6 lines: 123-137
RESULTS			
Study selection	17	Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram.	Page: 6 lines: 139-148
Study characteristics	18	For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations.	Page:6, 7; lines: 149-175.
Risk of bias within studies	19	Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12).	Page: 7-10; lines: 176-249
Results of individual studies	20	For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence intervals, ideally with a forest plot.	Page: 7-10; lines: 176-249
Synthesis of results	21	Present results of each meta-analysis done, including confidence intervals and measures of consistency.	Page: 7-10; lines: 176-249
Risk of bias across studies	22	Present results of any assessment of risk of bias across studies (see Item 15).	Page: 7-10; lines: 176-249
Additional analysis	23	Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16]).	Page: 7-10; lines: 176-

			249
DISCUSSION			
Summary of evidence	24	Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers).	Page:10-12
Limitations	25	Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias).	Page:12; lines: 291-299
Conclusions	26	Provide a general interpretation of the results in the context of other evidence, and implications for future research.	Page: 12; lines: 299-302
FUNDING			
Funding	27	Describe sources of funding for the systematic review and other support (e.g., supply of data); role of funders for the systematic review.	Page:12 line: 307

*Moher D, Liberati A, Tetzlaff J, Altman DG. The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. PLoS Med 6 (7): e1000097.

Table E2. Search strategy and number of publications in each electronic database

Data base	**Search strategy**
PubMed	(obesity[MeSH Terms]) OR body mass index[MeSH Terms]) OR BMI[Title/Abstract]) OR waist circumference[Title/Abstract]) OR waist to hip ratio[Title/Abstract]) OR weight[MeSH Terms]) OR adiposity[Title/Abstract]) OR cholesterol[MeSH Terms]) OR LDL, cholesterol[MeSH Terms]) OR HDL, cholesterol[MeSH Terms]) OR VLDL, cholesterol[MeSH Terms]) OR triglycerides[MeSH Terms]) OR triglyceride [Title/Abstract]) OR TG[Title/Abstract]) OR TC[Title/Abstract]) OR VLDL[Title/Abstract]) OR HDL[Title/Abstract] OR LDL [Title/Abstract]) AND dietary inflammatory index[Title/Abstract]) OR dietray inflammatory potential[Title/Abstract]) OR DII[Title/Abstract]) OR DIP [Title/Abstract]).

Table E3. The PICO criteria used for the present systematic review

PICO criteria	**Description**
Participants	General adult population
Exposure (Interventions)	Highest category of dietary inflammatory index by higher scores of DII®
Comparisons	Lowest category of dietary inflammatory index by lower scores of DII®
Outcome	Higher central obesity
Study design	Observational studies with the design of cross-sectional, case control or cohort

Table E4. Results of subgroup analyses of the association between OR's of WC and DII according to study and participants' characteristics

Group	No. of studies	OR (95% CI)	P $_{within\ group}$	P $_{between\ group}$	P $_{heterogeneity}$	I^2, %
Total	10	1.162 (0.95-1.43)	0.154		0.001	68.1
Continent						
USA	2	0.999 (0.788, 1.267)	0.996	0.004	0.094	49.5
Asia	6	0.983 (0.817, 1.183)	0.857		0.268	22.1
Europe	2	2.531 (1.715, 3.735)	<0.001		0.336	0.0
Country						
Luxembourg	1	1.120 (0.807, 1.554)	0.498	<0.001	-	-
China	1	0.930 (0.813, 1.064)	0.290		-	-
Iran	2	0.699 (0.365, 1.338)	0.279		0.374	0
Korea	1	1.217 (0.929, 1.592)	0.154		0.40	0
Lebanon	1	0.660 (0.292, 1.491)	0.318		-	-
USA	2	0.975 (0.723, 1.314)	0.866		0.078	56.1
Spain	2	2.531 (1.715, 3.735)	<0.001		0.336	0
Dietary assessment						
FFQ	8	1.098 (0.811, 1.487)	0.546	0.028	0.001	72.9
24h-Recall	2	1.050 (0.838, 1.315)	0.672		0.152	46.9
Sample size						
1500 >	4	1.030 (0.77, 1.376)	0.840	0.432	0.214	29.5
1500 <	5	1.168 (0.886, 1.539)	0.27		<0.001	80.2
Gender						
Male	2	1.334 (0.972, 1.831)	0.074	0.003	0.326	10.8
Female	2	1.473 (0.785, 2.764)	0.228		<0.001	87.8
Both gender	6	0.910 (0.817, 1.014)	0.088		0.571	0

