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Supplemental 1 - Characteristics of the publications included in the meta-analysis

Table S1-1. Characteristics of the publications included in the meta-analysis (N3 fatty acids).

Article(first author, year)	Location	Study design	Health status	Gender	Intervention duration	Intervention substance	Comparison	Age, year	n (Ctrl, Inter)	Extracted outcome(s)
Abbott 2020(1)	Australia	R, DB	Healthy	M/F	12W	1g EPA	placebo	50.9±12.7	73(35,38)	HDL-C, LDL-C, TG, TC, FBG, Insulin
Agh 2017(2)	Iran	R, DB	Hypertension	M/F	8W	720mg EPA+480mg DHA	placebo	55±1.29	45(21,24)	SBP, DBP, HDL-C, LDL-C, TG, TC
Alkhedhairi 2022(3)	UK	R, DB	Healthy	M/F	6M	4g N3	placebo	70.9=5.2	90(45,45)	SBP, DBP, HDL-C, LDL-C, TG, TC, FBG, Insulin
Ansari 2017(4)	Iran	R	Diabetes	M/F	10W	3750mg N3	placebo	51.34±1.36	44(22,22)	SBP, DBP, FBG, Insulin, HbA1c
Bakker 2023(5)	Netherlands	R, DB	Obesity	F	4W	0.92g EPA+ 0.76g DHA	placebo	44=18	60(30,30)	FBG, Insulin
Barbosa 2017(6)	USA	R, DB	Hypertension	M/F	2M	N3	placebo	47.6±11	80(40,40)	SBP, DBP, HDL-C, LDL-C, TG, TC
Bischoff-Ferrari 2020(7)	Switzerland	R, DB	Healthy	M/F	5Y	1g N3	placebo	70±1	2157(1077,1080)	SBP, DBP
Cazzola(1) 2007(8)	Italy	R, DB	Healthy	M	12W	2.7g EPA	placebo	18-42	93(46,47)	HDL-C, LDL-C, TG, TC
Cazzola(2) 2007(8)	Italy	R, DB	Healthy	M	13W	4.05g EPA	placebo	53-70	62(31,31)	HDL-C, LDL-C, TG, TC
Cussons(1) 2009(9)	Australia	R, C	PCOS	F	8W	4g N3	placebo	32.7±7.7	25(13,12)	SBP, DBP, HDL-C, LDL-C, TG, TC
Cussons(2) 2009(9)	Australia	R, C	PCOS	F	8W	4g N3	placebo	32.7±7.7	25(13,12)	SBP, DBP, HDL-C, LDL-C, TG, TC

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Dangardt 2010(10)	Sweden	R, DB, C	Obesity	M/F	3M	1.2g N3	placebo	15.7±10	25(13,12)	HDL-C, LDL-C, TG, TC
De Giuseppe 2023(11)	Italy	R, DB	Healthy	M/F	12W	N3	placebo	70.6=4.5	66(33,33)	HDL-C, LDL-C, TG, TC
de Lorgeril 1994(12)	France	R, SB	Hypertension	M/F	104W	N3	placebo	53.5±10	250(128,122)	SBP,HDL-C, TG, TC
Derosa 2012(13)	Italy	R, DB	Dyslipidemia	M/F	6M	3g N3	placebo	18-75	157(78,79)	SBP, DBP, HDL-C, TG, TC
Dogay Us 2022(14)	UK	R, DB	Hyperlipidemia	M/F	8W	4g EPA	placebo	60.91=8.56	41(21,20)	HDL-C, LDL-C, TG, TC
Du Plooy 1992(15)	South Africa	R, SB	Hypertension	M/F	4W	1000mg EPA	placebo	21-65	30(15,15)	DBP, HDL-C, LDL-C, TG, TC
Ebrahimi 2009(16)	Iran	R	Metabolic Syndrome	M/F	6M	180mg EPA+120mg DHA	placebo	52.9±11.9	89(42,47)	SBP, DBP, HDL-C, LDL-C, TG, TC
Elajami(1) 2017(17)	USA	R	Diabeties	M/F	1Y	1.86g EPA +1.5g DHA	control	64.5±6.9	79(40,39)	SBP, DBP, HDL-C, LDL-C, TG, TC, FBG, HbA1c
Elajami(2) 2017(17)	USA	R	Nondiabetes	M/F	1Y	1.86g EPA +1.5g DHA	control	63.6±7.6	183(88.95)	SBP, DBP, HDL-C, LDL-C, TG, TC, FBG, HbA1c
Fayh 2018(18)	Brazil	R	Diabetes	M/F	8W	300mg N3	placebo	50.47±6.06	30(15,15)	HDL-C, LDL-C, TG, TC, FBG, HbA1c
Félix-Soriano 2021(19)	Spain	R, DB	Post-Menopausal Women	F	16W	1950mg N3	control	55-70	35(20,15)	SBP, DBP, HDL-C, LDL-C, TG, TC
Finnegan(1) 2003(20)	UK	R, DB	Hyperlipidemia	M/F	6M	0.8g N3	control	53±2	60(30,30)	SBP, DBP, HDL-C, LDL-C, TG, TC
Finnegan(2) 2003(20)	UK	R, DB	Hyperlipidemia	M/F	6M	4.5g ALA	control	53±2	60(30,30)	SBP, DBP, HDL-C, LDL-C, TG, TC
Finnegan(3) 2003(20)	UK	R, DB	Hyperlipidemia	M/F	6M	1.7g N3	control	53±2	60(30,30)	SBP, DBP, HDL-C, LDL-C, TG, TC

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Finnegan(4) 2003(20)	UK	R, DB	Hyperlipidemia	M/F	6M	9.5g ALA	control	53±2	60(30,30)	SBP, DBP, HDL-C, TG
Ginty 2012(21)	USA	R, DB	Healthy	M/F	21D	1.4g N3	control	21±0.99	34(17,17)	SBP, DBP, LDL-C
Golpour 2020(22)	Iran	R, DB	Diabetes	M/F	10W	2700mg N3	placebo	51.15±7.45	61(30,31)	FBG, Insulin, HbA1c
Golzari 2017(23)	Iran	R, DB	Diabetes	M/F	8W	2g EPA	placebo	44.72±4.69	36(18,18)	SBP, DBP, HDL-C, LDL-C, TG, TC, FBG, HbA1c
Haghiac 2015(24)	USA	R, DB	Obesity	F	25W	800mg DHA+1200mg EPA	placebo	27±5	49(24,25)	FBG, Insulin
Harris(1) 2008(25)	USA	R, DB	Healthy	M/F	16W	1g EPA	placebo	42.3±10.1	22(11,11)	SBP, DBP, HDL-C, LDL-C, TG, TC
Harris(2) 2008(25)	USA	R, DB	Healthy	M/F	16W	1g EPA	placebo	42.3±10.1	22(11,11)	SBP, DBP, HDL-C, LDL-C, TG, TC
Holman 2009(26)	UK	R	Diabetes	M/F	28W	2000mg N3	placebo	63.5±11.7	400(200,200)	SBP, DBP, HDL-C, LDL-C, TC, HbA1c
Howe(1) 2018(26)	Australia	R, DB	Healthy	M/F	20W	1600mg DHA+400mg EPA	placebo	63.8±1.9	38(19,19)	SBP, DBP
Howe(2) 2018(26)	Australia	R, DB	Healthy	M/F	20W	1600mg DHA+400mg EPA	placebo	63.8±1.9	38(19,19)	SBP, DBP
Howe(3) 2018(26)	Australia	R, DB	Healthy	M/F	20W	1600mg DHA+400mg EPA	placebo	63.8±1.9	38(19,19)	SBP, DBP
Jamilian 2017(27)	Iran	R, DB	Diabetes	F	6W	240mg DHA +360mg EPA	placebo	30.7±4.1	70(35,35)	HDL-C, LDL-C, TG, TC, FBG, Insulin
Jamilian 2018(28)	Iran	R, DB	Diabetes	F	6W	240mg DHA +360mg EPA	placebo	30.8±2.4	40(20,20)	HDL-C, LDL-C, TG, TC, FBG, Insulin
Khani 2017(29)	Iran	R, DB	PCOS	F	24W	2000mg N3	placebo	31.04±5.04	88(44,44)	HDL-C, LDL-C, TG, TC, FBG

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Kobayashi 2023(30)	Japan	R, DB	Dyslipidemia	M/F	3M	1.86g EPA +1.5g DHA	placebo	73.6=12.7	38(19,19)	HDL-C, LDL-C, TG
Lee 2015(31)	Korea	R, DB	Diabetes	M/F	12W	1.38g EPA +1.14g DHA	placebo	60.4±1.2	19(11,8)	SBP, DBP, HDL-C, LDL-C, TG, TC, FBG, HbA1c
Lee(1) 2019(32)	Canada	R, DB	Healthy	M/F	12W	3g EPA	olive oil	21±2	58(30,28)	SBP, DBP
Lee(2) 2019(32)	Canada	R, DB	Healthy	M/F	12W	3g DHA	olive oil	22±2	58(30,28)	SBP, DBP
Liu 2022(33)	China	R, DB	Diabetes	M/F	6m	3g N3	placebo	62.45=8.58	100(50,50)	SBP, DBP, HDL-C, LDL-C, TG, TC, FBG, Insulin, HbA1c
Logan 2015(34)	Japan	R	Healthy	F	12W	3g N3	placebo	66±1	24(12,12)	SBP, DBP, TG
Lungershausen 1997(35)	Australia	R, DB	Diabetes	M/F	12W	2g EPA +1.4g DHA	placebo	55±1.29	32(16,16)	SBP, DBP, FBG, HbA1c
Manor 2013(36)	Israel	R, DB	Attention-Deficit Hyperactivity Disorder	M/F	15W	300mg N3	placebo	6 月 13 日	162(81,81)	SBP, DBP, HDL-C, LDL-C, TG, TC
Mejia-Montilla 2018(37)	Spain	R, DB	PCOS	F	12W	1000mg N3	placebo	23.6±6.4	200(100,100)	HDL-C, LDL-C, TG, TC, Insulin
Mengelberg 2022(38)	New Zealand	R, DB	Memory Complaints	M/F	12M	1.5g DHA+0.35g EPA	placebo	72.33=6.16	60(30,30)	SBP, DBP
Miller 2013(39)	USA	R, C	Diabetes	M/F	8W	1.38g EPA +1.14g DHA	placebo	60.4±1.2	31(17,14)	SBP, DBP, HDL-C, LDL-C, TG, TC, FBG
Miyajima 2001(40)	Japan	R, DB, C	Hypertension	M	8W	2.7g EPA	placebo	44.8±6.4	77(39,38)	SBP, DBP, HDL-C, TG
Moosavi 2022(41)	USA	R	Healthy	M/F		3.9g N3	placebo	71.4±4.40	44(22,22)	SBP, DBP, HDL-C, LDL-C, TG, TC
Mori 2009(42)	Australia	R, DB	Healthy	M/F	3W	4g N3	placebo	56.5±1.4	35(15,20)	SBP, DBP, HDL-C, LDL-C, TG, TC

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Mori(1) 1999(43)	Australia	R, DB	Hypercholesterolemic	M	6W	4g EPA	placebo	48.8±1.1	39(20,19)	HDL-C, LDL-C, TG, TC, FBG, Insulin
Mori(2) 1999(43)	Australia	R, DB	Hypercholesterolemic	M	6W	4g DHA	placebo	48.8±1.1	37(20,17)	HDL-C, LDL-C, TG, TC, FBG, Insulin
Mozaffarian 2022(44)	USA	R, DB	Hypertriglyceridemia	M/F	26W	4g N3	placebo	54.9=11.2	520(148,372)	HDL-C, LDL-C, TG
Murphy 2007(45)	Australia	R	Overweight	M/F	6M	1g N3	placebo	50.2±9.4	70(32,38)	SBP, DBP, HDL-C, LDL-C, TG, TC
Neff 2011(46)	USA	R, DB	Overweight	M/F	4.5M	2g DHA	placebo	44±10	36(18,18)	HDL-C, LDL-C, TG, TC
O'Mahoney 2020(47)	UK	R, DB	Diabetes	M/F	9M	3.3g N3	placebo	34±15	20(10,10)	SBP, DBP, TG, TC
Peña-de-la-Sancha 2023(48)	Mexico	R, SB	Hypertriglyceridemia	M/F	5W	0.46g EPA+0.38g DHA	placebo	42.5=6.2	18(9,9)	SBP, DBP, HDL-C, TG, TC, FBG
Pooya 2010(49)	Iran	R, DB	Diabetes	M/F	8W	2714mg N3	placebo	56.38±9.24	80(40,40)	LDL-C, TC, FBG, HbA1c
Rafraf 2012(50)	Iran	R, DB	PCOS	F	8W	4000mg N3	placebo	27.3±64.2	60(30,30)	FBG, Insulin
Root 2013(51)	USA	R, DB	Healthy	M/F	4W	1.7g N3	placebo	18-30	57(27,30)	SBP, HDL-C, LDL-C
Rossing 1996(52)	Denmark	R, DB	Diabetes	M/F	52W	2g EPA +2.6g DHA	placebo	33±1.3	29(15,14)	SBP, DBP, HDL-C, LDL-C, TG, TC, HbA1c
Samimi 2015(53)	Iran	R, DB	Diabetes	F	6W	120mg DHA +180mg EPA	placebo	30.3±5.5	56(28,28)	HDL-C, LDL-C, TG, TC, FBG, Insulin
Sanders 2006(54)	UK	R	Healthy	M/F	4W	1.5g DHA+0.6g EPA	placebo	31.6±12.9	79(39,40)	SBP, DBP, HDL-C, LDL-C, TG, TC
Sanders 2011(55)	UK	R, C	Healthy	M/F	12M	1.8g N3	placebo	55±2.1	178(88,90)	SBP, DBP, HDL-C, LDL-C, TG

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Sarbolouki 2013(56)	Iran	R, DB	Diabetes	M/F	12W	2000mg N3	placebo	45.3±3.93	67(32,35)	FBG, Insulin, HbA1c
Satoh 2009(57)	Japan	R	Obesity	M/F	3M	1.8g EPA	placebo	51.7±1.5	92(46,46)	SBP, DBP, HDL-C, LDL-C, TG, TC, FBG, Insulin, HbA1c
Shimizu 1995(58)	Japan	R	Diabetes	M/F	12M	900mg EPA	placebo	66.3±2.5	25(16,29)	SBP, DBP, HDL-C, TG, TC, FBG, HbA1c
Singhai 2013(59)	UK	R, DB	Healthy	M/F	4M	4g DHA	placebo	27.6±4.7	274(138,136)	SBP, DBP, HDL-C, LDL-C, TG, TC, FBG, Insulin
Stark 2003(60)	Canada	R, DB, C	Healthy	F	4W	6g DHA	placebo	56.7±6.2	64(32,32)	SBP, DBP, HDL-C, LDL-C, TG, TC, FBG, Insulin
Stupin 2018(61)	Croatia	R, DB	Healthy	M/F	3W	277mg N3	placebo	21±1	36(18,18)	SBP, DBP, HDL-C, LDL-C, TG, TC
Takaki 2011(62)	Japan	R	Hypertension	M/F	48W	1800mg EPA	placebo	61.6±5.6	50(25,25)	SBP, DBP, HDL-C, LDL-C
Takeshita 2022(63)	Japan	R, DB	Diabetes	M/F	12W	1.8g EPA	placebo	18-30	20(10,10)	SBP, HDL-C, TG, TC, FBG, HbA1c
Theobald 2007(64)	UK	R, DB, C	Hypertension	M/F	3M	0.7g DHA	placebo	51.1±7.4	38(19,19)	SBP, DBP
Thota 2020(65)	Australia	R	Obesity	M/F	12W	2g DHA	placebo	51.1±12.9	58(27,31)	FBG, Insulin
Tomiyama 2005(66)	Japan	R	Dyslipidemia	M/F	13M	1.8g EPA	placebo	65±2	84(40,44)	SBP, DBP, HDL-C, TG, TC, FBG
Tsunoda(1) 2015(67)	USA	R, DB	Healthy	M/F	6W	1.8g EPA	placebo	53.6±8.6	32(16,16)	HDL-C, LDL-C, TC, FBG, Insulin
Tsunoda(2) 2015(67)	USA	R, DB	Healthy	M/F	6W	1.8g DHA	placebo	51.6±9.7	34(16,18)	HDL-C, LDL-C, TC, FBG, Insulin
Udupa 2013(68)	India	R, DB	Diabetes	M/F	13W	300mg N3	placebo	53.5±1.4	50(25,25)	FBG, HbA1c

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Vakhapova 2011(69)	Israel	R, DB	Memory Complaints	M/F	15W	300mg DHA	placebo	72.36 ± 7.93	121(60,61)	SBP, DBP, HDL-C, LDL-C, TG, TC
Veleba 2015(70)	Czech Republic	R	Diabetes	M/F	24W	5000mg EPA/DHA	placebo	62 ± 1.4	60(30,30)	SBP, DBP, HDL-C, LDL-C, TG, TC, FBG, HbA1c
West 2010(71)	Canada	R, C	Hypercholesterolemic	M/F	18W	ALA	placebo	49.3 ± 1.7	12(6,6)	SBP
Wong 2013(72)	Australia	R, SB	Obesity	M/F	12W	4g N3	placebo	60 ± 4	25(12,13)	SBP, DBP, HDL-C, LDL-C, TG, TC
Woodman(1) 2002(73)	Australia	R, DB	Diabetes	M/F	6W	4000mg EPA	placebo	61.2 ± 9.6	26(12,14)	SBP, DBP, HDL-C, LDL-C, TG, TC, FBG, Insulin, HbA1c
Woodman(2) 2002(73)	Australia	R, DB	Diabetes	M/F	6W	4000mg DHA	placebo	60.9 ± 8.2	25(13,12)	SBP, DBP, HDL-C, LDL-C, TG, TC, FBG, Insulin, HbA1c
Yamamoto 2005(74)	Japan	R	Hypercholesterolemic	M/F	6M	0.9g EPA	placebo	71.6 ± 4.8	60(29,31)	HDL-C, LDL-C, TG, FBG, Insulin, HbA1c
Zeman 2005(75)	Czech Republic	R, SB	Diabetes	M/F	52W	2.07g EPA +1.53g DHA	placebo	48.8 ± 1.1	24(12,12)	TG, TC, FBG, HbA1c

Data are presented as mean ± SD or as a range.

R, randomized; SB, single-blinded; DB, double-blinded; C, crossover design; F, female; M, male; Ctrl, control group; Inter, Intervention group; W, week; M, month; D, day; PCOS, polycystic ovary syndrome; SBP, systolic blood pressure; DBP, diastolic blood pressure; TG, triglyceride; TC, total cholesterol; HDL-C, high density lipoprotein cholesterol; LDL-C, low density lipoprotein-cholesterol; FBG, fasting blood glucose; EPA, Eicosapentaenoic Acid; DHA, Docosahexaenoic Acid; ALA, alpha-linolenic acid.

Table S1-2. Characteristics of the publications included in the meta-analysis (N6 fatty acids).

Article(first author, year)	Location	Study design	Health status	Gender	Intervention duration	Intervention substance	Comparison	Age, year	n (Ctrl, Inter)	Extracted outcome(s)
Aryacian 2008(76)	Iran	R, DB	Rheumatoid Arthritis	M/F	12W	2.5g CLA	placebo	46.23 ± 2.79	44(22,22)	HDL-C, LDL-C, TG, TC
Carvalho 2012(77)	Brazil	R	Metabolic Syndrome	F	90D	3g CLA	placebo	41 ± 3.97	14(7,7)	SBP, DBP, HDL-C, LDL-C, TG, TC
Damsgaard(1) 2008(78)	Brazil	R, DB	Healthy	M	8W	7.3g linoleic acid	low linoleic acid	25.6 ± 4.6	64(23,23)	HDL-C, LDL-C, TG, TC
Damsgaard(2) 2008(78)	Brazil	R, DB	Healthy	M	8W	7.3g linoleic acid	low linoleic acid	25.6 ± 4.6	64(23,23)	HDL-C, LDL-C, TG, TC
Diaz 2008(79)	USA	R, DB	Overweight	F	12W	1.8g CLA	placebo	36 ± 1	35(17,18)	SBP, DBP, HDL-C, LDL-C, TG, TC
Dullaart 1992(80)	Netherlands	R	Diabetes	M/F	2Y	high linoleic acid diet	usual diet	44 ± 12	36(20,16)	HbA1c
Engberink(1) 2012(81)	Netherlands	R, C	Healthy	M/F	9W	CLA	Oleic acid diet	30.9 ± 13.7	61(30,31)	SBP, DBP
Engberink(2) 2012(81)	Netherlands	R, C	Healthy	M/F	9W	CLA	Industrial trans diet	30.9 ± 13.7	61(30,31)	SBP, DBP
Ferrara 2000(82)	Italy	R	Hypertension	M/F	6M	20g linoleic acid	olive oil	25-70	46(23,23)	SBP, DBP, HDL-C, TG, TC, FBG
Iwata(1) 2007(83)	Japan	R, DB	Overweight	M/F	12W	3.4g CLA	placebo	43.4 ± 9.8	60(20,20/20)	SBP, DBP, HDL-C, LDL-C, TG, TC
Iwata(2) 2017(83)	Japan	R, DB	Overweight	M/F	12W	6.8g CLA	placebo	43.4 ± 9.8	60(20,20/20)	SBP, HDL-C, LDL-C, TG, TC
Kaźmierska 2022(84)	Poland	R, DB	Healthy	M/F	9M	N6	placebo	22.1.92	50(25,25)	HDL-C, LDL-C, TG

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Kestin(1) 1990(85)	Australia	R	Hyperlipidemia	M/F	3W	14.3g linoleic acid	fish oil	28.6±2.6	62(31,31)	SBP, DBP, HDL-C, LDL-C, TG, TC
Kestin(2) 1990(85)	Australia	R	Hyperlipidemia	M/F	3W	14.3g linoleic acid	linoleic acid	28.6±2.6	62(31,31)	SBP, DBP, HDL-C, LDL-C, TG, TC
Kriketos 2001(86)	USA	R	Hypertension	M/F	10W	N6	placebo	45.67±1.94	36(19,17)	SBP, DBP, HDL-C, LDL-C, TG, TC
Laidlaw(1) 2003(87)	Canada	R	Healthy	F	28D	5 g EPA+DHA and 1 g GLA	4 g EPA +DHA	48±1.9	16(8,8)	HDL-C, LDL-C, TG, TC
Laidlaw(2) 2003(87)	Canada	R	Healthy	F	28D	5 g EPA+DHA and 2 g GLA	4 g EPA +DHA	48±1.9	15(8,7)	HDL-C, LDL-C, TG, TC
Laidlaw(3) 2003(87)	Canada	R	Healthy	F	28D	5 g EPA+DHA and 4 g GLA	4 g EPA +DHA	48±1.9	16(8,8)	HDL-C, LDL-C, TG, TC
Lee 2012(88)	Australia	R	Hypercholesterolemic	M/F	4W	N6	placebo	30-57	11(6,5)	SBP, DBP, HDL-C, LDL-C, TG, TC
Leng 1998(89)	UK	R	Stable Intermittent Claudication	M/F	24M	GLA	placebo	65±0.94	120(60,60)	HDL-C, LDL-C, TC
Miller 2016(90)	USA	R	Metabolic Syndrome	M/F	6M	linoleic acid	monounsaturated fat	60.9±8.5	88(44,44)	SBP, DBP, HDL-C, LDL-C, TG, TC, FBG, Insulin
Raff 2006(91)	Denmark	R, DB	Healthy	M	5W	4.7g CLA	control	25.8±3.9	38(20,18)	SBP, DBP

Data are presented as mean ± SD or as a range.

R, randomized; DB, double-blinded; C, crossover design; F, female; M, male; Ctrl, control group; Inter, Intervention group; W, week; M, month; D, day; PCOS, polycystic ovary syndrome; SBP, systolic blood pressure; DBP, diastolic blood pressure; TG, triglyceride; TC, total cholesterol; HDL-C, high density lipoprotein cholesterol; LDL-C, low density lipoprotein-cholesterol; FBG, fasting blood glucose; EPA, Eicosapentaenoic Acid; DHA, Docosahexaenoic Acid; ALA, alpha-linolenic acid; CLA, conjugated linoleic acid.

Table S1-3. Characteristics of the publications included in the meta-analysis (N9 fatty acids).

Article(first author, year)	Location	Study design	Health status	Gender	Intervention duration	Intervention substance	Comparison	Age, year	n (Ctrl, Inter)	Extracted outcome(s)
Binkoski 2005(92)	USA	R, DB	Hypercholesterolemia	M/F	6W	Mid-Oleic Sunflower Oil	olive oil	46.2±0.8	30(15,15)	HDL-C, LDL-C, TG, TC
Bowen 2019(93)	Canada	R, DB, C	Metabolic Syndrome	M/F	6W	High-Oleic Acid Canola Oil	conventional canola oil	44±13	80(40,40)	HDL-C, LDL-C, TG, TC
Gillingham 2011(94)	Canada	R, SB, C	Hypercholesterolemia	M/F	28D	High-Oleic Rapeseed Oil Diet	western diet	47.49±11.93	36(18,18)	HDL-C, LDL-C, TG, TC
Gilmore 2011(95)	USA	R	Healthy	M	5W	High-Oleic Acid Diet	low-oleic acid diet	35.8±1.3	40(20,20)	HDL-C, LDL-C, TG, TC
González-Rámila(1) 2022(96)	Spain	R, DB, C	Healthy	M/F	4W	Olive pomace oil	sunflower oil	30=2	30(15,15)	HDL-C, LDL-C, TG, TC, FBG, Insulin, HbA1c
González-Rámila(1) 2023(96)	Spain	R, DB, C	Healthy	M/F	4W	Olive pomace oil	sunflower oil	35=70	34(17,17)	SBP, DBP, HDL-C, LDL-C, TG, TC
González-Rámila(2) 2022(97)	Spain	R, DB, C	Hypercholesterolemia	M/F	4W	Olive pomace oil	sunflower oil	30=2	36(18,18)	HDL-C, LDL-C, TG, TC, FBG, Insulin, HbA1c
González-Rámila(2) 2023(97)	Spain	R, DB, C	Hypercholesterolemia	M/F	4W	Olive pomace oil	sunflower oil	44=52	30(15,15)	SBP, DBP, HDL-C, LDL-C, TG, TC
Jones 2014(98)	Canada	R, DB, C	Obesity	M/F	8W	High-Oleic Acid Canola Oil	conventional canola oil	43.87±15.81	52(26,26)	HDL-C, LDL-C, TG, TC
Jones 2015(99)	Canada	R, DB, C	Healthy	M/F	8W	High-Oleic Acid Canola Oil	conventional canola oil	45.8±12.9	30(15,15)	HDL-C, LDL-C, TG, TC

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Liu 2018(100)	USA	R, C	Metabolic Syndrome	M/F	28D	High-Oleic Acid Canola Oil	conventional canola oil	49.5 ± 12	40(20,20)	HDL-C, LDL-C, TG, TC
Loganathan 2022(101)	Malaysia	R, SB, C	Healthy	M/F	4W	palm olein	extra virgin olive oil	33.68 ± 4.82	40(20,20)	HDL-C, LDL-C, TG, TC, FBG, Insulin
Pu 2016(102)	Canada	R, DB, C	Hypertension	M/F	30D	High-Oleic Acid Canola Oil	conventional canola oil	45.6 ± 14.7	40(20,20)	HDL-C, LDL-C, TG, TC
Rodríguez-Pérez 2016(103)	Spain	R, DB	Metabolic Syndrome	M/F	8W	High-Oleic Acid Canola Oil	conventional canola oil	43.87 ± 15.81	36(18,18)	HDL-C, LDL-C, TG
Sanders 2003(104)	UK	R, C	Healthy	M	2W	Oleate Diet	carbohydrate diet	24.2 ± 5.9	30(15,15)	HDL-C, LDL-C, TG, TC
Tindall 2019(105)	USA	R, C	Hypertension	M/F	8W	Oleic Acid – Replaces – A- Linolenic Acid Diet	standard Western diet	43 ± 10	22(11,11)	SBP, DBP, HDL-C, LDL-C, TG, TC

Data are presented as mean ± SD or as a range.

R, randomized; SB, single-blinded; DB, double-blinded; C, crossover design; F, female; M, male; Ctrl, control group; Inter, Intervention group; W, week; M, month; D, day; PCOS, polycystic ovary syndrome; SBP, systolic blood pressure; DBP, diastolic blood pressure; TG, triglyceride; TC, total cholesterol; HDL-C, high density lipoprotein cholesterol; LDL-C, low density lipoprotein-cholesterol; FBG, fasting blood glucose.

Table S1-4. Characteristics of the publications included in the meta-analysis (Lycopene).

Article(first author, year)	Location	Study design	Health status	Gender	Intervention duration	Intervention substance	Comparison	Age, year	n (Ctrl, Inter)	Extracted outcome(s)
Amstrup 2015	Denmark	R, DB	Osteopenia	F	1Y	1mg melatonin	placebo	62.9±4.7	81(40,41)	Insulin
Bazyar 2021	Iran	R, DB	Diabetes	M/F	8W	2.5mg melatonin	placebo	52.52±5.65	50(25,25)	SBP
Gajendragadkar(1) 2014(106)	UK	R, DB	Healthy	M/F	2M	7mg lycopene	placebo	67±7	36(12,24)	SBP, DBP, HDL-C, LDL-C
Gajendragadkar(2) 2014(106)	UK	R, DB	Healthy	M/F	2M	7mg lycopene	placebo	67±7	36(12,24)	SBP, DBP, HDL-C, LDL-C
Kim(1) 2011(107)	Korea	R	Healthy	M	8W	6mg lycopene	placebo	34.3±1.21	79(38,41)	SBP
Kim(2) 2011(107)	Korea	R	Healthy	M	8W	15mg lycopene	placebo	34.3±1.21	75(38,37)	SBP
Lane(1) 2018(108)	UK	R	PSA	M	6M	15mg lycopene	placebo	63.7±4.8	89(45,44)	SBP
Lane(2) 2018(108)	UK	R	PSA	M	6M	15mg lycopene	placebo	63.7±4.8	89(45,44)	SBP
Paran 2009(109)	Israel	R, DB, C	Hypertension	M/F	6W	15mg lycopene	placebo	61.4±8.9	54(27,27)	SBP, DBP
Park 2013(110)	USA	R	Healthy	M	3M	Lycopene	control	67.8±7.3	34(12,22)	SBP, DBP
Ried 2009(111)	Australia	R	Prehypertension	M/F	12W	15mg lycopene	placebo	53.8±12.7	25(10,15)	SBP, DBP
Thies(1) 2012(112)	UK	R, SB	Healthy	M/F	12W	10mg lycopene	control	51.1±0.8	157(76,81)	SBP, DBP, HDL-C, LDL-C, TG, TC

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Thies(2) 2012(112)	UK	R, SB	Healthy	M/F	12W	10mg lycopene	control	51.1±0.8	144(76,68)	SBP, DBP, HDL-C, LDL-C, TG, TC
Wolak(1) 2019(113)	Israel	R, DB	Hypertension	M/F	8W	5mg lycopene	placebo	52.4±8.2	61(30,31)	SBP, DBP
Wolak(2) 2019(113)	Israel	R, DB	Hypertension	M/F	8W	15mg lycopene	placebo	52.4±8.2	61(30,31)	SBP, DBP
Wolak(3) 2019(113)	Israel	R, DB	Hypertension	M/F	8W	30mg lycopene	placebo	52.4±8.2	61(30,31)	SBP, DBP
Wolak(4) 2019(113)	Israel	R, DB	Hypertension	M/F	8W	15mg lycopene	placebo	52.4±8.2	61(30,31)	SBP, DBP

Data are presented as mean ± SD or as a range.

R, randomized; SB, single-blinded; DB, double-blinded; C, crossover design; F, female; M, male; Ctrl, control group; Inter, Intervention group; W, week; M, month; D, day; PSA, prostate cancer; SBP, systolic blood pressure; DBP, diastolic blood pressure; TG, triglyceride; TC, total cholesterol; HDL-C, high density lipoprotein cholesterol; LDL-C, low density lipoprotein-cholesterol.

Table S1-5. Characteristics of the publications included in the meta-analysis (Astaxanthin).

Article(first author, year)	Location	Study design	Health status	Gender	Intervention duration	Intervention substance	Comparison	Age, year	n (Ctrl, Inter)	Extracted outcome(s)
Choi 2011(114)	Korea	R, DB	Overweight	M/F	12W	20mg Astaxanthin	placebo	30.1=9.6	27(13,14)	HDL-C, LDL-C, TG, TC
Jabarpour 2024(115)	Iran	R, TB	PCOS	F	8W	12mg Astaxanthin	placebo	30.84=4.84	53(26,27)	SBP, DBP, HDL-C, LDL-C, TG, TC
Saeidi 2023 (1)(116)	Iran	R	Obesity	M	12W	20mg Astaxanthin	placebo	27.6=8.4	34(17,17)	HDL-C, LDL-C, TG, TC, FBG, Insulin
Saeidi 2023 (2)(116)	Iran	R	Obesity	M	12W	20mg Astaxanthin	placebo	27.6=8.4	34(17,17)	HDL-C, LDL-C, TG, TC, FBG, Insulin
Spiller 2003(117)	USA	R, DB	Healthy	M/F	8W	6mg Astaxanthin	placebo	58=9	35(16,19)	SBP, DBP, FBG
Urakaze 2021(118)	Japan	R, DB	Healthy	M/F	12W	12mg Astaxanthin	placebo	46.2=13.7	44(21,23)	HDL-C, LDL-C, TG, TC
Yoshida 2010 (1)(119)	Japan	R, DB	Hyperlipidemia	M/F	12W	6mg Astaxanthin	placebo	47.0=7.0	30(15,15)	SBP, DBP, HDL-C, LDL-C, TG, TC, FBG
Yoshida 2010 (2)(119)	Japan	R, DB	Hyperlipidemia	M/F	12W	12mg Astaxanthin	placebo	42.8=8.8	30(15,15)	SBP, DBP, HDL-C, LDL-C, TG, TC, FBG
Yoshida 2010 (3)(119)	Japan	R, DB	Hyperlipidemia	M/F	12W	18mg Astaxanthin	placebo	43.8=10.4	30(15,15)	SBP, DBP, HDL-C, LDL-C, TG, TC, FBG

Data are presented as mean $\pm$ SD or as a range.

R, randomized; DB, double-blinded; TB, triple-blinded; C, crossover design; F, female; M, male; Ctrl, control group; Inter, Intervention group; W, week; M, month; D, day; PCOS,

polycystic ovary syndrome; SBP, systolic blood pressure; DBP, diastolic blood pressure; TG, triglyceride; TC, total cholesterol; HDL-C, high density lipoprotein cholesterol; LDL-C, low density lipoprotein-cholesterol; FBG, fasting blood glucose.

Table S1-6. Characteristics of the publications included in the meta-analysis (Beta-carotene).

Article(first author, year)	Location	Study design	Health status	Gender	Intervention duration	Intervention substance	Comparison	Age, year	n (Ctrl, Inter)	Extracted outcome(s)
Asemi 2016(120)	Iran	R, DB, C	Diabetes	M/F	6W	50mg beta-carotene	placebo	52.9=8.1	102(51,51)	HDL-C, LDL-C, TG, TC
Nierenberg 1991(121)	USA	R	Healthy	M/F	12M	50mg beta-carotene	placebo	18-30	61(30,31)	HDL-C, TG, TC
Redlich 1999(122)	USA	R	Healthy	M/F	10M	30mg beta-carotene	placebo	54=6	52(23,29)	HDL-C, LDL-C, TG, TC
Ribaya-Mercado 1995(123)	USA	R	Healthy	F	3W	90mg beta-carotene	placebo	65.9=1.7	10(5,5)	HDL-C, LDL-C, TG, TC
Shaish 2006(124)	Israel	R, DB	Healthy	M/F	6W	60mg beta-carotene	placebo	43.9=10.2	22(11,11)	HDL-C, TG, TC
van Poppel 1994(125)	Netherlands	R, DB	Healthy	M	14W	20mg beta-carotene	placebo	40.0=10.4	50(25,25)	HDL-C, TC

Data are presented as mean $\pm$ SD or as a range.

R, randomized; DB, double-blinded; F, female; M, male; Ctrl, control group; Inter, Intervention group; W, week; M, month; TG, triglyceride; TC, total cholesterol; HDL-C, high density lipoprotein cholesterol; LDL-C, low density lipoprotein-cholesterol.

Supplemental 2-Forest plot

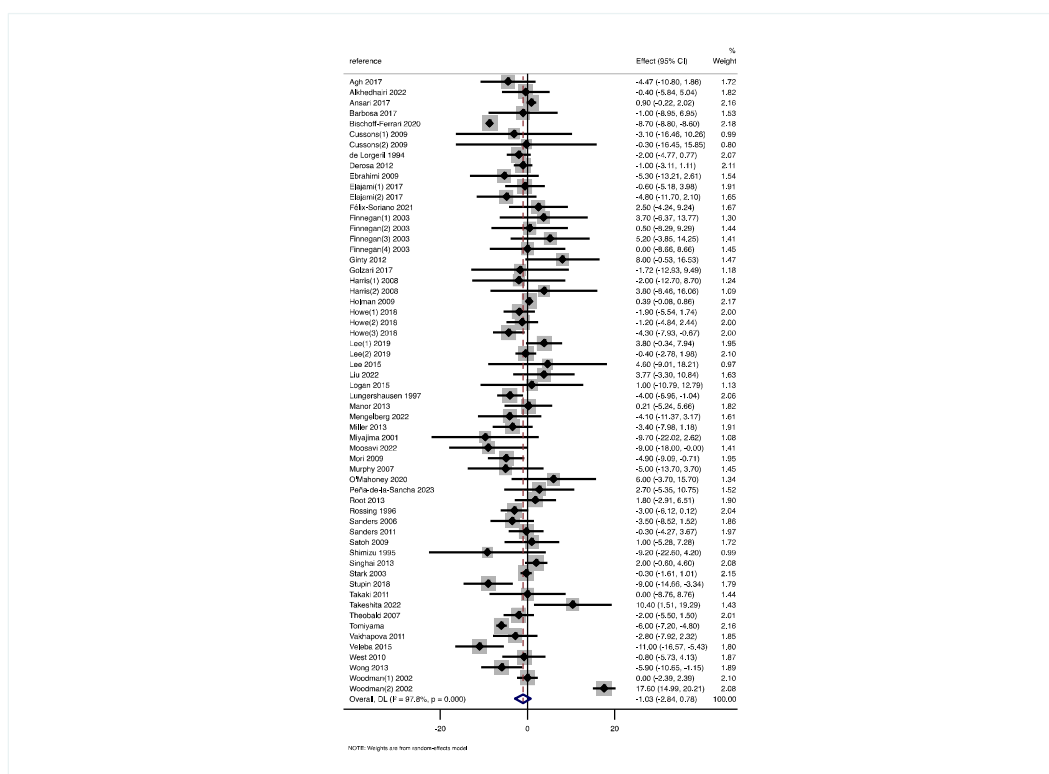


Figure S1-1-1 Forest plot of RCTs investigating the effect of n3 fatty acids supplementation on SBP.

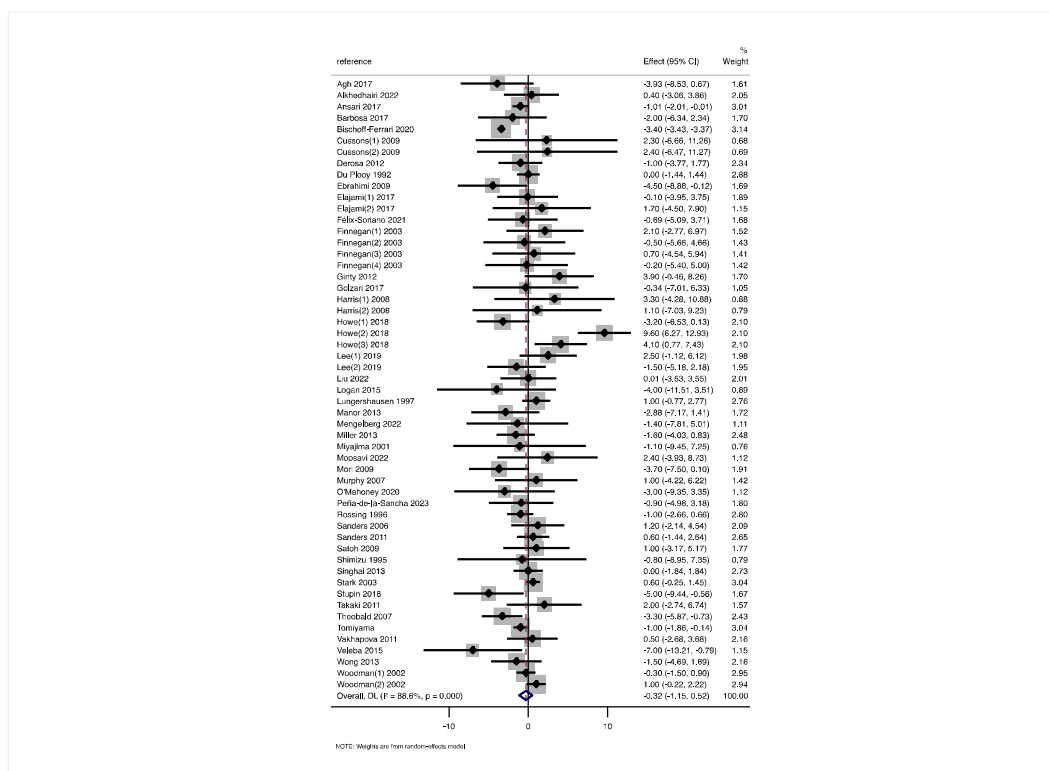


Figure S1-1-2 Forest plot of RCTs investigating the effect of n3 fatty acids supplementation on DBP.

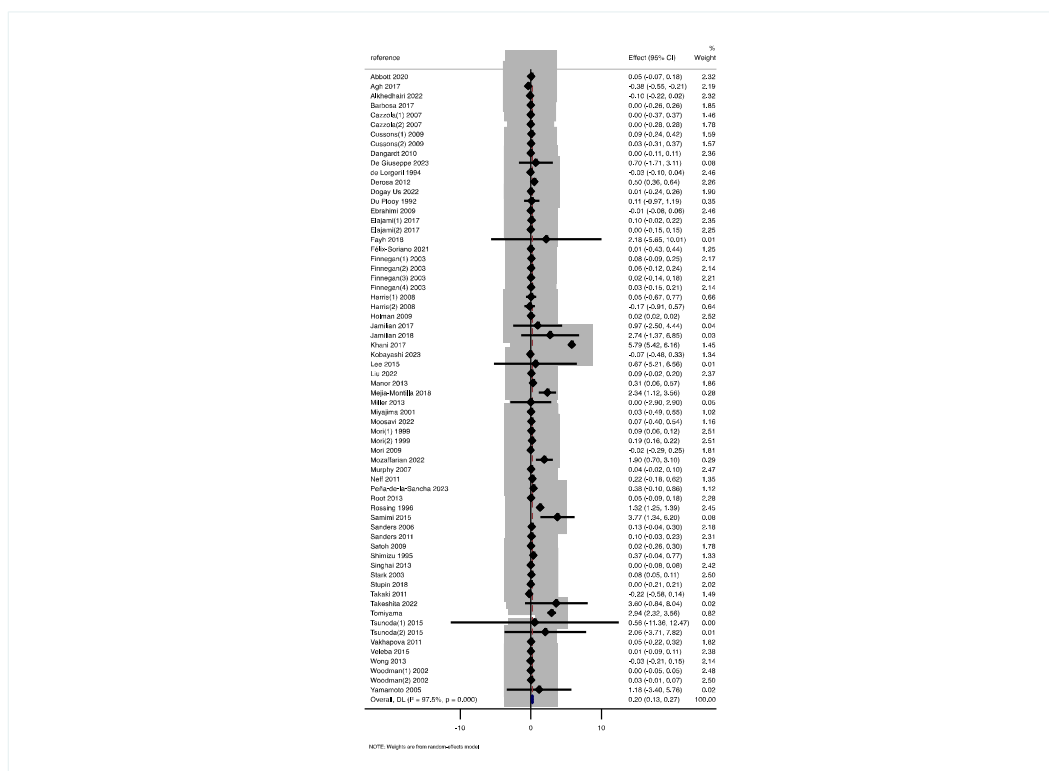


Figure S1-1-3 Forest plot of RCTs investigating the effect of n3 fatty acids supplementation on HDL-C.

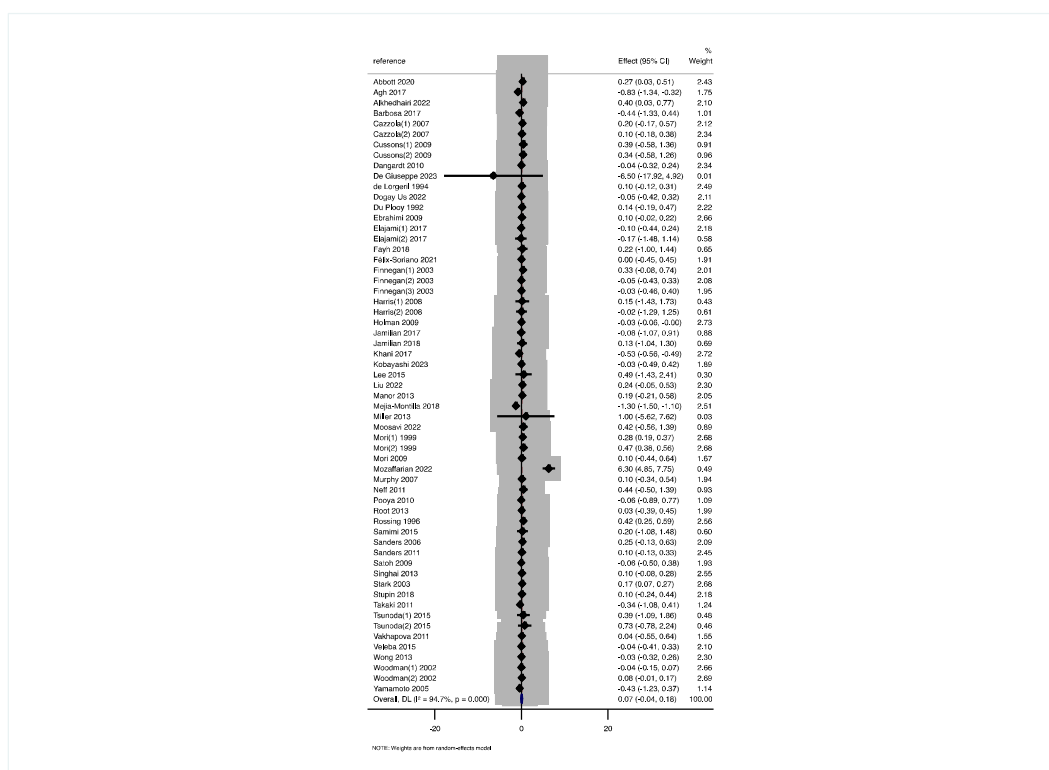


Figure S1-1-4 Forest plot of RCTs investigating the effect of n3 fatty acids supplementation on LDL-C.

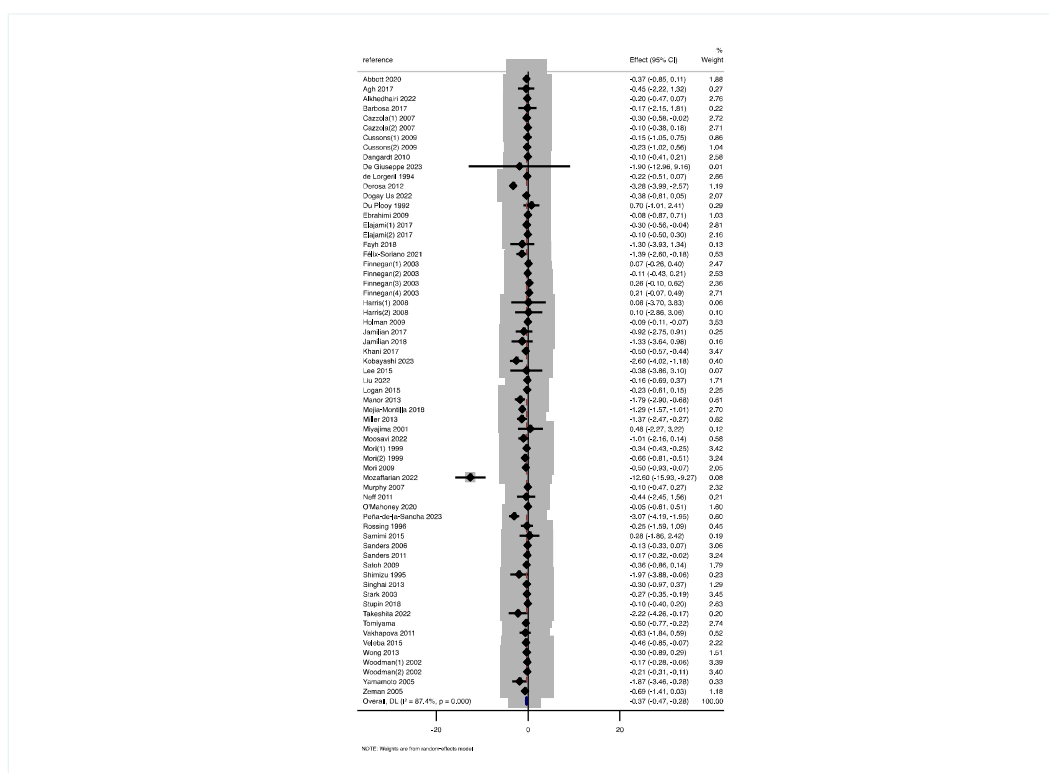


Figure S1-1-5 Forest plot of RCTs investigating the effect of n3 fatty acids supplementation on TG

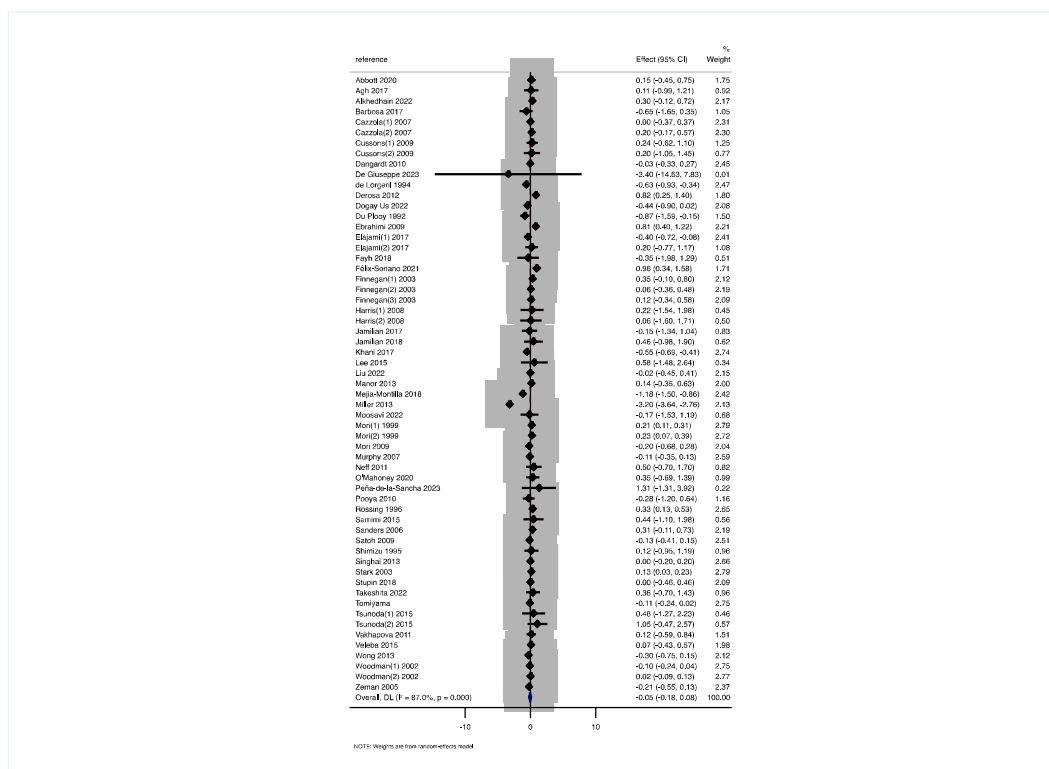


Figure S1-1-6 Forest plot of RCTs investigating the effect of n3 fatty acids supplementation on TC.

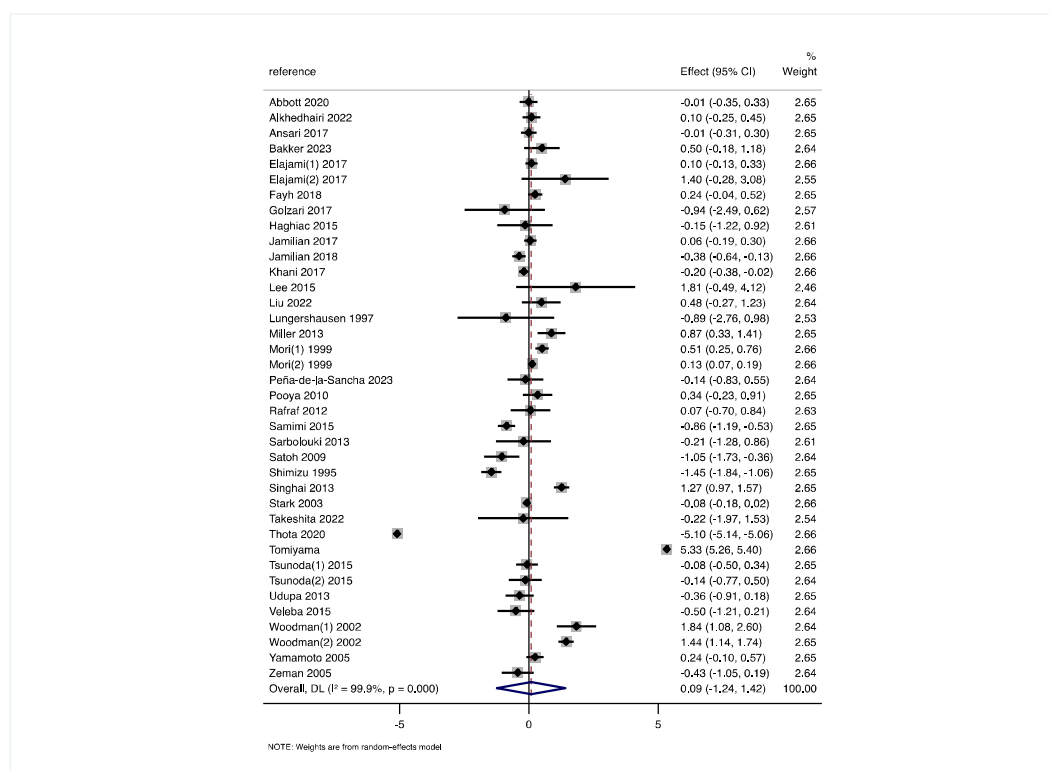


Figure S1-1-7 Forest plot of RCTs investigating the effect of n3 fatty acids supplementation on FBG.

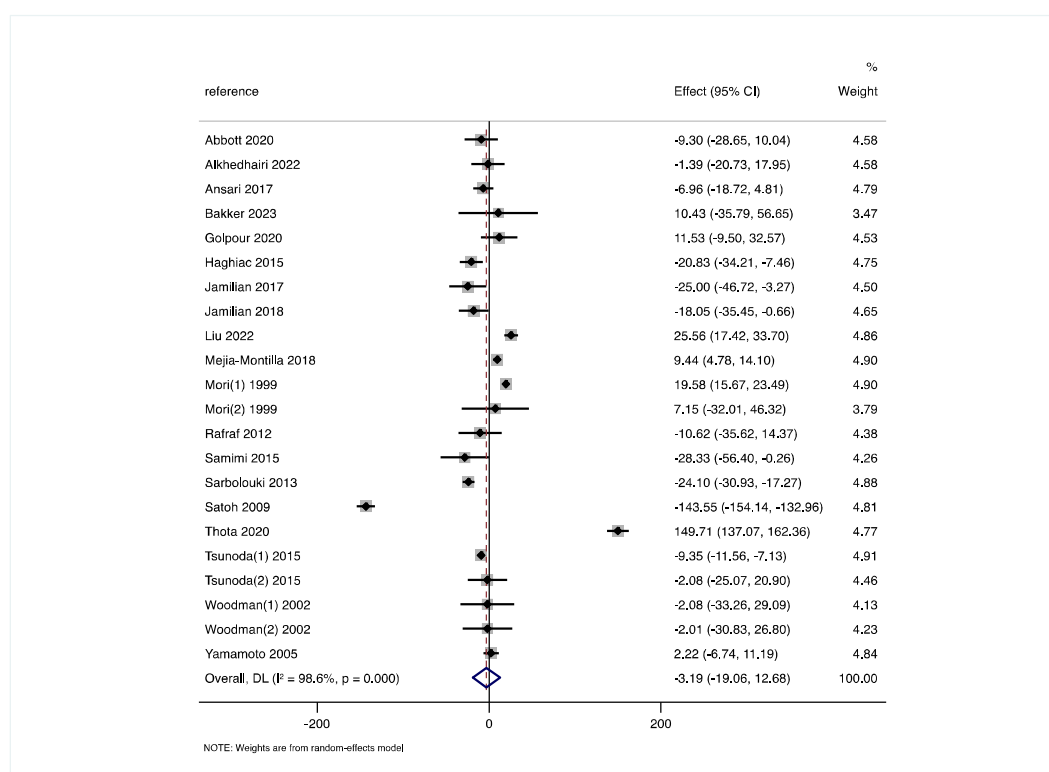


Figure S1-1-8 Forest plot of RCTs investigating the effect of n3 fatty acids supplementation on FBI.

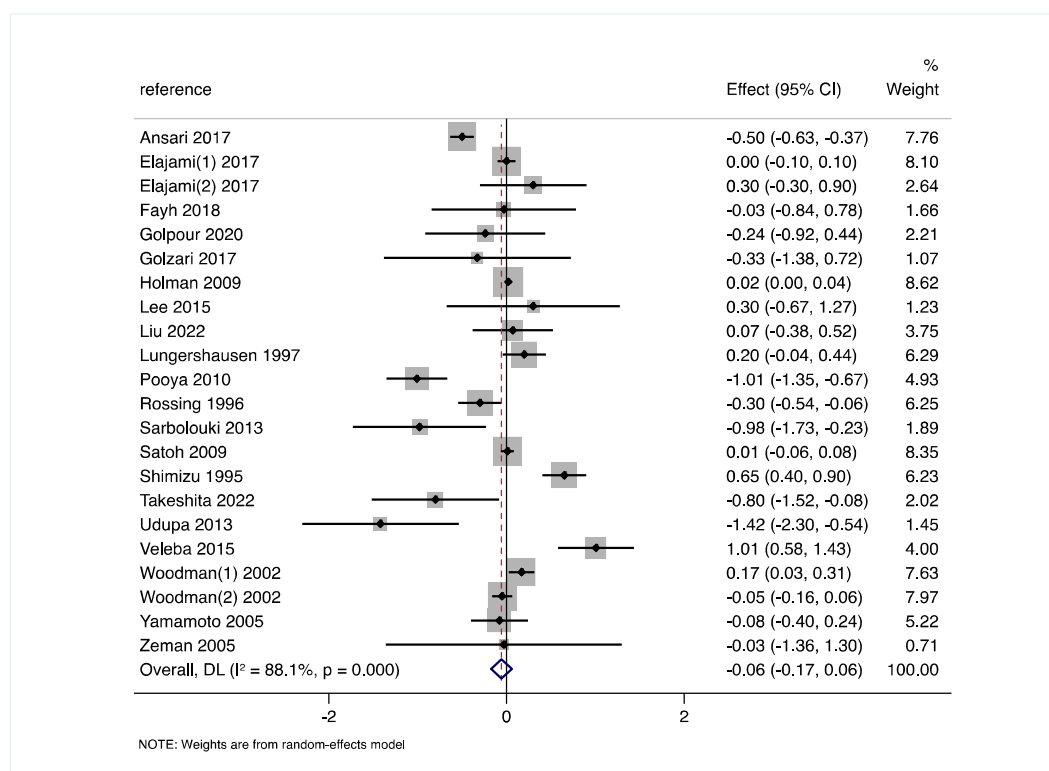


Figure S1-1-9 Forest plot of RCTs investigating the effect of n3 fatty acids supplementation on A1C.

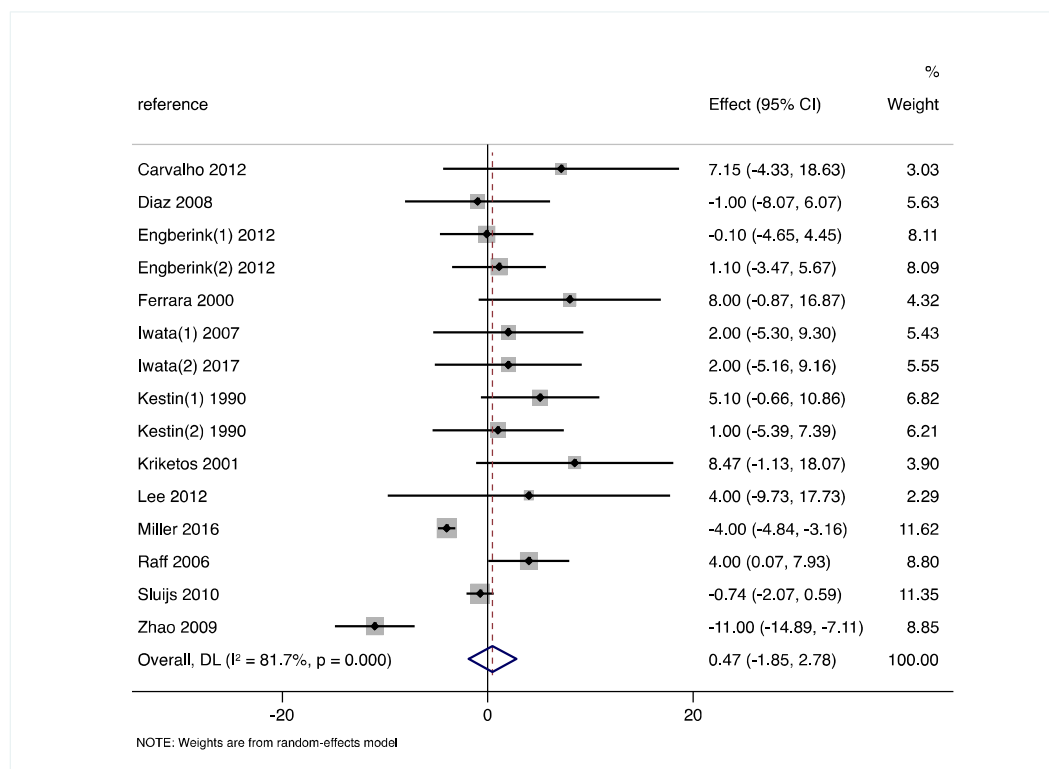


Figure S1-2-1 Forest plot of RCTs investigating the effect of n6 fatty acids supplementation on SBP.

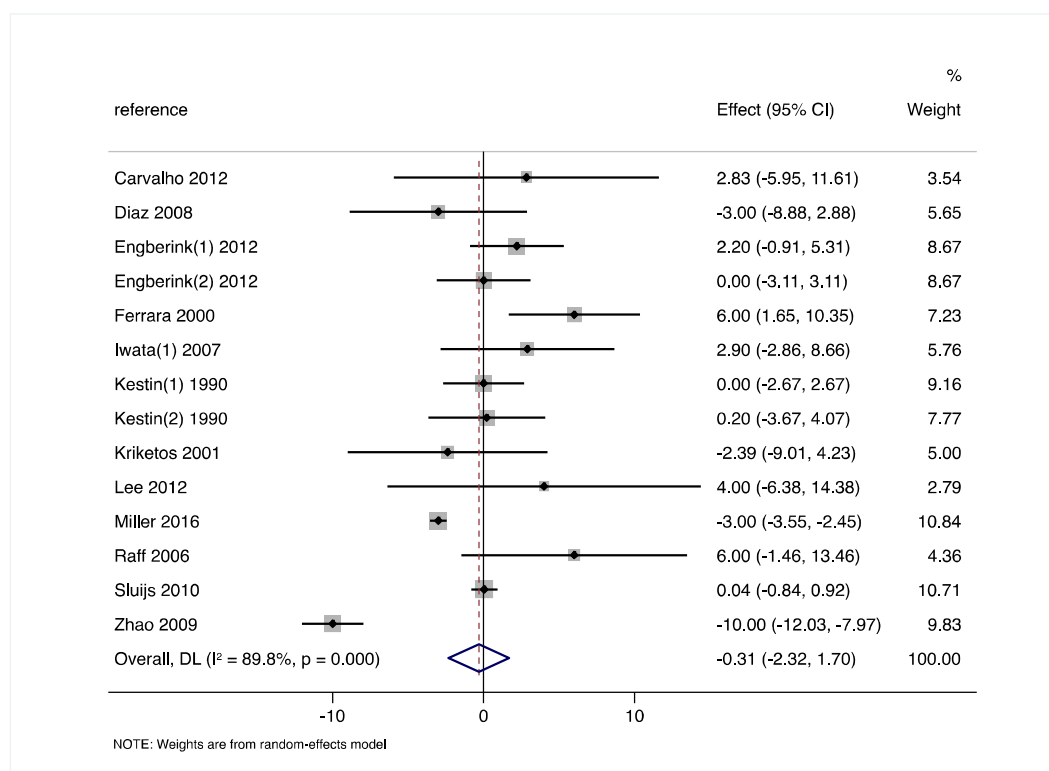


Figure S1-2-2 Forest plot of RCTs investigating the effect of n6 fatty acids supplementation on DBP.

