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WISCONSIN





THE UNIVERSITY
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MADISON



SURGICAL MANAGEMENT OF OBESITY

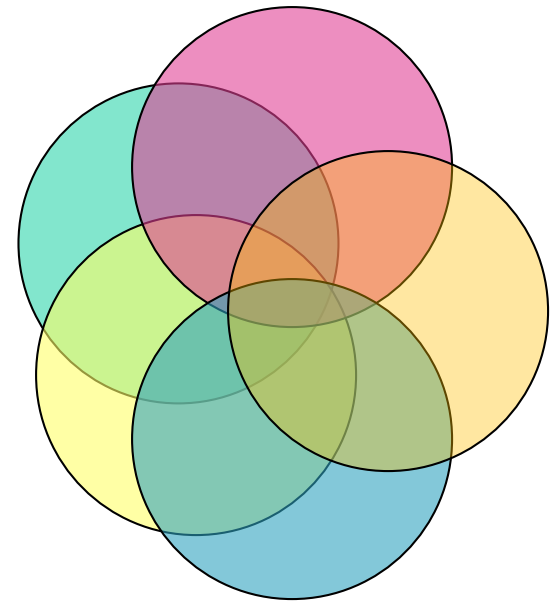
Anne Lidor, MD, MPH


Professor of Surgery

Chief, Division of Minimally Invasive and
Bariatric Surgery

Multi-Factorial Causes of Morbid Obesity include:

- **Genetic**
- **Environmental**
- **Cultural**
- **Psychological**
- **Socioeconomic**





How does obesity impact
our health?

Obesity-Related Comorbidities

- Type 2 Diabetes
- Obstructive sleep apnea
- High cholesterol
- Hypertension
- Heart Disease
- GERD (reflux/heart burn)
- Gallstones
- Degenerative joint disease
- Fatty liver disease
- Asthma
- Stress incontinence
- Birth defects
- Miscarriages
- Infertility
- **Cancer**
 - Breast
 - Cervical
 - Endometrial
 - Ovarian
 - Colorectal
 - Liver
 - Pancreatic
 - Esophageal
 - Lung
 - Prostate
 - Kidney
 - Lymphoma
 - Multiple myeloma
 - Leukemia

Available Treatment Options:

- **Diet & Exercise**
- **Medication**
- **Behavioral modification**
- **Surgical management**



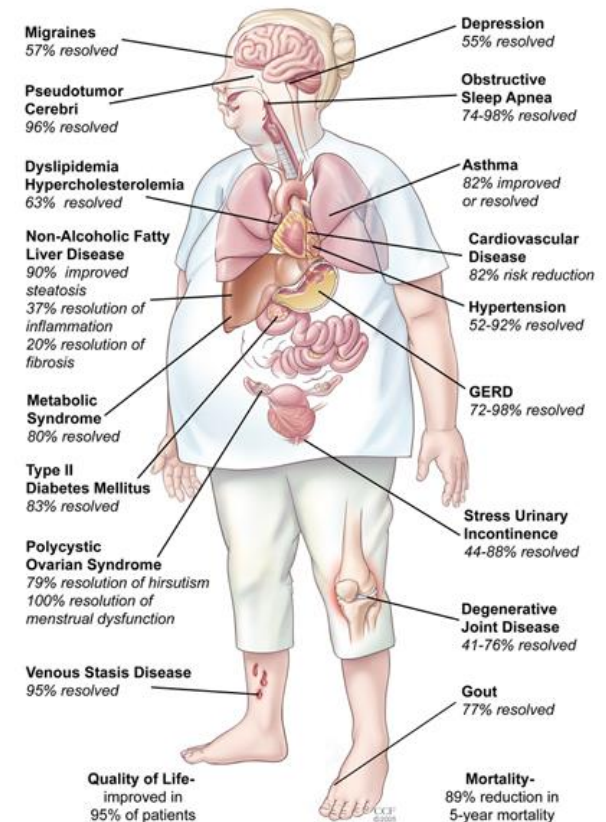
Why Bariatric surgery?



**It's the most powerful tool
in our tool box**

Purpose of Bariatric Surgery

- To alleviate or eliminate obesity related medical diseases
- It is not cosmetic surgery!



