



Baseline characteristics

	Began the study*			Completed week 24**		
	All (438)	Low fructose Diet (212)	Standard diet (226)	All (239)	Low fructose diet(121)	Standard diet (118)
Age (years)	47.2±8.6	46.3±8.4	48.0±8.7	47.9±8.6	47.5±8.0	48.2±9.1
Gender (women) (%)	293 (66.9)	141 (66.5)	152 (67.3)	152 (63.6)	79 (61.9)	73 (65.3)
Height (cm)	164.9±9.5	165.1 ±9.5	164.8±9.5	164.5±9.9	164.8±10.2	164.3±9.5
Weight (kg)	94.4±13.5	95.0±13.6	93.9±13.4	92.9±13.1	92.8±12.7	93.1±13.6
BMI	34.6±2.9	34.8±3.0	34.4±2.8	34.2±2.8	34.3±2.8	34.2±2.7
Waist circumference (cm)	108.2±9.2	108.6±9.1	107.7±9.3	107.7±8.9	107.9±8.7	107.7±9.3
Waist circumference/h eight ratio	0.656±0.050	0.659±0.051	0.654±0.050	0.656±0.050	0.657±0.050	0.654±0.050
Hypertension (%)	163 (37.2)	75 (35.4)	88 (38.9)	90 (37.7)	45 (37.2)	45 (38.1)
Hypercholesterolo	180 (41.1)	95 (42)	85 (40.1)	105 (43.9)	52 (43.0)	53 (44.9)

emia (%)						
Familial antecedent of diabetes (%)	222 (51.3)	116(54.7)	106 (48)	136 (56.9)	68 (56.2)	68 (57.6)
<i>Smoking status (%)</i>						
- Current smoker	52 (11.9)	18 (8.5)	34 (15.0)	23 (9.6)	3 (2.5)	20 (16.9)
- Former smoker	93 (21.2)	47 (22.2)	46 (20.4)	50 (20.9)	28 (23.1)	22 (18.6)
- Never smoked	293 (66.9)	147 (69.3)	146 (64.6)	166 (69.5)	90 (74.4)	76 (64.4)
<i>Marital status (%)</i>						
-Married or cohabitating	339 (77.4)	166 (78.3)	173 (76.5)	189 (79.1)	96 (79.3)	93 (78.8)
-Divorced/separated	28 (6.4)	15 (7.1)	13 (5.8)	13(5.4)	10 (8.3)	3 (2.5)
-Widowed	13 (3.0)	7 (3.3)	6 (2.6)	9 (3.8)	6 (5)	3 (2.5)
-Single	58 (13.2)	24 (11.3)	34 (15.1)	28 (11.7)	9 (7.4)	19 (16.1)

<i>Social class (%)</i>						
-Low	152 (34.7)	78 (36.8)	74 (32.7)	95 (39.7)	50 (38.8)	45 (42)
-Medium	153 (34.9)	78 (36.8)	75 (33.2)	76 (31.8)	37 (31.1)	39 (33.6)
-High	126 (28.8)	54 (25.5)	72 (31.9)	64 (26.8)	32 (29.6)	32 (27.6)
-Information not provided	7 (1.6)	2 (0.9)	5 (2.2)	4 (1.7)	2 (1.5)	2 (1.6)
<i>Blood pressure mmHg</i>						
- Systolic	128.3±15.7	129.1±15.2	127.6±16.1	130.2±15.6	130.1±15.9	130.3±15.3
- Diastolic	81.4±9.8	82.4±10.4	80.5±9.1	82.2±9.8	82.6±10.7	81.7±8.6
Fasting glucose mg/dL	91.6±12.1	89.0±11.6	94.0±12.1	92.1±11.9	89.8±11.5	94.4±11.9
Fasting insulin (μU/ml)	13.5±8.9	13.6±10.1	13.4±7.7	12.8±7.1	12.5±5.9	13.3±8.1
HOMA-2IR	0.29±0.20	0.29±0.21	0.29±0.18	0.28±0.16	0.27±0.13	0.29±0.19
75 gr OGTT glucose mg/dL	114.2 ± 37.4	111.3± 37.9	117.0 ± 37.2	116.2 ± 41.5	115.1 ±43.2	118.6 ± 39.7
75 gr OGTT	87.0 ± 72.7	83.0 ± 67.2	90.9 ± 77.5	90.8 ± 76.7	85.1 ± 71.5	96.7 ± 81.7