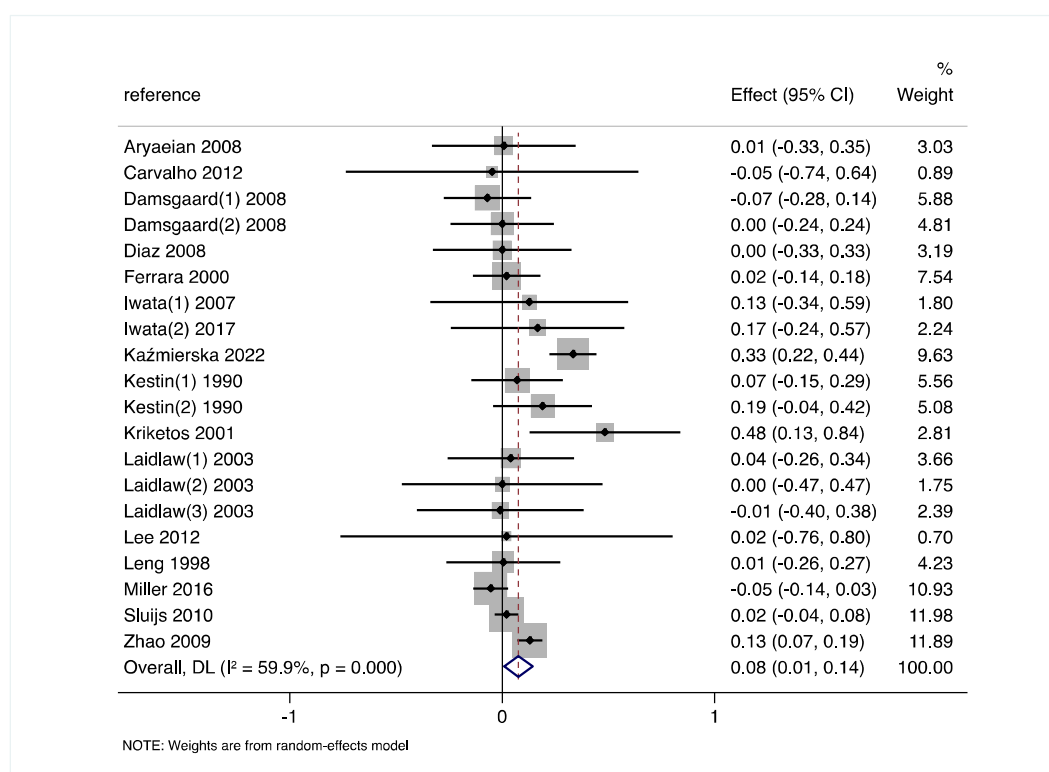


Figure S1-2-3 Forest plot of RCTs investigating the effect of n6 fatty acids supplementation on HDL-C.

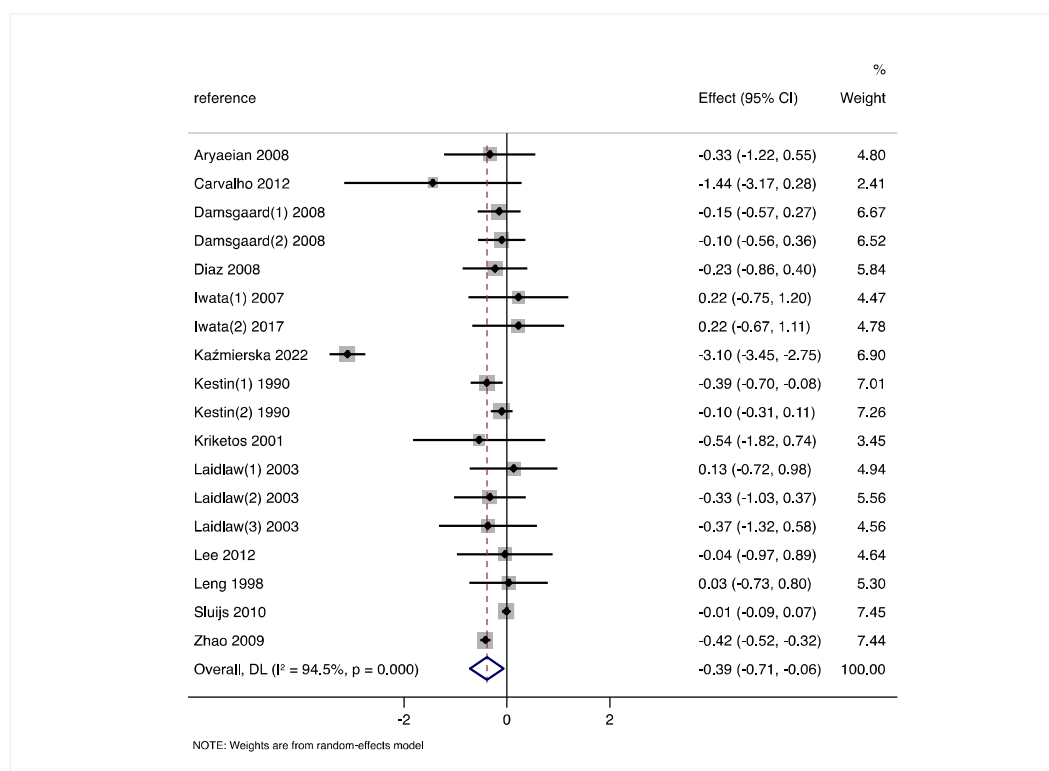


Figure S1-2-4 Forest plot of RCTs investigating the effect of n6 fatty acids supplementation on LDL-C.

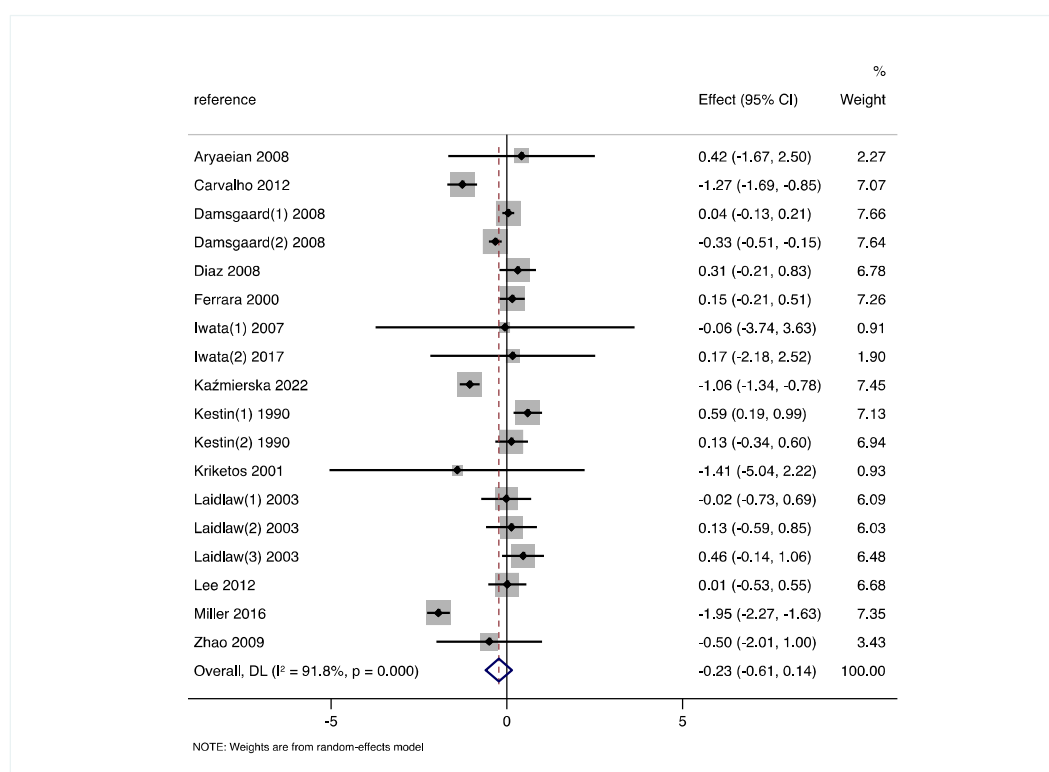


Figure S1-2-5 Forest plot of RCTs investigating the effect of n6 fatty acids supplementation on TG

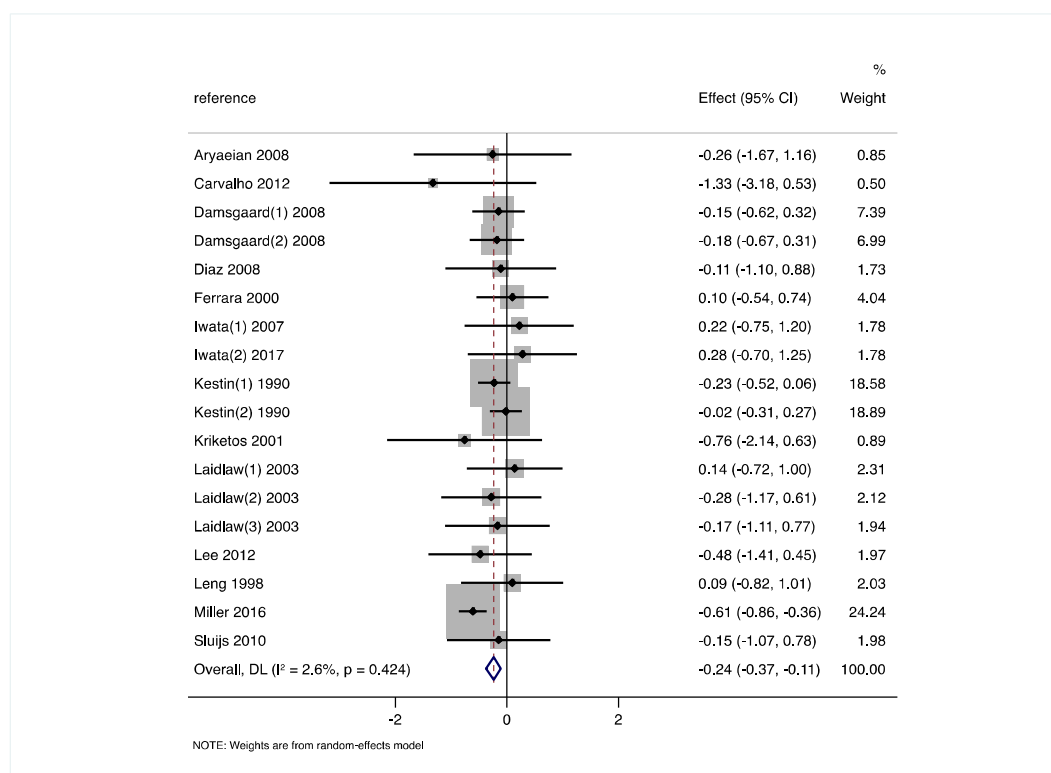


Figure S1-2-6 Forest plot of RCTs investigating the effect of n6 fatty acids supplementation on TC.

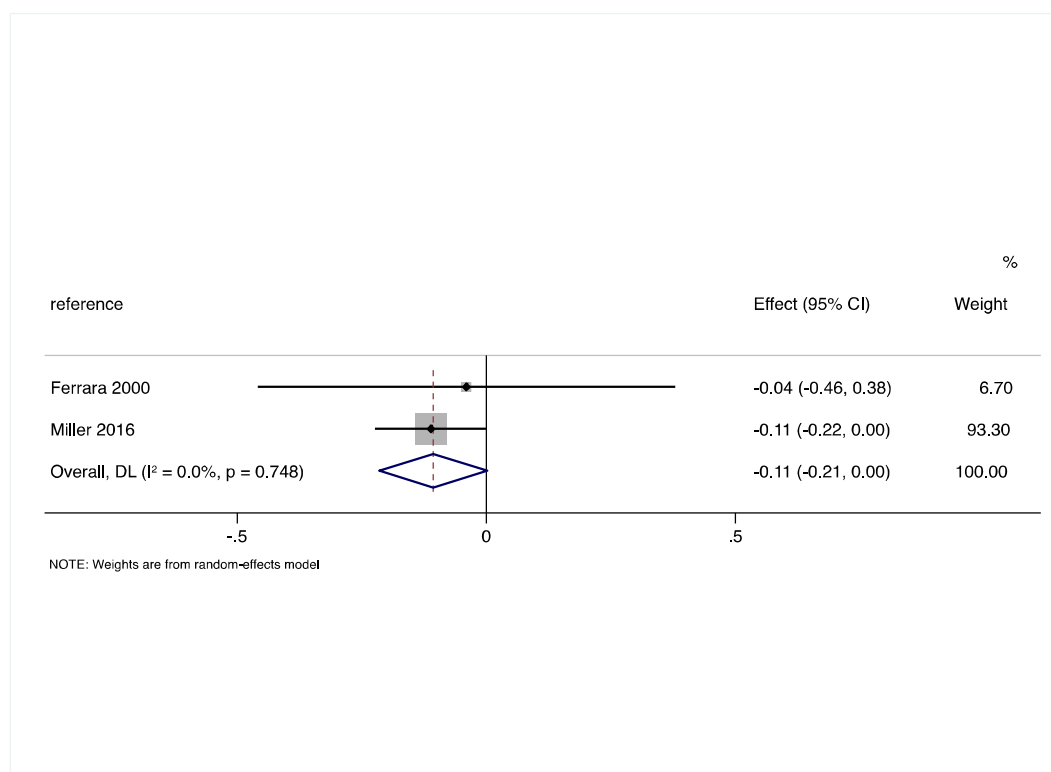


Figure S1-2-7 Forest plot of RCTs investigating the effect of n6 fatty acids supplementation on FBG.

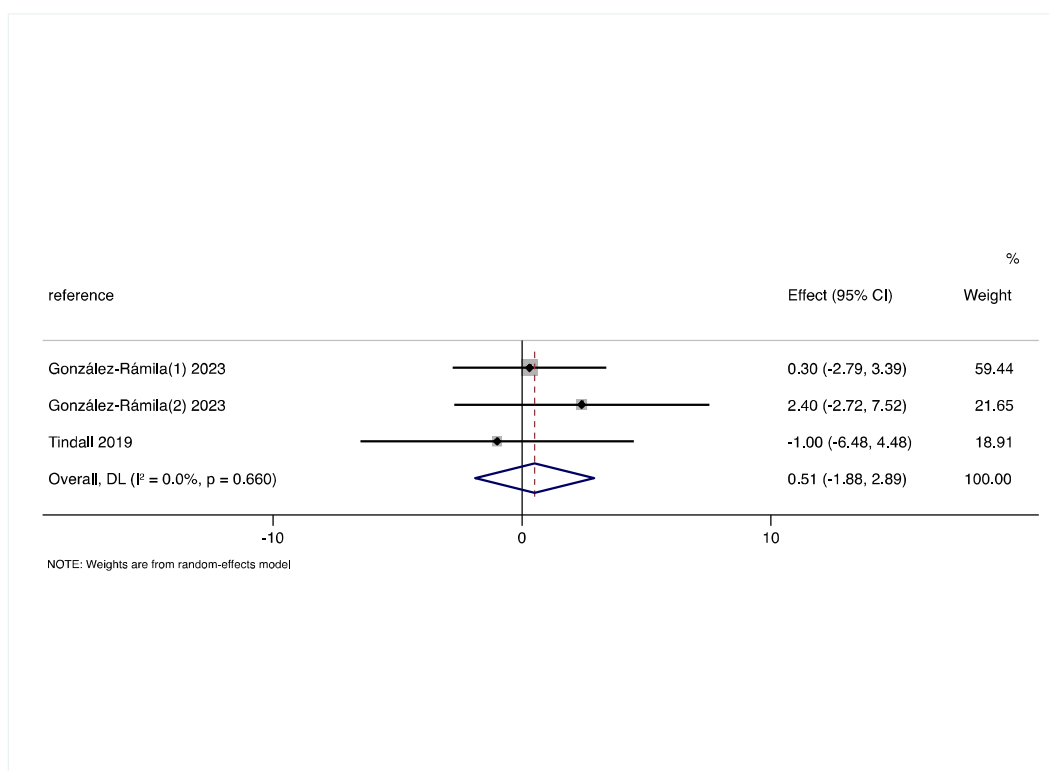


Figure S1-3-1 Forest plot of RCTs investigating the effect of n9 fatty acids supplementation on SBP.

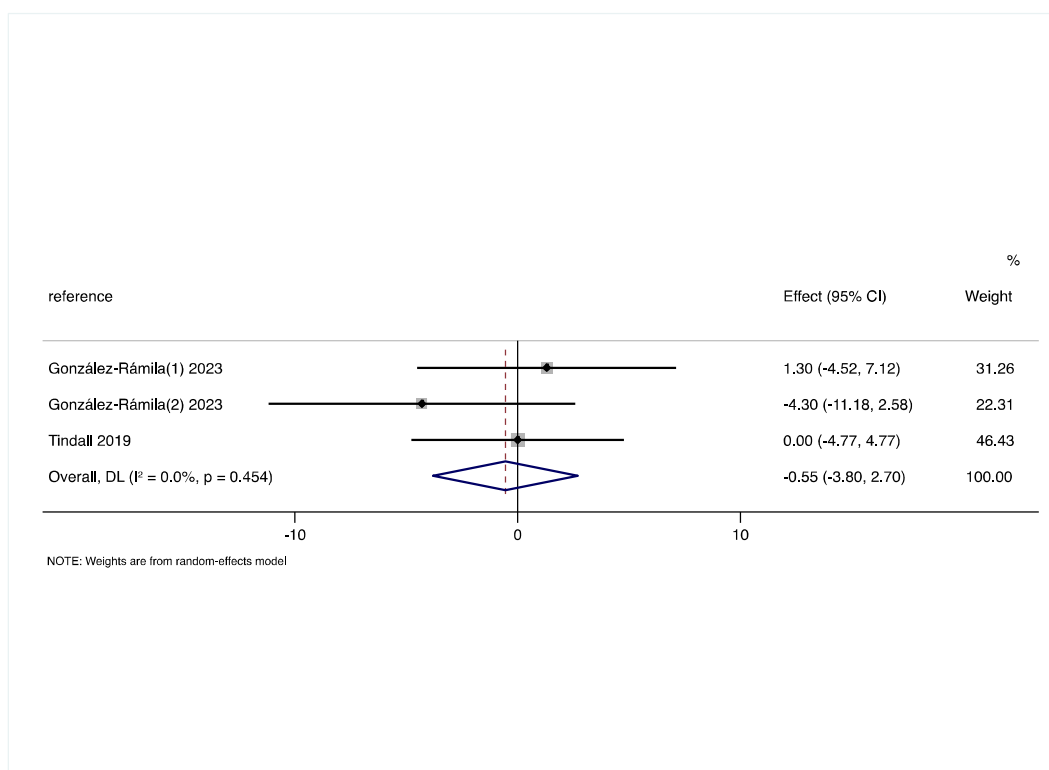


Figure S1-3-2 Forest plot of RCTs investigating the effect of n9 fatty acids supplementation on DBP.

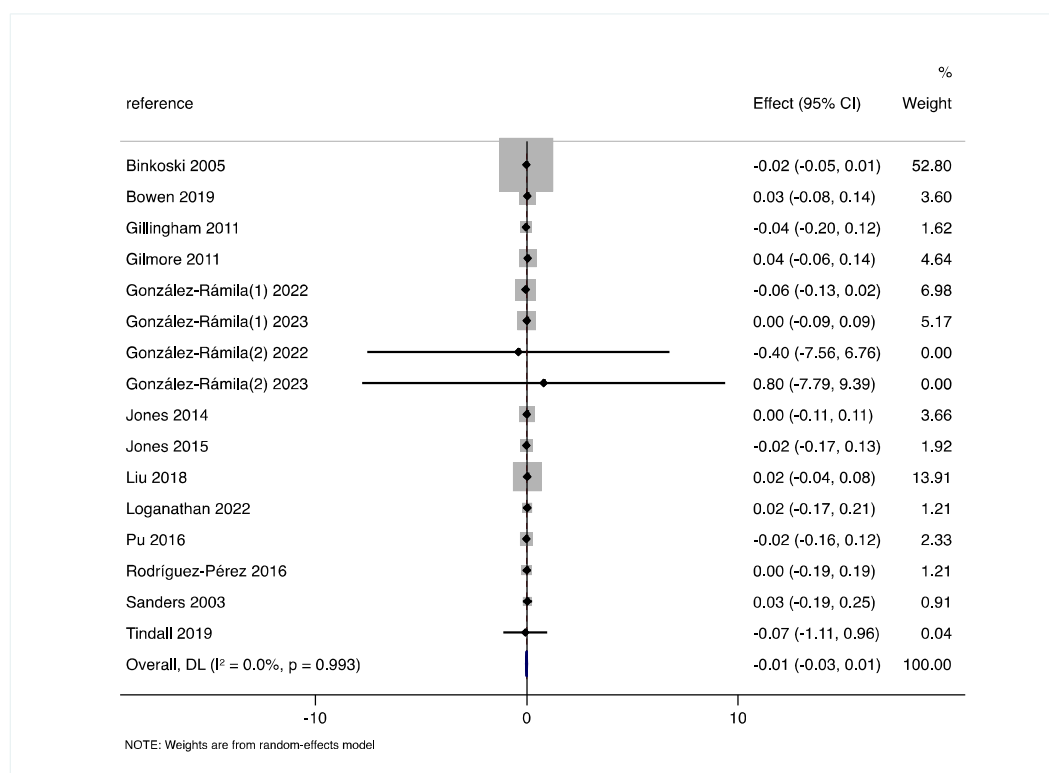


Figure S1-3 Forest plot of RCTs investigating the effect of n9 fatty acids supplementation on HDL-C.

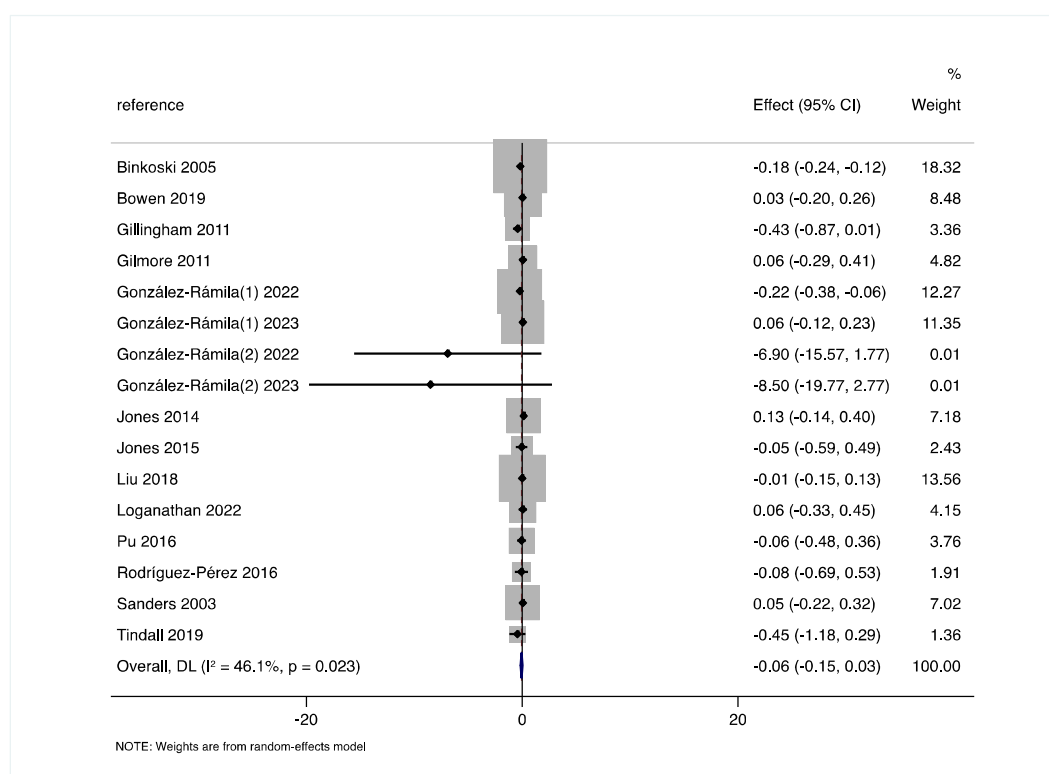


Figure S1-3-4 Forest plot of RCTs investigating the effect of n9 fatty acids supplementation on LDL-C.

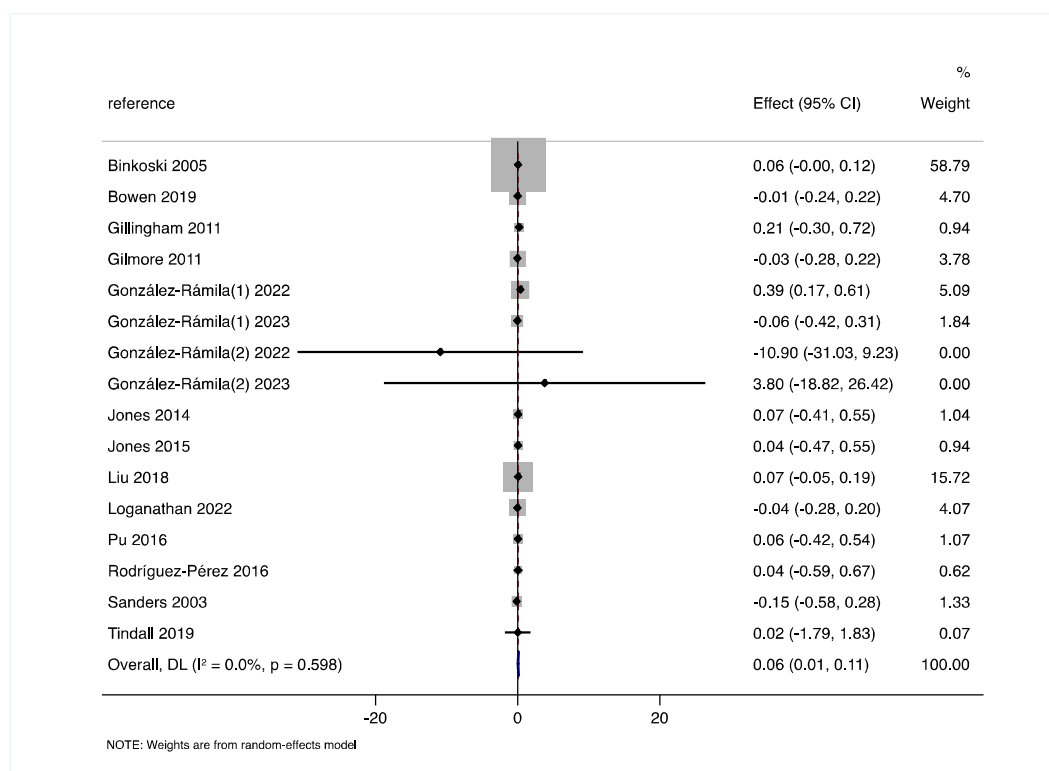


Figure S1-3-5 Forest plot of RCTs investigating the effect of n9 fatty acids supplementation on TG

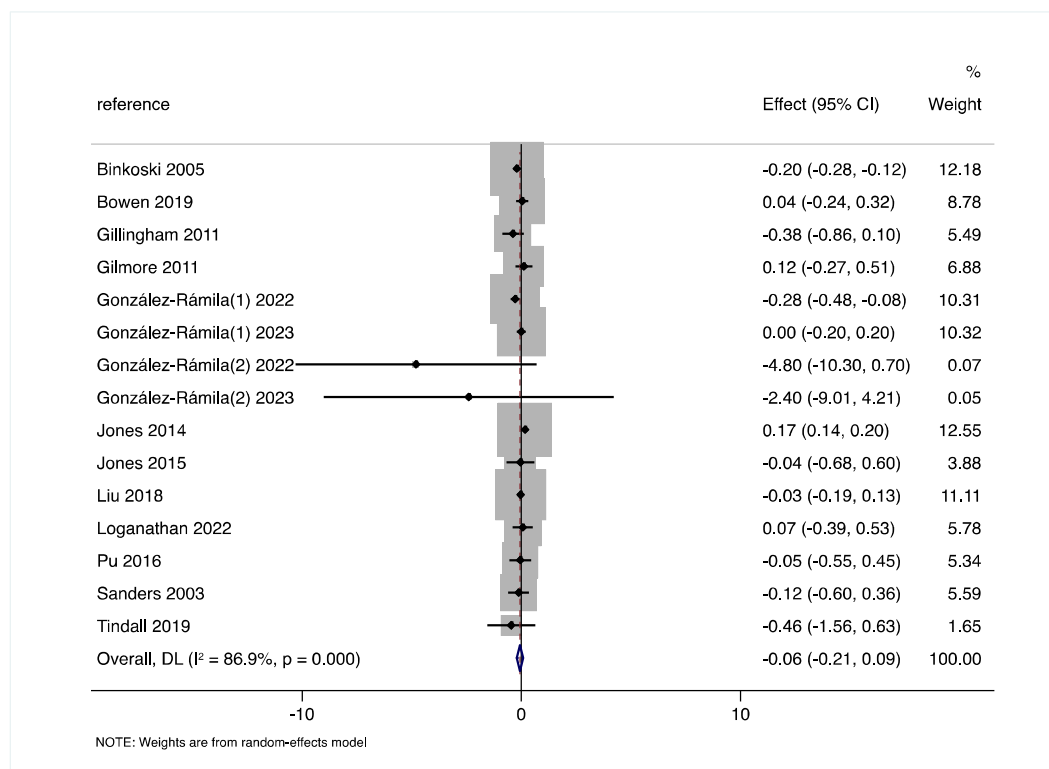


Figure S1-3-6 Forest plot of RCTs investigating the effect of n9 fatty acids supplementation on TC.

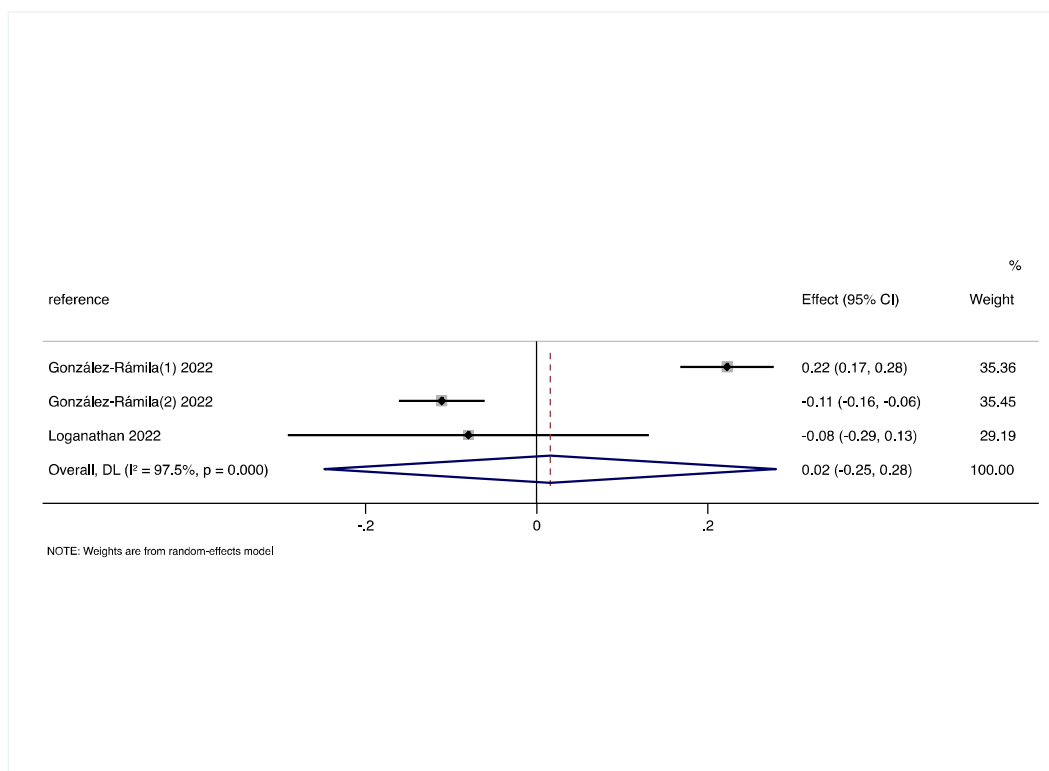


Figure S1-3-7 Forest plot of RCTs investigating the effect of n9 fatty acids supplementation on FBG.

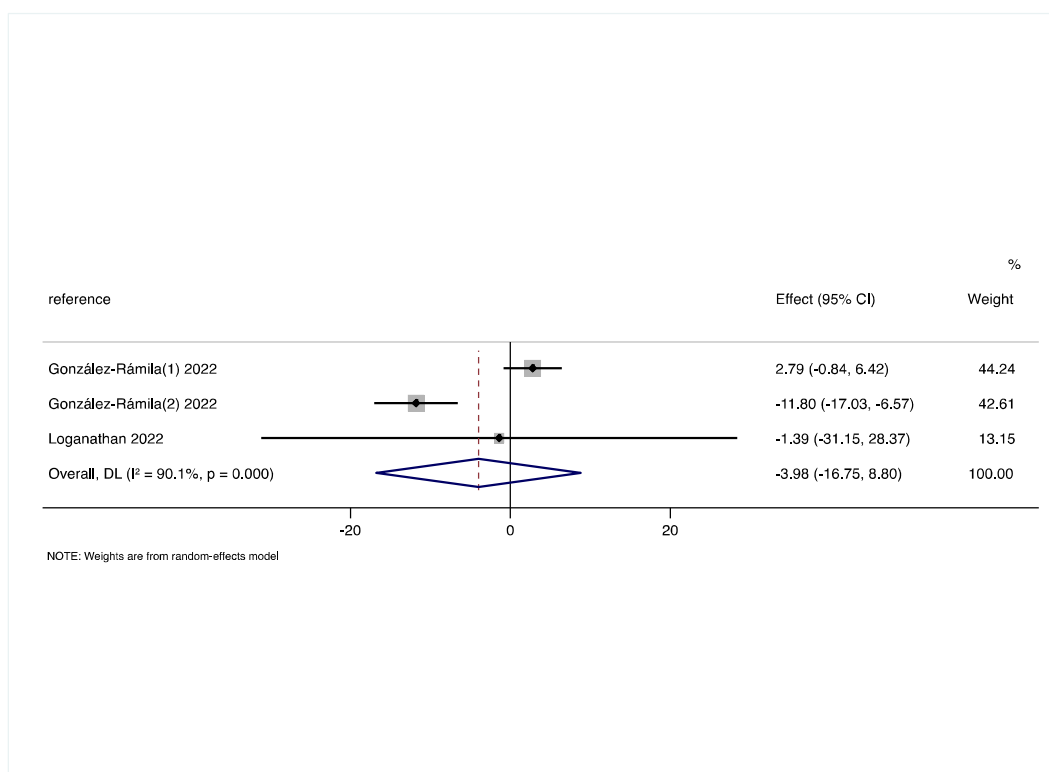


Figure S1-3-8 Forest plot of RCTs investigating the effect of n9 fatty acids supplementation on FBI.

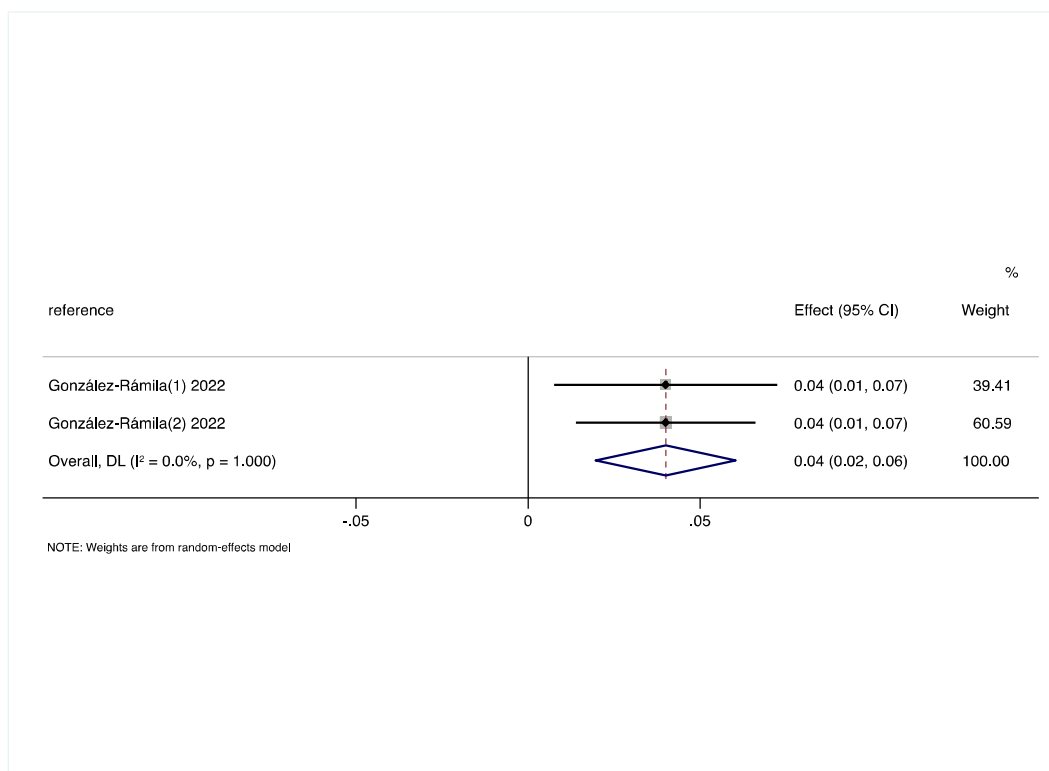


Figure S1-3-9 Forest plot of RCTs investigating the effect of n9 fatty acids supplementation on A1C.

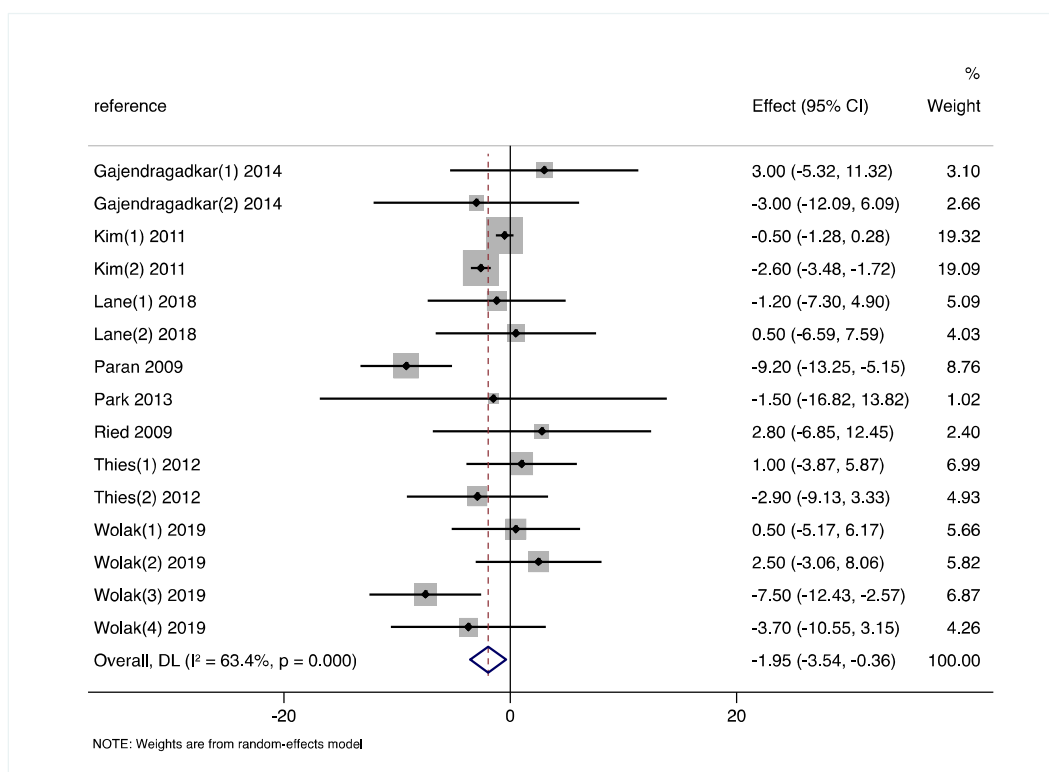


Figure S1-4-1 Forest plot of RCTs investigating the effect of lycopene supplementation on SBP.

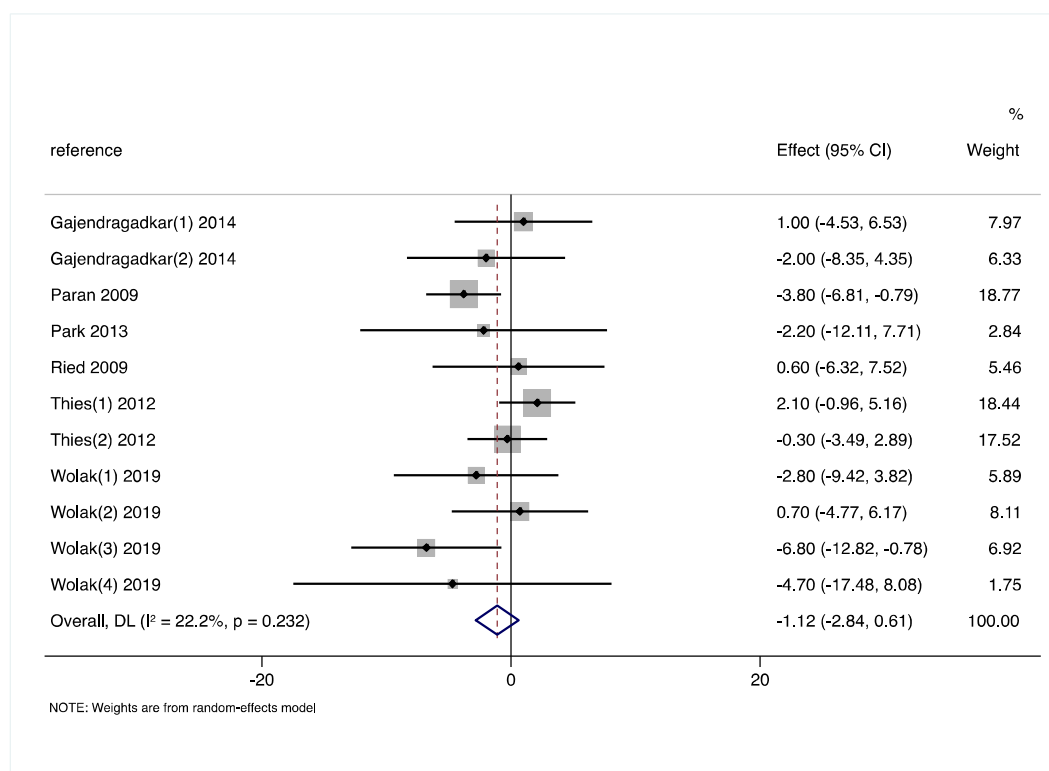


Figure S1-4-2 Forest plot of RCTs investigating the effect of lycopene supplementation on DBP.

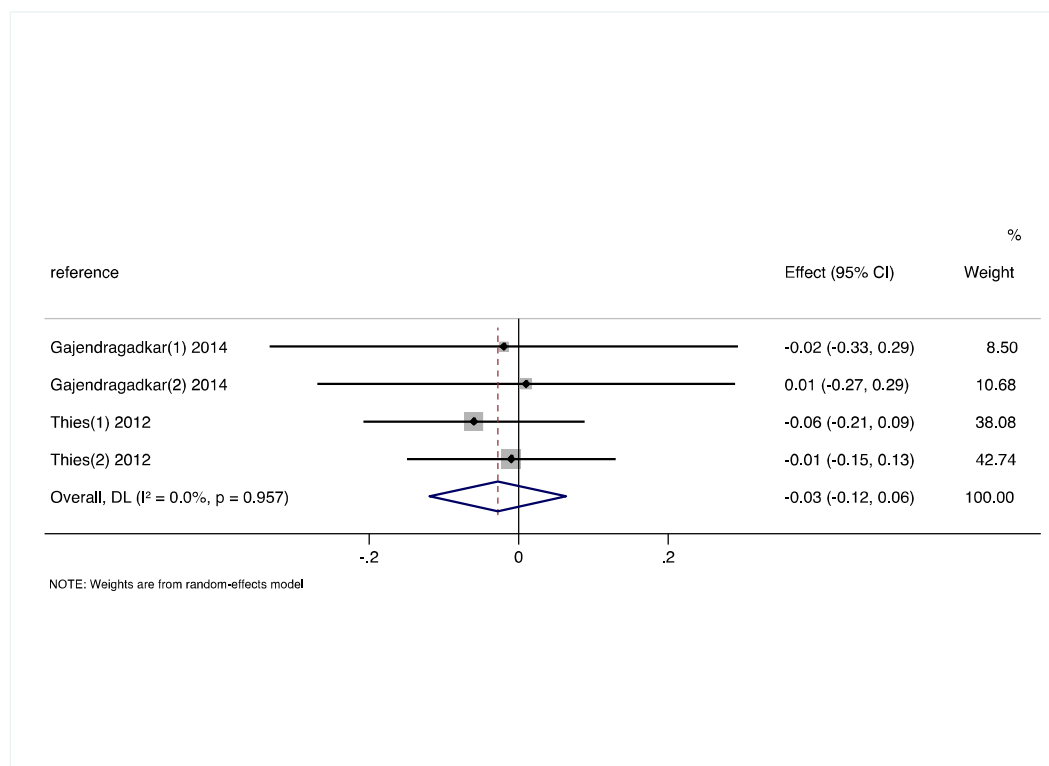


Figure S1-4-3 Forest plot of RCTs investigating the effect of lycopene supplementation on HDL-C.

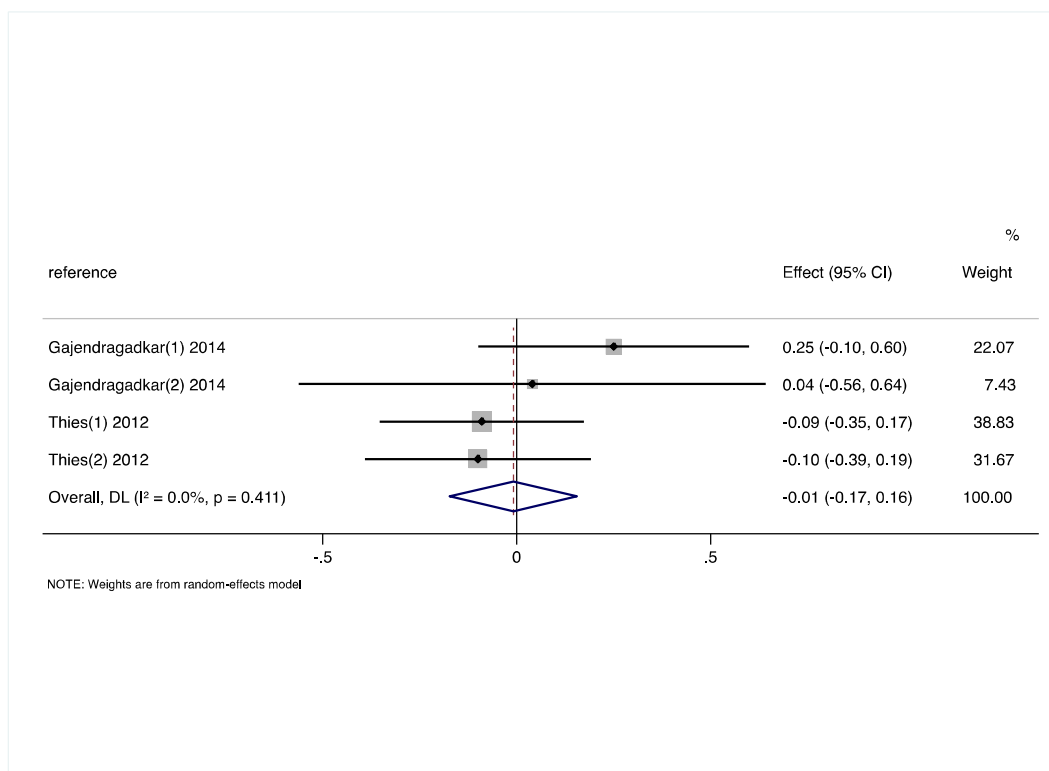


Figure S1-4-4 Forest plot of RCTs investigating the effect of lycopene supplementation on LDL-C.

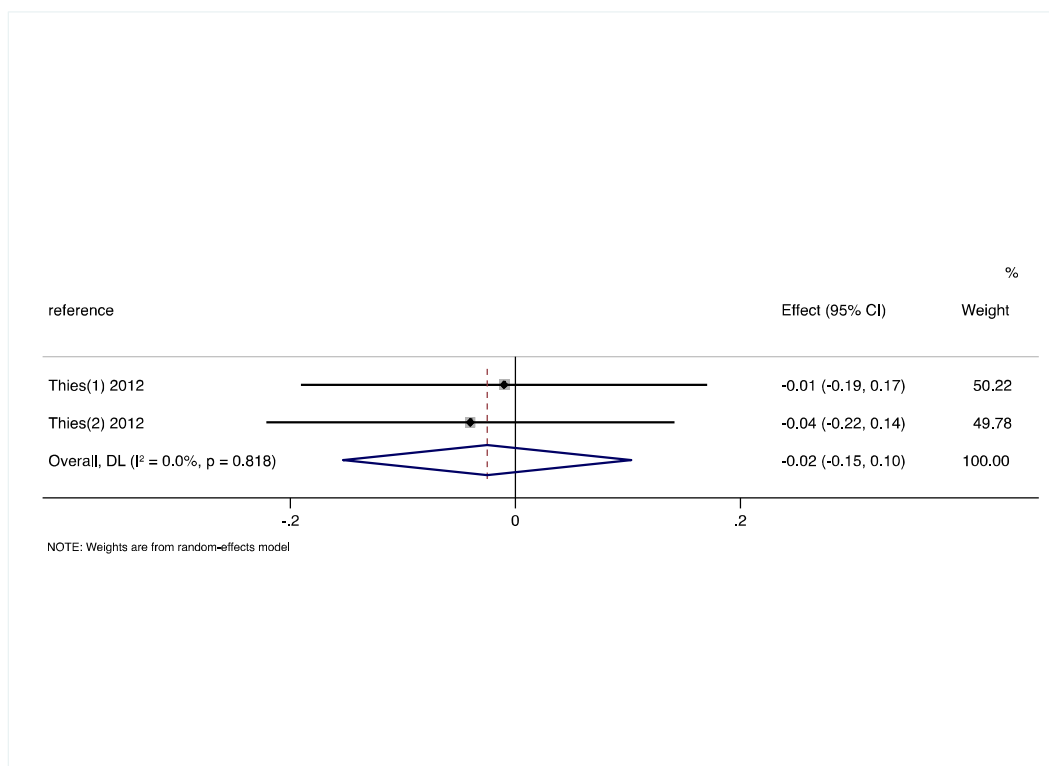


Figure S1-4-5 Forest plot of RCTs investigating the effect of lycopene supplementation on TG

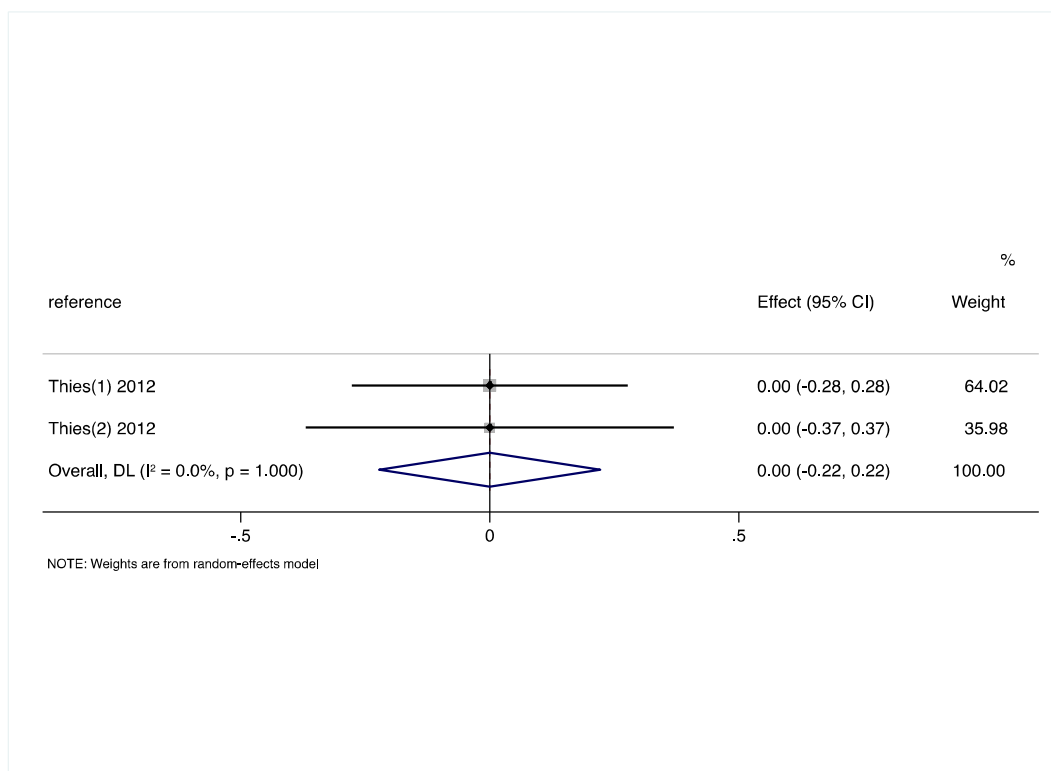


Figure S1-4-6 Forest plot of RCTs investigating the effect of lycopene supplementation on TC.

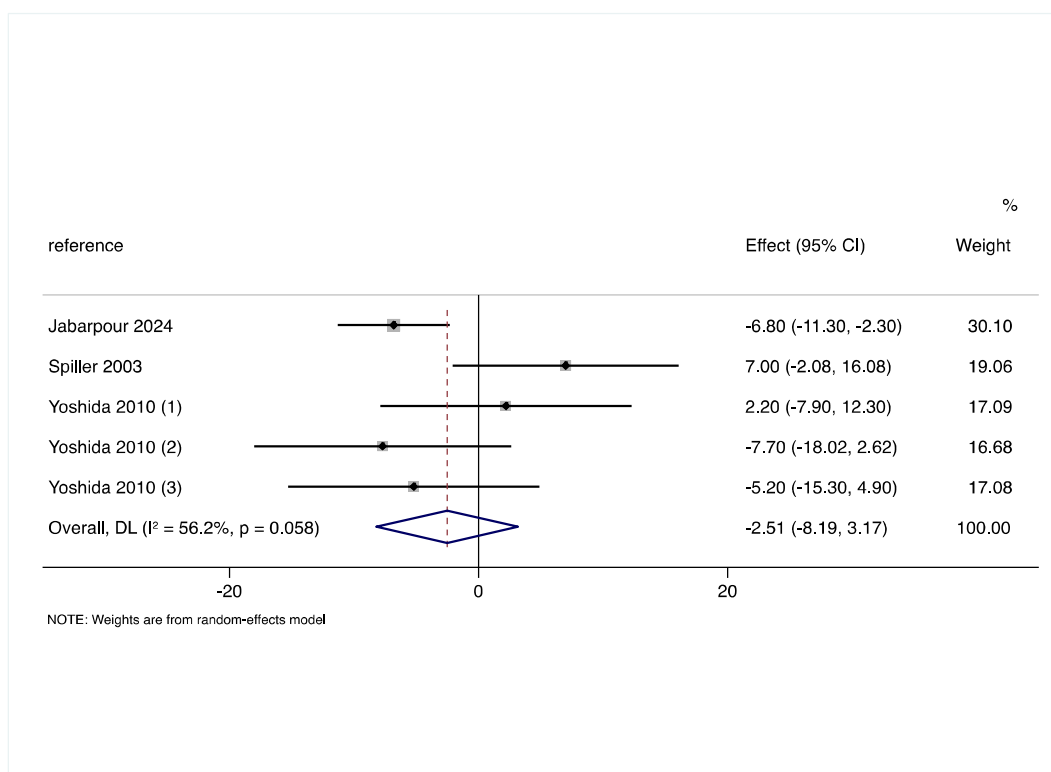


Figure S1-5-1 Forest plot of RCTs investigating the effect of astaxanthin supplementation on SBP.

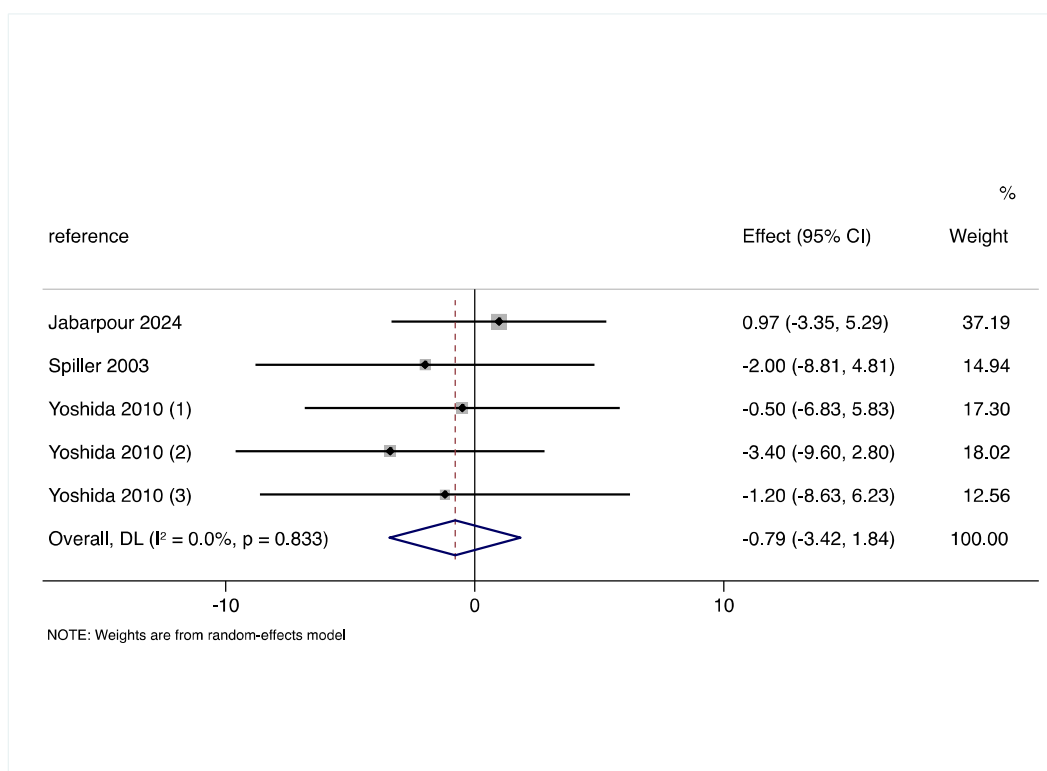


Figure S1-5-2 Forest plot of RCTs investigating the effect of astaxanthin supplementation on DBP.

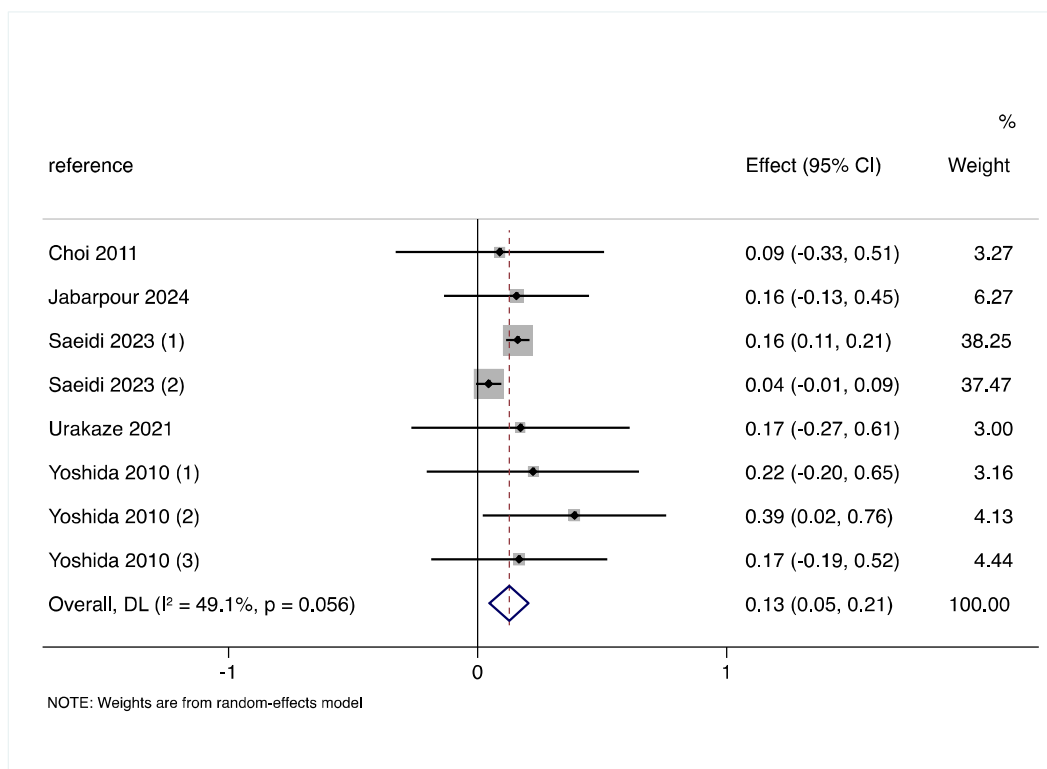


Figure S1-5-3 Forest plot of RCTs investigating the effect of astaxanthin supplementation on HDL-C.

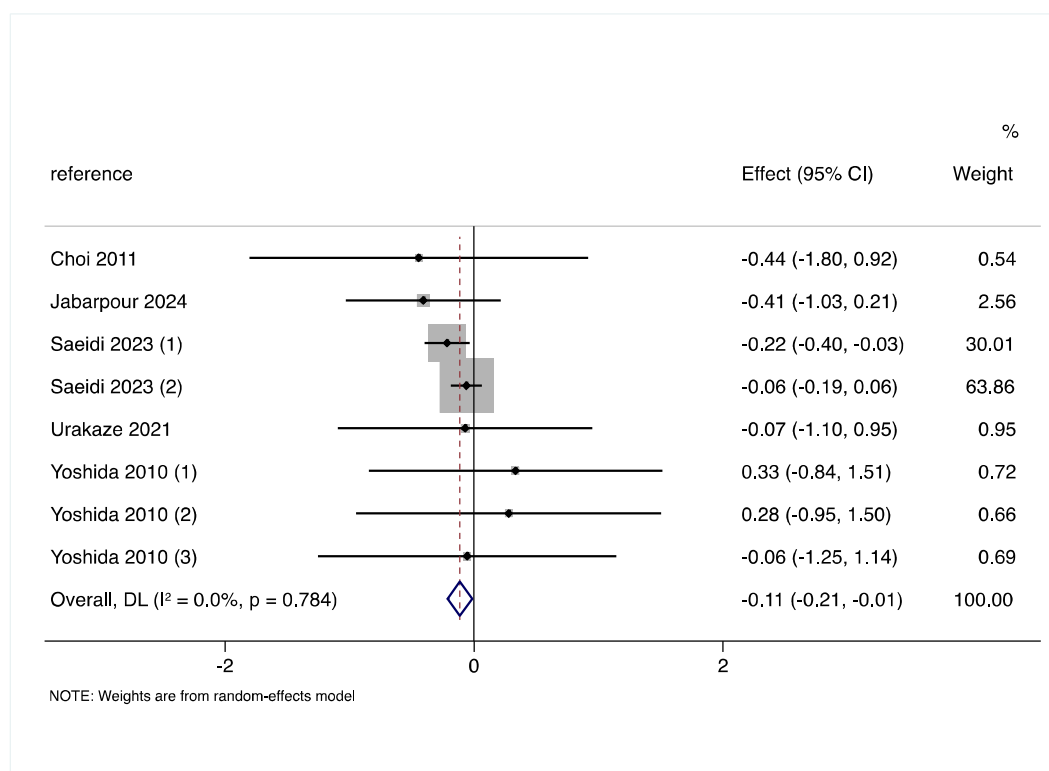


Figure S1-5-4 Forest plot of RCTs investigating the effect of astaxanthin supplementation on LDL-C.