Bariatric Surgery Patient Selection

(Based On The 1991 NIH Guidelines)

- BMI > 40; or ≥ 35 with obesity related morbidity
- Previous failed attempts at supervised weight reduction
- Realistic expectations
- No recent substance abuse
- Age limits (18 to 65 yrs old in most programs)
- Supportive family/friends
- Lifelong commitment to dietary change and follow-up

What is Body Mass Index?

Classification of Obesity

$$\text{Body Mass Index (BMI)} = \text{wt (kg)} / \text{ht (m)}^2$$

	<u>BMI (kg/m²)</u>	<u>~Excess body weight</u>
Non-obese	20 - 25	< 30 lbs
Obese	≥ 30	> 30 lbs
Morbid Obesity	≥ 40	> 100 lbs
Superobesity	≥ 50	> 150 lbs

How much weight loss ?

Current weight: 250 pounds

- (subtract)

Ideal Body Weight: 150 pounds

= Excess Body Weight: 100

50-75% Excess Body Weight = 50 to 75 pounds lost

Example:

A 300 lb individual may realize a 55 - 80 lb weight loss

A 400 lb individual may realize a 75-130 lb weight loss

A “normal” BMI is **not** necessary for improved health

OUR GOALS FOR YOU INCLUDE:

✓ Improved Co-morbid Conditions

- Type 2 Diabetes
- Obstructive sleep apnea
- High cholesterol
- Hypertension

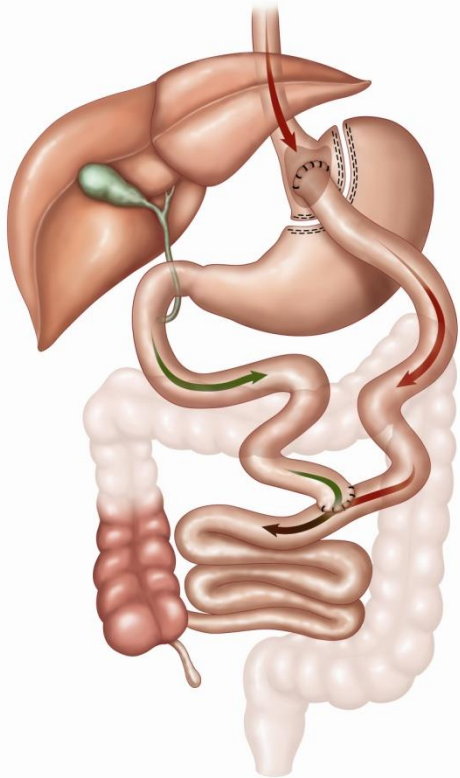
✓ Improved Over-all Health

✓ Improved Quality of Life

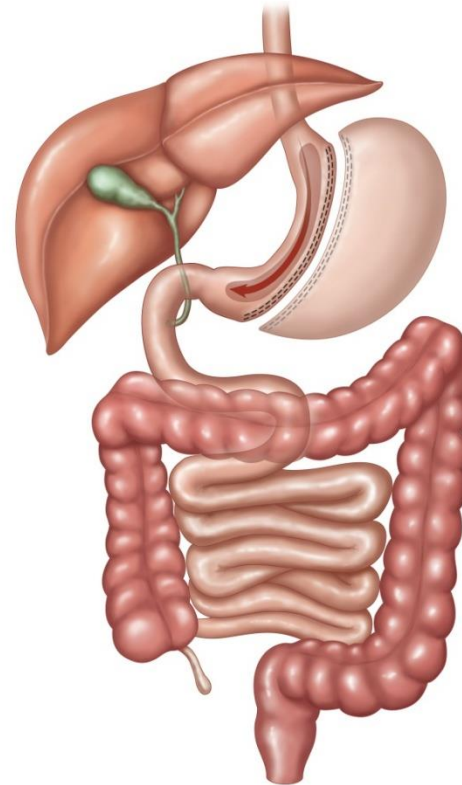
✓ Longer Life

Bariatric Procedures

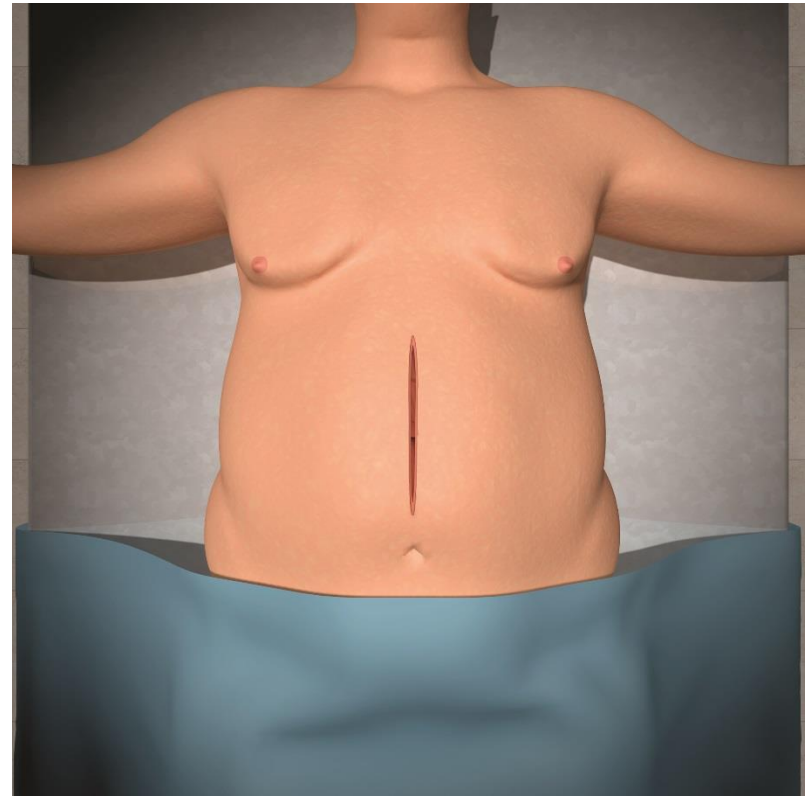
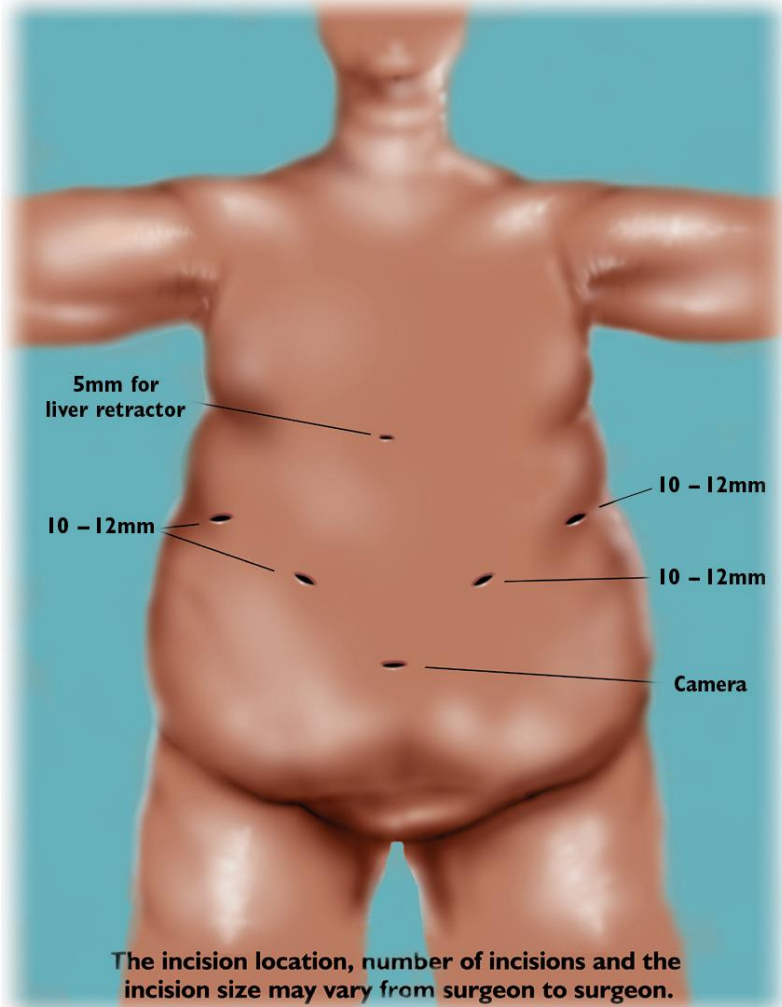
RNY (Gastric Bypass)