Table E5. Results of subgroup analyses of the association between mean of WC in different DII categories according to study and participants' characteristics

Group	No. of studies	WMD (95% CI)	$P_{within\ group}$	$P_{between\ group}$	$P_{heterogeneity}$	I^2, %
Total	22	1.813 (0.785, 2.841)	0.001		<0.001	98.2
Country				<0.001		
Australia	1	2.60 (-4.753, 9.953)	0.488		0	0
Colombia	1	2.40 (-3.470, 8.270)	0.42		0	0
Indonesia	1	-0.80 (-3.582, 1.982)	0.57		0.095	64
South Africa	1	-4.10 (-7.807, -0.393)	0.03		0	0
China	1	4.40 (4.390, 4.410)	<0.001		0	0
Ireland	1	2.84 (2.804, 2.876)	<0.001		0	0
Spain	1	2.371 (1.537, 3.205)	<0.001		0.49	0
Pakistan	1	12.25 (10.904, 13.596)	<0.001		0	0
Iran	5	-1.895 (-5.959, 2.169)	0.36		0.1	63.1
Luxembourg	1	-2.50 (-2.587, -2.413)	<0.001		0	0
USA	5	0.759 (-1.970, 3.488)	0.58		<0.001	93.7
Turkey	1	-0.095 (-0.513, 0.323)	0.605		0	0
Sweden	1	0.188 (-0.266, 0.642)	0.416		0	0
Korea	1	1.157 (0.145, 2.169)	<0.001		0	0
Continent				<0.001		
USA	5	0.944 (-1.58, 3.47)	0.46		<0.001	91.7
Europa/Australia	8	1.019 (-2.17, 4.21)	0.53		<0.001	100
Asia	8	3.38 (-1.912, 8.67)	0.21		<0.001	98.1
Africa	1	-4.10 (-7.81, -0.39)	0.03		-	-
Dietary assessment				<0.001		
FFQ	12	0.60 (-0.933, 2.134)	<0.001		<0.001	100
24h-Recall	6	3.495 (-1.170, 8.160)	<0.001		<0.001	99.9
3 day food dairy	4	-0.20 (-6.402, 6.002)	0.95		-	-
Sample size				<0.001		
<1000	13	0.394 (-5.189, 5.977)	0.89		<0.001	98.5
1000-10000	7	1.352 (-0.15, 2.857)	0.078		<0.001	92.8
>15000	2	4.198 (3.576, 4.820)	<0.001		<0.001	57.7
Gender				<0.001		
Male	3	5.847 (-2.477, 14.171)	0.17		<0.001	98.2

Female	2	-0.505 (-7.053, 6.043)	0.88		0.001	91.4
Both gender	17	0.624 (-0.834, 2.082)	0.40		<0.001	100

Table E6. Results of subgroup analyses of the association between mean of WHR in different DII categories according to study and participants' characteristics.

Group	**No. of studies**	**WMD (95% CI)**	**P within group**	**P between group**	**P heterogeneity**	**I^2, %**
Total	9	-0.005 (-0.038, 0.027)	0.751		<0.001	86.9
Country				<0.001		
South Africa	1	0.000 (-0.029, 0.029)	1		-	-
Spain	2	0.010 (-0.002, 0.022)	0.098		<0.001	88.5
Pakistan	1	0.060 (0.040, 0.080)	<0.001		-	-
Iran	3	0.000 (-0.013, 0.013)	1		-	-
USA	2	0.020 (0.001, 0.039)	0.038		-	-
Continent				<0.001		
Africa	1	0.000 (-0.029, 0.029)	1		-	-
USA	1	0.020 (0.001, 0.039)	0.036		-	-
Europe	2	0.010 (-0.002, 0.022)	0.098		<0.001	88.5
Asia	5	0.029 (-0.029, 0.088)	0.32		<0.001	96
Dietary assessment				<0.001		
FFQ	6	0.007 (-0.002, 0.017)	0.006		0.004	87.9
24h-Recall	3	0.040 (0.001, 0.079)	<0.127		0.001	79.9
Sample size				0.115		
<1500	5	0.020 (-0.008, 0.048)	0.159		<0.001	88.7
>1500	4	0.010 (-0.002, 0.022)	0.098		<0.001	88.5
Gender				<0.001		
Male	2	0.034 (-0.015, 0.083)	0.172		<0.001	95.3
Female	2	0.015 (-0.002, 0.032)	0.081		0.183	43.6
Both gender	5	0.004 (-0.006, 0.013)	0.448		0.139	49.4

