Supplementary Online Content

Courcoulas AP, King WC, Belle SH, et al. Seven-Year Weight Trajectories and Health Outcomes in the Longitudinal Assessment of Bariatric Surgery (LABS) Study. *JAMA Surg*. Published online December 6, 2017. doi:10.1001/jamasurg.2017.5025

This supplementary material has been provided by the authors to give readers additional information about their work.

eAppendix 1. Statistical Analysis Methods

Descriptive statistics summarize baseline characteristics and outcomes by time point. Frequencies and percentages are reported for categorical data. Medians, 25th and 75th percentiles, the difference between the latter being interquartile ranges (IQRs), are reported for continuous data.

The rates of death and of subsequent bariatric procedures were estimated by dividing the number of participants with events known to occur within 7 years of the initial bariatric surgery by the number of person-years (PYR) of observation. We report the rates per 1000 person-years, a standard unit, and per 700 person-years, which correspond to the number of persons with the event, expected if 100 people were followed for 7 years. Exact confidence intervals for rates were constructed using the Poisson distribution

Longitudinal analyses were performed using mixed models with a person-level random intercept controlling for site, baseline age, and smoking status, which were associated with missing follow-up data,[1] as fixed effects (specifics follow). Sensitivity analyses were performed to examine the robustness of results with respect to the missing at random assumption of the mixed models. Among those missing versus not missing an outcome (i.e., mean percent weight change or comorbidity prevalence) at a particular follow-up assessment, the outcome was similar, in general, at other follow-up assessments (**eAppendix 2 Tables 1 and 2**).

Linear mixed models via maximum likelihood were used to estimate change in weight (kg and percent weight change), with time (follow-up assessment) as a discrete fixed effect. Modeled means and 95% confidence intervals (CI) are reported by post-surgery follow-up assessment. Weight stability beyond three years was evaluated by limiting the dataset to years 3 to 7 and testing for linear and quadratic trends with time (days since surgery) as a continuous fixed effect in linear mixed models of weight change. Linear mixed models were also used to test whether change in percent weight change was significantly different from 0 between year-3 and year-7.

Poisson mixed models with robust error variance were used to estimate prevalence, remission and incidence of comorbidities with time (follow-up assessment) as a discrete fixed effect. Modeled proportions and 95% CI are reported by post-surgery follow-up assessment. To assess the long-term effect, a pairwise comparison was made between baseline and year 7 prevalence. Prevalence, remission and incidence stability beyond three years were evaluated by limiting the dataset to years 3 to 7 and testing for linear and quadratic trends using time (days since surgery) as a continuous fixed effect in Poisson mixed models with robust error variance adjusting for previously mentioned factors.

Growth mixture models[2,3] were used to estimate weight change trajectories for each participant and to group participants with similar modeled trajectories. The smallest trajectory group was constrained to include at least 5% of the sample. The best fitting model was determined using the Bayesian information criterion. The modeled group trajectories are plotted. Trajectory-specific weight stability beyond 3 years was evaluated using the methodology described above. Associations between participant baseline characteristics and weight trajectory group membership were evaluated with the Cochran-Armitage Trend Test, Kendall's Tau-b, and Jonckheere-Terpstra trend test.

Among participants who underwent RYGB, Poisson mixed models with robust error variance were used to test and estimate associations between weight trajectory group membership with remission of each comorbidity, with weight trajectory group, time and a time x weight trajectory group interaction term entered as fixed effects. Observed remission percentages and adjusted relative risks of remission by RYGB weight trajectory group and post-surgery follow-up assessment are reported.

Analyses were conducted using SAS version 9.4 (SAS Institute, Cary, NC, USA). All reported P values are

two-sided; P values less than 0.05 were considered to be statistically significant.

References

1. King WC, Chen JY, Belle SH, et al. Change in Pain and Physical Function Following Bariatric Surgery for Severe Obesity. *JAMA*. Apr 5 2016;315(13):1362-1371.
2. Courcoulas AP, Christian NJ, Belle SH, et al. Weight change and health outcomes at 3 years after bariatric surgery among individuals with severe obesity. *JAMA*. Dec 11 2013;310(22):2416-2425.
3. Wang J, Wang X. Structural equation modeling: applications using Mplus. Chichester, West Sussex England; Hoboken, N.J.: John Wiley/Higher Education Press; 2012.

eAppendix 2. Sensitivity Analysis of Missing at Random Assumption

A sensitivity analysis was performed to examine the robustness of results with respect to the missing at random assumption for percent weight change and comorbidity status. A linear mixed model was constructed for each follow-up assessment to test whether missing weight at that assessment (yes/no), entered as a fixed effect, was related to percent weight change, with time entered as a fixed effect. Models included a person-level random intercept, and controlled for site, baseline age, and smoking status, which were associated with missing follow-up data, as fixed effects. Among those missing versus not missing weight at each follow-up assessment, the mean value at other follow-up time points was similar (**eAppendix 2 Table 1**). This process was repeated for comorbidity prevalence using Poisson mixed models with robust error variance. Among those missing versus not missing each comorbidity at each follow-up assessment, the prevalence at other follow-up time points was similar, in general (**eAppendix 2 Table 2**). However, those with missing high low-density lipoprotein (LDL) status in years 1-5 appeared to have slightly lower prevalence of high LDL at other non-missing time points, suggesting modeled high LDL prevalence might have been overestimated.

eAppendix 2 Table 1. Modeled Percent Weight Change by Time Point by whether Weight was Missing or Observed at each Follow-up Assessment[a]

	Modeled Mean (95% Confidence Interval) Percent Weight Change															
	6 month		Year 1		Year 2		Year 3		Year 4		Year 5		Year 6		Year 7[b]	
	Missing (N=113)	Observed (N=2231)	Missing (N=144)	Observed (N=2195)	Missing (N=234)	Observed (N=2098)	Missing (N=267)	Observed (N=2057)	Missing (N=290)	Observed (N=2029)	Missing (N=312)	Observed (N=1995)	Missing (N=317)	Observed (N=1969)	Missing (N=977)	Observed (N=1300)
6 mon			-21.9 (-23.7- -20.1)	-23.1 (-24.1- -22.2)	-23.2 (-24.7- -21.7)	-23.1 (-24.0- -22.1)	-23.3 (-24.6- -21.9)	-23.1 (-24.0- -22.1)	-22.9 (-24.3- -21.6)	-23.1 (-24.0- 22.2)	-23.2 (-24.5- -21.9)	-23.1 (-24.0- -22.1)	-22.9 (-24.2- -21.7)	-23.1 (-24.0- -22.2)	-22.5 (-23.5- -21.6)	-23.5 (-24.4- -22.5)
Y 1	-30.3 (-32.8- -27.8)	-28.7 (-29.9- -27.5)			-28.8 (-30.3- -27.3)	-28.7 (-29.7- -27.7)	-28.9 (-30.3- -27.5)	-28.7 (-29.7- -27.7)	-28.6 (-29.9- -27.2)	-28.7 (-29.7- 27.8)	-28.8 (-30.1- -27.5)	-28.7 (-29.7- -27.7)	-28.6 (-29.9- -27.3)	-28.7 (-29.7- -27.8)	-28.2 (-29.2- -27..1)	-29.1 (-30.1- -28.1)
Y 2	-30.8 (-33.3- -28.3)	-29.2 (-30.4- -28.0)	-28.0 (-29.9- -26.2)	-29.3 (-30.3- -28.2)			-29.4 (-30.8- -27.9)	-29.2 (-30.2- -28.2)	-29.0 (-30.4- -27.7)	-29.2 (-30.2- 28.2)	-29.3 (-30.6- -28.0)	-29.2 (-30.2- -28.2)	-29.1 (-30.4- -27.8)	-29.2 (-30.2- -28.2)	-28.7 (-29.7- -27.6)	-29.6 (-30.6- -28.6)
Y 3	-29.0 (-31.6- -26.5)	-27.4 (-28.7- -26.2)	-26.3 (-28.1- -24.4)	-27.5 (-28.5- -26.5)	-27.5 (-29.0- -26.0)	-27.4 (-28.4- -26.4)			-27.3 (-28.7- -25.9)	-27.5 (-28.5- 26.5)	-27.6 (-28.9- -26.2)	-27.4 (28.4- -26.4)	-27.3 (-28.6- -26.0)	-27.5 (-28.5- -26.5)	-26.9 (-28.0- -25.8)	-27.8 (-28.9- -26.8)
Y 4	-27.5 (-30.0- -25.0)	-25.9 (-27.1- -24.7)	-24.8 (-26.6- -22.9)	-26.0 (-27.0- -25.0)	-26.0 (-27.5- -24.5)	-25.9 (-26.9- -24.9)	-26.1 (-27.5- -24.7)	-25.9 (-26.9- -24.9)			-26.0 (-27.4- -24.7)	-25.9 (-26.9- -24.9)	-25.8 (-27.1- -24.5)	-26.0 (-26.9- -25.0)	-25.4 (-26.5- -24.3)	-26.3 (-27.4- -25.3)
Y 5	-26.8 (-29.3- -24.2)	-25.2 (-26.4- -23.9)	-24.0 (-26.9- -22.2)	-25.3 (-26.3- -24.2)	-25.3 (-26.8- -23.8)	-25.2 (-26.2- -24.2)	-25.3 (-26.8- -23.9)	-25.2 (-26.2- -24.1)	-25.1 (-26.5- -23.7)	-25.2 (-26.2- 24.2)			-25.1 (-26.4- -23.7)	-25.2 (-26.2- -24.2)	-24.7 (-25.7- -23.6)	-25.6 (-26.6- -24.6)
Y 6	-27.3 (-29.8- -24.7)	-25.7 (-26.9- -24.4)	-24.5 (-26.4- -22.7)	-25.8 (-26.8- -24.7)	-25.8 (-27.3- -24.3)	-25.7 (-26.7- -24.7)	-25.8 (-27.3- -24.4)	-25.6 (-26.7- -24.6)	-25.6 (-27.0- -24.2)	-25.7 (-26.7- -24.7)	-25.8 (-27.2- -24.5)	-25.7 (-26.7- -24.7)			-25.2 (-26.3- -24.1)	-26.1 (-27.2- -25.1)
Y 7	-25.8 (-28.4- -23.3)	-24.2 (-25.5- -23.0)	-23.1 (-24.9- -21.2)	-24.3 (-25.4- -23.3)	-24.4 (-25.9- -22.8)	-24.2 (-25.3- -23.2)	-24.4 (-25.9- -23.0)	-24.2 (-25.2- -23.2)	-24.1 (-25.5- -22.7)	-24.3 (-25.3- -23.3)	-24.4 (-25.7- -23.0)	-24.2 (-25.3- -23.2)	-24.1 (-25.5- -22.8)	-24.3 (-25.3- -23.3)		

[a]A negative value indicates weight loss from baseline. Weight data was obtained in 95.3% (2231/2340) of participants at 6 months, 94.2% (2195/2329) at year-1, 90.8% (2098/2310) at year-2, 89.5%(2057/2299) at year-3, 88.4% (2029/2296) at year-4, 87.1% (1995/2293) at year-5 87.0% (1969/2267) at year-6, and 82.9% (1300/1569) at year-7. Missingness did not differ by surgical procedure so results for Roux-en-Y gastric bypass and laparoscopic adjustable gastric band were combined. [b]Data collection ended prior to 700 participants' 7 year assessment.

