

Molecular remodeling of adipose tissue is associated with metabolic recovery after weight loss surgery

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Supplementary Material

Table S1. Participants characteristics

	Preoperative							Postoperative						
	SG	RYGB	BPD-DS	P-value	SG vs RYGB	SG vs BPD-DS	RYGB vs BPD-DS	SG	RYGB	BPD-DS	P-value	SG vs RYGB	SG vs BPD-DS	RYGB vs BPD-DS
N (male)	9 (5)	5 (3)	7 (2)	0.5										
Age (years)	53.4 ± 8.1	55.7 ± 7.8	47.8 ± 7.1	0.4	0.9	0.4	0.2							
Height (cm)	168.6 ± 8.6	166.4 ± 9.7	167.1 ± 8.9	0.7	0.9	0.9	1.0							
Body weight (kg)	123.5 ± 18	106 ± 9.1	139.8 ± 15.3	0.01	0.1	0.1	0.004	90.8 ± 12.8	71.5 ± 10.1	81.4 ± 10.0	0.02	0.02	0.3	0.3
BMI (kg/m ²)	43.3 ± 3.8	38.4 ± 2.8	50.2 ± 5.5	0.005	0.1	0.01	0.0004	31.9 ± 3.5	25.8 ± 2.5	29.3 ± 4.1	0.02	0.02	0.3	0.2
ΔBMI								-11.4 ± 3.1	-12.6 ± 2.6	-20.9 ± -2.9	0.0001	0.7	0.00001	0.0004
%TWL								26.2 ± 6.5	31.9 ± 6.4	41.7 ± 4.6	0.0003	0.2	0.0002	0.03
%EWL								56.7 ± 14.8	80.6 ± 16.1	78.6 ± 15.1	0.008	0.03	0.03	1.0
Neck circ. (cm)	44.7 ± 2	43.6 ± 3.8	45.1 ± 3.3	0.4	0.8	1.0	0.7	39.7 ± 2.6	36.8 ± 2.6	35.2 ± 2.8	0.01	0.2	0.01	0.6
Waist circ. (cm)	138.7 ± 9.3	125.9 ± 5.2	147.9 ± 9.8	0.002	0.04	0.1	0.001	111.7 ± 8.6	93.4 ± 5.5	104.1 ± 8.5	0.006	0.002	0.2	0.1
Fat mass (kg)	59.4 ± 13.2	47.9 ± 7.8	78.3 ± 7.5	0.003	0.1	0.006	0.0003	30.6 ± 11.2	17.2 ± 5.1	26.8 ± 9.1	0.1	0.1	0.7	0.2
Fat free mass (kg)	65.6 ± 10.8	60.8 ± 11.7	66.1 ± 6.2	0.2	0.7	1.0	0.6	58.5 ± 10.7	54.7 ± 12.2	56.3 ± 5.1	0.4	0.8	0.9	1.0
Adipocyte size (µm)	86.1 ± 7.4	84.4 ± 10.8	88.8 ± 5.1	0.5	0.9	0.8	0.6	70.1 ± 5.3	55.3 ± 5.1	58.5 ± 7.9	0.0002	0.001	0.006	0.7
SBP	136 ± 13.2	139.8 ± 26.6	143.1 ± 16.5	0.8	0.9	0.7	0.9	128.9 ± 14.2	142.2 ± 29.2	129.9 ± 12.3	0.5	0.4	1.0	0.5
DBP	81.9 ± 4.5	81.6 ± 10.7	82.7 ± 6.8	1.0	1.0	1.0	1.0	76.6 ± 11.8	82.2 ± 16.9	74.3 ± 8.8	0.4	0.7	0.9	0.5

SG, sleeve gastrectomy. RYGB, Roux-en-Y gastric bypass. BPD-DS, biliopancreatic diversion with duodenal switch. N, number of participants. BMI, body mass index. ΔBMI, delta BMI, %TWL, percentage of total body weight loss, %EWL, percentage of excess body weight loss. Circ, circumference. SBP and DBP, systolic and diastolic blood pressure, respectively. P-values are obtained from one-way ANOVA adjusted by age, sex and BMI. Post-hoc Tukey test was used for multiple comparisons among surgery group

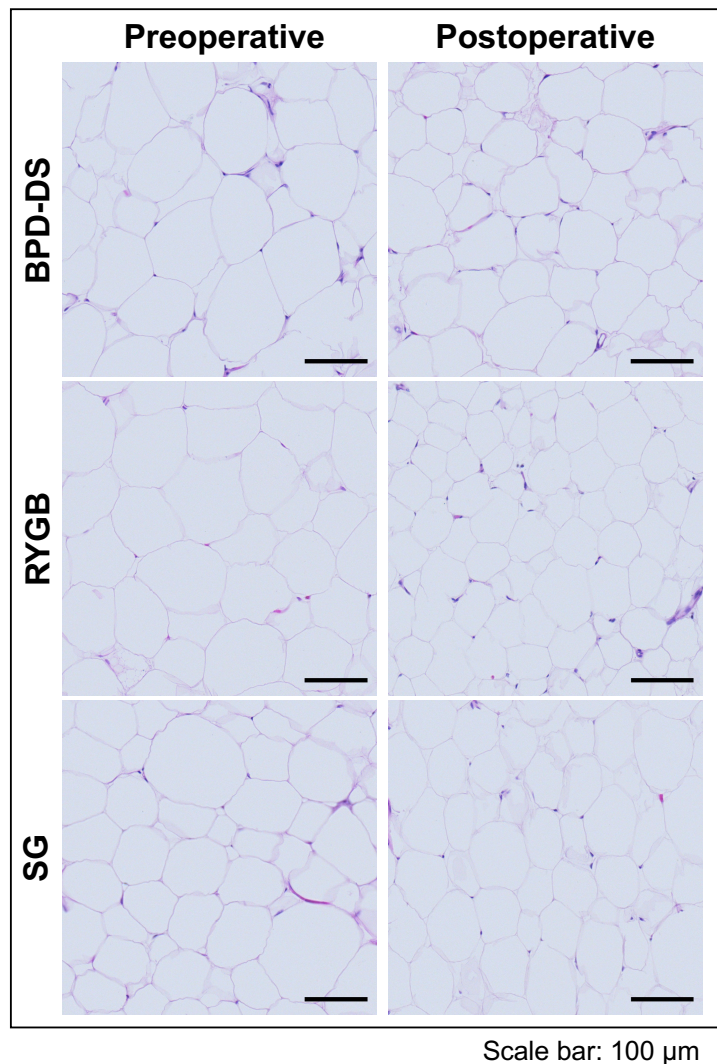


Figure S1. Subcutaneous adipose tissue morphology before and after the bariatric surgery. Micrographs were taken from histological sections of subcutaneous adipose tissue biopsies obtained during surgery (preoperative) and 12 months after (postoperative) and stained with hematoxylin/eosin. Preoperative and postoperative images shown were taken from the same participant. All the representative images shown were taken from women. The mean adipocyte sizes \pm standard deviation of each participant are given below. From left to right and top to bottom: biliopancreatic diversion with duodenal switch (BPD-DS, 88.3 ± 22.6 vs 55.9 ± 15.9), Roux-en-Y gastric bypass (RYGB, 84.9 ± 19.8 vs 59.5 ± 13.9) and sleeve gastrectomy (SG, 82.4 ± 20.7 vs 69.9 ± 13.8). All images were taken with a light microscope at 20x magnification.