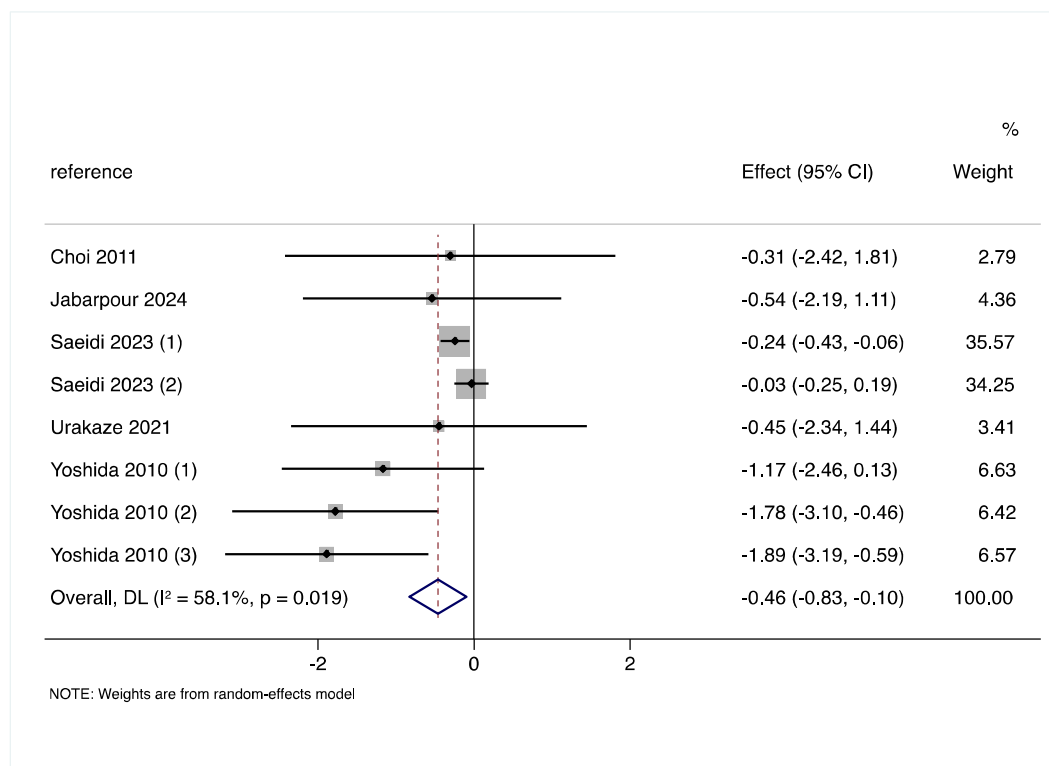


Figure S1-5-5 Forest plot of RCTs investigating the effect of astaxanthin supplementation on TG

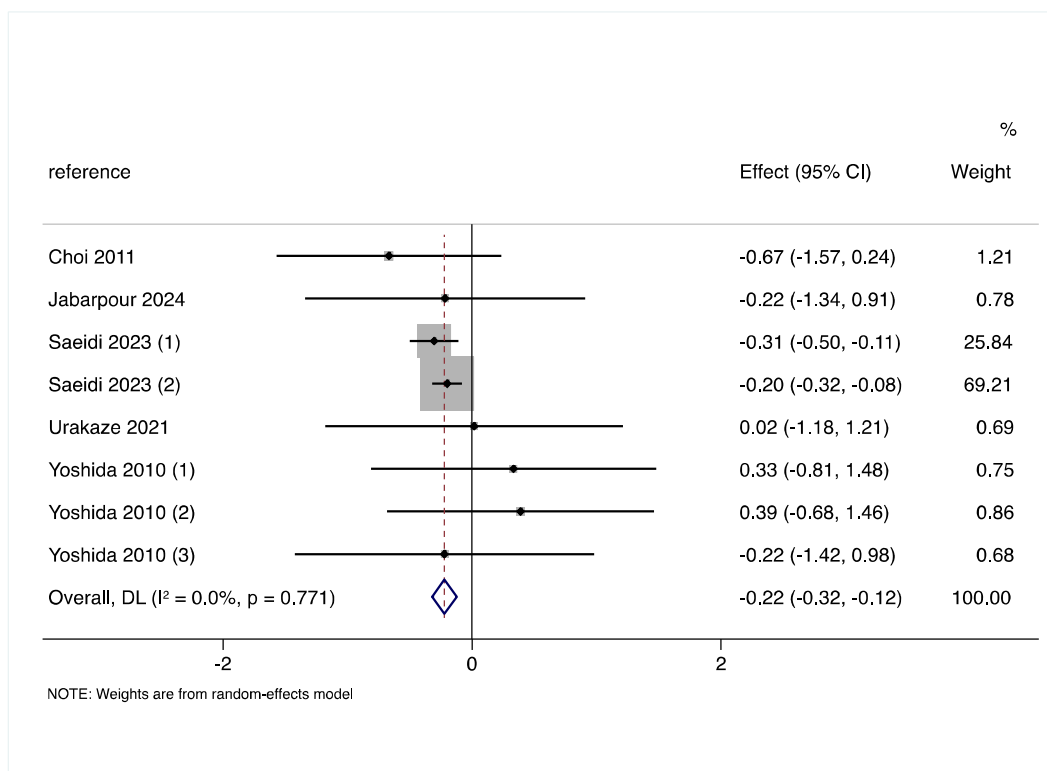


Figure S1-5-6 Forest plot of RCTs investigating the effect of astaxanthin supplementation on TC.

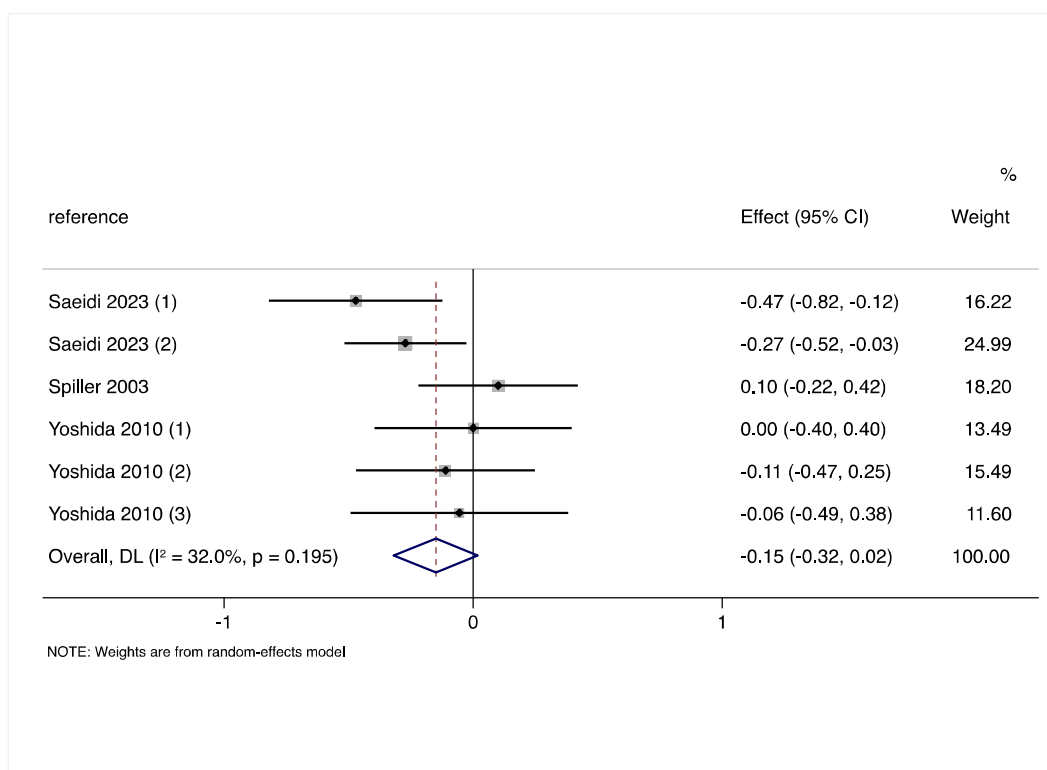


Figure S1-5-7 Forest plot of RCTs investigating the effect of astaxanthin supplementation on FBG.

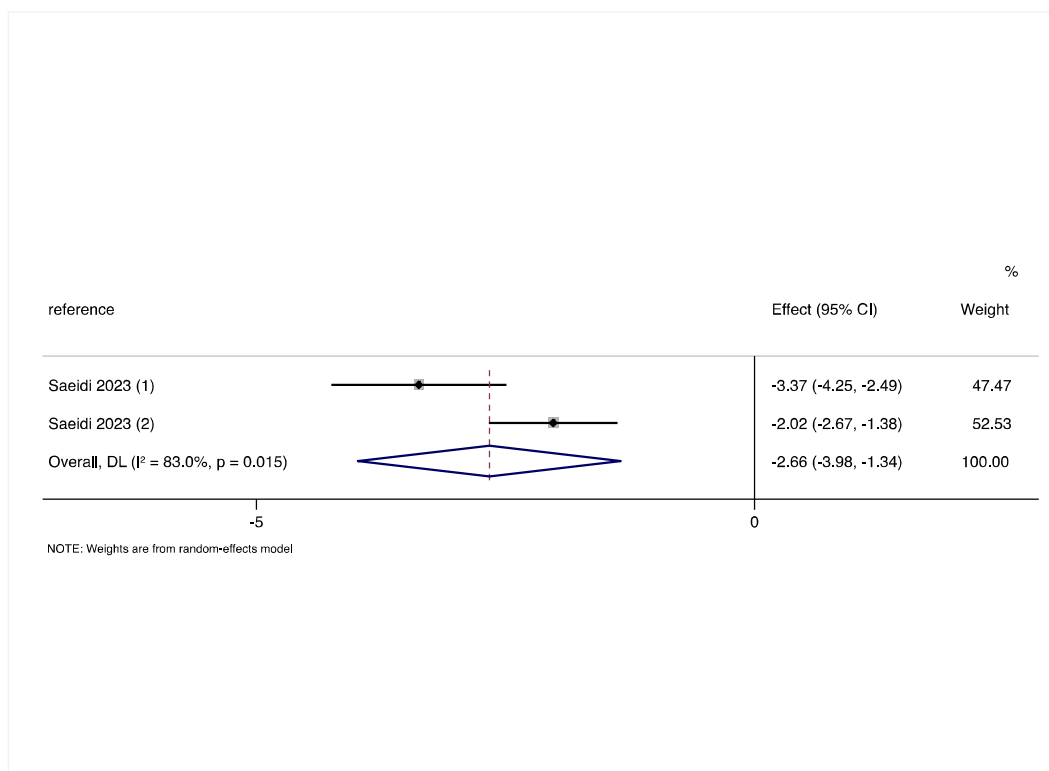


Figure S1-5-8 Forest plot of RCTs investigating the effect of astaxanthin supplementation on FBI.

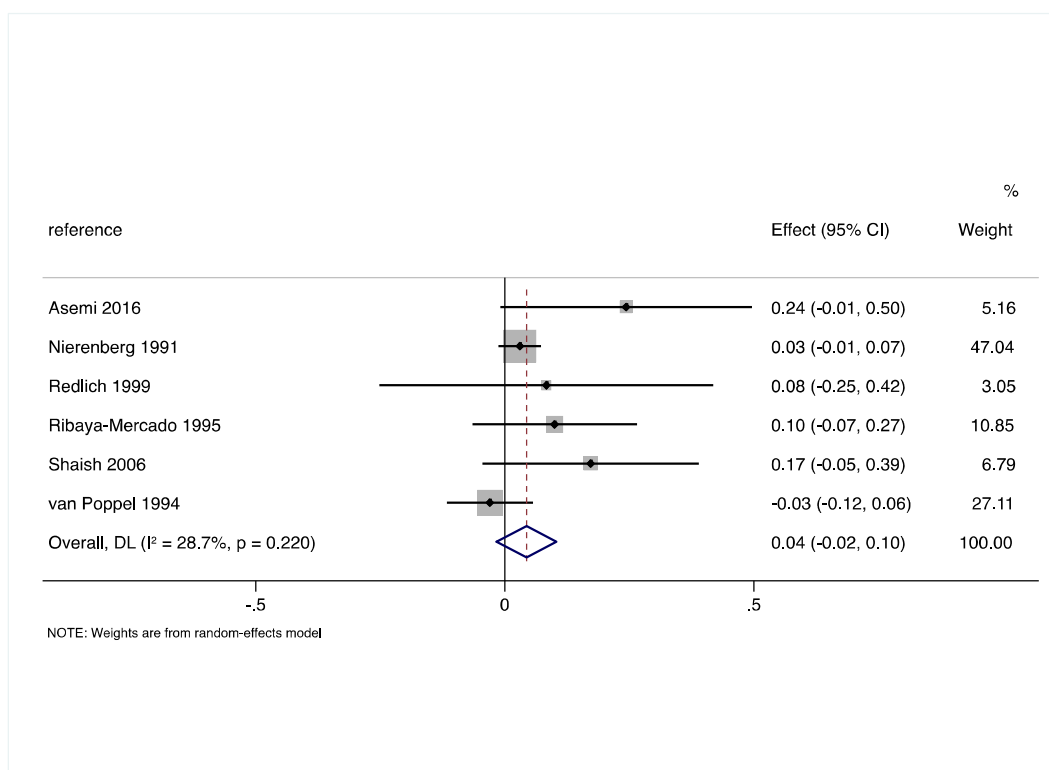


Figure S1-6-1 Forest plot of RCTs investigating the effect of beta-carotene supplementation on HDL-C.

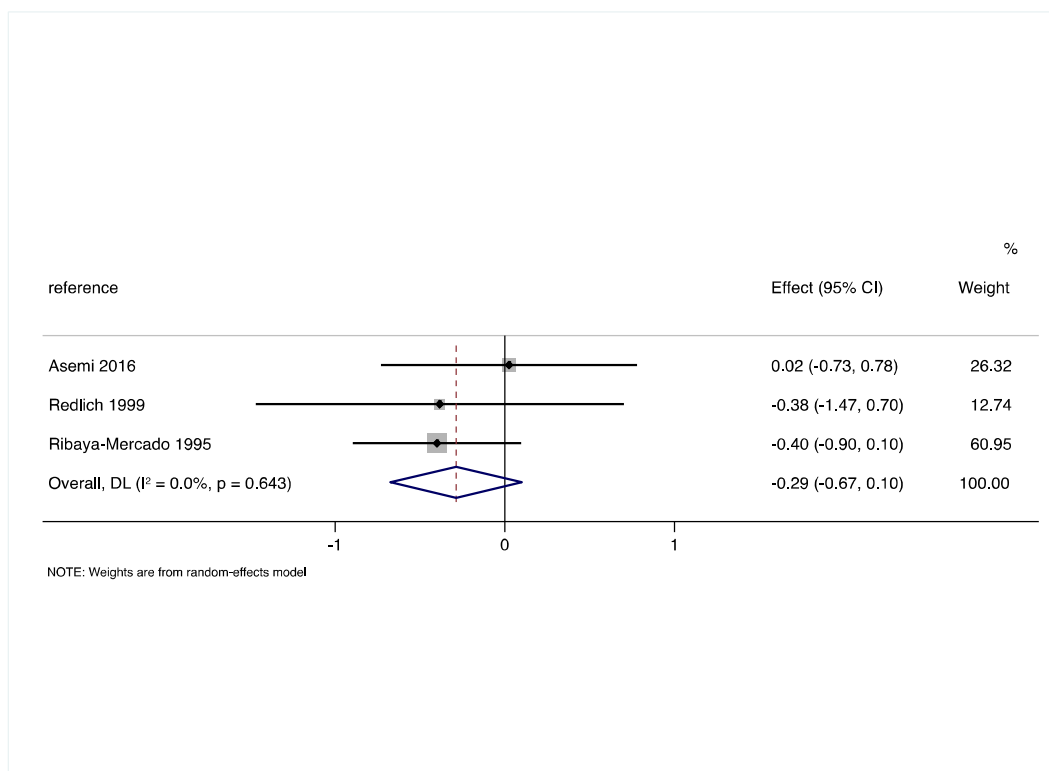


Figure S1-6-2 Forest plot of RCTs investigating the effect of beta-carotene supplementation on LDL-C.

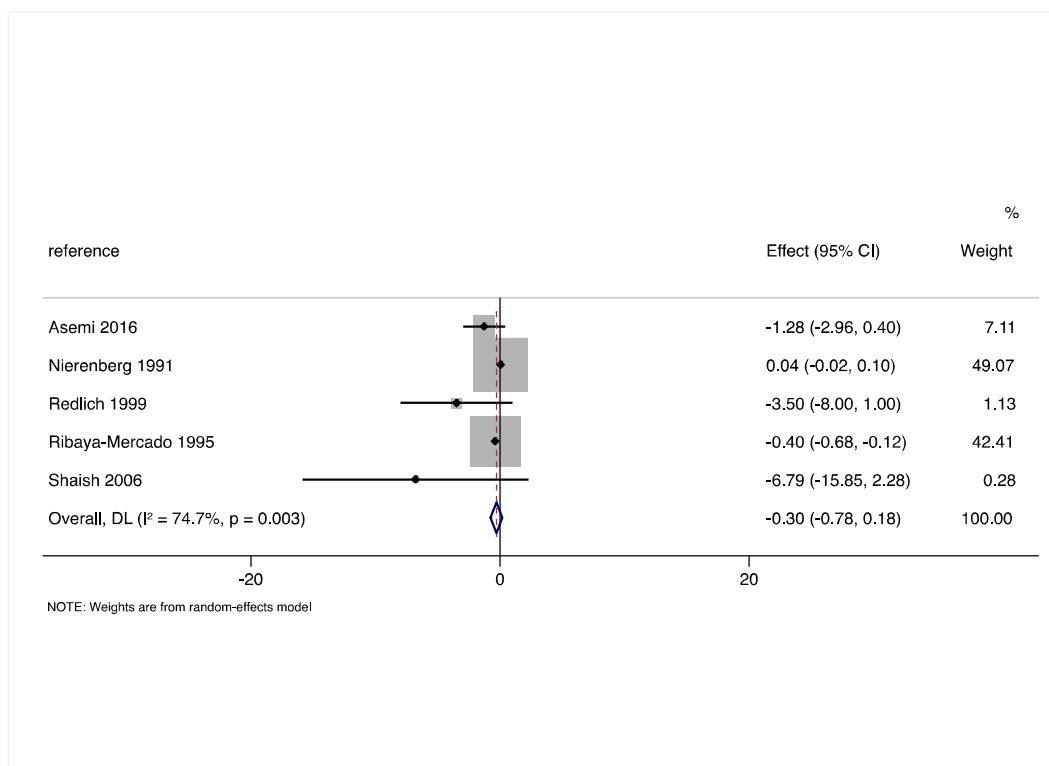


Figure S1-6-3 Forest plot of RCTs investigating the effect of beta-carotene supplementation on TG

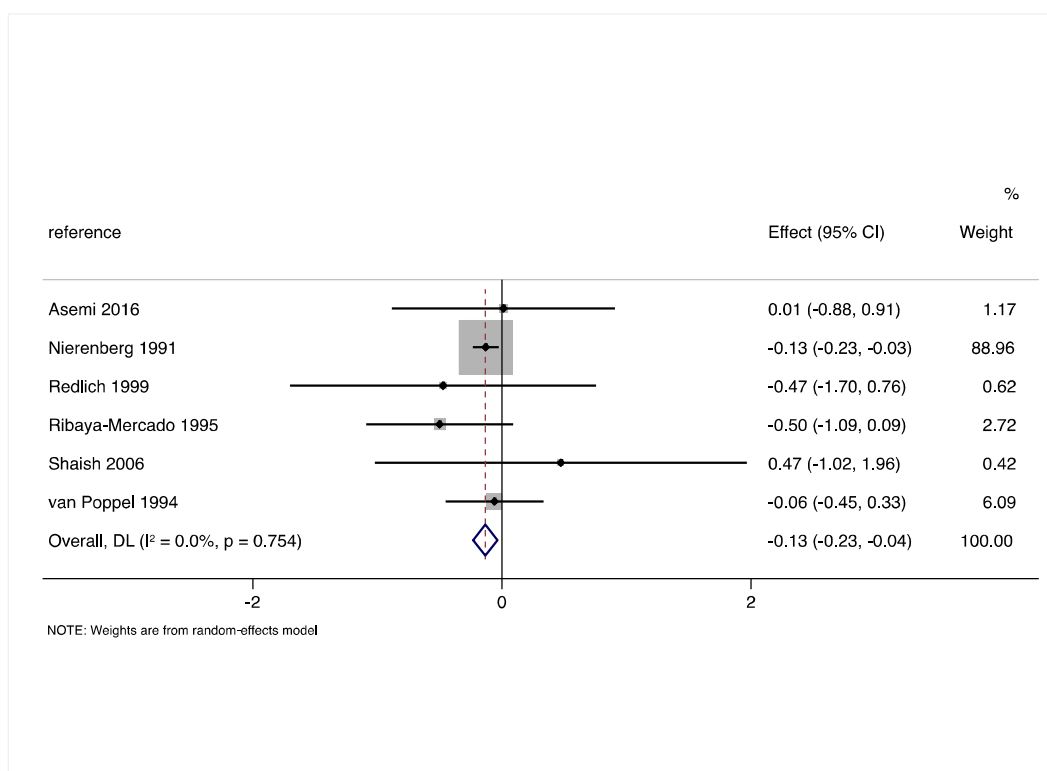


Figure S1-6-4 Forest plot of RCTs investigating the effect of beta-carotene supplementation on TC.

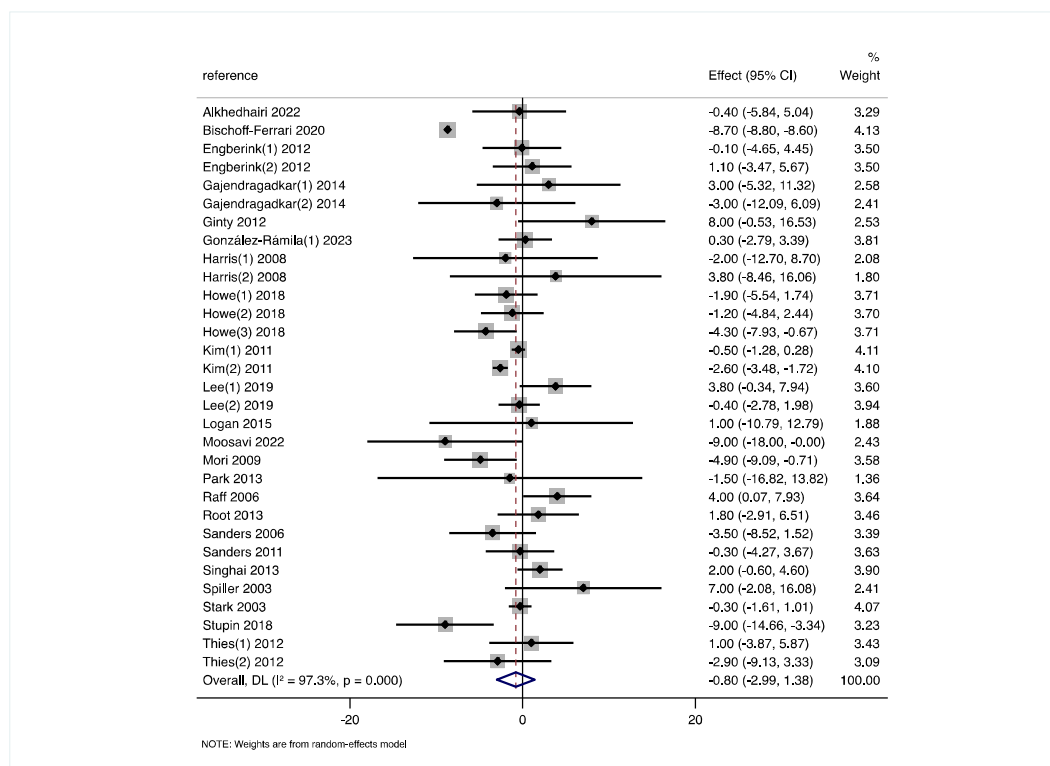


Figure S1-7-1 Forest plot of RCTs investigating the effect of antioxidant fatty acids supplementation on SBP in healthy population.

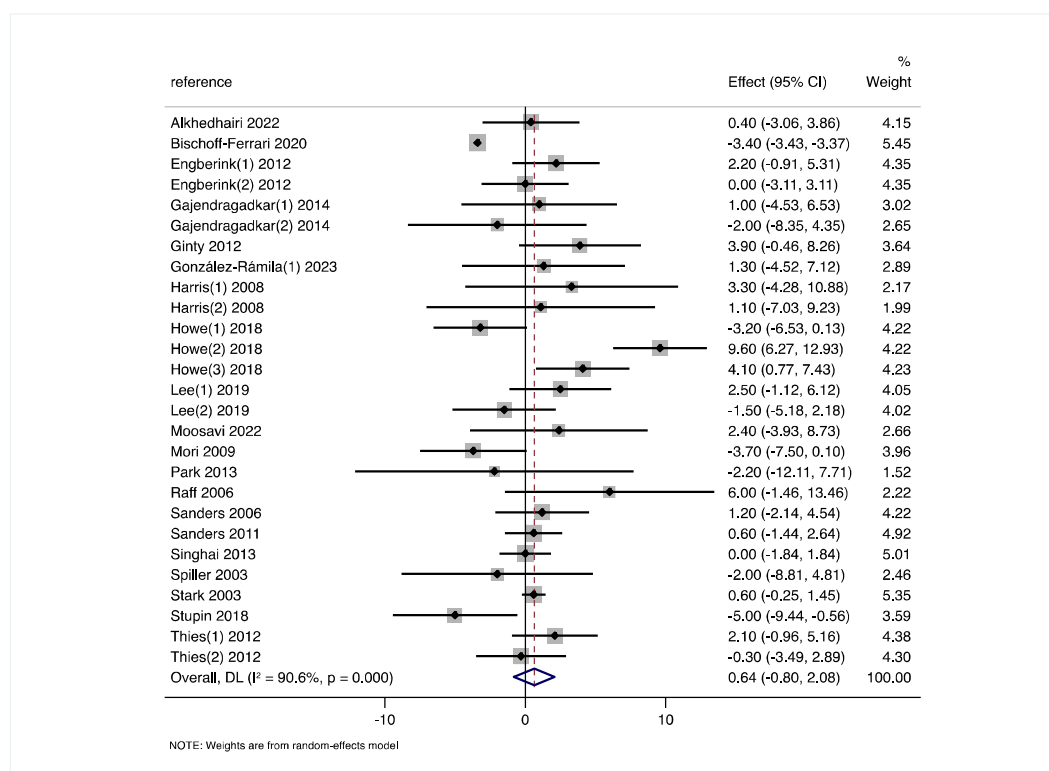


Figure S1-7-2 Forest plot of RCTs investigating the effect of antioxidant fatty acids supplementation on DBP in healthy population.

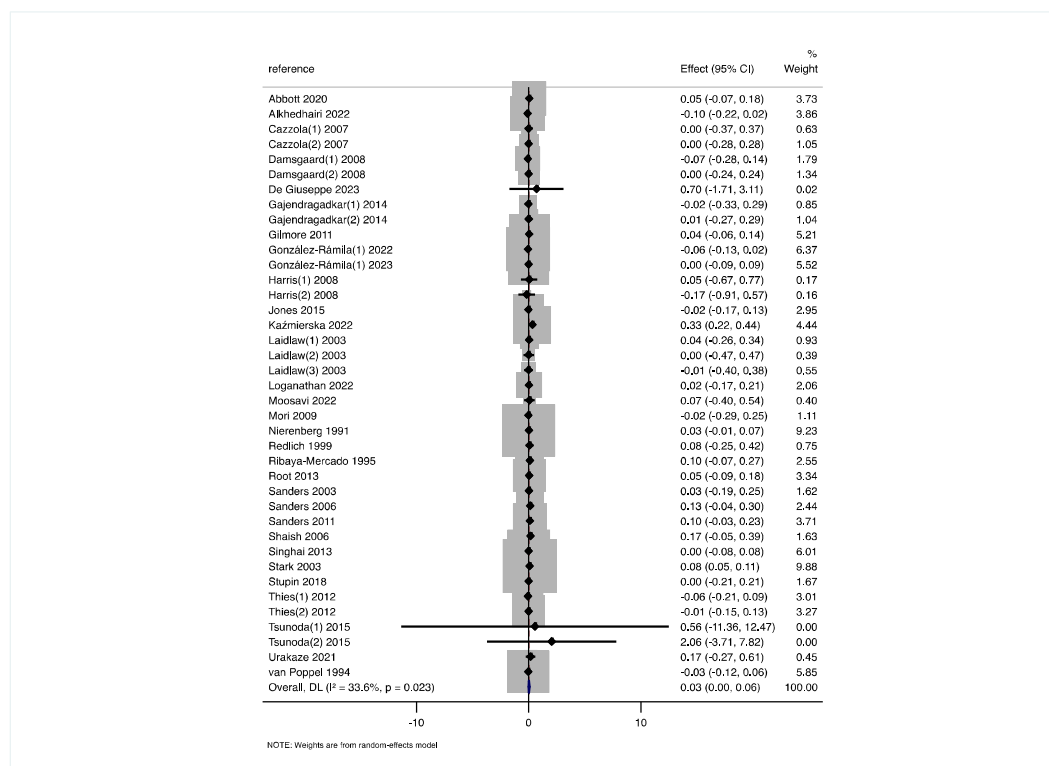


Figure S1-7-3 Forest plot of RCTs investigating the effect of antioxidant fatty acids supplementation on HDL in healthy population.

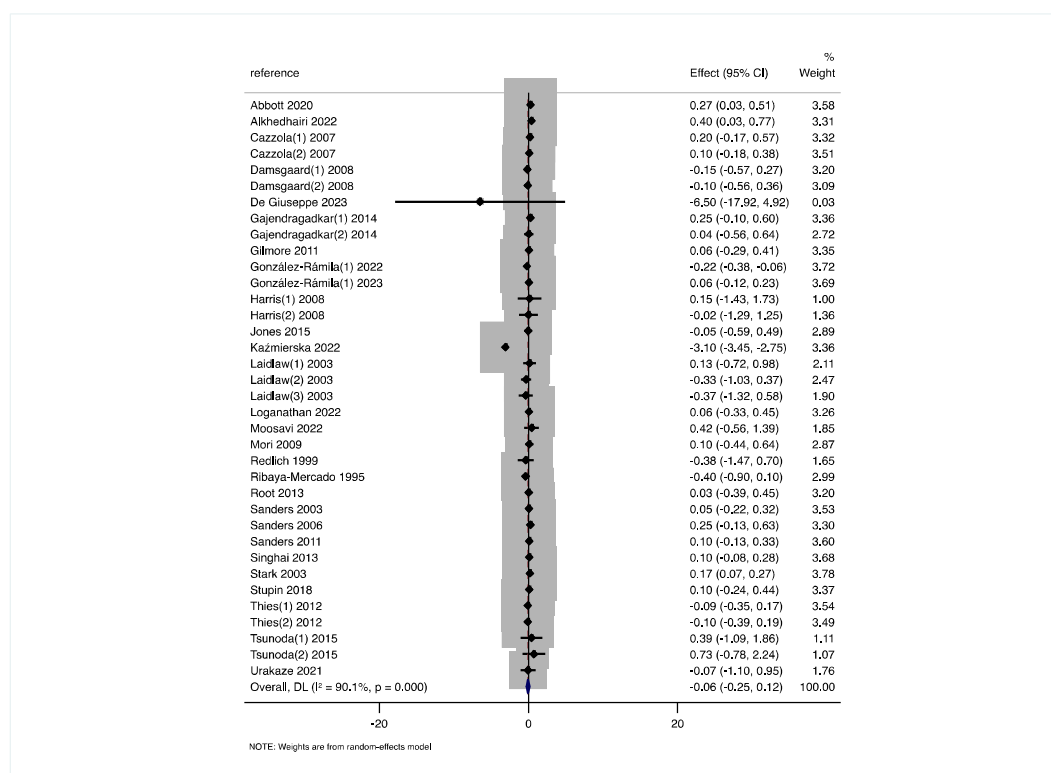


Figure S1-7-4 Forest plot of RCTs investigating the effect of antioxidant fatty acids supplementation on LDL in healthy population.

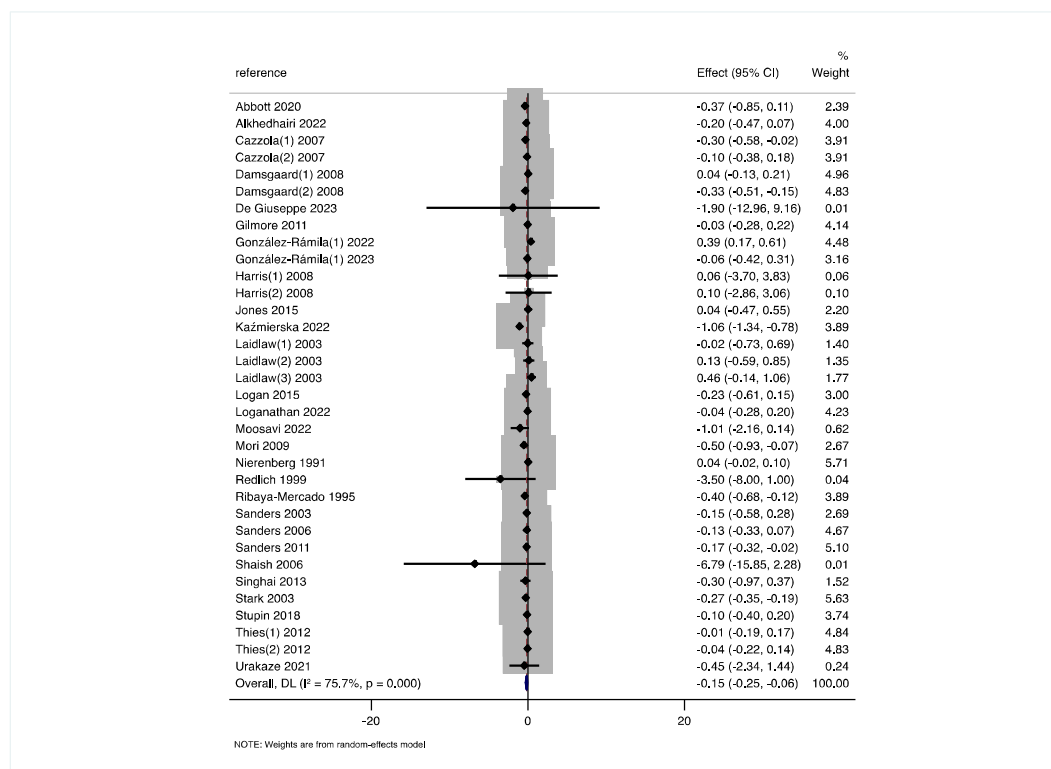


Figure S1-7-5 Forest plot of RCTs investigating the effect of antioxidant fatty acids supplementation on TG in healthy population.

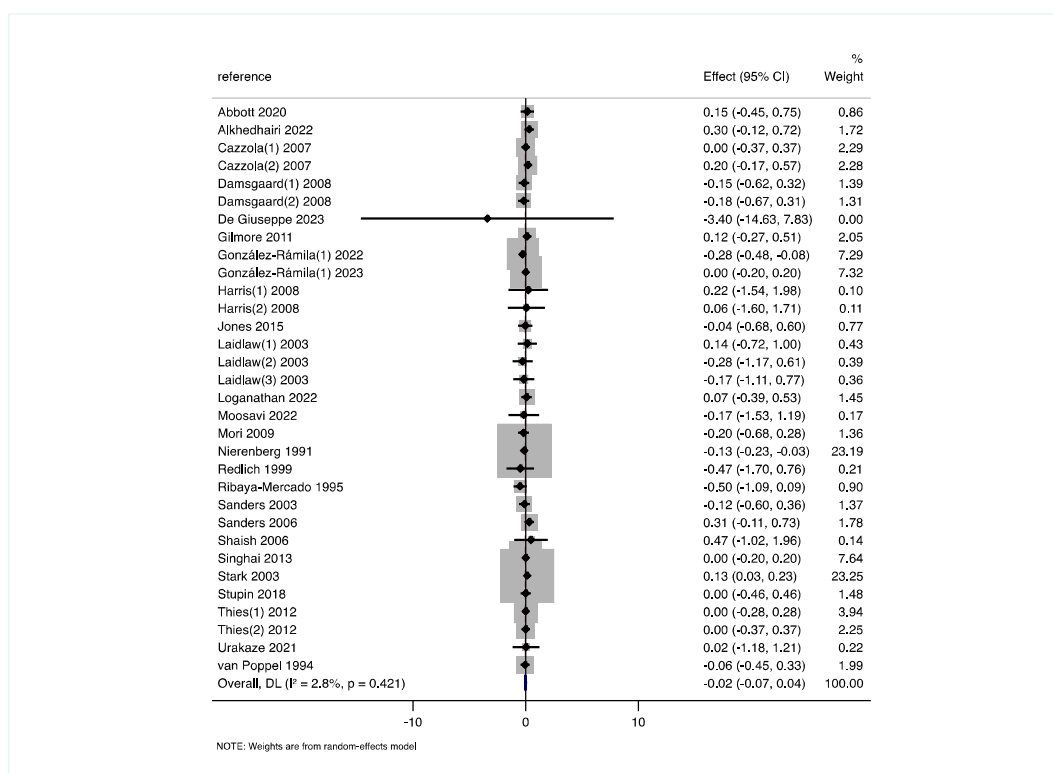


Figure S1-7-6 Forest plot of RCTs investigating the effect of antioxidant fatty acids supplementation on TC in healthy population.

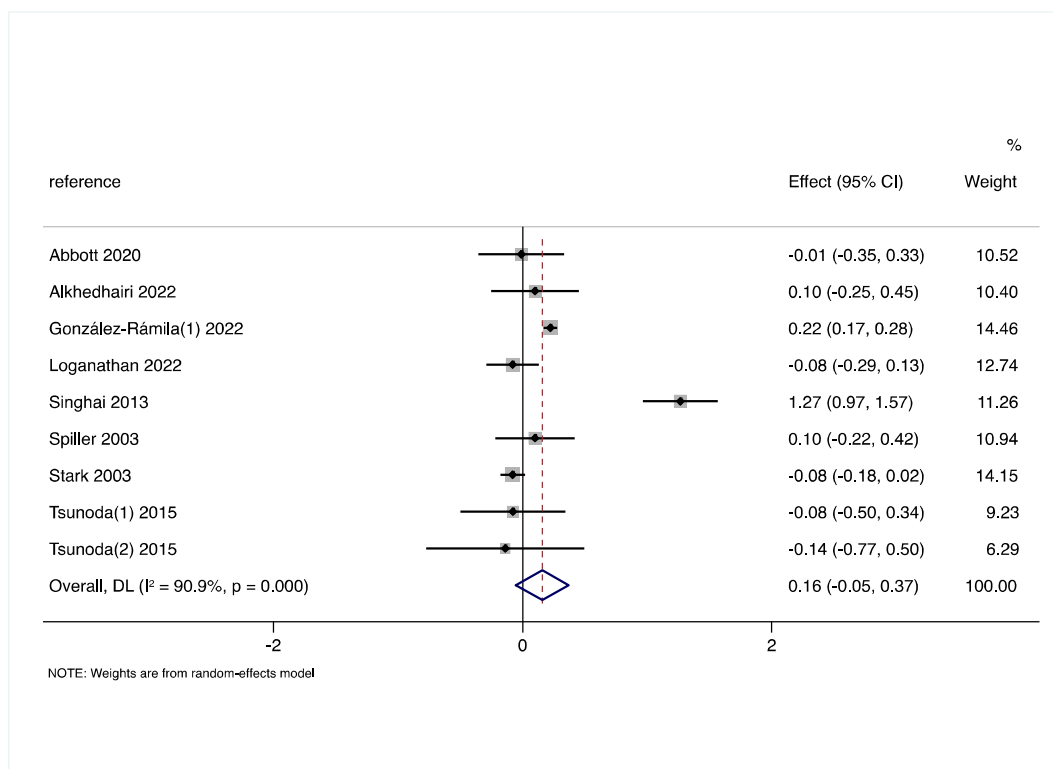


Figure S1-7-7 Forest plot of RCTs investigating the effect of antioxidant fatty acids supplementation on FBG in healthy population.

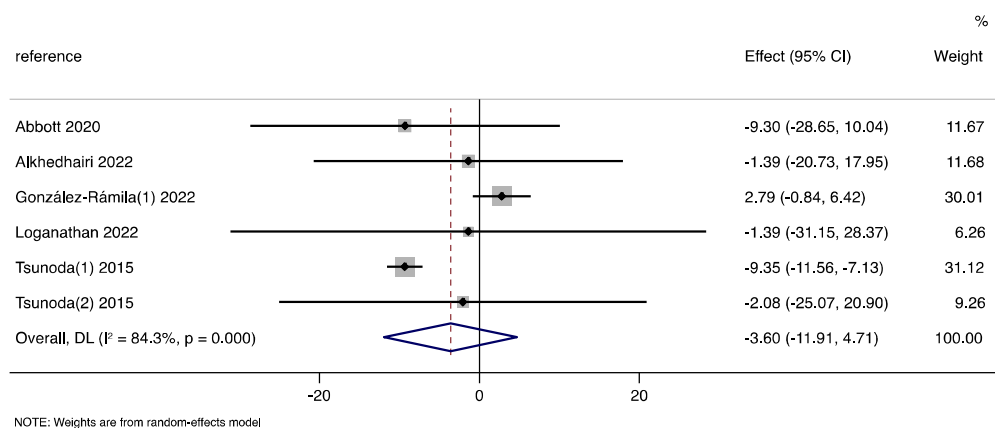


Figure S1-7-8 Forest plot of RCTs investigating the effect of antioxidant fatty acids supplementation on FBI in healthy population.

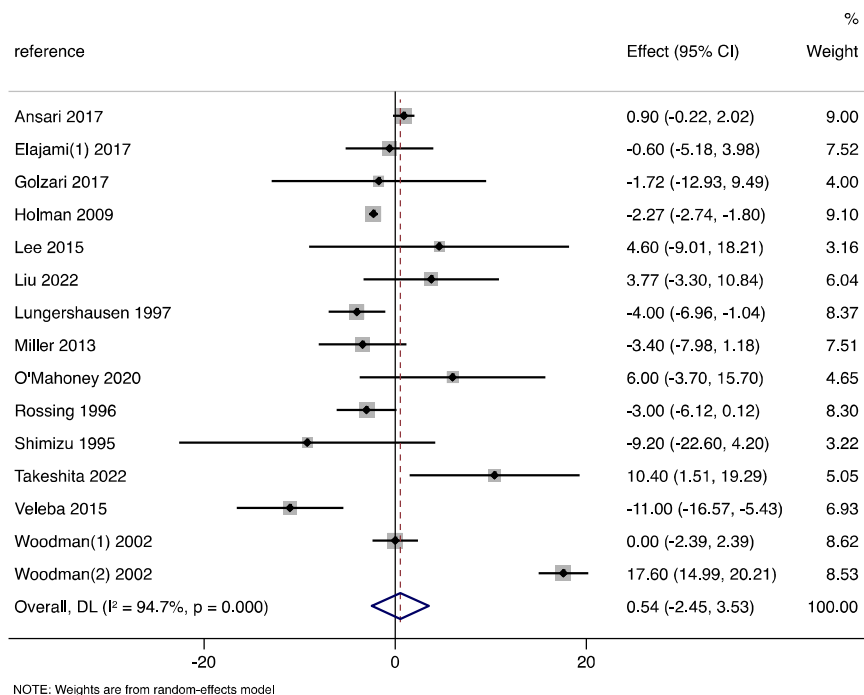


Figure S1-8-1 Forest plot of RCTs investigating the effect of antioxidant fatty acids supplementation on SBP in population with diabetes.

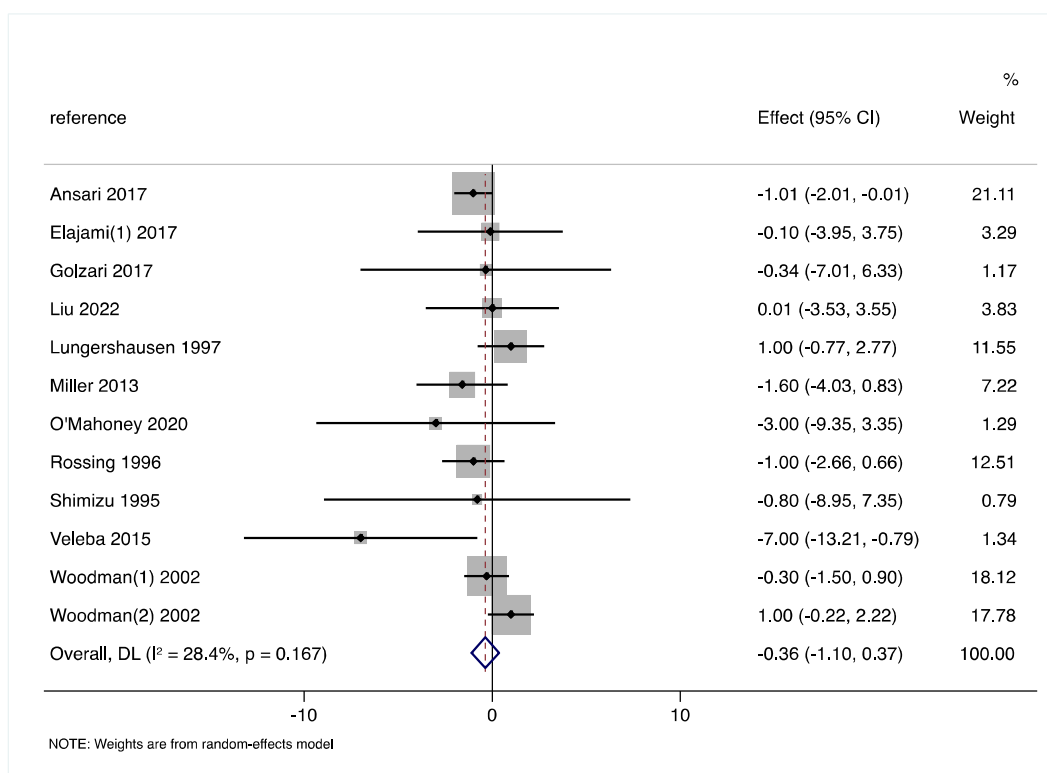


Figure S1-8-2 Forest plot of RCTs investigating the effect of antioxidant fatty acids supplementation on DBP in population with diabetes.

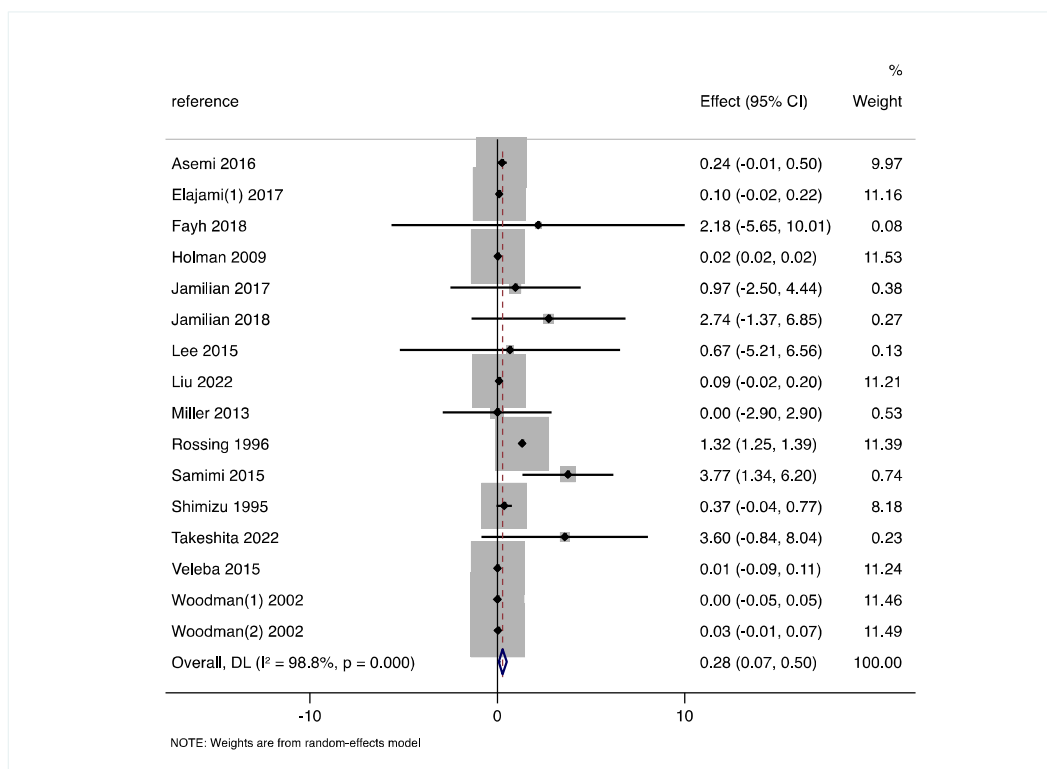


Figure S1-8-3 Forest plot of RCTs investigating the effect of antioxidant fatty acids supplementation on HDL in population with diabetes.

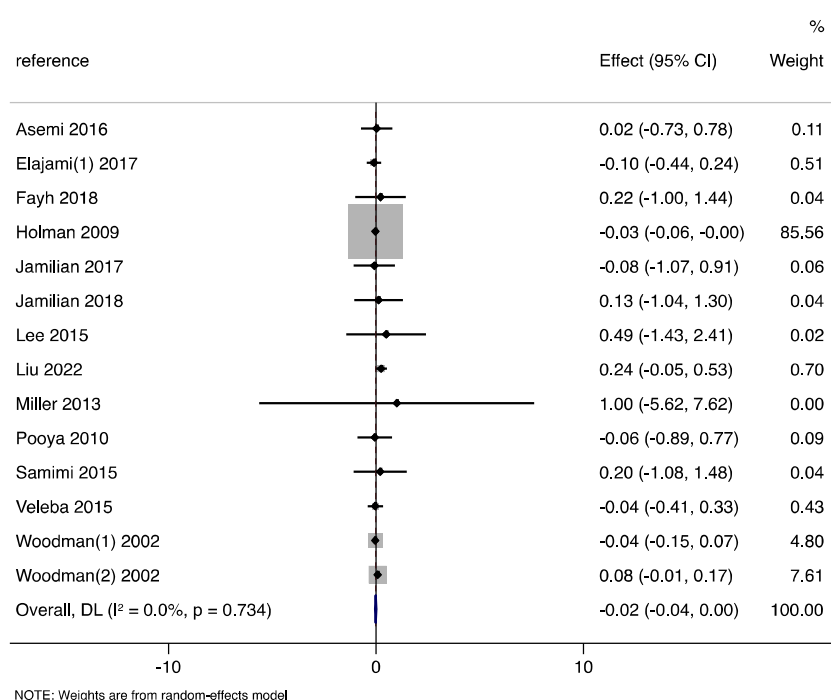


Figure S1-8-4 Forest plot of RCTs investigating the effect of antioxidant fatty acids supplementation on LDL in population with diabetes.

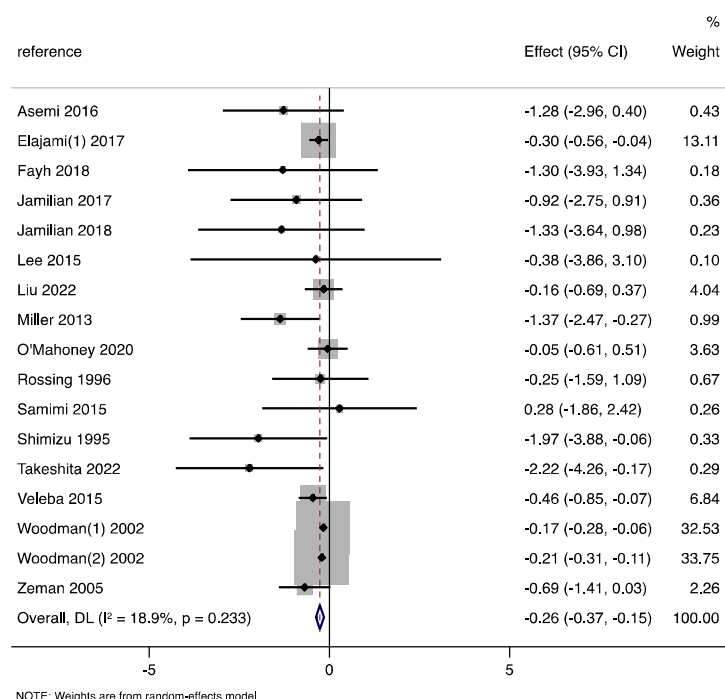


Figure S1-8-5 Forest plot of RCTs investigating the effect of antioxidant fatty acids supplementation on TG in population with diabetes.

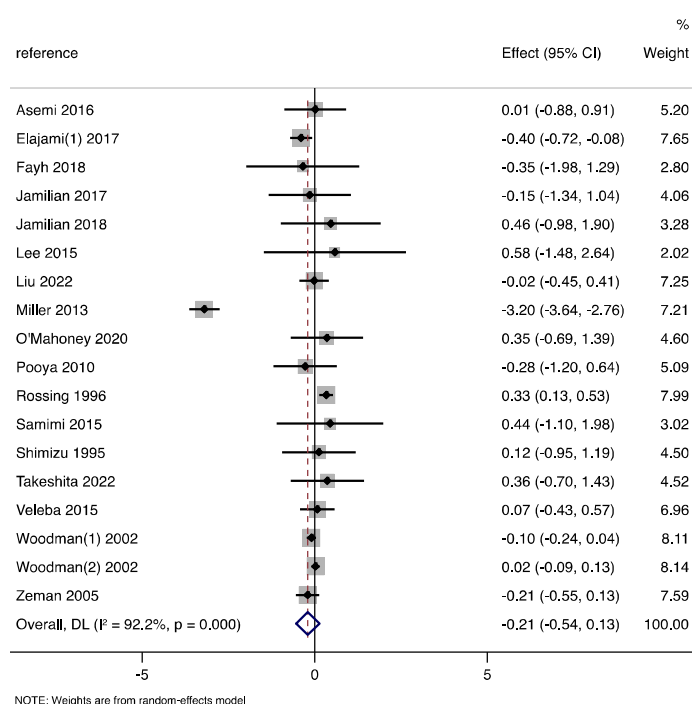


Figure S1-8-6 Forest plot of RCTs investigating the effect of antioxidant fatty acids supplementation on TC in population with diabetes.

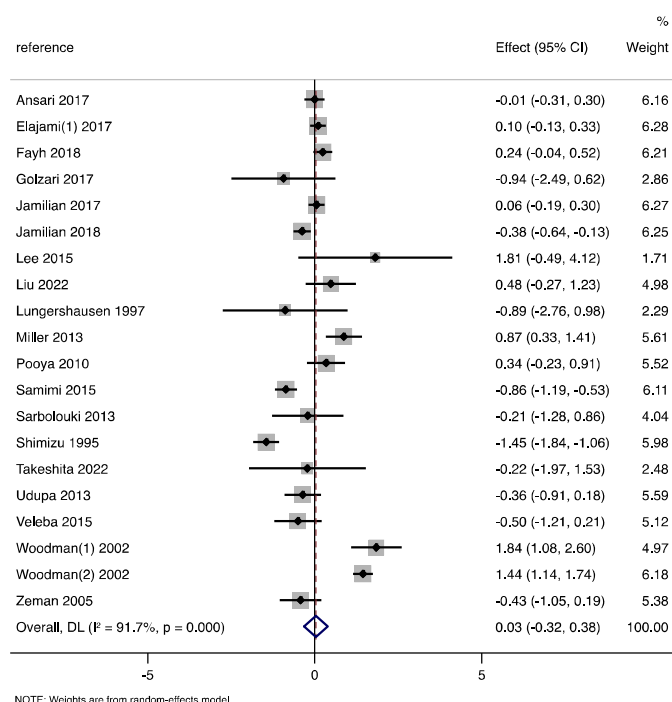


Figure S1-8-7 Forest plot of RCTs investigating the effect of antioxidant fatty acids supplementation on FBG in population with diabetes.

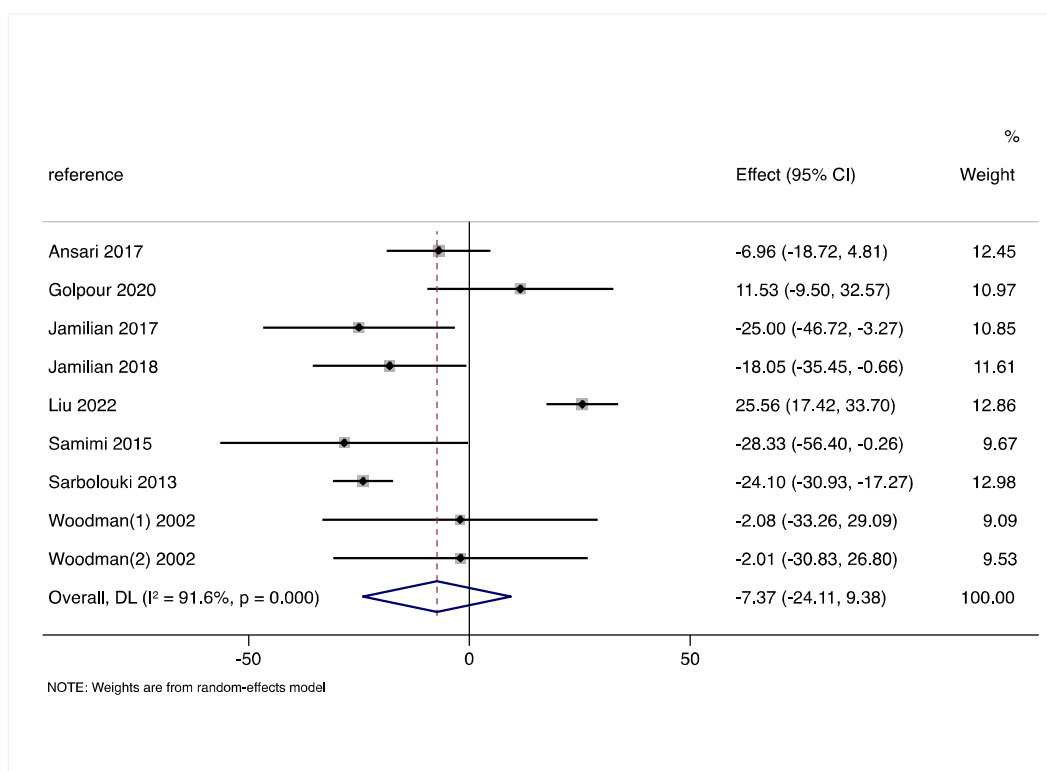


Figure S1-8-8 Forest plot of RCTs investigating the effect of antioxidant fatty acids supplementation on FBI in population with diabetes.

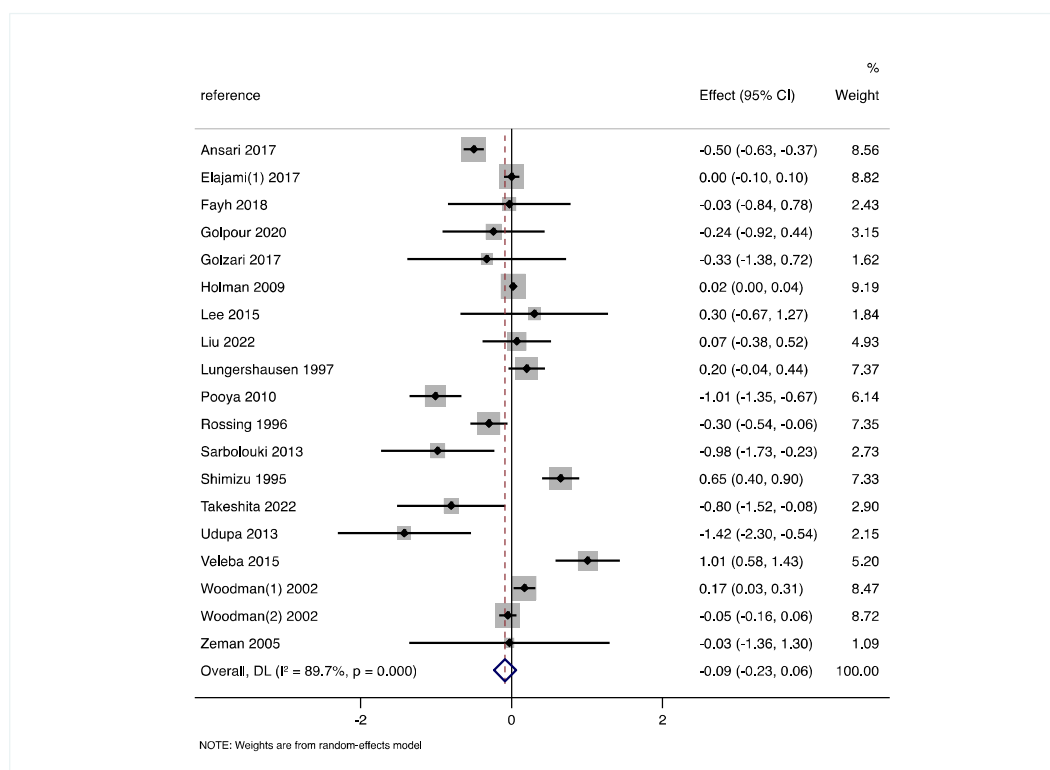


Figure S1-8-9 Forest plot of RCTs investigating the effect of antioxidant fatty acids supplementation on A1C in population with diabetes.

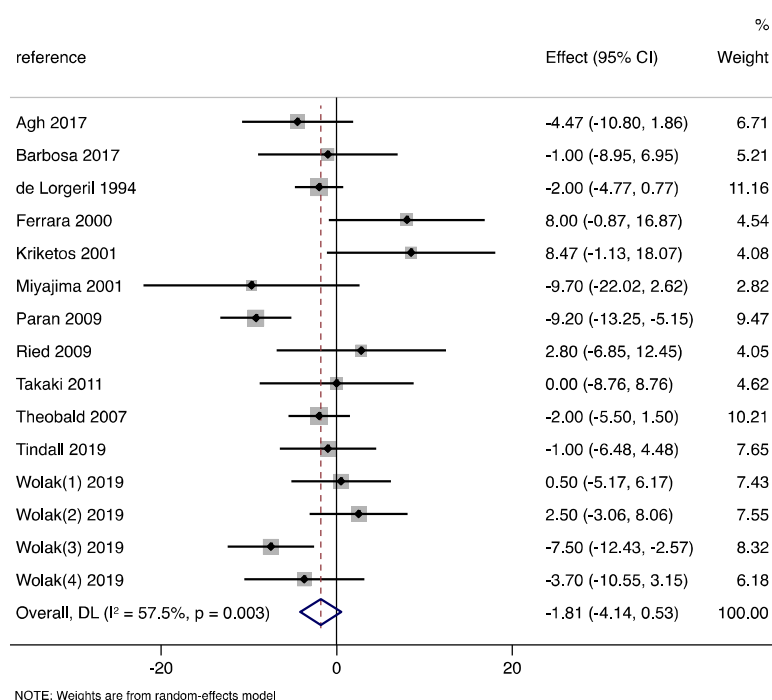


Figure S1-9-1 Forest plot of RCTs investigating the effect of antioxidant fatty acids supplementation on SBP in population with hypertension.

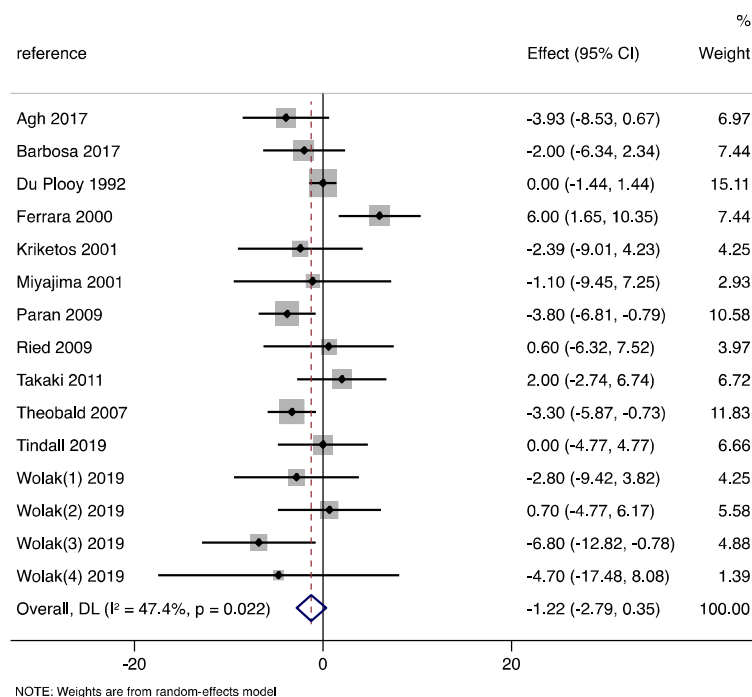


Figure S1-9-2 Forest plot of RCTs investigating the effect of antioxidant fatty acids supplementation on DBP in population with hypertension.

