Random, Controlled Trials Comparing Low-Fat and Low-Carb Diets

	Article Title	Journal	Diet	Marcronutrients	Weight Loss (lbs)	Δ HDL Chol. (mg/dL)	Δ LDL Chol. (mg/dL)	Δ Trigs (mg/dL)	Δ Glucose (mg/dL)	Conclusion
1	Weight Loss with a Low-Carbohydrate, Mediterranean, or Low-Fat Diet	NEJM	Low-fat	1500 (w) | 1800 cal (m), 51% carb, 30% fat, 19% pro	6.38	+6.4	-0.05	-2.8	Diabetcis: +12.1	*Mediterranean and low-carbohydrate diets may be effective alternatives to low-fat diets. The more favorable effects on lipids (with the low-carbohydrate diet) and on glycemic control (with the Mediterranean diet) suggest that personal preferences and metabolic considerations might inform individualized tailoring of dietary interventions.*
			Mediterranean	1500 (w) | 1800 (m) cal, 50% carb, 33% fat, 19% pro (total 102%?)	9.68	+6.3	-5.6	-21.8	Diabetcis: -32.8	
			Low-carb	No calorie restriction, 40% carb, 40% fat, 22% pro (total 102%?)	10.34	+8.4	-3.0	-23.7	Diabetcis: +1.2	
2	Comparison of the Atkins, Zone, Ornish, and LEARN Diets for Change in Weight and Related Risk Factors Among Overweight Premenopausal Women	JAMA	Ornish	10% or less fat	5.2	0.0	-3.8	-14.9	-0.8	*...premenopausal overweight and obese women assigned to follow the Atkins diet, which had the lowest carbohydrate intake, lost more weight and experienced more favorable overall metabolic effects at 12 months than women assigned to follow the Zone, Ornish, or LEARN diets.*
			LEARN	55-60% c	4.84	+2.8	+0.6	-14.6	+0.5	
			Zone	40% c/30% f/20% p	3.52	+2.2	0.0	-4.2	-1.6	
			Atkins	20 g/d carbs first 2-3 moths 50 g/day or less for remainder of study	10.34	+4.9	+0.8	-29.3	-1.8	
3	A Low-Carbohydrate as Compared with a Low-Fat Diet in Severe Obesity – 2003	NEJM	Low-fat	30% of calories or less from fat Total calories at a 500 calorie deficit (calorie-restricted)	4.18	-1	+3	-7	All: -2 Diabetics: -5	*Severely obese subjects with a high prevalence of diabetes or the metabolic syndrome lost more weight during six months on a carbohydrate-restricted diet than on a calorie and fat-restricted diet, with a relative improvement in insulin sensitivity and triglyceride levels*
			Low-carb	30 grams carbs or less per day No restriction on fat Protein or calories	12.76	0	+5	-38	All: -11 Diabetics: -26	
4	A low-carbohydrate diet is more effective in reducing body weight than healthy eating in both diabetic and non-diabetic subjects.	Diabet. Med.	Low-fat	Calorie-restricted, mixed diet reco. 40% carb, 39% fat, 18% pro	D: 1.76 ND: 6.16	D: -2.34 ND: +1.08	D: -2.34 ND: +1.08	D: +1.8 ND: -1.8	N/A	*Weight loss was greater in the low-carbohydrate group, with no difference in changes in HbA1c, ketone or lipid levels.* *D: Diabetics, ND: Non-diabetics*
			Low-carb	No calorie restriction, <40 grams carbs reco. 17% carb, 46% fat, 31% pro	D: 17.6 ND: 12.76	D: +1.44 ND: +1.44	D: +4.32 ND: +2.88	D: -10.8 ND: -1.8	N/A	
5	A Low-Carbohydrate, Ketogenic Diet versus a Low-Fat Diet To Treat Obesity and Hyperlipidemia A Randomized, Controlled Trial	Annals of Internal Medicine	Low-fat	<30% fat, 500-1000 calorie deficit (calorie-restricted)	10.56 (FM)	-1.6	-7.4	-27.9	N/A	*Compared with a low-fat diet, a low-carbohydrate diet program had better participant retention and greater weight loss. During active weight loss, serum triglyceride levels decreased more and high-density lipoprotein cholesterol level increased more with the low-carbohydrate diet than with the low-fat diet.*
			Low-carb	<20 g carbs, non-calorie-restricted	20.68 (FM)	+5.5	+1.6	-74.2	N/A	
6	Effects of a Low-Carbohydrate Diet on Weight Loss and Cardiovascular Risk Factors in Overweight Adolescents	J Pediatrics	Low-fat	<40 g fat, 5 servings of starch per day, unlimited fat-free dairy, fruits and vegetables	9.02	+1.8	-25.1	-5.9	N/A	*The LC diet appears to be an effective method for short-term weight loss in overweight adolescents and does not harm the lipid profile.*
			Low-carb	<20 g carbs, no restrictions on protein, fat or calories	21.78	+1.8	+3.8	-48.3	N/A	
7	A Randomized Trial Comparing a Very Low Carbohydrate Diet and a Calorie-Restricted Low Fat Diet on Body Weight and Cardiovascular Risk Factors in Healthy Women	JCEM	Low-fat	55% carb, 15% pro, 30% fat, calorie-restricted	8.58	+4.1	-6.0	+1.75	-4.6	*...a very low carbohydrate diet is more effective than a low fat diet for short-term weight loss and, over 6 months, is not associated with deleterious effects on important cardiovascular risk factors in healthy women.*
			Low-carb	<20 g carbs, non-calorie-restricted 40-60 g carb after 2 wks	18.7	+7.0	-0.86	-35	-9.0	