eAppendix 2 Table 2. Modeled Comorbid Condition Prevalence by Time Point by whether Comorbidity Status was Missing or Observed at each Follow-up Assessment[a]

	Modeled Prevalence (95% Confidence Interval)													
	Baseline		Year 1		Year 2		Year 3		Year 4		Year 5		Year 7[b]	
DM	**Missing (N =116)**	**Observed (N=2211)**	**Missing (N =798)**	**Observed (N=1529)**	**Missing (N**	**Observed (N=1286)**	**Missing (N**	**Observed (N=1294)**	**Missing (N=1020)**	**Observed (N=1307)**	**Missing (N =970)**	**Observed (N=1357)**	**Missing (N**	**Observed (N=886)**
BL	NA	NA	27.6 (22.3-34.1)	28.3 (23.5-34.1)	28.3 (23.2-	27.8 (23.0-33.7)	28.2 (23.2-	28.2 (23.3-34.1)	28.9 (23.7-35.3)	27.7 (23.0-33.4)	28.4 (23.3-34.7)	28.2 (23.4-34.0)	24.1 (19.6-	29.5 (24.4-35.7)
Y 1	8.2 (6.1-10.9)	9.3 (5.7-15.1)	NA	NA	11.2 (9.0-	11.1 (9.0-13.7)	11.1 (9.0-	11.1 (9.0-13.7)	11.4 (9.2-14.2)	10.9 (8.9-13.5)	11.2 (9.0-13.9)	11.1 (9.0-13.7)	9.5 (7.6-	11.6 (9.4-14.4)
Y 2	7.7 (5.8-10.2)	8.7 (5.4-14.2)	10.3 (8.1-13.0)	10.5 (8.5-13.1)	NA	NA	10.6 (8.5-	10.6 (8.5-13.1)	10.9 (8.7-13.6)	10.4 (8.4-12.9)	10.6 (8.5-13.3)	10.5 (8.5-13.0)	8.9 (7.1-	10.9 (8.8-13.6)
Y 3	8.4 (6.3-11.2)	9.6 (5.9-15.6)	11.3 (9.0-14.3)	11.6 (9.4-14.4)	11.8 (9.5-	11.6 (9.4-14.4)	NA	NA	12.1 (9.7-15.1)	11.6 (9.4-14.3)	11.8 (9.5-14.8)	11.7 (9.5-14.5)	9.9 (7.9-	12.1 (9.8-15.0)
Y 4	9.2 (6.9-12.3)	10.5 (6.5-17.1)	12.1 (9.6-15.2)	12.4 (10.0-15.3)	12.6 (10.1-	12.4 (10.0-15.4)	12.6 (10.1-	12.5 (10.2-15.5)	NA	NA	12.7 (10.2-15.8)	12.6 (10.2-15.6)	10.6 (8.5-	13.0 (10.5-16.1)
Y 5	9.8 (7.4-13.0)	11.1 (6.9-18.2)	13.0 (10.4-16.4)	13.4 (10.9-16.4)	13.6 (10.9-	13.4 (10.8-16.5)	13.6 (10.9-	13.5 (11.0-16.7)	14.0 (11.3-17.4)	13.4 (10.9-16.5)	NA	NA	11.5 (9.2-	14.0 (11.4-17.3)
Y 7	11.0 (8.3-14.7)	12.5 (7.7-20.5)	14.1 (11.1-17.9)	14.5 (11.7-17.9)	14.7 (11.7-	14.4 (11.6-18.0)	14.5 (11.6-	14.5 (11.7-18.1)	14.9 (11.9-18.8)	14.3 (11.6-17.8)	14.7 (11.7-18.5)	14.6 (11.8-18.1)	NA	NA
High LDL	**Missing (N =340)**	**Observed (N=1884)**	**Missing (N =1045)**	**Observed (N=1179)**	**Missing (N**	**Observed (N=987)**	**Missing (N**	**Observed (N=1007)**	**Missing (N =1216)**	**Observed (N=1008)**	**Missing (N =1180)**	**Observed (N=1044)**	**Missing (N**	**Observed (N=678)**
BL	NA	NA	30.1 (25.0-36.2)	38.0 (32.1-45.0)	31.3 (26.3-	38.8 (32.8-45.9)	30.6 (25.6-	39.8 (33.8-47.0)	31.4 (26.3-37.4)	38.8 (32.9-45.8)	32.0 (26.8-38.2)	37.5 (31.7-44.4)	35.1 (29.7-	31.2 (25.9-37.6)
Y 1	15.3 (11.2-20.8)	16.9 (13.3-21.5)	NA	NA	17.2 (14.2-	21.3 (17.8-25.7)	16.8 (13.8-	21.9 (18.2-26.3)	17.3 (14.2-21)	21.3 (17.8-25.6)	17.6 (14.5-21.4)	20.6 (17.1-24.8)	19.3 (16.0-	17.1 (14-20.9)
Y 2	14.9 (11.0-20.3)	16.5 (13.0-21.0)	16.0 (13.1-19.6)	20.2 (16.7-24.4)	NA	NA	16.4 (13.4-	21.3 (17.7-25.7)	16.8 (13.9-20.5)	20.8 (17.3-25.1)	17.1 (14.1-20.9)	20.1 (16.7-24.2)	19.0 (15.7-	16.9 (13.8-20.6)
Y 3	15.7 (11.6-21.3)	17.3 (13.7-22.1)	16.7 (13.7-20.5)	21.2 (17.5-25.5)	17.6 (14.5-	21.8 (18.1-26.2)	NA	NA	17.6 (14.5-21.4)	21.7 (18.1-26.1)	18.0 (14.8-21.8)	21.0 (17.5-25.4)	19.9 (16.5-	17.6 (14.5-21.6)
Y 4	16.5 (12.2-22.3)	18.2 (14.3-23.2)	17.3 (14.2-21.2)	21.9 (18.2-26.4)	18.3 (15.1-	22.6 (18.8-27.3)	17.8 (14.6-	23.1 (19.3-27.8)	NA	NA	18.6 (15.3-22.7)	21.8 (18.1-26.3)	20.8 (17.2-	18.4 (15.1-22.5)
Y 5	16.4 (12.1-22.2)	18.1 (14.3-23.1)	17.2 (14.1-21.1)	21.8 (18.1-26.3)	18.1 (14.9-	22.4 (18.6-26.9)	17.6 (14.4-	22.9 (19.1-27.5)	18.1 (14.9-22.0)	22.3 (18.6-26.8)	NA	NA	20.6 (17.0-	18.3 (15.0-22.3)
Y 7	16.3 (12.0-22.4)	18.1 (14.1-23.2)	16.7 (13.5-20.8)	21.1 (17.3-25.8)	17.6 (14.3-	21.8 (17.9-26.6)	17.2 (13.9-	22.4 (18.4-27.3)	17.6 (14.3-21.7)	21.8 (17.9-26.5)	18.0 (14.6-22.2)	21.0 (17.2-25.7)	NA	NA

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eAppendix 2 Table 2 Continued.

	Modeled Prevalence (95% Confidence Interval)													
	Baseline		**Year 1**		**Year 2**		**Year 3**		**Year 4**		**Year 5**		**Year 7[b]**	
High TG	**Missing (N =318)**	**Observed (N=1906)**	**Missing (N =971)**	**Observed (N=1253)**	**Missing (N =1153)**	**Observed (N=1071)**	**Missing (N =1132)**	**Observed (N=1092)**	**Missing (N =1153)**	**Observed (N=1071)**	**Missing (N =1132)**	**Observed (N=1092)**	**Missing (N =1511)**	**Observed (N=713)**
BL	NA	NA	21.4 (16.7-27.5)	21.0 (16.7-26.4)	21.1 (16.6-26.9)	21.4 (17.1-27.0)	21.0 (16.5-26.9)	22.0 (17.5-27.7)	21.3 (16.7-27.1)	21.9 (17.4-27.7)	21.4 (16.8-27.3)	21.0 (16.6-26.6)	21.1 (16.7-26.7)	20.7 (16.1-26.5)
Y 1	3.3 (2.0-5.6)	3.4 (2.3-5.3)	NA	NA	4.2 (3.0-5.9)	4.3 (3.1-5.9)	4.1 (3.0-5.8)	4.3 (3.1-6.0)	4.2 (3.0-5.9)	4.4 (3.2-6.0)	4.2 (3.0-5.9)	4.2 (3.0-5.7)	4.2 (3.0-5.8)	4.1 (3.0-5.6)
Y 2	3.6 (2.1-6.2)	3.8 (2.5-5.8)	4.8 (3.5-6.8)	4.7 (3.4-6.5)	NA	NA	4.7 (3.4-6.6)	4.9 (3.6-6.8)	4.8 (3.5-6.7)	5.0 (3.6-6.8)	4.8 (3.5-6.7)	4.8 (3.5-6.5)	4.7 (3.4-6.5)	4.6 (3.3-6.4)
Y 3	5.0 (3.0-8.3)	5.2 (3.5-7.7)	6.4 (4.7-8.8)	6.3 (4.7-8.5)	6.4 (4.8-8.7)	6.6 (4.9-8.8)	NA	NA	6.4 (4.7-8.7)	6.6 (5.0-8.9)	6.5 (4.8-8.9)	6.4 (4.8-8.5)	6.3 (4.7-8.5)	6.2 (4.6-8.4)
Y 4	4.4 (2.7-7.3)	4.6 (3.1-7.0)	5.6 (4.1-7.7)	5.5 (4.1-7.5)	5.6 (4.1-7.7)	5.7 (4.2-7.7)	5.6 (4.1-7.7)	5.8 (4.3-7.9)	NA	NA	5.7 (4.2-7.8)	5.6 (4.1-7.6)	5.5 (4.1-7.5)	5.4 (3.9-7.4)
Y 5	4.2 (2.5-7.0)	4.4 (2.9-6.6)	5.3 (3.8-7.4)	5.2 (3.8-7.1)	5.3 (3.9-7.3)	5.4 (4.0-7.4)	5.3 (3.8-7.3)	5.5 (4.0-7.5)	5.4 (3.9-7.4)	5.5 (4.1-7.5)	NA	NA	5.2 (3.8-7.2)	5.1 (3.7-7.1)
Y 7	4.0 (2.7-8.0)	4.8 (3.1-7.5)	5.6 (3.9-8.1)	5.5 (3.9-7.8)	5.7 (4.0-8.0)	5.7 (4.1-8.2)	5.6 (3.9-8.0)	5.9 (4.1-8.3)	5.7 (4.0-8.1)	5.9 (4.2-8.2)	5.8 (4.0-8.3)	5.7 (4.0-8.0)	NA	NA
Low HDL	**Missing (N =81)**	**Observed (N=2249)**	**Missing (N =698)**	**Observed (N=1632)**	**Missing (N =928)**	**Observed (N=1402)**	**Missing (N =943)**	**Observed (N=1387)**	**Missing (N =984)**	**Observed (N=1346)**	**Missing (N =927)**	**Observed (N=1403)**	**Missing (N**	**Observed (N=904)**
BL	NA	NA	36.4 (30.0-44.3)	33.2 (27.9-39.6)	39.1 (32.6-46.9)	30.6 (25.6-36.5)	39.7 (33.2-47.6)	30.0 (25.1-35.9)	36.5 (30.4-43.8)	32.2 (27.1-38.4)	37.9 (31.6-45.5)	31.5 (26.4-37.6)	36.2 (30.4-43.2)	29.0 (23.9-35.1)
Y 1	5.3 (2.7-10.5)	8.7 (6.5-11.8)	NA	NA	13.1 (10.5-16.2)	10.2 (8.3-12.6)	13.2 (10.7-16.3)	10.0 (8.1-12.3)	12.0 (9.7-14.8)	10.6 (8.6-13.0)	12.5 (10.1-15.5)	10.4 (8.4-12.8)	11.9 (9.6-14.6)	9.5 (7.6-11.8)
Y 2	3.3 (1.7-6.6)	5.5 (4.0-7.5)	7.5 (5.8-9.7)	6.9 (5.4-8.7)	NA	NA	8.5 (6.6-10.8)	6.4 (5.0-8.1)	7.6 (5.9-9.7)	6.7 (5.3-8.5)	7.9 (6.2-10.1)	6.6 (5.2-8.4)	7.5 (5.9-9.6)	6.0 (4.7-7.7)
Y 3	3.4 (1.7-6.8)	5.6 (4.1-7.6)	7.7 (5.9-9.9)	7.0 (5.5-8.9)	8.6 (6.7-11.0)	6.7 (5.3-8.5)	NA	NA	7.8 (6.1-9.9)	6.9 (5.4-8.7)	8.1 (6.4-10.4)	6.8 (5.3-8.6)	7.7 (6.0-9.8)	6.1 (4.8-7.9)
Y 4	4.0 (2.0-7.8)	6.5 (4.8-8.8)	9.2 (7.2-11.8)	8.4 (6.7-10.6)	10.2 (8.1-12.9)	8.0 (6.4-10.0)	10.5 (8.3-13.3)	7.9 (6.3-9.9)	NA	NA	9.8 (7.8-12.4)	8.1 (6.5-10.2)	9.2 (7.3-11.6)	7.4 (5.8-9.4)
Y 5	4.5 (2.2-9.0)	7.4 (5.4-10.0)	10.4 (8.2-13.2)	9.5 (7.6-11.8)	11.5 (9.2-14.4)	9.0 (7.2-11.2)	11.8 (9.4-14.8)	8.9 (7.1-11.1)	10.5 (8.4-13.2)	9.3 (7.5-11.6)	NA	NA	10.5 (8.4-13.1)	8.4 (6.7-10.5)
Y 7	3.8 (1.9-7.6)	6.2 (4.4-8.6)	8.2 (6.2-10.9)	7.5 (5.7-9.7)	9.0 (6.9-11.8)	7.1 (5.4-9.2)	9.1 (6.9-11.9)	6.9 (5.3-9.0)	8.3 (6.3-10.8)	7.3 (5.6-9.5)	8.6 (6.6-11.3)	7.2 (5.5-9.4)	NA	NA