Sleeve



Laparoscopic Approach

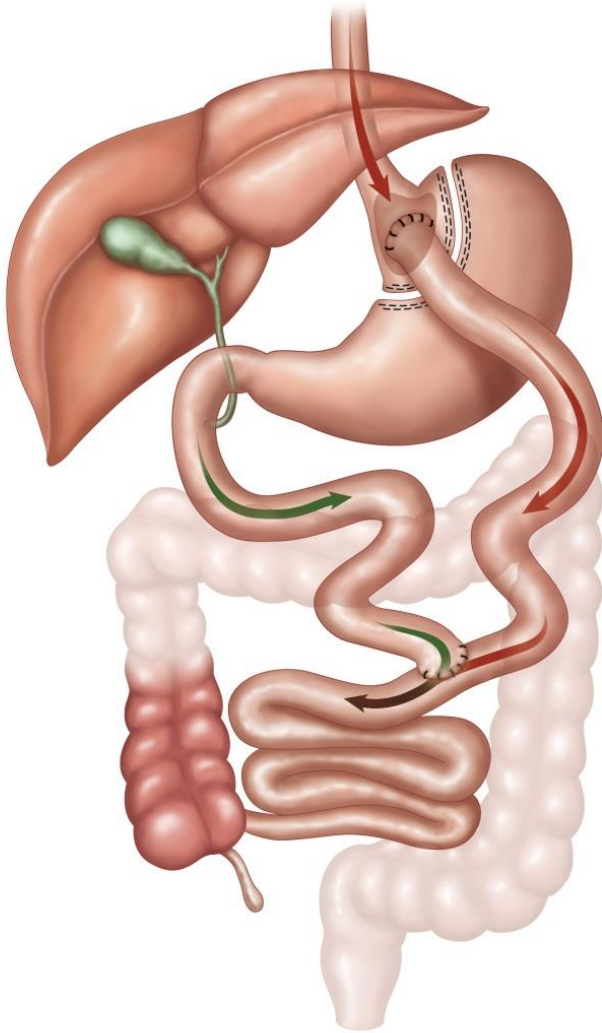


Laparoscopic Approach



- Less pain
- Fewer infections
- Shorter length of stay
- Much less risk of developing a hernia at incision

Roux-en-Y Gastric Bypass



- **Restrictive**
 - (small pouch size)
- **Malabsorptive**
 - (skipping part of the intestine)
- **Alters hunger hormones and insulin sensitivity**
 - little to no hunger
 - Improved diabetes
- **Hospital stay of 2 nights**

Roux-en-Y Gastric Bypass



Gastric Bypass

PROS

- ❑ Proven long term weight loss
- ❑ Proven reduction of obesity related co-morbidities
- ❑ Best operation for patients with GERD

CONS

- ❑ Ulcers/stenosis
- ❑ Anemia
- ❑ Calcium deficiency
- ❑ Dumping syndrome
- ❑ Difficult to reverse
- ❑ Internal hernia

Pre-Op

22



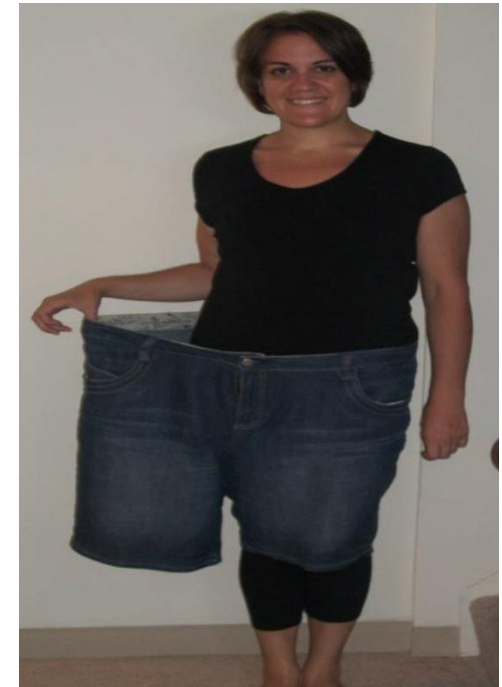
- BMI = 47
- Weight = 306 lbs.
- Waist = 54 inches
- High Blood Pressure
- Diabetes
- PCOS
- Depression
- Back & Knee Pain
- Swelling of lower legs
- 7 prescriptions daily

