

Correction to: A Randomized Controlled Trial of a Mini Low-Carbohydrate Diet and an Energy-Controlled Diet Among Japanese Patients With Type 2 Diabetes

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This is to correct the published article, *Journal of Clinical Medicine Research*, 2018;10(3):182-188. DOI:10.14740/jocmr3281w.

Due to the lack of some values in the previous version, Tables 1 and 2 and Figures 3 and 4 are slightly changed. The corrected tables and figures were described below.

In page 185, right paragraph, “However, there was a difference in LDL-cholesterol levels between the two groups ($P = 0.018$).” should be deleted, and Results for Figure 3 and Figure 4 should read “No difference was seen in the HbA1c of patients in either group at week 12, as compared with the baseline (mini-LCD: $P = 0.40$; ECD: $P = 0.10$) (Fig. 3). Patients in the mini-LCD group showed a significant difference in body weight at week 12, as compared with the baseline ($P = 0.03$); however, no significant difference was seen in patients in the ECD group ($P = 0.50$) (Fig. 4)”.

In page 187, left paragraph, the results about protein intake should read “There was a tendency to show the difference

in protein intake between the two groups from the baseline and week 12 (mini-LCD: 3.7 ± 4.6 ; ECD: -1.9 ± 3.5 ; $P = 0.34$)”.

In page 187, right paragraph, the Discussion about propensity score matching should read “A difference in HbA1c between the two groups or from week 0 to 12 after propensity score matching showed no significant changes.”, and the following description should be deleted: “However, an increase in protein intake was observed in the mini-LCD group from the baseline to week 12 ($P = 0.045$)” should be deleted.

In page 188, left paragraph, the Discussion about body weight changes should read “Previous reports have demonstrated that low carbohydrate diets are associated with weight loss in obese patients [4, 13, 14]. The present study also demonstrated that the mini-LCD diet tended to decrease the body weight.”

The authors declare that these minor changes do not affect the conclusion of this study solely.

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Table 1. Baseline Characteristics Before and After Propensity Score Matching

	Before propensity score matching			After propensity score matching		
	Mini low-carbohydrate diet group	Energy-controlled diet group	P value	Mini low-carbohydrate diet group	Energy-controlled diet group	P value
Number	25	23		12	12	
Men/women (n)	8/17	7/16	0.91	3/9	4/8	1.00
Age (years)	64.4 ± 2.5	67.0 ± 1.7	0.41	70.9 ± 1.8	67.0 ± 2.9	0.27
Diabetes duration (years)	11.4 ± 2.0	11.1 ± 1.7	0.92	14.6 ± 3.7	9.3 ± 1.9	0.22
Body weight (kg)	67.1 ± 2.8	58.2 ± 1.9	0.01	58.3 ± 2.8	61.2 ± 3.2	0.51
BMI (kg/m ²)	26.3 ± 0.8	22.9 ± 0.7	0.003	23.7 ± 0.9	24.2 ± 1.2	0.76
Waist circumference (cm)	88.5 ± 1.8	81.2 ± 1.8	0.006	82.6 ± 2.5	83.9 ± 3.0	0.74
HbA1c (%)	7.0 ± 0.1	7.0 ± 0.1	0.87	6.9 ± 0.2	7.1 ± 0.2	0.32
HDL-cholesterol (mg/dL)	60.6 ± 3.5	60.3 ± 3.3	0.96	66.3 ± 6.1	53.1 ± 2.2	0.06
LDL-cholesterol (mg/dL)	113.6 ± 5.5	115.0 ± 5.6	0.86	108.9 ± 7.7	115.8 ± 7.2	0.52
Triglycerides (mg/dL)	157.5 ± 20.9	127.3 ± 15.8	0.26	122.8 ± 19.3	136.3 ± 18.3	0.62
Basal energy expenditure (kcal/day)	1,336.1 ± 48.3	1,266.7 ± 31.1	0.24	1,236.6 ± 42.0	1,288.0 ± 50.1	0.44
Fat mass (%)	32.9 ± 1.7	27.9 ± 1.8	0.05	30.6 ± 2.0	29.5 ± 2.7	0.76
Diet treatment only/diet-treatment-plus-oral hypoglycemic agents	9/16	10/13	0.60	5/7	6/6	0.68
DTSQ total score	27.8 ± 1.0	30.9 ± 0.8	0.014	28.7 ± 1.5	30.7 ± 1.1	0.29

Data are expressed as means ± standard error. P values between two groups were determined using the *t*-test. One-to-one nearest-neighbor matching with replacement based on propensity score was performed. To test the approach and maximize the number of matching, the process was repeated without a replacement option, using calipers and logit of the propensity score. Calipers of width equal to 0.25 of the standard deviation of the logit score. BMI: body mass index; HbA1c: glycosylated hemoglobin; HDL: high-density lipoprotein; LDL: low-density lipoprotein.