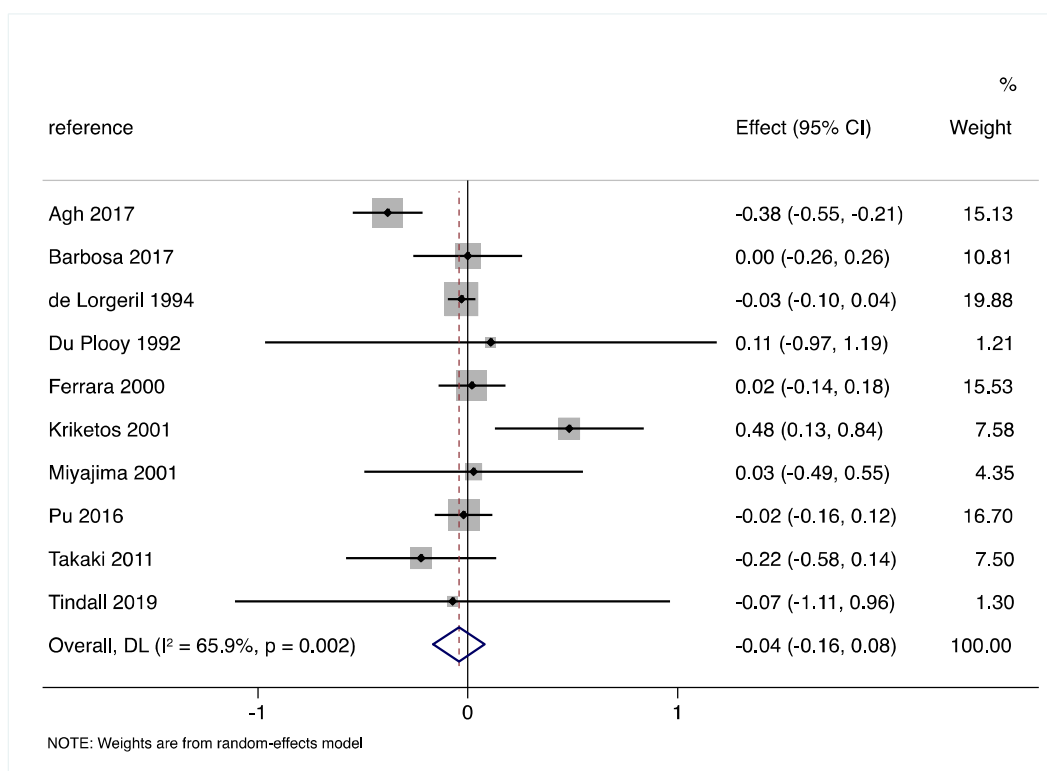


Figure S1-9-3 Forest plot of RCTs investigating the effect of antioxidant fatty acids supplementation on HDL in population with hypertension.

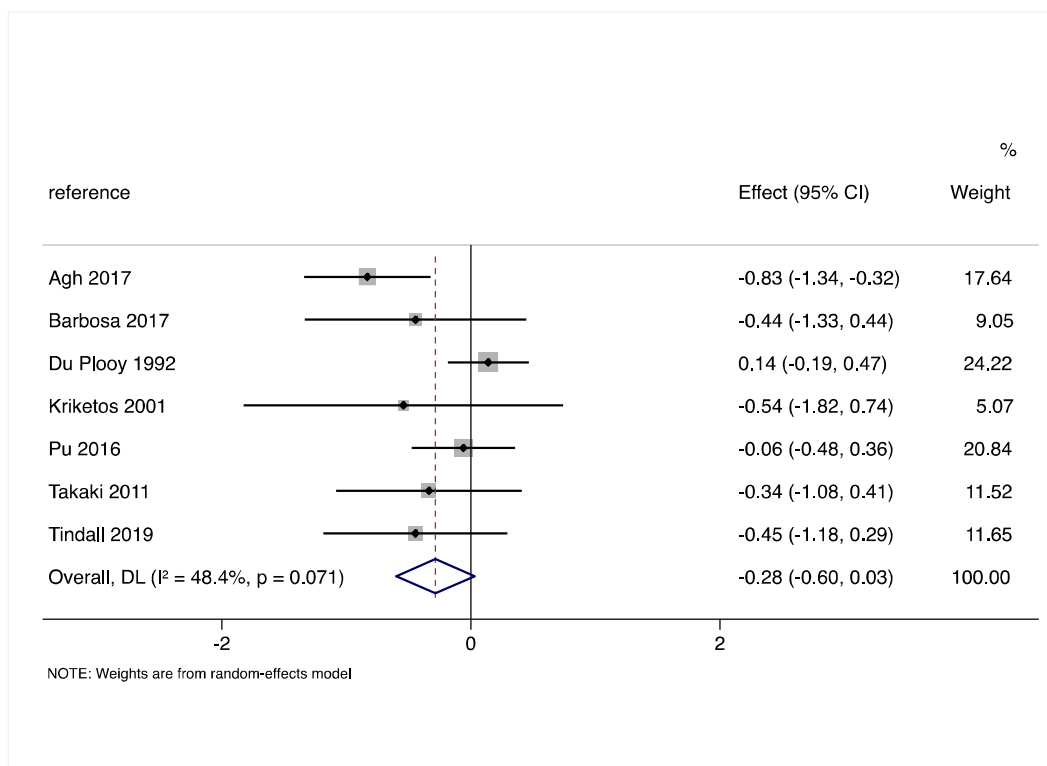


Figure S1-9-4 Forest plot of RCTs investigating the effect of antioxidant fatty acids supplementation on LDL in population with hypertension.

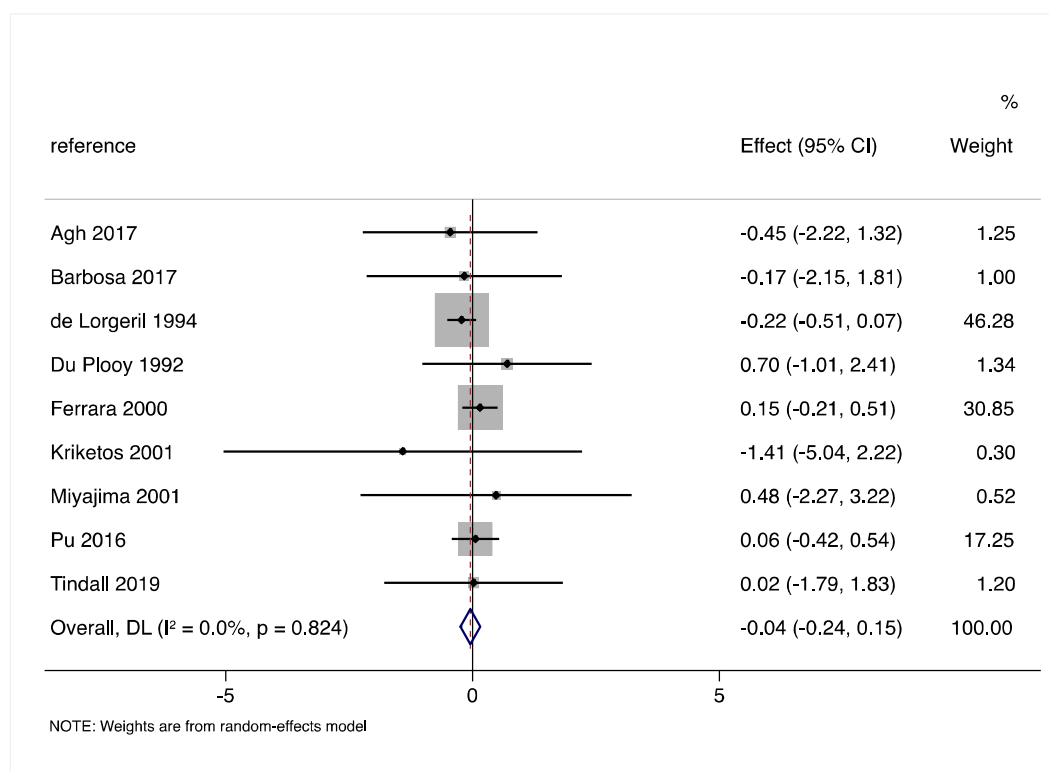


Figure S1-9-5 Forest plot of RCTs investigating the effect of antioxidant fatty acids supplementation on TG in population with hypertension.

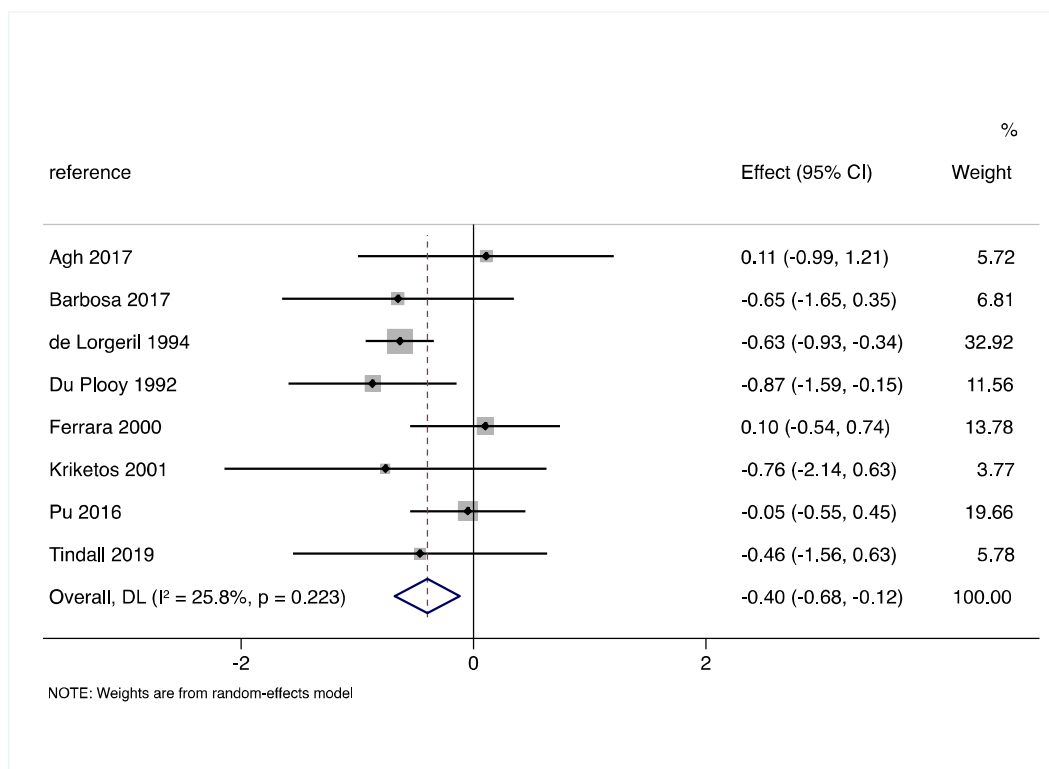


Figure S1-9-6 Forest plot of RCTs investigating the effect of antioxidant fatty acids supplementation on TC in population with hypertension.

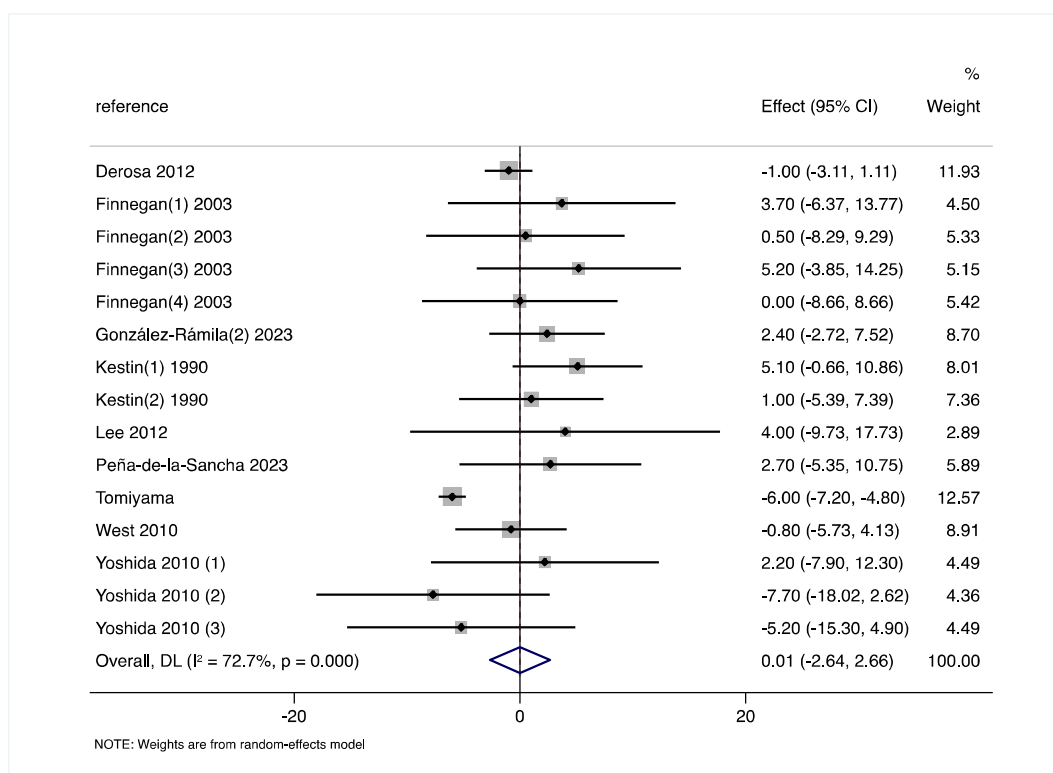


Figure S1-9-7 Forest plot of RCTs investigating the effect of antioxidant fatty acids supplementation on FBG in population with hypertension.

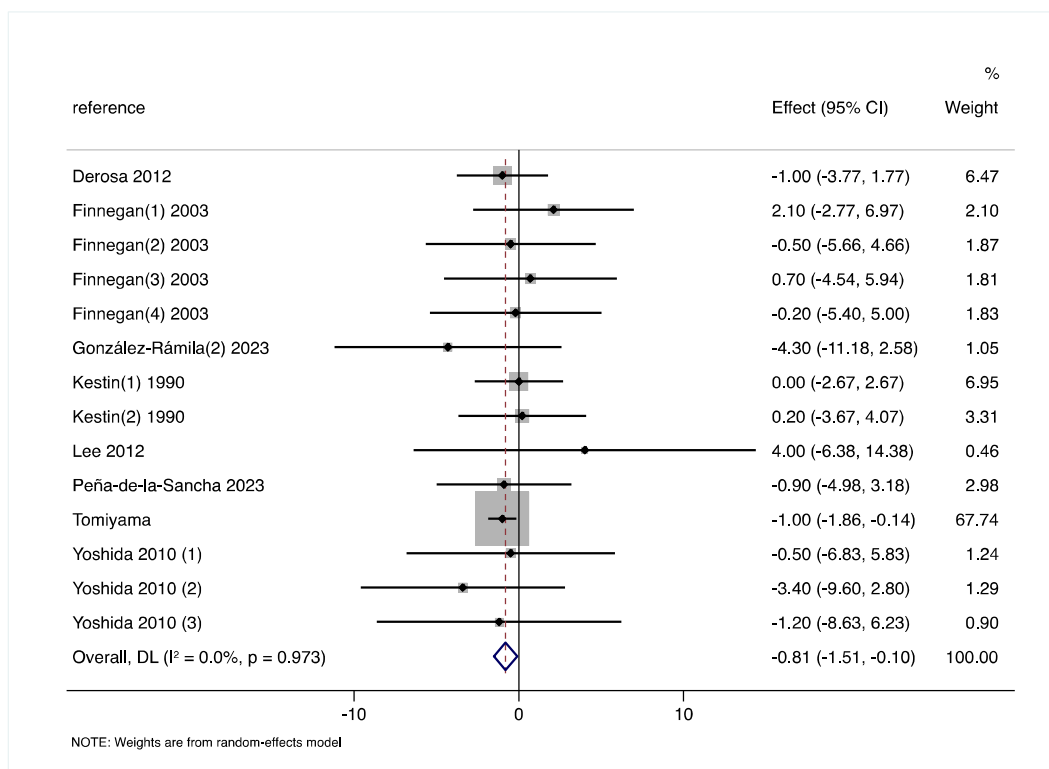


Figure S1-10-1 Forest plot of RCTs investigating the effect of antioxidant fatty acids supplementation on SBP in population with dyslipidemia.

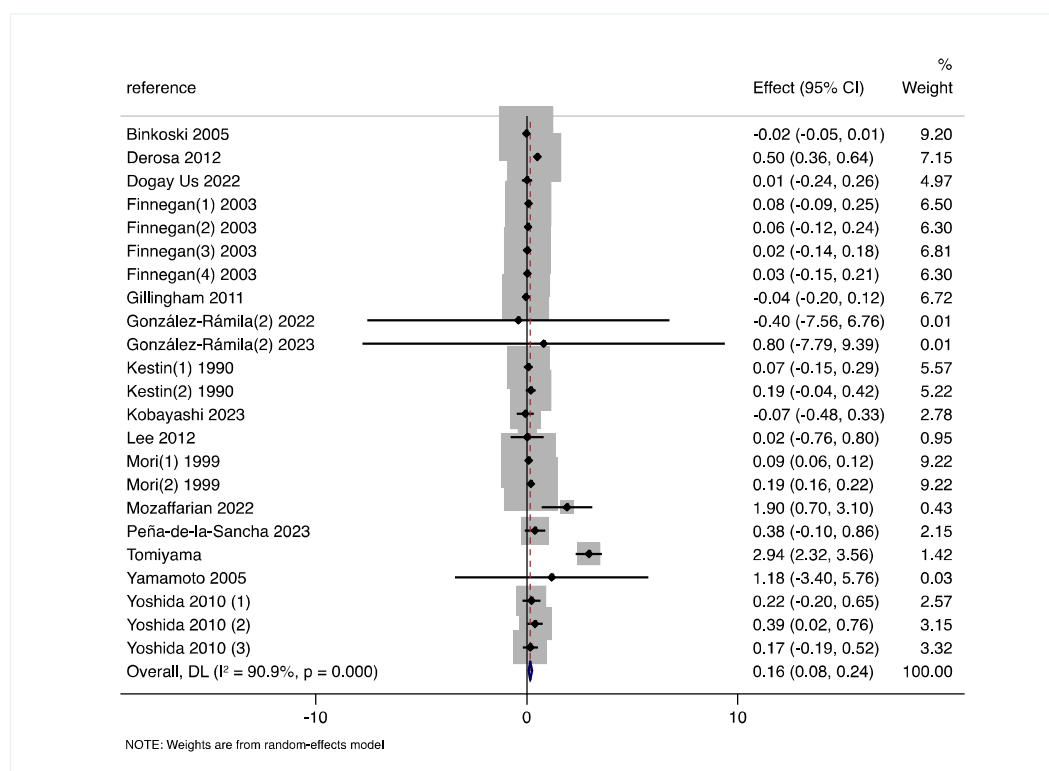


Figure S1-10-2 Forest plot of RCTs investigating the effect of antioxidant fatty acids supplementation on DBP in population with dyslipidemia.

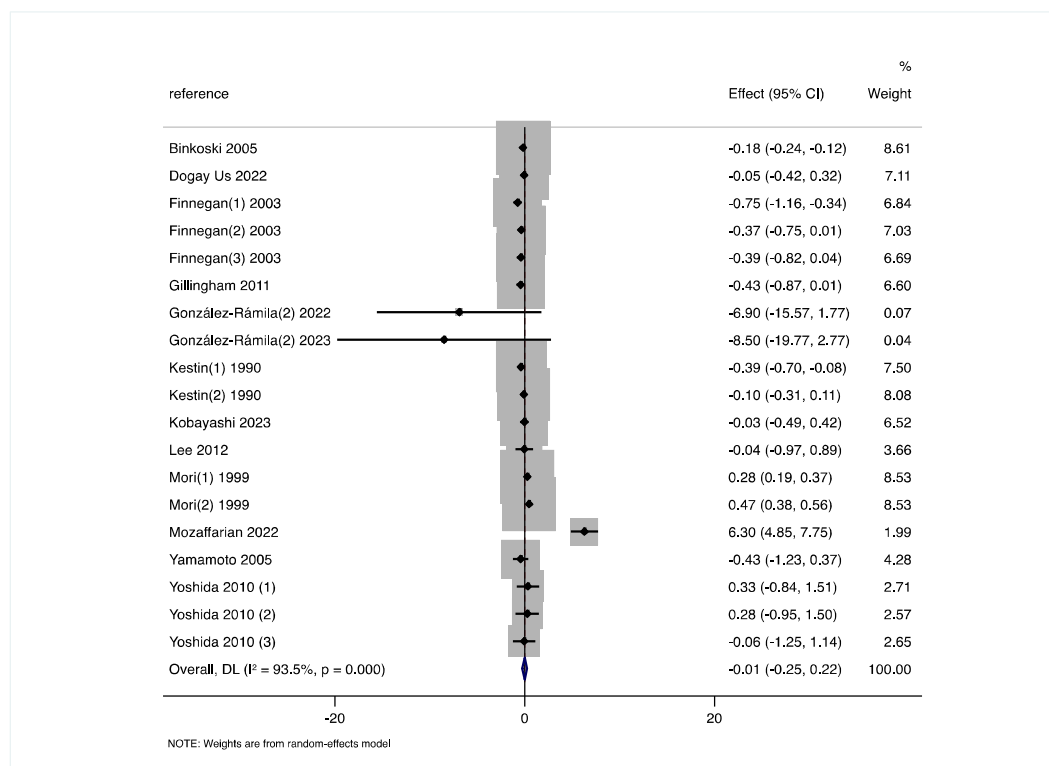


Figure S1-10-3 Forest plot of RCTs investigating the effect of antioxidant fatty acids supplementation on HDL in population with dyslipidemia.

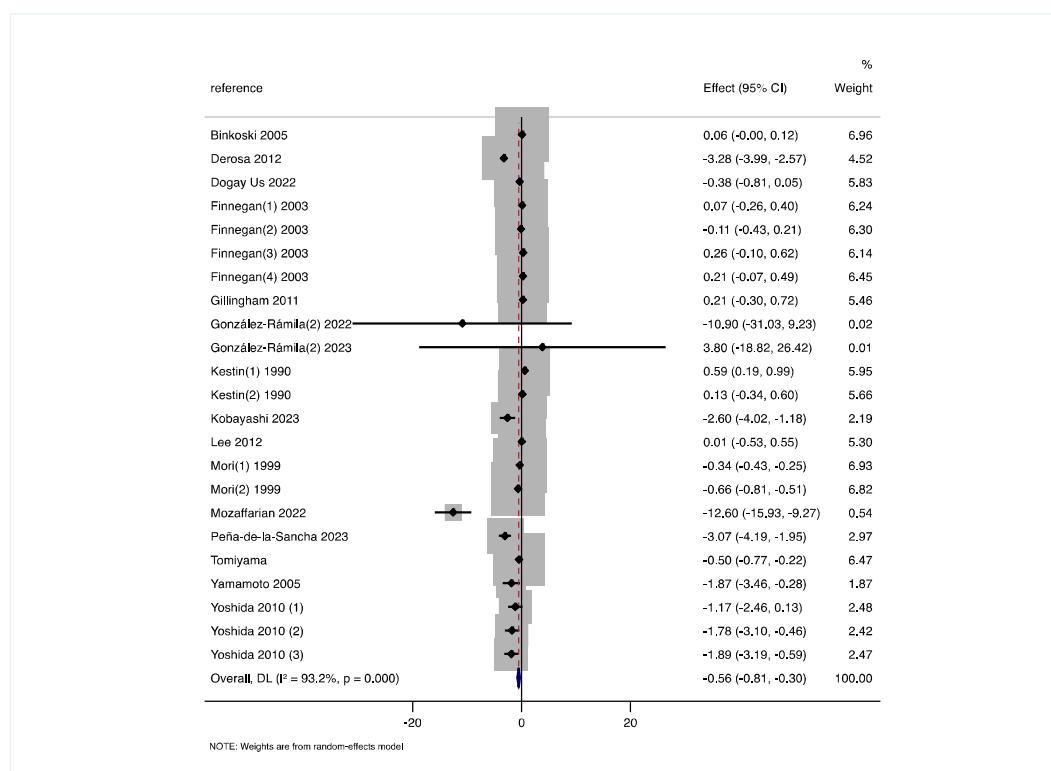


Figure S1-10-4 Forest plot of RCTs investigating the effect of antioxidant fatty acids supplementation on LDL in population with dyslipidemia.

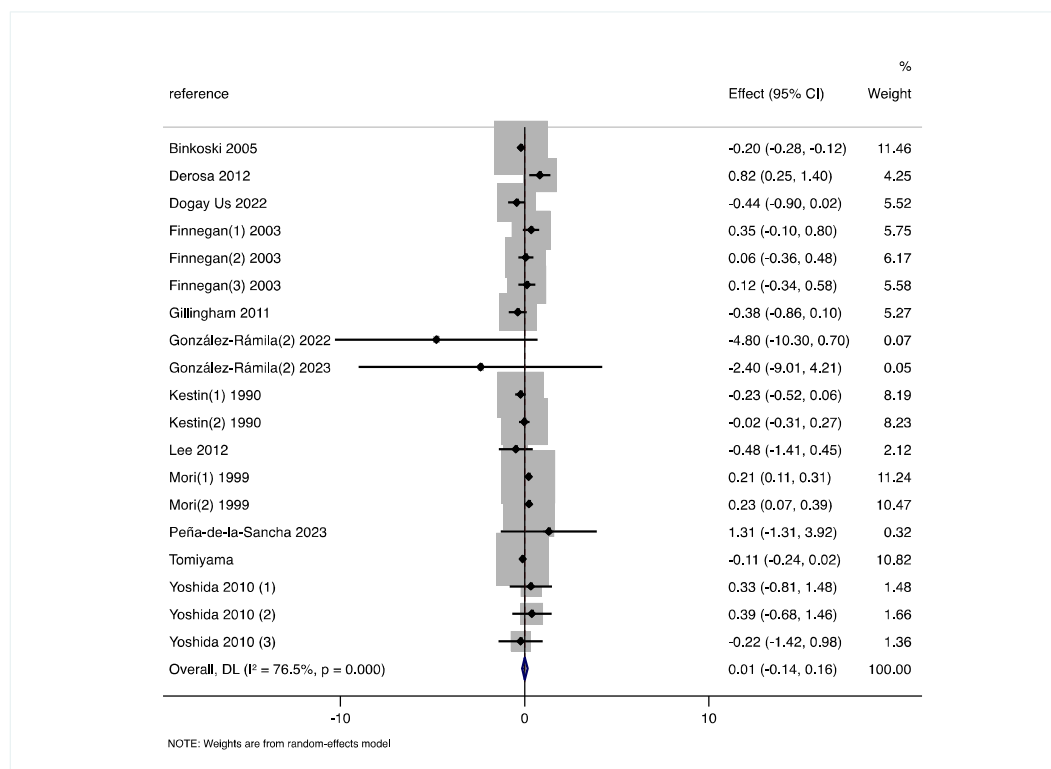


Figure S1-10-5 Forest plot of RCTs investigating the effect of antioxidant fatty acids supplementation on TG in population with dyslipidemia.

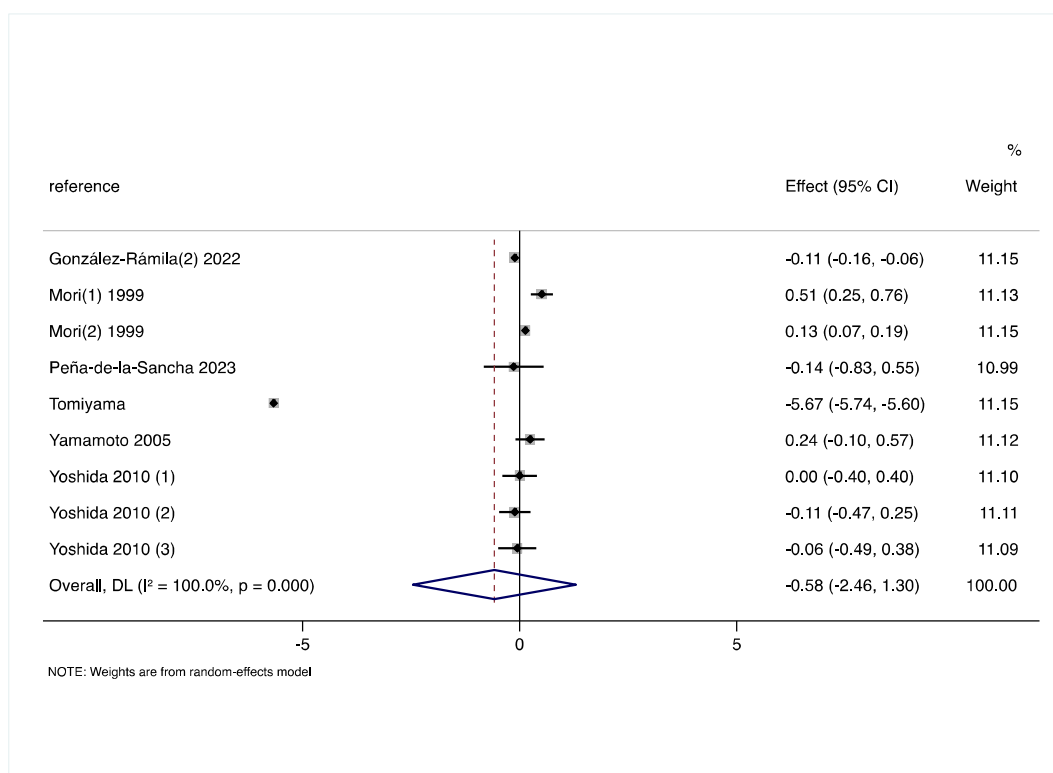


Figure S1-10-6 Forest plot of RCTs investigating the effect of antioxidant fatty acids supplementation on TC in population with dyslipidemia.

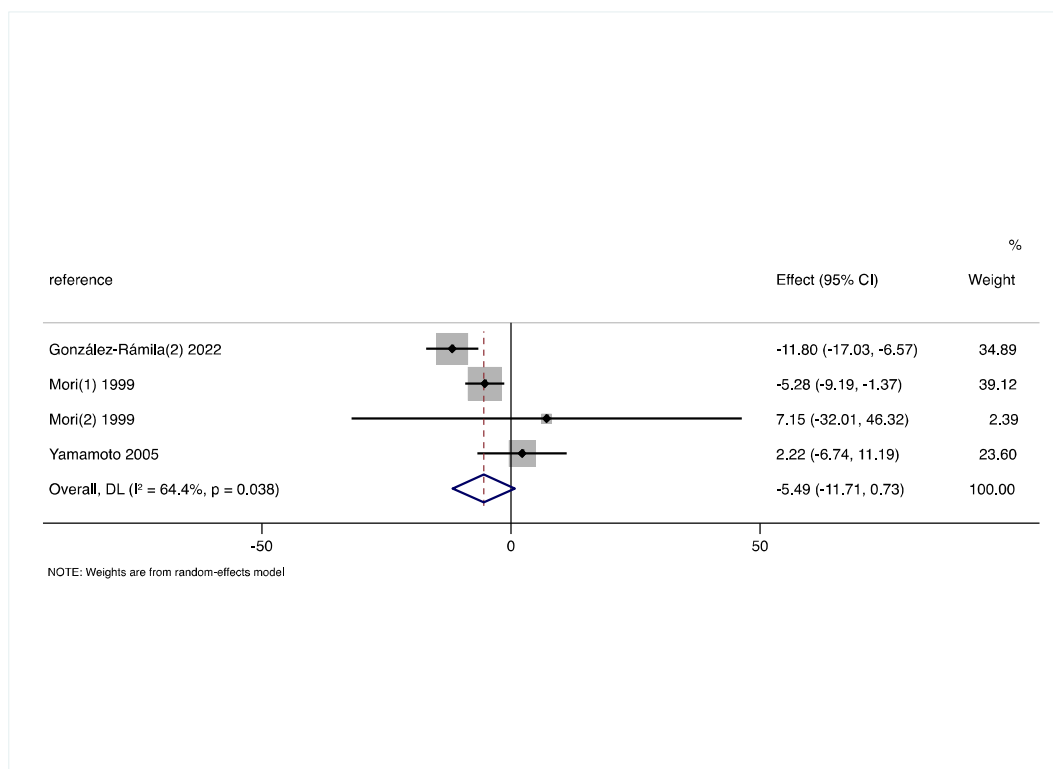


Figure S1-10-7 Forest plot of RCTs investigating the effect of antioxidant fatty acids supplementation on FBG in population with dyslipidemia.

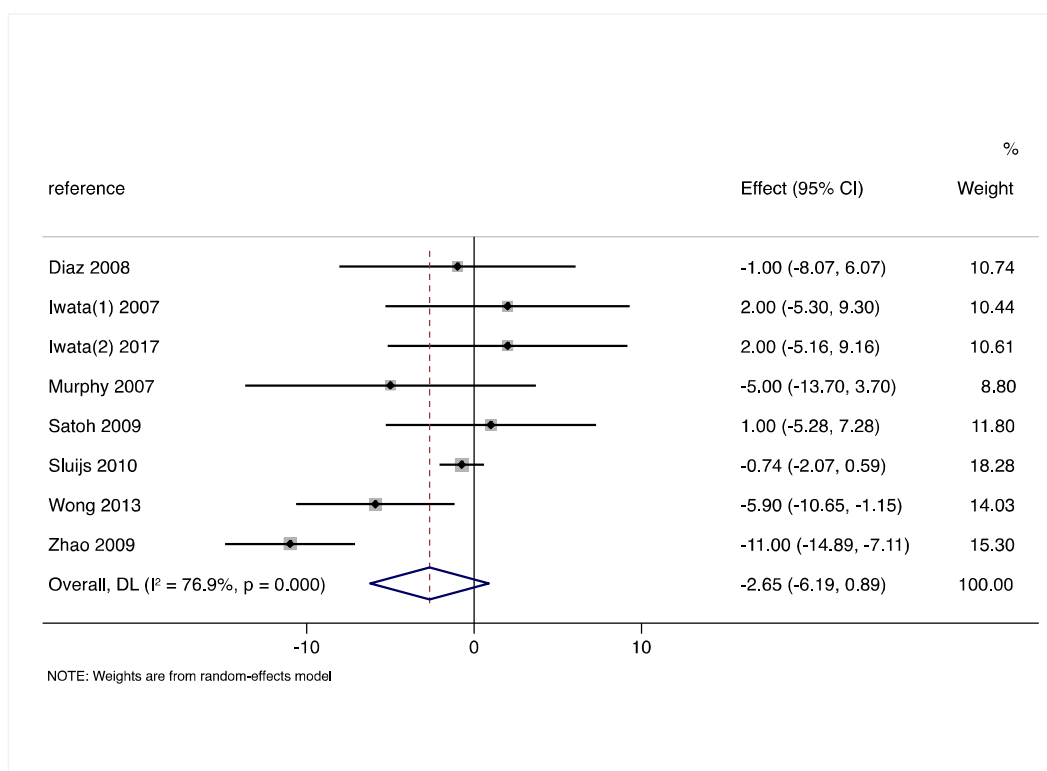


Figure S1-11-1 Forest plot of RCTs investigating the effect of antioxidant fatty acids supplementation on SBP in population with obesity.

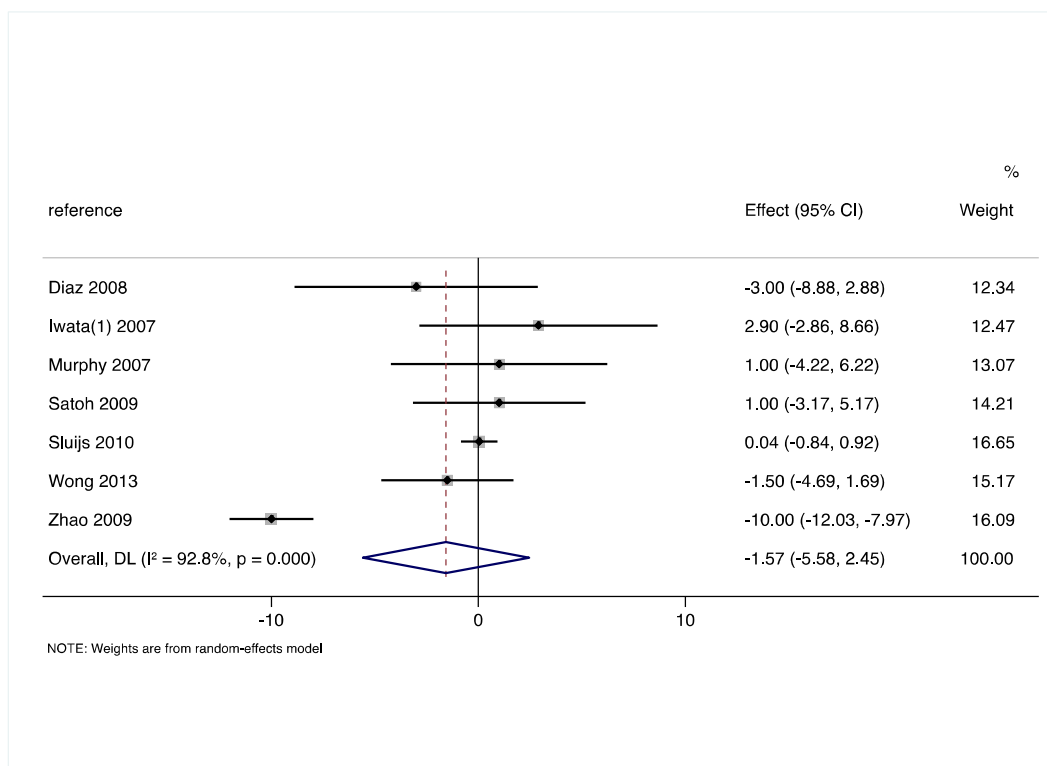


Figure S1-11-2 Forest plot of RCTs investigating the effect of antioxidant fatty acids supplementation on DBP in population with obesity.

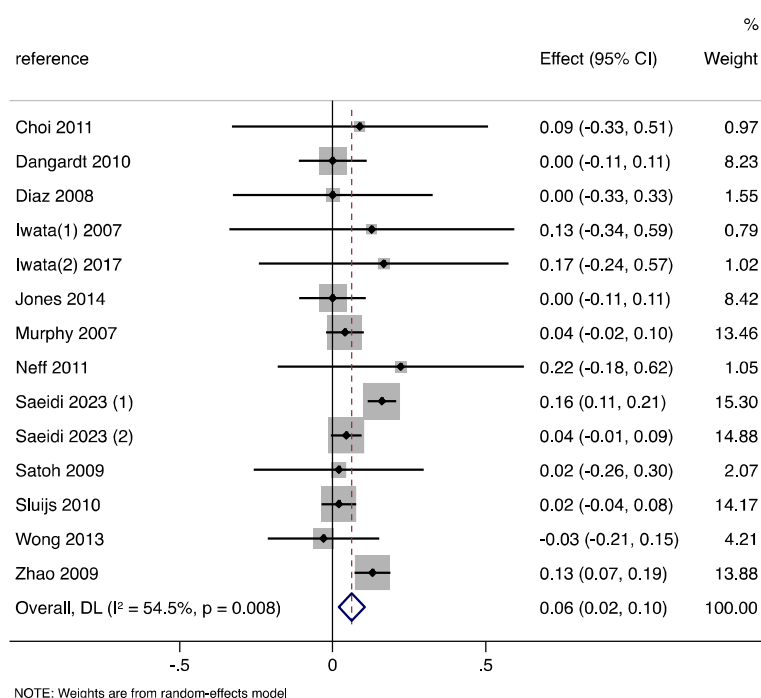


Figure S1-11-3 Forest plot of RCTs investigating the effect of antioxidant fatty acids supplementation on HDL in population with obesity.

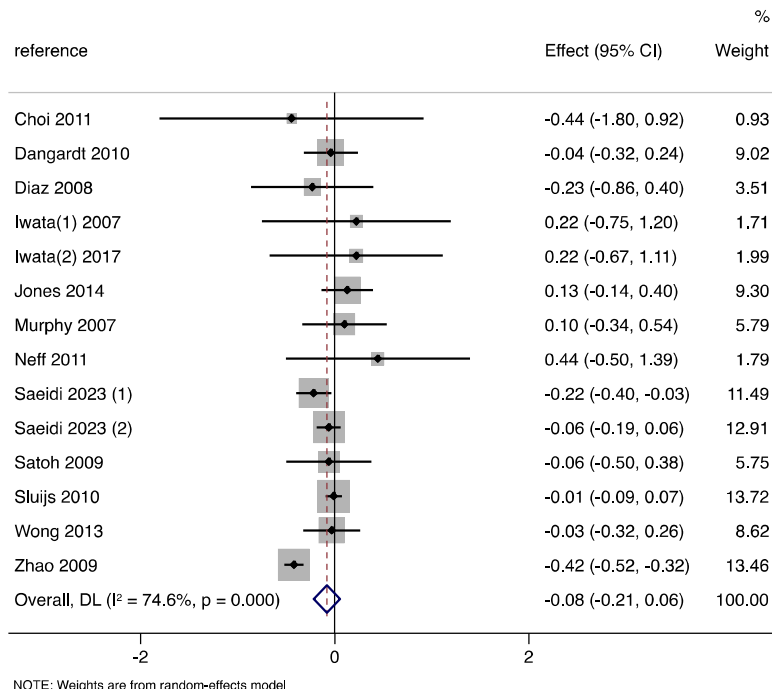


Figure S1-11-4 Forest plot of RCTs investigating the effect of antioxidant fatty acids supplementation on LDL in population with obesity.

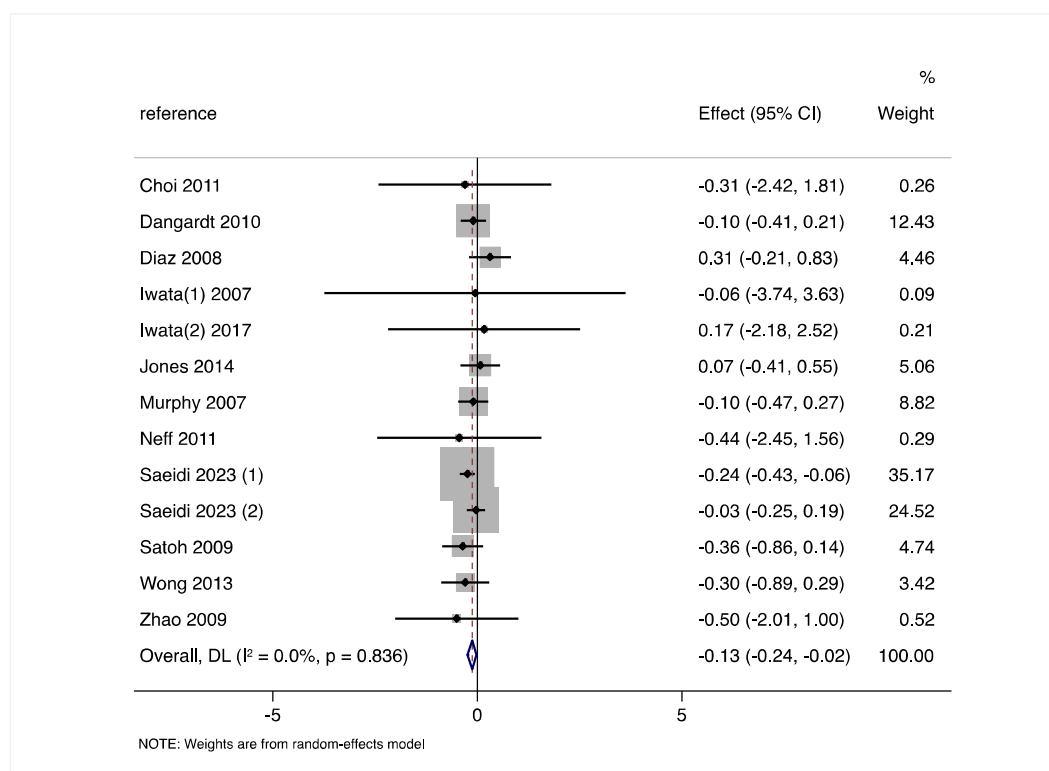


Figure S1-11-5 Forest plot of RCTs investigating the effect of antioxidant fatty acids supplementation on TG in population with obesity.

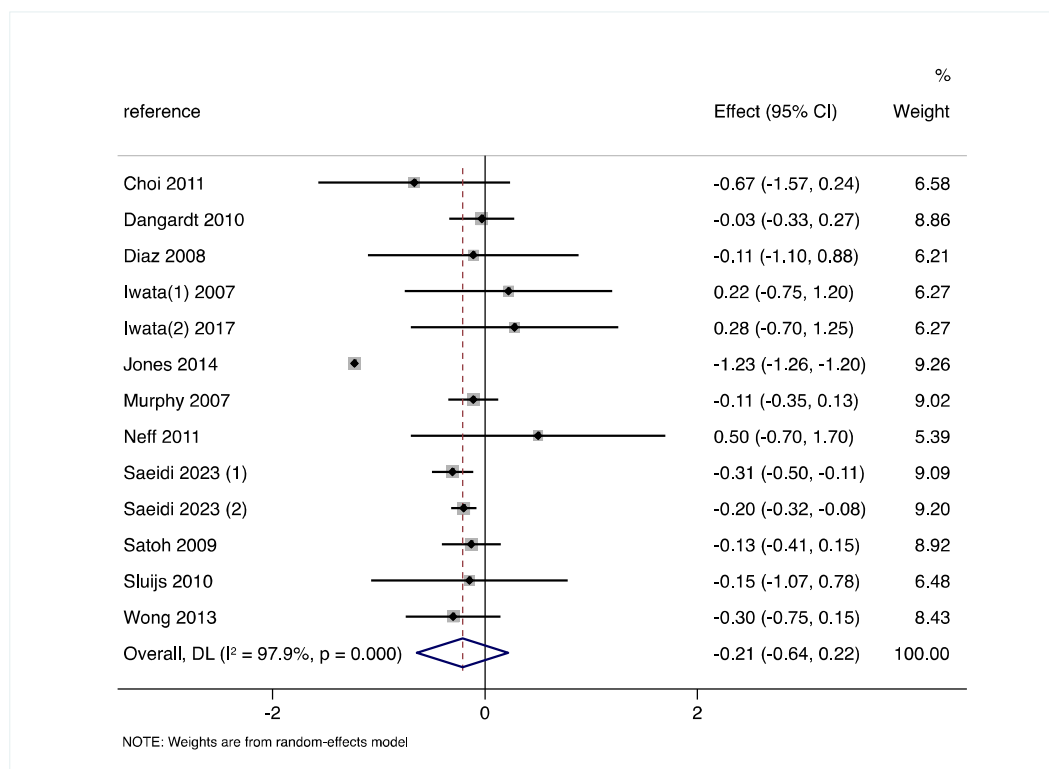


Figure S1-11-6 Forest plot of RCTs investigating the effect of antioxidant fatty acids supplementation on TC in population with obesity.

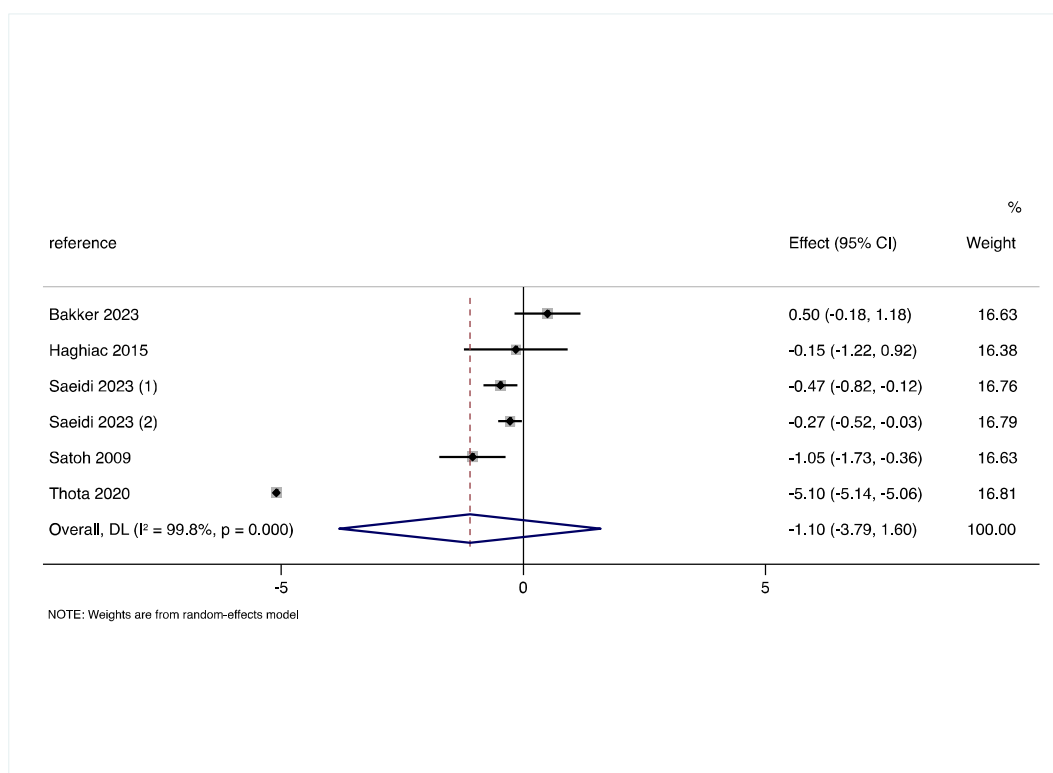


Figure S1-11-7 Forest plot of RCTs investigating the effect of antioxidant fatty acids supplementation on FBG in population with obesity.

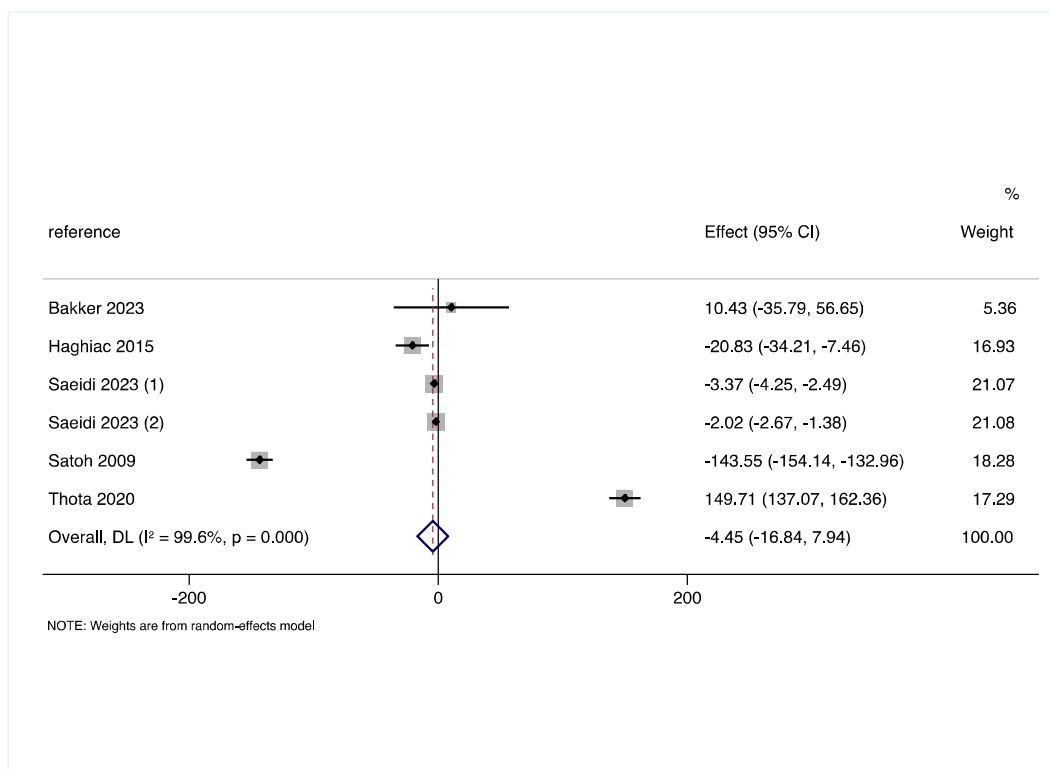


Figure S1-11-8 Forest plot of RCTs investigating the effect of antioxidant fatty acids supplementation on FBI in population with obesity.

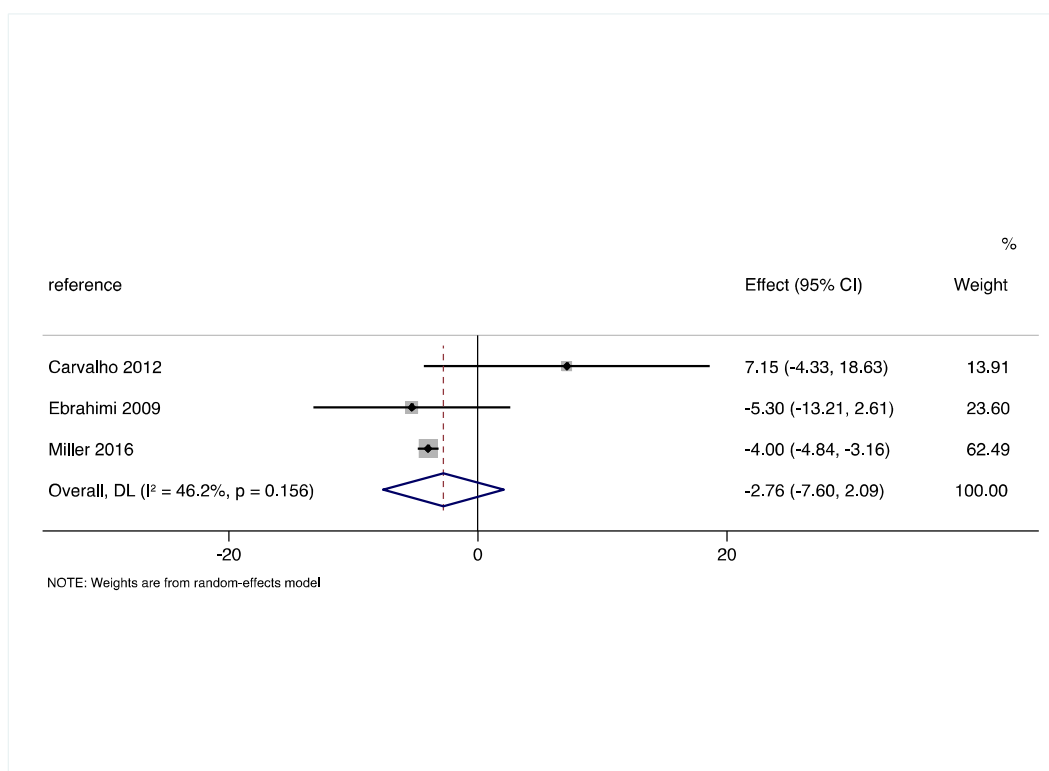


Figure S1-12-1 Forest plot of RCTs investigating the effect of antioxidant fatty acids supplementation on SBP in population with metabolic syndrome.

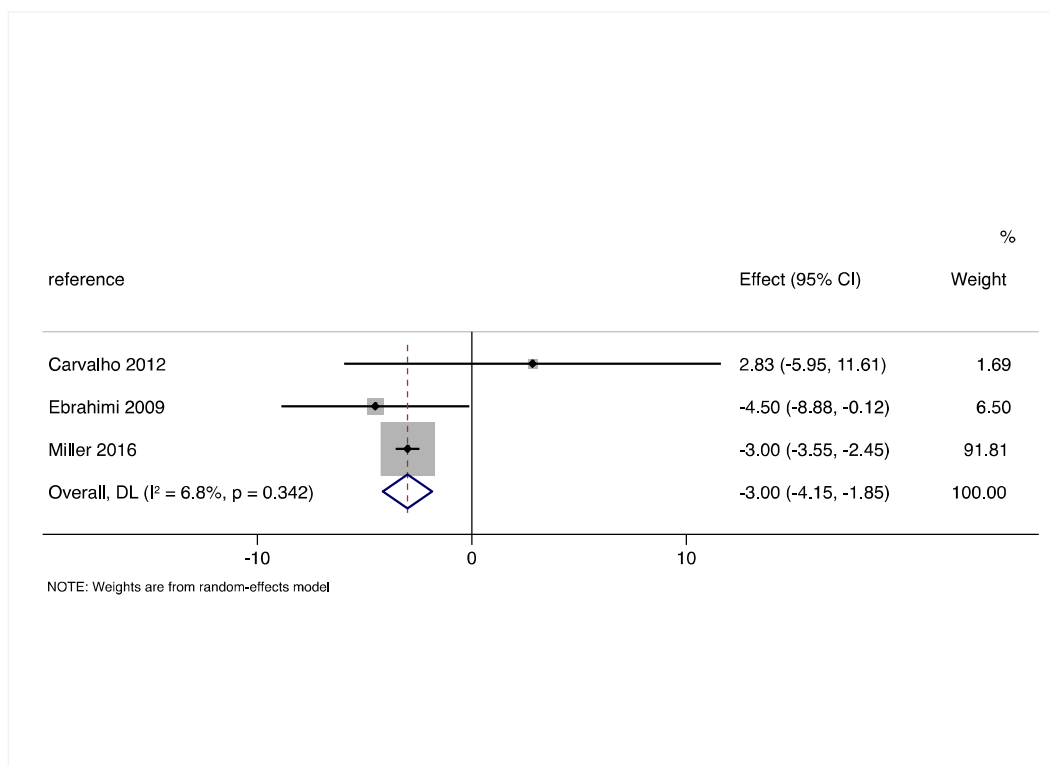


Figure S1-12-2 Forest plot of RCTs investigating the effect of antioxidant fatty acids supplementation on DBP in population with metabolic syndrome.

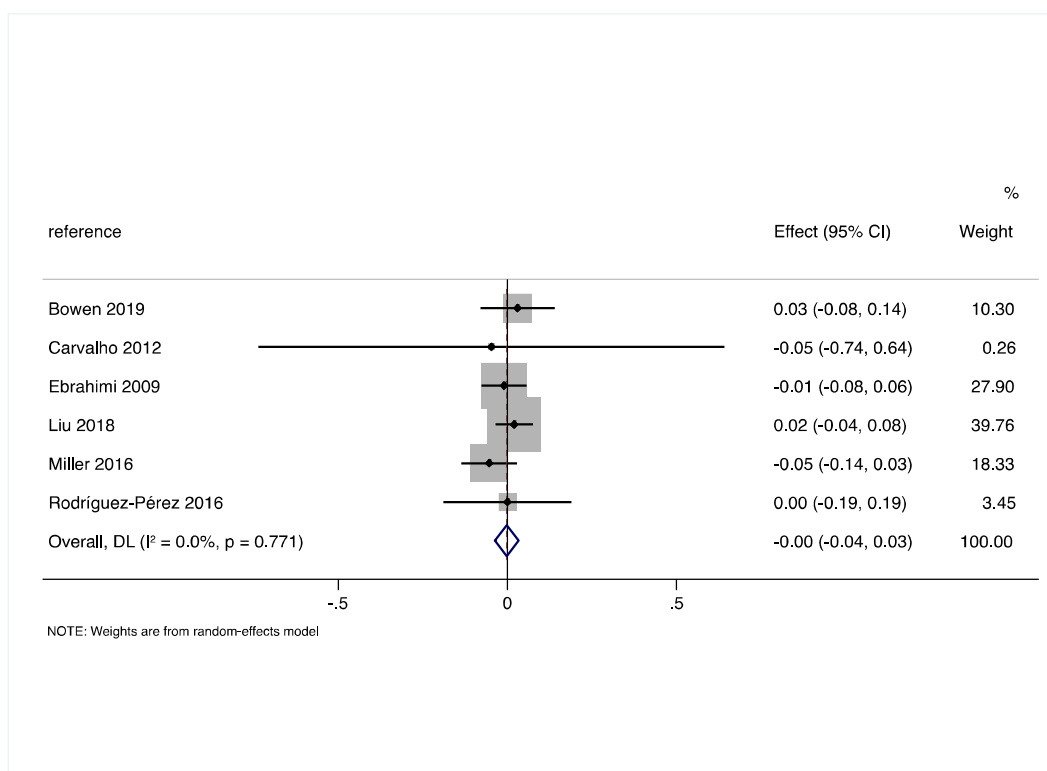


Figure S1-12-3 Forest plot of RCTs investigating the effect of antioxidant fatty acids supplementation on HDL in population with metabolic syndrome.

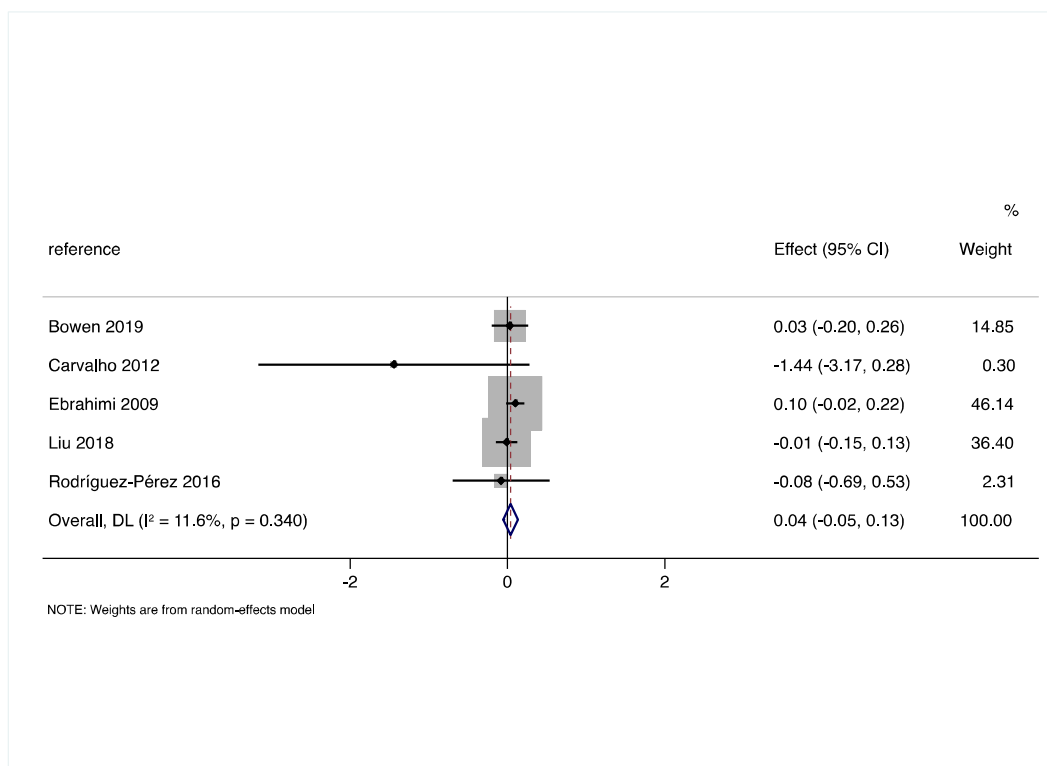


Figure S1-12-4 Forest plot of RCTs investigating the effect of antioxidant fatty acids supplementation on LDL in population with metabolic syndrome.

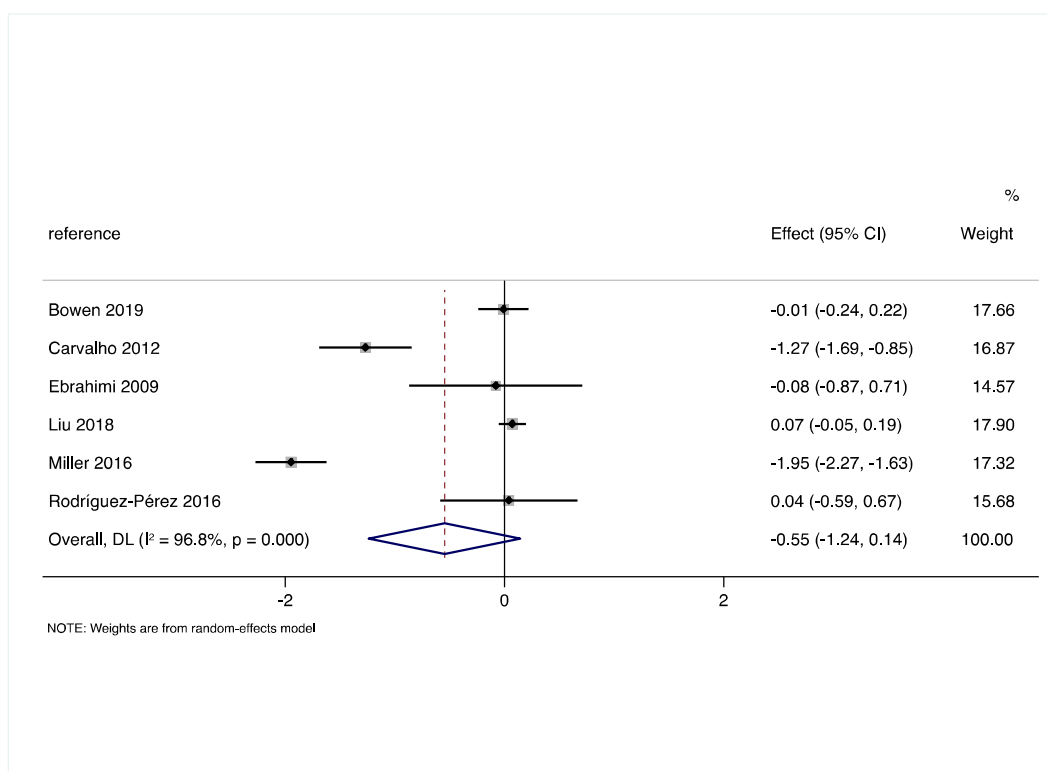


Figure S1-12-5 Forest plot of RCTs investigating the effect of antioxidant fatty acids supplementation on TG in population with metabolic syndrome.