Continued next page

eAppendix 2 Table 2 Continued.

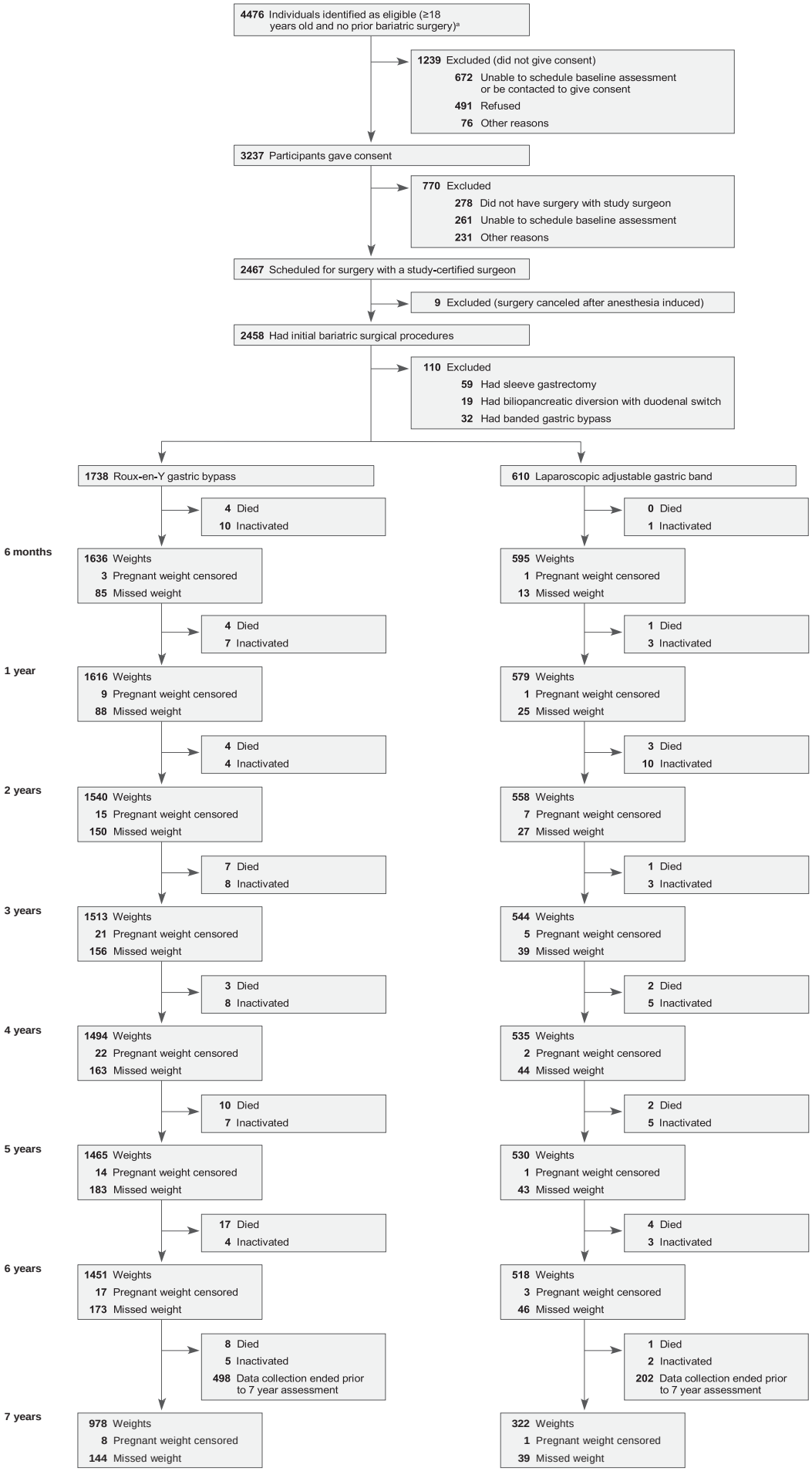
	Modeled Prevalence (95% Confidence Interval)													
	Baseline		Year 1		Year 2		Year 3		Year 4		Year 5		Year 7[b]	
HTN	**Missing (N =74)**	**Observed (N=2263)**	**Missing (N =424)**	**Observed (N=1913)**	**Missing (N =737)**	**Observed (N=1600)**	**Missing (N =793)**	**Observed (N=1544)**	**Missing (N =804)**	**Observed (N=1533)**	**Missing (N =752)**	**Observed (N=1585)**	**Missing (N =1316)**	**Observed (N=1021)**
BL	NA	NA	65.4 (59.0-72.5)	67.9 (62.8-73.5)	66.7 (61.0-72.9)	67.9 (62.6-73.5)	67.0 (61.3-73.2)	67.7 (62.5-73.4)	63.6 (58.1-69.7)	69.5 (64.1-75.3)	64.9 (59.2-71.2)	68.7 (63.4-74.4)	66.9 (61.5-72.9)	65.5 (59.9-71.7)
Y 1	52.2 (43.3-63.0)	42.4 (38.3-47.0)	NA	NA	43.7 (39.6-48.1)	44.4 (40.7-48.5)	43.8 (39.8-48.2)	44.2 (40.5-48.3)	41.4 (37.5-45.8)	45.2 (41.4-49.4)	42.3 (38.3-46.8)	44.7 (41.0-48.9)	43.5 (39.6-47.8)	42.6 (38.6-46.9)
Y 2	52.3 (43.3-63.2)	42.5 (38.3-47.2)	43.1 (38.5-48.3)	44.8 (41.0-49.0)	NA	NA	44.3 (40.1-48.9)	44.7 (40.9-49.0)	41.7 (37.7-46.2)	45.6 (41.7-49.9)	42.7 (38.6-47.3)	45.2 (41.3-49.4)	43.7 (39.8-48.1)	42.8 (38.8-47.2)
Y 3	56.1 (46.5-67.8)	45.6 (41.2-50.6)	46.3 (41.4-51.7)	48.1 (44.1-52.5)	47.5 (43.0-52.4)	48.3 (44.2-52.8)	NA	NA	44.9 (40.6-49.6)	49.0 (44.9-53.5)	45.9 (41.5-50.9)	48.6 (44.5-53.1)	47.0 (42.8-51.6)	46.0 (41.7-50.6)
Y 4	60.4 (50.1-72.8)	49.1 (44.4-54.4)	49.9 (44.7-55.7)	51.9 (47.6-56.5)	51.2 (46.5-56.4)	52.1 (47.8-56.8)	51.5 (46.8-56.7)	52.0 (47.7-56.7)	NA	NA	49.7 (45.0-55.0)	52.6 (48.3-57.3)	50.6 (46.1-55.5)	49.5 (45.0-54.4)
Y 5	61.1 (50.7-73.8)	49.7 (44.9-55.0)	50.4 (45.1-56.2)	52.3 (48.1-57.0)	51.6 (46.8-56.8)	52.5 (48.2-57.2)	51.8 (47.1-57.1)	52.4 (48.1-57.1)	48.9 (44.3-54.1)	53.4 (49-58.2)	NA	NA	51.1 (46.6-56.1)	50.0 (45.5-55.0)
Y 7	66.0 (54.6-79.8)	53.7 (48.4-59.6)	54.0 (48.2-60.5)	56.1 (51.3-61.4)	55.3 (50.0-61.1)	56.3 (51.4-61.6)	55.5 (50.3-61.4)	56.1 (51.3-61.5)	52.6 (47.5-58.4)	57.5 (52.5-62.9)	53.9 (48.6-59.9)	57.1 (52.2-62.5)	NA	NA

Abbreviations: DM, diabetes mellitus; HDL, high-density lipoprotein; HTN, hypertension; LDL, low-density lipoprotein; NA, not applicable; TG, Triglyceride;

[a]Diabetes was obtained in 65.7% (1529/2326) of participants at year-1, 55.7% (1286/2309) at year-2, 56.4% (1294/2293) at year-3, 57.0% (1307/2292) at year-4, 59.4% (1357/2286) at year-5 and 56.8% (886/1559) at year-7. High LDL was obtained in 50.7% (1179/2326) of participants at year-1, 42.7% (987/2309) at year-2, 43.9% (1007/2293) at year-3, 44.0% (1008/2292) at year-4, 45.7% (1044/2286) at year-5, and 43.5% (678/1559) at year-7. High triglycerides was obtained in 53.9% (1253/2326) of participants at year-1, 46.4% (1071/2309) at year-2, 47.6% (1092/2293) at year-3, 46.7% (1071/2292) at year-4, 47.8% (1092/2286) at year-5, and 45.7% (713/1559) at year-7. Low HDL was obtained in 70.2% (1632/2326) of participants at year-1, 60.7% (1402/2309) at year-2, 60.5% (1387/2293) at year-3, 58.7% (1346/2292) at year-4, 61.4% (1403/2286) at year-5, and 58.0% (904/1559) at year-7. Hypertension was obtained 82.2% (1913/2326) of participants at year-1, 69.3% (1600/2309) at year-2, 67.3% (1544/2293) at year-3, 66.9% (1533/2292) at year-4, 69.3% (1585/2286) at year-5, and 65.5% (1021/1559) at year-7.

