

Source = Beverages															
Majid et al, 2013	31	2.32	0.84	[0.67; 3.97]	1	0		8.00	M	GP	Mix	AL		4	2
Lowndes et al, 2014a	15	-3.30	3.44	[-10.04; 3.44]	0	2		10.00	MF	OW/OB	Mix	Eu	0	10	2
Campos et al, 2015	13	0.00	3.62	[-7.10; 7.10]	0	0		18.00	MF	OW/OB	Mix	AL	2.3	12	1
Hollis et al, 2009	25	1.55	2.21	[-2.78; 5.88]	0	2		18.00	MF	OW	Mix	AL	1.5	12	1
Maersk et al, 2012*	14	2.32	2.64	[-2.86; 7.50]	0	0		18.00	MF	OW/OB	Mix	AL	1	24	2
Hernandez-Cordero et al, 2014	120	-1.90	0.30	[-2.49; -1.31]	0	0	1	20.00	F	OW/OB	Mix	AL	0.5	36	2
Lowndes et al, 2014b*	55	-0.20	1.59	[-3.32; 2.92]	0	0		22.00	MF	BMI<35	Mix	Eu	-4.1	10	2
Random effects model (r = 0.82)		0.16		[-1.69; 2.01]											
Heterogeneity: I ² = 78% [54%; 89%], τ ² = 3.018	2, p < 0.01														
Source = Foods															
Gostner et al, 2005	19	1.30	1.92	[-2.46; 5.06]	0	2		6.00	MF	GP	Mix	Eu	0	4	1
Hallfrisch et al, 1983a* (NI - HI)	24	2.10	1.03	[0.08; 4.12]	1	0		15.00	M	NI - HI	Fruct	Eu		5	2
Reiser et al, 1989a* (normoinsulinemic)	11	1.93	1.70	[-1.40; 5.27]	0	2	1	20.00	M	N-I	Fruct	Eu	1.1	5	2
Reiser el al., 1989a* (hyperinsulinemic)	10	0.39	1.61	[-2.77; 3.55]	0	0		20.00	M	H-I	Fruct	Eu		5	2
Israel et al. 1983*	12	3.00	1.20	[0.65; 5.35]	1	0		28.00	M	H-I	Mix	Eu	-3.8	6	1
Israel et al, 1983*	12	7.00	1.80	[3.47; 10.53]	0	0		28.00	F	H-I	Mix	Eu	0.2	6	1
Random effects model (r = 0.82)		2.55		[1.03; 4.07]											
Heterogeneity: I ² = 43% [0%; 78%], τ ² = 1.380	1, p = 0.12														
Source = Mixed							_					_			
Lewis et al, 2013	13	3.87	1.83	[0.27; 7.46]	1	0		10.00	MF	OW/OB	Mix	Eu	0.7	6	1
Markey et al, 2018	50	0.00	1.18	[-2.32; 2.32]	0	0		10.00	MF	Non-OB	Mix	AL	0.1	8	1
Smith et al, 1996	16	-3.87	2.63	[-9.02; 1.29]	0	2		12.00		H-TG	Mix	AL	2.7	24	2
Black et al, 2006	13 14	0.00	1.39	[-2.73; 2.73]	0	0		15.00	M	BMI<35 GP	Mix	Eu	0.4	6	1
Swanson et al, 1992		3.09	1.62	[-0.09; 6.28]	0	-		16.60		-	Fruct	Eu		4	
Saris et al, 2000*	79 14	-1.93 1.16	1.24 1.74	[-4.36; 0.50]	0	0 2		19.00	MF	OW/OB OW/No-NAFLD	Mix	AL Eu	0.9	24 12	1 2
Umpleby et al, 2017 (No NAFLD) Umpleby et al, 2017 (NAFLD)	14	2.32	1.74	[-2.26; 4.58] [-1.35; 5.99]	0	2		20.00 20.00	M	OW/NG-NAFLD	Mix Mix	Eu	2.2	12	2
Raben et al. 2002*	11	1.16	3.23	[-5.17; 7.49]	o	0		23.00	ME	OW	Mix	AL	2.6	10	1
Werner et al, 1984	12	-4.25	3.23 1.41	[-7.02; -1.49]	1	0		23.00	MF	Gallstones	Mix	AL	1.4	6	2
Random effects model (r = 0.82)	12	0.10	1.41	[-1.61; 1.81]		U	- <u> </u>	24.00	IVIE	Galistones	IVIIX	AL	1.4	0	2
Heterogeneity: $I^2 = 62\%$ [25%; 81%], $\tau^2 = 4.546$	0 - < 0.01	0.10		[-1.01, 1.01]											
Heterogeneity: $I = 02\% [20\%; 81\%], \pi = 4.040$	0, p < 0.01														
Random effects model (r = 0.82)		0.83		[-0.25; 1.91]			-								
Prediction interval				[-3.51; 5.17]											
Heterogeneity: $I^2 = 77\%$ [66%; 85%], $z^2 = 4.050$	0.01 s, μ < 0.01														
Residual heterogeneity: /2 = 66% [47%; 79%], g							-10 -5 0 5 10								
Random effects model (r = 0.5): 0.54 [-0.52; 1.							Black = Parallel Red = Cross-over								
Random effects model (r = 0.99): 0.88 [-0.24; 1	.95]		r 0.8	5 = 1 -> significant ef	fect (0.82)	becomes	ion-significant (0.5); r 0.99 = 2 -> non signifi	ficant effect (0.82)	becomes sid	gnificant (0.99)					
	-														

Figure G.6c2: Stratified by sugars source



Figure G.6d: Effect of high vs low sugar intake on fasting triglycerides (mg/dL)

