

## Supplementary appendix

This appendix formed part of the original submission and has been peer reviewed. We post it as supplied by the authors.

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## **Appendix:**

### Supplemental Methods

Supplemental Table 1. Sensitivity analyses of random effects pooled weighted mean difference (kg) for low-fat vs. comparator dietary interventions from randomized trials reporting at least 1 year of follow-up.

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**Supplemental Table 1. Sensitivity analyses of random effects pooled weighted mean difference (kg) for low-fat vs. comparator dietary interventions from randomized trials reporting at least 1 year of follow-up.**

		<b>N Comparisons</b>	<b>WMD (95% CI)</b>	<b>p-value</b>	<b>I<sup>2</sup> (p-value for heterogeneity)</b>
<b>Weight Loss Goal</b>					
	<i>Intention-to-Treat Analyses</i>	21	-0.17 (-1.09, 0.75)	0.71	73.9% (p<0.001)
	Low-Carbohydrate	12	1.29 (0.58, 2.01)	<0.001	16.5% (p=0.28)
	Other Higher Fat Intervention	10	-0.28 (-1.05, 0.49)	0.48	40.1% (p=0.09)
	Usual Diet	3	-5.78 (-9.03, -2.52)	0.00	69.9% (p=0.036)
	<i>≥100 Participants</i>	16	-0.09 (-1.14, 0.97)	0.870	78.1% (p<0.001)
	Low-Carbohydrate	9	1.44 (0.58, 2.29)	0.001	25.7% (p=0.22)
	Other Higher Fat Intervention	6	0.00 (-0.68, 0.68)	0.99	24.5% (p=0.25)
	Usual Diet	2	-7.46 (-9.78, -5.13)	<0.001	77.9% (p<0.001)
<b>No Weight Loss Goal</b>					
	<i>Intention-to-Treat Analyses</i>	2	0.47 (0.08, 0.86)	0.02	0.0% (p=0.64)
	Low-Carbohydrate	--	--	--	--
	Other Higher Fat Intervention	2	0.47 (0.08, 0.86)	0.02	0.0% (p=0.64)
	Usual Diet	--	--	--	--
	<i>≥100 Participants</i>	11	-0.90 (-1.73, -0.07)	0.033	80.9% (p<0.001)
	Low-Carbohydrate	--	--	--	--
	Other Higher Fat Intervention	5	0.42 (-0.07, 0.90)	0.090	16.1% (p=0.31)
	Usual Diet	6	-1.65 (-2.45, -0.85)	<0.001	45.9% (p=0.10)
<b>Weight Maintenance</b>					
	<i>Intention-to-Treat Analyses</i>	1	N/A	N/A	N/A
	Low-Carbohydrate	--	--	--	--
	Other Higher Fat Intervention	--	--	--	--
	Usual Diet	1	N/A	N/A	N/A

	<i>≥100 Participants</i>	3	-0.71 (-0.89, -0.53)	<0.001	0.0% (p=0.86)
	Low-Carbohydrate	--	--	--	--
	Other Higher Fat Intervention	2	-1.00 (-2.06, 0.06)	0.065	0.0% (p=1.00)
	Usual Diet	1	N/A	N/A	N/A

WMD=DerSimonian and Laird random effects weighted mean difference, in kg; Negative value favors low-fat dietary intervention;

Positive value favors higher fat comparator intervention

**Supplemental Table 2. Inverse variance weighted fixed effect weighted mean difference (kg) for low-fat vs. comparator dietary interventions from 53 randomized trials reporting at least 1 year of follow-up, by weight loss intention and other trial characteristics.**

		Fixed Effect WMD (95% CI)	p-value
<b>Weight Loss Goal</b>			
	All Comparisons	0.44 (0.12, 0.77)	0.008
	<i>Comparator Diet</i>		
	Low-Carbohydrate Intervention	1.18 (0.60, 1.77)	<0.001
	Other Higher Fat Intervention	0.92 (0.52, 1.31)	<0.001
	Usual Diet	-5.09 (-6.12, -4.06)	<0.001
	Similar Intervention Intensity	0.99 (0.65, 1.33)	<0.001
	<i>Comparator Diet</i>		
	Low-Carbohydrate	1.18 (0.60, 1.77)	<0.001
	Other Higher Fat Intervention	0.92 (0.52, 1.31)	<0.001
	Usual Diet	--	--
	<i>Caloric Restriction</i>		
	Both Interventions	1.17 (0.78, 1.56)	<0.001
	Neither Intervention	0.45 (-0.40, 1.30)	0.30
	Low-Fat Only	1.51 (0.60, 2.41)	0.001
	Comparator Only	-0.67 (-1.87, 0.52)	0.27
	<i>Chronic Disease Population</i>		
	No	1.21 (0.81, 1.61)	<0.001
	Yes	0.39 (-0.26, 1.05)	0.24
	<i>Difference in Fat Intake at Follow-up (% Calories)</i>		
	<5% Difference in Fat Intake	0.07 (-0.65, 0.80)	0.84
	≥5% Difference in Fat Intake	1.56 (1.14, 1.98)	<0.001
	<i>Difference in Triglycerides at Follow-up (mg/dL Change)</i>		
	<5 mg/dL Change Difference	-0.21 (-0.86, 0.43)	0.52
	≥5 mg/dL Greater Change in Low-Fat Group	2.06 (1.59, 2.52)	<0.001
<b>No Weight Loss Goal</b>			
	All Comparisons	-0.75 (-1.00, -0.49)	<0.001
	<i>Comparator Diet</i>		

