

**Table S1.** Pre-surgery characteristics of LABS-3 participants included vs. excluded from analysis.

	No. (%) unless otherwise indicated		<i>p</i> <sup>b</sup>
	Analysis sample N=165 <sup>a</sup>	Excluded N=34 <sup>a</sup>	
Sex			.37
Male	30(18.2)	4(11.8)	
Female	135(81.8)	30(88.2)	
Age, years			.18
median (quartiles)	46(37, 54)	43(38,48)	
range	21-68	24-62	
Race			.90
White	153(92.7)	31(93.9)	
Black	11(6.7)	2(6.1)	
Other	1(0.6)	0(0.0)	
Hispanic ethnicity			
No	158(95.8)	31(91.2)	
Yes	7(4.2)	3(8.8)	.27
Married/ living as married			.49
No	60(38.7)	11(32.4)	
Yes	95(61.3)	23(67.6)	
Education			.99
High school or less	27(17.5)	6(17.6)	
Some post high school education	66(42.9)	15(44.1)	
College degree or higher	61(39.6)	13(38.2)	
Employed			.71
No	46(29.7)	9(26.5)	
Yes	109(70.3)	25(73.5)	
Household income			.80
Less than \$25,000	26(16.7)	6(19.4)	
\$25,000-\$49,000	48(30.8)	6(19.4)	
\$50,000-\$74,999	38(24.4)	9(29.0)	
\$75,000-\$99,999	22(14.1)	5(16.1)	
\$100,000 or more	22(14.1)	5(16.1)	
Body Mass Index, kg/m <sup>2</sup>			.70
median (quartiles)	44.8(42.1, 49.0)	45.5(40.4, 51.6)	
range	33.5-76.0	33.2-64.0	
Any psychiatric disorder			.74
No	112(69.6)	22(66.7)	
Yes	49(30.4)	11(33.3)	
Any mood disorder			.61
No	144(87.8)	30(90.9)	
Yes	20(12.2)	3(9.1)	
Any anxiety disorder			.38
No	135(82.8)	26(76.5)	
Yes	28(17.2)	8(23.5)	
Any schizophrenia /other psychotic disorder			.65
No	164(99.4)	34(100.0)	
Yes	1(0.6)	0(0.0)	

	No. (%) unless otherwise indicated		<i>p</i> <sup>b</sup>
	Analysis sample N=165 <sup>a</sup>	Excluded N=34 <sup>a</sup>	
Any substance use disorder			.52
No	161(98.8)	34(100.0)	
Yes	2(1.2)	0(0.0)	
Any somatoform disorder			.52
No	162(98.8)	33(100.0)	
Yes	2(1.2)	0(0.0)	
Any eating disorder (without EDNOS)			.37
No	152(92.7)	32(97.0)	
Yes	12(7.3)	1(3.0)	
Adjustment disorder			.21
No	163(99.4)	32(97.0)	
Yes	1(0.6)	1(3.0)	
Other DSM-IV Axis disorder			.52
No	162(98.8)	33(100.0)	
Yes	2(1.2)	0(0.0)	
Any psychiatric medication			.62
No	92(59.0)	21(63.6)	
Yes	64(41.0)	12(36.4)	
Anti-depressant medication			.31
No	94(60.3)	23(69.7)	
Yes	62(39.7)	10(30.3)	
Anti-anxiety medication			.10
No	144(92.3)	32(100.0)	
Yes	12(7.7)	0(0.0)	
Other psychiatric medication			.054
No	150(96.2)	29(87.9)	
Yes	6(3.8)	4(12.1)	

EDNOS= Eating Disorder Not Otherwise Specified; DSM-IV = Diagnostic and Statistical Manual of Mental Disorders-IV  
<sup>a</sup>The number of participants across categories may not sum to the total number of participants because of missing data.

<sup>b</sup>Chi square test for dichotomous variables; Wilcoxon rank sum test for continuous variables.