Study	N	Mean Effect	se Effect	95% CI	r 0.5	r 0.99		Sugar diff (E%)	Sex	Subjects	Sugar	Source	BW*	Duration	RoB
Diet = Isocaloric with neutral energy balance	e.						I								
Gostner et al. 2005	19	-0.70	12.41	[-25.03; 23.63]	0	0		6.00	MF	GP	Mix	F	0	4	1
Lewis et al. 2013	13	0.00	8.40	[-16.46; 16.46]	0	0		10.00	MF	OW/OB	Mix	Mix	0.7	6	1
Lowndes et al, 2014a	15	-9.90	19.55	[-48.22; 28.42]	0	0		10.00	MF	OW/OB	Mix	в	0	10	2
Black et al, 2006	13	10.40	3.13	[4.26; 16.53]	0	0	+	15.00	M	BMI<35	Mix	Mix	0.4	6	1
Hallfrisch et al, 1983a* (normoinsulinemic)	12	6.40	11.40	[-15.94; 28.74]	0	2		15.00	M	N-I	Fruct	F		5	2
Hallfrisch et al, 1983a* (hyperinsulinemic)	12	61.80	14.40	[33.58; 90.02]	0	0		15.00	M	H-I	Fruct	F		5	2
Swanson et al, 1992	14	4.42	5.31	[-5.98; 14.83]	0	2	+	16.60	MF	GP	Fruct	Mix		4	1
Reiser et al, 1989a* (normoinsulinemic)	11	15.05	5.98	[3.32; 26.77]	1	0	-	20.00	M	N-I	Fruct	F		5	2
Reiser el al., 1989a* (hyperinsulinemic)	10	67.26	16.37	[35.17; 99.35]	0	0		20.00	M	H-I	Fruct	F		5	2
Umpleby et al, 2017 (No NAFLD)	14	17.70	6.38	[5.19; 30.21]	1	0	-	20.00	M	OW/No-NAFLD	Mix	Mix	2.2	12	2
Umpleby et al, 2017 (NAFLD)	11	24.78	12.22	[0.82; 48.74]	1	0	-	20.00	M	OW/NAFLD	Mix	Mix	2.1	12	2
Lowndes et al, 2014b*	55	16.80	8.18	[0.76; 32.84]	1	0	-	22.00	MF	BMI<35	Mix	в	-4.1	10	2
Israel et al, 1983*	12	108.00	26.79	[55.50; 160.50]	0	0		28.00	M	H-I	Mix	F	-3.8	6	1
Israel et al, 1983*	12	22.00	5.32	[11.58; 32.42]	0	0	-	28.00	F	H-I	Mix	F	0.2	6	1
Reiser et al, 1979a*	10	39.00	16.38	[6.90; 71.10]	1	0		30.00	M	GP	Mix	F		6	2
Reiser et al, 1979a*	9	22.00	4.59	[13.01; 30.99]	0	0	-	30.00	F	GP	Mix	F		6	2
Moser et al, 1986 (OC-users)	6	-10.00	6.12	[-21.99; 1.99]	0	2		43.00	F	OC	Mix	F	-1	4	1
Moser et al, 1986 (No OC-users)	6	-1.00	3.93	[-8.70; 6.70]	0	0	÷	43.00	F	Non-OC	Mix	F	1	4	1
Random effects model (r = 0.82)		17.24		[7.67; 26.81]			•								
Heterogeneity: I ² = 79% [67%; 86%], τ ² = 323.869	7, p < 0.0 ⁻	1													
Diet = Ad libitum							_								
Majid et al, 2013	31	-17.70	5.51	[-28.51; -6.89]	0	0	<u></u>	8.00	M	GP	Mix	в		4	2
Markey et al, 2016	50	0.89	2.97	[-4.93; 6.70]	0	0		10.00	MF	Non-OB	Mix	Mix	0.1	8	1
Smith et al, 1996	16	26.55	23.17	[-18.87; 71.97]	0	2	<u> </u>	12.00	MF	H-TG	Mix	Mix	2.7	24	2
Huttunen et al, 1976	40	-2.66	8.21	[-18.75; 13.44]	0	0	+	16.00	MF	GP	Mix	Mix		72	2
Campos et al, 2015	13	-26.55	22.67	[-70.98; 17.88]	0	0		18.00	MF	OW/OB	Mix	в	2.3	12	1
Hollis et al, 2009	25	-1.77	10.03	[-21.43; 17.89]	0	0		18.00	MF	OW	Mix	в	1.5	12	1
Maersk et al, 2012*	15	53.98	14.42	[25.72; 82.25]	0	0		18.00	MF	OW/OB	Mix	в	1	24	2
Saris et al, 2000*	79	15.04	8.05	[-0.74; 30.83]	0	0	<u> </u>	19.00	MF	OW/OB	Mix	Mix	0.9	24	1
Hernandez-Cordero et al, 2014	120	17.00	2.26	[12.58; 21.42]	0	0		20.00	F	OW/OB	Mix	в	0.5	36	2
Raben et al, 2002*	11	29.20	14.50	[0.78; 57.63]	1	0	-	23.00	MF	OW	Mix	Mix	2.6	10	1
Werner et al, 1984	12	30.97	11.60	[8.24; 53.71]	1	0		24.00	MF	Gallstones	Mix	Mix	1.4	6	2
Random effects model (r = 0.82)		10.32		[-2.04; 22.68]			· · · · · · · · · · · · · · · · · · ·								
Heterogeneity: $I^2 = 85\%$ [74%; 91%], $\tau^2 = 315.583$	2, p < 0.0														
Random effects model (r = 0.82)		14.59		[7.16; 22.02]			•								
Prediction interval				[-22.16; 51.35]											
Heterogeneity: 1 ² = 81% [73%; 86%], τ ² = 306.549	8. p < 0.0 ⁻	1													
Residual heterogeneity: 1 ² = 81% [74%; 87%], p <		-					-100 -50 0 50 100 150								
Random effects model (r = 0.5): 10.58 [3.76; 17.4							Black = Parallel Red = Cross-over								
Random effects model (r = 0.99): 18.43 [8.2; 28.6			r O	5 = 1 -> significant et	ffect (0.82)		on-significant (0.5); r 0.99 = 2 -> non signi	ficant effect (0.82) be	ecomes si	onificant (0.99)					
	-				((

Footnote to Figure G6. * differences in BW change between high and low sugar intake; B = beverages; BMI = body mass index; BW = body weight; CI = confidence interval; E% = energy percentage; F under Sex = females; F under Source = food; Fruct = fructose; GP = general practitioner; H-I = hyperinsulinemia; H-TG = hyper-triglyceridemic; M = males; MF = males and females; Mix under Sugar = sugar mixtures; Mix under Source = foods and beverages; N = average sample size per arm; N-I = normo-insulinemia; NAFLD = non-alcoholic fatty liver disease; OB = obese; OC = oral contraceptives; OW = overweight; r05 and r099 = change in the significance of the effect (0 = no change; 1 = change) when assuming a correlation coefficient of respectively 0.50 and 0.99 (instead of 0.82) when computing the SE of the effect measurement; RoB = risk of bias (tier). Study duration is expressed in weeks.