LRNY GBP, Johns Hopkins, 11/2008

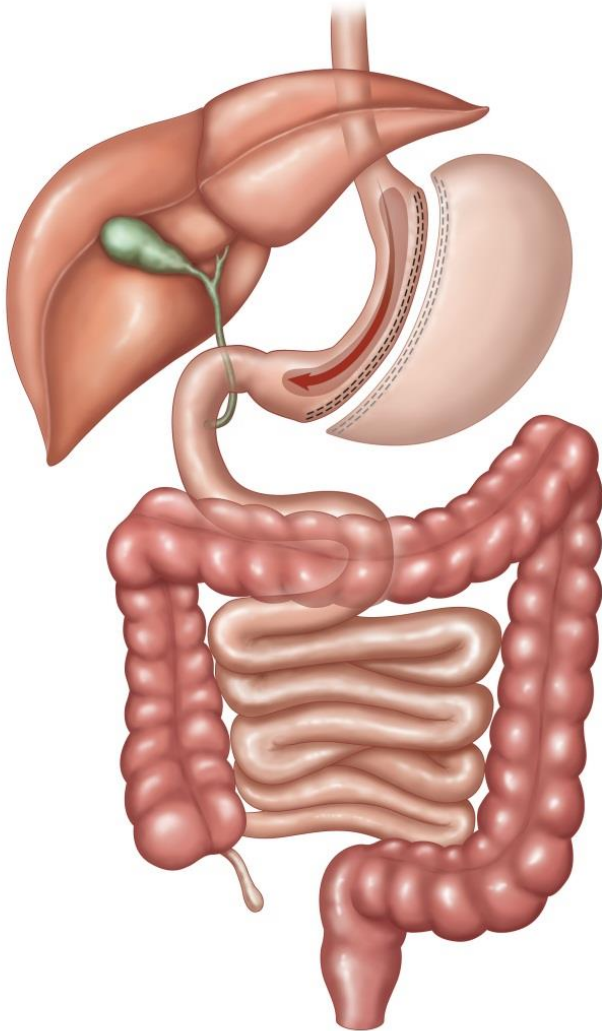
5 years post-op

23

- BMI = 25
- Weight loss = 140 lbs.
- Waist = 37 inches
- Resolved Medical Problems
 - High Blood Pressure*
 - Diabetes*
 - Depression*
 - PCOS Symptoms*
- Improved Medical Problems
 - Back & Knee Pain*
 - 1 Prescription Medication*
 - Just became pregnant!*



Vertical Sleeve Gastrectomy



- **Mostly a restrictive procedure**

- **Some altered hunger hormones and insulin sensitivity**
 - ▣ less hunger
 - ▣ improved diabetes

- **Hospital stay of 1-2 nights**

Sleeve Gastrectomy



Sleeve Gastrectomy

PROS

- ❑ No malabsorption
- ❑ Proven long term weight loss and resolution of co-morbidities
- ❑ Preserves pylorus (decreases risk of dumping)
- ❑ Can be converted to gastric bypass or duodenal switch

CONS

- ❑ Large portion of stomach removed (not reversible)
- ❑ Can worsen GERD
- ❑ Strictures



Jason White

Dr Lidor is the greatest thank you for saving my life

Yesterday at 11:24 PM · Like · Reply



Jason White



Yesterday at 11:25 PM · Like · Reply



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More



Complications of surgery

- Bleeding
- Wound Infection
- DVT (blood clot) to Pulmonary Embolism
- Cardiac Event
- Leak
- Ulcers/Stricture/Stenosis
- Malabsorption
- Internal Hernia

