

SUPPLEMENTARY DATA

Supplementary Table 1. Baseline demographic, anthropomorphic, and co-morbid conditions of the LABS-2 subjects by type 2 diabetes status with complete diabetes prevalence data at baseline and for at least one follow-up visit.

Characteristics	No Diabetes (n=1241)		Diabetes (n=627)		P-value
	n	% or median (25th, 75th quartiles)	n	% or median (25th, 75th quartiles)	
Age (years)					<0.001
<30	124	10	13	2.1	
30-39	342	27.6	86	13.7	
40-49	348	28	165	26.3	
50-59	315	25.4	233	37.2	
≥60	112	9	130	20.7	
Female					<0.001
No	215	17.3	182	29	
Yes	1026	82.7	445	71	
Race					0.16
White	1090	88.7	533	85.7	
Black	107	8.7	66	10.6	
Other	32	2.6	23	3.7	
Hispanic ethnicity					0.96
No	1181	95.2	597	95.2	
Yes	60	4.8	30	4.8	
Education					0.067
High school only	259	21.9	150	25.2	
Some college	461	39.1	246	41.3	
College degree	460	40	200	33.6	
Married					0.97
No	418	35.5	212	35.6	
Yes	760	64.5	384	64.4	
BMI (kg/m ²)					0.009
<40	169	13.6	104	16.6	
40- <50	711	57.3	314	50.1	
50- <60	295	23.8	159	25.4	

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Characteristics	No Diabetes (n=1241)		Diabetes (n=627)		P-value
	n	% or median (25th, 75th quartiles)	n	% or median (25th, 75th quartiles)	
≥60	66	5.3	50	8	
% Body fat	1089	51.3 (48.7, 68.2)	514	50.3 (46.6, 53.8)	<0.001
Waist circumference (cm)	1174	128.5 (119.4, 139.0)	590	136.1 (124.7, 147.0)	<0.001
Neck circumference (cm)	1179	41.0 (38.7, 44.1)	592	43.7 (40.2, 47.7)	<0.001
Length of time with DM (years)	--	--	302	7 (3, 12)	--
Glucose (mmol/L)	1074	5.27 (4.88, 5.72)	528	6.88 (5.74, 8.77)	<0.001
Insulin (pmol/L)	1079	123.6 (84.7, 184.7)	529	163.9 (103.5, 270.9)	<0.001
C-peptide (nmol/L)	1071	1.23 (0.96, 1.57)	527	1.30 (0.88, 1.71)	0.64
Proinsulin (pM/L)	1065	18.3 (12.1, 30.1)	524	31.2 (16.6, 56.6)	<0.001
Proinsulin/insulin ratio	1064	0.155 (0.105, 0.214)	523	0.201 (0.111, 0.341)	<0.001
HbA1C (%)	1234	5.4 (5.1, 5.7)	620	6.8 (6.1, 7.8)	<0.001
(mmol/M)		36 (32, 39)	620	51 (43, 62)	
HOMA %S	1073	43.6 (29.4, 63.3)	518	30.6 (19.0, 48.4)	<0.001
HOMA %B	1073	153.3 (115.6, 196.4)	518	108.9 (67.9, 169.2)	<0.001
AST (μkat/L)	1241	0.45 (0.37, 0.57)	626	0.47 (0.38, 0.63)	0.01
ALT (μkat/L)	1241	0.47 (0.35, 0.67)	626	0.52 (0.37, 0.37)	0.005
Liver size					<0.001
Normal	663	54.1	239	38.7	
Large	508	41.5	322	52.1	
Extremely large	54	4.4	57	9.2	
Free fatty acids (mmol/L)	1071	0.72 (0.57, 0.92)	527	0.72 (0.55, 0.91)	0.29
Leptin (μg/L)	1064	59.9 (45.6, 75.5)	524	52.4 (38.0, 69.7)	<0.001
Current smoking					0.94
No	1214	97.8	613	97.8	
Yes	27	2.2	14	2.2	
Abnormal kidney function					<0.001
No	1175	94.8	521	83.5	