Table 2. Treatment Time Course Before and After Propensity Score Matching

	Before propensity score matching					After propensity score matching					P value
	Baseline	4 weeks	8 weeks	12 weeks	Change from the baseline	Baseline	4 weeks	8 weeks	12 weeks	Change from the baseline	
HbA1c (%)	Mimi-LCD ECD	7.0±0.1 7.0±0.1	6.8±0.1 6.9±0.1	6.8±0.1 6.8±0.1	6.7±0.1 6.8±0.1	-0.2±0.08 -0.2±0.07	6.9±0.2 7.1±0.2	6.8±0.1 6.9±0.2	6.8±0.2 6.9±0.2	-0.09±0.1 -0.2±0.1	0.44
Glycated albumin (%)	Mimi-LCD ECD	17.9±0.4 18.6±0.5	17.6±0.5 18.3±0.4	17.6±0.5 18.3±0.4	17.6±0.5 18.3±0.4	-0.3±0.3 -0.3±0.2	18.2±0.6 19.3±0.7	18.1±0.5 18.9±0.5	18.1±0.5 18.9±0.5	-0.08±0.4 -0.4±0.4	0.59
1.5 AG	Mimi-LCD ECD	10.5±1.6 9.3±1.2	10.5±1.5 10.8±1.4	10.5±1.5 10.8±1.4	10.5±1.5 10.8±1.4	0.04±0.4 1.5±0.6	9.1±1.6 8.3±1.4	8.9±1.7 9.7±1.4	8.9±1.7 9.7±1.4	-0.3±0.3 1.4±0.8	0.07
Body weight (kg)	Mimi-LCD ECD	67.1±2.8 58.2±1.9	66.3±2.9 57.9±1.9	66.2±2.8 57.9±1.9	65.7±2.8 57.9±2.0	-1.4±0.4 -0.3±0.3	58.3±2.8 61.2±3.2	57.9±2.9 60.6±3.3	57.6±2.8 60.8±3.5	-0.7±0.3 -0.4±0.6	0.63
Energy intake (kcal/day)	Mimi-LCD	1,646.2±72.9	1,557.7±65.0	1,480.1±71.2	1,528.0±64.3	-118.2±62.6	1,743.3±103.0	1,609.7±105.4	1,679.5±76.5	-63.8±85.9	0.90
Carbohydrate intake (g/day)	ECD	1,666.4±52.5	1,657.2±56.7	1,693.1±70.8	1,622.9±56.2	-43.5±52.1	1,645.5±40.4	1,596.5±55.1	1,594.5±62.0	-51.1±58.9	0.32
	Mimi-LCD	208.1±10.9 (50.7±1.7%)	200.2±10.2 (51.7±1.9%)	182.0±9.6 (49.4±1.4%)	178.8±7.8 (47.2±1.2%)	-29.3±10.6	215.3±13.1 (50.2±2.6%)	198.0±13.8 (49.5±1.9%)	196.9±9.4 (47.2±1.7%)	-18.4±12.9	
Protein intake (g/day)	ECD	223.0±8.9 (53.6±1.5%)	225.2±7.4 (55.0±1.8%)	237.4±10.3 (56.3±1.3%)	216.0±9.5 (53.6±1.9%)	-7.0±9.6	209.9±9.2 (51.2±2.3%)	225.4±8.1 (56.7±1.5%)	209.1±10.8 (52.6±2.1%)	-0.9±11.6	0.34
	Mimi-LCD	71.5±3.1 (17.8±0.8%)	69.7±4.2 (18.0±0.9%)	67.7±3.7 (18.5±0.7%)	74.1±3.3 (19.5±0.6%)	2.6±3.1	75.6±4.8 (17.7±1.2%)	72.4±4.8 (18.4±1.2%)	79.3±4.1 (19.0±0.8%)	3.7±4.6	
Fat intake (g/day)	ECD	69.7±3.1 (16.8±0.5%)	69.7±4.3 (16.7±0.7%)	65.4±3.5 (15.5±0.6%)	69.1±2.8 (17.2±0.6%)	-0.6±3.2	68.8±2.9 (16.7±0.6%)	65.2±4.5 (15.3±0.5%)	66.9±3.0 (16.9±0.8%)	-1.9±3.5	0.24
	Mimi-LCD	50.4±3.2 (27.9±1.5%)	51.4±3.4 (29.8±1.7%)	51.0±3.2 (31.1±1.4%)	53.5±3.0 (31.5±1.3%)	3.1±2.8	52.2±4.9 (26.9±1.8%)	49.2±4.0 (27.3±1.6%)	55.1±5.0 (30.9±2.1%)	5.7±3.6	