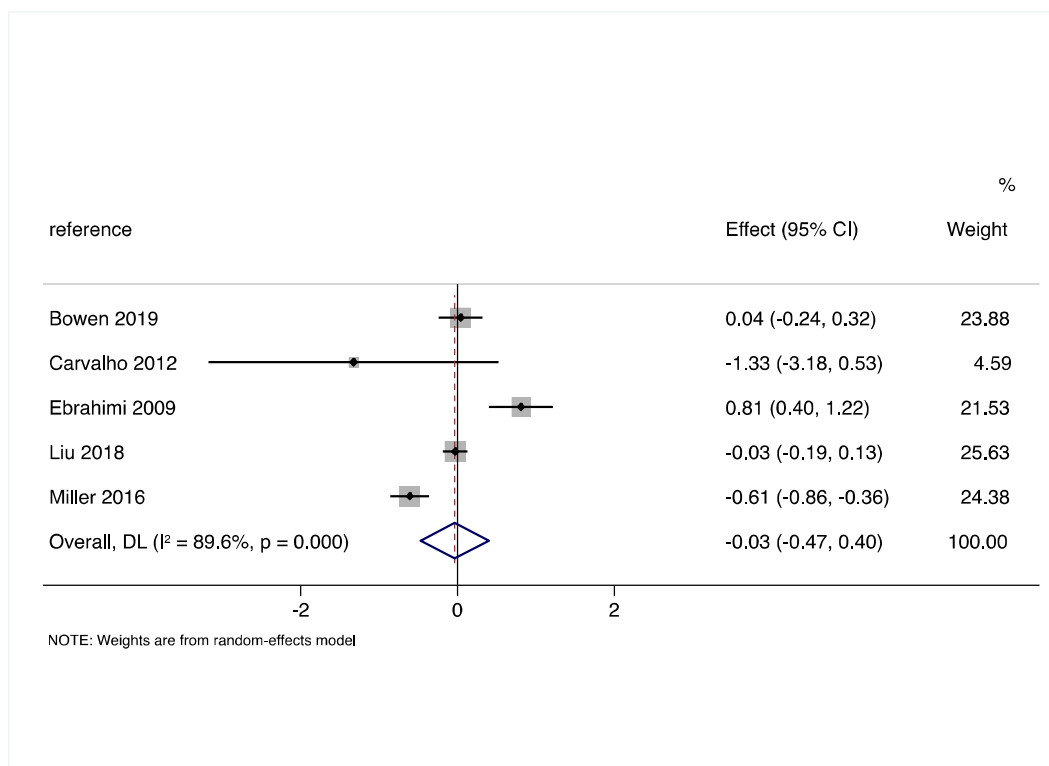


Figure S1-12-6 Forest plot of RCTs investigating the effect of antioxidant fatty acids supplementation on TC in population with metabolic syndrome.

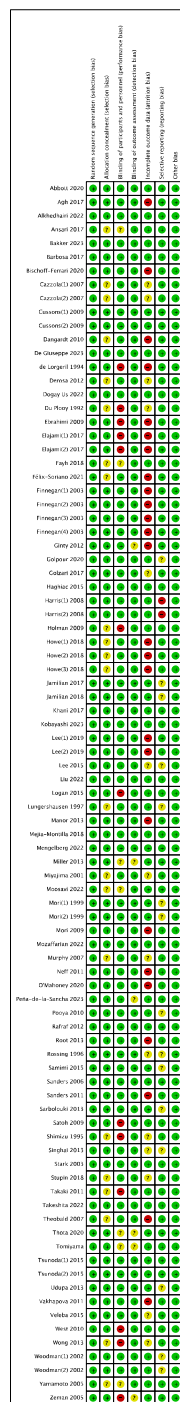


Figure S2-1 Risk of bias graph: the distribution of risk of bias judgments (Low risk of bias, Green; High risk of bias, Red; Unclear, Yellow) for each study (n3 fatty acid).

	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)	Other bias
Aryaeian 2008	+	+	+	+	+	+	+
Carvalho 2012	+	+	-	+	+	+	+
Damsgaard(1) 2008	+	+	+	+	?	+	+
Damsgaard(2) 2008	+	+	+	+	?	+	+
Diaz 2008	+	+	+	+	-	+	+
Dullaart 1992	+	+	?	?	+	+	+
Engberink(1) 2012	+	+	-	+	-	+	+
Engberink(2) 2012	+	+	-	+	-	+	+
Ferrara 2000	+	+	?	-	+	+	+
Iwata(1) 2007	+	+	+	+	+	+	+
Iwata(2) 2017	+	+	+	+	+	+	+
Kaźmierska 2022	+	+	+	+	+	+	+
Kestin(1) 1990	+	+	+	+	-	+	+
Kestin(2) 1990	+	+	+	+	-	+	+
Kriketos 2001	+	?	-	+	+	+	+
Laidlaw(1) 2003	+	+	-	+	?	+	+
Laidlaw(2) 2003	+	+	-	+	?	+	+
Laidlaw(3) 2003	+	+	-	+	?	+	+
Lee 2012	+	?	-	+	+	+	+
Leng 1998	+	+	-	+	-	+	+
Miller 2016	+	+	?	?	+	+	+
Raff 2006	+	+	+	+	+	+	+
Sluijs 2010	+	+	+	+	-	+	+
Zhao 2009	+	+	+	+	+	+	+

Figure S2-2 Risk of bias graph: the distribution of risk of bias judgments (Low risk of bias, Green; High risk of bias, Red; Unclear, Yellow) for each study (n6 fatty acid).

	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)	Other bias
Binkoski 2005	+	+	+	+	?	+	+
Bowen 2019	+	+	+	+	?	+	+
Gillingham 2011	+	+	-	+	+	+	+
Gilmore 2011	+	+	?	+	+	+	+
González-Rámila(1) 2022	+	+	+	+	+	+	+
González-Rámila(1) 2023	+	+	+	+	+	+	+
González-Rámila(2) 2022	+	+	+	+	+	+	+
González-Rámila(2) 2023	+	+	+	+	+	+	+
Jones 2014	+	+	+	+	+	+	+
Jones 2015	+	+	+	+	+	+	+
Liu 2018	+	+	?	+	+	+	+
Loganathan 2022	+	+	?	+	+	+	+
Pu 2016	+	+	+	+	?	+	+
Rodríguez-Pérez 2016	+	+	+	+	+	+	+
Sanders 2003	+	+	?	+	+	+	+
Tindall 2019	+	+	?	+	+	+	+

Figure S2-3 Risk of bias graph: the distribution of risk of bias judgments (Low risk of bias, Green; High risk of bias, Red; Unclear, Yellow) for each study (n9 fatty acid).

	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)	Other bias
Gajendragadkar(1) 2014	+	+	+	+	+	+	+
Gajendragadkar(2) 2014	+	+	+	+	-	+	+
Kim(1) 2011	+	+	?	+	+	+	+
Kim(2) 2011	+	+	?	+	-	+	+
Lane(1) 2018	+	+	+	+	+	+	+
Lane(2) 2018	+	+	+	+	?	+	+
Paran 2009	?	+	+	+	+	+	+
Park 2013	+	+	+	+	+	+	+
Ried 2009	+	+	+	+	+	+	+
Thies(1) 2012	+	?	+	+	+	+	+
Thies(2) 2012	+	?	+	+	+	+	+
Wolak(1) 2019	+	+	+	+	?	+	+
Wolak(2) 2019	+	+	+	+	?	+	+
Wolak(3) 2019	+	+	+	+	+	+	+
Wolak(4) 2019	+	+	+	+	+	+	+

Figure S2-4 Risk of bias graph: the distribution of risk of bias judgments (Low risk of bias, Green; High risk of bias, Red; Unclear, Yellow) for each study (lycopene).

	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)	Other bias
Choi 2011	+	+	+	+	+	+	+
Jabarpour 2024	+	+	+	+	+	+	+
Saeidi 2023 (1)	+	+	?	+	+	+	+
Saeidi 2023 (2)	+	+	?	+	+	+	+
Spiller 2003	+	+	+	+	?	+	+
Urakaze 2021	+	+	+	+	+	+	+
Yoshida 2010 (1)	+	+	+	+	+	?	+
Yoshida 2010 (2)	+	+	+	+	+	?	+
Yoshida 2010 (3)	+	+	+	+	+	?	+

Figure S2-5 Risk of bias graph: the distribution of risk of bias judgments (Low risk of bias, Green; High risk of bias, Red; Unclear, Yellow) for each study (astaxanthin).

	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)	Other bias
Asemi 2016	+	+	+	+	+	+	+
Nierenberg 1991	+	?	?	+	+	+	+
Redlich 1999	+	+	+	?	+	+	+
Ribaya–Mercado 1995	+	+	-	?	+	+	+
Shaish 2006	+	+	+	+	+	+	+
van Poppel 1994	+	+	+	+	+	+	+

Figure S2-6 Risk of bias graph: the distribution of risk of bias judgments (Low risk of bias, Green; High risk of bias, Red; Unclear, Yellow) for each study (beta-carotene).

Supplemental 4 - Funnel plot

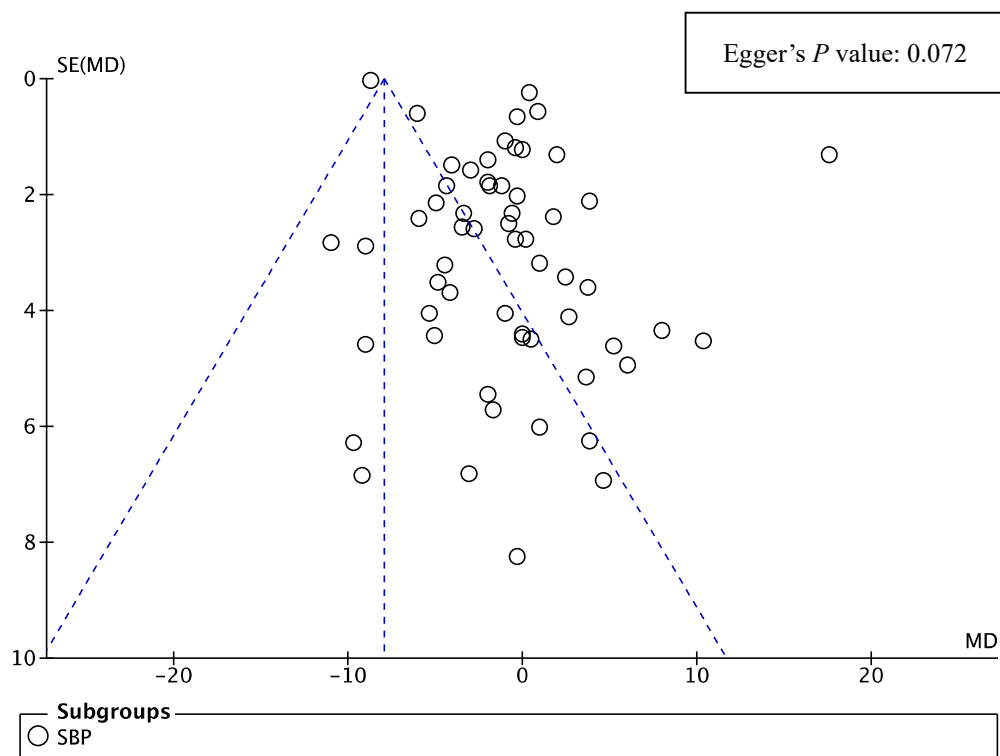


Figure S3-1-1 Funnel plot of RCTs investigating the effect of n3 fatty acids supplementation on SBP.

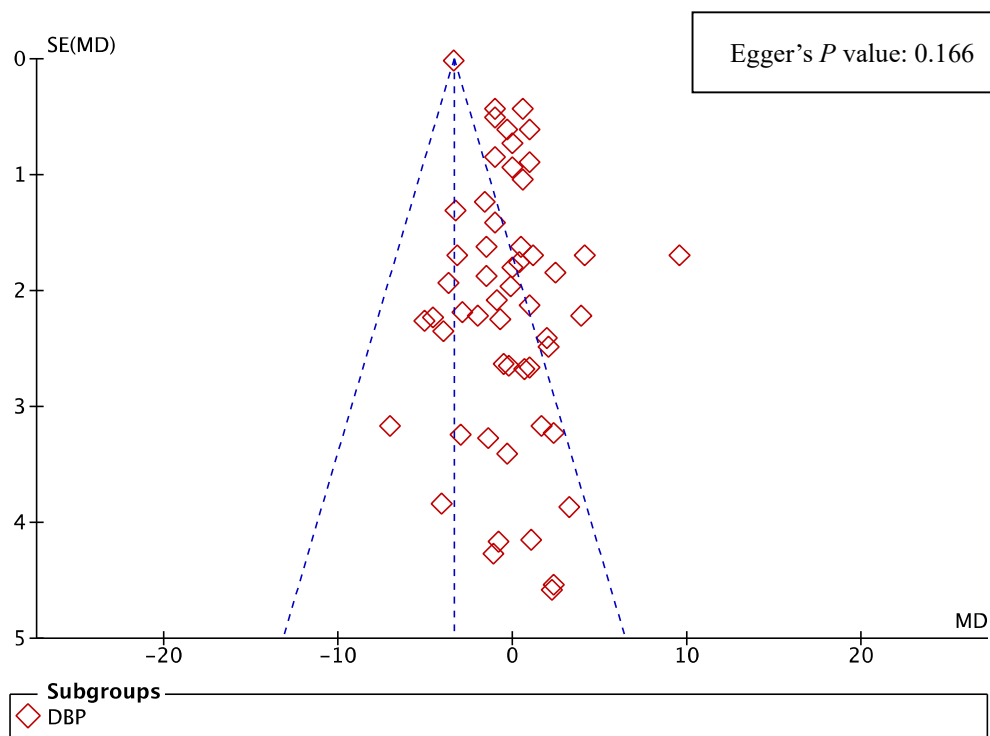


Figure S3-1-2 Funnel plot of RCTs investigating the effect of n3 fatty acids supplementation on DBP.

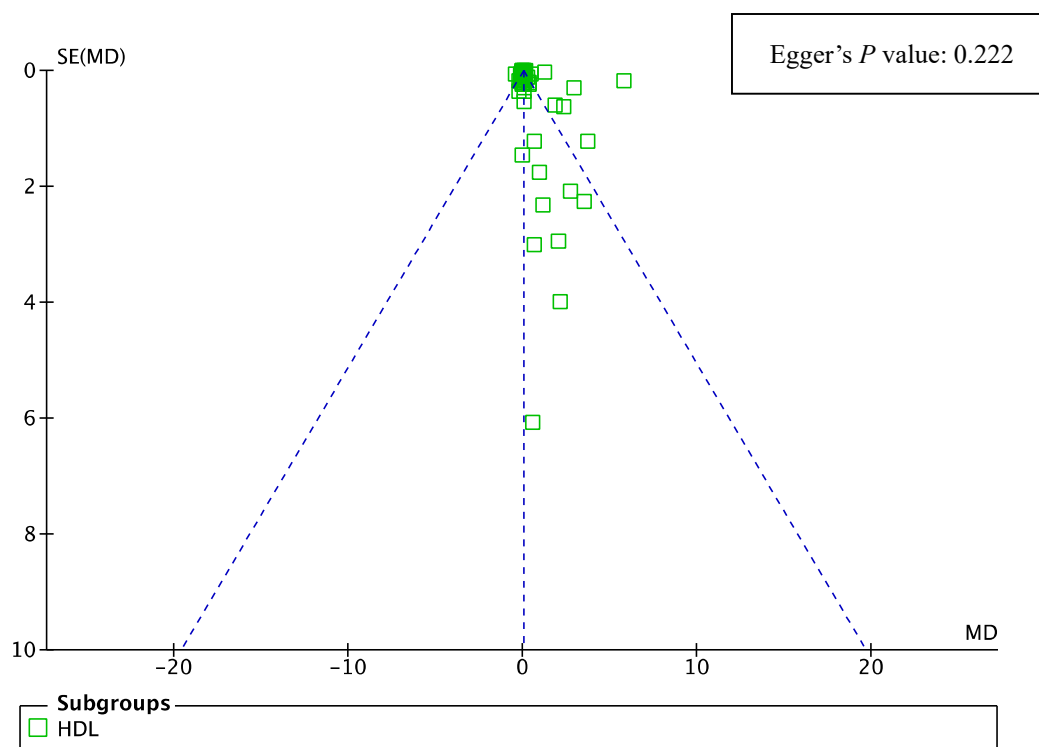


Figure S3-1-3 Funnel plot of RCTs investigating the effect of n3 fatty acids supplementation on HDL-C.

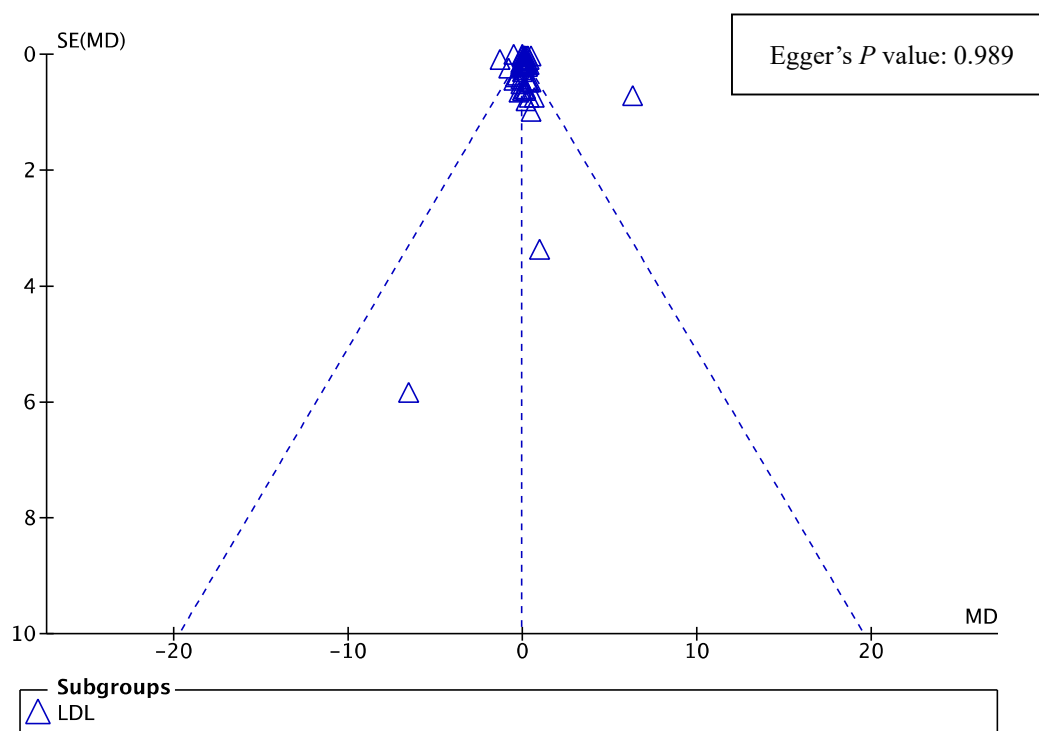


Figure S3-1-4 Funnel plot of RCTs investigating the effect of n3 fatty acids supplementation on LDL-C.

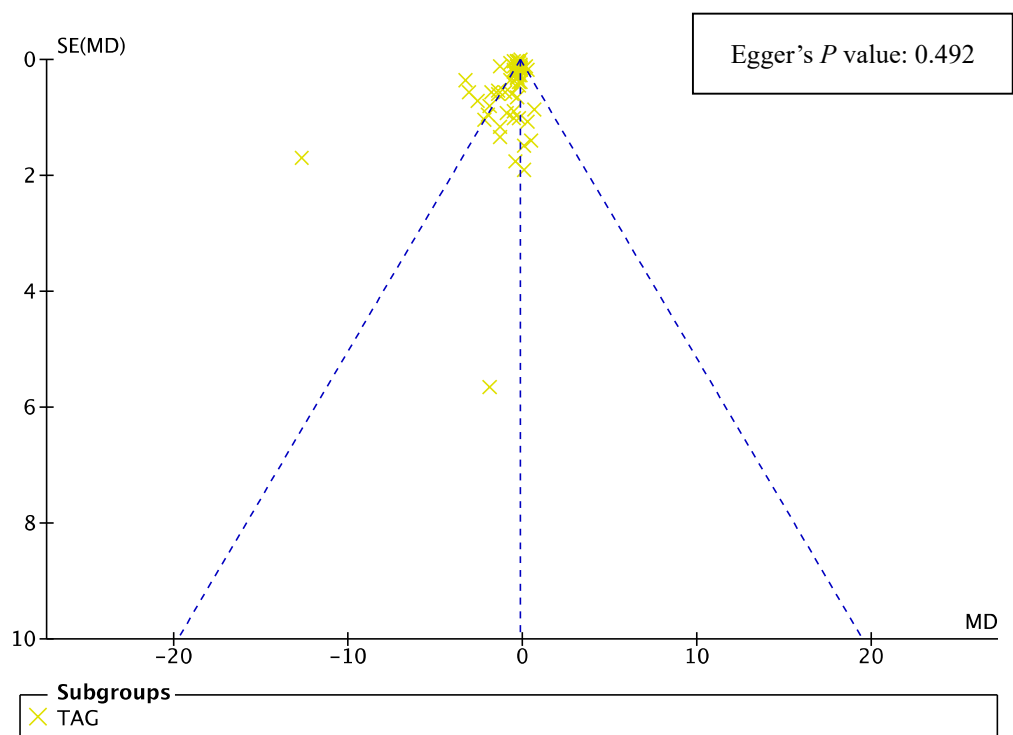


Figure S3-1-5 Funnel plot of RCTs investigating the effect of n3 fatty acids supplementation on TG

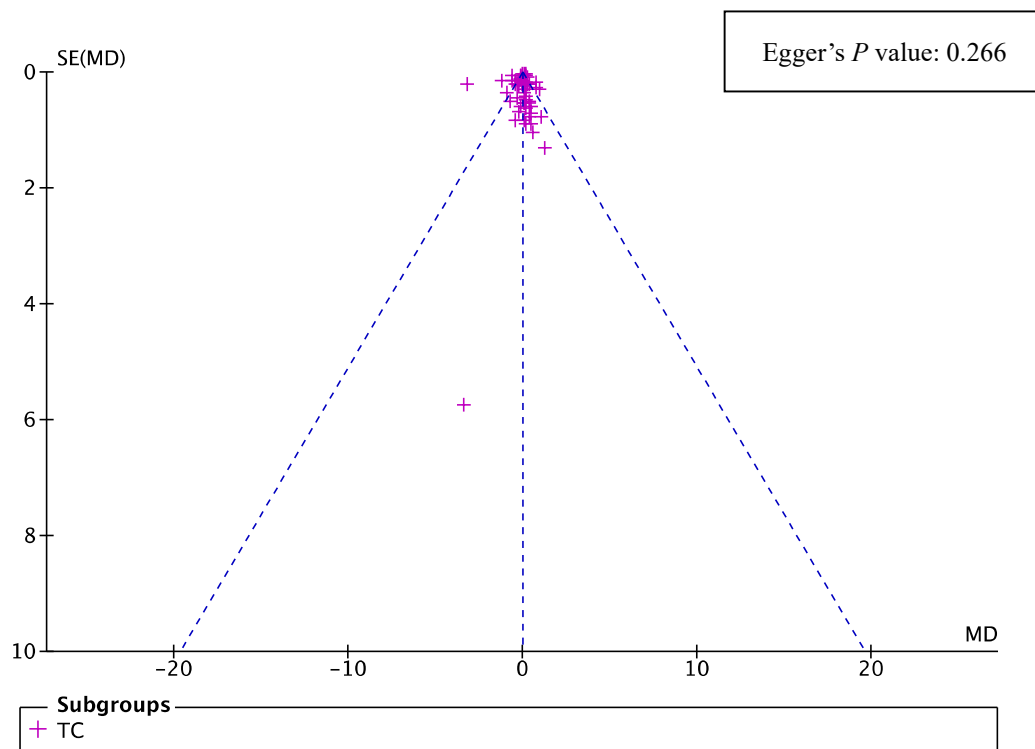


Figure S3-1-6 Funnel plot of RCTs investigating the effect of n3 fatty acids supplementation on TC.

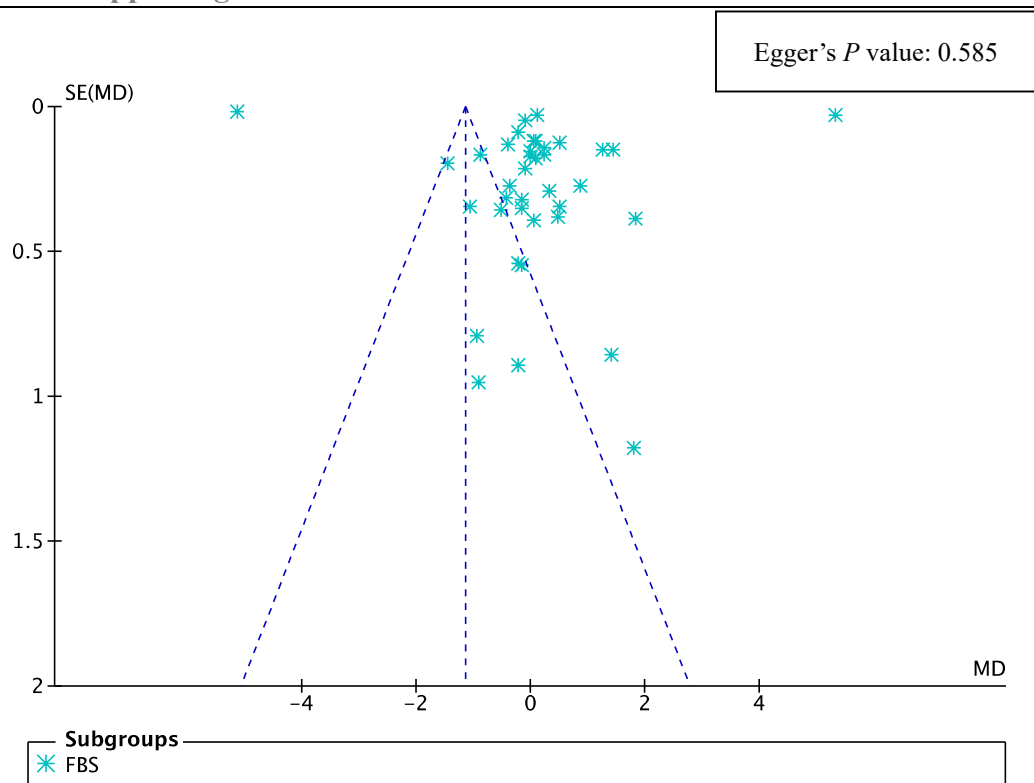


Figure S3-1-7 Funnel plot of RCTs investigating the effect of n3 fatty acids supplementation on FBG.

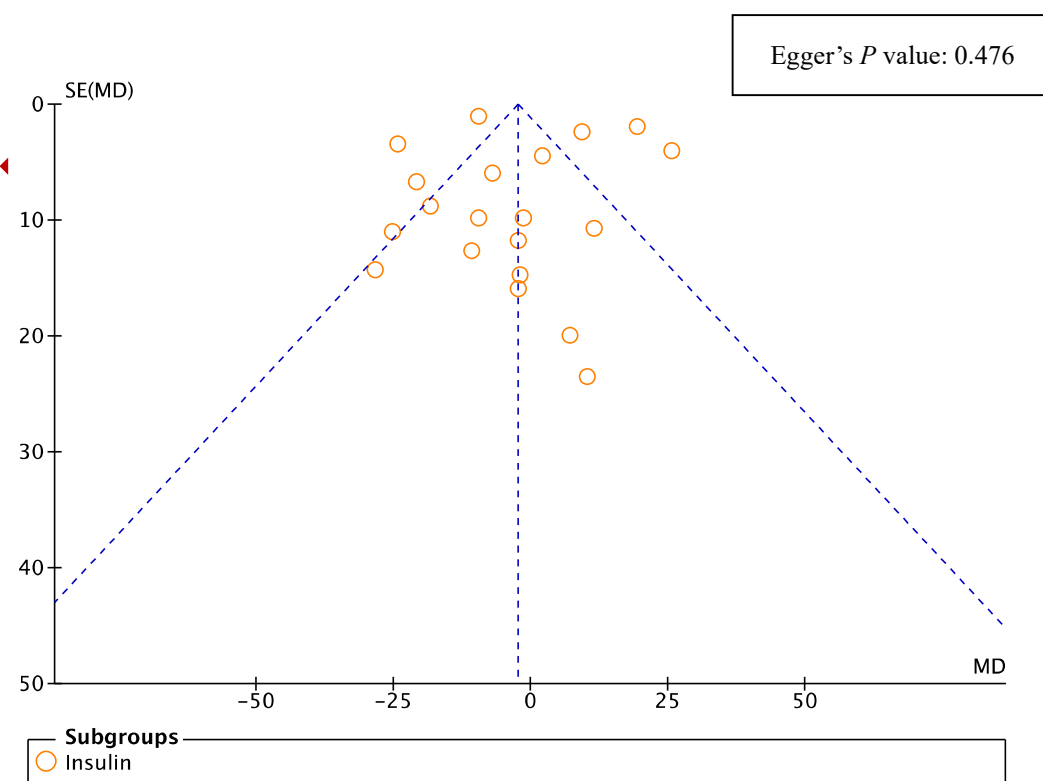


Figure S3-1-8 Funnel plot of RCTs investigating the effect of n3 fatty acids supplementation on FBI.

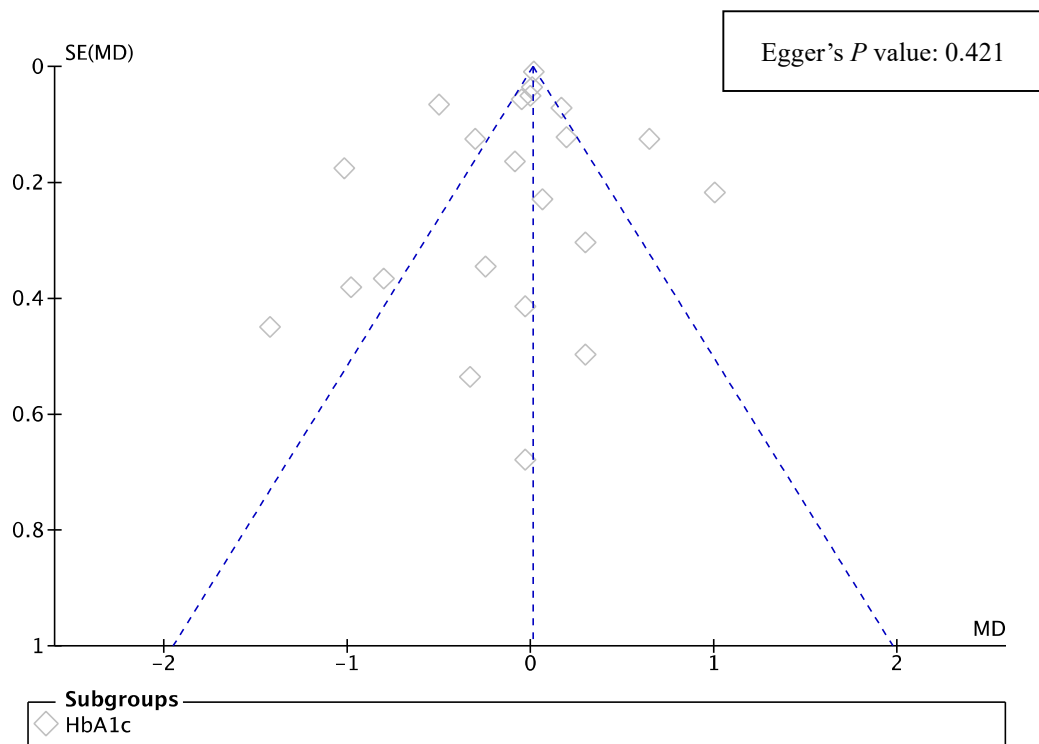


Figure S3-1-9 Funnel plot of RCTs investigating the effect of n3 fatty acids supplementation on A1C.

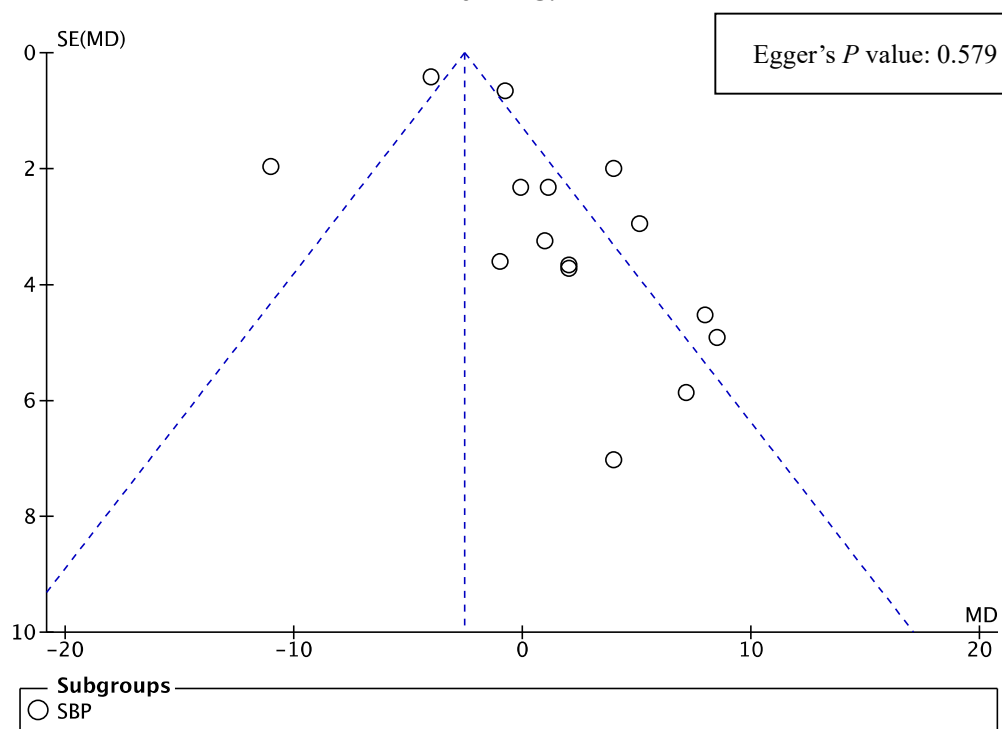


Figure S3-2-1 Funnel plot of RCTs investigating the effect of n6 fatty acids supplementation on SBP.

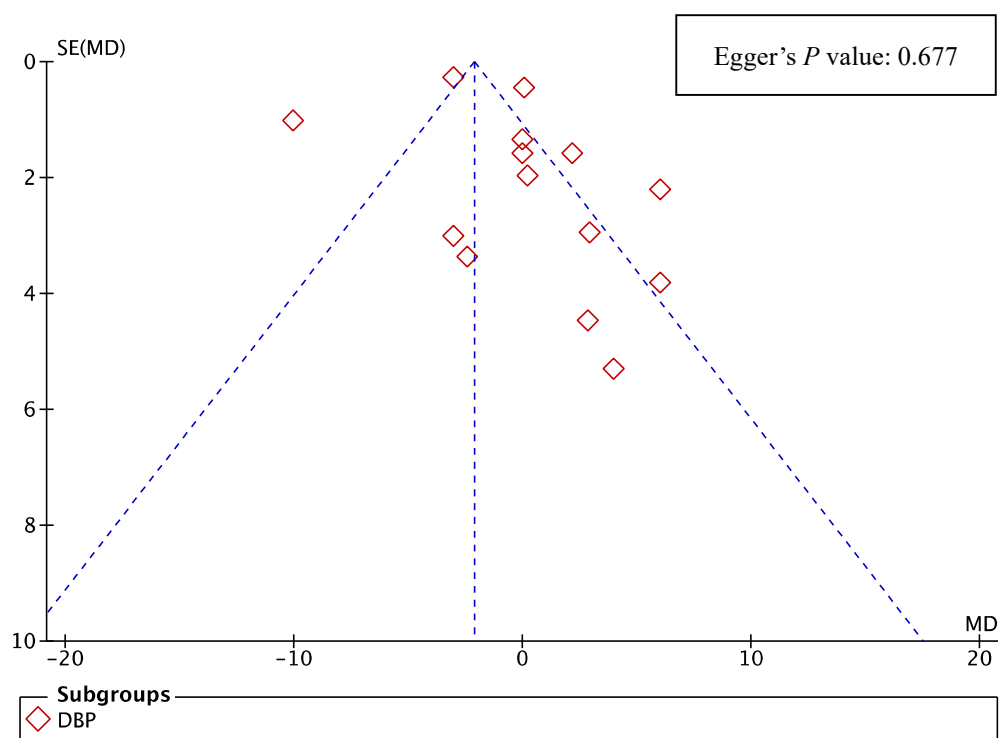


Figure S3-2-2 Funnel plot of RCTs investigating the effect of n6 fatty acids supplementation on DBP.

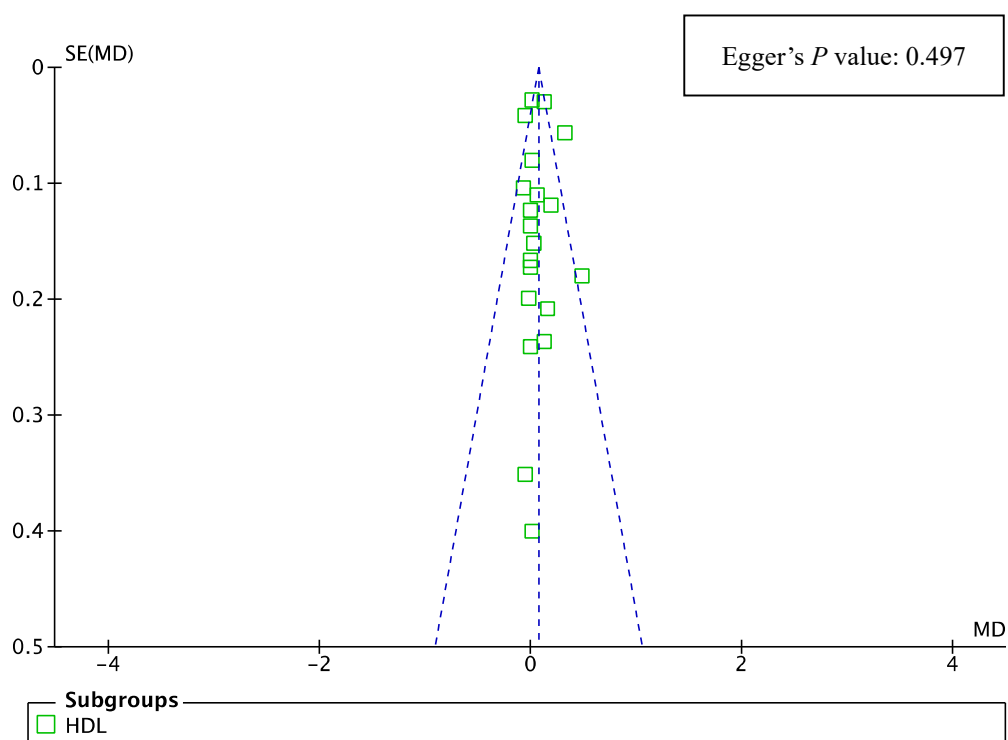


Figure S3-2-3 Funnel plot of RCTs investigating the effect of n6 fatty acids supplementation on HDL-C.

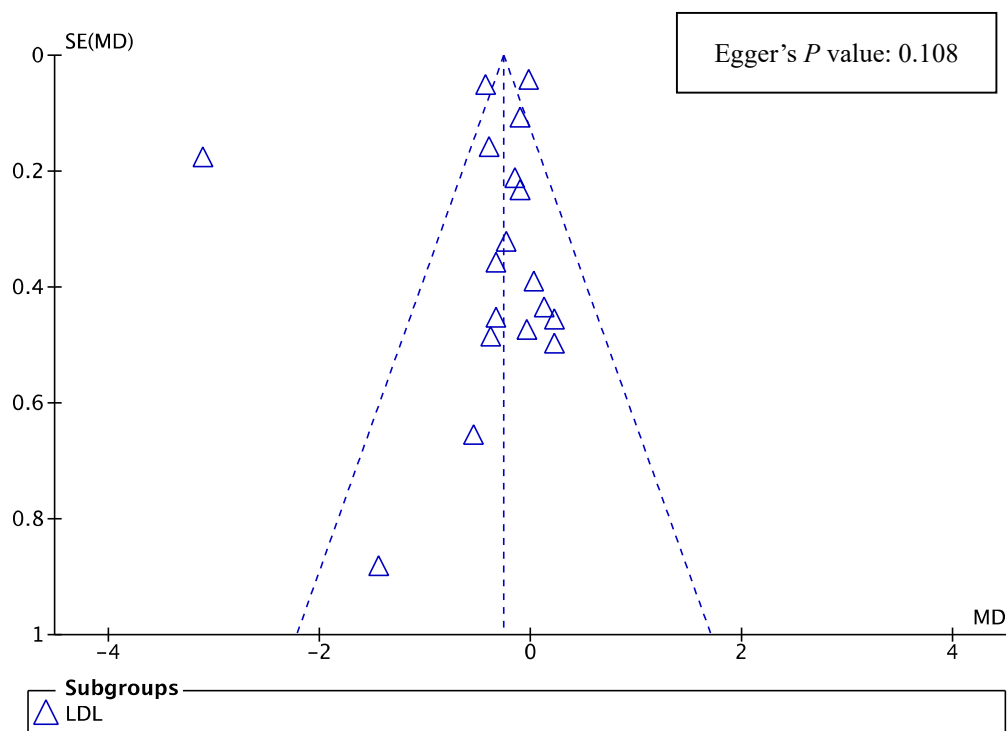


Figure S3-2-4 Funnel plot of RCTs investigating the effect of n6 fatty acids supplementation on LDL-C.

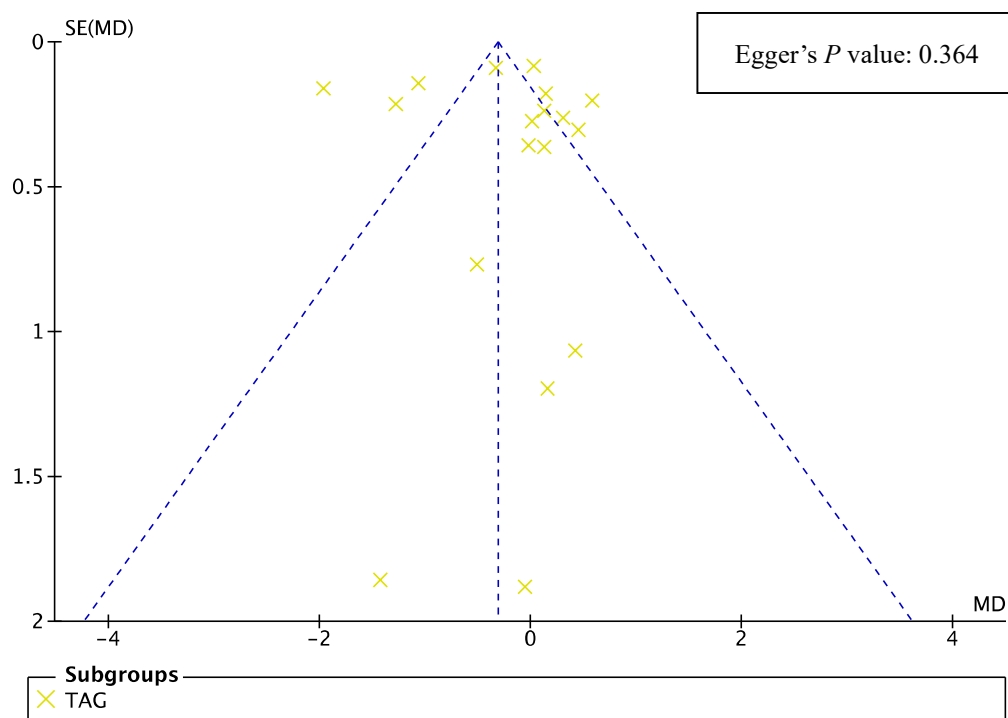


Figure S3-2-5 Funnel plot of RCTs investigating the effect of n6 fatty acids supplementation on TG

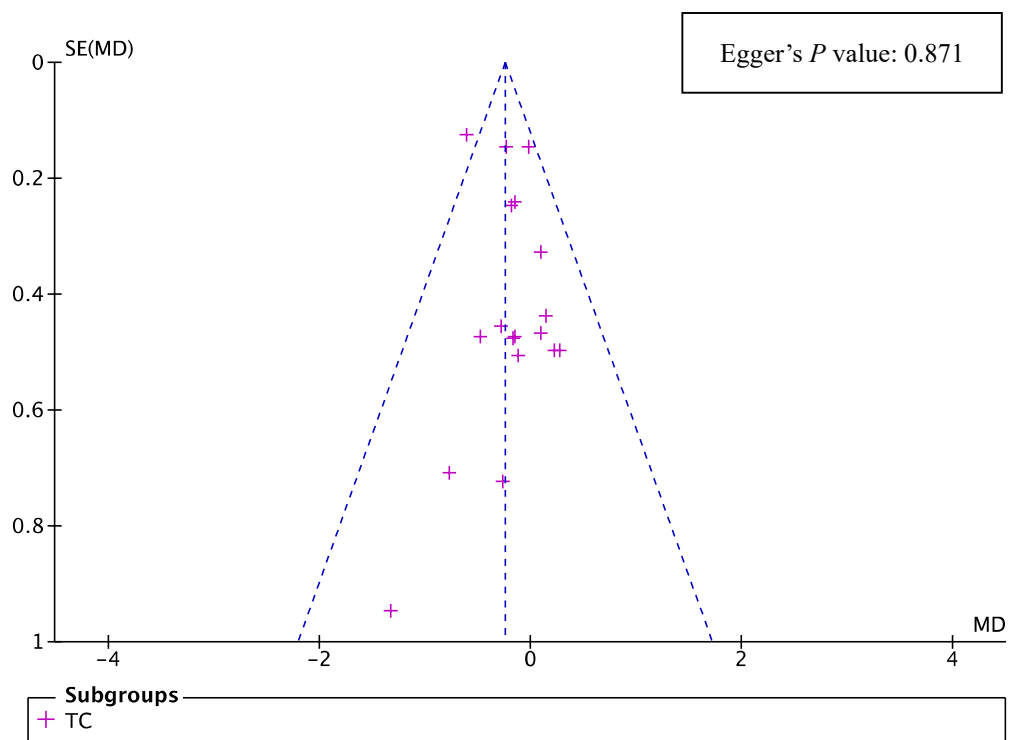


Figure S3-2-6 Funnel plot of RCTs investigating the effect of n6 fatty acids supplementation on TC.

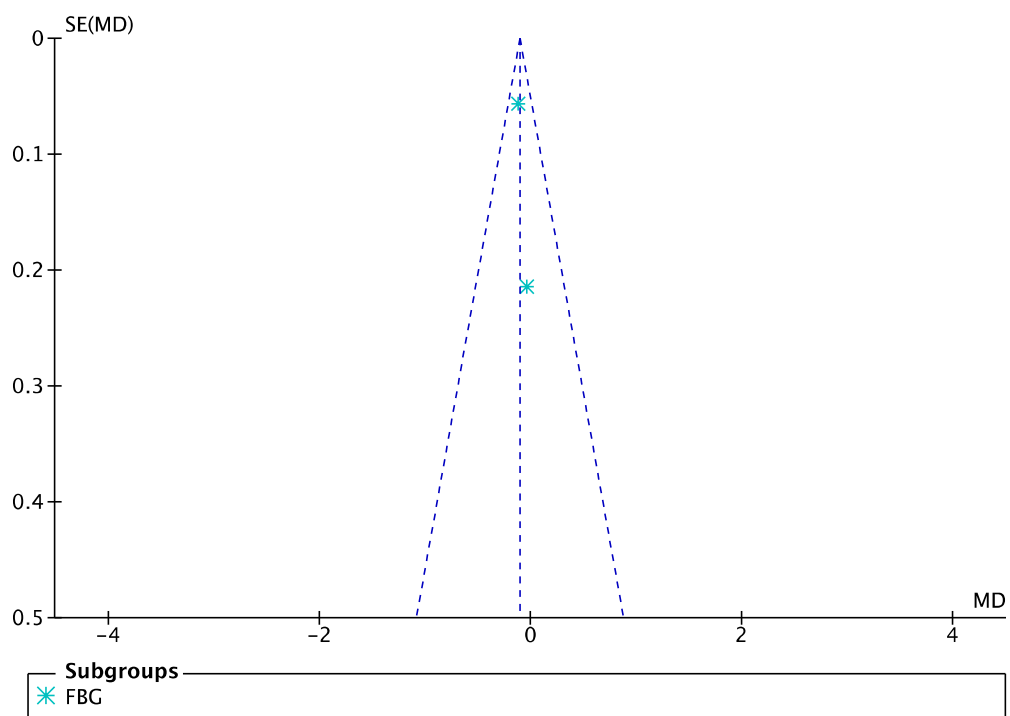


Figure S3-2-7 Funnel plot of RCTs investigating the effect of n6 fatty acids supplementation on FBG.

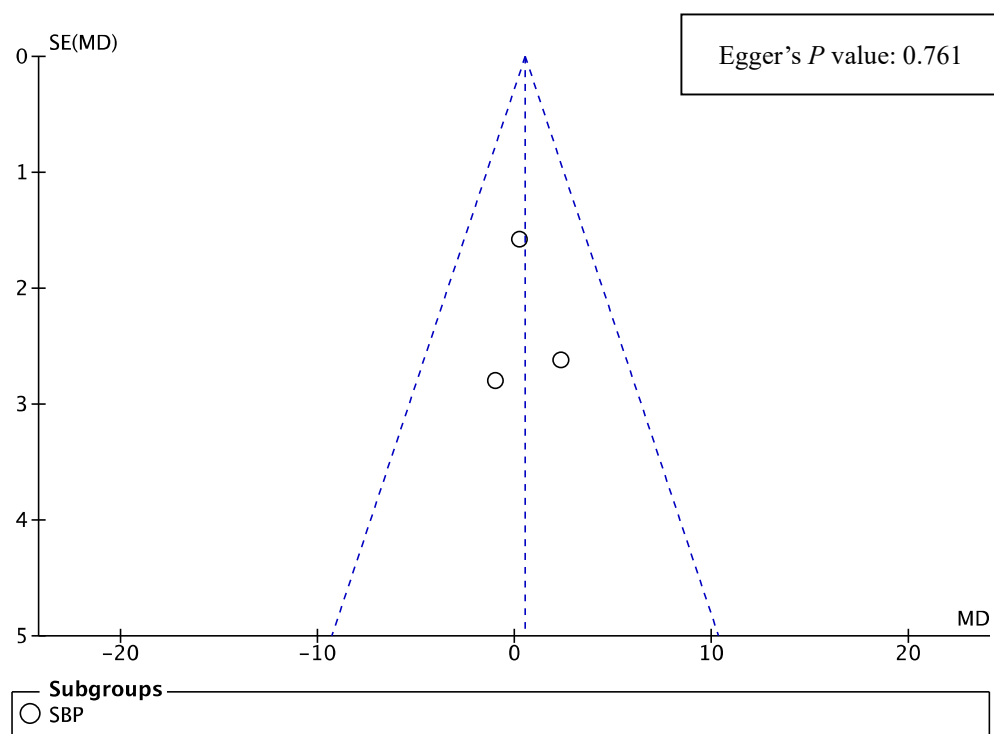


Figure S3-3-1 Funnel plot of RCTs investigating the effect of n9 fatty acids supplementation on SBP.

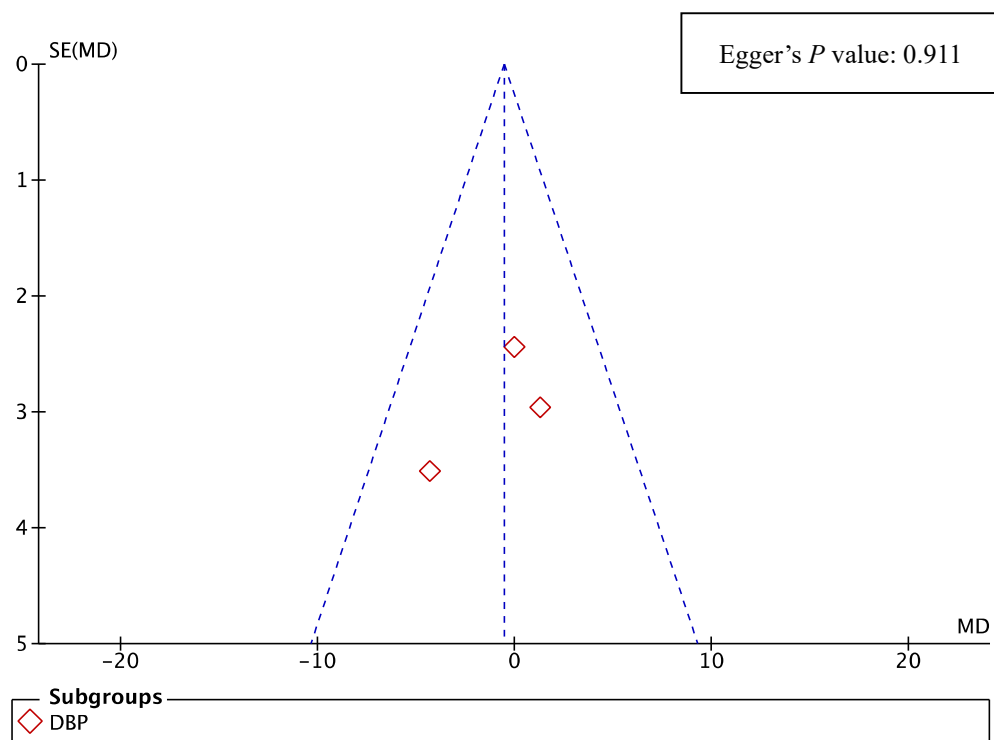


Figure S3-3-2 Funnel plot of RCTs investigating the effect of n9 fatty acids supplementation on DBP.

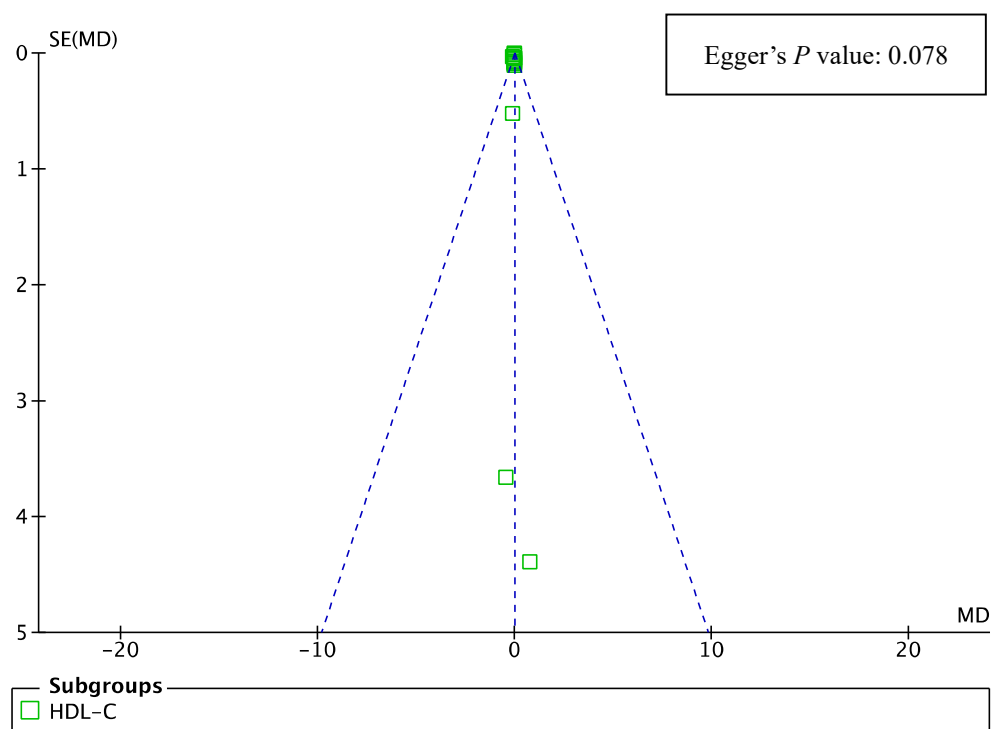


Figure S3-3-3 Funnel plot of RCTs investigating the effect of n9 fatty acids supplementation on HDL-C.

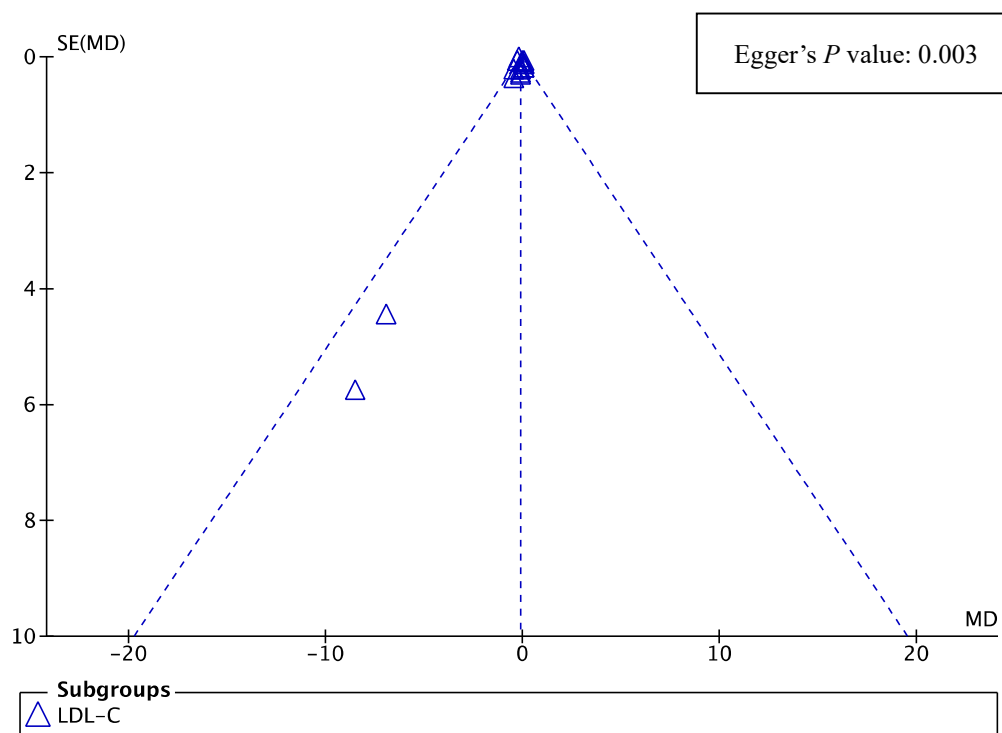


Figure S3-3-4 Funnel plot of RCTs investigating the effect of n9 fatty acids supplementation on LDL-C.

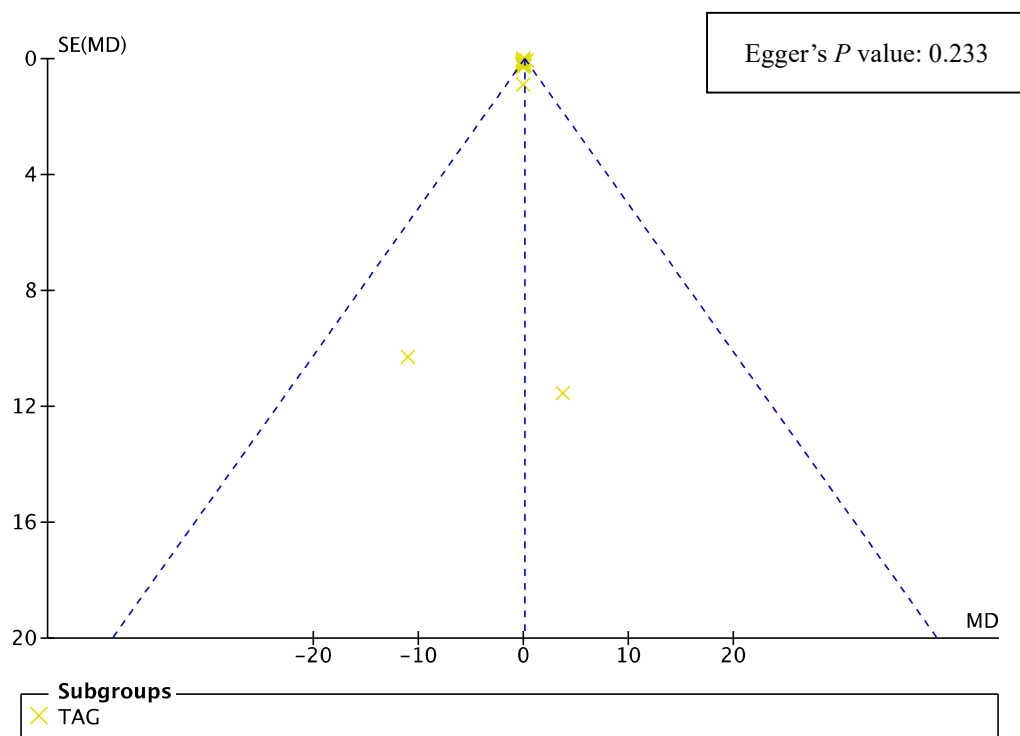


Figure S3-3-5 Funnel plot of RCTs investigating the effect of n9 fatty acids supplementation on TG

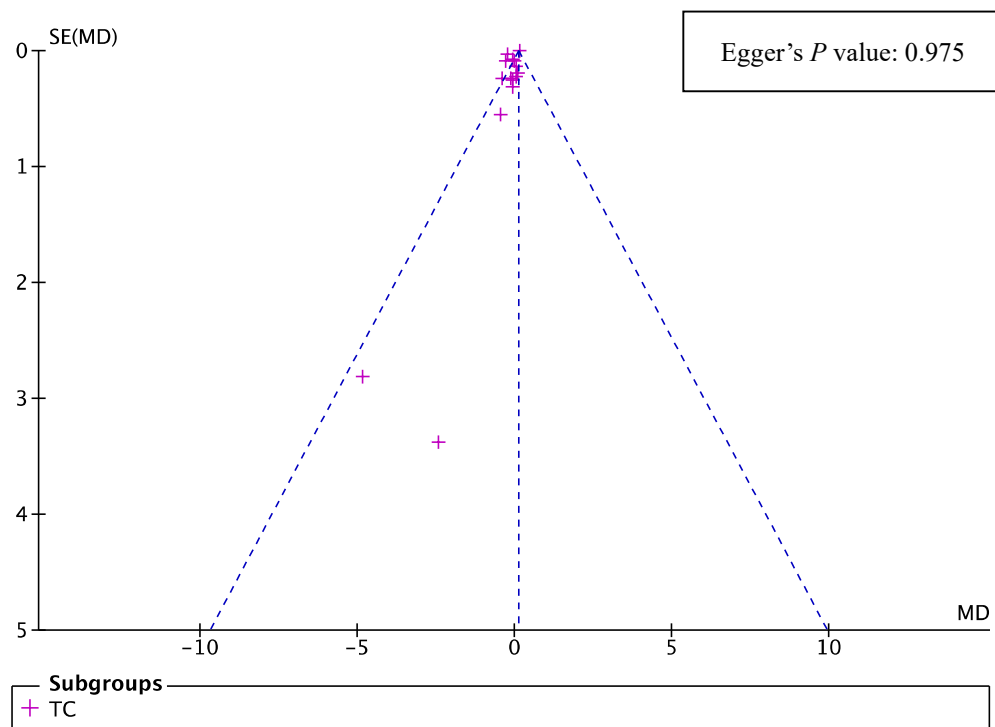


Figure S3-3-6 Funnel plot of RCTs investigating the effect of n9 fatty acids supplementation on TC.