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Characteristics	No Diabetes (n=1241)		Diabetes (n=627)		P-value
	n	% or median (25th, 75th quartiles)	n	% or median (25th, 75th quartiles)	
Yes	64	5.2	103	16.5	
Sleep apnea					<0.001
No	637	51.3	233	37.2	
Yes	604	48.7	393	62.8	
C-PAP					<0.001
No	745	60.3	278	44.6	
Yes	490	39.7	345	55.4	
Hypertension					<0.001
No	504	41.5	86	14	
Yes	709	58.4	530	86	
Any anti-hypertension medications					<0.001
No	670	54.1	108	17.3	
Yes	568	45.9	516	82.7	
Any anti-DM medication					<0.001
No	1220	98.3	66	10.5	
Yes	21	1.7	561	89.5	
Insulin medication					--
No	--	--	431	72.2	
Yes	--	--	166	27.8	
Dyslipidemia					<0.001
No	496	46.2	91	17.3	
Yes	577	53.8	435	82.7	
Anti-hyperlipidemic medication					<0.001
No	1013	82	245	39.4	
Yes	222	18	377	60.6	
Surgery type					0.007
Laparoscopic gastric band	338	27.2	140	22.3	

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Characteristics	No Diabetes (n=1241)		Diabetes (n=627)		P-value
	n	% or median (25th, 75th quartiles)	n	% or median (25th, 75th quartiles)	
Roux-n-Y Gastric Bypass	838	67.5	466	74.3	
Gastric sleeve, Biliopancreatic Diversion with Duodenal Switch and Banded Gastric Bypass	65	5.2	21	3.3	

HOMA %S: Homeostasis Model Assessment insulin sensitivity. HOMA %B: Homeostasis Model Assessment beta cell function.

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Supplementary Table 2. Type 2 diabetes mellitus prevalence, incidence, and remission and 95% confidence intervals from baseline to three years of follow-up after bariatric surgery in the Longitudinal Assessment of Bariatric Surgery (LABS) 2 study.

	No.	Baseline	Year 1	Year 2	Year 3
Prevalence (%)	1868	33.6 (31.3-35.9)	13.1 (11.6-14.8)	12.9 (11.4-14.6)	14.6 (12.9-16.4)
Remission: (%)					
All surgeries	627		62.2 (58.1-66.1)	63.2 (59.2-67.1)	60.2 (56.0-64.3)
RYGBP	466		71.0 (66.4-75.2)	71.6 (67.0-75.7)	68.7 (63.9-73.2)
% Partial			22%	25%	30%
% Complete			78%	75%	70%
LAGB	140		29.9 (22.4-38.6)	33.7 (25.8-42.8)	30.2 (22.5-39.2)
% Partial (n)			47%	29%	46%
% Complete (n)			53%	71%	54%
Other	21		82.5 (55.6-94.6)	75.4 (49.0-90.7)	69.8 (42.8-87.7)
Incidence (%)					
All surgeries	1241		0.4 (0.2-1.1)	1.0 (0.5-1.8)	1.7 (1.0-2.8)
RYGBP	838		0.4 (0.1-1.2)	0.3 (0.1-1.3)	0.8 (0.3-2.0)
LAGB	338		0.8 (0.2-2.8)	2.5 (1.2-5.2)	3.4 (1.8-6.4)
Use of diabetes medications (% (n))					
RYGBP	466				
Diabetes meds and HbA1c < 6.5% (48 mmol/M)			7.3% (34)	5.8% (27)	4.3% (20)
Diabetes meds and HbA1c < 5.7% (39 mmol/M)			5.4% (25)	4.1% (19)	2.4% (11)
LAGB	140				
Diabetes meds and HbA1c < 6.5% (48 mmol/M)			20% (28)	12% (17)	14% (20)
Diabetes meds and HbA1c < 5.7% (39 mmol/M)			11% (16)	6.4% (9)	8.6% (12)

RYGBP: Roux-n-Y Gastric Bypass. LAGB: Laparoscopic Gastric Band. The incident analysis (new since baseline) was restricted to participants without diabetes at baseline and the improvement and the remission analyses were restricted to those with diabetes at baseline. Prevalent or incident diabetes was defined as a Hemoglobin A1c (HbA1c) \geq 6.5% (48 mmol/M) (or if HbA1c not available, a fasting glucose $>$ 6.9 mmol/L) or use of at least one diabetes medication. Remission of diabetes was defined as no diabetes medication and HbA1c $<$ 6.5% (48 mmol/M), or if HbA1c not available, a fasting glucose \leq 6.9 mmol/L. Partial remission defined as HbA1c between 5.7 - 6.5% (39 - 48 mmol/M), or if HbA1c not available, a fasting glucose between 5.6 - 6.9 mmol/L. Complete remission defined as HbA1c $<$ 5.7 % (39 mmol/M), or if HbA1c not available, a fasting glucose $<$ 5.6 mmol/L. Other surgery included sleeve gastrectomy, biliopancreatic diversion