	Low-Carbohydrate Intervention	--	--
	Other Higher Fat Intervention	0.39 (0.03, 0.76)	0.037
	Usual Diet	-1.78 (-2.13, -1.43)	<0.001
Weight Maintenance			
	All Comparisons	-0.70 (-0.88, -0.53)	<0.001
	<i>Comparator Diet</i>		
	Low-Carbohydrate Intervention	--	--
	Other Higher Fat Intervention	-0.95 (-2.00, 0.10)	0.076
	Usual Diet	-0.70 (-0.88, -0.52)	<0.001

WMD=Inverse variance weighted fixed effect weighted mean difference, in kg; Negative value favors low-fat dietary intervention; Positive value favors higher fat comparator intervention

Supplemental Table 4. Cochrane risk of bias assessment.

Trial Name	Random sequence generation (selection bias)	Allocation concealment (selection bias)	Blinding of participants and personnel (performance bias)	Blinding of outcome assessment (detection bias)	Incomplete outcome data (attrition bias)	Selective reporting (reporting bias)	Differential intervention intensity
A to Z	+	+	-	+	-	?	+
Anderson 1992	+	?	-	?	-	?	-
Barnard 2009	+	?	-	+	-	?	+
Bazzano 2014	+	?	-	+	-	?	+
Bertz 2012	+	?	-	?	-	?	-
Boyd 1990	?	?	-	?	-	?	-
Breast Cancer Prevention Program	+	?	-	?	-	?	-
Brehm 2009	?	?	-	?	-	?	+
BRIDGES	?	?	-	?	-	?	-
Brinkworth 2009	?	?	-	?	-	?	+
CALERIE Phase I	+	?	-	+	-	?	+
Canadian Diet and Breast Cancer Prevention Study	+	+	-	?	-	?	-
Dansinger 2005	+	+	-	+	-	?	+
Davis 2009	+	?	-	?	-	?	+
DEER	+	?	-	?	+	?	-
The Dietary Alternatives Study	?	?	-	?	?	+	+
DIRECT	+	?	-	+	-	?	+
Ebbeling 2007	+	+	-	+	-	?	+
Elhayany 2010	?	?	-	?	-	?	+
Esposito 2009	+	+	-	+	-	?	+

Foster 2003	+	?	-	?	-	?	+
Foster 2010	+	?	-	?	-	?	+
Guldbrand 2012	+	?	-	?	-	?	+
Harvey-Berino 1999	?	?	-	?	-	?	+
Iqbal 2010	+	?	-	?	-	?	+
Keogh 2007	?	?	-	?	-	?	+
Klemsdal 2010	?	?	-	-	-	?	+
Kristal 2005	+	?	-	?	-	?	-
Lapointe 2010	+	?	-	?	-	?	+
Lim 2010	?	?	-	?	-	?	-/+
McAuley 2006	+	+	-	?	-	?	+
McManus 2001	+	?	-	-	-	?	+
NEW Study	+	?	-	+	-	?	-
Nutrition and Breast Health Study	?	?	-	?	-	?	-/+
Pilkington 1960	?	?	-	?	?	?	+
Polyp Prevention Trial	+	+	-	?	-	+	-
Pounds Lost Trial	+	+	+	+	-	+	+
PREDIMED	+	?	-	+	-	+	-
PREMIER	+	+	-	+	-	+	+
Shah 1996	?	?	-	?	-	?	+
SMART Study	+	?	-	?	-	?	+
Stern 2004	+	?	-	?	-	?	+
Swinburn 2001	+	+	-	?	-	?	-
Tapsell 2004	?	?	-	?	-	?	+
Tehran Lipid and Glucose Study	+	?	-	+	-	?	+
Turner-McGrievy 2007	+	?	-	?	-	?	+
Viegener 1990	?	?	-	?	-	?	+
Women's Health Initiative Dietary Modification Trial	+	+	-	+	+	+	-
Women's Health Trial Vanguard Study	+	?	-	?	-	+	-
Women's Healthy Eating and Living (WHEL)	+	+	-	?	+	+	-
Women's Intervention Nutrition Study (WINS)	+	?	-	?	-	+	-
Women's Intervention Nutrition Study (WINS) Feasibility	+	+	-	?	-	?	-
Wood 1991	?	?	-	?	-	?	-

+ indicates low risk of bias; - indicates high risk of bias; ? indicates unclear risk of bias



Supplemental Figure 1. Egger plot for publication bias.