Figure G.6d1: Stratified by type of diet



Source = Beverages															
Majid et al, 2013	31	-17.70	5.51	[-28.51; -6.89]	0	0		8.00	M	GP	Mix	AL		4	2
Lowndes et al, 2014a	15	-9.90	19.55	[-48.22; 28.42]	0	0		10.00	MF	OW/OB	Mix	Eu	0	10	2
Campos et al, 2015	13	-26.55	22.67	[-70.98; 17.88]	0	0		18.00	MF	OW/OB	Mix	AL	2.3	12	1
Hollis et al, 2009	25	-1.77	10.03	[-21.43; 17.89]	0	0	- 	18.00	MF	OW	Mix	AL	1.5	12	1
Maersk et al, 2012*	15	53.98	14.42	[25.72; 82.25]	0	0	- <u>-</u>	18.00	MF	OW/OB	Mix	AL	1	24	2
Hernandez-Cordero et al, 2014	120	17.00	2.26	[12.58; 21.42]	0	0	+	20.00	F	OW/OB	Mix	AL	0.5	36	2
Lowndes et al, 2014b*	55	16.80	8.18	[0.76; 32.84]	1	0		22.00	MF	BMI<35	Mix	Eu	-4.1	10	2
Random effects model (r = 0.82)		6.10		[-12.43; 24.64]											
Heterogeneity: 1 ² = 88% [77%; 93%], τ ² = 480.702	2, p < 0.01			(
Source = Foods															
Gostner et al. 2005	19	-0.70	12.41	[-25.03; 23.63]	0	0		6.00	MF	GP	Mix	Eu	0	4	1
Hallfrisch et al, 1983a* (normoinsulinemic)	12	6.40	11.40	[-15.94; 28.74]	0	2		15.00	M	N-I	Fruct	Eu		5	2
Hallfrisch et al, 1983a* (hyperinsulinemic)	12	61.80	14.40	[33.58; 90.02]	ŏ	õ	Γ - π	15.00	M	H-I	Fruct	Eu		5	2
Reiser et al, 1989a* (normoinsulinemic)	11	15.05	5.98	[3.32; 28.77]	1	0		20.00	M	N-I	Fruct	Eu		5	2
Reiser et al., 1989a* (hyperinsulinemic)	10	67.26	16.37	[35.17; 99.35]	ò	ŏ		20.00	M	H-I	Fruct	Eu		5	2
Israel et al., 1983*	12	108.00	26.79	[55.50; 160.50]	ŏ	ŏ		28.00	M	H-I	Mix	Eu	-3.8	6	1
Israel et al. 1983*	12	22.00	5.32		ő	ő		28.00	F	H-1	Mix	Eu	0.2	6	1
Reiser et al, 1983"	12	39.00	16.38	[11.58; 32.42]	1	0		30.00	м	GP	Mix	Eu	0.2	6	2
				[6.90; 71.10]		-	-		F					-	
Reiser et al, 1979a*	9 6	22.00	4.59	[13.01; 30.99]	0	0		30.00	F	GP	Mix	Eu		6	2
Moser et al, 1986 (OC-users)	-	-10.00	6.12	[-21.99; 1.99]	0	2	핏	43.00	F	oc	Mix	Eu	-1	4	1
Moser et al, 1986 (No OC-users)	6	-1.00	3.93	[-8.70; 6.70]	0	0	1	43.00	F	Non-OC	Mix	Eu	1	4	1
Random effects model (r = 0.82)		25.14		[7.54; 42.73]											
Heterogeneity: / ² = 86% [77%; 92%], τ ² = 746.708	9, p < 0.01														
Source = Mixed															
Lewis et al, 2013	13	0.00	8.40	[-16.46; 16.46]	0	0		10.00	MF	OW/OB	Mix	Eu	0.7	6	1
Markey et al, 2016	50	0.89	2.97	[-4.93; 6.70]	0	0		10.00	MF	Non-OB	Mix	AL	0.1	8	1
Smith et al, 1996	16	26.55	23.17	[-18.87; 71.97]	0	2		12.00	MF	H-TG	Mix	AL	2.7	24	2
Black et al, 2006	13	10.40	3.13	[4.26; 16.53]	0	0	-+-	15.00	M	BMI<35	Mix	Eu	0.4	6	1
Huttunen et al, 1976	40	-2.66	8.21	[-18.75; 13.44]	0	0	+	16.00	MF	GP	Mix	AL		72	2
Swanson et al, 1992	14	4.42	5.31	[-5.98; 14.83]	0	2	÷	16.60	MF	GP	Fruct	Eu		4	1
Saris et al, 2000*	79	15.04	8.05	[-0.74; 30.83]	0	0	* * *	19.00	MF	OW/OB	Mix	AL	0.9	24	1
Umpleby et al, 2017 (No NAFLD)	14	17.70	6.38	[5.19; 30.21]	1	0		20.00	M	OW/No-NAFLD	Mix	Eu	2.2	12	2
Umpleby et al, 2017 (NAFLD)	11	24.78	12.22	[0.82; 48.74]	1	0		20.00	м	OW/NAFLD	Mix	Eu	2.1	12	2
Raben et al. 2002*	11	29.20	14.50	[0.78; 57.63]	1	0		23.00	MF	ow	Mix	AL	2.6	10	1
Werner et al, 1984	12	30.97	11.60	[8.24; 53.71]	1	0		24.00	MF	Gallstones	Mix	AL	1.4	6	2
Random effects model (r = 0.82)		9.88		[3.93; 15.82]			◆								
Heterogeneity: 1 ² = 52% [5%; 78%], τ ² = 42.4333,	p = 0.02			(,											
Random effects model (r = 0.82)		14.59		[7.16; 22.02]			•								
Prediction interval				[-22.16; 51.35]											
Heterogeneity: 1 ² = 81% [73%; 88%], τ ² = 308.549	8 n < 0.01														
Residual heterogeneity: 1 ² = 82% [74%; 87%], p <						-1	00 -50 0 50 100 150								
Random effects model (r = 0.5): 10.58 [3.76; 17.4]						-	de Breillet, Bede Breinen								
Random effects model (r = 0.99): 18.43 [8.2; 28.60			- /		fact (0.92)		ack = Parallel Red = Cross-over -significant (0.5); r 0.99 = 2 -> non signific	cont offect (0.92)	hoomoo -i	anificant (0.99)					
realized effects model (1 = 0.00). 10.45 [0.2, 20.0	-1		r.	v.o – 1 -> signincant et	iea (0.62)	becomes nor	-significant (0.0), r 0.88 = 2 -> non signific	uant effect (0.82)	becomes si	grindant (0.55)					

Figure G.6d2: Stratified by sugars source

Study Ν Mean Effect se Effect 95% CI r 0.5 r 0.99 Fru-Glu (E%) Sex Subjects Source BW* Weeks RoB Diet = Isocaloric with neutral energy balance Bantle et al, 2000 24 3.09 1.16 [0.82; 5.37] 0 14 MF BMI<32 Mix 1 1 6 Koh et al, 1988 (NGT) 9 -7.00 3.60 [-14.08; 0.08] 0 2 15 MF NGT Mix 2 4 Koh et al, 1988 (IGT) -2.00 0 15 MF Mix 9 6.96 [-15.64; 11.64] 0 IGT 4 -1.24 [-8.37; 5.90] Random effects model Heterogeneity: $l^2 = 73\% [10\%; >92\%], \tau^2 = 28.0880, p = 0.02$ Diet = Isocaloric with positive energy balance Silbernagel et al, 2011 10 9.00 7.21 [-5.13; 23.13] 0 0 22 MF BMI<35 в -1.5 4 1 Random effects model 9.00 [-5.13; 23.13] Heterogeneity: not applicable Diet = Ad libitum Angelopoulos et al, 2015* 71 -0.40 4.06 9 MF BMI<35 10 [-8.36; 7.56] 0 0 в 0.1 1 36 1.55 4.14 0 0 16 F OW/OB в -0.4 4 1 Mark et al, 2014 [-8.57; 9.66] 25 -0.2 2 16 26.00 9.99 MF OW/OB в 8 Stanhope et al, 2009* [6.41; 45.59] 1 0 Random effects model 6.40 [-7.04; 19.84] Heterogeneity: $I^2 = 67\%$ [0%; >91%], $\tau^2 = 105.2070$, p = 0.05Random effects model 1.56 [-2.97; 6.10] Prediction interval [-10.53; 13.65] Heterogeneity: 1² = 59% [4%; 82%], τ² = 18.7825, p = 0.02 -20 -10 0 10 20 30 40 50 Random effects model (r = 0.5): 2.4 [-2.21; 7] Random effects model (r = 0.99): 1.78 [-8.34; 9.9] Black = Parallel Red = Cross-over r 0.5 = 1 -> significant effect (0.82) becomes non-significant (0.5); r 0.99 = 2 -> non significant effect (0.82) becomes significant (0.99)

Figure G.7: Randomised controlled trials: effect of fructose vs. glucose on blood lipids

Figure G.7a: Effect of fructose vs glucose on total cholesterol (mg/dL)