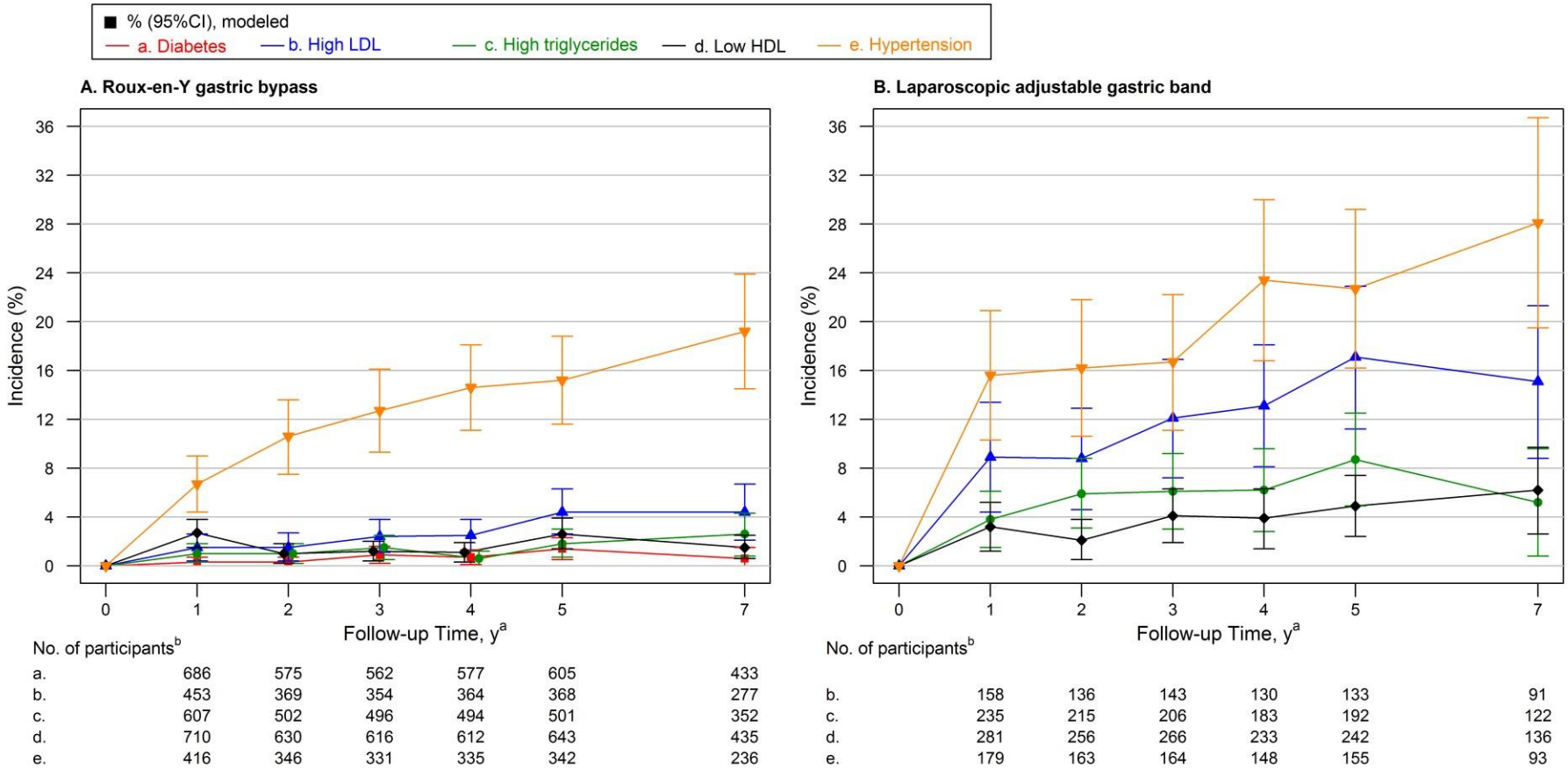
[b]Data collection ended prior to 700 participants' 7 year assessment.

eFigure 1. Flow of Participants through Recruitment, Follow-up, and Weight Measurements



[a]The number of patients screened to identify those thought to be eligible was not recorded.

eFigure 2. Incidence of Comorbid Conditions Following Bariatric Surgery



Abbreviations: HDL, high-density lipoprotein cholesterol; LAGB, laparoscopic adjustable gastric band; LDL, low-density lipoprotein cholesterol; RYGB, Roux-en-Y gastric bypass.
Lines indicate modeled incidence, bars, 95% CI, based on mixed models, adjusted for baseline factors independently related to missing follow-up data (i.e., site, age and smoking). Observed and modeled data are reported in **eTable 3** and **eTable 4**, respectively (supplemental material). Incidence was defined as the percentage of participants who had the comorbidity at the indicated follow-up among participants who did not have the comorbidity at baseline.
[a]Comorbidities were not assessed at 6 months or year 6. [b]Data collection ended before the 7 year assessment of 30% of LABS-2 participants. Given the sample size, diabetes incidence was too rare to model following LAGB.

eTable 1. Baseline Characteristics of LABS-2 Participants

	Roux-en-Y Gastric Bypass (n = 1738[a])	Laparoscopic Adjustable Gastric Band (n = 610[a])
Age (years)		
Median (25^{th}-75^{th})	45 (37-54)	48 (37-56)
Range	19 to 75	18 to 78
Sex - n (%)		
Female	1389 (79.9)	465 (76.2)
Male	349 (20.1)	145 (23.8)
Race - n (%)	N=1720	N=606
White	1463 (85.1)	543 (89.6)
Black	196 (11.4)	51 (8.4)
Other	61 (3.5)	12 (2.0)
Ethnicity - n (%)	N=1737	N=609
Hispanic	85 (4.9)	26 (4.3)
Non-Hispanic	1652 (95.1)	583 (95.7)
Smoker- n (%)	N=1734	N=610
Yes	250 (14.4)	56 (9.2)
No	1484 (85.6)	554 (90.8)
Weight (kg)		
Median (25^{th}-75^{th})	130 (116-150)	123 (111- 139)
Range	75 to 240	85 to 246
Body mass index (kg/m^2)[b]		
Median (25^{th}-75^{th})	46.6 (42.4, 51.9)	43.9 (40.4, 48.0)
Range	33.7 to 81.0	33.0 to 87.3
Comorbidities - No./Total (%)		
Diabetes	583/1646 (35.4)	164/569 (28.8)
High LDL	515/1406 (36.6)	177/482 (36.7)
High triglycerides	340/1426 (23.8)	103/489 (21.1)
Low HDL	648/1671 (38.8)	194/582 (33.3)
Hypertension	1159/1682 (68.9)	367/585 (62.7)

Abbreviations: HDL, high-density lipoprotein cholesterol; LDL, low-density lipoprotein cholesterol.

[a]Denominators shift between variables because of missing data.

[b]Calculated as weight in kilograms divided by height in meters squared.

eTable 2. Observed and Modeled Weight Change,[a] by Time Point in Relation to Bariatric Surgery

	6 months	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7 [b]		
	Observed, N, Median (25th-75th)									
RYGB	N=1636	N=1616	N=1540	N=1513	N=1494	N=1465	N=1451	N=978		
Percent Weight Change	-27.0	-34.0	-34.1	-31.5	-29.5	-28.8	-29.1	-27.6		
	(-30.8-23.0)	(-39.2-28.6)	(-40.4-27.6)	(-38.4-24.7)	(-37.0-22.7)	(-36.0-21.6)	(-36.4-21.7)	(-35.1-20.1)		
Weight Change, kg	-35.0	-44.5	-43.6	-40.5	-37.7	-37.3	-37.3	-35.5		
	(-41.4-29.5)	(-53.6-35.9)	(-55.5-35.0)	(-51.8-31.4)	(-49.5-28.6)	(-48.2-27.3)	(-49.1-27.7)	(-47.3-25.9)		
LAGB	N=595	N=579	N=558	N=544	N=535	N=530	N=518	N=322		
Percent Weight Change	-11.7	-13.9	-16.2	-16.0	-14.7	-15.0	-16.1	-14.4		
	(-15.5-8.1)	(-19.6-9.6)	(-22.9-9.3)	(-23.0-7.9)	(-22.9-6.7)	(-22.5-6.8)	(-24.3-7.6)	(-23.1-6.9)		
Weight Change, kg	-14.5	-17.7	-20.0	-20.2	-17.7	-18.2	-19.5	-17.7		
	(-19.5-10.5)	(-24.5-11.8)	(-28.2-10.9)	(-29.1-9.5)	(-28.2-8.6)	(-28.2-8.6)	(-29.1-9.1)	(-28.2-9.1)		
	Model-based Estimates, Mean (95% Confidence Interval) [c]								**P for trend Years 3-7**	
RYGB (N= 1734)									linear	quadratic
Percent Weight Change	-27.7	-34.5	-34.6	-32.3	-30.5	-29.6	-29.9	-28.4	<.001	<.01
	(-28.4-27.1)	(-35.1-33.8)	(-35.4-33.9)	(-33.0-31.5)	(-31.2-29.7)	(-30.4-28.8)	(-30.7-29.2)	(-29.2-27.6)		
Weight Change, kg	-37.0	-46.2	-46.6	-43.4	-41.0	-39.8	-40.3	-38.2	<.001	<.01
	(-38.1-36.0)	(-47.4-45.1)	(-47.8-45.4)	(-44.6-42.2)	(-42.2-39.7)	(-41.0-38.5)	(-41.5-39.0)	(-39.5-36.9)		
LAGB (N=610)										
Percent Weight Change	-12.5	-15.0	-16.4	-16.3	-15.5	-15.2	-16.2	-14.9	0.10	0.68
	(-14.0-11.0)	(-16.6-13.5)	(-18.0-14.7)	(-18.0-14.6)	(-17.2-13.8)	(-17.0-13.5)	(-18.0-14.5)	(-16.7-13.1)		
Weight Change, kg	-16.0	-19.0	-20.7	-20.6	-19.6	-19.3	-20.5	-18.8	0.10	0.72
	(-18.1-13.8)	(-21.2-16.9)	(-22.9-18.4)	(-23.0-18.3)	(-22.0-17.3)	(-21.7-16.8)	(-23.0-18.1)	(-21.3-16.3)		

Abbreviations: LAGB, laparoscopic adjustable gastric banding; RYGB, Roux-en-Y gastric bypass.

[a]Weight change from baseline. Negative values indicate weight loss.

[b]Data collection ended before the 7 year assessment of 498 RYGB and 202 LAGB participants.

