

**Supplementary Table S3** Results from reviews on glycaemic control and weight among different dietary patterns: Low carbohydrate versus control diets difference in HbA1c, fasting blood glucose (FBG), fasting blood insulin (FBI) and body weight

Review dietary characteristics			Outcomes				
First author, year	No. of RCTs	Intervention diets	Control diets	HbA1c	FBG	FBI or non-FBI	Weight (wt.)
		CHO range (% Energy or g/day)	% CHO or % total fat or low calorie - (kcal/day)	Change (%) MD with 95% CI	Change (mmol/L) MD with 95% CI	Change (mU/L) MD with 95% CI	Change (Kg) MD with 95% CI Pooled data
Systematic review with meta-analysis A							
Fan, 2016	10 T2D	LC diets 20-70g/d of CHO (or 20-50% CHO of total energy (E) 1500-1800 kcal/d)	LF diets >30% energy fat (>10% SFA). HC diets (50-60% E from CHO) or usual/ADA diet. (50-60% E from CHO of 1400-1800 kcal/d)	Significantly favours LC diets in 10 studies. -0.3% (-0.51, -0.151), P<0.001	NR	NR	Significantly favours -2.3kg (-3.65, -1.06) P<0.001
Goldenberg, 2021	23 Trials	LC diets 20-50/d of CHO, 70-130g/d, energy restricted	LF diets, iso-caloric	Significantly favours LC diets in 17 studies. 0.5% (- 1.19, -0.27) 0.60, -0.34) P<0.001	No difference, NS in 14 studies -0.7 (- 1.19, -0.27) P=NR	NR	Significantly favours in 18 studies MD - 3.5kg (-5.2, - 1.7) P<0.001
Huntriss, 2018	7 in MA (of 18 studies) T2D	LC diets 20-50g/day of CHO (or 20-50% energy from CHO or <130g/d)	Usual care diets 50-60% energy from CHO	Significantly favours LC diets in 7 studies analysing HbA1c. -0.3% (-0.53, -0.02) P=0.03	NR	NR	NS difference in 10 studies 0.2kg (95% CI - 1.37, 1.92) P=0.7
Jamka, 2020 a	3 in MA (of 4 studies) GMD (T2D)	Paleolithic (paleo) diets 32-52% energy from CHO	HE diets or M diet, 42-52% energy from CHO	No difference, NS in 3 paleo diet studies analysing HbA1c. -0.4% (-0.87, 0.11) P=0.1	No difference, NS -0.3 (-0.87, 0.18) P=0.2	No difference, NS -0.1 mU/L (-0.6, 0.3) P=0.5	No difference, NS in 3 studies. Range of MD -0.3, to - 13kg, P=NR
Korsmo-Haugen, 2019	16 in MA (of 23 studies) T2D	LC diets 20-70g/d of CHO (or 5-40% energy from CHO)	HC diets 52g/d of CHO or 40-60% energy from CHO	Favours, NS in LC diets and HE in 16 studies. MD - 0.09% (-0.17, - 0.01) tested # P=0.01	NR	NR	Favours, NS in 16 (+1) studies. -0.4 kg (-0.91, 0.21) P=0.07

Li, 2021	12 T2D	LC diets 20-50g/d, 70-130g/d of CHO or 20% energy from CHO	LF diets, 25-30% energy from fat, 45-60% energy from CHO	Significantly favours with LC diet. MD -0.4% (95% CI -0.45, -0.24) P<0.00001	NR	NR	Significantly favours -3kg (-4.36, -1.63) P<0.00001
McArdle, 2019	25 T2D	VLCD diets, 20-50g/d to low CHO diets, (LC diet 70-130g/d to moderate CHO diets, 128-232g/d of CHO	LF diets, HC, M diet calorie-restricted diets, Low calorie diets, LGI, or LP diets, or LF-HC: 50-60% energy from CHO	No difference, NS in pooled effect -0.09%, (-0.27, 0.08) P=0.3 VLCD: -0.1% (-0.34, 0.08) P=0.2 LC: -0.5% (-0.75, -0.23) P=0.0002, MC: 0.1% (-0.17, 0.37) P=0.5	NR	NR	No difference, NS -0.1kg (-0.33, 0.08) P=0.2
Meng, 2017	9 T2D	LC diets 20-130g of CHO (or 5-20% energy from CHO)	HC diets or usual diets, 50-60% energy from CHO (or unclear)	Significantly favours HbA1c with LC diets -0.4% (95% CI -0.61, -0.26) P=0	No difference, NS -0.05 (-0.58, 0.47) P=0.8	NR	No difference, NS but favours in subgroup # analysis. WMD -0.9kg (95% CI -0.92, 0.05) P=0.06
Naude, 2014 #	5 include T2D (of 19 studies)	LC diets <45% energy from CHO, various energy restrictions	Wt loss diets >65% energy from CHO, and energy balance	No difference, NS in LC diet subgroup# with T2D. 3-6mo: 0.2% (-0.0, 0.39) 1-2yrs: 0.01%, (-0.28, 0.30) P=NR	NR	NR	NS difference in # T2D. 3-6mo. 5 trials MD 0.82 kg (95% CI -1.25 to 2.9) P=0.4, 1-2 yr. 4 trials MD 0.9kg, (95% CI -2.08, 3.89) P=0.6
Sainsbury, 2018	12 in analysis (of 25 studies) T2D	VLCD and LC diets ≤ 45% energy from CHO, LCD <26% E from CHO. MC diets 26-45% E from CHO	HC diets ≥45% energy from CHO, and LF, HE, ADA, LGI, M Diet or usual diet	Favours, NS reduction at 3mo. in LC, no change in MC. 3mo: -0.2% (-0.33, -0.05) P=0.008. 6mo: -0.2% (-0.31, 0.02) P=0.09. 12mo: -0.09% (-0.21, 0.03) P=0.1	NR	NR	No difference, NS in 9 studies. 6 mo: -0.1kg (95% CI -0.93, 0.65). 10 studies 12 mo: -0.1kg (95% CI -0.93, 0.07) P=NR