Study	N	Mean Effect	se Effect	95% CI	r 0.5	r 0.99		Fru-Glu (E%)	Sex	Subjects	Source	BW*	Weeks	RoB
Diet = Isocaloric with neutra Bantle et al, 2000 Koh et al, 1988 (NGT) Koh et al, 1988 (IGT) Random effects model Heterogeneity: I ² = 0% [0%; >88	24 9 9	0.00 -4.00 -2.00 -0.56	0.93 3.31 5.77	[-1.82; 1.82] [-10.49; 2.49] [-13.31; 9.31] [-2.88; 1.76]	0 0	0 2 0		14 15 15	MF MF	BMI<32 NGT IGT	Mix Mix Mix		6 4 4	1 2
Diet = Isocaloric with positi Silbernagel et al, 2011 Random effects model Heterogeneity: not applicable	ve ener 10	gy balance 9.00 9.00	7.21	[-5.13 ; 23.13] [-5.13; 23.13]	0	0		22	MF	BMI<35	в	-1.5	4	1
Diet = Ad libitum Angelopoulos et al, 2015* Mark et al, 2014 Stanhope et al, 2009* Random effects model Heterogeneity: I ² = 54% [0%; >8	71 38 16	-1.80 1.16 15.30 2.60 23.3920, p = 0.11	3.50 3.79 7.44	[-8.66; 5.06] [-6.27; 8.59] [0.72; 29.88] [-4.96; 10.16]	0 0 1	0 0 0		9 18 25	MF F MF	BMI<35 OW/OB OW/OB	B B	0.1 -0.4 -0.2	10 4 8	1 1 2
Random effects model Prediction interval Heterogeneity: I ² = 22% [0%; 85 Random effects model (r = 0.5); Random effects model (r = 0.99	0.2 [-2.4	8; 2.88]		[-1.64; 1.59] [-2.15; 2.09]	effect (0.82		-20 -10 0 10 20 30 40 ack = Parallel Red = Cross-over posignificant (0 B): (0 99 = 2 -> pop sign		neromes s	ionificent (0.99)				

r 0.5 = 1 -> significant effect (0.82) becomes non-significant (0.5); r 0.99 = 2 -> non significant effect (0.82) becomes significant (0.99)

Figure G.7b: Effect of fructose vs glucose on LDL-cholesterol (mg/dL)



Study	N	Mean Effect	se Effect	95% CI	r 0.5	r 0.99		Fru-Glu (E%)	Sex	Subjects	Source	BW*	Weeks	RoB
Diet = Isocaloric with neutra	-						1							
Bantle et al, 2000	24	0.00	0.70	[-1.36; 1.36]	0	0	-	14	MF	BMI<32	Mix		6	1
Koh et al, 1988 (NGT)	9	-3.00	2.12	[-7.16; 1.16]	0	2		15	MF	NGT	Mix		4	2
Koh et al, 1988 (IGT)	9	1.00	2.40	[-3.70; 5.70]	0	0		15	MF	IGT	Mix		4	
Random effects model	2	-0.20		[-1.45; 1.05]			•							
Heterogeneity: 1 ² = 4% [0%; >90	%], т [*] = -	< 0.0001, p = 0.35												
Diet = Isocaloric with positiv	ve ener													
Silbernagel et al, 2011	10	-2.00	1.41	[-4.77; 0.77]	0	0		22	MF	BMI<35	в	-1.5	4	1
Random effects model		-2.00		[-4.77; 0.77]										
Heterogeneity: not applicable														
Diet = Ad libitum														
Angelopoulos et al, 2015*	71	0.56	1.31	[-2.00; 3.12]	0	0	<u>*</u>	9	MF	BMI<35	в	0.1	10	1
Mark et al, 2014	36	-1.55	1.57	[-4.62; 1.53]	0	2		16	F	OW/OB	в	-0.4	4	1
Stanhope et al, 2009*	16	3.00	2.23	[-1.36; 7.36]	0	2		25	MF	OW/OB	в	-0.2	8	2
Random effects model		0.31		[-1.77; 2.38]			-							
Heterogeneity: $l^2 = 31\% [0\%; >9$	3%], τ ² =	0.7610, p = 0.24												
Random effects model		-0.29		[-1.25; 0.68]			-							
Prediction interval				[-1.55; 0.98]										
Heterogeneity: /2 = 12% [0%; 74	%], - ² < (0.000 1 , p = 0.34												
Random effects model (r = 0.5):							-10 -5 0 5 10							
Random effects model (r = 0.99)							Black = Parallel Red = Cross-over							
			r 0.5	i = 1 -> significant	effect (0.82	heromes r	on-significant (0.5) : $r(0.99 = 2 \rightarrow non sign$	nificant effect (0.82) h	emmes	ignificant (0.99)				

r 0.5 = 1 -> significant effect (0.82) becomes non-significant (0.5); r 0.99 = 2 -> non significant effect (0.82) becomes significant (0.99)

Figure G.7c: Effect of fructose vs glucose on HDL-cholesterol (mg/dL)



Study	N	Mean Effect	se Effect	95% CI	r 0.5	r 0.99		Fru-Glu (E%)	Sex	Subjects	Source	BW*	Weeks	RoB
Diet = Isocaloric with neutr	al energy	y balance					I							
Bantle et al, 2000	12	26.55	3.19	[20.31; 32.79]	0	0	-	14	M	BMI<32	Mix		6	1
Bantle et al, 2000	12	-3.54	3.19	[-9.78; 2.70]	0	2	-	14	F	BMI<32	Mix		6	1
Koh et al, 1988 (NGT)	9	2.00	5.18	[-8.15; 12.15]	0	0	+	15	MF	NGT	Mix		4	2
Koh et al, 1988 (IGT)	9	-19.00	8.42	[-35.51; -2.49]	1	0		15	MF	IGT	Mix		4	2
Random effects model		2.33		[-16.02; 20.68]										
Heterogeneity: 12 = 95% [90%; 1	>97%], τ ²	= 322.6196, p < 0.01												
Diet = Isocaloric with posit	ive ener	gy balance												
Silbernagel et al, 2011	10	35.00	14.87	[5.86; 64.14]	0	0		22	MF	BMI<35	в	-1.5	4	1
Random effects model		35.00		[5.86; 64.14]										
Heterogeneity: not applicable														
Diet = Ad libitum						-	L	-			_			
Angelopoulos et al, 2015*	71	2.94	6.24	[-9.29; 15.17]	0	2		9	MF	BMI<35	в	0.1	10	1
Mark et al, 2014	36	15.93	7.90	[0.44; 31.42]	1	0		16	F	OW/OB	в	-0.4	4	1
Jin et al., 2014	10	-49.56	26.51	[-101.51; 2.39]	0	2		20	MF	NAFLD	в	0.2	4	1
Stanhope et al, 2009*	16	-4.00	14.73	[-32.86; 24.86]	0	0		25	MF	OW/OB	в	-0.2	8	2
Random effects model		3.07		[-10.59; 16.72]			-							
Heterogeneity: 12 = 55% [0%; >	×85%], τ ² :	= 78.1339, <i>p</i> = 0.08												
Random effects model		4.25		[-7.68; 16.17]										
Prediction interval		4.20		[-35.31; 43.81]										
Heterogeneity: 1 ² = 88% [80%;	929/1 - ² -	242 9284 - < 0.01		[-55.51, 45.01]										
Random effects model (r = 0.5)							-100 -50 0 50							
Random effects model (r = 0.9)		· ·					Black = Parallel Red = Cross-ove	r.						
Handell encots model (1 - 0.0	a). 2.00 [-1	(a.z.a, 10.0]	r	0.5 = 1 -> significant	effect (0.82) becomes	on-significant (0.5); r 0.99 = 2 -> non sign		becomes s	ignificant (0.99)				
							• • • •			-				