[c]Means (95% Confidence Interval) are based on mixed models, adjusted for baseline factors independently related to missing follow-up data (i.e., site, age and smoking).

eTable 3. Observed Prevalence, Remission, and Incidence of Comorbidities[a], by Time Point in Relation to Bariatric Surgery

	%, No./Total													
	Baseline		Year 1		Year 2		Year 3		Year 4		Year 5		Year 7	
RYGB														
Diabetes														
Prevalence	35.4	583/1646	11.0	123/1122	10.3	97/942	12.0	112/933	13.7	132/964	14.8	148/999	14.4	98/681
Remission	NA	NA	69.7	264/379	71.3	233/327	67.5	216/320	63.7	218/342	61.4	212/345	58.9	129/219
Incidence	NA	NA	0.3	2/686	0.4	2/575	0.9	5/562	0.7	4/577	1.3	8/605	1.2	5/433
High LDL														
Prevalence	36.6	515/1406	16.2	140/866	17.3	123/710	17.8	129/724	18.2	133/732	17.6	133/755	16.1	82/509
Remission	NA	NA	62.0	181/292	58.1	143/246	59.7	151/253	58.9	149/253	60.8	158/260	62.9	105/167
Incidence	NA	NA	1.6	7/453	1.6	6/369	2.5	9/354	2.8	10/364	4.1	15/368	4.7	13/277
High triglycerides														
Prevalence	23.8	340/1426	2.7	25/922	2.9	22/768	4.7	37/785	4.1	32/779	3.2	25/793	5.2	28/537
Remission	NA	NA	91.5	184/201	92.2	153/166	85.8	139/162	83.2	134/161	91.5	150/164	85.8	103/120
Incidence	NA	NA	1.0	6/607	1.0	5/502	1.6	8/496	0.6	3/494	1.6	8/501	2.6	9/352
Low HDL														
Prevalence	38.8	648/1671	10.6	126/1190	5.9	60/1016	6.1	61/1001	7.7	76/985	8.1	84/1034	6.2	43/692
Remission	NA	NA	76.0	332/437	85.3	301/353	85.7	293/342	79.8	272/341	81.4	288/354	85.1	205/241
Incidence	NA	NA	2.7	19/710	1.1	7/630	1.5	9/616	1.1	7/612	2.5	16/643	1.4	6/435
Hypertension														
Prevalence	68.9	1159/1682	40.6	574/1415	42.7	499/1169	45.9	509/1109	50.5	566/1122	51.2	595/1162	52.5	411/783
Remission	NA	NA	45.4	436/960	43.3	340/786	39.3	291/741	34.4	258/751	33.1	259/782	32.3	168/520
Incidence	NA	NA	6.7	28/416	10.1	35/346	12.1	40/331	14.6	49/335	14.3	49/342	18.6	44/236
LABG														
Diabetes														
Prevalence	28.8	164/569	22.7	93/410	22.4	78/348	22.9	83/363	21.8	75/344	24.5	88/359	24.9	51/205
Remission	NA	NA	29.2	35/120	35.0	35/100	28.6	28/98	33.0	30/91	26.3	25/95	24.0	12/50
Incidence	NA	NA	0.7	2/268	2.2	5/230	3.2	8/247	3.9	9/231	4.6	11/237	4.9	7/144
High LDL														
Prevalence	36.7	177/482	37.7	119/316	35.7	100/280	39.0	111/285	39.7	110/277	38.3	111/290	35.5	60/169
Remission	NA	NA	24.6	27/110	24.3	25/103	22.7	22/97	26.4	24/91	27.7	26/94	30.2	16/53
Incidence	NA	NA	10.8	17/158	8.8	12/136	14.7	21/143	17.7	23/130	20.3	27/133	15.4	14/91

Continued next page

eTable 3 Continued

	%, No./Total													
	Baseline		**Year 1**		**Year 2**		**Year 3**		**Year 4**		**Year 5**		**Year 7**	
LAGB														
High triglycerides														
Prevalence	21.1	103/489	10.3	35/339	12.2	38/312	14.1	44/312	12.5	37/297	13.5	41/304	9.4	17/180
Remission	NA	NA	63.2	36/57	65.4	34/52	62.1	36/58	64.9	37/57	67.3	35/52	78.1	25/32
Incidence	NA	NA	3.8	9/235	6.5	14/215	6.8	14/206	6.6	12/183	8.9	17/192	4.9	6/122
Low HDL														
Prevalence	33.3	194/582	16.6	74/445	12.1	47/390	12.1	47/389	14.1	51/363	17.3	64/370	13.7	29/212
Remission	NA	NA	56.8	84/148	64.7	77/119	67.3	76/113	62.8	71/113	56.4	62/110	66.7	44/66
Incidence	NA	NA	3.2	9/281	2.0	5/256	3.8	10/266	3.9	9/233	5.0	12/242	5.2	7/136
Hypertension														
Prevalence	62.7	367/585	56.6	284/502	53.3	232/435	56.1	245/437	60.8	250/411	60.1	255/424	62.2	148/238
Remission	NA	NA	19.5	59/302	22.9	59/258	19.9	51/256	15.9	39/245	17.5	44/252	17.1	24/140
Incidence	NA	NA	15.6	28/179	16.6	27/163	17.1	28/164	23.7	35/148	22.6	35/155	30.1	28/93

Abbreviations: HDL, high-density lipoprotein; LAGB, laparoscopic adjustable gastric banding; LDL, low-density lipoprotein cholesterol; NA, not applicable; No., number; RYGB, Roux-en-Y gastric bypass.

[a]Remission is the percentage of participants who did not have the comorbidity at follow-up among participants who had the comorbidity at baseline. Incidence is the percentage of participants who had the comorbidity at follow-up among participants who did not have the comorbidity at baseline**.** The sum of the incidence and the remission samples are slightly smaller than the prevalence sample of the corresponding comorbidity due to missing baseline status.

eTable 4. Modeled[a] Prevalence, Remission, and Incidence of Comorbidities[b], by Time Point in Relation to Bariatric Surgery

	N	Model-Based Estimates, % (95% Confidence Interval)														*P*	
		Baseline (BL)		Year 1		Year 2		Year 3		Year 4		Year 5		Year 7		Year 7 vs. BL	Trend Years 3-7[c]
RYGB																	
Diabetes																	
Prevalence	1723	28.3	(26.4-30.3)	8.5	(7.2-9.8)	7.8	(6.5-9.1)	8.9	(7.5-10.2)	10.0	(8.6-11.5)	10.8	(9.3-12.2)	11.6	(9.9-13.4)	<.001	<.001
Remission	582	NA	NA	71.2	(67.0-75.4)	72.3	(68.0-76.6)	69.4	(65.0-73.8)	66.3	(61.8-70.9)	64.6	(60.0-69.2)	60.2	(54.7-65.6)	NA	<.01
Incidence	1060	NA	NA	0.3	(0.0-0.7)	0.3	(0.0-0.7)	0.9	(0.2-1.6)	0.7	(0.1-1.3)	1.4	(0.5-2.3)	0.6	(0.0-1.5)	NA	0.25
High LDL																	
Prevalence	1646	33.3	(31.1-35.6)	13.6	(11.7-15.4)	13.7	(11.8-15.6)	13.8	(11.9-15.7)	14.3	(12.4-16.2)	14.1	(12.2-16.0)	14.3	(11.9-16.7)	<.001	0.57
Remission	512	NA	NA	65.3	(60.0-70.5)	63.2	(58.0-68.5)	62.7	(57.3-68.0)	60.6	(55.4-65.8)	62.5	(57.4-67.6)	60.7	(54.6-66.8)	NA	0.77
Incidence	890	NA	NA	1.5	(0.4-2.6)	1.5	(0.4-2.7)	2.4	(1.1-3.8)	2.5	(1.2-3.8)	4.4	(2.6-6.3)	4.4	(2.1-6.7)	NA	0.04
High triglycerides																	
Prevalence	1662	23.7	(21.5-25.9)	2.6	(1.6-3.6)	2.8	(1.7-3.8)	4.6	(3.3-6.0)	4.2	(2.9-5.4)	3.2	(2.1-4.3)	4.9	(3.3-6.6)	<.001	0.02[d]
Remission	339	NA	NA	92.1	(88.3-95.9)	92.3	(88.2-96.4)	86.8	(81.6-91.9)	84.1	(78.8-89.5)	91.9	(87.7-96.0)	86.9	(81.2-92.7)	NA	0.68
Incidence	1083	NA	NA	1.0	(0.3-1.8)	1.0	(0.2-1.8)	1.5	(0.5-2.5)	0.6	(0.0-1.2)	1.8	(0.7-3.0)	2.6	(0.8-4.3)	NA	0.25
Low HDL																	
Prevalence	1725	34.9	(32.6-36.9)	9.5	(8.1-11.0)	5.3	(4.1-6.5)	5.4	(4.2-6.7)	6.9	(5.5-8.2)	7.3	(5.9-8.7)	5.8	(4.3-7.3)	<.001	0.29
Remission	646	NA	NA	75.7	(71.8-79.6)	84.6	(81.2-88.0)	85.5	(82.2-88.8)	82.7	(79.0-86.3)	83.2	(79.5-86.8)	83.7	(79.7-87.7)	NA	0.23
Incidence	1021	NA	NA	2.7	(1.5-3.8)	1.0	(0.2-1.8)	1.2	(0.4-2.0)	1.1	(0.3-1.9)	2.6	(1.4-3.9)	1.5	(0.6-2.5)	NA	0.26
Hypertension																	
Prevalence	1728	67.6	(65.4-69.7)	38.9	(36.6-41.1)	40.2	(37.8-42.6)	43.4	(40.9-45.9)	47.1	(44.6-49.6)	48.0	(45.5-50.6)	51.6	(48.6-54.6)	<.001	<.001
Remission	1156	NA	NA	46.1	(43.1-49.1)	46.1	(42.8-49.3)	41.3	(38.0-44.6)	37.2	(34.0-40.5)	35.4	(32.1-38.7)	33.4	(29.9-37.0)	NA	<.01
Incidence	522	NA	NA	6.7	(4.4-9.0)	10.6	(7.5-13.6)	12.7	(9.3-16.1)	14.6	(11.1-18.1)	15.2	(11.6-18.8)	19.2	(14.5-23.9)	NA	0.01
LAGB																	
Diabetes[e]																	
Prevalence	604	29.0	(25.6-32.5)	21.1	(17.9-24.2)	21.6	(18.3-24.9)	22.6	(19.3-25.9)	23.5	(20.1-27.0)	24.4	(20.9-27.9)	28.1	(23.6-32.5)	0.63	0.01
Remission	162	NA	NA	30.7	(22.8-38.7)	34.7	(26.5-42.9)	29.3	(21.6-37.1)	28.9	(20.4-37.4)	29.2	(21.0-37.4)	20.3	(9.7-30.9)	NA	0.19
High LDL																	
Prevalence	578	36.2	(32.4-40.0)	33.7	(29.5-37.8)	31.8	(27.7-35.9)	34.3	(30.0-38.5)	36.8	(32.3-41.3)	36.9	(32.4-41.4)	37.6	(32.5-42.8)	0.80	0.55
Remission	177	NA	NA	26.1	(17.8-34.4)	27.1	(18.5-35.7)	24.3	(16.5-32.0)	26.4	(18.0-34.8)	26.4	(18.0-34.7)	25.0	(14.8-35.1)	NA	0.80
Incidence	305	NA	NA	8.9	(4.4-13.4)	8.8	(4.6-12.9)	12.1	(7.2-16.9)	13.1	(8.1-18.1)	17.1	(11.2-22.9)	15.1	(8.8-21.3)	NA	0.20

Continued on next page.