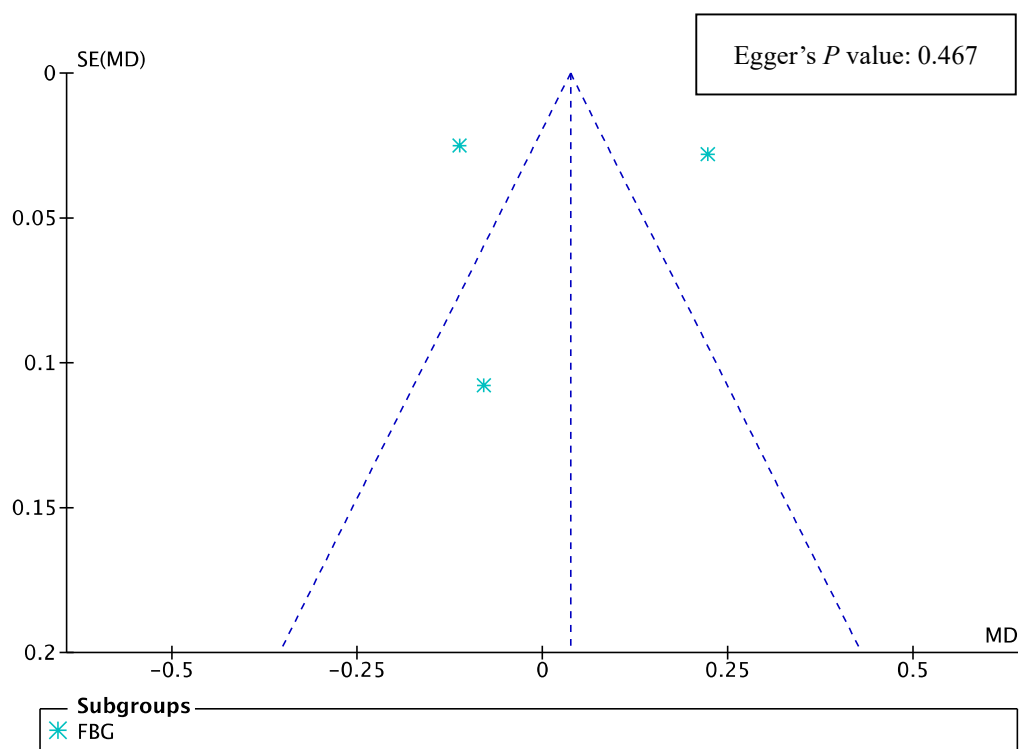


Figure S3-3-7 Funnel plot of RCTs investigating the effect of n9 fatty acids supplementation on FBG.

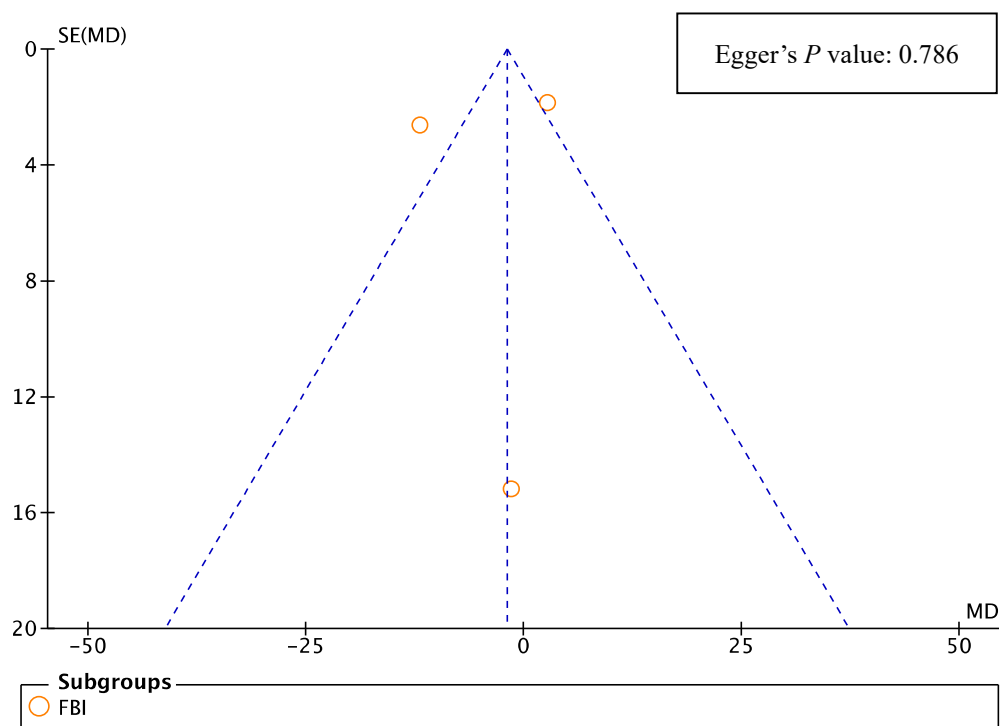


Figure S3-3-8 Funnel plot of RCTs investigating the effect of n9 fatty acids supplementation on FBI.

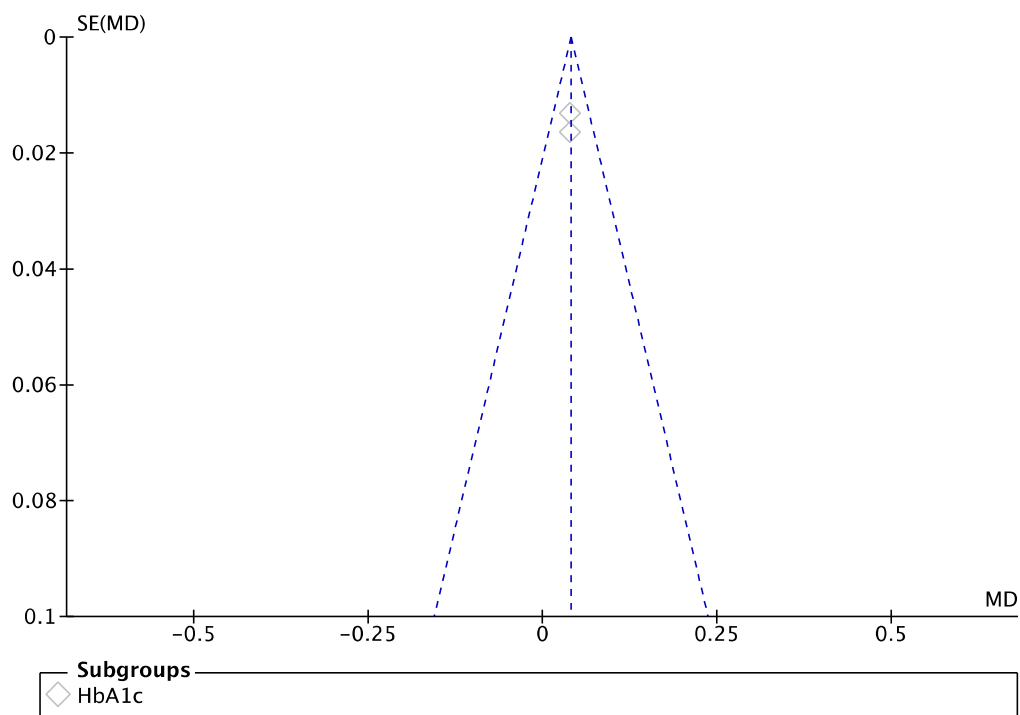


Figure S3-3-9 Funnel plot of RCTs investigating the effect of n9 fatty acids supplementation on A1C.

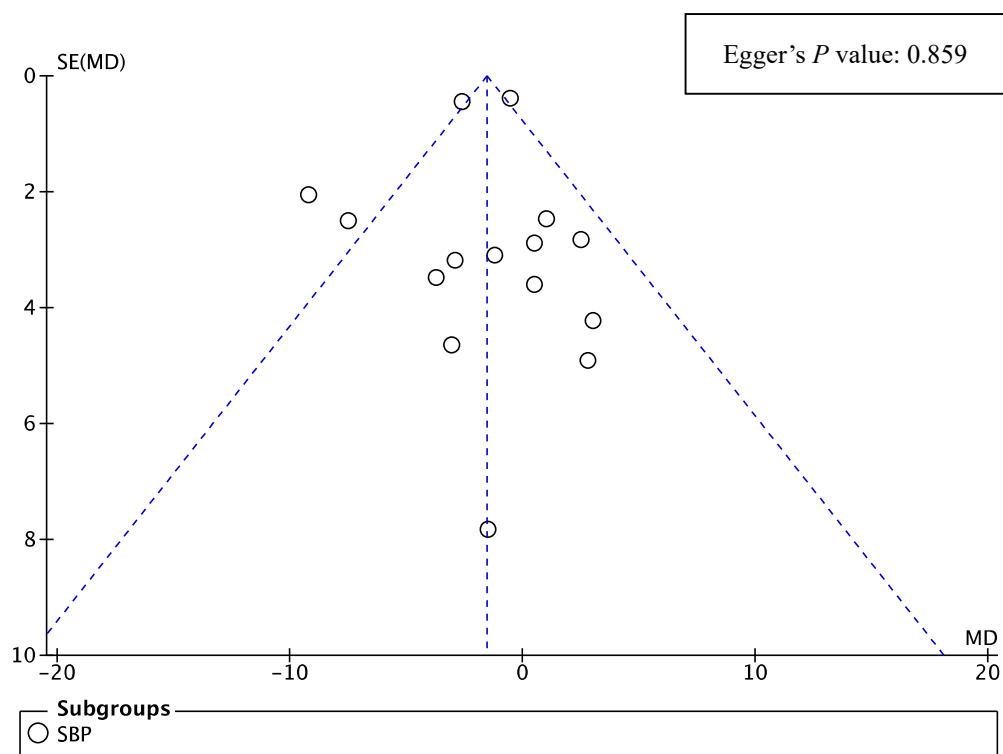


Figure S3-4-1 Funnel plot of RCTs investigating the effect of lycopene supplementation on SBP.

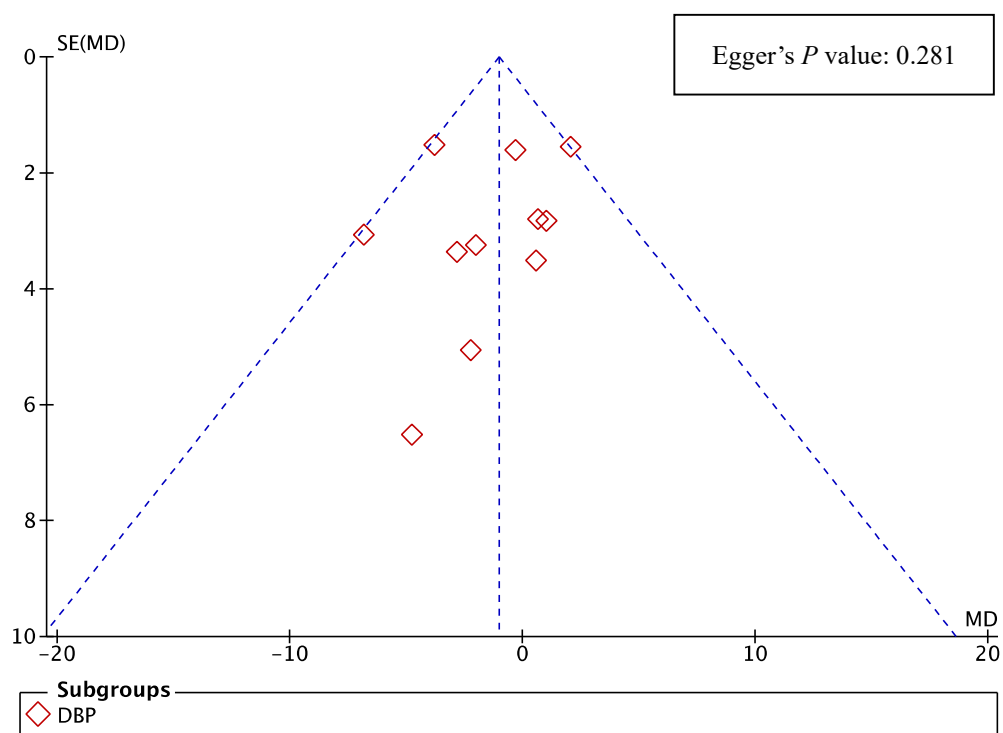


Figure S3-4-2 Funnel plot of RCTs investigating the effect of lycopene supplementation on DBP.

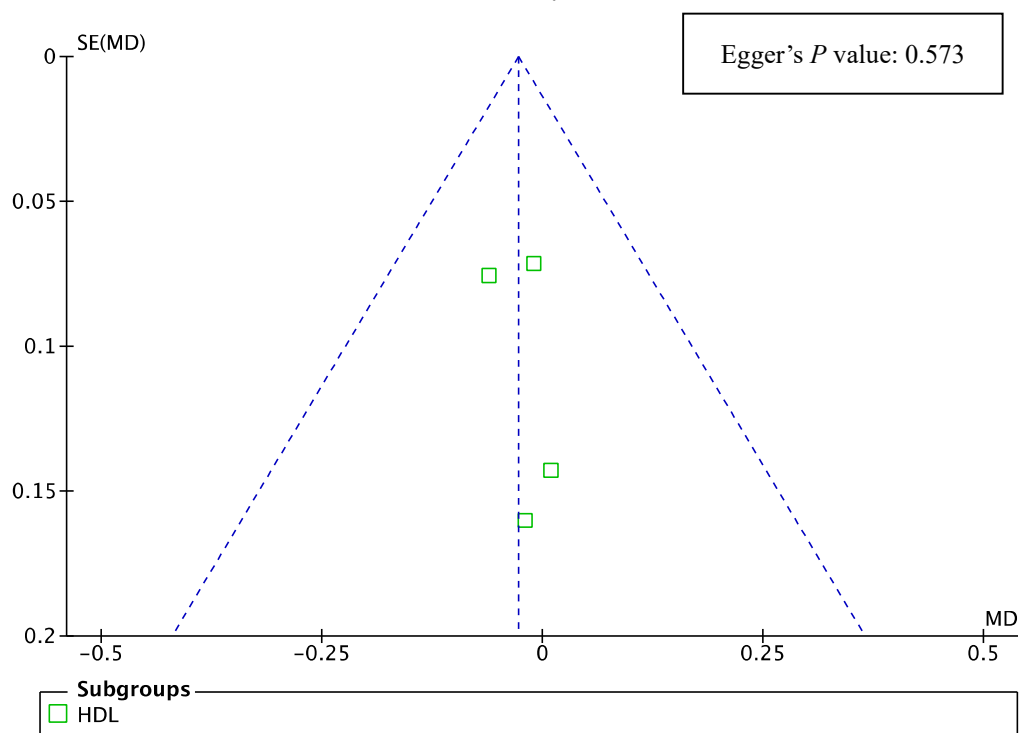


Figure S3-4-3 Funnel plot of RCTs investigating the effect of lycopene supplementation on HDL-C.

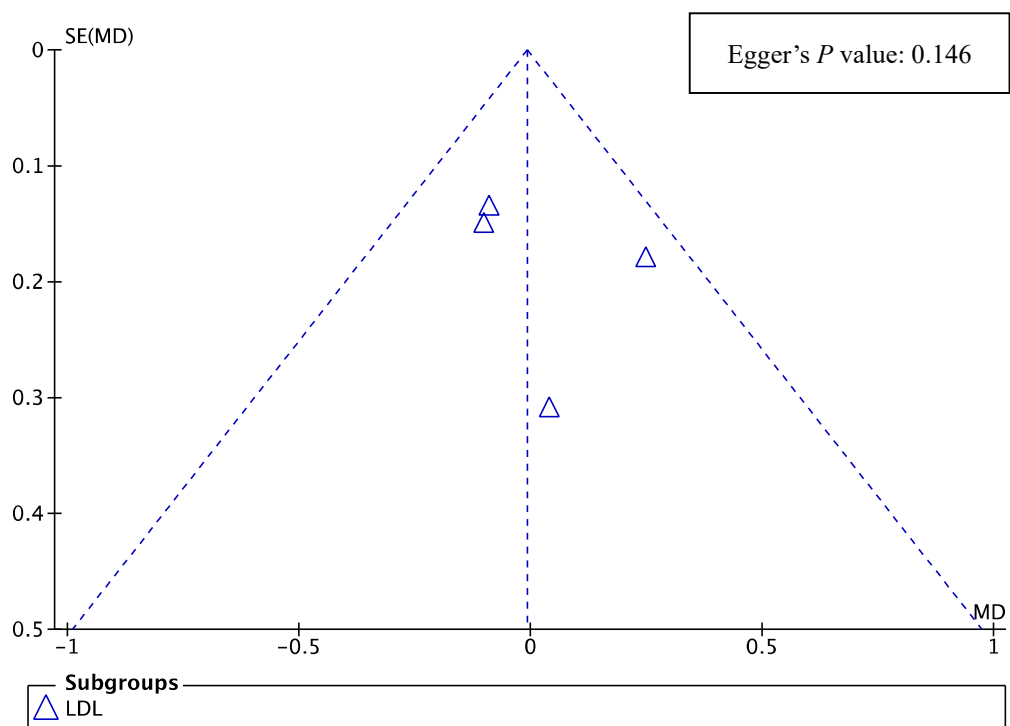


Figure S3-4-4 Funnel plot of RCTs investigating the effect of lycopene supplementation on LDL-C.

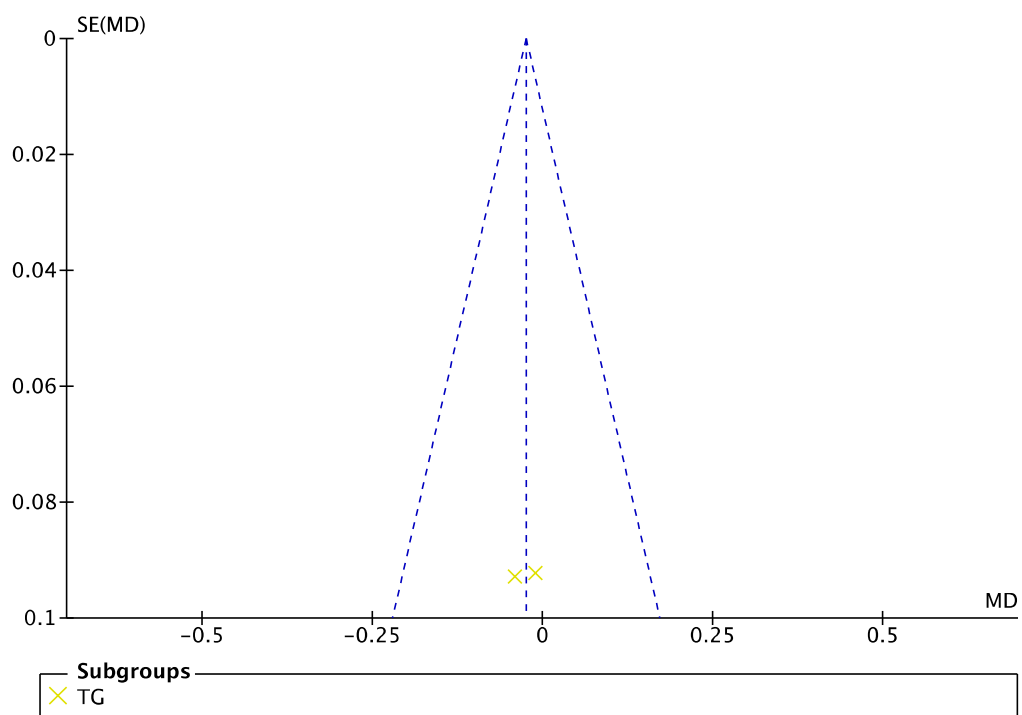


Figure S3-4-5 Funnel plot of RCTs investigating the effect of lycopene supplementation on TG

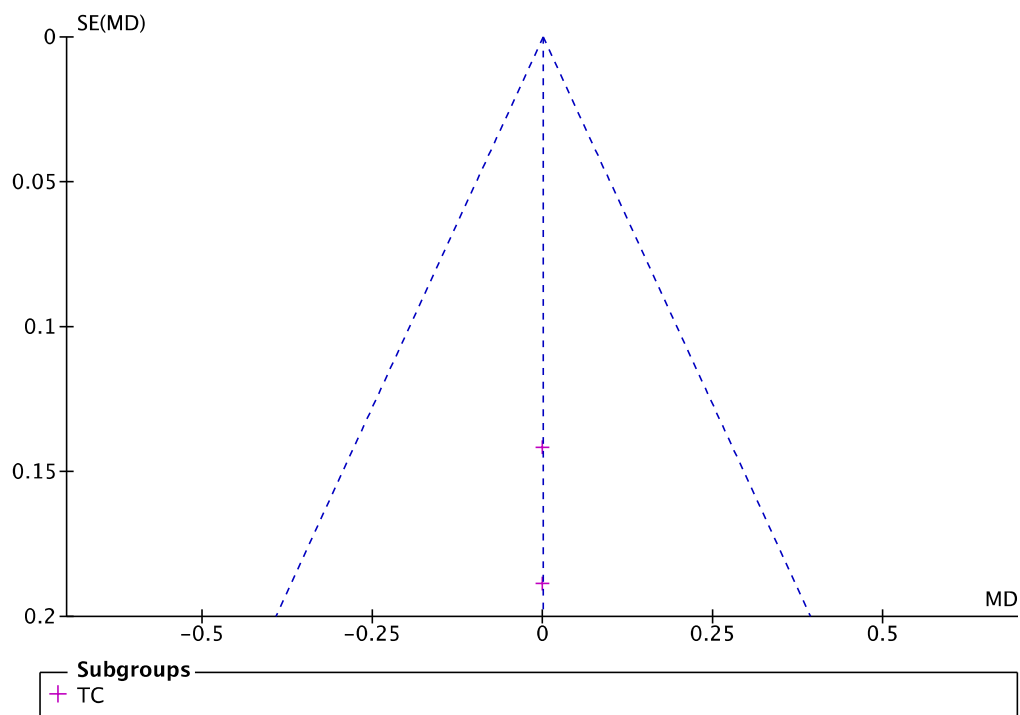


Figure S3-4-6 Funnel plot of RCTs investigating the effect of lycopene supplementation on TC.

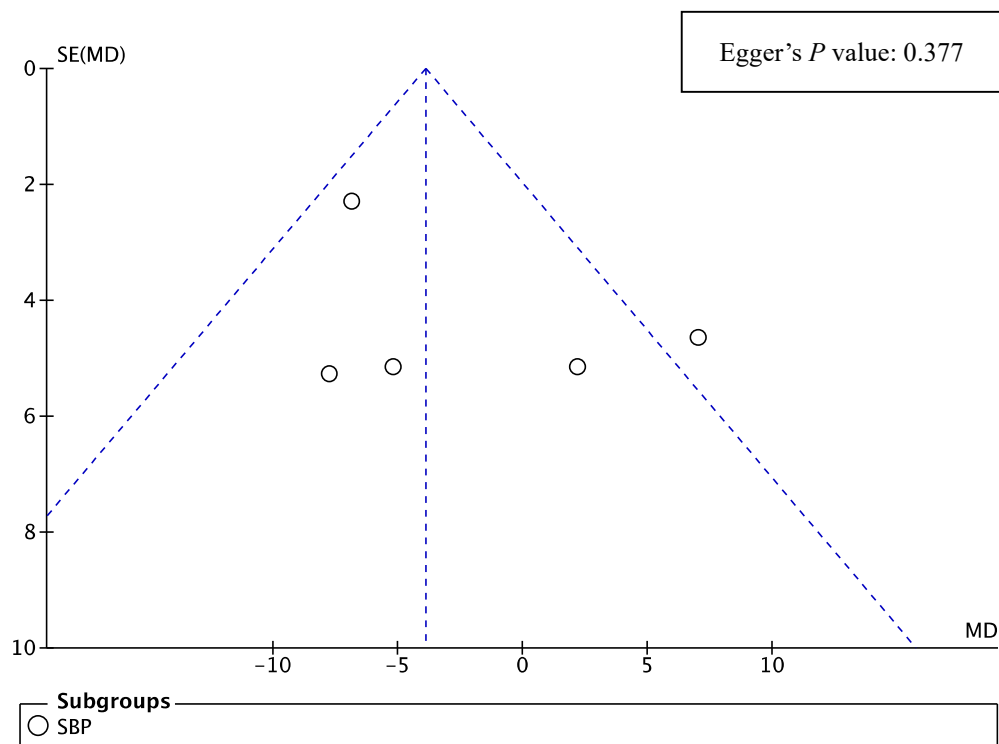


Figure S3-5-1 Funnel plot of RCTs investigating the effect of astaxanthin supplementation on SBP.

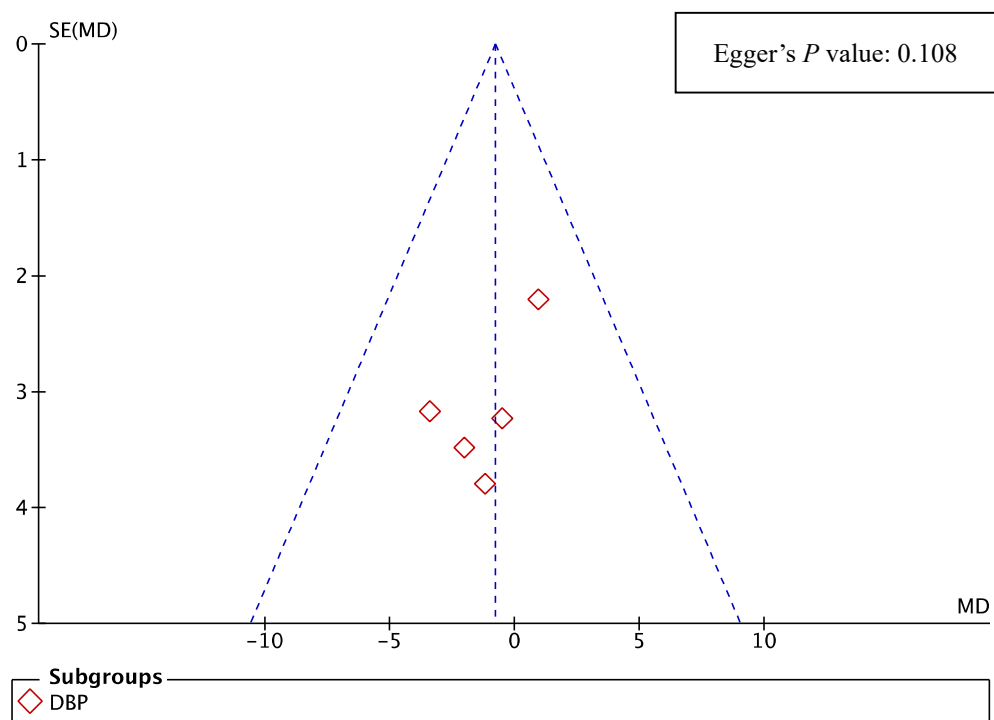


Figure S3-5-2 Funnel plot of RCTs investigating the effect of astaxanthin supplementation on DBP.

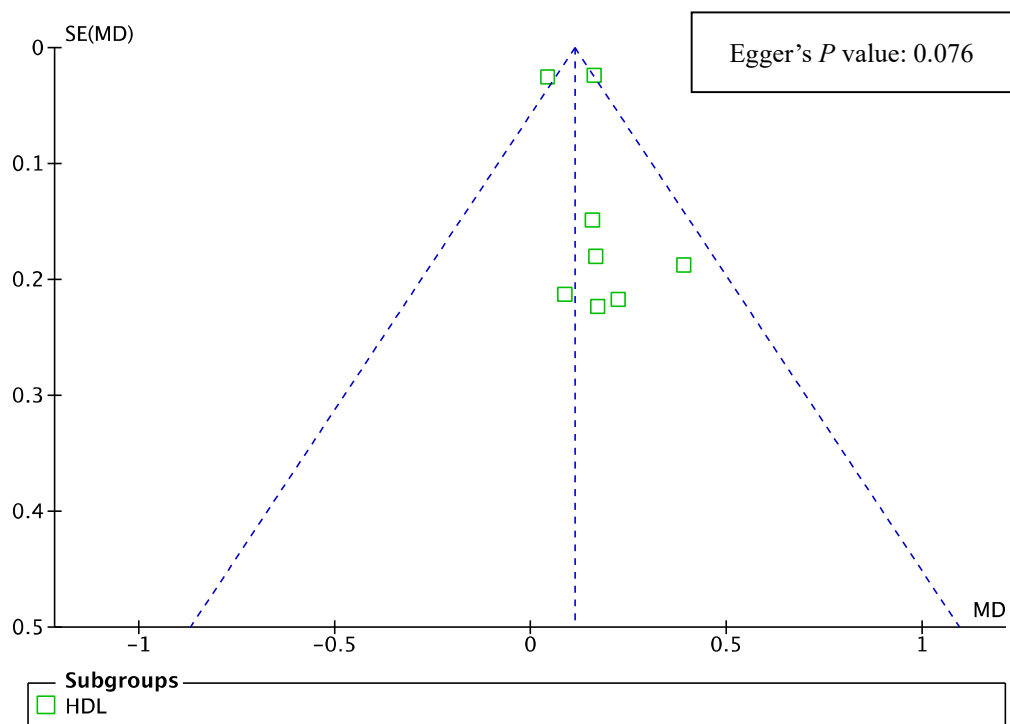


Figure S3-5-3 Funnel plot of RCTs investigating the effect of astaxanthin supplementation on HDL-C.

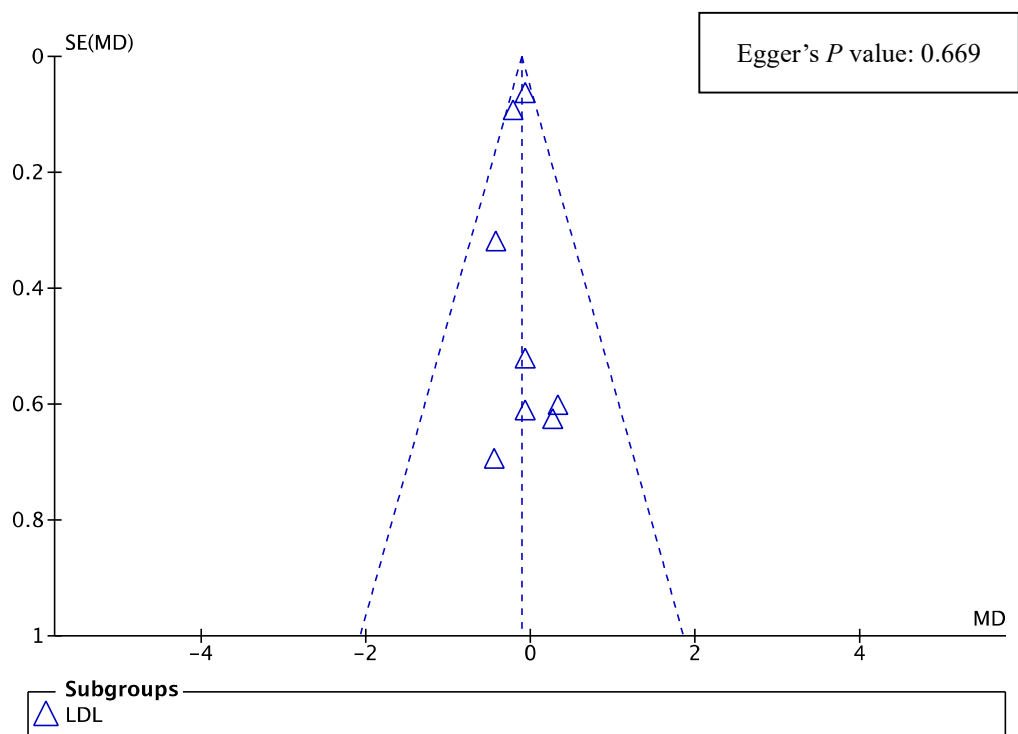


Figure S3-5-4 Funnel plot of RCTs investigating the effect of astaxanthin supplementation on LDL-C.

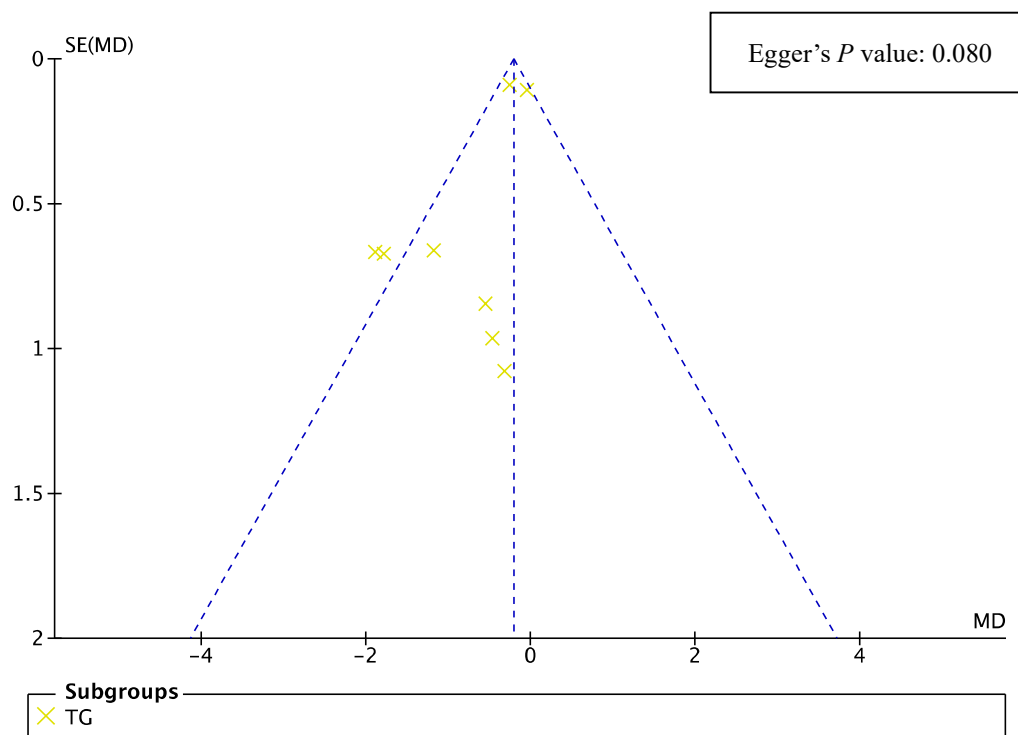


Figure S3-5-5 Funnel plot of RCTs investigating the effect of astaxanthin supplementation on TG

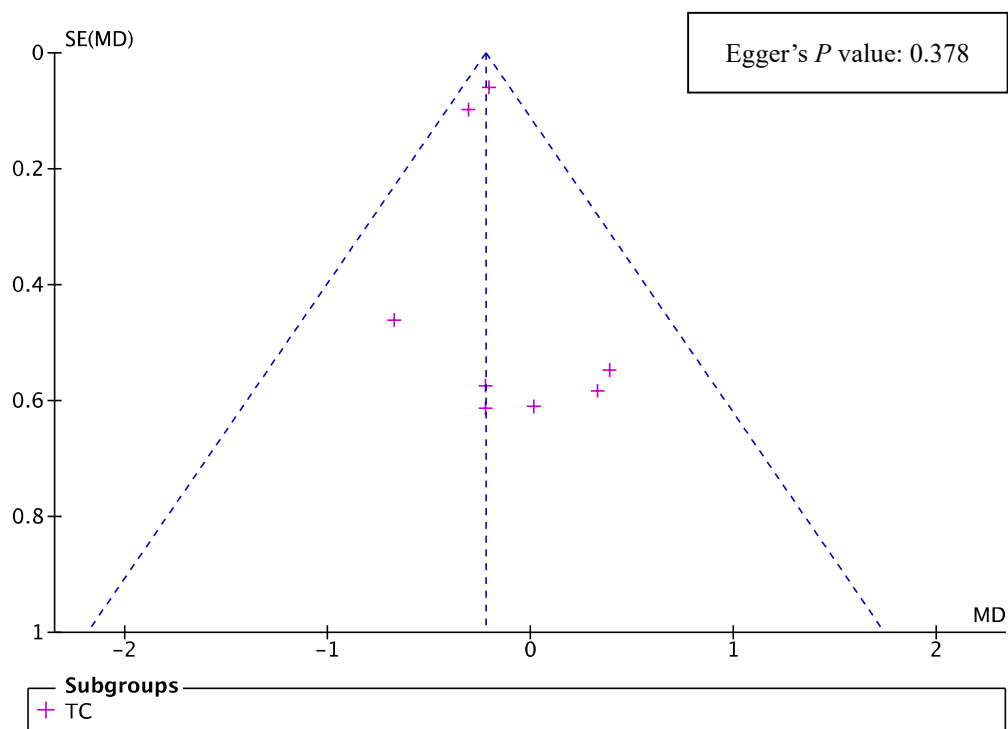


Figure S3-5-6 Funnel plot of RCTs investigating the effect of astaxanthin supplementation on TC.

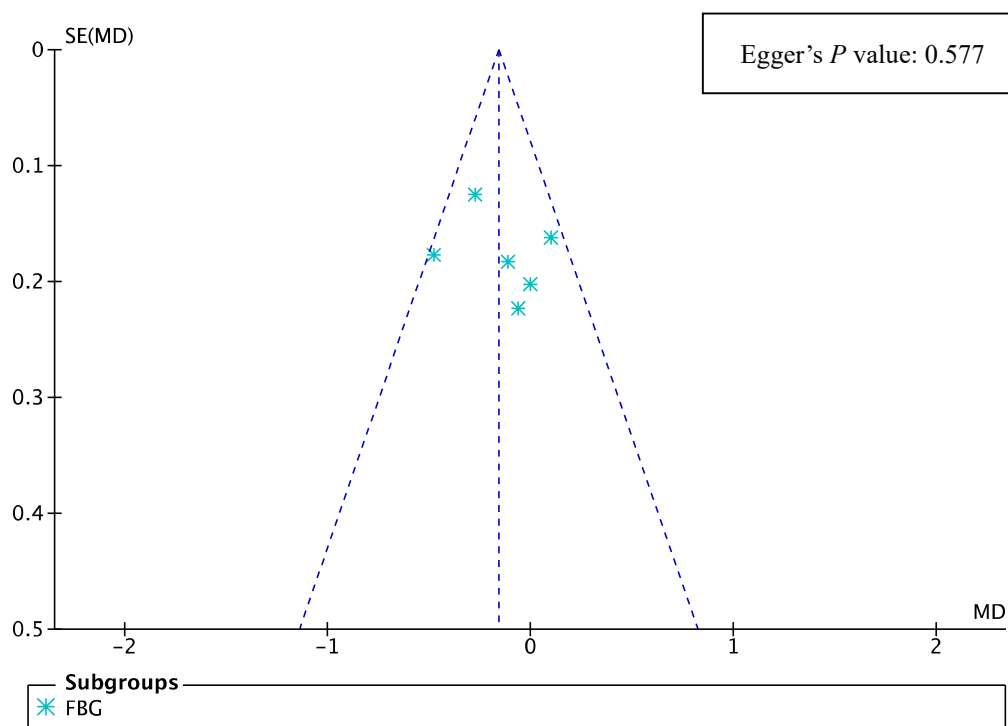


Figure S3-5-7 Funnel plot of RCTs investigating the effect of astaxanthin supplementation on FBG.

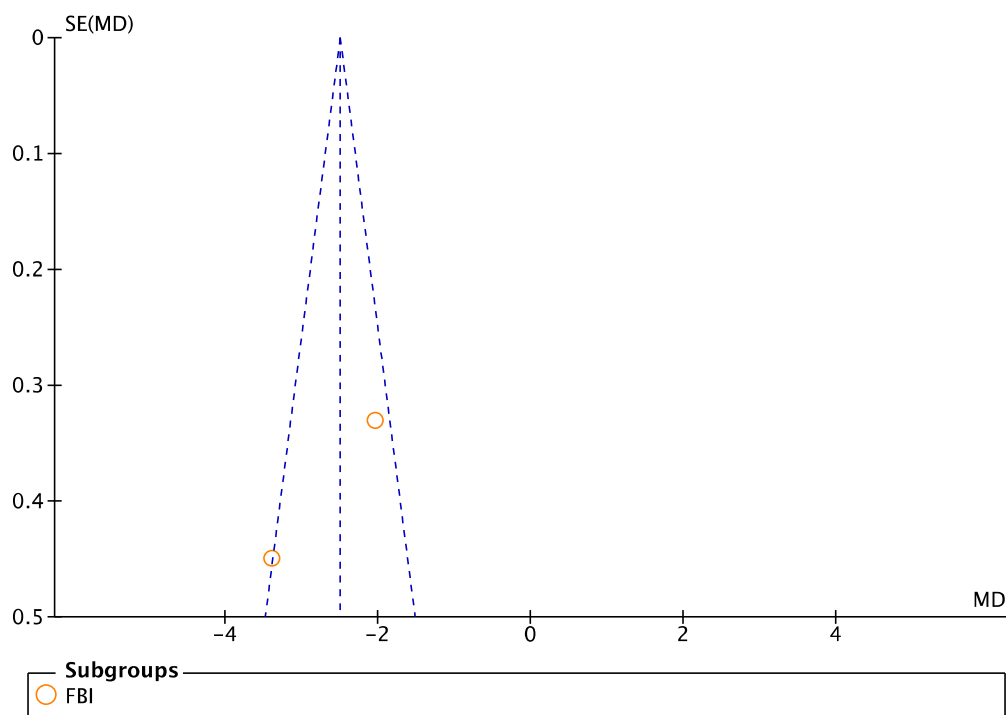


Figure S3-5-8 Funnel plot of RCTs investigating the effect of astaxanthin supplementation on FBI.

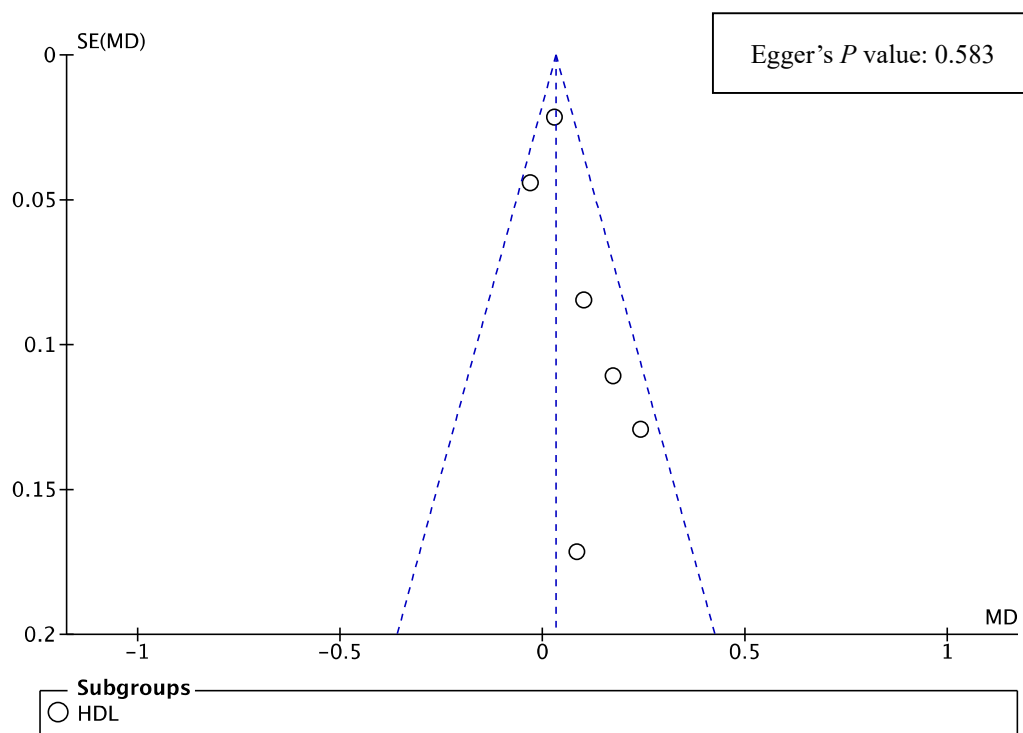


Figure S3-6-1 Funnel plot of RCTs investigating the effect of beta-carotene supplementation on HDL-C.

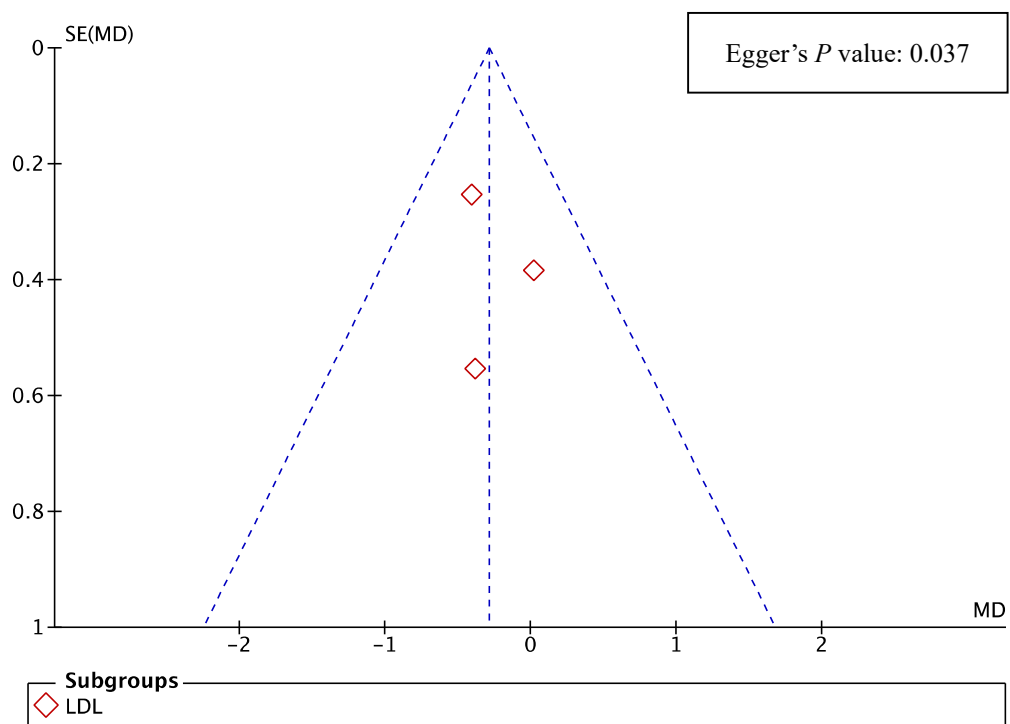


Figure S3-6-2 Funnel plot of RCTs investigating the effect of beta-carotene supplementation on LDL-C.

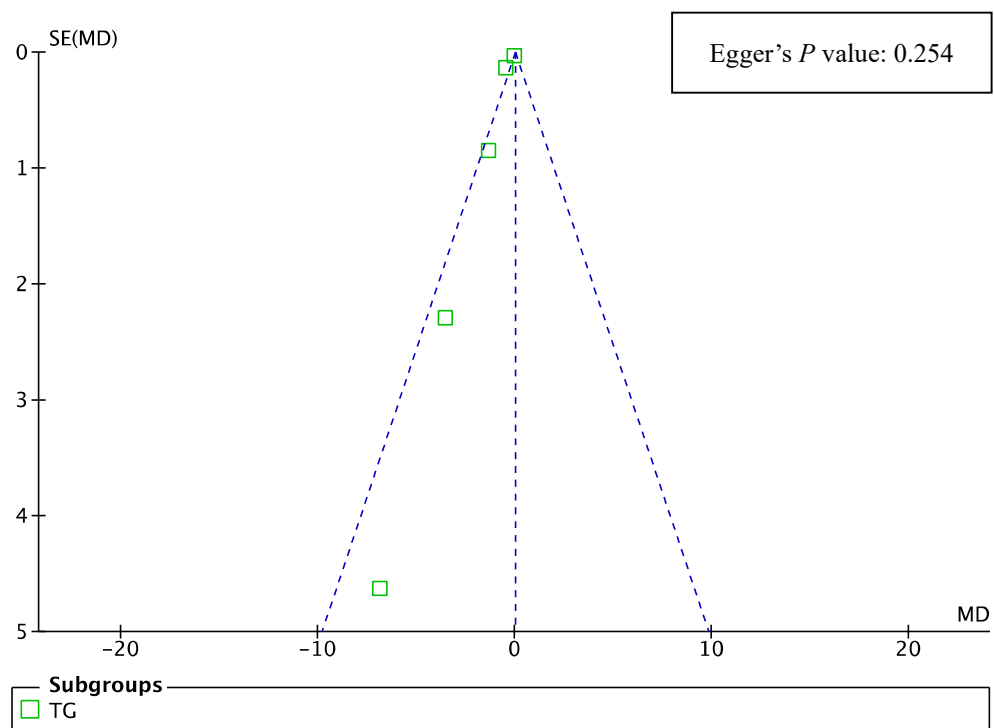


Figure S3-6-3 Funnel plot of RCTs investigating the effect of beta-carotene supplementation on TG

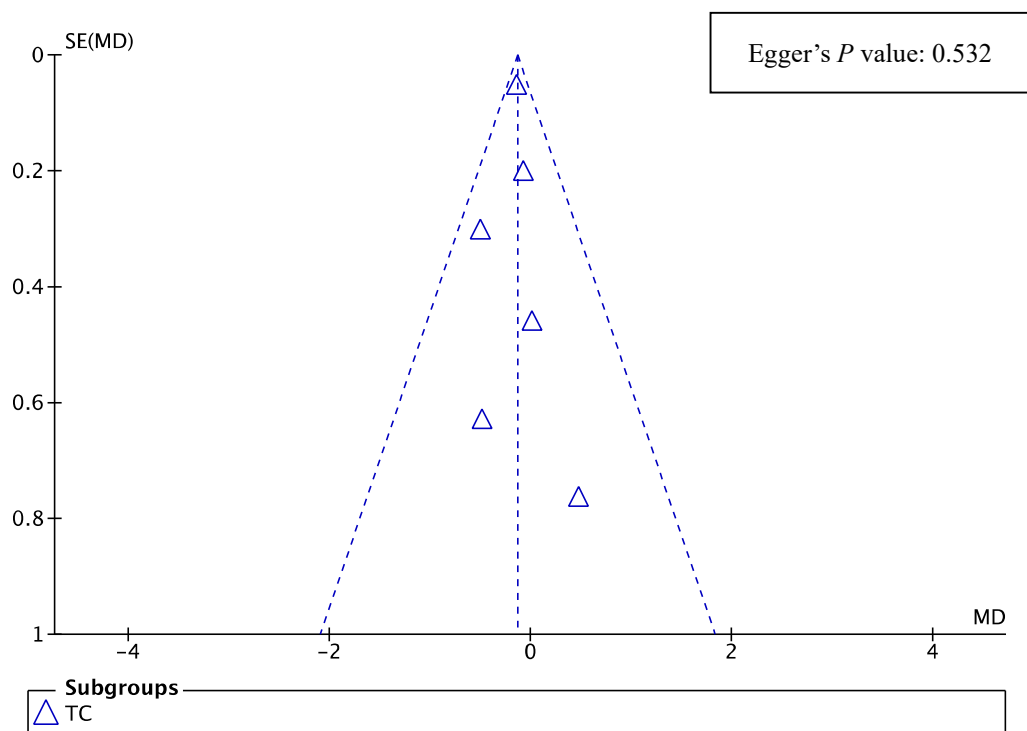


Figure S3-6-4 Funnel plot of RCTs investigating the effect of beta-carotene supplementation on TC.

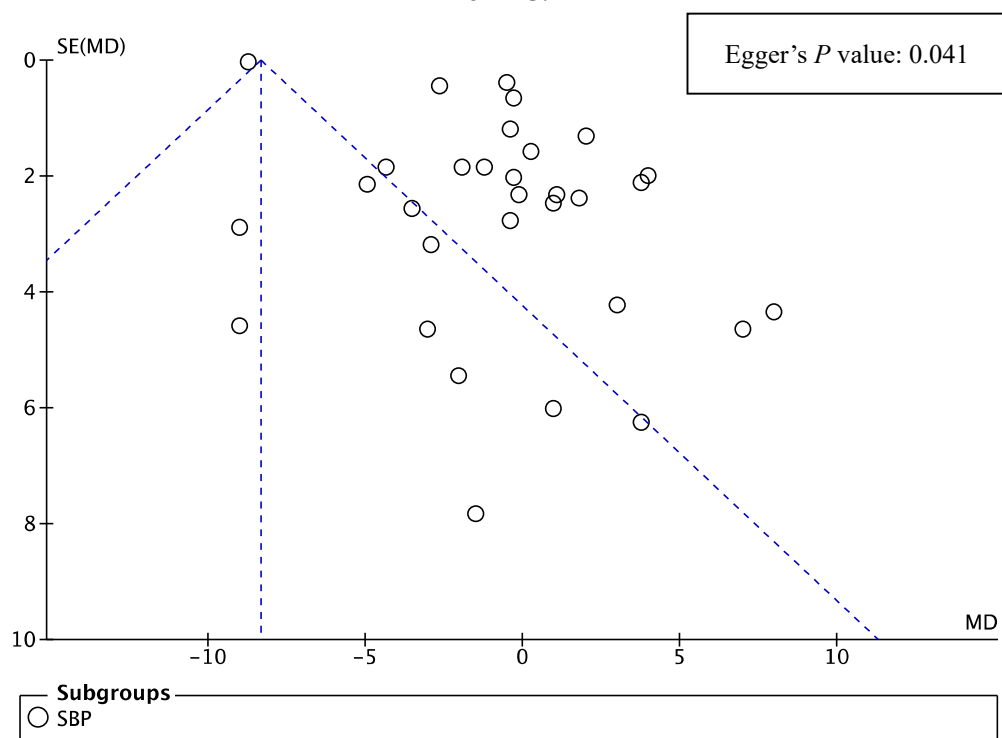


Figure S3-7-1 Funnel plot of RCTs investigating the effect of antioxidant fatty acids supplementation on SBP in healthy population.

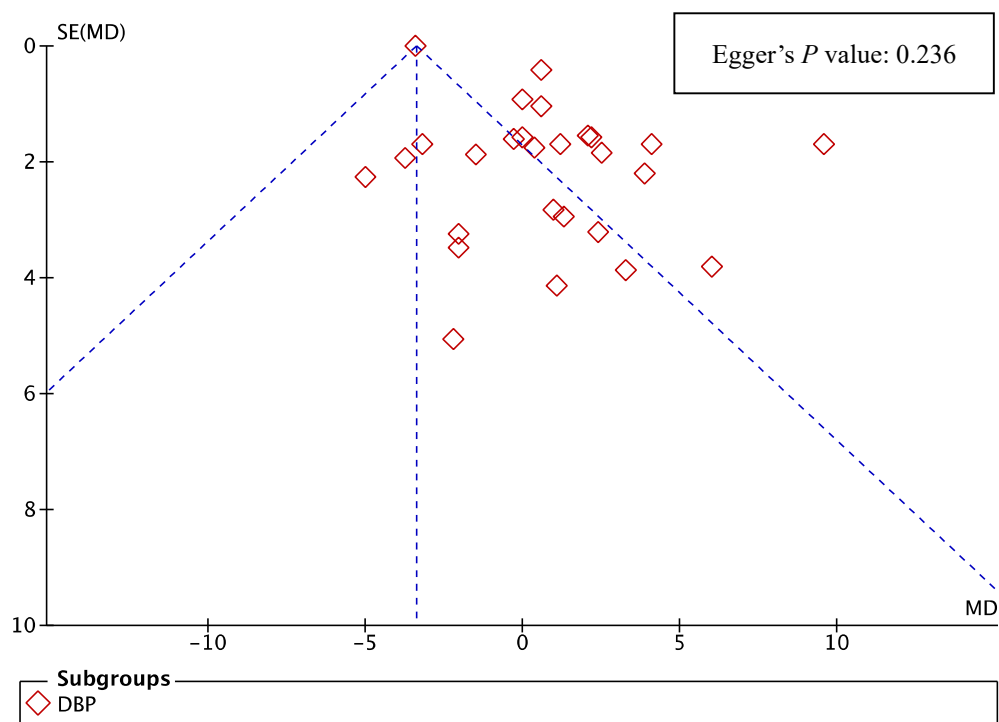


Figure S3-7-2 Funnel plot of RCTs investigating the effect of antioxidant fatty acids supplementation on DBP in healthy population.

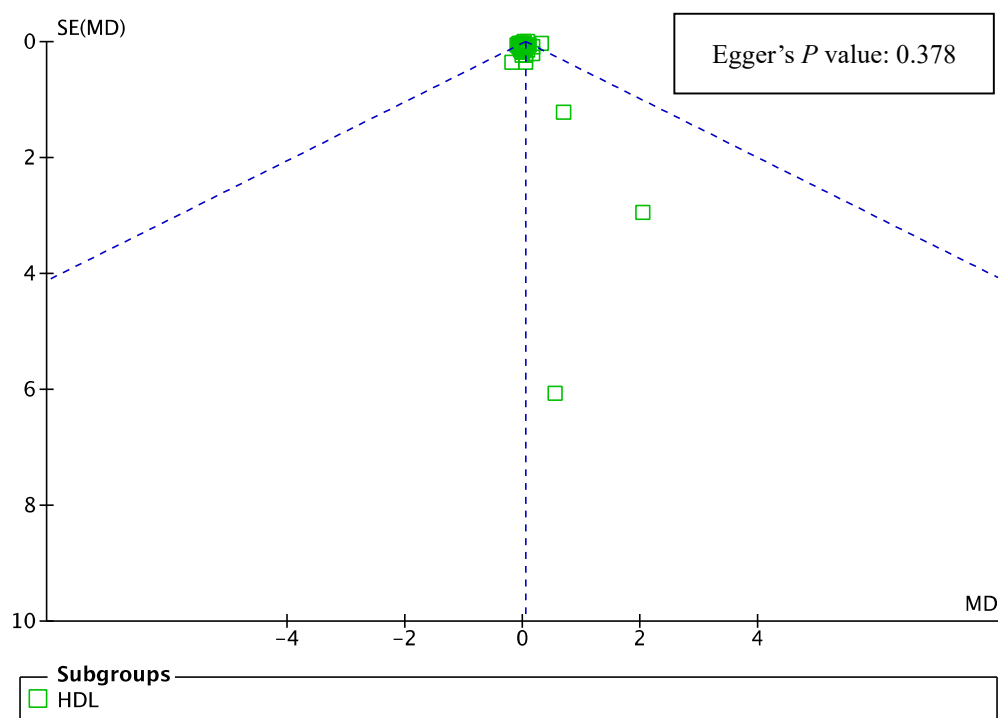


Figure S3-7-3 Funnel plot of RCTs investigating the effect of antioxidant fatty acids supplementation on HDL in healthy population.

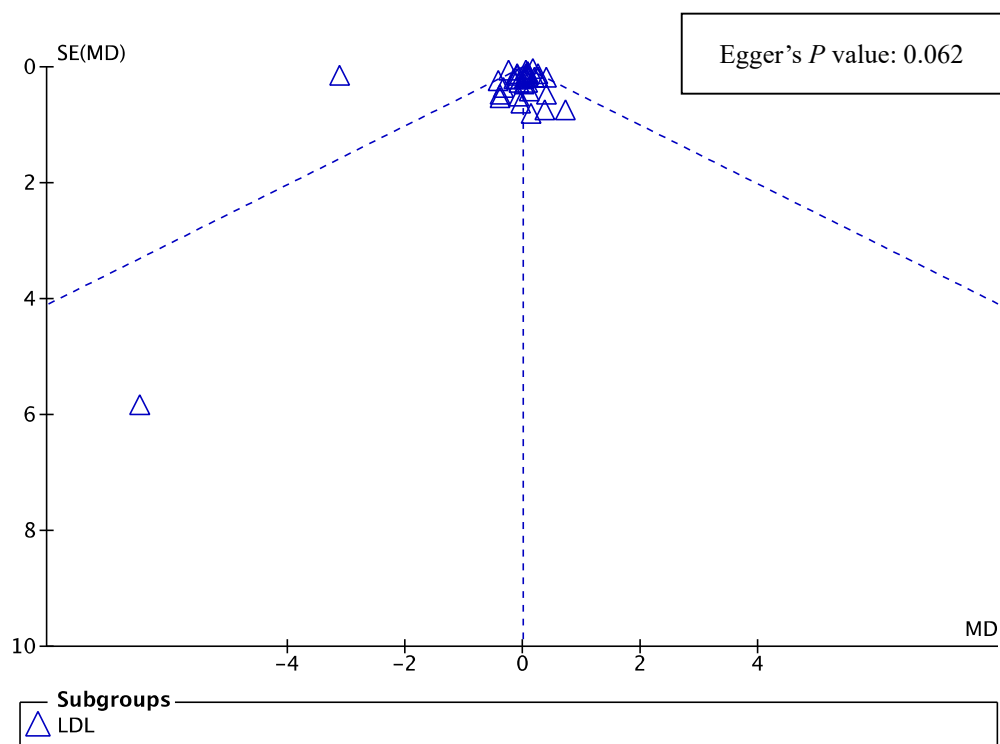


Figure S3-7-4 Funnel plot of RCTs investigating the effect of antioxidant fatty acids supplementation on LDL in healthy population.

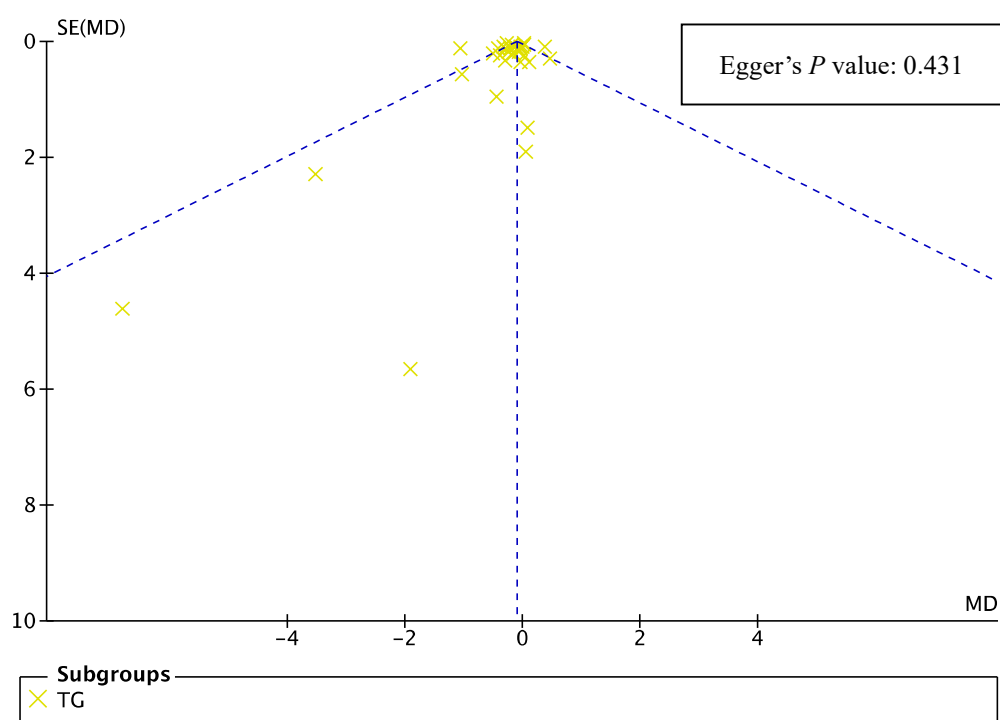


Figure S3-7-5 Funnel plot of RCTs investigating the effect of antioxidant fatty acids supplementation on TG in healthy population.

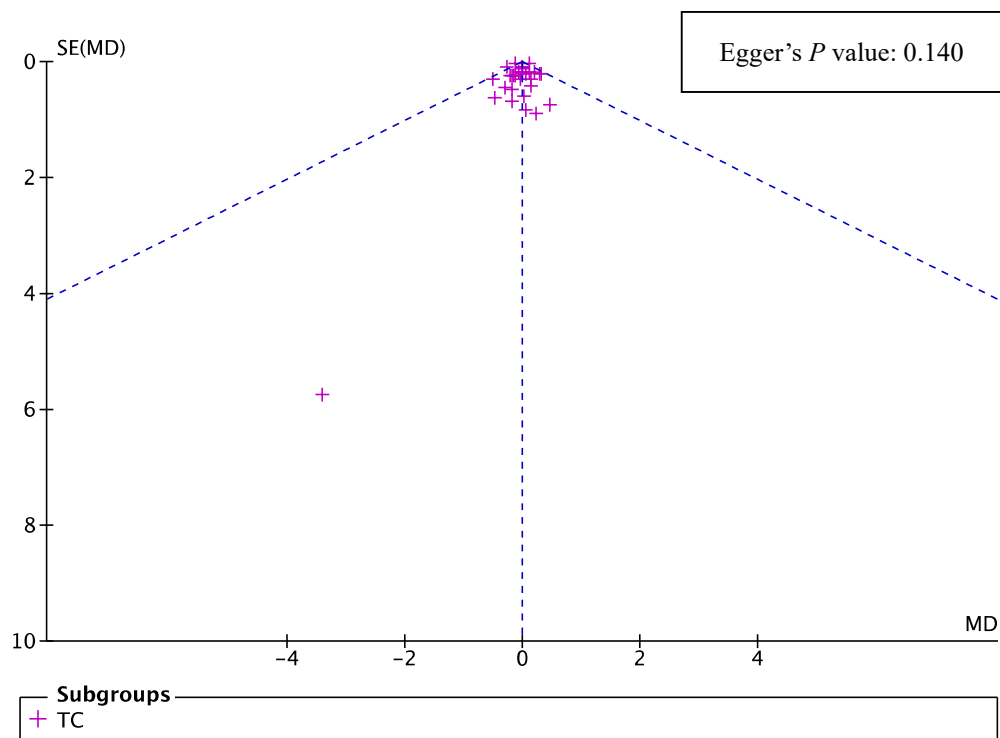


Figure S3-7-6 Funnel plot of RCTs investigating the effect of antioxidant fatty acids supplementation on TC in healthy population.