Footnote to Figure G7. * differences in BW change between high and low sugar intake; B = beverages; BMI = body mass index; BW = body weight; CI = confidence interval; E% = energy percentage; F under Sex = females; F under Source = food; Fru = fructose; Glu = glucose; HDL = high-density lipoprotein; IGT = impaired glucose tolerance; LDL = low-density lipoprotein; M = males; MF = males and females; Mix = foods and beverages; N = average sample size per arm; NAFLD = non-alcoholic fatty liver disease; NGT = normal glucose concentration; OB = obese; OW = overweight; r05 and r099 = change in the significance of the effect (0 = no change; 1 = change) when assuming a correlation coefficient of respectively 0.50 and 0.99 (instead of 0.82) when computing the SE of the effect measurement; RoB = risk of bias (tier). Study duration is expressed in weeks.

Figure G.7d: Effect of fructose vs glucose on fasting triglycerides (mg/dL)

Figure G.8: Randomised controlled trials: effect of high vs. low sugar intake on blood pressure

Figure G.8a: Effect of high vs low sugar intake on systolic blood pressure (mmHg)

Study	N	Mean Effect	se Effect	95% CI	r 0.5	r 0.99		Sugar diff (E%)	Sex	Subjects	Sugar	Source	BW*	Duration	RoB
Diet = Isocaloric with neutral energy balance	2						1								
Lewis et al, 2013	13	4.30	2.21	[-0.04; 8.64]	0	2		10	MF	OW/OB	Mix	Mix	0.7	6	2
Black et al, 2006	13	-3.00	1.80	[-8.53; 0.53]	0	2		15	M	BMI<35	Mix	Mix	0.4	6	1
Hallfrisch et al, 1983a* (normoinsulinemic)	12	-3.00	2.02	[-6.97; 0.97]	0	2		15	M	N-I	Fruct	F		5	2
Hallfrisch et al, 1983a* (hyperinsulinemic)	12	-3.00	2.02	[-8.97; 0.97]	0	2		15	M	H-I	Fruct	F		5	2
Lowndes et al, 2014b*	55	4.90	1.27	[2.42; 7.38]	0	0		22	MF	BMI<35	Mix	в	-4.1	10	2
Israel et al, 1983*	24	2.00	1.60	[-1.14; 5.14]	0	2		28	MF	H-I	Mix	F		6	2
Random effects model (r = 0.82)		0.47		[-2.60; 3.55]											
Heterogeneity: $I^2 = 80\%$ [56%; 91%], $\tau^2 = 11.4338$, j	p < 0.01														
Diet = Ad libitum															
Markey et al, 2016	50	1.00	0.98	[-0.91; 2.91]	0	2	- 	10	MF	Non-OB	Mix	Mix	0.1	8	1
Campos et al, 2015	13	3.50	3.26	[-2.89; 9.89]	0	2		18	MF	OW/OB	Mix	в	2.3	12	2
Maersk et al, 2012*	14	7.10	2.76	[1.70; 12.50]	1	0		18	MF	OW/OB	Mix	в	1	24	2
Hernandez-Cordero et al, 2014	120	-1.40	0.29	[-1.97; -0.83]	0	0		20	F	OW/OB	Mix	в	0.5	36	2
Raben et al, 2002*	20	6.90	2.41	[2.17; 11.63]	0	0		23	MF	ow	Mix	Mix	2.6	10	1
Random effects model (r = 0.82)		2.77		[-0.72; 6.26]											
Heterogeneity: $I^2 = 85\%$ [68%; 93%], $\tau^2 = 11.7827$, j	p < 0.01														
Random effects model (r = 0.82)		1.47		[-0.75; 3.68]											
Prediction interval				[-6.26; 9.19]											
Heterogeneity: / ² = 83% [72%; 90%], τ ² = 10.3914,	p < 0.01														
Residual heterogeneity: 12 = 83% [70%; 90%], p < 0							-5 0 5 10 15								
Random effects model (r = 0.5): 1.48 [-1.08; 3.98]						BI	ack = Parallel Red = Cross-over								
Random effects model (r = 0.99): 1.43 [-1.12; 3.98]			r 0.5 =	= 1 -> significant ef	ffect (0.82)		on-significant (0.5); r 0.99 = 2 -> non sign	ificant effect (0.82) be	ecomes si	gnificant (0.99)					

Figure G.8a1: Stratified by type of diet



Study	N	Mean Effect	se Effect	95% CI	r 0.5	r 0.99		Sugar diff (E%)	Sex	Subject	Sugar	Diet	BW*	Weeks	RoB
Source = Beverages															
Campos et al, 2015	13	3.50	3.26	[-2.89; 9.89]	0	2		18	MF	OW/OB	Mix	AL	2.3	12	2
Maersk et al, 2012*	14	7.10	2.76	[1.70; 12.50]	1	0		18	MF	OW/OB	Mix	AL	1	24	2
Hernandez-Cordero et al, 2014	120	-1.40	0.29	[-1.97; -0.83]	0	0		20	F	OW/OB	Mix	AL	0.5	36	2
Lowndes et al, 2014b*	55	4.90	1.27	[2.42; 7.38]	0	0		22	MF	BMI<35	Mix	Eu	-4.1	10	2
Random effects model (r = 0.82)		3.05		[-0.96; 7.06]											
Heterogeneity: $I^2 = 91\%$ [81%; >96%], $\tau^2 = 12.797$	9, p < 0.01														
Source = Foods															
Hallfrisch et al, 1983a* (normoinsulinemic)	12	-3.00	2.02	[-6.97; 0.97]	0	2		15	M	N-I	Fruct	Eu		5	2
Hallfrisch et al, 1983a* (hyperinsulinemic)	12	-3.00	2.02	[-6.97; 0.97]	0	2		15	M	H-I	Fruct	Eu		5	2
Israel et al, 1983*	24	2.00	1.60	[-1.14; 5.14]	0	2		28	MF	H-I	Mix	Eu		6	2
Random effects model (r = 0.82)		-1.14		[-4.58; 2.30]											
Heterogeneity: $I^2 = 63\%$ [0%; >89%], $\tau^2 = 5.7084$,	p = 0.07														
Source = Mixed															
Lewis et al, 2013	13	4.30	2.21	[-0.04; 8.64]	0	2		10	MF	OW/OB	Mix	Eu	0.7	6	2
Markey et al, 2016	50	1.00	0.98	[-0.91; 2.91]	0	2		10	MF	Non-OB	Mix	AL	0.1	8	1
Black et al, 2006	13	-3.00	1.80	[-6.53; 0.53]	0	2		15	M	BMI<35	Mix	Eu	0.4	6	1
Raben et al, 2002*	20	6.90	2.41	[2.17; 11.63]	0	0		23	MF	OW	Mix	AL	2.6	10	1
Random effects model (r = 0.82)		2.04		[-1.98; 6.07]											
Heterogeneity: $I^2 = 77\%$ [37%; >92%], $\tau^2 = 13.387$;	3, p < 0.01														
Random effects model (r = 0.82)		1.47		[-0.75; 3.68]			-								
Prediction interval				[-6.26; 9.19]											
Heterogeneity: I ² = 83% [72%; 90%], τ ² = 10.3914,	p < 0.01														
Random effects model (r = 0.5): 1.46 [-1.06; 3.98]							-5 0 5 10 15								
Random effects model (r = 0.99): 1.43 [-1.12; 3.98	1						ok = Parallel Red = Cross-over								
			r 0.5	= 1 -> significant et	ffect (0.82)	becomes n	on-significant (0.5); r 0.99 = 2 -> non sign	ificant effect (0.82) be	ecomes si	gnificant (0.99)				