eTable 4 Continued

	N	Model-Based Estimates, % (95% Confidence Interval)														*P*	
		Baseline (BL)		Year 1		Year 2		Year 3		Year 4		Year 5		Year 7		Year 7 vs. BL	Trend Years 3-7[c]
LAGB																	
High triglycerides																	
Prevalence	583	21.3	(17.8-24.9)	10.7	(7.7-13.7)	12.1	(8.8-15.4)	13.3	(9.8-16.7)	12.0	(8.6-15.3)	13.0	(9.5-16.4)	9.7	(5.8-13.6)	<.001	0.19
Remission	103	NA	NA	64.9	(51.9-77.9)	68.2	(55.0-81.5)	66.2	(54.1-78.4)	65.8	(53.6-78.1)	70.6	(59.1-82.0)	80.8	(68.4-93.2)	NA	0.04
Incidence	386	NA	NA	3.8	(1.5-6.1)	5.9	(3.1-8.8)	6.1	(3.0-9.2)	6.2	(2.8-9.6)	8.7	(4.9-12.5)	5.2	(0.8-9.6)	NA	0.85
Low HDL																	
Prevalence	605	33.0	(29.2-36.7)	16.5	(13.2-19.8)	13.4	(10.3-16.5)	13.9	(10.7-17.1)	15.1	(11.7-18.5)	18.3	(14.7-21.9)	16.3	(12.0-20.7)	<.001	0.052
Remission	194	NA	NA	55.4	(47.7-63.1)	61.6	(53.4-69.7)	64.0	(56.0-72.1)	60.5	(52.2-68.8)	56.3	(47.8-64.8)	61.0	(51.1-70.9)	NA	0.61
Incidence	388	NA	NA	3.2	(1.2-5.2)	2.1	(0.5-3.8)	4.1	(1.9-6.3)	3.9	(1.4-6.3)	4.9	(2.4-7.4)	6.2	(2.6-9.7)	NA	0.13
Hypertension																	
Prevalence	609	63.0	(59.5-66.6)	56.1	(52.3-59.8)	53.8	(49.8-57.8)	56.4	(52.5-60.3)	59.7	(55.7-63.7)	59.6	(55.6-63.6)	63.1	(58.1-68.1)	0.99	0.054
Remission	367	NA	NA	20.8	(16.5-25.1)	24.3	(19.2-29.4)	21.4	(16.8-26.0)	18.2	(13.6-22.8)	19.7	(14.9-24.5)	16.9	(11.5-22.4)	NA	0.39
Incidence	218	NA	NA	15.6	(10.3-20.9)	16.2	(10.6-21.8)	16.7	(11.1-22.2)	23.4	(16.8-30.0)	22.7	(16.2-29.2)	28.1	(19.5-36.7)	NA	0.12

Abbreviations: HDL, high-density lipoprotein; LAGB, laparoscopic adjustable gastric banding; LDL, low-density lipoprotein NA, not applicable; RYGB, Roux-en-Y gastric bypass.

[a]Modeled percentage (95% CI) are based on mixed models, adjusted for baseline factors independently related to missing follow-up data (i.e., site, age and smoking).

[b]Remission is the percentage of participants who did not have the comorbidity at follow-up among participants who had the comorbidity at baseline. Incidence is the percentage of participants who had the comorbidity at follow-up among participants who did not have the comorbidity at baseline**.**

[c]*P*-value for a linear trend is reported unless a quadratic trend is significant.

[d]*P*-value for quadratic trend.

[e]Incidence of diabetes is too rare to model given the sample size. Observed data reported in **eTable 3.**

eTable 5. Modeled Percent Weight Change[a] and Subsequent Bariatric Procedures after Initial Bariatric Procedure by Weight Trajectory Group Membership[b]

Weight Trajectory Groups[b]	Percent Weight Change from Baseline Model-based Estimates, Mean (95% Confidence Interval)[c]					P for trend Years 3-7		Percent Weight Change from Baseline		Participants who had a Subsequent Procedure[e], N(%)		
	Year-3	Year-4	Year-5	Year-6	Year-7	linear	quadratic	Change Years 3-7	P[d]	New	Reversal	Revision
RYGB												
Group 1 (n=84; 4.8%)	-12.4 (-15.1- -9.8)	-10.2 (-12.7- -7.6)	-9.6 (-12.3- -6.9)	-10.6 (-13.6- -7.6)	-11.7 (-14.9- -8.5)	0.12	<.01	0.7 (-1.9-3.4)	0.59	0	0	0
Group 2 (n=375; 21.6%)	-22.4 (-23.1- -21.6)	-20.0 (-20.8- -19.2)	-18.1 (-19.0- -17.3)	-18.6 (-19.4- -17.7)	-17.1 (-18.1- -16.1)	<.001	<.001	5.3 (4.3-6.2)	<.001	0	1 (0.3)	2 (0.5)
Group 3 (n=482; 27.8%)	-30.3 (-31.0- -29.6)	-27.5 (-28.2- -26.7)	-26.5 (-27.3- -25.8)	-26.1 (-26.9- -25.4)	-24.3 (-25.1- -23.5)	<.001	<.001	6.0 (5.3-6.7)	<.001	0	1 (0.2)	6 (1.2)
Group 4 (n=456; 26.3%)	-38.1 (-38.6- -37.5)	-36.5 (-37.1- -36.0)	-35.3 (-35.9- -34.7)	-35.5 (-36.1- -34.8)	-33.4 (-34.2- -32.6)	<.001	0.79	4.7 (3.9-5.5)	<.001	0	1 (0.2)	1 (0.2)
Group 5 (n=106; 6.1%)	-26.9 (-28.6- -25.3)	-28.6 (-30.2- -27.0)	-31.6 (-33.2- -30.1)	-34.5 (-36.1- -32.9)	-35.0 (-37.5- -32.6)	<.001	0.56	-8.1 (-10.7- 5.5)	<.001	0	0	0
Group 6 (n=231; 13.3%)	-47.4 (-48.2- -46.5)	-46.6 (-47.4- -45.7)	-46.0 (-46.9- -45.1)	-46.3 (-47.2- -45.3)	-44.5 (-45.6- -43.3)	<.001	0.32	2.9 (1.6-4.1)	<.001	0	0	2 (0.9)
LAGB												
Group 1 (n=32; 5.3%)	3.3 (0.9-5.6)	6.4 (4.4-8.3)	7.7 (5.4-10.0)	7.2 (5.3-9.1)	10.9 (6.3-15.6)	<.001	0.40	7.7 (3.0-12.4)	<.01	2 (6.3)	11 (34.4)	0
Group 2 (n=123; 20.2%)	-5.6 (-7.4- -3.9)	-5.7 (-7.5- -4.0)	-4.8 (-6.6- -3.0)	-6.8 (-8.9- -4.7)	-5.5 (-7.5- -3.5)	0.44	0.88	0.1 (-1.4-1.5)	0.92	8 (6.5)	12 (9.8)	9 (7.3)
Group 3 (n=36; 5.9%)	-16.0 (-18.5- -13.5)	-7.6 (-10.2- -5.0)	-5.0 (-7.7- -2.2)	-3.0 (-6.0- -0.1)	-1.8 (-5.1-1.4)	<.001	<.001	14.2 (11.2-17.2)	<.001	3 (8.3)	6 (16.7)	3 (8.3)
Group 4 (n=239; 39.2%)	-16.0 (-17.4- -14.7)	-15.3 (-16.6- -14.0)	-15.5 (-16.8- -14.2)	-17.1 (-18.5- -15.7)	-16.4 (-18.0- -14.8)	0.11	0.34	-0.3 (-1.8-1.1)	0.63	33 (13.8)	7 (2.9)	19 (8.0)
Group 5 (n=93; 15.3%)	-27.5 (-29.3- -25.6)	-25.4 (-27.2- -23.7)	-23.3 (-25.1- -21.6)	-22.6 (-24.3- -20.9)	-19.9 (-22.0- -17.7)	<.001	0.99	7.6 (52-10.1)	<.001	9 (9.7)	4 (4.3)	8 (8.6)
Group 6 (n=50; 8.2%)	-23.4 (-27.7- -19.2)	-27.8 (-32.0- -23.7)	-31.4 (-35.2- -27.6)	-34.0 (-37.8- -30.1)	-33.4 (-37.4- -29.5)	<.001	<.01	-10.0 (-13.8- -6.2)	<.001	14 (28.0)	0	4 (8.0)
Group 7 (n=37; 6.1%)	-35.0 (-39.9- -30.2)	-36.7 (-41.3- -32.2)	-37.7 (-42.3- -33.1)	-37.2 (-41.7- -32.7)	-35.7 (-40.9- -30.5)	0.89	<.01	-0.7 (-4.3-3.0)	0.69	4 (5.5)	1 (2.7)	3 (6.5)

Abbreviations: LAGB, laparoscopic adjustable gastric banding; RYGB, Roux-en-Y gastric bypass.

[a]Percent weight change from baseline. Negative values indicate weight loss. Positive values indicate weight gain.

[b]Growth mixture models were used to estimate weight change trajectories for each participant and to group participants with similar modeled trajectories. Trajectory groups, shown in **Figure 4** of the main results, are ordered from worst (1) to best (6 or 7) 7-year weight change.

[c]Means (95% CI) are based on mixed models, adjusted for baseline factors independently related to missing follow-up data (i.e., site, age and smoking).

[d]The *P*-value indicates whether the average difference in percent weight change from baseline between year 3 and year 7 is significantly different from zero.

[e]Participants who had more than one type of subsequent surgery are categorized according to the following hierarchy: new procedure, reversal,

revision.

eTable 6. Baseline Characteristics by Weight Trajectory Group

eTable 6a. Baseline Characteristics by RYGB Weight Trajectory Group Membership[a].

	RYGB Weight Trajectory Groups						
	1 (n=84)	**2** (n=375)	**3** (n=482)	**4** (n=456)	**5** (n=106)	**6** (n=231)	***P***[b]
Age (years)							<.001
Median	48.5	47.0	45.0	44.0	51.0	42.0	
(25^{th}-75^{th})	(42.5-56.0)	(39.0-55.0)	(37.0-53.0)	(35.0-52.0)	(44.0-58.0)	(34.0-50.0)	
Range	24.0-70.0	19.0-70.0	19.0-73.0	19.0-75.0	20.0-70.0	19.0-69.0	
Sex - n (%)							<.001
Female	59 (70.2)	290 (77.3)	370 (76.8)	385 (84.4)	81 (76.4)	201 (87)	
Male	25 (29.8)	85 (22.7)	112 (23.2)	71 (15.6)	25 (23.6)	30 (13.0)	
Race - n (%)	N=84	N=367	N=480	N=451	N=105	N=229	0.03
White	67 (79.8)	296 (80.7)	418 (87.1)	393 (87.1)	83 (79.0)	202 (88.2)	
Black	14 (16.7)	58 (15.8)	48 (10.0)	38 (8.4)	17 (16.2)	21 (9.2)	
Other	3 (3.6)	13 (3.5)	14 (2.9)	20 (4.4)	5 (4.8)	6 (2.6)	
Ethnicity - n (%)	N=84	N=374	N=482	N=456	N=106	N=231	0.99
Hispanic	5 (6.0)	22 (5.9)	14 (2.9)	27 (5.9)	6 (5.7)	11 (4.8)	
Non-Hispanic	79 (94.0)	352 (94.1)	468 (97.1)	429 (94.1)	100 (94.3)	220 (95.2)	
Smoker - n (%)	N=84	N=375	N=482	N=456	N=106	N=231	<.001
Yes	6 (7.1)	42 (11.2)	44 (9.1)	88 (19.3)	19 (17.9)	51 (22.1)	
No	78 (92.9)	333 (88.8)	438 (90.9)	368 (80.7)	87 (82.1)	180 (77.9)	
Weight (kg)							0.46
Median	129.1	131.4	130.0	128.0	130.9	133.6	
(25^{th}-75^{th})	(114.8-151.1)	(115.9-151.4)	(116.8-145.5)	(114.5-148.9)	(120.5-149.1)	(120.0-151.8)	
Range	82.7-232.3	83.2-223.6	87.3-239.1	75.0-236.8	87.7-240.0	88.6-233.6	
Body mass index (kg/m^2)[b]							<.001
Median	44.7	47.2	45.8	46.2	47.0	49.4	
(25^{th}-75th)	(40.8-52.3)	(41.7-51.8)	(42.5-50.7)	(42.2-51.6)	(42.3-52.4)	(44.7-53.9)	
Range	35.6-72.5	33.8-77.2	33.7-76.8	34.6-81.0	34.7-77.6	35.3-70.5	
Comorbidities – No./Total (%)							
Diabetes	49/81 (60.5)	173/356 (48.6)	145/462 (31.4)	120/434 (27.6)	46/97 (47.4)	49/212 (23.1)	<.001
High LDL	33/68 (48.5)	125/298 (41.9)	150/405 (37.0)	110/361 (30.5)	40/88 (45.5)	54/182 (29.7)	<.01
High triglycerides	19/71 (26.8)	74/301 (24.6)	92/408 (22.5)	89/365 (24.4)	26/89 (29.2)	39/188 (20.7)	0.58
Low HDL	37/82 (45.1)	135/359 (37.6)	179/468 (38.2)	173/442 (39.1)	47/98 (48.0)	75/218 (34.4)	0.58
Hypertension	59/79 (74.7)	269/362 (74.3)	313/471 (66.5)	292/440 (66.4)	83/104 (79.8)	140/222 (63.1)	0.03