Scallions	1	Chicken Wings	297
Peppercorns	99	Peppercorns	40
Asafoetida	20	Onions	66
Tofu	59	Sauce	13
Fish sauce	2	Crust	178
Noodles	137		
Soy sauce	8		
Brown sugar	13		
Sesame oil	30		

Cheeseburger With Fries	Calories 765
Bun	170
Ketchup	20
Pickles	0
Lettuce	0
Mustard	5
Cheese	100
Beef	240

Potato Chips	Calories 170
---------------------	--------------

Salad	Calories 306
Bacon	24
Dressing	110
Croutons	56

Obesity

Edited by Edward H. Livingston, MD

Research

Bariatric Surgery and Long-term Weight Loss 241

The 2 most commonly performed operations for obesity are laparoscopic Roux-en-Y gastric bypass and laparoscopic sleeve gastrectomy. In a randomized trial of 240 patients with morbid obesity, Salminen and colleagues found that laparoscopic Roux-en-Y gastric bypass resulted in greater weight loss than laparoscopic sleeve gastrectomy at 5 years, but the difference was not clinically significant. In an Editorial for this theme issue on treatments for severe obesity, Arterburn and Gupta note that shared decisions about obesity management are challenging because they require patients and physicians to consider complications and comorbidities as well as weight loss goals.

Editorials 235 and 238 Related Articles 255, 266, and 279 JAMA Patient Page 316

CME jamanetwork.com/learning

Long-term Efficacy of Sleeve Gastrectomy 255

The sleeve gastrectomy procedure is technically easier, faster to perform, and potentially safer than Roux-en-Y gastric bypass, but there is insufficient evidence for its long-term efficacy. In a randomized trial of 217 patients with severe obesity who were randomly assigned to sleeve gastrectomy or Roux-en-Y gastric bypass with a 5-year follow-up period, Peteril and colleagues found no significant difference in excess weight loss.

Editorials 235 and 238 Related Article 241 JAMA Patient Page 316

Gastric Bypass Surgery for the Treatment of Type 2 Diabetes 266

Preventing the microvascular complications of type 2 diabetes requires management of blood pressure and lipids as well as glycemic control. In a 5-year follow-up study by Ikramuddin and colleagues of 120 patients with obesity and type 2 diabetes who received a lifestyle-intensive medical management intervention, participants who also had Roux-en-Y gastric bypass were more likely to achieve a composite end point of hemoglobin A_{1c} level less than 7.0%, low-density lipoprotein cholesterol level less than 100 mg/dL, and systolic blood pressure less than 130 mm Hg.

Editorial 238 Related Articles 241 and 291

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Opinion

Viewpoint

221 Evolving Societal Norms of What Is the Appropriate Respiratory Support?
MA Burke and FW Heiland

223 Toward Precision Approaches for the Prevention and Treatment of Obesity
SZ Yanovski and JA Yanovski

225 Counting Calories as an Approach to Achieve Weight Control
E Guth

227 Can the Government Require Health Warnings on Sugar-Sweetened Beverage Advertisements?
JL Pomeranz, D Mozaffarian, and

229 Taxes and Sugar-Sweetened Beverages
LM Powell and ML Maciejewski

231 Fitness or Fatness: Which Is More Important?
A Blair Kennedy, CJ Lavie, and SJ

A Piece of My Mind

233 Engaging With Patients or Policy Changes: An Urgent Issue
J Avorn

Editorial

235 Comparing the Outcomes of Gastric Bypass and Roux-en-Y Gastric Bypass for Severe Obesity
D Arterburn and A Gupta

238 Reimagining Obesity in 2030
A JAMA Theme Issue on Obesity
EH Livingston

LETTERS

Research Letter

305 Pass-Through of a Tax on Sugar-Sweetened Beverages at the Philadelphia International Airport
J Cawley, B Willage, and D Frisvo

Comment & Response

306 Axillary vs Sentinel Lymph Node Dissection in Women With Invasive Breast Cancer

307 Trends in Carotid Intima-Media Thickness and Revascularization Procedures

309 Risks of Statins for Lower-Risk Individuals

Editor in Chief
Howard Bauchner, MD

13
OF
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Research (continued)

Bariatric Surgery and All-Cause Mortality 279

Obesity is a chronic disease with life-threatening complications. In a retrospective cohort study by Reges and colleagues of 33 540 patients with obesity, bariatric surgery was associated with lower all-cause mortality than nonsurgical obesity management over a median follow-up of approximately 4.5 years.