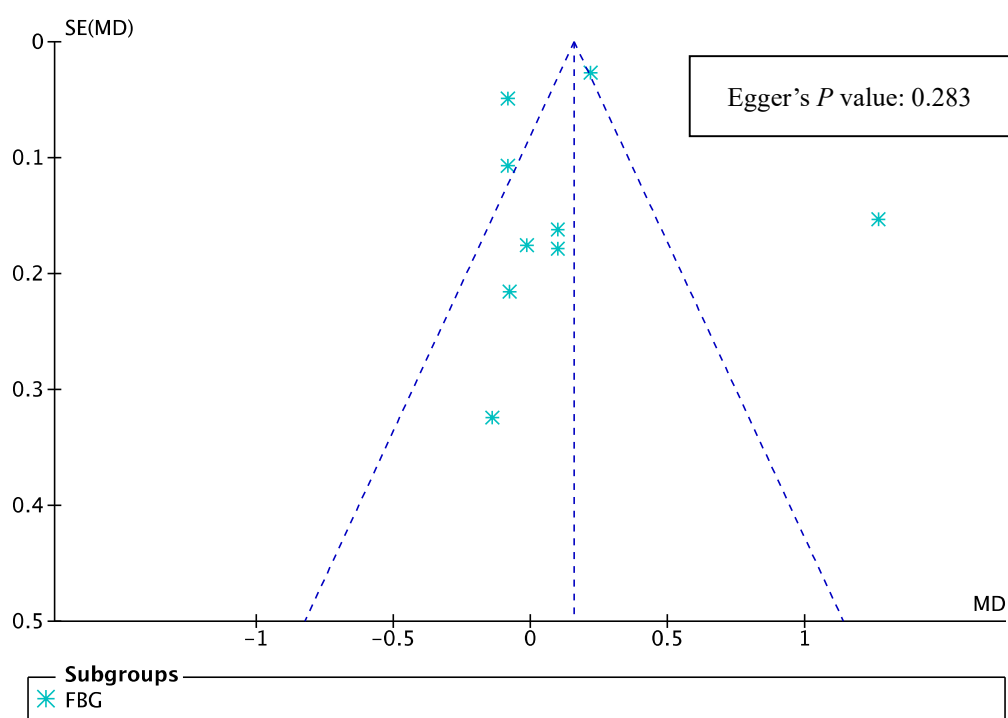


Figure S3-7-7 Funnel plot of RCTs investigating the effect of antioxidant fatty acids supplementation on FBG in healthy population.

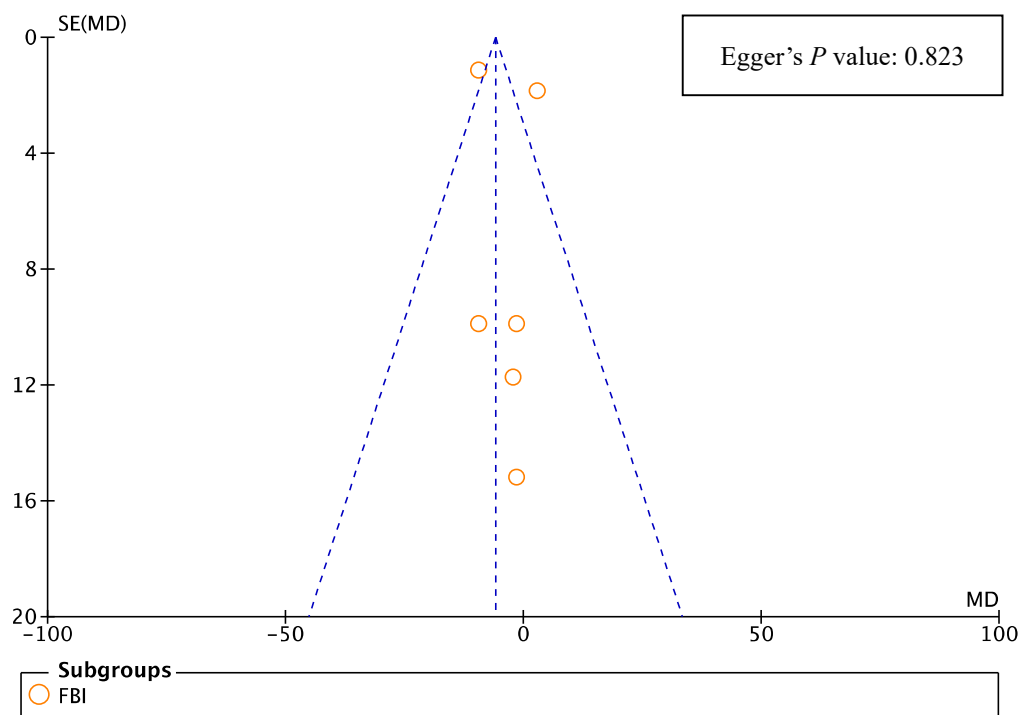


Figure S3-7-8 Funnel plot of RCTs investigating the effect of antioxidant fatty acids supplementation on FBI in healthy population.

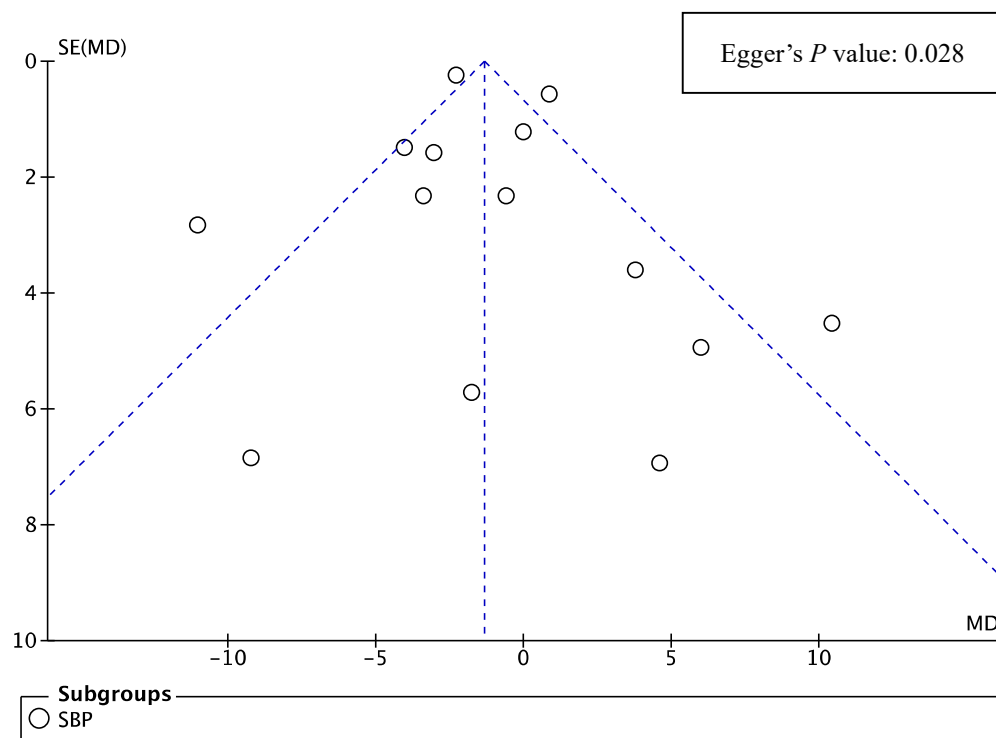


Figure S3-8-1 Funnel plot of RCTs investigating the effect of antioxidant fatty acids supplementation on SBP in population with diabetes.

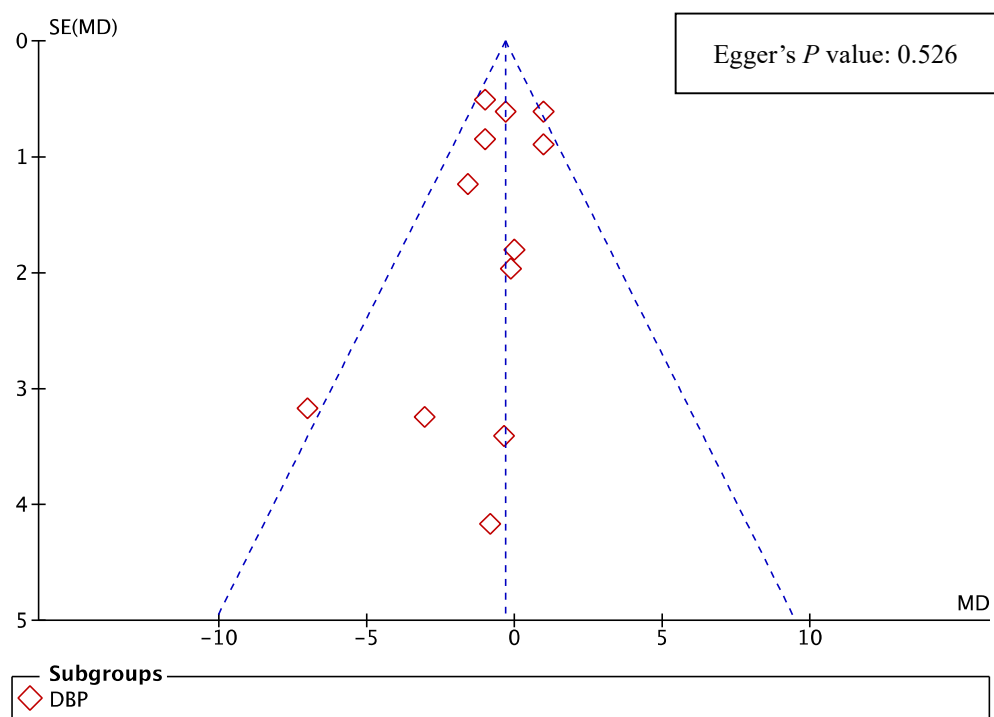


Figure S3-8-2 Funnel plot of RCTs investigating the effect of antioxidant fatty acids supplementation on DBP in population with diabetes.

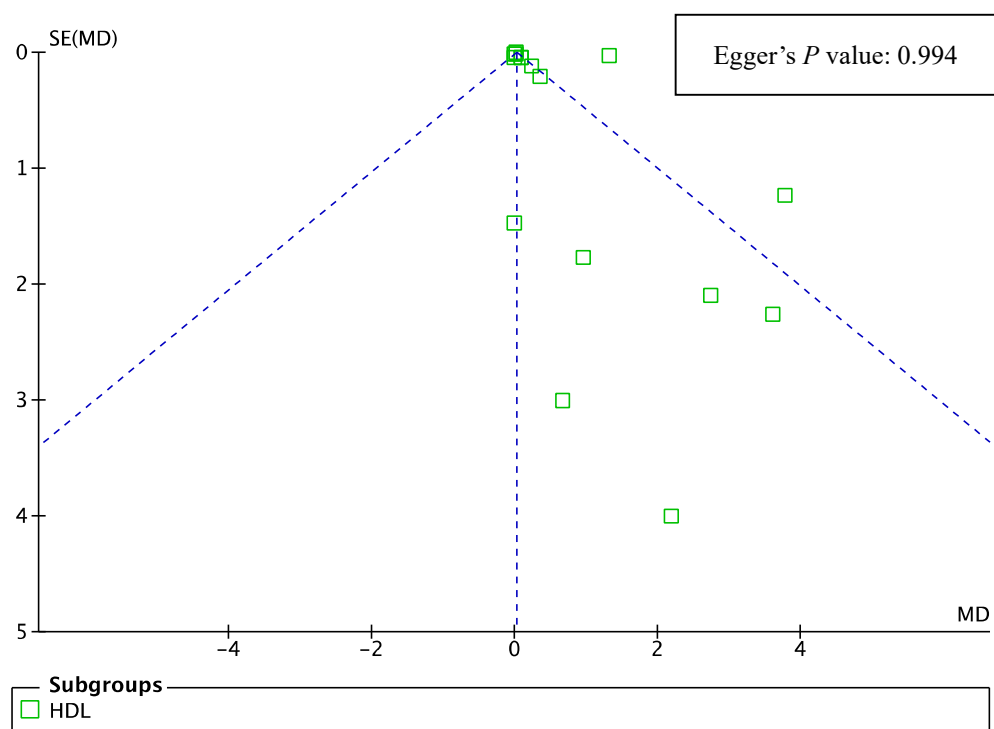


Figure S3-8-3 Funnel plot of RCTs investigating the effect of antioxidant fatty acids supplementation on HDL in population with diabetes.

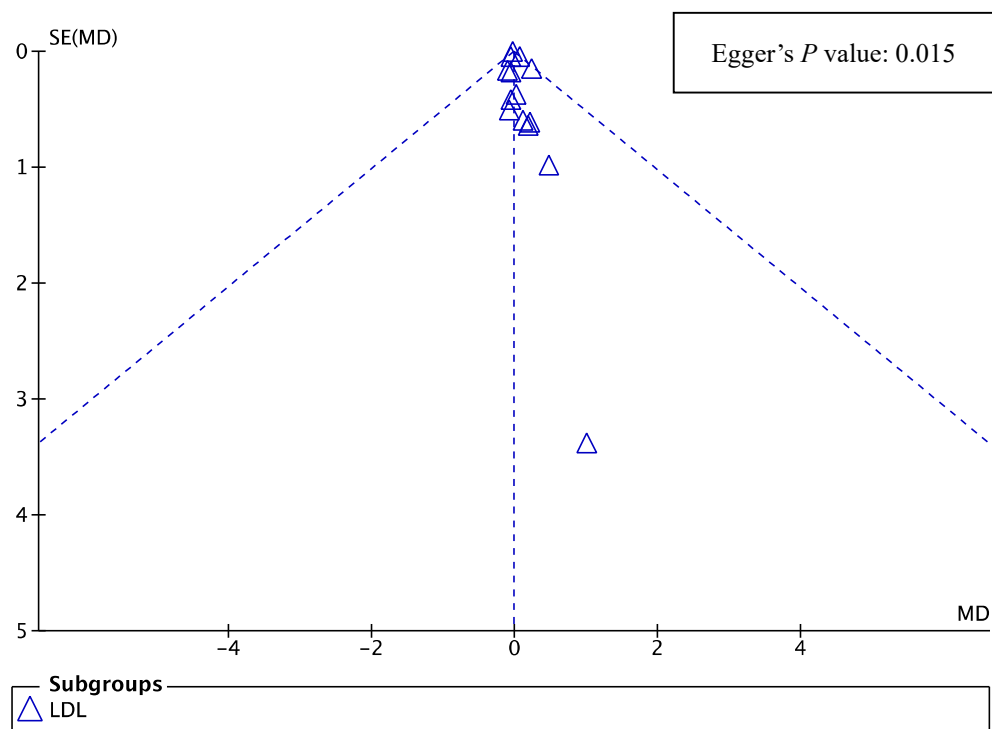


Figure S3-8-4 Funnel plot of RCTs investigating the effect of antioxidant fatty acids supplementation on LDL in population with diabetes.

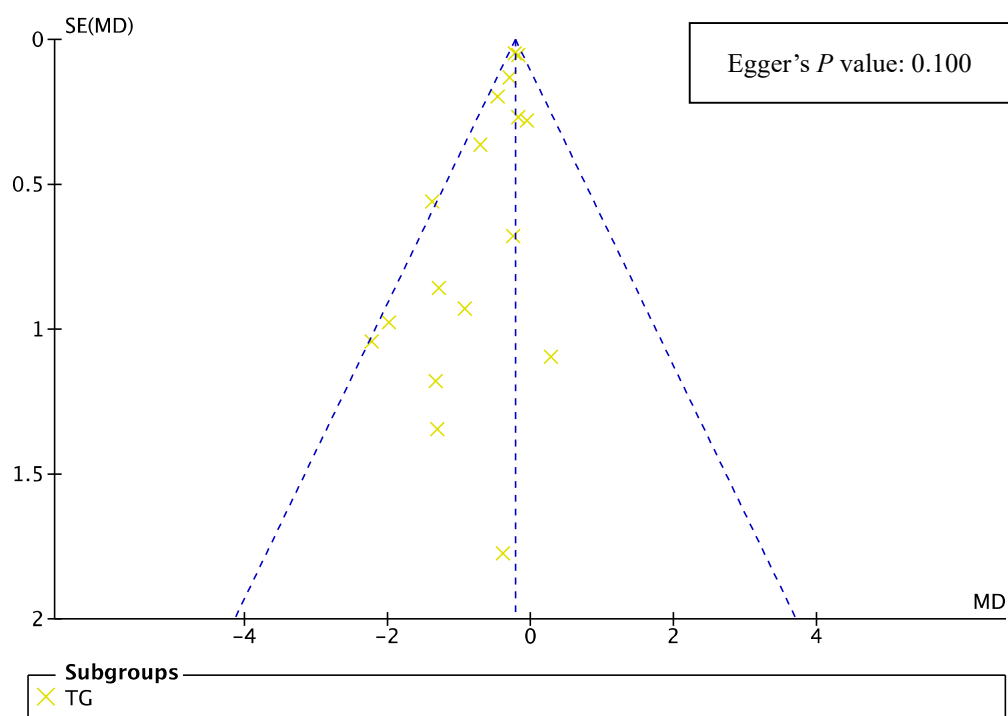


Figure S3-8-5 Funnel plot of RCTs investigating the effect of antioxidant fatty acids supplementation on TG in population with diabetes.

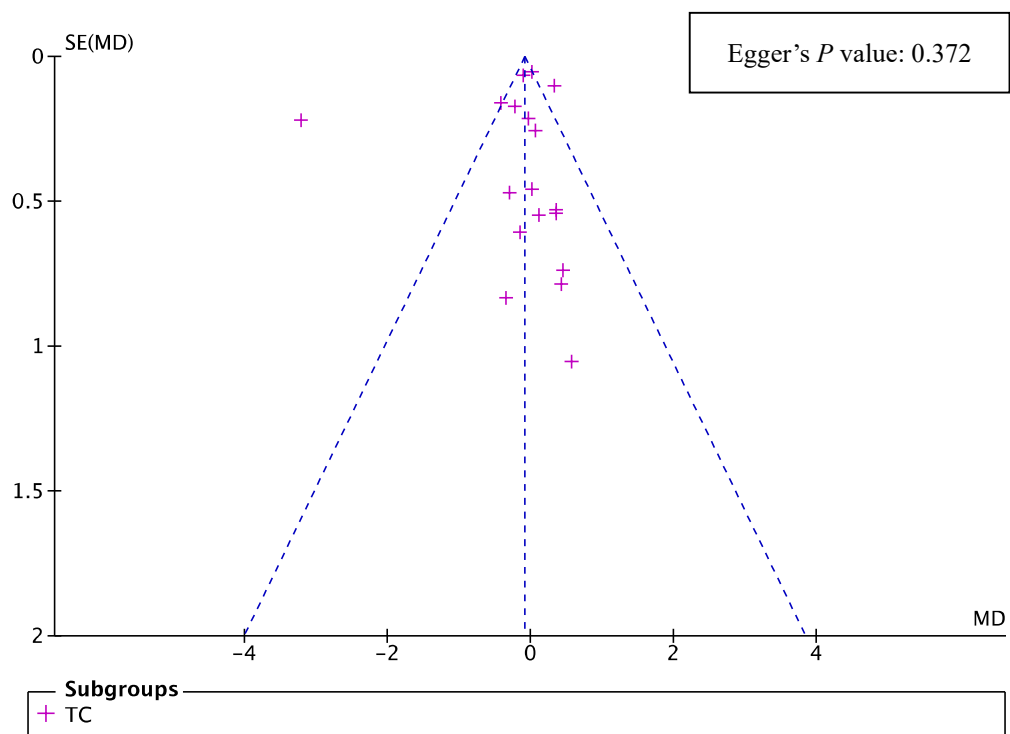


Figure S3-8-6 Funnel plot of RCTs investigating the effect of antioxidant fatty acids supplementation on TC in population with diabetes.

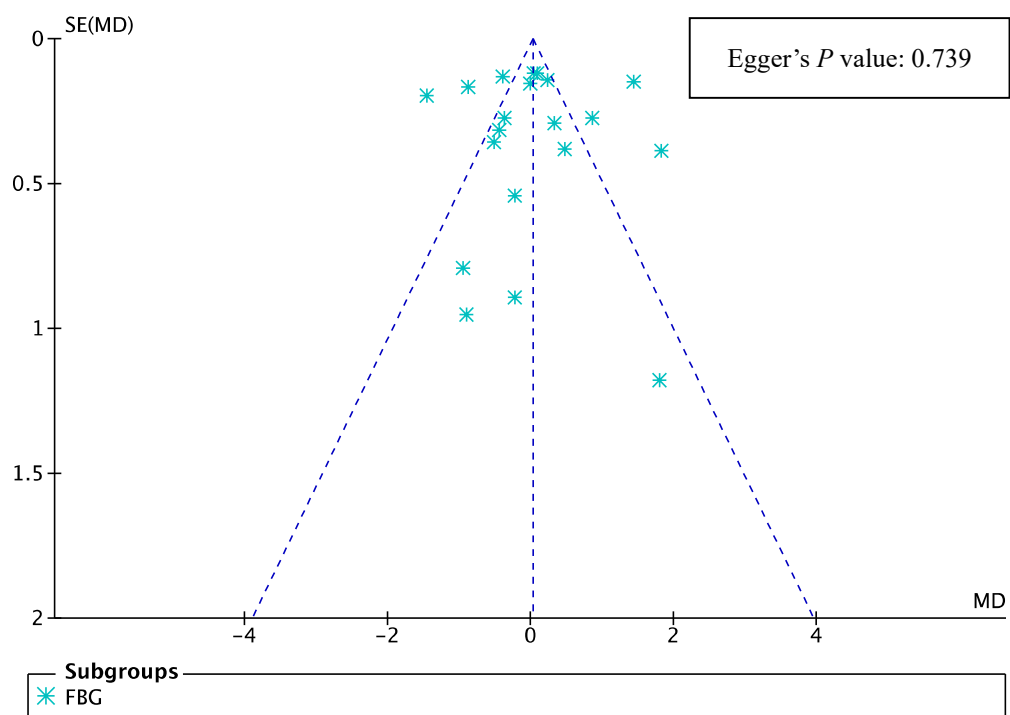


Figure S3-8-7 Funnel plot of RCTs investigating the effect of antioxidant fatty acids supplementation on FBG in population with diabetes.

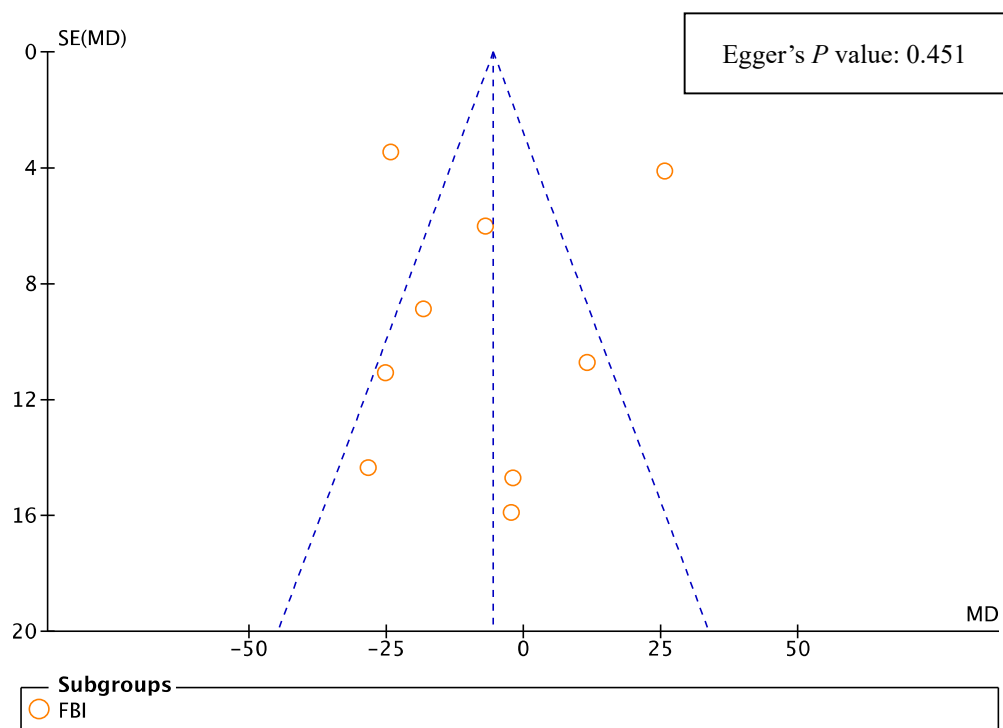


Figure S3-8-8 Funnel plot of RCTs investigating the effect of antioxidant fatty acids supplementation on FBI in population with diabetes.

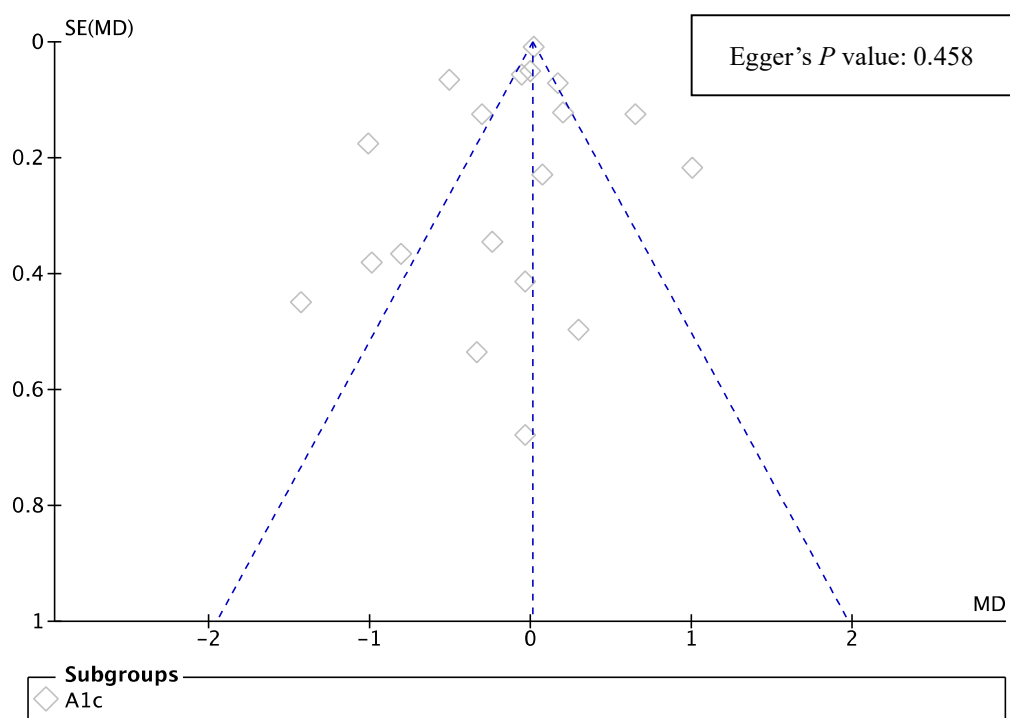


Figure S3-8-9 Funnel plot of RCTs investigating the effect of antioxidant fatty acids supplementation on A1C in population with diabetes.

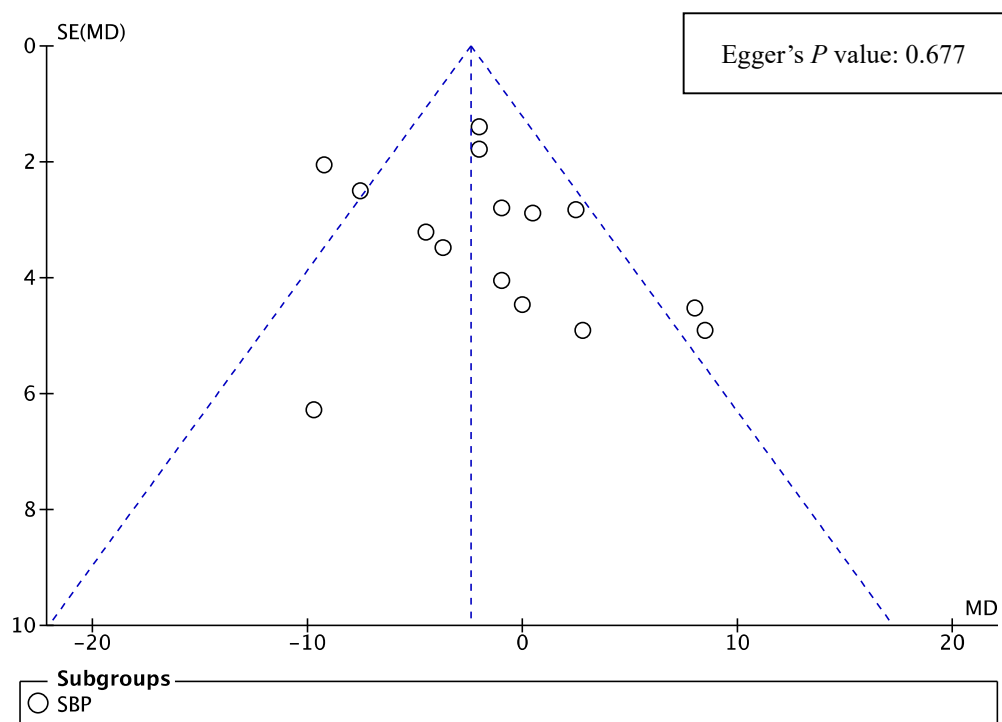


Figure S3-9-1 Funnel plot of RCTs investigating the effect of antioxidant fatty acids supplementation on SBP in population with hypertension.

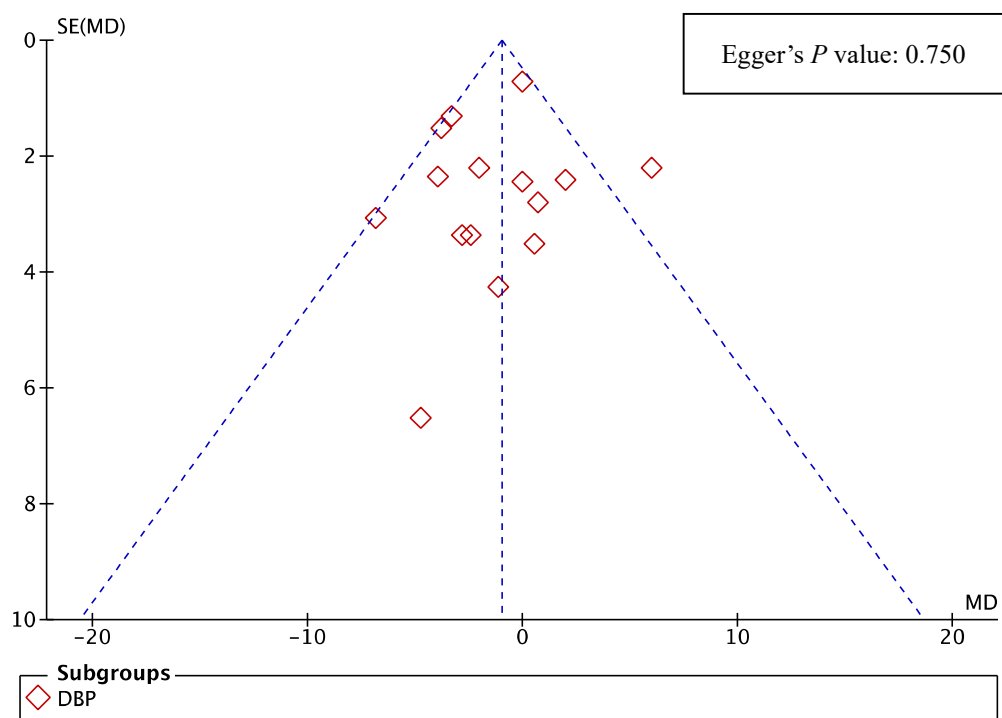


Figure S3-9-2 Funnel plot of RCTs investigating the effect of antioxidant fatty acids supplementation on DBP in population with hypertension.

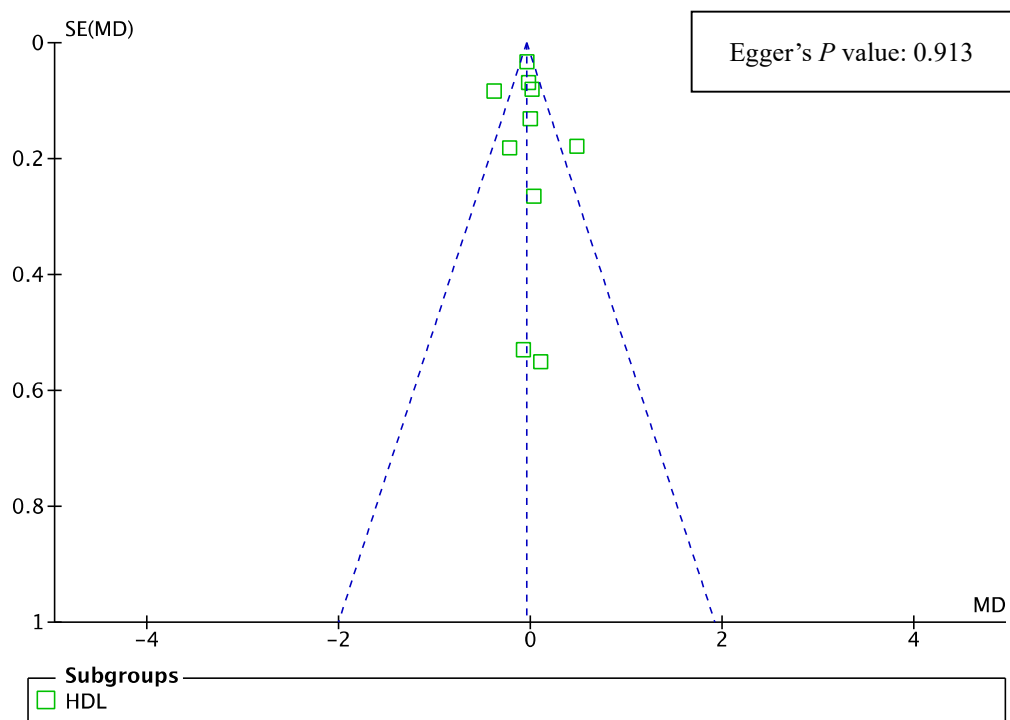


Figure S3-9-3 Funnel plot of RCTs investigating the effect of antioxidant fatty acids supplementation on HDL in population with hypertension.

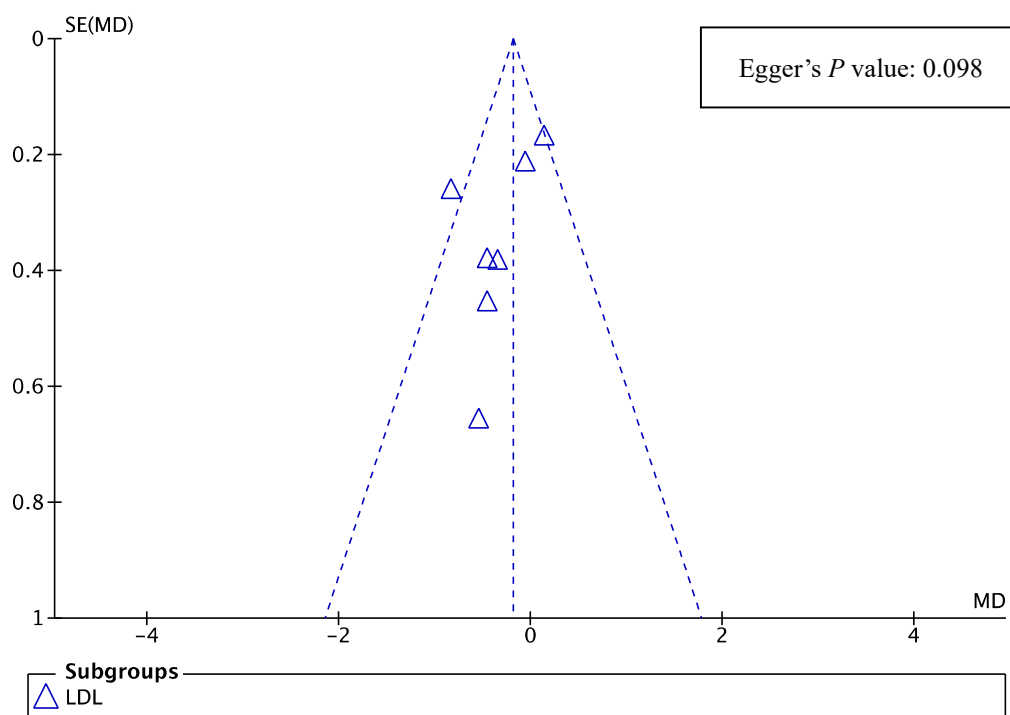


Figure S3-9-4 Funnel plot of RCTs investigating the effect of antioxidant fatty acids supplementation on LDL in population with hypertension.

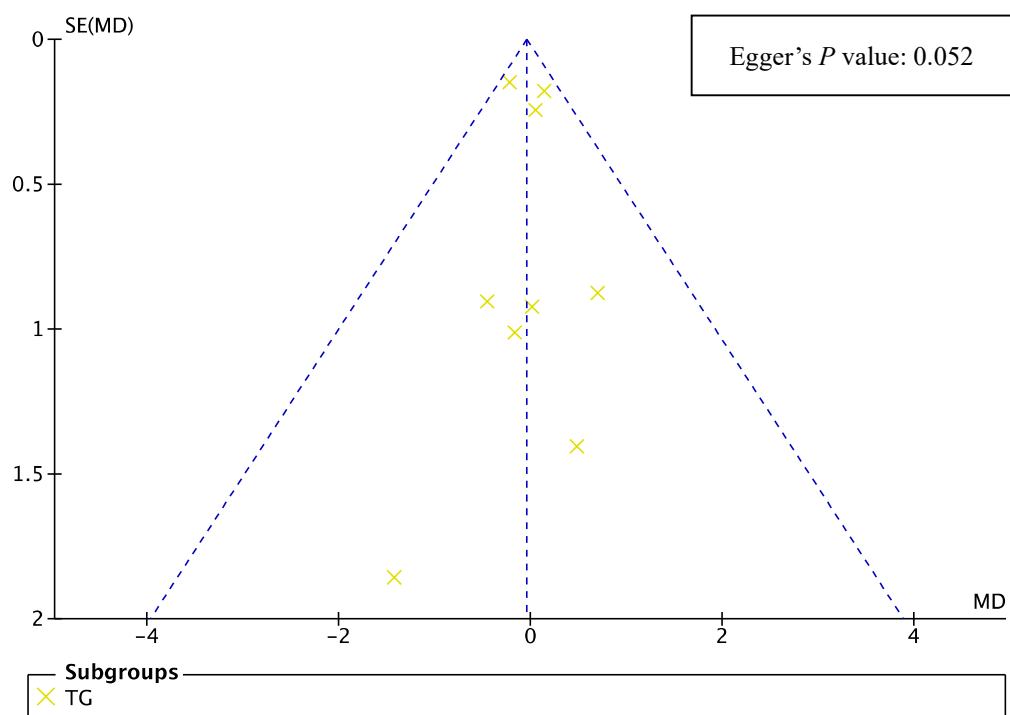


Figure S3-9-5 Funnel plot of RCTs investigating the effect of antioxidant fatty acids supplementation on TG in population with hypertension.

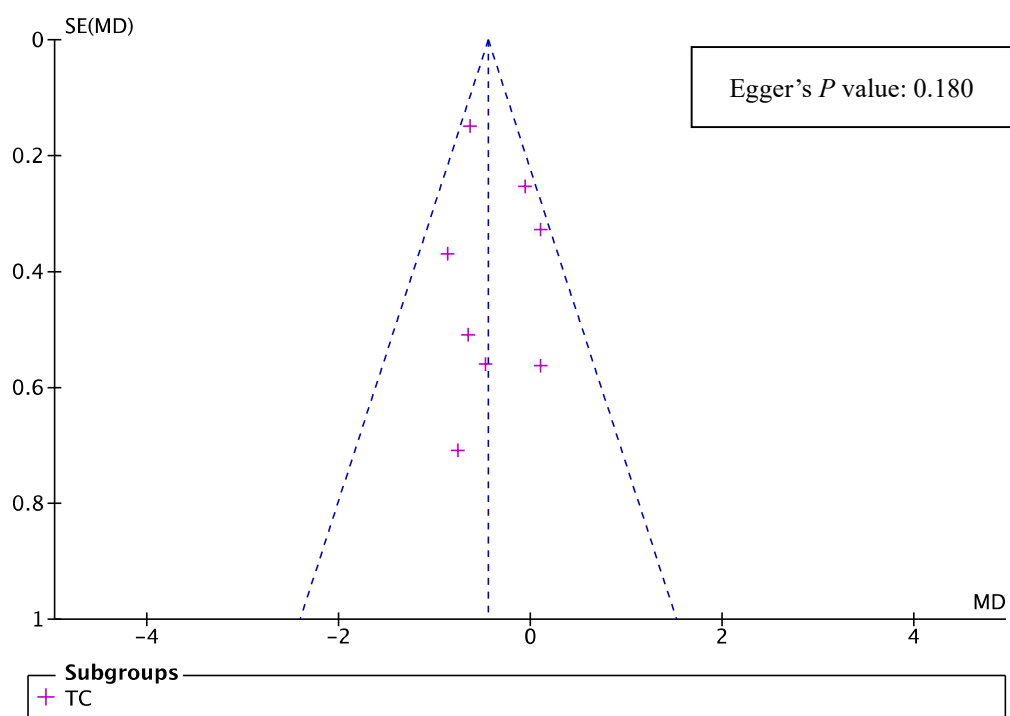


Figure S3-9-6 Funnel plot of RCTs investigating the effect of antioxidant fatty acids supplementation on TC in population with hypertension.

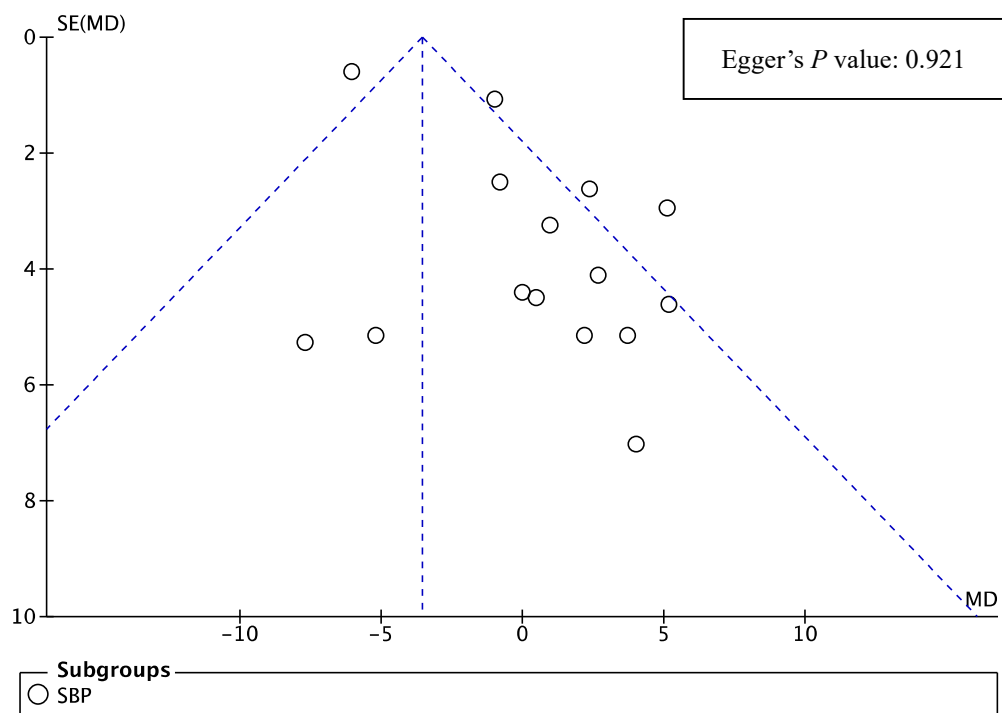


Figure S3-10-1 Funnel plot of RCTs investigating the effect of antioxidant fatty acids supplementation on SBP in population with dyslipidemia.

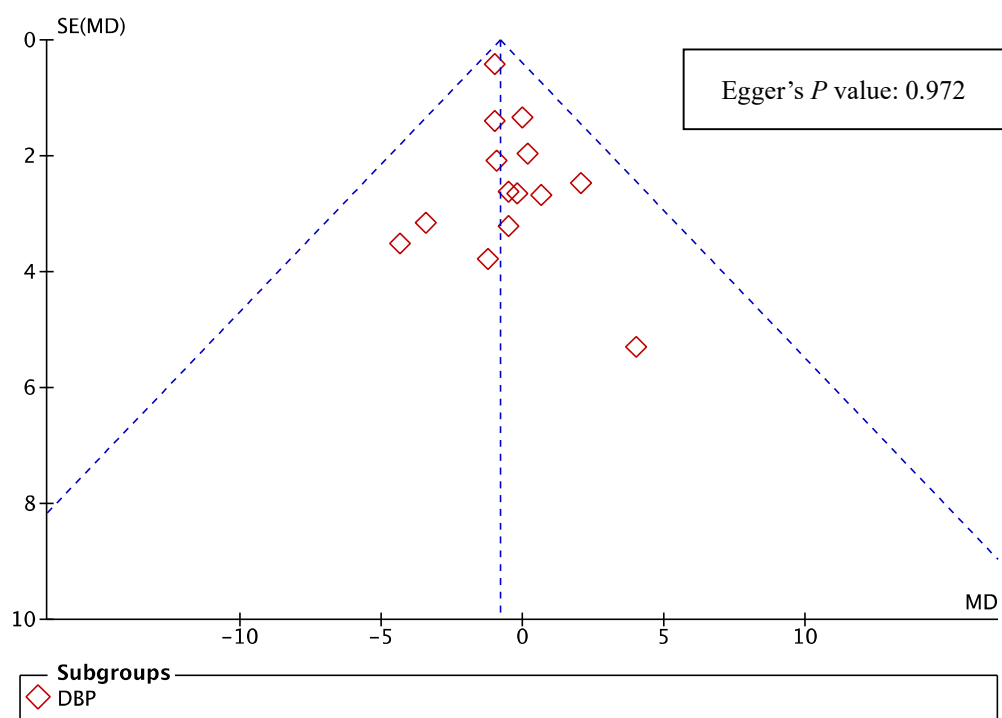


Figure S3-10-2 Funnel plot of RCTs investigating the effect of antioxidant fatty acids supplementation on DBP in population with dyslipidemia.

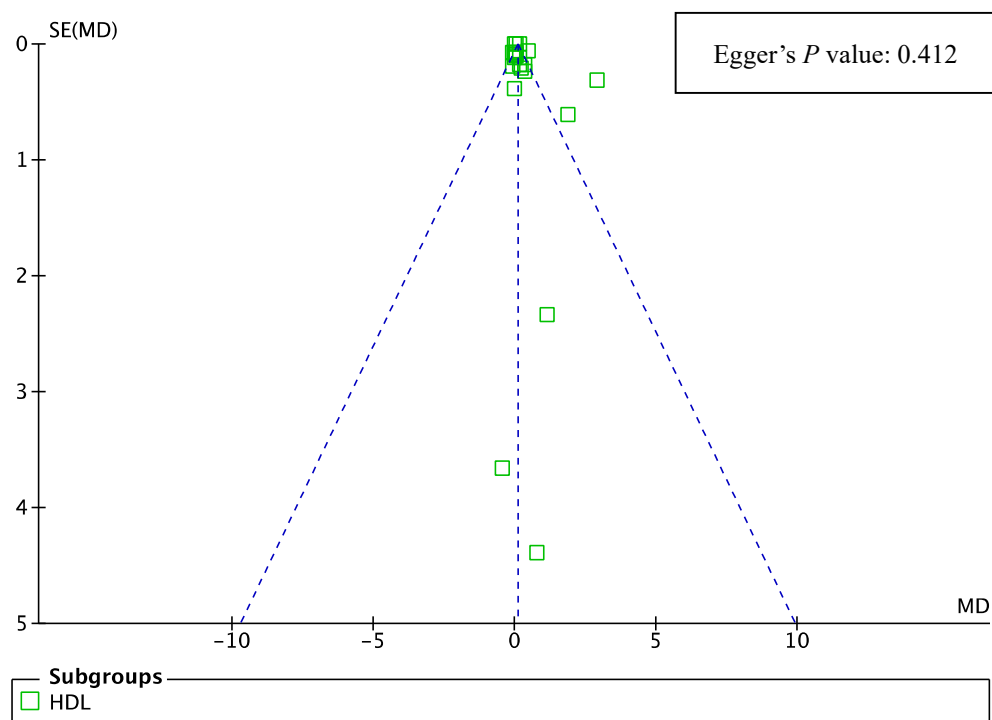


Figure S3-10-3 Funnel plot of RCTs investigating the effect of antioxidant fatty acids supplementation on HDL in population with dyslipidemia.

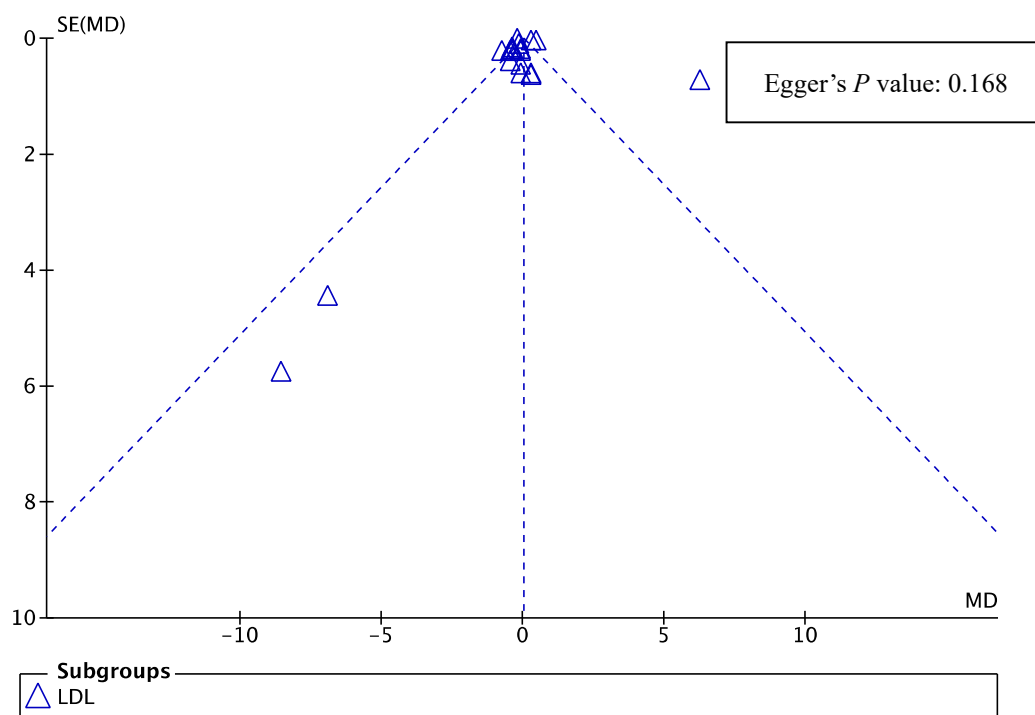


Figure S3-10-4 Funnel plot of RCTs investigating the effect of antioxidant fatty acids supplementation on LDL in population with dyslipidemia.

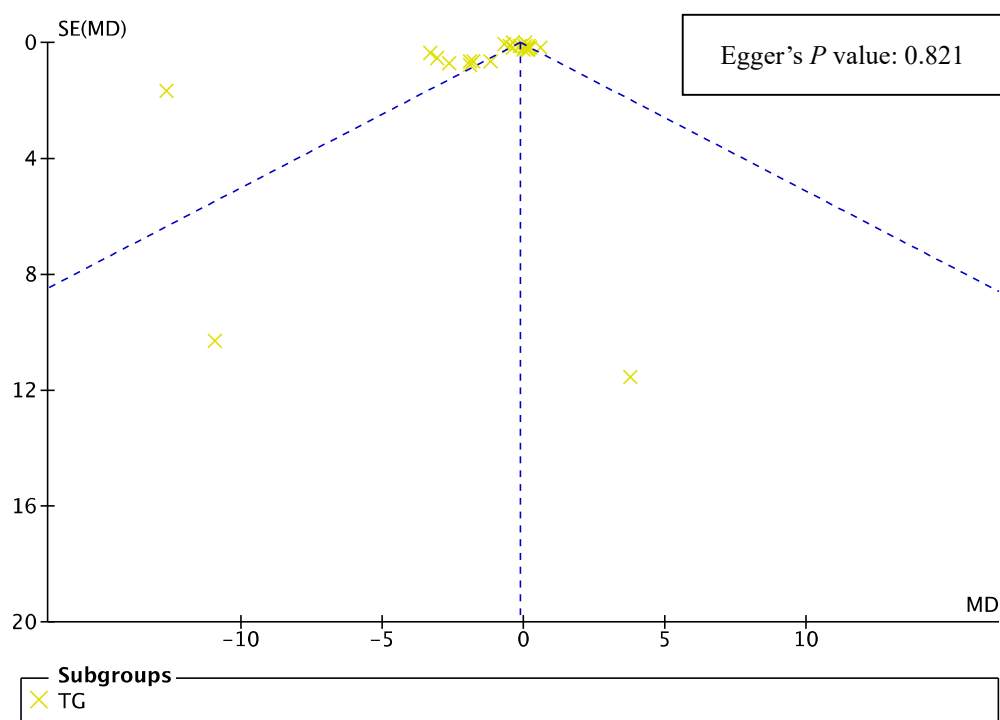


Figure S3-10-5 Funnel plot of RCTs investigating the effect of antioxidant fatty acids supplementation on TG in population with dyslipidemia.

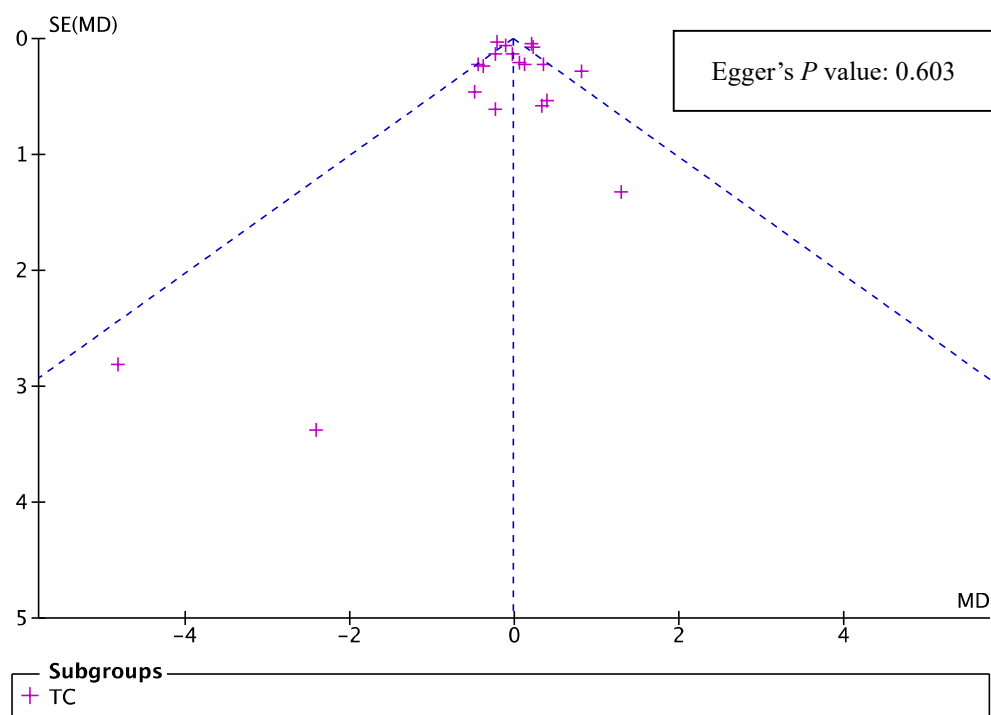


Figure S3-10-6 Funnel plot of RCTs investigating the effect of antioxidant fatty acids supplementation on TC in population with dyslipidemia.

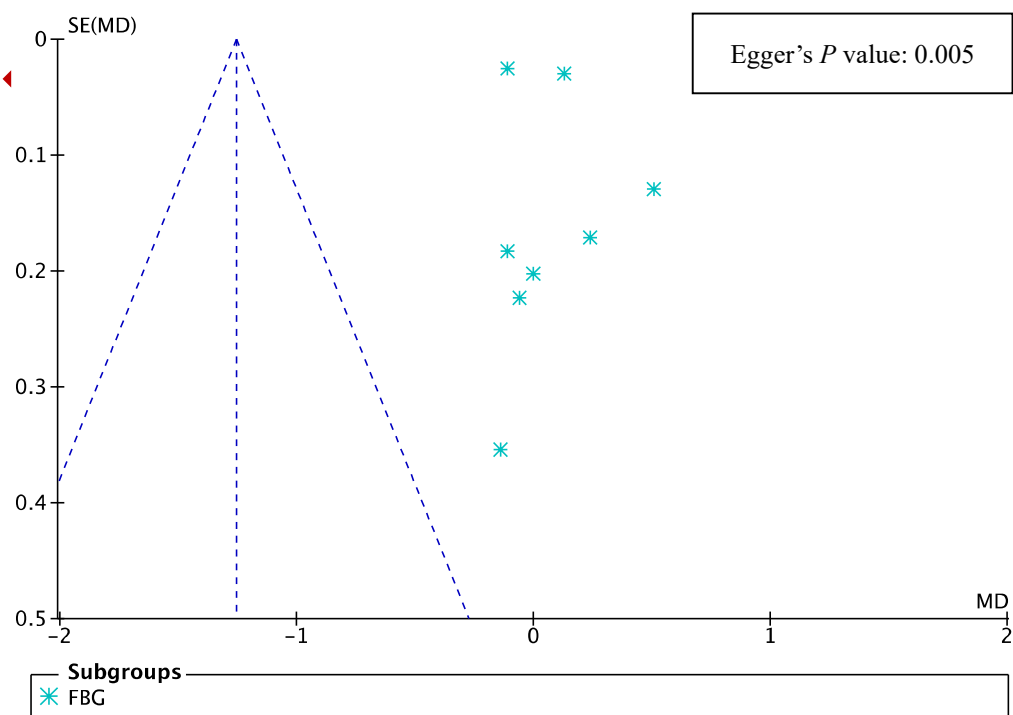


Figure S3-10-7 Funnel plot of RCTs investigating the effect of antioxidant fatty acids supplementation on FBG in population with dyslipidemia.

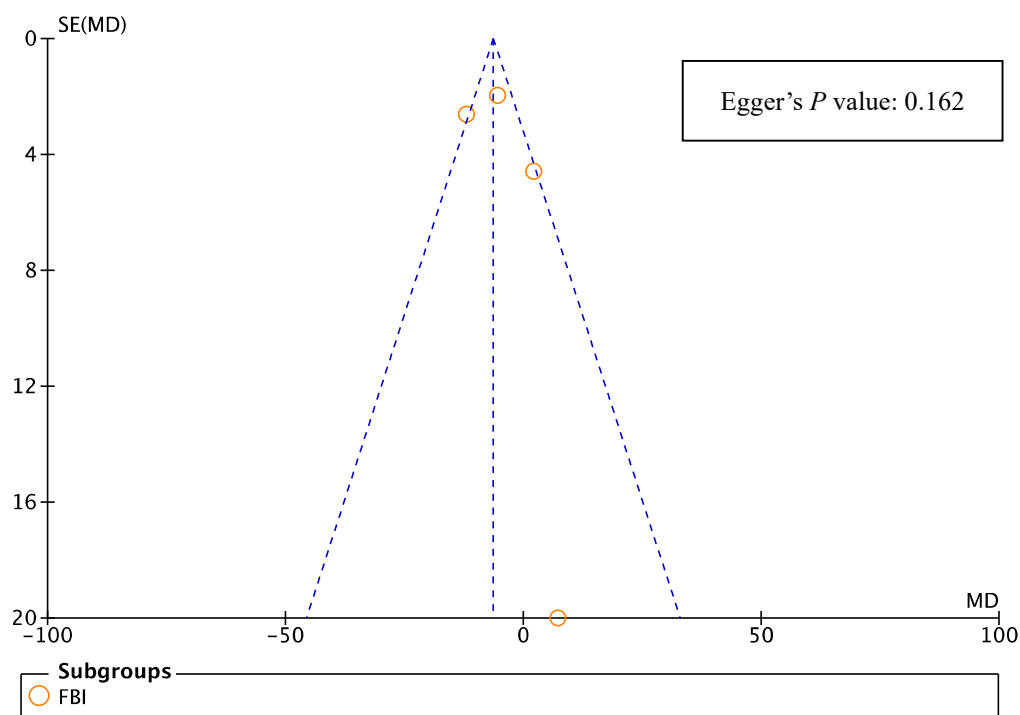


Figure S3-10-8 Funnel plot of RCTs investigating the effect of antioxidant fatty acids supplementation on FBI in population with dyslipidemia.

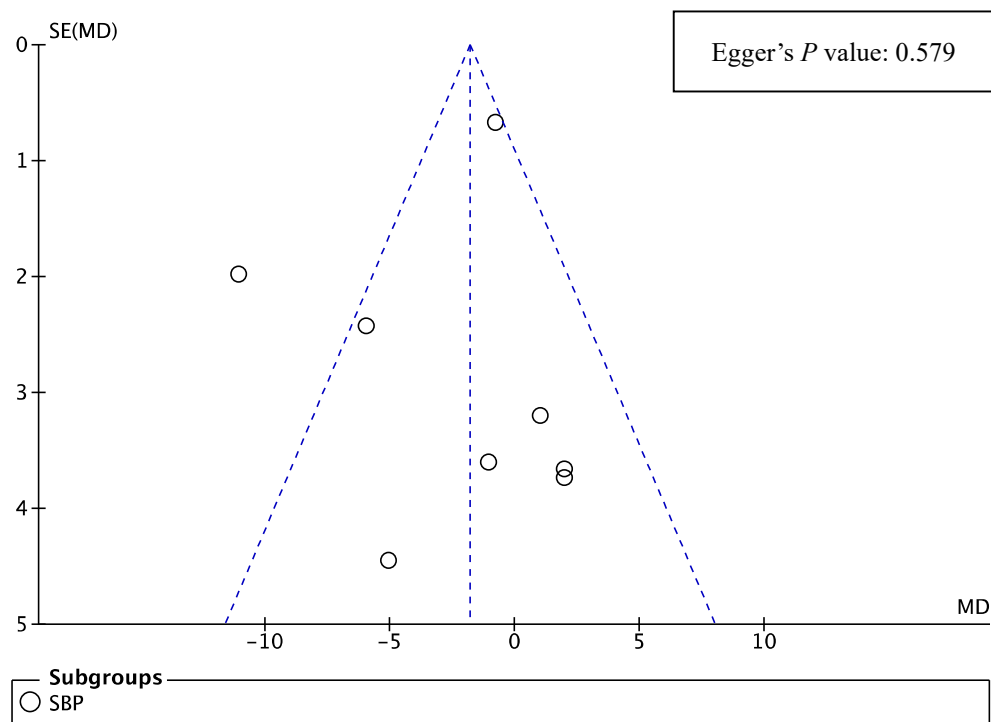


Figure S3-11-1 Funnel plot of RCTs investigating the effect of antioxidant fatty acids supplementation on SBP in population with obesity.

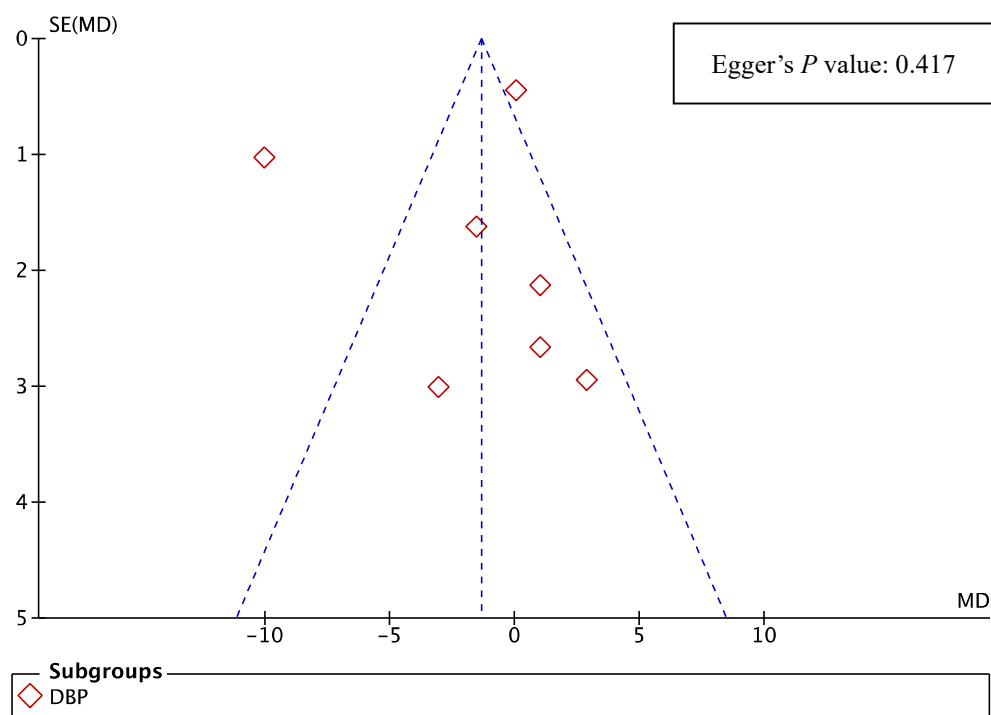


Figure S3-11-2 Funnel plot of RCTs investigating the effect of antioxidant fatty acids supplementation on DBP in population with obesity.