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with duodenal switch, and banded gastric bypass. Incidence rates for available, then a fasting glucose subjects undergoing other surgical types could not be accurately estimated given the low number of participants (n=65).

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Supplementary Table 3. Baseline demographic, anthropomorphic, and co-morbid conditions of the LABS-2 subjects in subjects achieving diabetes remission.

	Diabetes Remission	<i>P</i> -value
n	424	
Age (years)		<0.001
<30	69.2 (9)	
30-39	80.2 (69)	
40-49	76.4 (126)	
50-59	60.5 (141)	
≥60	60.7 (79)	
Sex		0.13
Male	63.2 (115)	
Female	69.4 (309)	
Race		0.001
White	67.3 (359)	
Black	80.3 (53)	
Other	39.1 (9)	
Ethnicity		0.91
Hispanic	66.6 (20)	
Non-Hispanic	67.7 (404)	
Education level		0.70
≤ High School	65.3 (98)	
> High School	67.0 (299)	

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	Diabetes Remission	<i>P</i> -value
n	424	
Married		0.02
No	72.6 (154)	
Yes	63.3 (243)	
Current Smoking		0.04
No	67.0 (411)	
Yes	92.9 (13)	
BMI (kg/m ²)		
Male		0.003
<40	60.7 (17)	
40-<50	51.6 (47)	
50-<60	81.6 (40)	
60+	78.6 (11)	
Female		0.27
<40	60.5 (46)	
40-<50	71.7 (160)	
50-<60	69.1 (76)	
60+	75.0 (27)	
% Body fat*		
Male		<0.001
<37.8	37.8 (14)	
37.8-<43.5	62.2 (23)	

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	Diabetes Remission	<i>P</i> -value
n	424	
43.5-<49.1	55.0 (22)	
49.1+	84.2 (32)	
Female		0.04
<49.2	59.6 (53)	
49.2-<51.5	69.2 (63)	
51.5-<54.4	69.2 (63)	
54.4+	79.1 (72)	
Waist circumference (cm)		
Male		0.03
<137.6	48.8 (21)	
137.6-<146.9	55.8 (24)	
146.9-<156.3	62.8 (27)	
156.3+	79.1 (34)	
Female		0.25
<122.0	63.5 (66)	
122.0-<131.2	66.7 (70)	
131.2-<141.5	76.0 (79)	
141.5+	69.5 (73)	
Neck circumference (cm)*		
Male		0.37
<47.0	63.2 (24)	

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	Diabetes Remission	<i>P</i> -value
n	424	
47.0-<49.0	52.1 (25)	
49.0-<51.1	62.8 (27)	
51.1+	69.8 (30)	
Female		0.23
<39.3	66.3 (69)	
39.3-<41.9	72.1 (75)	
41.9-<44.5	74.8 (80)	
44.5+	62.9 (66)	
Length of time with diabetes (years)		<0.001
<5	88.3 (83)	
5-<10	67.0 (65)	
10+	38.7 (43)	
Insulin use		<0.001
No	77.4 (325)	
Yes	41.2 (73)	
Number of non-insulin diabetes medications		0.004
0	69.7 (85)	
1	72.1 (202)	
2	58.6 (85)	

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	Diabetes Remission	<i>P</i> -value
n	424	
≥3	52.0 (26)	
Glucose (mmol/L)*		0.02
<5.74	76.5 (101)	
5.74-<6.88	67.9 (89)	
6.88-<8.77	63.8 (83)	
8.77+	59.3 (80)	
Insulin (pmol/L)*		0.12
<103.5	64.4 (85)	
103.5-<163.9	70.4 (93)	
163.9-<270.9	72.7 (96)	
270.9+	59.4 (79)	
C-peptide (nmol/L)*		<0.001
<0.88	34.1 (45)	
0.88-<1.30	71.2 (94)	
1.30-<1.71	79.5 (105)	
1.71+	82.6 (109)	
Proinsulin (pM/L)*		<0.001
<16.6	47.7 (62)	
16.6-<31.2	68.2 (90)	
31.2-<56.65	77.9 (102)	
56.65+	73.3 (96)	