LDL-C (mg/dL)	ECD	52.2±3.5 (28.0±1.5%)	50.4±3.5 (27.1±1.4%)	52.1±3.4 (31.1±1.4%)	52.4±3.8 (28.7±1.7%)	0.2±4.7	55.3±5.1 (30.0±2.4%)	48.1±3.4 (27.0±1.4%)	51.5±4.0 (29.1±1.9%)	-3.8±7.1	0.41
	Mimi-LCD	113.6±5.5	114.5±6.5	118.8±6.4	107.6±4.9	-6.0±4.3	108.9±7.7	113.0±7.1	102.1±5.0	-6.8±7.8	
HDL-C (mg/dL)	ECD	115.0±5.6	113.8±5.1	114.5±7.4	115.7±7.9	0.7±4.9	115.8±7.2	114.7±12.5	118.9±13.0	3.2±9.1	0.02
	Mimi-LCD	60.6±3.5	60.1±3.2	60.4±2.9	58.8±3.5	-1.7±1.9	66.3±6.1	65.2±4.5	61.1±4.7	-5.2±1.9	
TG (mg/dL)	ECD	60.3±3.3	59.7±2.9	58.8±3.1	60.4±3.2	0.04±1.2	53.1±2.2	52.2±2.9	54.1±2.8	1.0±1.6	0.62
	Mimi-LCD	157.5±20.9	153.9±18.7	144.8±18.4	156.1±21.1	-1.4±13.6	122.8±19.3	126.8±15.6	149.2±25.4	26.3±19.9	
Ketones (µmol/L)	ECD	127.3±15.8	129.3±16.3	135.2±20.4	133.6±17.7	6.3±14.3	136.3±18.3	158.1±33.7	148.1±26.0	11.8±21.4	0.99
	Mimi-LCD	71.4±9.6	71.4±9.6	71.4±9.6	71.4±9.6	0.0±0.0	71.4±9.6	71.4±9.6	71.4±9.6	0.0±0.0	
DTSQ total	ECD	62.3±10.0	62.3±10.0	62.3±10.0	62.3±10.0	0.0±0.0	62.3±10.0	62.3±10.0	62.3±10.0	0.0±0.0	0.47
	Mimi-LCD	27.8±1.0	27.8±1.0	27.8±1.0	27.8±1.0	0.0±0.0	27.8±1.0	27.8±1.0	27.8±1.0	0.0±0.0	
DTSQ Q2	ECD	30.9±0.8	30.9±0.8	30.9±0.8	30.9±0.8	0.0±0.0	30.9±0.8	30.9±0.8	30.9±0.8	0.0±0.0	0.86
	Mimi-LCD	3.0±0.4	3.0±0.4	3.0±0.4	3.0±0.4	0.0±0.0	3.0±0.4	3.0±0.4	3.0±0.4	0.0±0.0	
DTSQ Q3	ECD	2.9±0.4	2.9±0.4	2.9±0.4	2.9±0.4	0.0±0.0	2.9±0.4	2.9±0.4	2.9±0.4	0.0±0.0	0.41
	Mimi-LCD	1.5±0.2	1.5±0.2	1.5±0.2	1.5±0.2	0.0±0.0	1.5±0.2	1.5±0.2	1.5±0.2	0.0±0.0	
Waist circumference (cm)	ECD	1.4±0.2	1.4±0.2	1.4±0.2	1.4±0.2	0.0±0.0	1.4±0.2	1.4±0.2	1.4±0.2	0.0±0.0	0.55
	Mimi-LCD	88.5±1.8	88.5±1.8	88.5±1.8	88.5±1.8	0.0±0.0	88.5±1.8	88.5±1.8	88.5±1.8	0.0±0.0	
Basal energy expenditure (kcal/day)	ECD	81.2±1.8	81.2±1.8	81.2±1.8	81.2±1.8	0.0±0.0	81.2±1.8	81.2±1.8	81.2±1.8	0.0±0.0	0.83
	Mimi-LCD	1,336.1±48.3	1,340.4±48.3	1,340.4±48.3	1,340.4±48.3	4.3±3.1	1,236.6±42.0	1,240.6±40.9	1,240.6±40.9	4.0±3.9	
Fat mass (%)	ECD	1,266.7±31.1	1,270.4±30.5	1,270.4±30.5	1,270.4±30.5	3.6±3.4	1,288.0±50.1	1,290.6±49.6	1,290.6±49.6	2.6±5.2	0.98
	Mimi-LCD	32.9±1.7	31.5±1.7	31.5±1.7	31.5±1.7	-1.4±0.4	30.6±2.0	29.4±1.9	29.4±1.9	-1.2±0.5	
Muscle mass (kg)	ECD	27.9±1.8	27.0±1.8	27.0±1.8	27.0±1.8	-0.9±0.3	29.5±2.7	28.4±2.8	28.4±2.8	-1.2±0.5	0.88
	Mimi-LCD	24.4±1.3	24.5±1.3	24.5±1.3	24.5±1.3	0.07±0.09	21.6±1.2	21.7±1.1	21.7±1.1	0.04±0.1	
	ECD	22.4±0.9	22.5±0.9	22.5±0.9	22.5±0.9	0.07±0.1	23.0±1.4	23.0±1.4	23.0±1.4	0.008±0.2	

