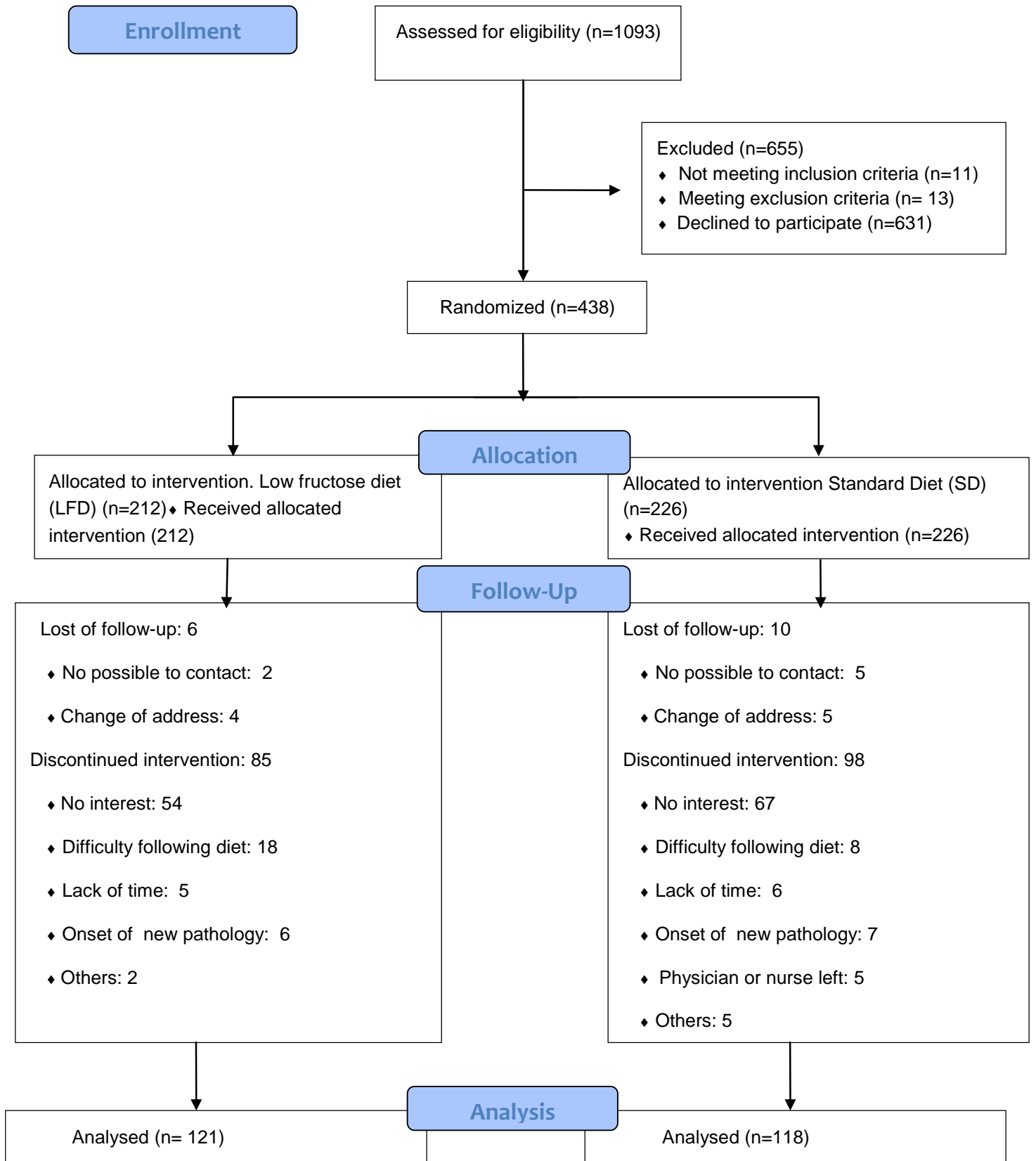


Participant flow



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	107.5±9.0
Waist circumference/height ratio	0.656±0.050	0.659±0.051	0.654±0.050	0.656±0.050	0.657±0.050	0.653±0.047
Hypertension (%)	163 (37.2)	75 (35.4)	88 (38.9)	90 (37.7)	45 (37.2)	45 (38.1)
Hypercholesterolemia	180 (41.1)	95 (42)	85 (40.1)	105 (43.9)	52 (43.0)	53 (44.9)

lemia (%)						
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)	P
kcal/day	1900.5 ± 515.3	1841.3 ± 518	0.377
Proteins	173.1 ± 38.9	177.4 ± 35.1	0.371
Fats	344.9 ± 80.3	338.7 ± 76.7	0.542
SFA	97.9 ± 23.7	98.00 ± 28.9	0.980
MUFA	132.3 ± 32.1	126.9 ± 31.1	0.184
PUFA	48.1 ± 17.2	48.3 ± 17.7	0.931
Carbohydrates	498.2 ± 67.6	491.9 ± 75.4	0.495
Starch	254.8 ± 58.4	238.8 ± 65.8	0.048
Lactose	35.1 ± 19.8	39.0 ± 25.8	0.189
Total galactose	20.1 ± 10.8	22.0 ± 12.7	0.207
Free galactose	1.9 ± 1.8	1.7 ± 1.6	0.567
Sucrose	111.4 ± 42.2	109.7 ± 44.8	0.769
Sucrose in natural foods	25.2 ± 16.0	27.7 ± 17.9	0.247
Sucrose in industrial foods	86.2 ± 44.1	82.0 ± 45.8	0,470
Total fructose	102.5 ± 32.8	104.1 ± 41.3	0.739
Free fructose	47.6 ± 29.1	50.2 ± 34.9	0.536
Total fructose in natural foods	45.4 ± 33.6	52.2 ± 41.3	0.163
Total fructose in industrial foods	57.1 ± 26.7	51.9 ± 29.4	0.155
Free fructose in natural	33.1 ± 28.4	38.4 ± 36.1	0.211

foods			
Free fructose in industrial foods	14.5 ± 14.1	11.8 ± 15.4	0.158
Total glucose	90.0 ± 27.3	89.3 ± 30.9	0.854
Free glucose	38.3 ± 20.7	37.6 ± 20.3	0.801
Total glucose in natural foods	32.6 ± 23.3	36.2 ± 24.1	0.246
Free glucose in natural foods	23.4 ± 19.6	25.7 ± 19.4	0.375
Total glucose in industrial foods	57.3 ± 25.2	53.1 ± 27.0	0.215
Free glucose in industrial foods	14.9 ± 12.2	12.0 ± 11.9	0.064
Fiber*	11.1 ± 6.5	10.6 ± 3.4	0.418

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 outcome measures: Week 24-week 0.

	Low fructose diet (LFD) (n=121)			Standard diet (SD)(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	-2.6
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	107.5±9.0	102.8±9.3	-4.8	- 2.2
Waist circumference/height ratio	0.66 ±0.05	0.62 ±0.06	-0.04	0.65±0.05	0.62±0.05	-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	-4.2	-1.4
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 outcome measures: Week 48-week 24.

	Low fructose diet (n=77)			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	-2.644
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	103.3±9.4	104.5± 9.1	1.2	-1.2
Waist circumference/height ratio	0.614±0.056	0.614±0.053	0.0	0.628±0.053	0.635±0.053	0.007	-0.007
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 \pm 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.