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	Diabetes Remission	<i>P</i> -value
n	424	
Proinsulin/insulin ratio*		<0.001
<0.111	41.2 (54)	
0.111-<0.201	78.6 (103)	
0.201-<0.341	75.4 (98)	
0.341+	71.8 (94)	
Free fatty acids (mmol/L)*		0.16
<0.55	62.0 (80)	
0.55-<0.715	68.9 (93)	
0.715-<0.91	62.8 (81)	
0.91+	73.3 (99)	
Leptin (µg/L)*		0.94
<38.0	65.1 (84)	
38.0-<52.4	66.9 (87)	
52.4-<69.7	66.4 (89)	
69.7+	68.7 (90)	
HOMA %S*		0.20
<19.0	61.2 (79)	
19.0-<30.5	73.6 (92)	
30.5-<48.4	68.7 (92)	
48.4+	66.2 (86)	
HOMA %B*		0.02

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	Diabetes Remission	<i>P</i> -value
n	424	
<67.9	59.7 (77)	
67.9-<108.9	62.3 (81)	
108.9-<169.2	75.2 (97)	
169.2+	72.3 (94)	
HbA1C (mmol/M and %)*		<0.001
<43.2 (<6.1%)	89.8 (123)	
43.2-<50.8 (6.1%-<6.8%)	74.2 (121)	
50.8-<62.3 (6.8%-<7.85%)	60.0 (99)	
62.3+ (7.85%+)	49.0 (76)	
AST (μkat/L)*		0.23
<0.38	69.7 (108)	
0.38-<0.47	61.1 (91)	
0.47-<0.63	68.4 (108)	
0.63+	71.3 (117)	
ALT (μkat/L)*		0.18
<0.37	66.4 (99)	
0.37-<0.52	62.5 (100)	
0.52-<0.73	68.1 (109)	
0.73+	73.9 (116)	
Liver size		0.93
Normal	67.4 (161)	

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	Diabetes Remission	<i>P</i> -value
n	424	
Large	68.6 (221)	
Extremely large	66.7 (38)	
Dyslipidemia		0.13
No	73.6 (67)	
Yes	65.5 (285)	
Hypertension		0.06
No	76.7 (66)	
Yes	66.4 (352)	
Abnormal kidney function		0.54
No	68.1 (355)	
Yes	65.0 (67)	
Sleep Apnea		0.06
No	72.1 (168)	
Yes	64.9 (255)	
Severe walking limitation		0.43
No	67.9 (352)	
Yes	63.1 (41)	
Anti-hypertensive medication		0.07
No	75.0 (81)	
Yes	66.1 (341)	
Anti-hyperlipidemic medication		<0.001

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	Diabetes Remission	<i>P</i> -value
n	424	
No	78.0 (191)	
Yes	60.7 (229)	
Bariatric Surgical Procedure		<0.001
RYGB	75.7 (353)	
Lap adjustable gastric band	38.6 (54)	
Other	81.0 (17)	

Values are percentages (n). *Cut-points are quartiles. Lap: Laparoscopic; RYGB: Roux-n-Y gastric bypass. Other surgical procedures include biliopancreatic diversion with duodenal switch, sleeve gastrectomy and banded gastric bypass. HOMA %S: Homeostasis Model Assessment insulin sensitivity. HOMA %B: Homeostasis Model Assessment beta cell function.

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Supplementary Table 4. Baseline demographic, anthropomorphic, and co-morbid conditions of the LABS-2 subjects with type 2 diabetes status by surgery type.