Figure G.8a2: Stratified by sugars source

Figure G.8b: Effect of high vs low sugar intake on diastolic blood pressure (mmHg)

Study	N	Mean Effect	se Effect	95% CI	r 0.5	r 0.99		Sugar diff (E%)	Sex	Subjects	Sugar	Source	BW*	Duration	RoB
Diet = Isocaloric with neutral energy balance															
Lewis et al, 2013	13	4.10	1.67	[0.82; 7.38]	1	0		10	MF	OW/OB	Mix	Mix	0.7	6	2
Black et al, 2006	13	0.00	1.20	[-2.35; 2.35]	0	0		15	M	BMI<35	Mix	Mix	0.4	6	1
Hallfrisch et al, 1983a* (normoinsulinemic)	12	-2.00	1.09	[-4.14; 0.14]	0	2		15	M	N-I	Fruct	F		5	2
Hallfrisch et al, 1983a* (hyperinsulinemic)	12	1.00	1.28	[-1.51; 3.51]	0	2		15	M	H-I	Fruct	F		5	2
Lowndes et al, 2014b*	55	0.70	0.95	[-1.16; 2.56]	0	2		22	MF	BMI<35	Mix	в	-4.1	10	2
Israel et al, 1983*	24	3.00	1.29	[0.47; 5.53]	1	0		28	MF	H-I	Mix	F		6	2
Random effects model (r = 0.82)		0.95		[-0.70; 2.60]											
Heterogeneity: $l^2 = 64\%$ [13%; 85%], $\tau^2 = 2.7122$, p	= 0.02														
Diet = Ad libitum															
Markey et al, 2016	50	-1.00	0.68	[-2.33; 0.33]	0	2		10	MF	Non-OB	Mix	Mix	0.1	8	1
Campos et al, 2015	13	3.20	2.13	[-0.97; 7.37]	0	2		18	MF	OW/OB	Mix	в	2.3	12	2
Maersk et al, 2012*	14	6.90	1.99	[3.00; 10.80]	0	0		18	MF	OW/OB	Mix	в	1	24	2
Hernandez-Cordero et al, 2014	120	-0.10	0.81	[-1.68; 1.48]	0	0	-8-	20	F	OW/OB	Mix	в	0.5	36	2
Raben et al, 2002*	20	5.30	2.16	[1.08; 9.52]	0	0		23	MF	ow	Mix	Mix	2.6	10	1
Random effects model (r = 0.82)		2.43		[-0.64; 5.49]											
Heterogeneity: $l^2 = 82\%$ [58%; 92%], $\tau^2 = 9.6755$, p	< 0.01														
Random effects model (r = 0.82)		1.48		[-0.05; 3.00]			-								
Prediction interval				[-3.76; 6.71]											
Heterogeneity: 1 ² = 73% [50%; 85%], z ² = 4.7450, p	< 0.01														
Residual heterogeneity: 1 ² = 75% [53%; 87%], p < 0	.01						-5 0 5 10								
Random effects model (r = 0.5): 1.07 [-0.62; 2.76]						Bla	ok = Parallel Red = Cross-over								
Random effects model (r = 0.99): 1.7 [-0.12; 3.52]			r 0.5	= 1 -> significant ef	fect (0.82)		on-significant (0.5); r 0.99 = 2 -> non sign	nificant effect (0.82) be	ecomes si	gnificant (0.99)					

Figure G.8b1: Stratified by type of diet



Study	N	Mean Effect	se Effect	95% CI	r 0.5	r 0.99		Sugar diff (E%)	Sex	Subject	Sugar	Diet	BW*	Weeks	RoB
Source = Beverages							T								
Campos et al. 2015	13	3.20	2.13	[-0.97; 7.37]	0	2		18	MF	OW/OB	Mix	AL	2.3	12	2
Maersk et al, 2012*	14	6.90	1.99	[3.00; 10.80]	0	0		18	ME	OW/OB	Mix	AL	1	24	2
Hernandez-Cordero et al. 2014	120	-0.10	0.81	[-1.68; 1.48]	0	0		20	F	OW/OB	Mix	AL	0.5	36	2
Lowndes et al, 2014b*	55	0.70	0.95	[-1.16; 2.56]	0	2	- -	22	MF	BMI<35	Mix	Eu	-4.1	10	2
Random effects model (r = 0.82)		2.25		[-0.70; 5.21]											
Heterogeneity: $l^2 = 75\%$ [29%; >91%], $\tau^2 = 6.9185$,	p < 0.01														
Source = Foods															
Hallfrisch et al, 1983a* (normoinsulinemic)	12	-2.00	1.09	[-4.14; 0.14]	0	2		15	м	N-I	Fruct	Eu		5	2
Hallfrisch et al, 1983a* (hyperinsulinemic)	12	1.00	1.28	[-1.51; 3.51]	0	2		15	M	H-I	Fruct	Eu		5	2
Israel et al. 1983*	24	3.00	1.29	[0.47; 5.53]	1	0		28	MF	H-I	Mix	Eu		6	2
Random effects model (r = 0.82)		0.60		[-2.29; 3.49]											
Heterogeneity: $l^2 = 78\%$ [29%; >93%], $\tau^2 = 5.0385$,	p = 0.01														
Source = Mixed															
Lewis et al, 2013	13	4.10	1.67	[0.82; 7.38]	1	0		10	MF	OW/OB	Mix	Eu	0.7	6	2
Markey et al, 2016	50	-1.00	0.68	[-2.33; 0.33]	0	2		10	ME	Non-OB	Mix	AL	0.1	8	1
Black et al, 2006	13	0.00	1.20	[-2.35; 2.35]	0	0		15	M	BMI<35	Mix	Eu	0.4	6	1
Raben et al, 2002*	20	5.30	2.16	[1.08; 9.52]	0	0	T	23	MF	OW	Mix	AL	2.6	10	1
Random effects model (r = 0.82)		1.68		[-1.27; 4.63]											
Heterogeneity: $l^2 = 79\%$ [43%; >92%], $\tau^2 = 6.9868$,	p < 0.01														
Random effects model (r = 0.82)		1.48		[-0.05; 3.00]			-								
Prediction interval				[-3.76; 6.71]											
Heterogeneity: 1 ² = 73% [50%; 85%], τ ² = 4.7450,	p < 0.01														
Random effects model (r = 0.5): 1.07 [-0.62; 2.76]							-5 0 5 10								
Random effects model (r = 0.99): 1.7 [-0.12; 3.52]						в	ack = Parallel Red = Cross-over								
			r 0.5 :	= 1 -> significant ef	fect (0.82)		non-significant (0.5); r 0.99 = 2 -> non sig	nificant effect (0.82) b	ecomes s	gnificant (0.9	9)				

Footnote to Figure G8. * differences in BW change between high and low sugar intake; B = beverages; BMI = body mass index; BW = body weight; CI = confidence interval; E% = energy percentage; F = females; F under Source = food; Fruct = fructose; H-I = hyperinsulinemia; M = males; MF = males and females; Mix under Sugar = sugar mixtures; Mix under Source = foods and beverages; N = average sample size per arm; N-I = normo-insulinemia; OB = obese; OW = overweight; r05 and r099 = change in the significance of the effect (0 = no change; 1 = change) when assuming a correlation coefficient of respectively 0.50 and 0.99 (instead of 0.82) when computing the SE of the effect measurement; RoB = risk of bias (tier). Study duration is expressed in weeks.