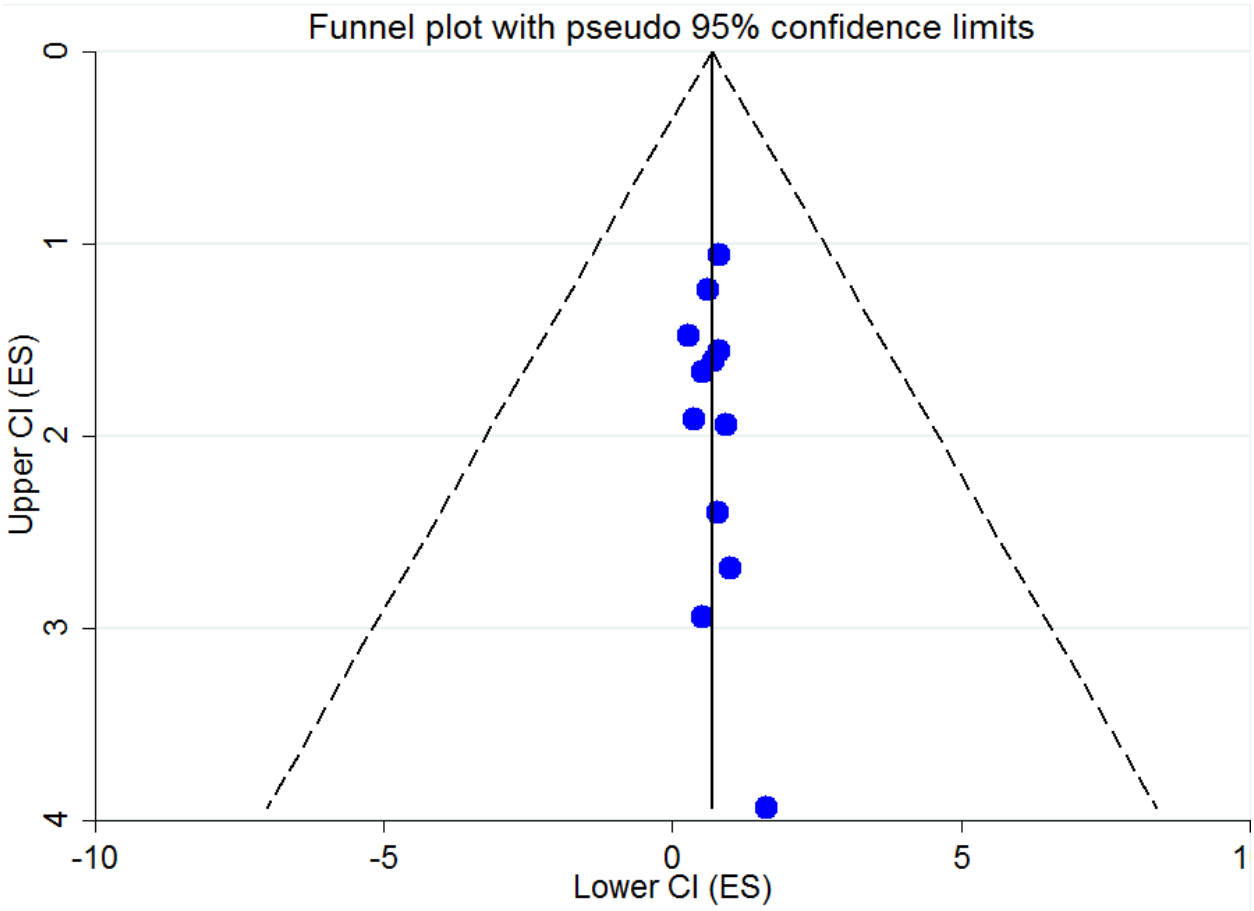

Figure E1. Begg's funnel plots (with pseudo 95% CIs) of the lower CI (ES) versus the upper CI (ES) of the OR for studies evaluating the association between WC and DII. (The results of eggers test did not show evidence of publication bias Egger's test P = 0.359)