Characteristics	Roux-n-Y Gastric Bypass (n=466)		Laparoscopic band (n=140)		P-value
	n	% or median (25th, 75th quartiles)	n	% or median (25th, 75th quartiles)	
Age (years)					0.001
<30	11	2.4	1	0.7	
30-39	61	13.1	21	15	
40-49	137	29.4	22	15.7	
50-59	172	36.9	52	37.1	
≥60	85	18.2	44	31.4	
Female					0.006
No	121	26	53	37.9	
Yes	345	74	87	62.1	
Race					0.009
White	387	83.6	128	92.7	
Black	59	12.7	5	3.6	
Other	17	3.7	5	3.6	
Hispanic ethnicity					0.30
No	446	95.7	131	93.6	
Yes	20	4.3	9	6.4	
Education					0.14

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Characteristics	Roux-n-Y Gastric Bypass (n=466)		Laparoscopic band (n=140)		P-value
	n	% or median (25th, 75th quartiles)	n	% or median (25th, 75th quartiles)	
High school or less	104	23.7	41	29.9	
More than high school	335	76.3	96	70.1	
Married					0.02
No	168	38.3	37	27	
Yes	271	61.7	100	73	
BMI (kg/m ²)					<0.001
<35	6	1.3	4	2.9	
35-<40	58	12.4	35	25	
40+	402	86.3	101	72.1	
% Body fat	381	50.6 (47.1, 54.0)	114	49.5 (44.5, 52.8)	0.009
Waist circumference (cm)	440	137.0 (125.4, 147.7)	129	130.9 (121.5, 143.7)	0.006
Neck circumference (cm)	442	43.5 (40.1, 47.5)	129	43.9 (40.0, 48.2)	0.63
Length of time with DM (years)	203	7 (3, 12)	89	8 (5, 12)	0.45
Glucose (mmol/L)	387	6.83 (5.72, 8.55)	121	7.44 (5.83, 5.99)	0.21
Insulin (pmol/L)	388	163.2 (102.8, 274.3)	121	161.1 (100.0, 263.9)	0.72
C-peptide (nmol/L)	387	1.29 (0.87, 1.71)	121	1.30 (0.92, 1.63)	0.90

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Characteristics	Roux-n-Y Gastric Bypass (n=466)		Laparoscopic band (n=140)		P-value
	n	% or median (25th, 75th quartiles)	n	% or median (25th, 75th quartiles)	
Proinsulin (pM/L)	386	29.6 (16.5, 53.6)	118	31.4 (15.3, 56.9)	0.81
Proinsulin/insulin ratio	385	0.194 (0.108, 0.333)	118	0.207 (0.118, 0.349)	0.69
Proinsulin/C-peptide ratio	384	26.1 (17.6, 41.6)	118	28.5 (17.7, 42.0)	0.74
HOMA %S	380	30.6 (18.6, 48.5)	117	31.8 (20.3, 50.6)	0.55
HOMA %B	380	112.2 (67.9, 175.1)	117	102.3 (67.9, 151.9)	0.30
HbA1C (%)	461	6.8 (6.1, 7.9)	139	6.9 (6.2, 7.6)	0.77
(mmol/M)		51 (43, 63)		52 (45, 60)	
AST (μkat/L)	466	0.45 (0.37, 0.62)	139	0.50 (0.40, 0.65)	0.14
ALT (μkat/L)	466	0.50 (0.37, 0.70)	139	0.52 (0.33, 0.72)	0.56
Liver size					0.19
Normal	175	38	60	44.1	
Large	247	53.6	61	44.9	
Extremely large	39	8.5	15	11	
Free fatty acids (mmol/L)	387	0.72 (0.55, 0.91)	121	0.69 (0.53, 0.86)	0.37
Leptin (μg/L)	386	53.9 (38.8, 72.4)	118	45.2 (35.0, 60.0)	0.002
Abnormal kidney function					0.23
No	385	82.8	121	87	

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Characteristics	Roux-n-Y Gastric Bypass (n=466)		Laparoscopic band (n=140)		P-value
	n	% or median (25th, 75th quartiles)	n	% or median (25th, 75th quartiles)	
Yes	80	17.2	18	13	
Sleep apnea					0.05
No	182	39.1	42	30	
Yes	283	60.9	98	70	
C-PAP					0.22
No	37	13	8	8.3	
Yes	248	87	88	91.7	
Hypertension					0.71
No	66	14.4	18	13.1	
Yes	392	85.6	119	86.9	
Current smoking					0.31
No	455	97.6	139	99.3	
Yes	11	2.4	1	0.7	
Insulin medication					0.72
No	308	70.2	99	71.7	
Yes	131	29.8	39	28.3	
Number non-insulin DM medications					0.53
0	92	21.0	22	16.1	
1	203	46.2	70	50.7	