Figure G.8b2: Stratified by sugars source

Study Ν Mean Effect se Effect 95% CI r 0.5 r 0.99 Fru-Glu (E%) Subjects BW* Weeks RoB Sex Source Diet = Isocaloric with neutral energy balance Koh et al, 1988 (NGT) 9 -2.00 4.00 [-9.84; 5.84] 0 2 15 MF NGT Mix 2 4 Koh et al, 1988 (IGT) 9 -4.00 1.20 [-8.35; -1.65] 0 0 15 MF IGT Mix 2 4 Random effects model -3.84 [-6.09; -1.58] Heterogeneity: $I^2 = 0\%$, $\tau^2 = 0$, p = 0.63Diet = Isocaloric with positive energy balance Silbernagel et al, 2011 10 -5.00 4.24 [-13.32; 3.32] 0 0 22 MF BMI<35 в -1.5 4 2 Random effects model -5.00 [-13.32; 3.32] Heterogeneity: not applicable Diet = Ad libitum Angelopoulos et al, 2015* 71 2.20 1.02 [0.20; 4.20] 1 0 9 MF BMI<35 в 0.1 10 2 -2.00 2 25 2 Stanhope et al, 2009* 16 1.70 [-5.34; 1.34] 0 MF OW/OB в -0.2 8 0.32 Random effects model [-3.77; 4.41] Heterogeneity: $I^2 = 78\%$ [2%; 95%], $\tau^2 = 6.8475$, p = 0.03Random effects model -1.61 [-4.61; 1.38] Prediction interval [-11.32; 8.10] Heterogeneity: 1² = 77% [44%; 90%], τ² = 6.9732, p < 0.01 -15 -10 -5 0 5 10 Random effects model (r = 0.5): -1.53 [-5.43; 2.38] Random effects model (r = 0.99): -1.77 [-5.11; 1.57] Black = Parallel Red = Cross-over r 0.5 = 1 -> significant effect (0.82) becomes non-significant (0.5); r 0.99 = 2 -> non significant effect (0.82) becomes significant (0.99)

Figure G.9: Randomised controlled trials: effect of fructose vs. glucose on blood pressure

Figure G.9a: Effect of fructose vs glucose on systolic blood pressure (mmHg)

Study	N	Mean Effect	se Effect	95% CI	r 0.5	r 0.99		Fru-Glu (E%)	Sex	Subjects	Source	BW*	Weeks	RoB
Diet = Isocaloric with neutra Koh et al, 1988 (NGT) Koh et al, 1988 (IGT) Random effects model Heterogeneity: $I^2 = 0\%$, $\tau^2 = 0$, p	9 9	-4.00 -4.00 -4.00	1.80 1.20	[-7.53; -0.47] [-6.35; -1.65] [-5.96; -2.04]	1 0	0 0		15 15	MF MF	NGT IGT	Mix Mix		4 4	2 2
Diet = Isocaloric with positiv Silbernagel et al, 2011 Random effects model Heterogeneity: not applicable	ve energ 10	y balance -3.00 -3.00	4.47	[-11.77; 5.77] [-11.77; 5.77]	0	0		22	MF	BMI<35	в	-1.5	4	2
Diet = Ad libitum Angelopoulos et al, 2015* Stanhope et al, 2009* Random effects model Heterogeneity: I ² = 83% [27%; 9	71 16 8%], τ ² =	0.98 -2.00 -0.53 3.8895, p = 0.02	0.90 0.85	[-0.79; 2.75] [-3.67; -0.33] [-3.45; 2.40]	0 1	2 0	*	9 25	MF MF	BMI<35 OW/OB	B B	0.1 -0.2	10 8	2 2
Random effects model Prediction interval Heterogeneity: l^2 = 72% [29%; 8 Random effects model (r = 0.5): Random effects model (r = 0.99)	-1.75 [-4	.52; 1.01]	r 0	[-4.30; 0.13] [-9.40; 5.23] .5 = 1 -> significant 6	effect (0.82		15 -10 -5 0 5 Black = Parallel Red = Cros		becomes s	ignificant (0.99)				

Footnote to Figure G9. * differences in BW change between high and low sugar intake; B = beverages; BMI = body mass index; BW = body weight; CI = confidence interval; E% = energy percentage; Fru = fructose; Glu = glucose; IGT = impaired glucose tolerance; MF = males and females; Mix = foods and beverages; N = average sample size per arm; NGT = normal glucose concentration; OB = obese; OW = overweight; r05 and r099 = change in the significance of the effect (0 = no change; 1 = change) when assuming a correlation coefficient of respectively 0.50 and 0.99 (instead of 0.82) when computing the SE of the effect measurement; ROB = risk of bias (tier). Study duration is expressed in weeks.

Figure G.9b: Effect of fructose vs glucose on diastolic blood pressure (mmHg)

Figure G.10: Randomised controlled trials: effect of high vs. low sugar intake on uric acid (mg/dL)

Study	Ν	Mean Effect	se Effect	95% CI	r 0.5	r 0.99		Sugar diff (E%)	Sex	Subjects	Sugar	Source	BW*	Duration	RoB
Diet = Isocaloric with neutral ener	rgy balar	nce													
Reiser el al., 1989a* (NI - HI)	21	0.54	0.18	[0.19; 0.89]	1	0	-	20	M	NI - HI	Fruct	F		5	2
Lowndes et al, 2014b*	55	-0.20	0.18	[-0.56; 0.16]	0	2	<u>=</u>	22	MF	BMI<35	Mix	в	-4.1	10	2
Israel et al, 1983*	12	0.82	0.27	[0.28; 1.36]	1	0		28	M	H-I	Mix	F	-3.8	6	1
Israel et al, 1983*	12	0.33	0.19	[-0.04; 0.70]	0	2	-	28	F	H-I	Mix	F	0.2	6	1
Reiser et al, 1979a*	19	0.40	0.21	[-0.01; 0.81]	0	2		30	MF	GP	Mix	F	0.5	6	2
Random effects model (r = 0.82)		0.35		[0.03; 0.68]			•								
Heterogeneity: $l^2 = 69\%$ [21%; 88%], τ^2	2 = 0.0918	8, p = 0.01													
Diet = Ad libitum															
Huttunen et al, 1976	40	0.67	0.25	[0.19; 1.15]	0	0		16	MF	GP	Mix	Mix		72	2
Campos et al, 2015	13	-0.05	0.34	[-0.72; 0.62]	0	0		18	MF	OW/OB	Mix	в	2.3	12	1
Maersk et al, 2012*	11	0.68	0.33	[0.03; 1.33]	1	0		18	MF	OW/OB	Mix	в	1	24	2
Random effects model (r = 0.82)		0.47		[0.03; 0.91]			►								
Heterogeneity: $I^2 = 41\% [0\%; 82\%], \tau^2$	= 0.0600	, p = 0.18													
Random effects model (r = 0.82)		0.39		[0.14; 0.64]			•								
Prediction interval				[-0.35; 1.12]											
Heterogeneity: / ² = 59% [11%; 81%], τ ²	² = 0.0733	3, p = 0.02													
Residual heterogeneity: 12 = 63% [17%;	84%]. p	= 0.01					-2 0 2 4								
Random effects model (r = 0.5): 0.39 [(0.09; 0.69	9]					ack = Parallel Red = Cross-over								
Random effects model (r = 0.99): 0.39	[0.09; 0.6	9]	r 0.5 =	1 -> significant e	ffect (0.82)		n-significant (0.5); r 0.99 = 2 -> non signif	icant effect (0.82) be	comes si	gnificant (0.99)					