insulin (μ U/ml)						
Cholesterol mg/dL						
- Total	192.3 \pm 35.6	192.7 \pm 35.0	192.0 \pm 36.3	189.9 \pm 34.9	189.6 \pm 32.4	189.9 \pm 37.9
- LDL	115.7 \pm 30.0	116.8 \pm 31.0	114.7 \pm 29.2	113.6 \pm 29.6	112.0 \pm 29.5	114.9 \pm 30.3
- HDL	48.5 \pm 11.9	48.1 \pm 11.4	49.0 \pm 12.4	48.5 \pm 10.9	49.3 \pm 11.2	47.6 \pm 10.6
Triglycerides mg/dL	140.2 \pm 75.9	138.2 \pm 72.4	142.1 \pm 79.1	140.5 \pm 72.8	139.6 \pm 72.4	141.5 \pm 73.8
<i>Physical activity</i> <i>kcal/day</i>						
- Previous 6 months	353.8 \pm 32.2	342.7 \pm 589.0	364.2 \pm 671.4	375 \pm 748	368.1 \pm 721.2	383.1 \pm 777.1
- Previous week	581.5 \pm 670.7	607.2 \pm 663.1	557.3 \pm 678.3	577 \pm 668	603.4 \pm 716.0	550.7 \pm 617.2

Quantitative variables shown as mean \pm standard deviation.

* Between Low fructose and Standard diet in 'Began the study': Age, $p=0.034$. Glucose, $p<0.001$, Diastolic blood pressure, $p=0.041$.

** Between Low fructose and Standard diets in 'completed week 24': Glucose, $p=0.002$. Smoking status, $p=0.001$. Marital status, $p=0.034$ (Comparing married or cohabitant vs all other categories, $p=0.53$).

Nutritional values at the start of the study for those who completed week 24.

	Low fructose diet (n=121)	Standard diet (n=118)
kcal/day	1900.5 \pm 515.3	1841.3 \pm 518.2
Proteins	173.1 \pm 38.9	177.4 \pm 35.1
Fats	344.9 \pm 80.3	338.7 \pm 76.7
SFA	97.9 \pm 23.7	98.00 \pm 28.9
MUFA	132.3 \pm 32.1	126.9 \pm 31.1
PUFA	48.1 \pm 17.2	48.3 \pm 17.7
Carbohydrates	498.2 \pm 67.6	491.9 \pm 75.4
Starch	254.8 \pm 58.4	238.8 \pm 65.8
Lactose	35.1 \pm 19.8	39.0 \pm 25.8
Total galactose	20.1 \pm 10.8	22.0 \pm 12.7
Free galactose	1.9 \pm 1.8	1.7 \pm 1.6
Sucrose	111.4 \pm 42.2	109.7 \pm 44.8
Sucrose in natural foods	25.2 \pm 16.0	27.7 \pm 17.9
Sucrose in industrial foods	86.2 \pm 44.1	82.0 \pm 45.8
Total fructose	102.5 \pm 32.8	104.1 \pm 41.3
Free fructose	47.6 \pm 29.1	50.2 \pm 34.9
Total fructose in natural foods	45.4 \pm 33.6	52.2 \pm 41.3
Total fructose in industrial foods	57.1 \pm 26.7	51.9 \pm 29.4
Free fructose in natural foods	33.1 \pm 28.4	38.4 \pm 36.1

Free fructose in industrial foods	14.5 ± 14.1	11.8 ± 15.4
Total glucose	90.0 ± 27.3	89.3 ± 30.9
Free glucose	38.3 ± 20.7	37.6 ± 20.3
Total glucose in natural foods	32.6 ± 23.3	36.2 ± 24.1
Free glucose in natural foods	23.4 ± 19.6	25.7 ± 19.4
Total glucose in industrial foods	57.3 ± 25.2	53.1 ± 27.0
Free glucose in industrial foods	14.9 ± 12.2	12.0 ± 11.9
Fiber*	11.1 ± 6.5	10.6 ± 3.4

Mean nutritional density of daily intakes ± SD. *Grams per 1000 kcal.

SFA: saturated fatty acids; MUFA: monounsaturated fatty acids; PUFA: polyunsaturated fatty acids.

Primary and secondary outcomes. Week 24-week 0.