Snorgaard, 2017	8 in MA (of 10 studies) T2D	LC diets to moderate CHO diets 14-42% energy from CHO	HC diets 48-55% energy from CHO.	Favours, NS in LC diets lowering HbA1c short term only. 3-6mo. -0.3% (-0.63, -0.06) P=0.02. 12mo. 0.04% (-0.04, 0.13) P=0.29	NR	NR	No difference, NS in 7 studies less than 1 yr: (1.02, -1.03) over 1 yr. studies (1.36, -0.97) P=NR
van Zuuren, 2018	14 in analysis (of 36) T2D	LC diets 20-130g of CHO/d (or 10-40% energy from CHO)	LF diets 45-70% energy from CHO	Favours, NS in LC diets slightly in 14 studies. 16wks: -0.6% (-0.91, -0.12) 0.93, -0.17) 2yrs: 0.4 (-1.22, 0.48) 26wks: -0.3% (-0.50, -0.02) P=0.04. 2yrs: -0.2% (-0.37, -0.41) P=0.9	No difference, NS 16wks: -1.0 (-1.66, -0.28) 26wk: -0.5 (-0.91, -0.12) 2yrs: 0.4 (-1.22, 0.48) P=NR	NR	No difference, NS in 16 studies. 26wks -0.2kg (95% CI -1.65, 1.27) P=NR
Yu, 2020 b	13 T2D	HP diet, >25% energy from protein	HC diet	No difference, NS when data is pooled. MD -0.01% (95% CI -0.11, 0.10) P=0.9	No difference, NS MD -0.1 (95% CI -0.46, 0.19) P=0.43	NR	NR

#### Systematic review with no meta-analysis B

Malaeb, 2019 b	7 RCTs (of 21 studies) T2D	HP diet 40% energy from CHO, 30% protein, 30% fat (21-30% protein consumed)	Control diet or usual diet. 55% energy from CHO, 15%-20% protein, 30% fat	No difference, NS based on 6 of 7 studies for HbA1c (range of MD 0.1% to -1.5% P=NR)	NR	NR	NR
Yamada, 2018	3 T2D	LC diet 70-180g/d energy from CHO (ER 1800 kcal)	HC diet 248g/d (ER 1800 kcal) or ideal body wt. x 25-28 kcal/d	Favours, NS in LC diets short term (range of MD -0.4% to -0.7% P=NR)	NR	NR	NR

*Note. A = Systematic reviews with meta-analysis – HbA1c and wt reduction are based on meta-analysis outcomes. B = Systematic reviews (without meta-analysis) – HbA1c and wt reduction are based on statistical analysis of individual reviews. a = Paleolithic diets. b = High protein diets. d = includes type 1 diabetes (T1D). # = subgroup data. . Abbreviations: CHO = carbohydrate; ER = energy restricted; HE = healthy eating; HC = High carbohydrate; HP = high protein; kcal = kilocalorie (calorie); LC = low carbohydrate; LCMD = Low carbohydrate Mediterranean diet; LF = low fat; LGI = low glycaemic index; LP = low protein; MA = meta-analysis; MC = moderate carbohydrate; MD = mean difference; M diet = Mediterranean diet; NR = not reported; NS = not significant; SD = significant different; T1D = type 1 diabetes; T2D = type 2 diabetes; TE = total energy; VLCD = very low carbohydrate diets; WMD = weighted mean difference; wt. = weight.*