Figure G.10a: Stratified by type of diet

Study	N	Mean Effect	se Effect	95% CI	r 0.5	r 0.99		Sugar diff (E%)	Sex	Subject	Sugar	Diet	BW*	Weeks	RoB
Source = Beverages							1								
Campos et al, 2015	13	-0.05	0.34	[-0.72; 0.62]	0	0	- + -	18	MF	OW/OB	Mix	AL	2.3	12	1
Maersk et al, 2012*	11	0.68	0.33	[0.03; 1.33]	1	0	-	18	MF	OW/OB	Mix	AL	1	24	2
Lowndes et al, 2014b*	55	-0.20	0.18	[-0.56; 0.16]	0	2		22	MF	BMI<35	Mix	Eu	-4.1	10	2
Random effects model (r = 0.82)		0.10		[-0.42; 0.63]			+								
Heterogeneity: I^2 = 63% [0%; 90%], τ^2	= 0.1360,	p = 0.06													
Source = Foods															
Reiser el al., 1989a* (NI - HI)	21	0.54	0.18	[0.19; 0.89]	1	0	-	20	M	NI - HI	Fruct	Eu		5	2
Israel et al, 1983*	12	0.82	0.27	[0.28; 1.36]	1	0		28	M	H-I	Mix	Eu	-3.8	6	1
Israel et al, 1983*	12	0.33	0.19	[-0.04; 0.70]	0	2		28	F	H-I	Mix	Eu	0.2	6	1
Reiser et al, 1979a*	19	0.40	0.21	[-0.01; 0.81]	0	2		30	MF	GP	Mix	Eu	0.5	6	2
Random effects model (r = 0.82)		0.48		[0.28; 0.69]			•								
Heterogeneity: $I^2 = 0\% [0\%; 81\%], \tau^2 =$	< 0.0001	, p = 0.49													
Source = Mixed															
Huttunen et al, 1976	40	0.67	0.25	[0.19; 1.15]	0	0		16	MF	GP	Mix	AL		72	2
Random effects model (r = 0.82)		0.67		[0.19; 1.15]			-								
Heterogeneity: not applicable															
Random effects model (r = 0.82) Prediction interval		0.39		[0.14; 0.64] [-0.35; 1.12]			<u> </u>								
Heterogeneity: 1 ² = 59% [11%; 81%], τ ² Residual heterogeneity: 1 ² = 37% [0%;							-2 0 2 4								
Random effects model (r = 0.5): 0.39 [0.09; 0.69	9]					ack = Parallel Red = Cross-over								
Random effects model (r = 0.99): 0.39	[0.09; 0.0	al	r 0.5 =	1 -> significant ef	fect (0.82)	becomes no	n-significant (0.5); r 0.99 = 2 -> non sign	ificant effect (0.82) be	comes si	gnificant (0.99	0				

Footnote to Figure G10 a and b * differences in BW change between high and low sugar intake; B = beverages; BMI = body mass index; BW = body weight; CI = confidence interval; E% = energy percentage; F = females; F under Source = foods; Fruc = fructose; GP = general practitioner; HI = hyperinsulinemia; M = males; MF = males and females; Mix = sugar mixtures; N = average sample size per arm; NI = normo-insulinemia; OB = obese; OW = overweight; r05 and r099 = change in the significance of the effect (0 = no change; 1 = change) when assuming a correlation coefficient of respectively 0.50 and 0.99 (instead of 0.82) when computing the SE of the effect measurement; RoB = risk of bias (tier). Study duration is expressed in weeks.

Figure G.10b: Stratified by sugars source



Study	N	Mean Effect	se Effect	95% CI	r 0.5	r 0.99		Fru-Glu (E%)	Sex	Subjects	Source	BW*	Weeks	RoB
Diet = Isocaloric with neutra Koh et al, 1988 (NGT)	al energ	y balance 0.20	0.18	[-0.15; 0.55]	0	2	<u> </u>	15	MF	NGT	Mix		4	2
Koh et al, 1988 (IGT) Random effects model Heterogeneity: / ² = 78% [2%; 95	9	-0.30 -0.06	0.15	[-0.60; 0.00] [-0.55; 0.43]	1	0		15	MF	IGT	Mix		4	2
Diet = Isocaloric with positi Silbernagel et al, 2011 Random effects model Heterogeneity: not applicable	ve ener 10	gy balance 0.20 0.20	0.36	[-0.51; 0.91] [-0.51; 0.91]	0	0		22	MF	BMI<35	В	-1.5	4	1
Diet = Ad libitum Angelopoulos et al, 2015* Stanhope et al, 2009* Random effects model Heterogeneity: 1 ² = 79% [7%; 95	71 15 %], τ ² =	0.06 0.47 0.27 0.0880, p = 0.03	0.14 0.13	[-0.22; 0.34] [0.22; 0.72] [-0.13; 0.67]	0 0	0 0	-	9 25	MF MF	BMI<35 OW/OB	B	0.1 -0.2	10 8	1 2
Random effects model Prediction interval Heterogeneity: $l^2 = 74\%$ [36%; 9 Random effects model ($r = 0.5$): Random effects model ($r = 0.99$	0.14 [-0.	24; 0.51]	r 0.5	[-0.16; 0.40] [-0.84; 1.08]	effect (0.82	2) becomes r	-2 -1 0 1 2 Black = Parallel Red = Cross-over n-significant (0.5); r 0.99 = 2 -> non sign	ificant effect (0.82) I	ecomes :	significant (0.99))			

Footnote to Figure G11 * differences in BW change between high and low sugar intake; B = beverages; BMI = body mass index; BW = body weight; CI = confidence interval; E% = energy percentage; Fru = fructose; Glu = glucose; IGT = impaired glucose tolerance; MF = males and females; Mix = foods and beverages; N = average sample size per arm; NGT = normal glucose concentration; OB = obese; OW = overweight; r05 and r099 = change in the significance of the effect (0 = no change; 1 = change) when assuming a correlation coefficient of respectively 0.50 and 0.99 (instead of 0.82) when computing the SE of the effect measurement; ROB = risk of bias (tier). Study duration is expressed in weeks.

Figure G.11: Randomised controlled trials: effect of fructose vs. glucose on uric acid (mg/dL)