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Characteristics	Roux-n-Y Gastric Bypass (n=466)		Laparoscopic band (n=140)		P-value
	n	% or median (25th, 75th quartiles)	n	% or median (25th, 75th quartiles)	
2	110	25.1	33	23.9	
3+	34	7.7	13	9.4	
Any anti-hypertension medications					0.88
No					
Yes	82	17.7	24	17.1	
	381	82.8	116	82.9	

HOMA %S: Homeostasis Model Assessment insulin sensitivity. HOMA %B: Homeostasis Model Assessment beta cell function.

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Supplementary Table 5. Metabolic parameters at baseline and yearly for three years in subjects with type 2 diabetes undergoing either Roux-n-Y Gastric Bypass (RYGBP) or Laparoscopic Gastric Band (LAGB) surgeries.

	Baseline		12-Months		24-Months		36-Months		
	n	Median (25 th , 75 th quartiles)	n	Median (25 th , 75 th quartiles)	n	Median (25 th , 75 th quartiles)	n	Median (IQR)	<i>P</i> -value*
BMI (kg/m ²)									
RYBG	466	47.0 (42.1, 52.5)	461	32.2 (27.7, 36.6)	449	32.2 (28.6, 36.7)	436	33.3 (29.2, 38.3)	<0.001
LAGB	140	43.7 (39.5, 48.2)	139	37.9 (34.2, 42.8)	136	37.1 (33.2, 41.7)	133	37.0 (32.8, 43.4)	<0.001
<i>P</i> -value		<0.001		<0.001		<0.001		<0.001	
HbA1C									
RYBGP (%)	461	6.8 (6.1, 7.9)	383	5.5 (5.1, 5.9)	342	5.5 (5.1, 6.0)	330	5.6 (5.1, 6.3)	<0.001
(mmol/M)		51 (43, 63)		37 (32, 41)		36.6 (32, 42)		38 (32, 45)	
LAGB (%)	139	6.9 (6.2, 7.6)	125	6.1 (5.6, 6.7)	106	6.1 (5.5, 6.8)	103	6.2 (5.6, 7.1)	<0.001
(mmol/M)		52 (45, 60)		43.2 (38, 50)		43 (37, 51)		44 (38, 54)	
<i>P</i> -value		0.77		<0.001		<0.001		<0.001	
Insulin (pmol/L)									
RYBGP	388	163.5 (103.1, 274.3)	293	47.9 (31.9, 69.4)	259	49.3 (35.4, 72.9)	253	52.8 (36.8, 81.3)	<0.001
LAGB	121	161.1 (100.0, 263.9)	95	101.4 (68.8, 181.3)	83	93.8 (58.3, 157.6)	86	106.6 (65.3, 170.1)	0.08
<i>P</i> -value		0.72		<0.001		<0.001		<0.001	
C-peptide (nmol/L)									
RYBGP	387	1.29 (0.87, 1.71)	293	0.75 (0.58, 0.96)	258	0.74 (0.57, 0.92)	197	0.78 (0.58, 1.05)	<0.001
LAGB	121	1.30 (0.92, 1.63)	95	0.99 (0.73, 1.34)	82	0.95 (0.69, 1.35)	67	1.13 (0.73, 1.49)	<0.001
<i>P</i> -value		0.9		<0.001		<0.001		<0.001	
Proinsulin (pM/L)									
RYBGP	386	29.6 (16.5, 53.6)	289	8.7 (6.0, 13.0)	257	9.3 (6.7, 13.0)	196	11.4 (8.4, 15.3)	<0.001
LAGB	118	31.4 (15.3, 56.9)	96	17.7 (12.0, 28.5)	81	15.6 (10.1, 29.6)	67	21.5 (12.0, 35.7)	<0.001
<i>P</i> -value		0.81		<0.001		<0.001		<0.001	
Proinsulin/insulin									
RYBGP	385	0.195 (0.108, 0.333)	289	0.204 (0.122, 0.288)	257	0.193 (0.126, 0.282)	195	0.237 (0.167, 0.337)	0.007
LAGB	118	0.207 (0.118, 0.349)	95	0.180 (0.112, 0.263)	81	0.175 (0.107, 0.298)	67	0.209 (0.155, 0.290)	0.01
<i>P</i> -value		0.69		0.28		0.35		0.08	
Free Fatty Acids (mmol/L)									
RYBGP	387	0.72 (0.55, 0.91)	293	0.53 (0.41, 0.70)	258	0.53 (0.37, 0.71)	197	0.55 (0.41, 0.72)	<0.001
LAGB	121	0.69 (0.53, 0.86)	95	0.55 (0.43, 0.73)	82	0.56 (0.44, 0.71)	67	0.60 (0.39, 0.75)	<0.001
<i>P</i> -value		0.37		0.44		0.13		0.49	
Leptin (µg/L)									
RYBGP	386	53.9 (38.8, 72.4)	288	13.4 (7.6, 26.6)	257	16.8 (9.6, 29.6)	196	21.2 (12.2, 36.6)	<0.001