8	Carbohydrate Restriction has a More Favorable Impact on the Metabolic Syndrome than a Low Fat Diet	Lipids	Low-fat	56% carb, 24% fat, 20% pro	7.7 (FM) 11.44 (BW)	-1	+5	-36	-2	*Despite a threefold higher intake of dietary saturated fat during the CRD, saturated fatty acids in TAG and cholesteryl ester were significantly decreased, as was palmitoleic acid (16:1n-7), an endogenous marker of lipogenesis, compared to subjects consuming the LFD...The results support the use of dietary carbohydrate restriction as an effective approach to improve features of MetS and cardiovascular risk.*
			Low-carb	12% carb, 59% fat, 28% pro	11.88 (FM) 22.22 (BW)	+4	-9	-107	-12	
9	Effects of weight loss from a very-low-carbohydrate diet on endothelial function and markers of cardiovascular disease risk in subjects with abdominal obesity	AJCN	Low-fat	46% carb, 30% fat, 24% pro	14.3	0	-5.4	-5.4	-3.6	*...short-term weight loss with the LC did not impair FMD. We observed beneficial effects on most of the traditional and new CVD disease risk factors measured with both dietary patterns. The overall risk of CVD does not seem to be different for these 2 types of diet.*
			Low-carb	4% carb, 61% fat, 35% pro	17.38	+1.8	-1.8	-9	-3.6	
10	The National Cholesterol Education Program Diet vs a Diet Lower in Carbohydrates and Higher in Protein and Monounsaturated Fat: A Randomized Trial	JAMA	Low-fat	55% carb, 15% pro, 30% fat, 1300 cal (w) or 1600 cal (m)	7.5	-3.8	-6.4	-15.2	N/A	*Compared with the NCEP diet (low-fat), the MLC diet (low carb), which is lower in total carbohydrates but higher in complex carbohydrates, protein, and monounsaturated fat, caused significantly greater weight loss over 12 weeks. There were no significant differences between the groups in blood lipid levels, but favorable changes were observed within the MLC diet group.*
			Low-carb	Phase 1: 10% carb, 62% fat, 28% pro Phase 2: 27% carb, 43% fat, 30% pro Phase 3: 28% carb, 39% fat, 33% pro	13.6	-1.3	-3.9	-42.0	N/A	
11	Low- and high-carbohydrate weight-loss diets have similar effects on mood but not cognitive performance	AJCN	Low-fat	46% carb, 30% fat, 24% pro, 30% caloric deficit	14.52	N/A	N/A	N/A	N/A	*Both dietary patterns significantly reduced body weight and were associated with improvements in mood. There was some evidence for a smaller improvement in cognitive functioning with the LCHF diet with respect to speed of processing, but further studies are required to determine the replicability of this finding.*
			Low-carb	4% carb, 61% fat, 35% pro, 30% caloric deficit	17.6	N/A	N/A	N/A	N/A	

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12	Efficacy and Safety of a High Protein, Low Carbohydrate Diet for Weight Loss in Severely Obese Adolescents	Pediatrics	Low-fat	<30% fat with calorie limit set at 30% lower than maintenance needs	16.06	-2.7	-11.9	-10.5	N/A	*The HPLC diet is a safe and effective option for medically supervised weight loss in severely obese adolescents.*
			Low-carb	<20 g, 2-2.5 g pro/kg ideal body weight, unlimited fat and calories	29.04	-0.8	-6.7	-45.2	N/A	
13	Adiponectin Changes in Relation to the Macronutrient Composition of a Weight-Loss Diet	Obesity	Low-fat	Calorie-restricted: 50% carb, 30% fat, 20% pro	11 (BW) 5.72 (FM)	N/A	N/A	N/A	N/A	*These results confirm that diet-induced loss of weight and body fat is associated with increased adiponectin concentrations. This effect is evident with weight loss of 10% or more, and may be greater with LC diets.*
			Low-carb	No calorie restriction, Atkins protocol, increasing carbs over time: 27% carb, 49% fat, 24% pro	20.02 (BW) 12.1 (FM)	N/A	N/A	N/A	N/A	
14	Short-term effects of severe dietary carbohydrate restriction advice in Type 2 diabetes—a randomized controlled trial	Diabetic Med.	Low-fat	45% carb, 33% fat, 21% pro	2.02	N/A	N/A	-4.5	N/A	*Carbohydrate restriction was an effective method of achieving shortterm weight loss compared with standard advice, but this was at the expense of an increase in relative saturated fat intake.*
			Low-carb	34% carb, 40% fat, 26% pro	7.81	N/A	N/A	-12.06	N/A	
15	Perceived Hunger Is Lower and Weight loss is Greater in Overweight Premenaopausal Women Consuming a Low-Carbohydrate/High-Protein vs High-Carbohydrate/Low-Fat Diet	J Am Diet. Assoc	Low-fat	Calories limited to level to create 750 calorie deficit 60% carb, 22% fat, 18% pro	9.24	N/A	N/A	N/A	N/A	*This perception of less hunger and equivalent restraint with a low-carbohydrate/high-protein diet may explain the greater BW loss compared with the high-carbohydrate/low-fat diet.*
			Low-carb	Atkins protocol: 2 weeks @ <20 g carb, increase carbs by 5 g/day each week after, no energy restriction 12% carb, 61% fat, 26% pro	14.08	N/A	N/A	N/A	N/A	