Abbreviations: HDL, high-density lipoprotein cholesterol; LDL, low-density lipoprotein cholesterol; RYGB, Roux-en-Y gastric bypass.

[a]Growth mixture models were used to estimate weight change trajectories for each participant and to group participants with similar modeled trajectories. Trajectory groups, shown in Figure 2 of the main results, are ordered from worst (1) to best (6) 7-year weight change.

[b]*P* values from Cochran-Armitage Trend Test for dichotomous variables, Kendall's Tau-b for categorical variables with more than 2 categories, and Jonckheere-Terpstra trend test for continuous variables.

eTable 6b. Baseline Characteristics by LAGB Weight Trajectory Group Membership[a].

	LAGB Weight Trajectory Groups							
	1 (n=32)	**2** (n=123)	**3** (n=36)	**4** (n=239)	**5** (n=93)	**6** (n=50)	**7** (n=37)	***P***[b]
Age (years)								0.29
Median	52.5	45.0	46.0	49.0	49.0	44.0	44.0	
(25^{th}-75th)	(39.0-63.5)	(38.0-56.0)	(32.0-52.0)	(38.0-57.0)	(35.0-56.0)	(35.0-55.0)	(36.0-51.0)	
Range	21.0-70.0	21.0-76.0	23.0-72.0	19.0-78.0	18.0-72.0	19.0-70.0	19.0-66.0	
Sex - n (%)								<.01
Female	23 (71.9)	85 (69.1)	26 (72.2)	182 (76.2)	77 (82.8)	42 (84.0)	30 (81.1)	
Male	9 (28.1)	38 (30.9)	10 (27.8)	57 (23.8)	16 (17.2)	8 (16.0)	7 (18.9)	
Race - n (%)	N=32	N=123	N=36	N=236	N=92	N=50	N=37	0.94
White	31 (96.9)	111 (90.2)	30 (83.3)	209 (88.6)	83 (90.2)	44 (88.0)	35 (94.6)	
Black	1 (3.1)	9 (7.3)	5 (13.9)	21 (8.9)	8 (8.7)	5 (10.0)	2 (5.4)	
Other	0 (0)	3 (2.4)	1 (2.8)	6 (2.5)	1 (1.1)	1 (2.0)	0 (0)	
Ethnicity - n (%)	N=32	N=123	N=36	N=238	N=93	N=50	N=37	0.01
Hispanic	0 (0)	3 (2.4)	1 (2.8)	9 (3.8)	7 (7.5)	2 (4.0)	4 (10.8)	
Non-Hispanic	32 (100)	120 (97.6)	35 (97.2)	229 (96.2)	86 (92.5)	48 (96.0)	33 (89.2)	
Smoker -n (%)	N=32	N=123	N=36	N=239	N=93	N=50	N=37	0.73
Yes	1 (3.1)	10 (8.1)	6 (16.7)	21 (8.8)	13 (14.0)	2 (4.0)	3 (8.1)	
No	31 (96.9)	113 (91.9)	30 (83.3)	218 (91.2)	80 (86.0)	48 (96.0)	34 (91.9)	
Weight (kg)								
Median	115.7	127.3	124.5	120.9	116.8	121.8	133.2	0.07
(25^{th}-75th)	(109.1-146.6)	(115.5-143.2)	(115.0-141.6)	(111.4-138.2)	(108.2-127.3)	(109.5-132.7)	(117.7-148.6)	
Range	94.5-198.6	85.0-245.5	91.8-180.9	87.3-200.0	88.6-181.4	89.5-188.6	92.3-171.8	
Body mass index (kg/m^2)[b]								0.40
Median	44.1	44.0	44.0	43.5	42.2	44.0	46.0	
(25^{th}-75th)	(40.5-50.1)	(40.6-50.8)	(42.0-48.0)	(39.9-47.1)	(39.6-45.7)	(41.1-47.0)	(42.1-51.3)	
Range	33.0-58.7	34.8-87.3	36.2-65.2	33.7-64.3	33.8-57.9	36.1-64.4	35.5-66.5	
Comorbidities-No./Total (%)								
Diabetes	9/28 (32.1)	37/110 (33.6)	3/34 (8.8)	74/224 (33.0)	22/90 (24.4)	14/50 (28.0)	5/33 (15.2)	0.13
High LDL	7/23 (30.4)	33/88 (37.5)	6/29 (20.7)	86/204 (42.2)	23/65 (35.4)	15/44 (34.1)	7/29 (24.1)	0.68
High triglycerides	7/25 (28.0)	23/89 (25.8)	8/29 (27.6)	38/207 (18.4)	10/65 (15.4)	11/43 (25.6)	6/31 (19.4)	0.21
Low HDL	10/34 (33.3)	54/112 (48.2)	11/34 (32.4)	67/230 (29.1)	23/90 (25.6)	19/50 (38.0)	10/36 (27.8)	0.02
Hypertension	23/32 (71.9)	77/117 (65.8)	23/35 (65.7)	144/226 (63.7)	57/93 (61.3)	25/48 (52.1)	18/34 (52.9)	0.03

Abbreviations: HDL, high-density lipoprotein cholesterol; LDL, low-density lipoprotein cholesterol; LAGB, laparoscopic adjustable gastric banding.

[a]Growth mixture models were used to estimate weight change trajectories for each participant and to group participants with similar modeled trajectories. Trajectory groups, shown in Figure 2 of the main results, are ordered from worst (1) to best (6) 7-year weight change.

[b]*P* values from Cochran-Armitage Trend Test for dichotomous variables, Kendall's Tau-b for categorical variables with more than 2 categories, and Jonckheere-Terpstra trend test for continuous variables.

eTable 7. Remission of Comorbid Conditions

eTable 7a. Remission of Diabetes[a] by RYGB Weight Trajectory Group Membership, by Time Point in Relation to Bariatric Surgery

	%, No./Total												
	Year 1		Year 2		Year 3		Year 4		Year 5		Year 7		*P*
Diabetes													
Group 1 (n=49)													<0.001[b]
Remission													0.12[c]
ARR	76.5	26/34	73.9	17/23	52.2	12/23	50.0	16/32	42.9	12/28	46.7	7/15	
Group 2 (n=173)	Ref		Ref		Ref		Ref		Ref		Ref		
Remission													
ARR	68.6	70/102	66.7	58/87	62.0	57/92	55.1	54/98	52.9	54/102	46.4	26/56	
Group 3 (n=145)	0.94	(0.75-1.17)	1.00	(0.74-1.35)	1.17	(0.79-1.74)	1.11	(0.76-1.63)	1.22	(0.79-1.89)	1.57	(0.73-3.38)	
Remission													
ARR	66.3	63/95	71.0	66/93	73.4	58/79	72.0	59/82	72.3	60/83	63.3	38/60	
Group 4 (n=120)	0.91	(0.73-1.15)	1.12	(0.83-1.51)	1.38	(0.94-2.04)	1.39	(0.95-2.02)	1.55	(1.01-2.37)	1.90	(0.89-4.04)	
Remission													
ARR	71.8	56/78	76.5	52/68	71.2	52/73	68.1	49/72	65.3	47/72	63.3	31/49	
Group 5 (n=46)	0.99	(0.79-1.23)	1.21	(0.91-1.63)	1.43	(0.98-2.10)	1.46	(1.00-2.13)	1.58	(1.03-2.42)	1.96	(0.92-4.17)	
Remission													
ARR	54.5	18/33	57.1	16/28	57.1	16/28	56.7	17/30	48.4	15/31	50.0	8/16	
Group 6 (n=49)	0.77	(0.55-1.07)	0.94	(0.65-1.38)	1.15	(0.73-1.82)	1.19	(0.77-1.84)	1.31	(0.81-2.13)	1.55	(0.69-3.50)	
Remission													
ARR	88.3	30/36	85.2	23/27	84.0	21/25	81.5	22/27	82.1	23/28	82.6	19/23	
	1.08	(0.85-1.36)	1.32	(0.98-1.79)	1.68	(1.13-2.47)	1.64	(1.11-2.40)	1.81	(1.17-2.78)	2.44	(1.15-5.17)	

Abbreviations: ARR, Adjusted relative risk; RYGB, Roux-en-Y gastric bypass.

[a] Among participants with diabetes at baseline, observed remission is reported. Poisson mixed models with robust error variance were used to model remission of diabetes, with weight trajectory group membership, time (follow-up assessment) and a time x weight trajectory group interaction term, as well as site, baseline age and smoking status, which were related to missing follow-up data, as fixed effects. Trajectory groups, shown in Figure 4 of the main results, are ordered from worst (1) to best (6) 7-year weight change. Adjusted relative risks of remission in comparison to group 1 are reported by time point.

[b] For weight trajectory group.