SUPPLEMENTARY DATA

	Baseline		12-Months		24-Months		36-Months		P- value*
	n	Median (25 th , 75 th quartiles)	n	Median (25 th , 75 th quartiles)	n	Median (25 th , 75 th quartiles)	n	Median (IQR)	
LAGB	118	45.2 (35.0, 60.0)	96	31.4 (22.6, 48.1)	81	29.0 (21.0, 46.8)	67	30.7 (17.1, 42.2)	<0.001
<i>P</i> -value		0.002		<0.001		<0.001		0.008	
HOMA %S									
RYGBP	381	30.8 (18.7, 48.4)	292	112.1 (74.3, 166.3)	257	106.0 (73.3, 147.4)	197	102.2 (64.0, 159.1)	<0.001
LAGB	117	31.8 (20.3, 50.6)	95	51.7 (29.1, 77.6)	81	55.9 (33.0, 88.5)	67	51.1 (30.8, 82.0)	<0.001
<i>P</i> -value		0.55		<0.001		<0.001		<0.001	
HOMA %B									
RYGBP	381	113.0 (68.0, 175.2)	292	77.5 (56.4, 101.9)	257	76.3 (57.0, 101.8)	197	74.1 (51.3, 105.9)	<0.001
LAGB	117	102.3 (67.9, 151.9)	95	99.0 (69.8, 132.8)	81	99.5 (63.0, 139.9)	67	93.7 (60.0, 137.5)	0.36
<i>P</i> -value		0.96		<0.001		<0.001		0.01	
Insulin Use									
RYGBP	308	70.2%	386	88.7%	375	94.0%	364	92.2%	<0.001
No	131	29.8%	49	11.3%	24	6.0%	31	7.80%	
LAGB			102	79.1%	104	84.6%	102	85.0%	0.001
No	99	71.7%	27	20.9%	19	15.4%	18	15.0%	
Yes	39	28.3%							
<i>P</i> -value		0.72		0.005		0.001		0.02	
Number of DM medications									
RYGBP									
0	60	13.7%	328	75.4%	321	80.4%	301	76.2%	<0.001
1	156	35.5%	64	14.7%	57	14.3%	64	16.2%	
2	128	29.2%	34	7.8%	16	4.0%	24	6.1%	
≥3	95	21.6%	9	2.1%	5	1.2%	6	1.5%	
LAGB									
0	11	8.0%	49	38.0%	52	42.3%	51	42.5%	<0.001
1	64	46.4%	41	31.8%	42	34.1%	43	35.8%	
2	33	23.9%	29	22.5%	21	17.1%	20	16.7%	
≥3	30	21.7%	10	7.7%	8	6.5%	6	5.00%	
<i>P</i> -value		0.07		<0.001		<0.001		<0.001	

* Overall test for change from baseline over time accounting for within-subject repeated measures.