**Table S2.** Risk of mood and anxiety disorders at 2 and 3 years post-surgery.

	Post-surgery status					
	Any mood disorder			Any anxiety disorder		
	N	RR (95%CI)	p	N	RR (95%CI)	p
Pre-surgery disorder of specified outcome		<sup>a</sup>	.002		<sup>b</sup>	<.001
Age, per 10 years	163	<sup>a</sup>	.86	163	<sup>b</sup>	.35
Pre-surgery disorder*Age interaction		<sup>a</sup>	.015		<sup>b</sup>	.007
Pre-surgery disorder of specified outcome (ref. = no lifetime/no current) by age	89			112		
Yes lifetime/no current	55			23		
At 25%tile age (37)		53.86(5.13-565.91)			0.98(0.11-9.10)	
At median age (46)		12.82(2.01-81.84)			1.04(0.18-6.08)	
At 75%tile age (54)		3.58(0.59-21.81)			1.10(0.23-5.33)	
Yes lifetime/yes current	19			28		
At 25%tile age (37)		230.43(24.41-2174.94)			12.34(3.79-40.13)	
At median age (46)		54.77(11.07-271.02)			5.48(1.99-15.13)	
At 75%tile age (54)		15.27(3.36-69.33)			2.67(0.87-8.13)	
Age, per 10 years by psychiatric status	163			163		
No lifetime/no current		3.01(1.15-7.88)			1.53(0.89-2.63)	
Yes lifetime/no current		0.61(0.34-1.08)			1.64(0.84-3.20)	
Yes lifetime/yes current		0.61(0.32-1.18)			0.62(0.41-0.94)	
Gender						
Males	30	Ref.	-	30	Ref.	-
Females	133	1.38(0.40-4.75)	.61	133	1.05(0.37-2.97)	.93
Race						
Non-white	12	Ref.	-	12	Ref.	-
White	151	0.40(0.17-0.95)	.037	151	3.11(0.25-38.68)	.37
Pre-surgery BMI, per 5 kg/m <sup>2</sup>	163	0.96(0.74-1.24)	.76	163	0.95(0.74-1.22)	.66
Surgical procedure				12		
LAGB	66	Ref.	-	66	Ref.	-
RYGB/Sleeve	97	0.72(0.13-4.17)	.71	97	1.17(0.42-3.24)	.76
% weight loss, per 5 %	163	0.96(0.73-1.26)	.77	163	0.96(0.84-1.09)	.54
Time point						
2 years	163	Ref.	-	163	Ref.	-
3 years	163	1.63(0.86-3.10)	.13	163	0.58(0.33-1.03)	.061

<sup>a</sup> Pre-surgery mood disorder has an significant interaction with age.

<sup>b</sup> Pre-surgery anxiety disorder has an significant interaction with age.

**Table S3.** Independent associations\* between pre-surgery psychiatric status and pre- to post-surgery change in weight over three years.

	% weight change		
	N	$\beta$ coefficient (95%CI)	p
<b>Any mood disorder</b> (ref. = no lifetime/no current)	87		.71
Yes lifetime/no current	55	1.2(-2.5-4.9)	
Yes lifetime/yes current	18	2.0(-3.4-7.3)	
<b>Any anxiety disorder</b> (ref. = no lifetime/no current)	110		.19
Yes lifetime/no current	22	-0.3(-5.3-4.6)	
Yes lifetime/yes current	28	-4.2(-8.9-0.5)	
<b>Any eating disorder</b> (ref. = no lifetime/no current)	135		.99
Yes lifetime/no current	13	-0.4(-6.5-5.7)	
Yes lifetime/yes current	12	-0.3(-6.4-5.8)	
<b>Any substance use disorder</b> (ref. = no lifetime**)	105		
Yes lifetime	55	-2.4(-5.8-1.0)	.16

\*A linear mixed model included the four psychiatric variables described in the table with adjustment for site, age, sex, race, pre-surgery BMI, and surgical procedure (n=160).

\*\*Current substance use disorder at time of surgery was too rare to model.