[c] For weight trajectory group and time interaction.

eTable 7b. Remission of High LDL[a] by RYGB Weight Trajectory Group Membership, by Time Point in Relation to Bariatric Surgery

	%, No./Total												
	Year 1		Year 2		Year 3		Year 4		Year 5		Year 7		*P*
High LDL													0.13[b]
Group 1 (n=33)													0.20[c]
Remission	35.0	7/20	40.0	6/15	38.5	5/13	50.0	8/16	41.7	5/12	57.1	4/7	
ARR	Ref		Ref		Ref		Ref		Ref		Ref		
Group 2 (n=125)													
Remission	63.2	43/68	52.5	31/59	50.8	33/65	46.6	27/58	48.4	30/62	52.9	18/34	
ARR	1.80	(1.09-2.98)	1.25	(0.78-2.00)	1.69	(0.88-3.25)	1.01	(0.63-1.63)	1.84	(0.81-4.19)	1.83	(0.61-5.50)	
Group 3 (n=150)													
Remission	65.1	56/86	63.8	51/80	73.1	49/67	74.0	57/77	72.4	55/76	71.4	40/56	
ARR	1.61	(0.98-2.65)	1.36	(0.86-2.13)	2.03	(1.07-3.84)	1.46	(0.96-2.23)	2.39	(1.07-5.32)	2.23	(0.75-6.61)	
Group 4 (n=110)													
Remission	63.9	39/61	63.0	29/46	63.9	39/61	59.6	34/57	63.8	37/58	63.6	28/44	
ARR	1.57	(0.94-2.62)	1.36	(0.85-2.17)	2.11	(1.11-4.02)	1.30	(0.83-2.02)	2.18	(0.97-4.92)	1.87	(0.62-5.61)	
Group 5 (n=40)													
Remission	54.2	13/24	36.8	7/19	52.2	12/23	42.9	9/21	56.0	14/25	36.4	4/11	
ARR	1.66	(0.95-2.89)	1.07	(0.60-1.90)	1.70	(0.83-3.50)	1.09	(0.63-1.91)	2.07	(0.88-4.88)	1.99	(0.62-6.37)	
Group 6 (n=54)													
Remission	74.2	23/31	76.0	19/25	56.5	13/23	60.9	14/23	65.4	17/26	73.3	11/15	
ARR	1.83	(1.09-3.05)	1.49	(0.93-2.37)	1.68	(0.84-3.37)	1.30	(0.79-2.13)	2.29	(1.00-5.22)	2.36	(0.77-7.24)	

Abbreviations: ARR, Adjusted relative risk; LDL, low-density lipoprotein cholesterol; RYGB, Roux-en-Y gastric bypass.

[a] Among participants with high LDL at baseline, observed remission is reported. Poisson mixed models with robust error variance were used to model remission of high LDL, with weight trajectory group membership, time (follow-up assessment) and a time x weight trajectory group interaction term, as well as site, baseline age and smoking status, which were related to missing follow-up data, as fixed effects. Trajectory groups, shown in Figure 2 of the main results, are ordered from worst (1) to best (6) 7-year weight change. Adjusted relative risks of remission in comparison to group 1 are reported by time point.

[b] For weight trajectory group.

[c] For weight trajectory group and time interaction.

eTable 7c. Remission of High Triglycerides[a] by RYGB Weight Trajectory Group Membership, by Time Point in Relation to Bariatric Surgery

	%, No./Total												
	Year 1		Year 2		Year 3		Year 4		Year 5		Year 7		*P*
High triglycerides													<0.001[b]
Group 1 (n=19)													0.03[c]
Remission	76.9	10/13	81.8	9/11	63.6	7/11	70.0	7/10	50.0	3/6	80.0	4/5	
ARR	Ref		Ref		Ref		Ref		Ref		Ref		
Group 2 (n=74)													
Remission	86.8	33/38	88.9	32/36	75.8	25/33	67.7	23/34	80.6	29/36	73.9	17/23	
ARR	1.07	(0.79-1.46)	1.08	(0.82-1.44)	1.15	(0.73-1.79)	0.90	(0.60-1.35)	1.35	(0.67-2.72)	0.94	(0.68-1.30)	
Group 3 (n=92)													
Remission	94.6	53/56	93.6	44/47	91.4	32/35	88.6	39/44	93.2	41/44	81.6	31/38	
ARR	1.19	(0.89-1.59)	1.16	(0.88-1.53)	1.38	(0.91-2.11)	1.22	(0.85-1.75)	1.62	(0.81-3.22)	1.04	(0.79-1.38)	
Group 4 (n=89)													
Remission	98.0	50/51	97.4	38/39	93.6	44/47	90.2	37/41	100.0	44/44	93.8	30/32	
ARR	1.21	(0.91-1.60)	1.20	(0.92-1.57)	1.43	(0.94-2.18)	1.22	(0.85-1.75)	1.71	(0.87-3.38)	1.18	(0.91-1.52)	
Group 5 (n=26)													
Remission	76.5	13/17	70.0	7/10	68.8	11/16	73.3	11/15	92.3	12/13	88.9	8/9	
ARR	0.94	(0.65-1.36)	0.92	(0.58-1.45)	1.02	(0.61-1.71)	0.99	(0.64-1.54)	1.63	(0.81-3.27)	1.10	(0.80-1.51)	
Group 6 (n=39)													
Remission	96.0	24/25	100.0	22/22	100.0	20/20	100.0	16/16	100.0	20/20	100.0	13/13	
ARR	1.20	(0.89-1.60)	1.22	(0.94-1.59)	1.53	(1.01-2.31)	1.36	(0.96-1.92)	1.72	(0.87-3.40)	1.25	(0.98-1.59)	

Abbreviations: ARR, Adjusted relative risk; RYGB, Roux-en-Y gastric bypass.

[a] Among participants with high triglycerides at baseline, observed remission is reported. Poisson mixed models with robust error variance were used to model remission of high triglycerides, with weight trajectory group membership, time (follow-up assessment) and a time x weight trajectory group interaction term, as well as site, baseline age and smoking status, which were related to missing follow-up data, as fixed effects. Trajectory groups, shown in Figure 2 of the main results, are ordered from worst (1) to best (6) 7-year weight change. Adjusted relative risks of remission in comparison to group 1 are reported by time point.

[b] For weight trajectory group.

[c] For weight trajectory group and time interaction.

eTable 7d. Remission of Low HDL[a] by RYGB Weight Trajectory Group Membership, by Time Point in Relation to Bariatric Surgery

	%, No./Total												
	Year 1		Year 2		Year 3		Year 4		Year 5		Year 7		*P*
Low HDL													<0.001[b]
Group 1 (n=37)													0.04[c]
Remission	61.5	16/26	61.9	13/21	50.0	11/22	45.8	11/24	39.1	9/23	53.8	7/13	
ARR	Ref		Ref		Ref		Ref		Ref		Ref		
Group 2 (n=135)													
Remission	70.5	62/88	77.3	58/75	76.6	49/64	67.1	47/70	75.7	53/70	72.1	31/43	
ARR	1.26	(0.90-1.76)	1.38	(0.95-1.98)	1.46	(0.99-2.14)	1.30	(0.88-1.92)	1.76	(1.13-2.75)	1.58	(0.95-2.63)	
Group 3 (n=179)													
Remission	78.7	96/122	86.0	86/100	92.0	92/100	88.4	84/95	83.3	80/96	84.5	60/71	
ARR	1.36	(0.98-1.88)	1.57	(1.10-2.23)	1.76	(1.21-2.56)	1.71	(1.18-2.47)	1.95	(1.27-3.02)	1.96	(1.20-3.20)	
Group 4 (n=173)													
Remission	76.1	83/109	92.5	86/93	90.5	86/95	82.4	75/91	86.2	81/94	93.9	62/66	
ARR	1.30	(0.93-1.81)	1.63	(1.15-2.33)	1.72	(1.18-2.51)	1.56	(1.07-2.27)	2.01	(1.30-3.10)	2.07	(1.27-3.37)	
Group 5 (n=47)													
Remission	68.6	24/35	76.2	16/21	78.9	15/19	76.2	16/21	80.8	21/26	100.0	14/14	
ARR	1.22	(0.83-1.79)	1.41	(0.95-2.10)	1.69	(1.11-2.56)	1.59	(1.05-2.40)	2.01	(1.27-3.19)	2.35	(1.43-3.87)	
Group 6 (n=75)													
Remission	89.1	49/55	97.6	40/41	97.5	39/40	97.5	39/40	97.8	44/45	91.2	31/34	
ARR	1.54	(1.11-2.13)	1.74	(1.22-2.47)	1.85	(1.27-2.69)	1.85	(1.28-2.67)	2.27	(1.48-3.49)	2.07	(1.26-3.38)	

Abbreviations: ARR, Adjusted relative risk; HDL, high-density lipoprotein cholesterol; RYGB, Roux-en-Y gastric bypass.

[a] Among participants with low HDL at baseline, observed remission is reported. Poisson mixed models with robust error variance were used to model remission of low HDL, with weight trajectory group membership, time (follow-up assessment) and a time x weight trajectory group interaction term, as well as site, baseline age and smoking status, which were related to missing follow-up data, as fixed effects. Trajectory groups, shown in Figure 2 of the main results, are ordered from worst (1) to best (6) 7-year weight change. Adjusted relative risks of remission in comparison to group 1 are reported by time point.

[b] For weight trajectory group.

[c] For weight trajectory group and time interaction.

eTable 7e. Remission of Hypertension[a] by RYGB Weight Trajectory Group Membership, by Time Point in Relation to Bariatric Surgery

	%, No./Total												
	Year 1		Year 2		Year 3		Year 4		Year 5		Year 7		*P*
Hypertension													<0.001[b]
Group 1 (n=59)													<0.001[c]
Remission	40.8	20/49	37.5	15/40	24.4	10/41	16.7	7/42	25.0	10/40	20.7	6/29	
ARR	Ref		Ref		Ref		Ref		Ref		Ref		
Group 2 (n=269)													
Remission	37.7	81/215	31.4	53/169	26.2	44/168	28.7	47/164	25.4	46/181	21.6	24/111	
ARR	0.86	(0.59-1.24)	0.82	(0.56-1.19)	0.97	(0.58-1.62)	1.44	(0.82-2.54)	1.01	(0.56-1.82)	1.00	(0.50-1.99)	
Group 3 (n=313)													
Remission	47.1	123/261	42.9	88/205	41.2	77/187	32.6	63/193	31.4	65/207	28.5	41/144	
ARR	1.06	(0.74-1.50)	1.04	(0.73-1.48)	1.46	(0.90-2.37)	1.55	(0.89-2.72)	1.27	(0.72-2.24)	1.18	(0.61-2.29)	
Group 4 (n=292)													
Remission	46.8	110/235	52.8	105/199	45.8	88/192	36.0	67/186	38.7	75/194	37.7	49/130	
ARR	1.03	(0.72-1.47)	1.23	(0.87-1.73)	1.60	(0.99-2.58)	1.78	(1.03-3.1)	1.55	(0.88-2.71)	1.75	(0.92-3.31)	
Group 5 (n=83)													
Remission	37.8	28/74	24.1	14/58	24.6	15/61	31.3	20/64	28.1	18/64	40.5	15/37	
ARR	1.03	(0.67-1.58)	0.65	(0.37-1.13)	1.07	(0.59-1.96)	1.91	(1.03-3.55)	1.48	(0.78-2.82)	2.27	(1.13-4.53)	
Group 6 (n=140)													
Remission	57.7	71/123	55.4	62/112	61.5	56/91	52.9	54/102	47.4	45/95	47.8	33/69	
ARR	1.19	(0.83-1.71)	1.18	(0.82-1.68)	2.04	(1.26-3.29)	2.44	(1.41-4.24)	1.89	(1.07-3.34)	2.10	(1.1-4.01)	

Abbreviations: ARR, Adjusted relative risk; RYGB, Roux-en-Y gastric bypass.

[a] Among participants with hypertension at baseline, observed remission is reported. Poisson mixed models with robust error variance were used to model remission of hypertension, with weight trajectory group membership, time (follow-up assessment) and a time x weight trajectory group interaction term, as well as site, baseline age and smoking status, which were related to missing follow-up data, as fixed effects. Trajectory groups, shown in Figure 2 of the main results, are ordered from worst (1) to best (6) 7-year weight change. Adjusted relative risks of remission in comparison to group 1 are reported by time point.

[b] For weight trajectory group.

[c] For weight trajectory group and time interaction.