Data are expressed as means ± standard error. P values between two groups were determined using the t-test. Chi-squared test was used for categorical variables. Multiple imputations were used to adjust for age, sex, body weight, HbA1c, basal energy expenditure, waist circumference, and height. The percentages of nutrient energy per daily energy intake are also shown before and after propensity score matching. Mini-LCD: mini low-carbohydrate diet; ECD: energy-restricted diet; HbA1c: glycosylated hemoglobin; 1.5-AG: 1.5-anhydroglucitol; LDL-C: low-density lipoprotein cholesterol; HDL-C: high-density lipoprotein cholesterol; TG: triglyceride; DT SQ: Diabetes Treatment Satisfaction Questionnaire; Q2: question 2; Q3: question 3.

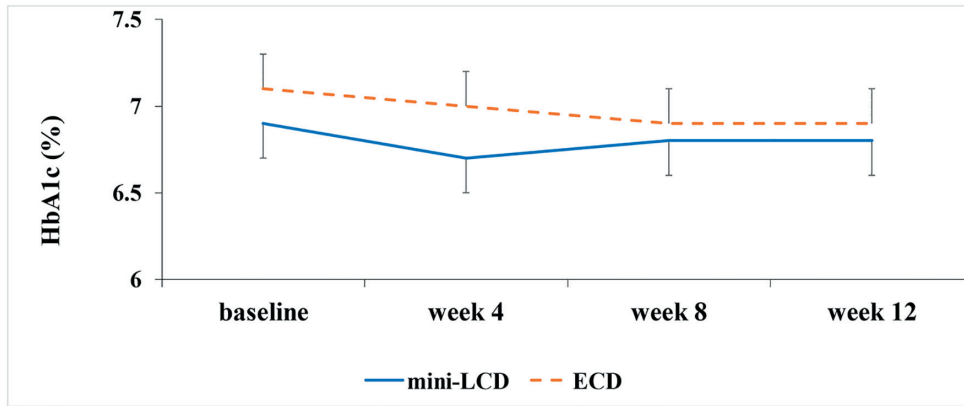


Figure 3. Change in HbA1c (%). Mini-LCD: mini low-carbohydrate diet; ECD: energy-controlled diet; HbA1c: glycosylated hemoglobin.

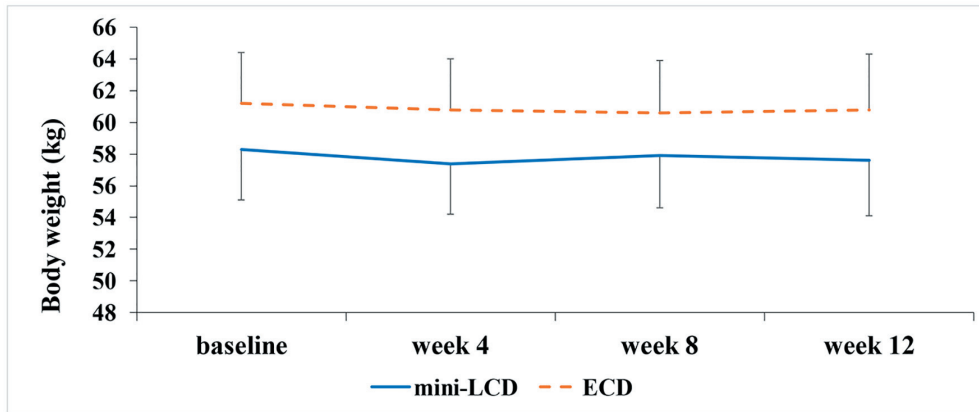


Figure 4. Change in body weight (kg). Mini-LCD: mini low-carbohydrate diet; ECD: energy-controlled diet.