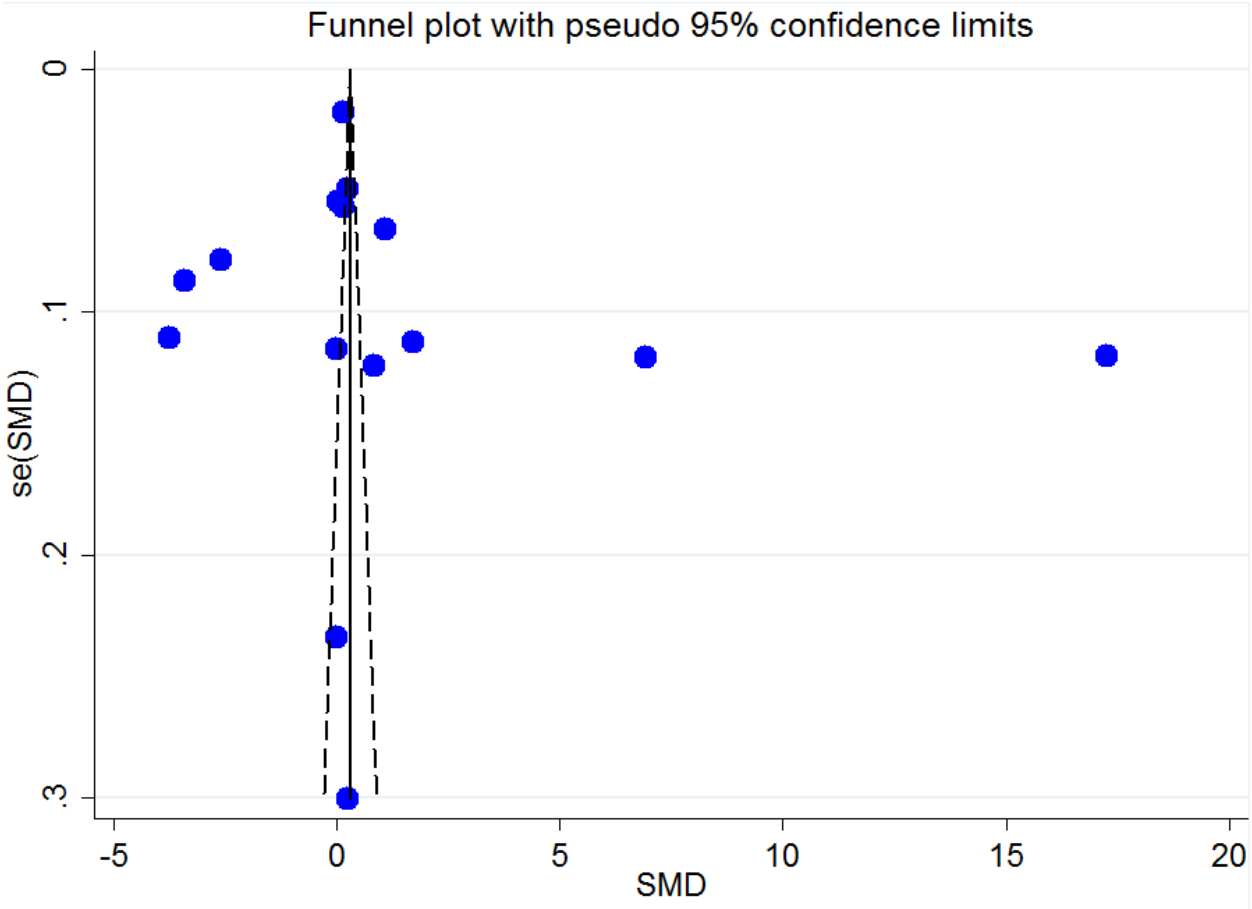

Figure E2. Begg's funnel plots (with pseudo 95% CIs) of the SMD versus the se (SMD) of the mean difference of WC for studies evaluating the association between WC and DII. (The results of eggers test did not show evidence of publication bias Egger's test P = 0.459).