	Low fructose diet (n=121)			Standard diet (n=118)			Differences between diets (LFD-SD)
	Week 0	Week 24	Difference (24 – 0)	Week 0	Week 24	Difference (24 – 0)	
Fasting glucose (mg/dL)	89.8 ±11.5	85.2 ±10.9	-4.6	94.4 ±11.9	92.4 ±11.5	-2.0	-2.7
Fasting insulin (μU/mL)	12.5 ±5.9	11.0 ±5.8	-1.6	13.3 ±8.1	11.7 ±7.4	-1.6	0.0
HOMA-2IR	0.2727 ±0.1297	0.2306 ±0.1296	-0.0421	0.2966 ±0.1920	0.2590 ±0.1692	-0.0376	-0.0045
BMI	34.3 ±2.8	31.9 ±3.3	-2.4	34.2 ±2.7	32.2 ±3.0	-2.0	-0.400
Waist circumference (cm)	107.9 ±8.7	100.9±10.3	-7.0	107.7 ±9.3	102.0 ±11.8	-5.7	-1.304
Waist circumference/height ratio	0.66 ±0.05	0.62 ±0.06	-0.04	0.65 ±0.05	0.62 ±0.07	-0.03	-0.01
Weight (kg)	92.8 ±12.7	86.3 ±13.5	-6.5	93.1 ±13.6	87.6 ±13.3	-5.5	-1.0
Fasting total cholesterol (mg/dL)	189.6 ±32.4	187.6 ±32.2	-1.9	189.9 ±37.9	187.1 ±34.7	-2.9	0.9
Fasting HDL (mg/dL)	49.3 ±11.2	50.3 ±11.4	1.0	47.6 ±10.6	48.7±11.8	1.1	0.1
Fasting LDL (mg/dL)	112.0 ±29.5	112.3 ±29.4	0.3	114.9 ±30.3	112.4 ±28.3	-2.5	2.8
Fasting Triglycerides (mg/dL)	139.6 ±72.4	128.4 ±73.9	-11.1	141.5 ±73.8	129.6 ±70.1	-11.9	0.8
Systolic blood pressure (mmHg)	130.1 ± 15.9	124.5 ± 13.6	-5.6	130.3 ± 15.3	126.1 ± 13.9	-4.1	-1.5
Diastolic blood pressure (mmHg)	82.6 ± 10.7	80.4 ± 9.1	-2.2	81.7 ± 8.6	79.2 ± 9.4	-2.5	0.3

Mean \pm SD

Primary and secondary outcomes. Week 48-week 24.

	Low fructose diet (n=76)			Standard diet (n=77)			Differences between diets (LFD-SD)
	Week 24	Week 48	Difference (48 – 24)	Week 24	Week 48	Difference (48 – 24)	
Fasting glucose (mg/dL)	85.08±9.2	93.2 ±10.1	8.1	92.8 ±12.3	94.3±11.2	1.4	6.7
Fasting insulin (μU/mL)	11.2±6.1	10.3 ± 4.8	-0.9	11.3 ± 7.9	13.0 ± 10.1	1.7	-2.6
HOMA-2IR	0.234±0.136	0.228±0.104	-0.006	0.251 ±0.178	0.288 ±0.231	0.038	-0.044
BMI	31.9 ±3.2	32.1 ±3.1	0.2	32.4 ± 3.1	32.0 ± 3.4	0.6	-0.4
Waist circumference (cm)	100.3 ± 10.1	100.3 ±9.5	0.0	103.2±9.4	104.3± 9.0	1.16	-1.16
Waist circumference/height ratio	0.614±0.057	0.615±0.053	0.001	0.626±0.052	0.633 ±0.052	0.007	-0.006
Weight (kg)	85.8 ± 13.4	86.2 ±12.8	0.4	88.4 ±13.5	89.9 ±14.1	1.5	-1.1
Fasting total cholesterol (mg/dL)	187.8 ±33.3	199.8±34.0	12.0	184.8 ±32.2	194.5 ±36.5	10.2	2.2
Fasting HDL (mg/dL)	49.6 ± 11.7	52.5 ± 13.0	3.1	48.4 ±11.6	50.9 ± 12.9	2.4	0.7
Fasting LDL (mg/dL)	111.5 ± 30.6	119.1 ± 31.6	7.6	110.7 ± 22.3	116.7 ±31.8	6.0	1.6
Fasting Triglycerides (mg/dL)	137.0 ±83.4	130.7 ± 70.6	-6.3	126.1 ± 59.6	131.5 ± 78.0	5.4	-11.7
Systolic blood pressure (mmHg)	124.0± 14.2	123.0 ± 14.1	-1	125.2 ± 14.7	126.3 ± 14.7	1.1	-2.1
Diastolic blood pressure (mmHg)	80.3 ± 9.9	77.8 ± 9.5	-2.5	79.1 ± 9.3	81.2 ± 13.4	2.1	-4.6

Mean ± SD

Adverse events

Only 5 adverse events were observed, all in the Low fructose diet group: 3 participants reported constipation, 1 hypotension, and 1 general weakness. All events were transitory, and all 5 participants completed the study. No adverse events were reported in the Standard diet group.