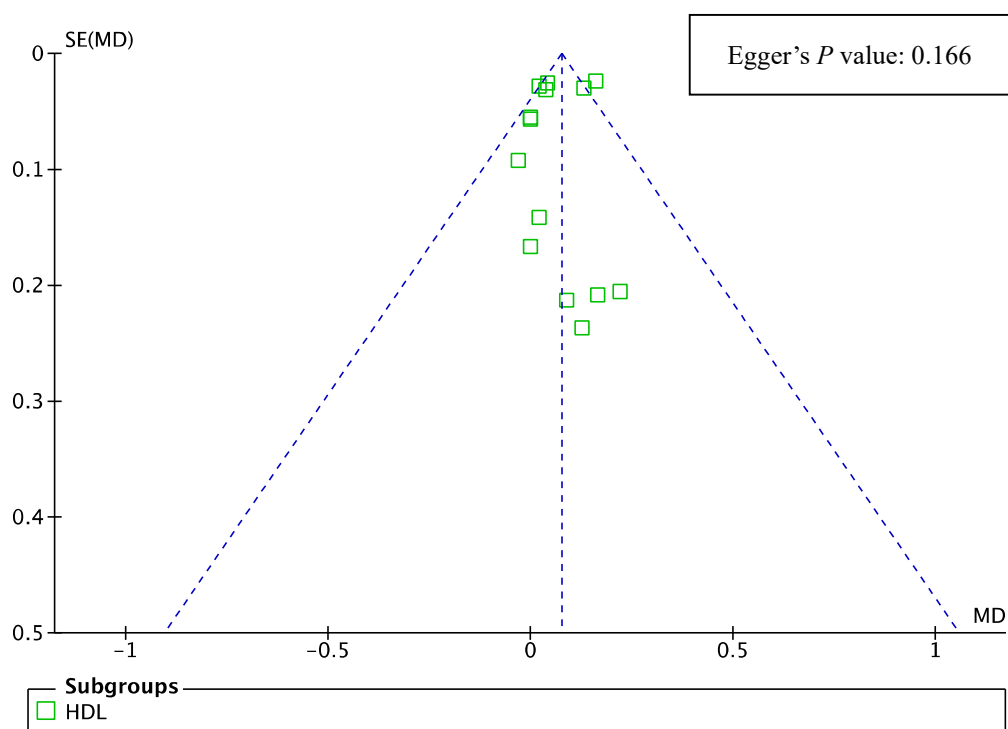


Figure S3-11-3 Funnel plot of RCTs investigating the effect of antioxidant fatty acids supplementation on HDL in population with obesity.

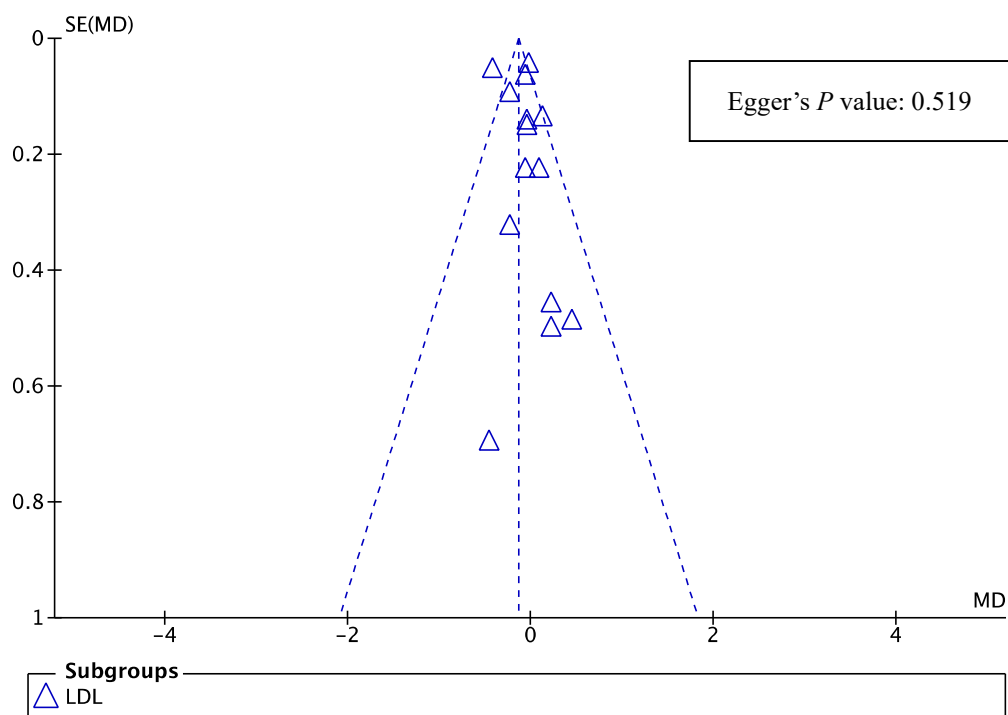


Figure S3-11-4 Funnel plot of RCTs investigating the effect of antioxidant fatty acids supplementation on LDL in population with obesity.

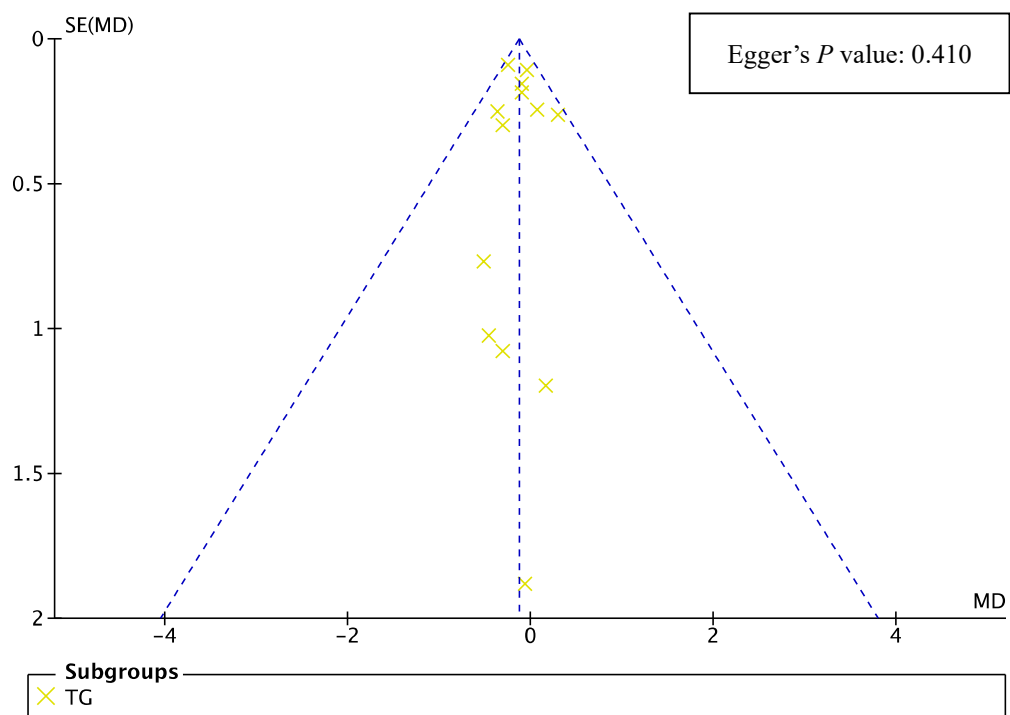


Figure S3-11-5 Funnel plot of RCTs investigating the effect of antioxidant fatty acids supplementation on TG in population with obesity.

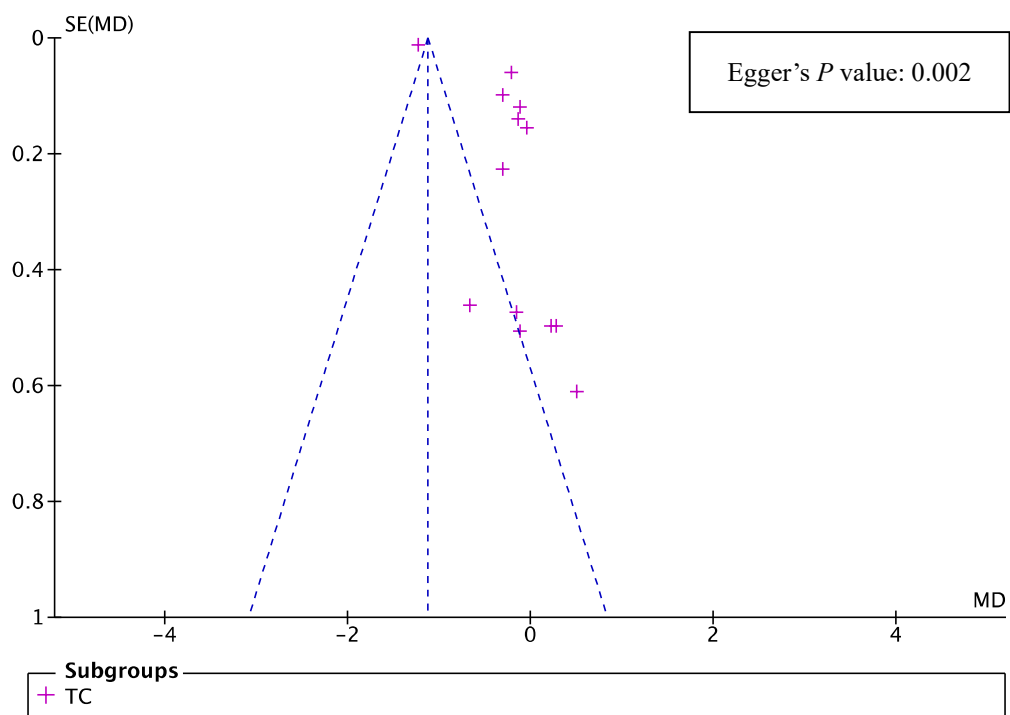


Figure S3-11-6 Funnel plot of RCTs investigating the effect of antioxidant fatty acids supplementation on TC in population with obesity.

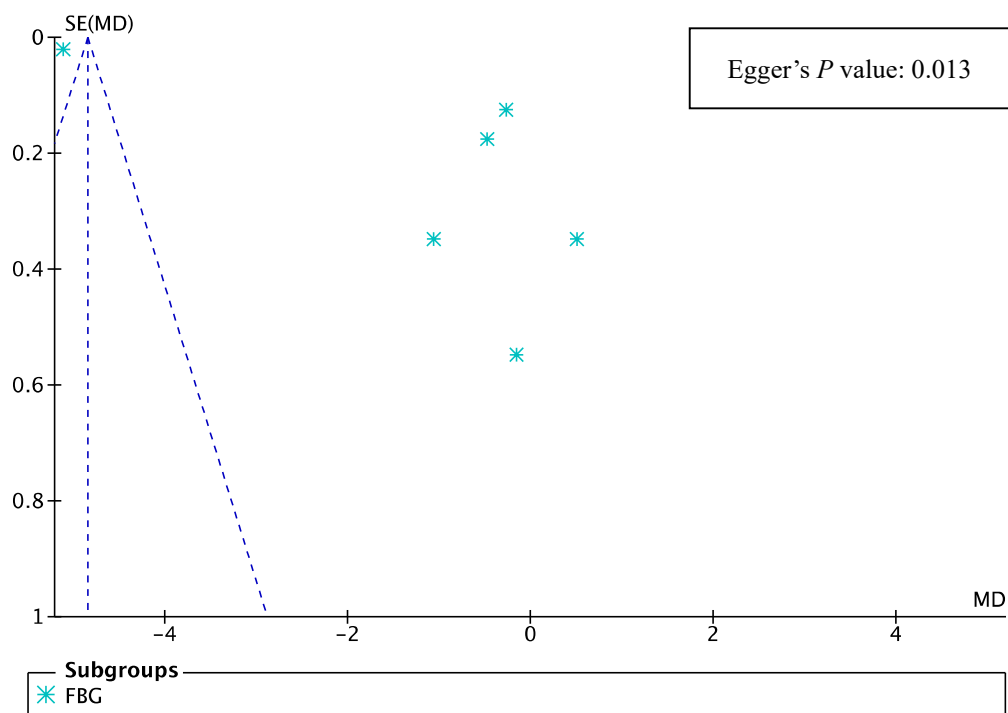


Figure S3-11-7 Funnel plot of RCTs investigating the effect of antioxidant fatty acids supplementation on FBG in population with obesity.

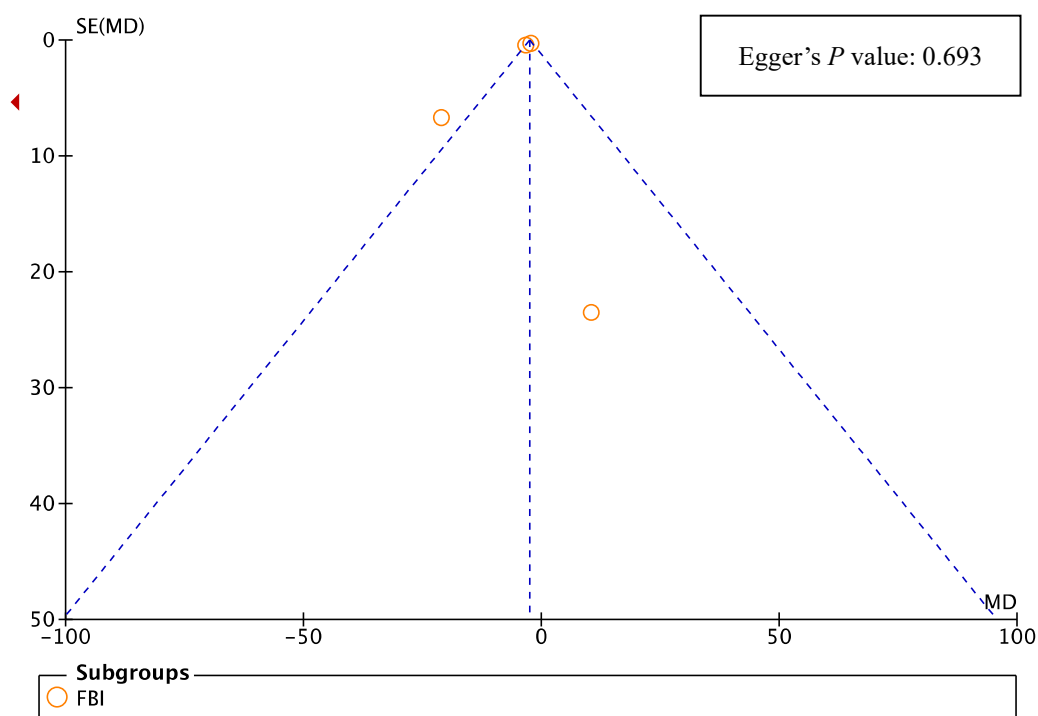


Figure S3-11-8 Funnel plot of RCTs investigating the effect of antioxidant fatty acids supplementation on FBI in population with obesity.

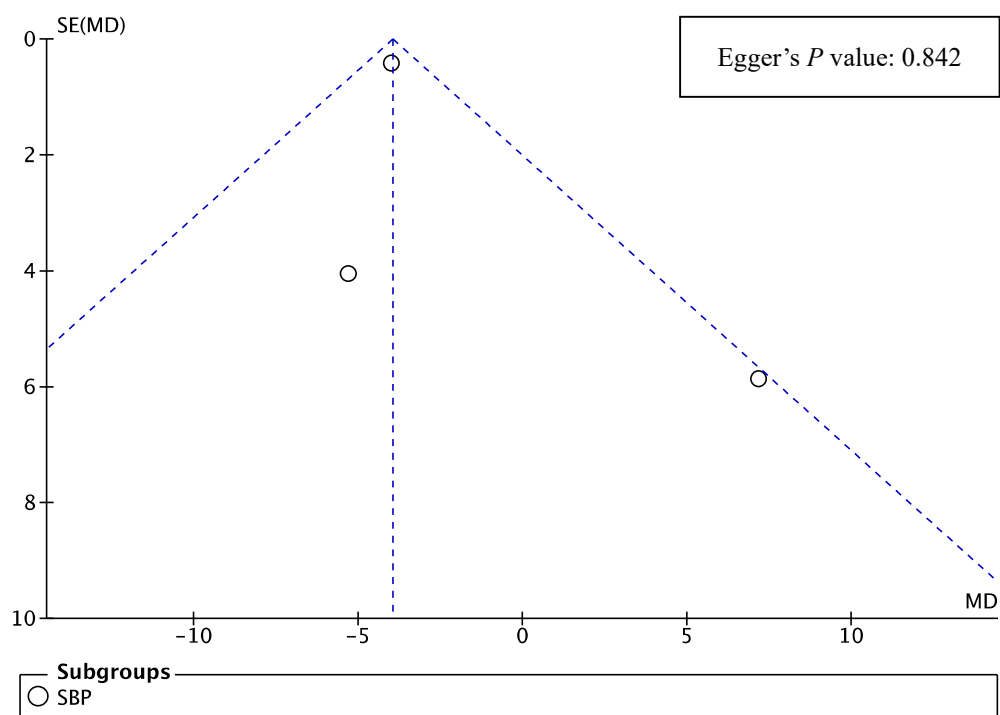


Figure S3-12-1 Funnel plot of RCTs investigating the effect of antioxidant fatty acids supplementation on SBP in population with metabolic syndrome.

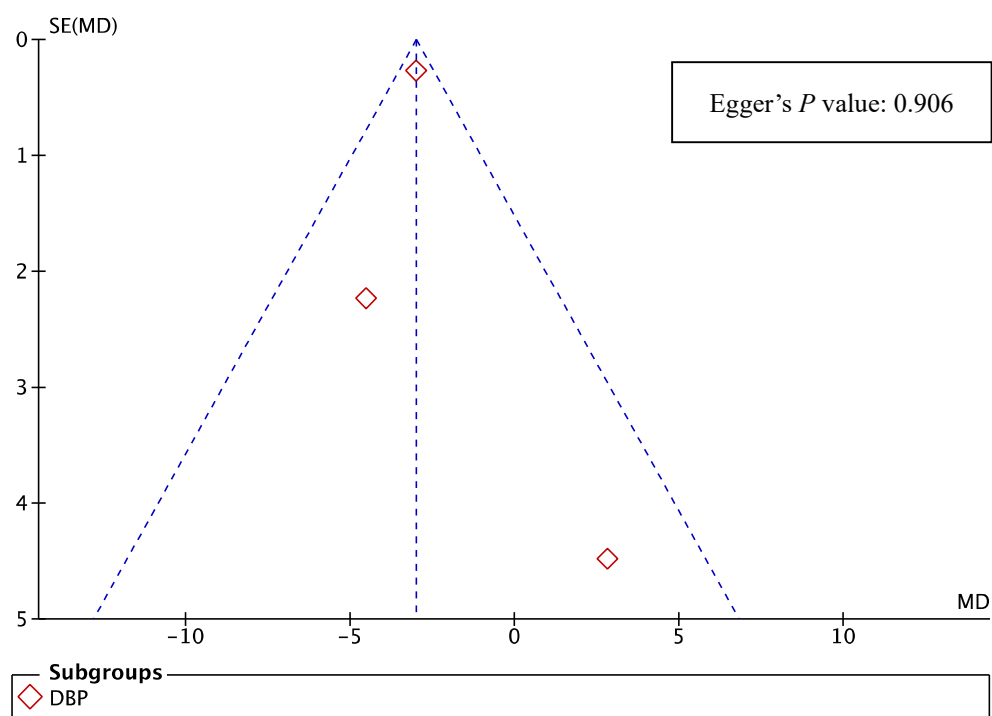


Figure S3-12-2 Funnel plot of RCTs investigating the effect of antioxidant fatty acids supplementation on DBP in population with metabolic syndrome.

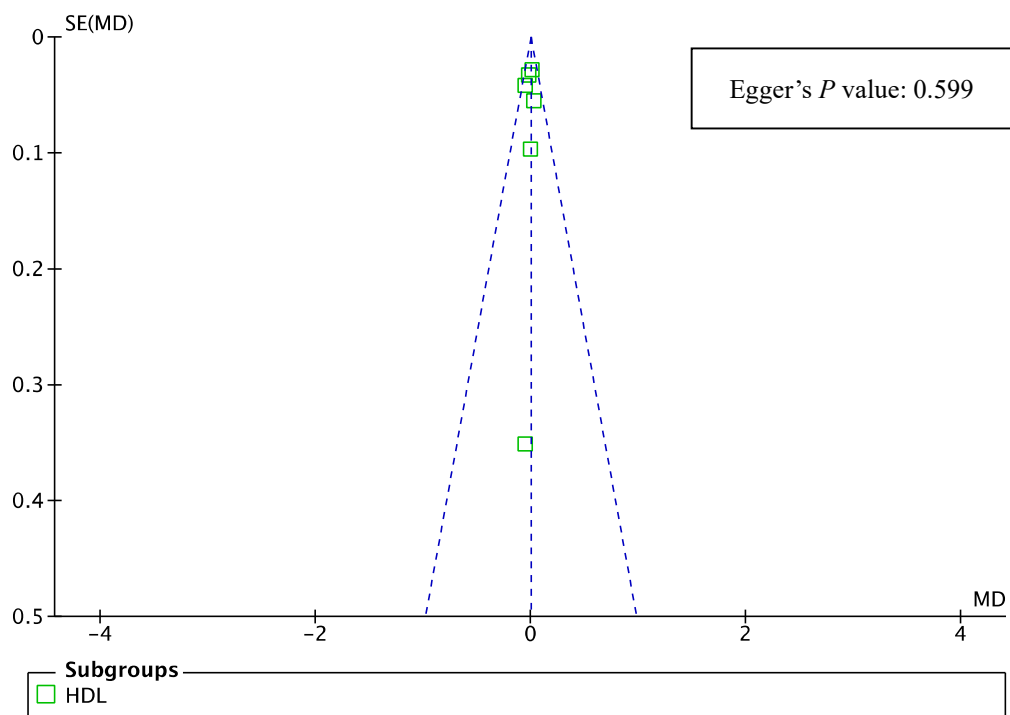


Figure S3-12-3 Funnel plot of RCTs investigating the effect of antioxidant fatty acids supplementation on HDL in population with metabolic syndrome.

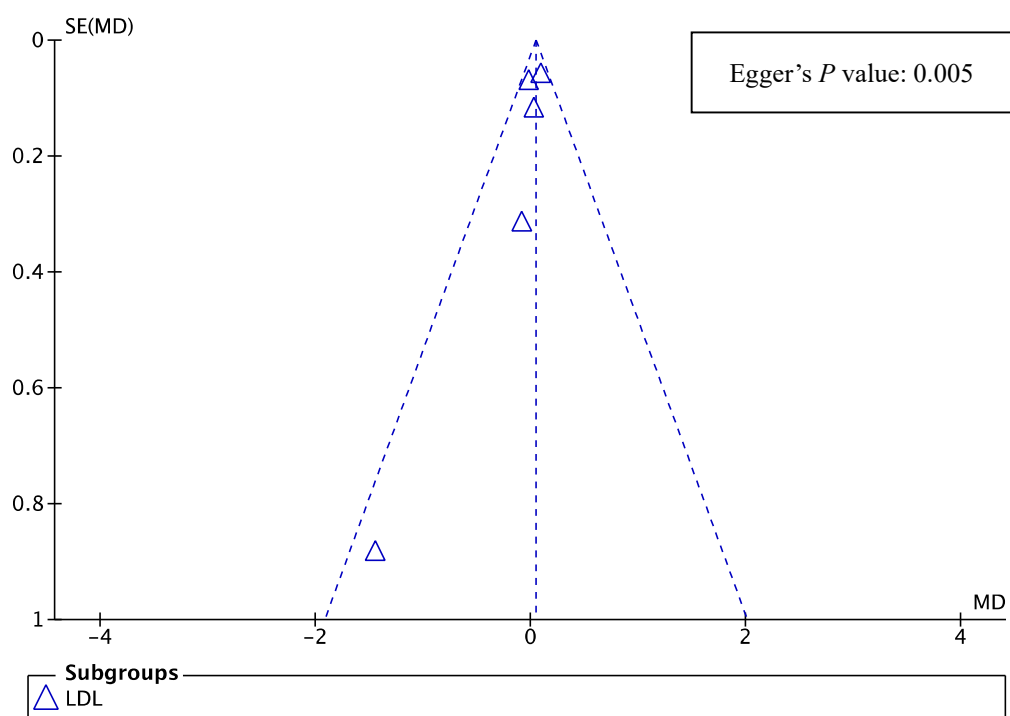


Figure S3-12-4 Funnel plot of RCTs investigating the effect of antioxidant fatty acids supplementation on LDL in population with metabolic syndrome.

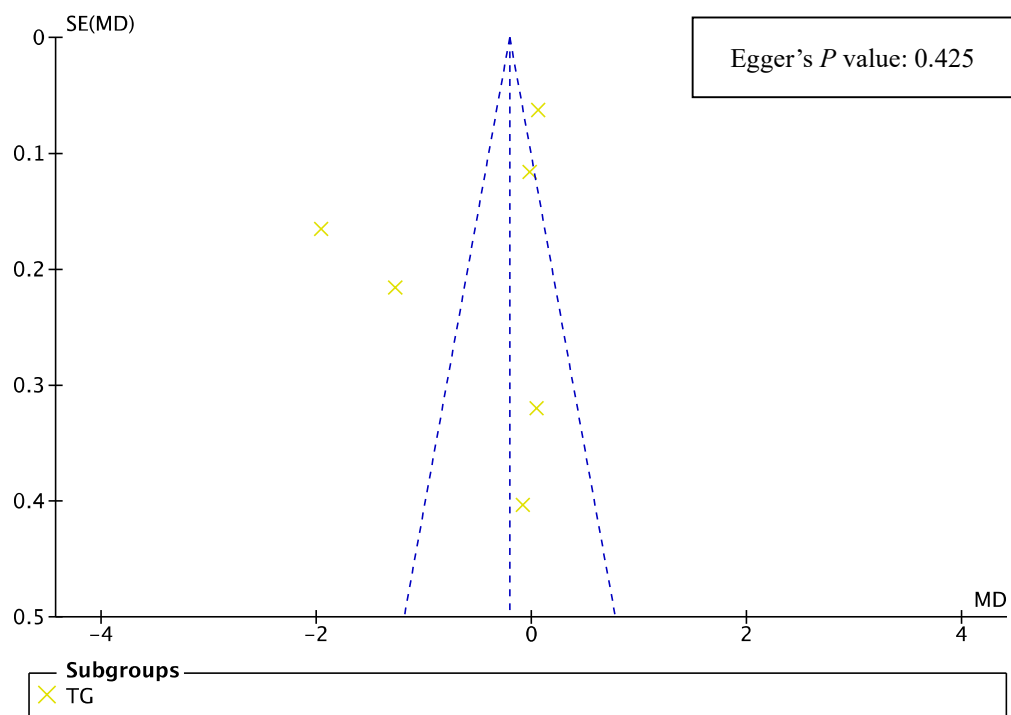


Figure S3-12-5 Funnel plot of RCTs investigating the effect of antioxidant fatty acids supplementation on TG in population with metabolic syndrome.

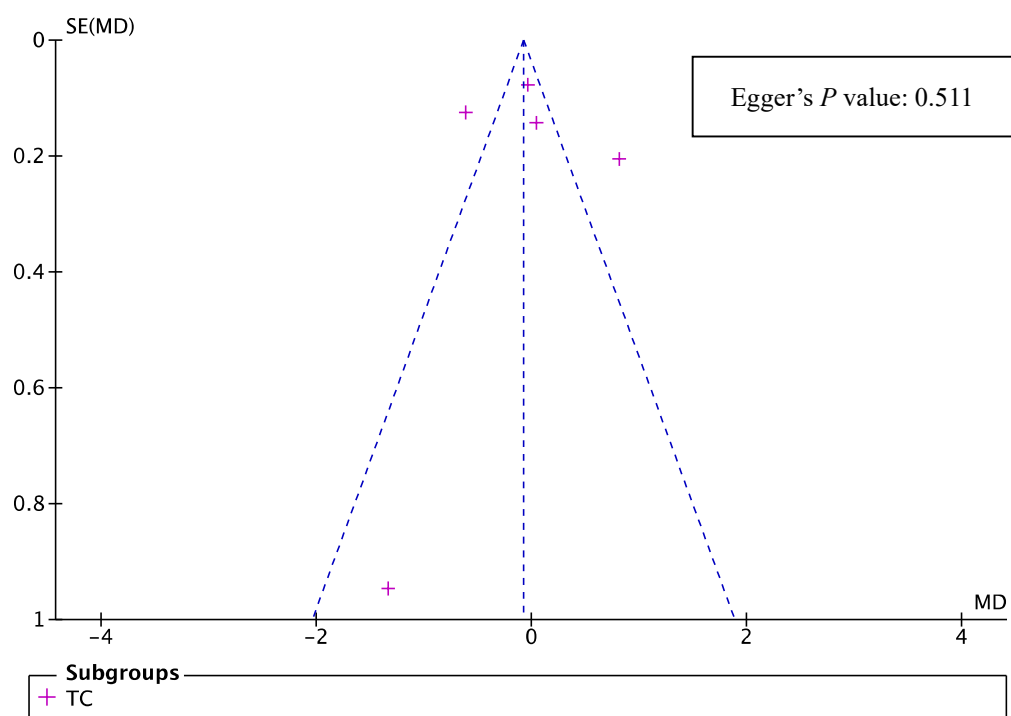


Figure S3-12-6 Funnel plot of RCTs investigating the effect of antioxidant fatty acids supplementation on TC in population with metabolic syndrome.

Supplemental 5 – GRADE

Table S2-1. GRADE profile for n3 fatty acids supplementation.

Certainty assessment							№ of patients		Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[n3]	[comparison]	Relative (95% CI)	Absolute (95% CI)		
Outcome - SBP												
59	randomised trials	not serious	serious ^a	not serious	serious ^b	none	3086	3071	-	MD 1.03 lower (2.84 lower to 0.78 higher)	⊕⊕○○ Low	
Outcome - DBP												
54	randomised trials	not serious	serious ^a	not serious	serious ^b	none	2820	2811	-	MD 0.32 lower (1.15 lower to 0.52 higher)	⊕⊕○○ Low	

Outcome - HDL

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[n3]	[comparison]	Relative (95% CI)	Absolute (95% CI)		
65	randomised trials	not serious	serious ^a	not serious	serious ^b	none	2722	2462	-	MD 0.2 higher (0.13 higher to 0.27 higher)	⊕⊕○○ Low	

Outcome - LDL

59	randomised trials	not serious	serious ^a	not serious	serious ^b	none	2617	2303	-	MD 0.07 higher (0.04 lower to 0.18 higher)	⊕⊕○○ Low	
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Outcome - TAG

64	randomised trials	not serious	serious ^a	not serious	not serious	none	2655	2406	-	MD 0.37 lower (0.47 lower to 0.28 lower)	⊕⊕⊕○ Moderate	
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Outcome - TC

Online Supporting Material

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[n3]	[comparison]	Relative (95% CI)	Absolute (95% CI)		
59	randomised trials	not serious	serious ^a	not serious	serious ^b	none	1995	1941	-	MD 0.05 lower (0.18 lower to 0.08 higher)	⊕⊕○○ Low	

Outcome - FBG

38	randomised trials	not serious	serious ^a	not serious	serious ^b	none	1125	1171	-	MD 0.09 higher (1.24 lower to 1.42 higher)	⊕⊕○○ Low	
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Outcome - Insulin

22	randomised trials	not serious	serious ^a	not serious	serious ^b	none	803	812	-	MD 3.19 lower (19.06 lower to 12.68 higher)	⊕⊕○○ Low	
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Outcome - HbA1c

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[n3]	[comparison]	Relative (95% CI)	Absolute (95% CI)		
22	randomised trials	not serious	serious ^a	not serious	serious ^b	none	803	788	-	MD 0.06 lower (0.17 lower to 0.06 higher)	⊕⊕○○ Low	

CI: confidence interval; MD: mean difference

Explanations

a. Rated down for inconsistency.

b. Rated down for imprecision.

Table S2-2. GRADE profile for n6 fatty acids supplementation.

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[n6]	[comparison]	Relative (95% CI)	Absolute (95% CI)		

Outcome - SBP

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[n6]	[comparison]	Relative (95% CI)	Absolute (95% CI)		
15	randomised trials	not serious	serious ^a	not serious	serious ^b	none	593	596	-	MD 0.47 higher (1.85 lower to 2.78 higher)	⊕⊕○○ Low	

Outcome - DBP

14	randomised trials	not serious	serious ^a	not serious	serious ^b	none	573	576	-	MD 0.31 lower (2.32 lower to 1.7 higher)	⊕⊕○○ Low	
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Outcome - HDL

20	randomised trials	not serious	serious ^a	not serious	serious ^b	none	612	618	-	MD 0.08 higher (0.01 higher to 0.14 higher)	⊕⊕○○ Low	
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Outcome - LDL

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[n6]	[comparison]	Relative (95% CI)	Absolute (95% CI)		
18	randomised trials	not serious	serious ^a	not serious	serious ^b	none	545	551	-	MD 0.39 lower (0.71 lower to 0.06 lower)	⊕⊕○○ Low	

Outcome - TAG

18	randomised trials	not serious	serious ^a	not serious	serious ^b	none	379	368	-	MD 0.23 lower (0.61 lower to 0.14 higher)	⊕⊕○○ Low	
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Outcome - TC

18	randomised trials	not serious	not serious	not serious	not serious	none	547	403	-	MD 0.24 lower (0.37 lower to 0.11 lower)	⊕⊕⊕⊕ High	
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Outcome - FBG

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[n6]	[comparison]	Relative (95% CI)	Absolute (95% CI)		
2	randomised trials	not serious	serious ^a	not serious	serious ^b	none	67	67	-	MD 0.22 higher (0.19 lower to 0.63 higher)	⊕⊕○○ Low	

CI: confidence interval; MD: mean difference

Explanations

a. Rated down for inconsistency.

b. Rated down for imprecision.

Table S2-3. GRADE profile for n9 fatty acids supplementation.

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[n9]	[comparison]	Relative (95% CI)	Absolute (95% CI)		

Outcome - SBP

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[n9]	[comparison]	Relative (95% CI)	Absolute (95% CI)		
3	randomised trials	not serious	not serious	not serious	serious ^a	none	48	43	-	MD 0.51 higher (1.88 lower to 2.89 higher)	⊕⊕⊕○ Moderate	

Outcome - DBP

3	randomised trials	not serious	not serious	not serious	serious ^a	none	43	43	-	MD 0.55 lower (3.8 lower to 2.7 higher)	⊕⊕⊕○ Moderate	
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Outcome - HDL-C

16	randomised trials	not serious	not serious	not serious	serious ^a	none	303	303	-	MD 0.01 lower (0.03 lower to 0.01 higher)	⊕⊕⊕○ Moderate	
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Outcome - LDL-C

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[n9]	[comparison]	Relative (95% CI)	Absolute (95% CI)		
16	randomised trials	not serious	not serious	not serious	serious ^a	none	332	303	-	MD 0.06 lower (0.15 lower to 0.03 higher)	⊕⊕⊕○ Moderate	

Outcome - TAG

16	randomised trials	not serious	not serious	not serious	serious ^a	none	303	303	-	MD 0.06 higher (0.01 higher to 0.11 higher)	⊕⊕⊕○ Moderate	
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Outcome - TC

15	randomised trials	not serious	serious ^b	not serious	serious ^a	none	285	285	-	MD 0.06 lower (0.21 lower to 0.09 higher)	⊕⊕○○ Low	
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Outcome - FBG

Online Supporting Material

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[n9]	[comparison]	Relative (95% CI)	Absolute (95% CI)		
3	randomised trials	not serious	serious ^b	not serious	serious ^a	none	53	53	-	MD 0.02 higher (0.25 lower to 0.28 higher)	⊕⊕○○ Low	

Outcome - FBI

3	randomised trials	not serious	serious ^b	not serious	serious ^a	none	53	53	-	MD 3.98 lower (16.75 lower to 8.8 higher)	⊕⊕○○ Low	
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Outcome - HbA1c

2	randomised trials	not serious	not serious	not serious	serious ^a	none	33	33	-	MD 0.04 higher (0.02 higher to 0.06 higher)	⊕⊕⊕○ Moderate	
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CI: confidence interval; MD: mean difference

Explanations

a. Rated down for imprecision.

b. Rated down for inconsistency.

Table S2-4. GRADE profile for lycopene supplementation.

Certainty assessment							№ of patients		Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[lycopene]	[comparison]	Relative (95% CI)	Absolute (95% CI)		
Outcome - SBP												
15	randomised trials	not serious	serious ^a	not serious	serious ^b	none	499	462	-	MD 1.95 lower (3.54 lower to 0.36 lower)	 Low	
Outcome - DBP												
11	randomised trials	not serious	not serious	not serious	serious ^b	none	333	296	-	MD 1.12 lower (2.84 lower to 0.61 higher)	 Moderate	

Online Supporting Material

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[lycopene]	[comparison]	Relative (95% CI)	Absolute (95% CI)		

Outcome - HDL

4	randomised trials	not serious	not serious	not serious	serious ^b	none	197	176	-	MD 0.03 lower (0.12 lower to 0.06 higher)	 Moderate	
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Outcome - LDL

4	randomised trials	not serious	not serious	not serious	serious ^b	none	197	176	-	MD 0.01 lower (0.17 lower to 0.16 higher)	 Moderate	
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Outcome - TG

2	randomised trials	not serious	not serious	not serious	serious ^b	none	149	152	-	MD 0.02 lower (0.15 lower to 0.1 higher)	 Moderate	
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Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[lycopene]	[comparison]	Relative (95% CI)	Absolute (95% CI)		
2	randomised trials	not serious	not serious	not serious	serious ^b	none	149	149	-	MD 0 (0.22 lower to 0.22 higher)	⊕⊕⊕○ Moderate	

CI: confidence interval; MD: mean difference

Explanations

a. Rated down for inconsistency.

b. Rated down for imprecision.

Table S2-5. GRADE profile for astaxanthin supplementation.

Online Supporting Material

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[astaxanthin]	[comparison]	Relative (95% CI)	Absolute (95% CI)		

outcome - SBP

5	randomised trials	not serious	serious ^a	not serious	serious ^b	none	91	87	-	MD 2.51 lower (8.19 lower to 3.17 higher)	⊕⊕○○ Low	
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outcome - DBP

5	randomised trials	not serious	not serious	not serious	serious ^b	none	91	87	-	MD 0.79 lower (3.42 lower to 1.84 higher)	⊕⊕⊕○ Moderate	
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outcome - HDL

8	randomised trials	not serious	not serious	not serious	serious ^b	none	143	139	-	MD 0.13 higher (0.05 higher to 0.21 higher)	⊕⊕⊕○ Moderate	
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Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[astaxanthin]	[comparison]	Relative (95% CI)	Absolute (95% CI)		

outcome - LDL

8	randomised trials	not serious	not serious	not serious	serious ^b	none	143	139	-	MD 0.11 lower (0.21 lower to 0.01 lower)	⊕⊕⊕○ Moderate	
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outcome - TG

8	randomised trials	not serious	serious ^a	not serious	not serious	none	143	139	-	MD 0.46 lower (0.83 lower to 0.1 lower)	⊕⊕⊕○ Moderate	
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outcome - TC

8	randomised trials	not serious	not serious	not serious	not serious	none	143	139	-	MD 0.22 lower (0.32 lower to 0.12 lower)	⊕⊕⊕⊕ High	
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Online Supporting Material

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[astaxanthin]	[comparison]	Relative (95% CI)	Absolute (95% CI)		

outcome - FBG

6	randomised trials	not serious	not serious	not serious	serious ^b	none	98	95	-	MD 0.15 lower (0.32 lower to 0.02 higher)	⊕⊕⊕○ Moderate	
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outcome - FBI

2	randomised trials	not serious	serious ^a	not serious	not serious	none	34	34	-	MD 2.66 lower (3.98 lower to 1.34 lower)	⊕⊕⊕○ Moderate	
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CI: confidence interval; MD: mean difference

Explanations

a. Rated down for inconsistency.

b. Rated down for imprecision.

Table S2-6. GRADE profile for beta-carotene supplementation.

Certainty assessment							№ of patients		Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[beta-carotene]	[comparison]	Relative (95% CI)	Absolute (95% CI)		
outcome - HDL												
6	randomised trials	not serious	not serious	not serious	serious ^a	none	152	145	-	MD 0.04 higher (0.02 lower to 0.1 higher)	 Moderate	
outcome - LDL												
3	randomised trials	not serious	not serious	not serious	serious ^a	none	85	79	-	MD 0.29 lower (0.67 lower to 0.1 higher)	 Moderate	

outcome - TG

Online Supporting Material

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[beta-carotene]	[comparison]	Relative (95% CI)	Absolute (95% CI)		
5	randomised trials	not serious	serious ^b	not serious	serious ^a	none	127	120	-	MD 0.3 lower (0.78 lower to 0.18 higher)	⊕⊕○○ Low	

outcome - TC

6	randomised trials	not serious	not serious	not serious	serious ^a	none	152	145	-	MD 0.13 lower (0.23 lower to 0.04 lower)	⊕⊕⊕○ Moderate	
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CI: confidence interval; MD: mean difference

Explanations

- a. Rated down for imprecision.
- b. Rated down for inconsistency.

Table S2-7. GRADE profile for antioxidant lipids in the healthy population.

Certainty assessment							№ of patients		Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[lipids]	[comparison]	Relative (95% CI)	Absolute (95% CI)		
healthy - SBP												
31	randomised trials	not serious	serious ^a	not serious	serious ^b	none	2132	2098	-	MD 0.8 lower (2.99 lower to 1.38 higher)	 Low	
healthy - DBP												
27	randomised trials	not serious	serious ^a	not serious	serious ^b	none	2012	1983	-	MD 0.64 higher (0.8 lower to 2.08 higher)	 Low	
healthy - HDL												
39	randomised trials	not serious	not serious	not serious	serious ^b	none	1141	1094	-	MD 0.03 higher (0 to 0.06 higher)	 Moderate	

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[lipids]	[comparison]	Relative (95% CI)	Absolute (95% CI)		

healthy - LDL

36	randomised trials	not serious	serious ^a	not serious	serious ^b	none	1084	1028	-	MD 0.06 lower (0.25 lower to 0.12 higher)	⊕⊕○○ Low	
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healthy - TG

34	randomised trials	not serious	serious ^a	not serious	serious ^b	none	1014	992	-	MD 0.15 lower (0.25 lower to 0.06 lower)	⊕⊕○○ Low	
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healthy - TC

32	randomised trials	not serious	not serious	not serious	serious ^b	none	912	895	-	MD 0.02 lower (0.07 lower to 0.04 higher)	⊕⊕⊕○ Moderate	
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Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[lipids]	[comparison]	Relative (95% CI)	Absolute (95% CI)		

healthy - FBG

9	randomised trials	not serious	serious ^a	not serious	serious ^b	none	347	330	-	MD 0.16 higher (0.05 lower to 0.37 higher)	⊕⊕○○ Low	
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healthy - FBI

6	randomised trials	not serious	serious ^a	not serious	serious ^b	none	163	173	-	MD 3.6 lower (11.91 lower to 4.71 higher)	⊕⊕○○ Low	
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CI: confidence interval; MD: mean difference

Explanations

- a. Rated down for inconsistency.
- b. Rated down for imprecision.

Table S2-8. GRADE profile for antioxidant lipids in population with diabetes.

Certainty assessment							№ of patients		Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[lipids]	[comparison]	Relative (95% CI)	Absolute (95% CI)		
diabetes - SBP												
15	randomised trials	not serious	serious ^a	not serious	serious ^b	none	564	543	-	MD 0.54 higher (2.45 lower to 3.53 higher)	 Low	
diabetes - DBP												
12	randomised trials	not serious	not serious	not serious	serious ^b	none	332	314	-	MD 0.36 lower (1.1 lower to 0.37 higher)	 Moderate	

diabetes - HDL

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[lipids]	[comparison]	Relative (95% CI)	Absolute (95% CI)		
16	randomised trials	not serious	serious ^a	not serious	serious ^b	none	647	626	-	MD 0.28 higher (0.07 higher to 0.5 higher)	⊕⊕○○ Low	

diabetes - LDL

14	randomised trials	not serious	not serious	not serious	serious ^b	none	567	571	-	MD 0.02 lower (0.04 lower to 0)	⊕⊕⊕○ Moderate	
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diabetes - TG

17	randomised trials	not serious	not serious	not serious	not serious	none	460	448	-	MD 0.26 lower (0.37 lower to 0.15 lower)	⊕⊕⊕⊕ High	
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diabetes - TC

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[lipids]	[comparison]	Relative (95% CI)	Absolute (95% CI)		
18	randomised trials	not serious	serious ^a	not serious	serious ^b	none	445	488	-	MD 0.21 lower (0.54 lower to 0.13 higher)	⊕⊕○○ Low	

diabetes - FBG

20	randomised trials	not serious	serious ^a	not serious	serious ^b	none	554	528	-	MD 0.03 higher (0.32 lower to 0.38 higher)	⊕⊕○○ Low	
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diabetes - FB1

9	randomised trials	not serious	serious ^a	not serious	serious ^b	none	341	252	-	MD 7.37 lower (24.11 lower to 9.38 higher)	⊕⊕○○ Low	
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diabetes - A1c

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[lipids]	[comparison]	Relative (95% CI)	Absolute (95% CI)		
19	randomised trials	not serious	serious ^a	not serious	serious ^b	none	687	673	-	MD 0.09 lower (0.23 lower to 0.06 higher)	⊕⊕○○ Low	

CI: confidence interval; MD: mean difference

Explanations

a. Rated down for inconsistency.

b. Rated down for imprecision.

Table S2-9. GRADE profile for antioxidant lipids in population with hypertension.

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[lipids]	[comparison]	Relative (95% CI)	Absolute (95% CI)		

hypertension - SBP

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[lipids]	[comparison]	Relative (95% CI)	Absolute (95% CI)		
15	randomised trials	not serious	serious ^a	not serious	serious ^b	none	418	411	-	MD 1.81 lower (4.14 lower to 0.53 higher)	⊕⊕○○ Low	

hypertension - DBP

15	randomised trials	not serious	not serious	not serious	serious ^b	none	371	363	-	MD 1.22 lower (2.79 lower to 0.35 higher)	⊕⊕⊕○ Moderate	
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hypertension - HDL

10	randomised trials	not serious	serious ^a	not serious	serious ^b	none	314	316	-	MD 0.04 lower (0.16 lower to 0.08 higher)	⊕⊕○○ Low	
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hypertension - LDL

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[lipids]	[comparison]	Relative (95% CI)	Absolute (95% CI)		
7	randomised trials	not serious	not serious	not serious	serious ^b	none	214	178	-	MD 0.28 lower (0.6 lower to 0.03 higher)	⊕⊕⊕○ Moderate	

hypertension - TG

9	randomised trials	not serious	not serious	not serious	serious ^b	none	289	291	-	MD 0.04 lower (0.24 lower to 0.15 higher)	⊕⊕⊕○ Moderate	
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hypertension - TC

8	randomised trials	not serious	not serious	not serious	not serious	none	263	274	-	MD 0.4 lower (0.68 lower to 0.12 lower)	⊕⊕⊕⊕ High	
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CI: confidence interval; MD: mean difference

Explanations

a. Rated down for inconsistency.

b. Rated down for imprecision.

Table S2-10. GRADE profile for antioxidant lipids in population with dyslipidemia.

Certainty assessment							№ of patients		Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[lipids]	[comparison]	Relative (95% CI)	Absolute (95% CI)		
dyslipidemia - SBP												
15	randomised trials	not serious	serious ^a	not serious	serious ^b	none	386	390	-	MD 0.01 higher (2.64 lower to 2.66 higher)	 Low	
dyslipidemia - DBP												
14	randomised trials	not serious	not serious	not serious	serious ^b	none	424	434	-	MD 0.81 lower (1.51 lower to 0.1 lower)	 Moderate	

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[lipids]	[comparison]	Relative (95% CI)	Absolute (95% CI)		

dyslipidemia - HDL

23	randomised trials	not serious	serious ^a	not serious	serious ^b	none	910	693	-	MD 0.16 higher (0.08 higher to 0.24 higher)	 Low	
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dyslipidemia - LDL

19	randomised trials	not serious	serious ^a	not serious	serious ^b	none	751	530	-	MD 0.01 lower (0.25 lower to 0.22 higher)	 Low	
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dyslipidemia - TG

23	randomised trials	not serious	serious ^a	not serious	not serious	none	909	693	-	MD 0.56 lower (0.81 lower to 0.3 lower)	 Moderate	
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Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[lipids]	[comparison]	Relative (95% CI)	Absolute (95% CI)		

dyslipidemia - TC

19	randomised trials	not serious	serious ^a	not serious	serious ^b	none	422	467	-	MD 0.01 higher (0.14 lower to 0.16 higher)	 Low	
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dyslipidemia - FBG

9	randomised trials	not serious	serious ^a	not serious	serious ^b	none	154	185	-	MD 0.58 lower (2.46 lower to 1.3 higher)	 Low	
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dyslipidemia - FBI

4	randomised trials	not serious	serious ^a	not serious	serious ^b	none	72	74	-	MD 5.49 lower (11.71 lower to 0.73 higher)	 Low	
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CI: confidence interval; MD: mean difference

Explanations

- a. Rated down for inconsistency.
- b. Rated down for imprecision.

Table S2-11. GRADE profile for antioxidant lipids in population with obesity.

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[lipids]	[comparison]	Relative (95% CI)	Absolute (95% CI)		
8	randomised trials	not serious	serious ^a	not serious	serious ^b	none	394	393	-	MD 2.65 lower (6.19 lower to 0.89 higher)	 Low	

obesity - DBP

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[lipids]	[comparison]	Relative (95% CI)	Absolute (95% CI)		
7	randomised trials	not serious	serious ^a	not serious	serious ^b	none	374	373	-	MD 1.57 lower (5.58 lower to 2.45 higher)	⊕⊕○○ Low	

obesity - HDL

14	randomised trials	not serious	serious ^a	not serious	serious ^b	none	512	508	-	MD 0.06 higher (0.02 higher to 0.1 higher)	⊕⊕○○ Low	
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obesity - LDL

14	randomised trials	not serious	serious ^a	not serious	serious ^b	none	609	508	-	MD 0.08 lower (0.21 lower to 0.06 higher)	⊕⊕○○ Low	
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obesity - TG

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[lipids]	[comparison]	Relative (95% CI)	Absolute (95% CI)		
13	randomised trials	not serious	not serious	not serious	serious ^b	none	339	318	-	MD 0.13 lower (0.24 lower to 0.02 lower)	⊕⊕⊕○ Moderate	

obesity - TC

13	randomised trials	not serious	serious ^a	not serious	serious ^b	none	569	318	-	MD 0.21 lower (0.64 lower to 0.22 higher)	⊕⊕○○ Low	
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obesity - FBG

6	randomised trials	not serious	serious ^a	not serious	serious ^b	none	146	161	-	MD 1.1 lower (3.79 lower to 1.6 higher)	⊕⊕○○ Low	
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obesity - FBI

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[lipids]	[comparison]	Relative (95% CI)	Absolute (95% CI)		
6	randomised trials	not serious	serious ^a	not serious	serious ^b	none	267	272	-	MD 4.45 lower (16.84 lower to 7.94 higher)	⊕⊕○○ Low	

CI: confidence interval; MD: mean difference

Explanations

a. Rated down for inconsistency.

b. Rated down for imprecision.

Table S2-12. GRADE profile for antioxidant lipids in population with metabolic syndrome.

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[lipids]	[comparison]	Relative (95% CI)	Absolute (95% CI)		

MetS - SBP

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[lipids]	[comparison]	Relative (95% CI)	Absolute (95% CI)		
3	randomised trials	not serious	not serious	not serious	serious ^a	none	98	93	-	MD 2.76 lower (7.6 lower to 2.09 higher)	⊕⊕⊕○ Moderate	

MetS - DBP

3	randomised trials	not serious	not serious	not serious	not serious	none	98	93	-	MD 3 lower (4.15 lower to 1.85 lower)	⊕⊕⊕⊕ High	
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MetS - HDL

6	randomised trials	not serious	not serious	not serious	serious ^a	none	176	171	-	MD 0 (0.04 lower to 0.03 higher)	⊕⊕⊕○ Moderate	
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MetS - LDL

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	[lipids]	[comparison]	Relative (95% CI)	Absolute (95% CI)		
5	randomised trials	not serious	not serious	not serious	serious ^a	none	180	173	-	MD 0.04 higher (0.05 lower to 0.13 higher)	⊕⊕⊕○ Moderate	

MetS - TG

6	randomised trials	not serious	serious ^b	not serious	serious ^a	none	176	171	-	MD 0.55 lower (1.24 lower to 0.14 higher)	⊕⊕○○ Low	
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MetS - TC

5	randomised trials	not serious	serious ^b	not serious	serious ^a	none	206	153	-	MD 0.03 lower (0.47 lower to 0.4 higher)	⊕⊕○○ Low	
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CI: confidence interval; MD: mean difference

Explanations

- a. Rated down for imprecision.
- b. Rated down for inconsistency.

Supplemental 6 - Results of sensitivity analysis of the systematic removal of each study

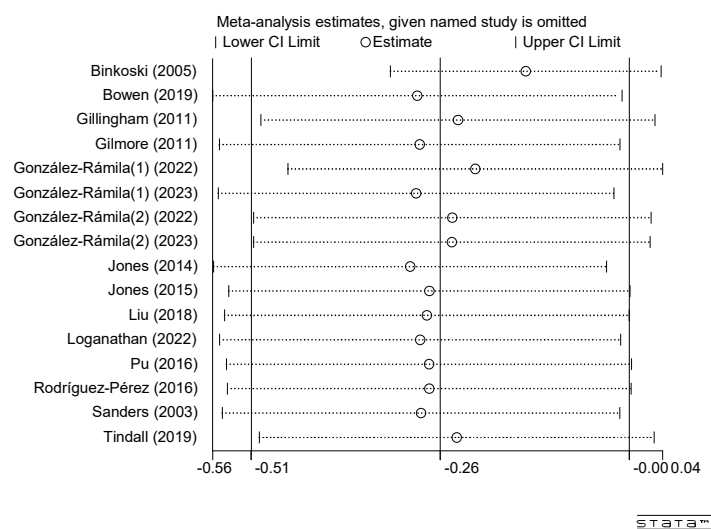


Figure S4-1 Sensitivity analysis of the systematic removal of each study for LDL-C in participants supplemented with n9 fatty acid.

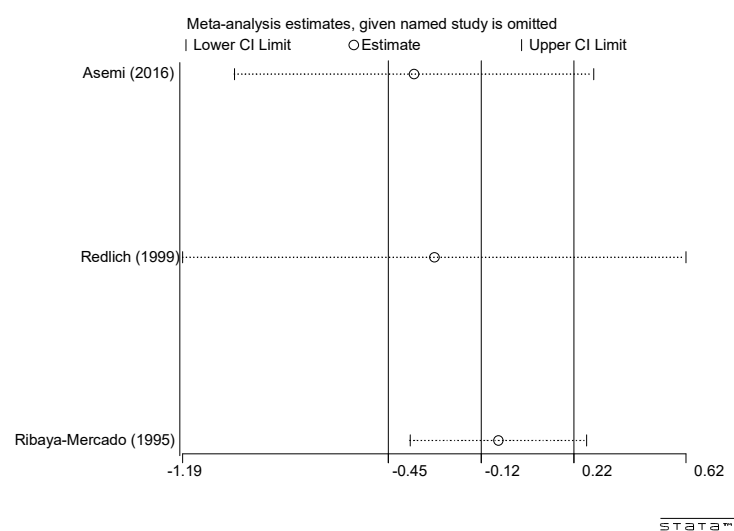


Figure S4-2 Sensitivity analysis of the systematic removal of each study for LDL-C in participants supplemented with beta-carotene.

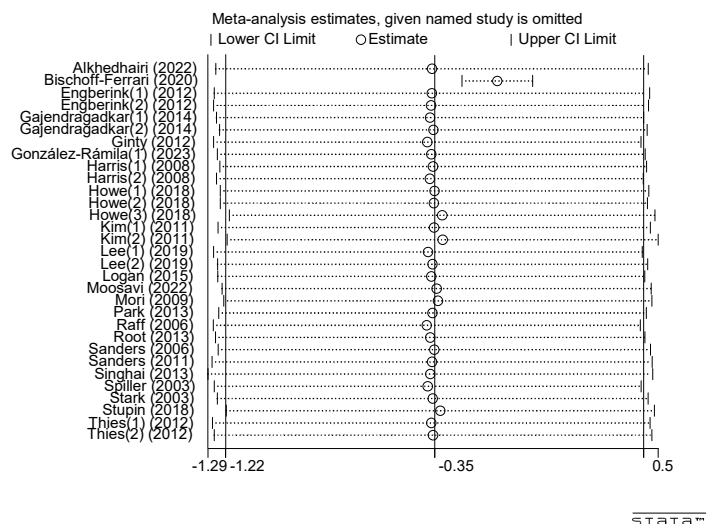


Figure S4-3 Sensitivity analysis of the systematic removal of each study for SBP in the healthy population.

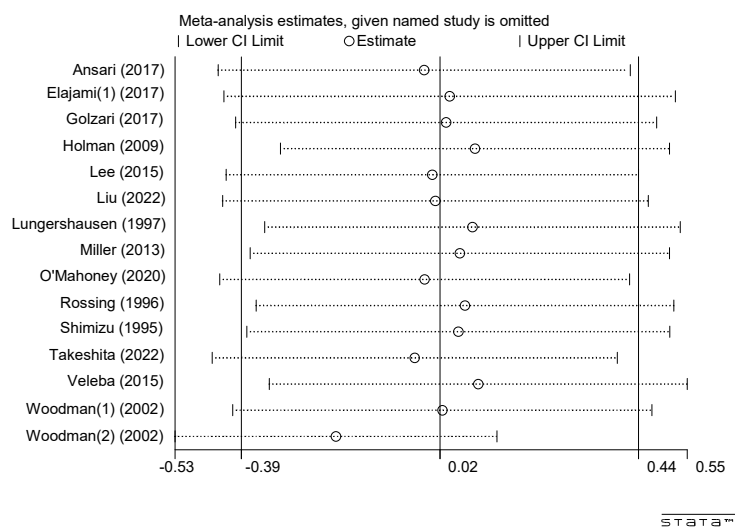


Figure S4-4 Sensitivity analysis of the systematic removal of each study for SBP in the population with diabetes.

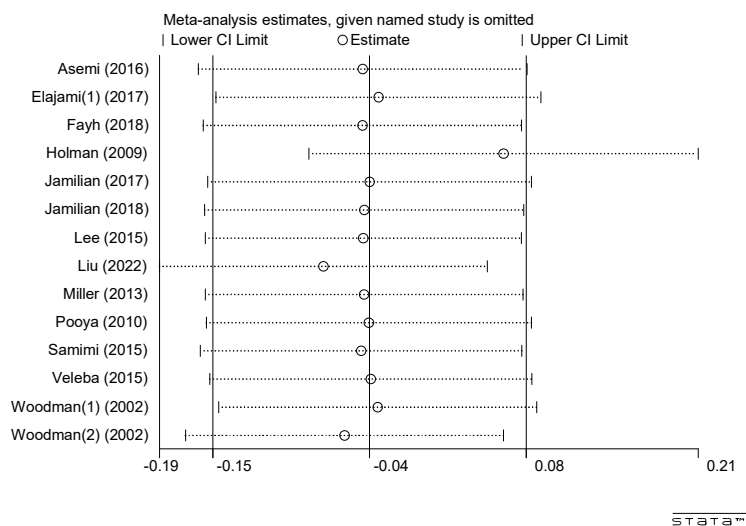


Figure S4-5 Sensitivity analysis of the systematic removal of each study for LDL-C in the population with diabetes.

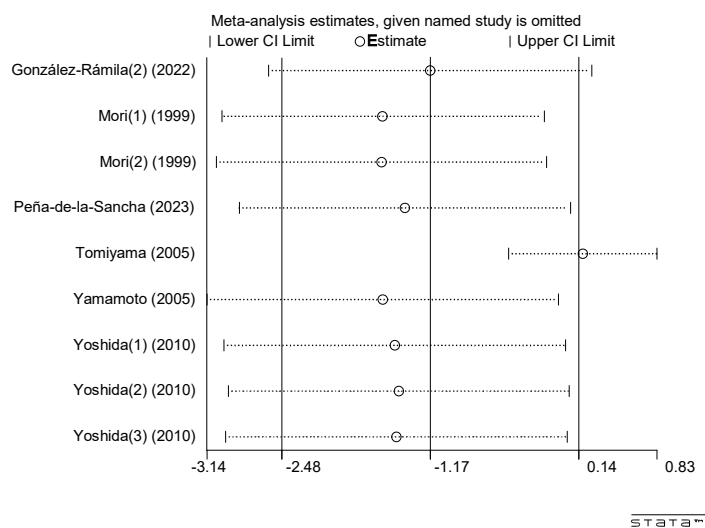


Figure S4-6 Sensitivity analysis of the systematic removal of each study for FBG in the population with dyslipidemia.

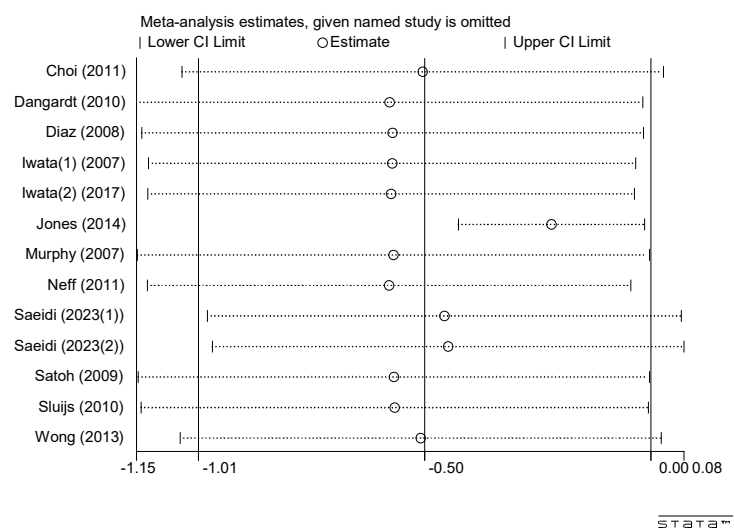


Figure S4-7 Sensitivity analysis of the systematic removal of each study for TC in the population with obesity.

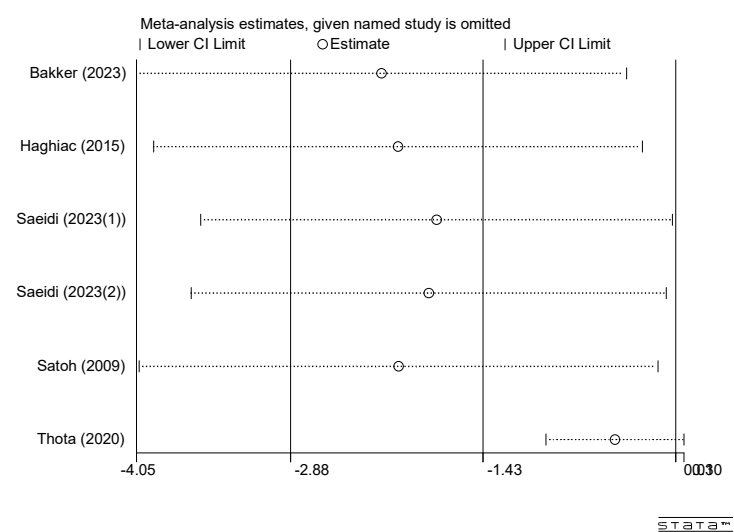


Figure S4-8 Sensitivity analysis of the systematic removal of each study for FBG in the population with obesity.

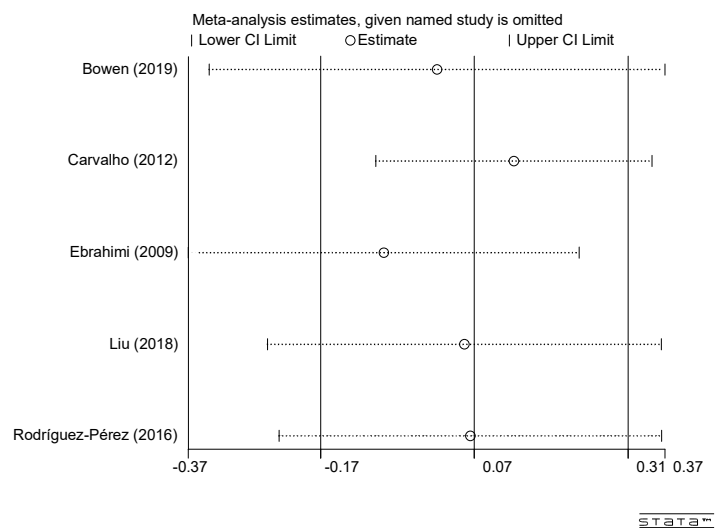


Figure S4-9 Sensitivity analysis of the systematic removal of each study for LDL-C in the population with metabolic syndrome.

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