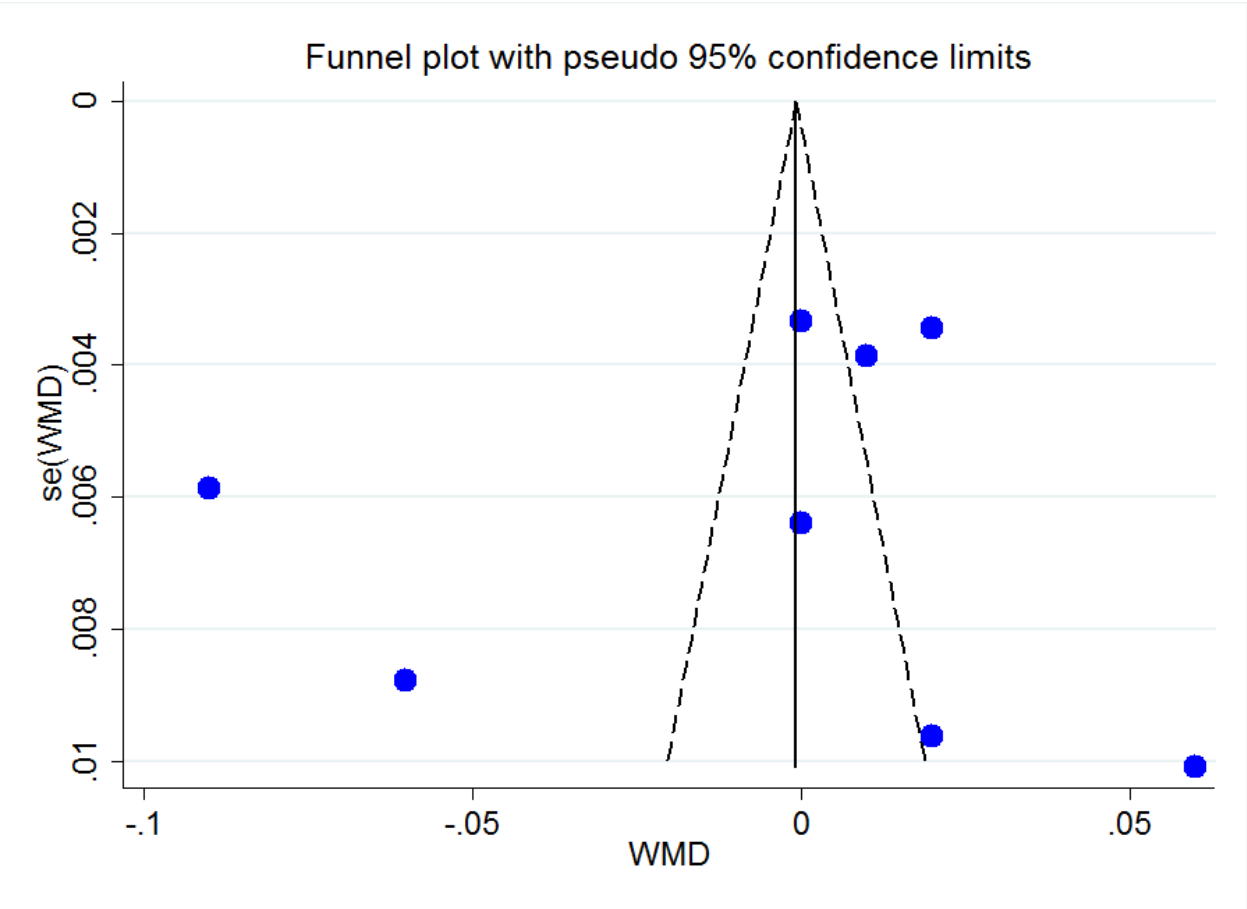

Figure E3. Begg's funnel plots (with pseudo 95% CIs) of the SMD versus the se (SMD) of the mean difference of WHR for studies evaluating the association between WHR and DII. (The results of eggers test did not show evidence of publication bias Egger's test P = 0. 593).