SUPPLEMENTARY DATA

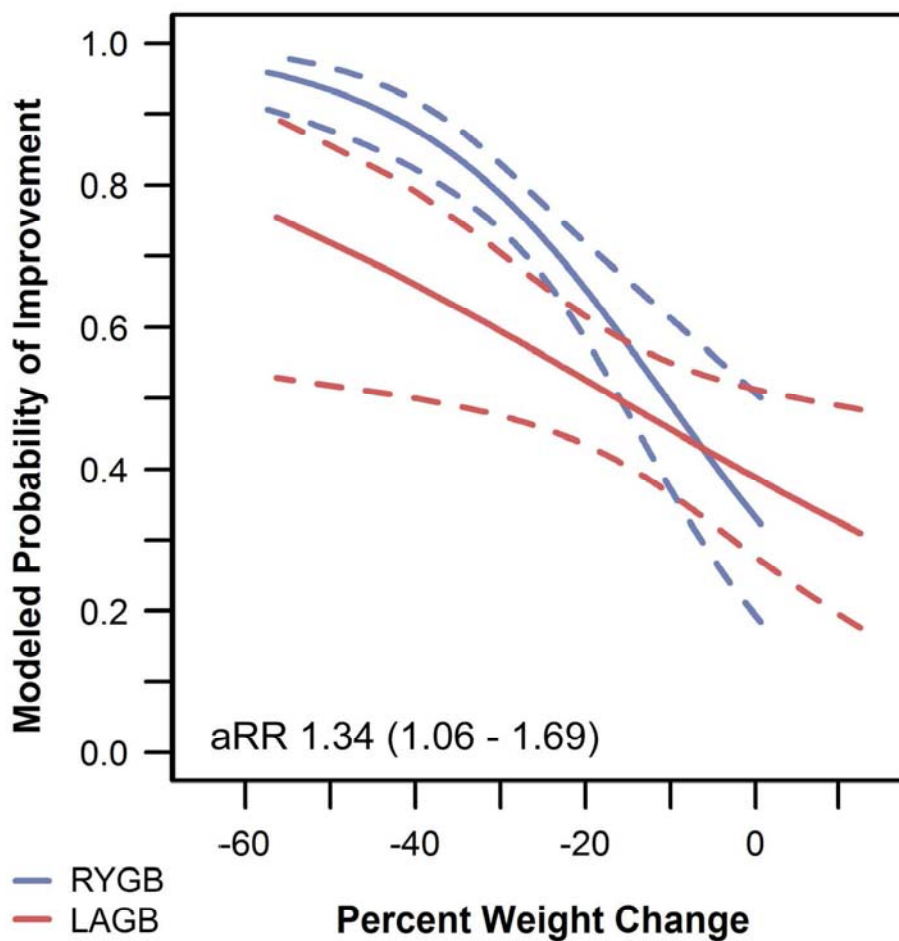
Supplementary Table 6. The association between surgery type and remission in type 2 diabetes status at Year 1 among LABS-2 participants with overlapping percent weight loss from baseline to post-op year 1 after undergoing either Roux-n-Y gastric bypass (RYGBP, n=200) or laparoscopic gastric band (LAGB, n=87) procedures.

	Improvement in Diabetes Mellitus			
	RR	95%CI		<i>P</i> -value
RYGB versus LABG	2.59	1.63	4.12	<0.001
Percent weight loss from baseline, per 10%	0.87	0.67	1.15	0.33
Weight at baseline, per 5 kilograms ↑	0.99	0.97	1.01	0.36
Baseline HbA1C, per 0.91% (10 mmol/M) ↑	0.92	0.84	1.02	0.11
Insulin use at baseline	0.55	0.35	0.87	0.01
Age, per 5 year ↑	0.90	0.85	0.96	0.002

RR-relative risk. CI-confidence intervals.

SUPPLEMENTARY DATA

Supplementary Figure 1. Modeled probabilities in relation to percent weight loss and 95% confidence intervals for diabetes remission 3 years after Roux-n-Y gastric bypass (RYGBP, blue lines) or laparoscopic gastric banding (LAGB, red lines). Diabetes remission is defined as HbA1c < 6.5% (48 mmol/M) with or without the use of one oral medication. The adjusted relative risk (aRR) and 95% confidence intervals for the association between surgical type and diabetes remission at 3 years is adjusted for percent weight change from baseline and a propensity score consisting of baseline demographic and clinical characteristics determined and measured prior to bariatric surgical and associated with type of surgery. Using this modified definition of diabetes remission to include those who meet HbA1c criteria but are still taking at least one medicine used to treat diabetes, subjects undergoing RYGB were 34% more likely to be in remission from diabetes compared to subjects undergoing LABG 3 years post-bariatric surgery (p=0.02).



SUPPLEMENTARY DATA

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