Editorials 235 and 238 Related Article 241 JAMA Patient Page 316

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Treatment Options for Severe Obesity 291

Shared decisions about treatments for severe obesity must balance the risks of bariatric surgery against the adverse effects of the underlying disease. In a cohort study by Jakobsen and colleagues of 1888 patients with severe obesity followed up for a median of 6.5 years, bariatric surgery compared with medical treatment was associated with higher risks of complications and lower risks of obesity-related comorbidities.

Editorial 238 Related Articles 266 and 302

Clinical Review & Education

Long-term Outcomes of Bariatric Surgery 302

A recent article in *JAMA Surgery* assessed the long-term efficacy and safety of bariatric surgical procedures. In this From the JAMA Network article, Shubeck and colleagues discuss societal and cultural barriers to the surgical treatment of obesity.

Related Article 291



JAMA Patient Page

316 Sleeve Gastrectomy for Weight Loss

NEWS & ANALYSIS

Medical News & Perspectives

215 Interest in the Ketogenic Diet Grows for Weight Loss and Type 2 Diabetes

JAMA Infographic

218 Medical Care Use and Expenditures Associated With Adult Obesity in the United States

219 Global Health

Possible Biomarkers of Deadly Ebola

Dangers of Substandard or Falsified Medicines

Combination Strategy Associated With Reduced HIV Incidence in Uganda

220 News From the FDA

Second Cancer Biosimilar Approved

Regulatory Pathway for 3-D Printing

Monthly Buprenorphine Injection Approved for Opioid Use Disorder

HUMANITIES

Poetry and Medicine

311 Embers: PET CT Skull Base to Mid Thighs

CS Halberstadt

JAMA Revisited

312 Appropriations for City Health Departments

Departments

209 Staff Listing

304 CME Questions

313 Classified Advertising

314 Journal Advertiser Index

315 Contact Information

Note about the cover: The calorie counts on the cover are approximations for illustration purposes only and not intended to provide precise accurate nutritional information.

Online @ jama.com



Editor's Audio Summary

Edward H. Livingston, MD, summarizes and comments on this week's issue.

JAMA Network Audio

Podcasts from JAMA and the JAMA Network are available at sites.jamanetwork.com/audio/.

Research Ethics Site

Important documents and discussions of principles of research ethics are available at sites.jamanetwork.com/research-ethics.

Genomics and Precision Health

A genomics glossary and related articles are available at jama.genetics.com.

Effect of Laparoscopic Sleeve Gastrectomy vs Laparoscopic Roux-en-Y Gastric Bypass on Weight Loss in Patients With Morbid Obesity

The SM-BOSS Randomized Clinical Trial

Ralph Peterli, MD; Bettina Karin Wölnerhanssen, MD; Thomas Peters, MD; Diana Vetter, MD; Dino Kröll, MD; Yves Borbély, MD; Bernd Schultes, MD; Christoph Beglinger, MD; Jürgen Drewe, MD, MSc; Marc Schiesser, MD; Philipp Nett, MD; Marco Bueter, MD, PhD

	SG	GBP
Excess BMI loss	61%	68%
Remission of DM, HTN, dyslipidemia	Equivalent	Equivalent
GERD	33% better	66% better
Early morbidity	0.9%	4.5%
Total reoperations/interventions	15.8%	23%

* Swiss study-217 with 95% follow up to 5 years

Effect of Laparoscopic Sleeve Gastrectomy vs Laparoscopic Roux-en-Y Gastric Bypass on Weight Loss at 5 Years Among Patients With Morbid Obesity

The SLEEVEPASS Randomized Clinical Trial

Paulina Salminen, MD, PhD; Mika Helmiö, MD; Jari Ovaska, MD, PhD; Anne Juuti, MD, PhD; Marja Leivonen, MD, PhD; Pipsa Peromaa-Haavisto, MD, PhD; Saija Hurme, MSc; Minna Soinio, MD, PhD; Pirjo Nuutila, MD, PhD; Mikael Victorzon, MD, PhD

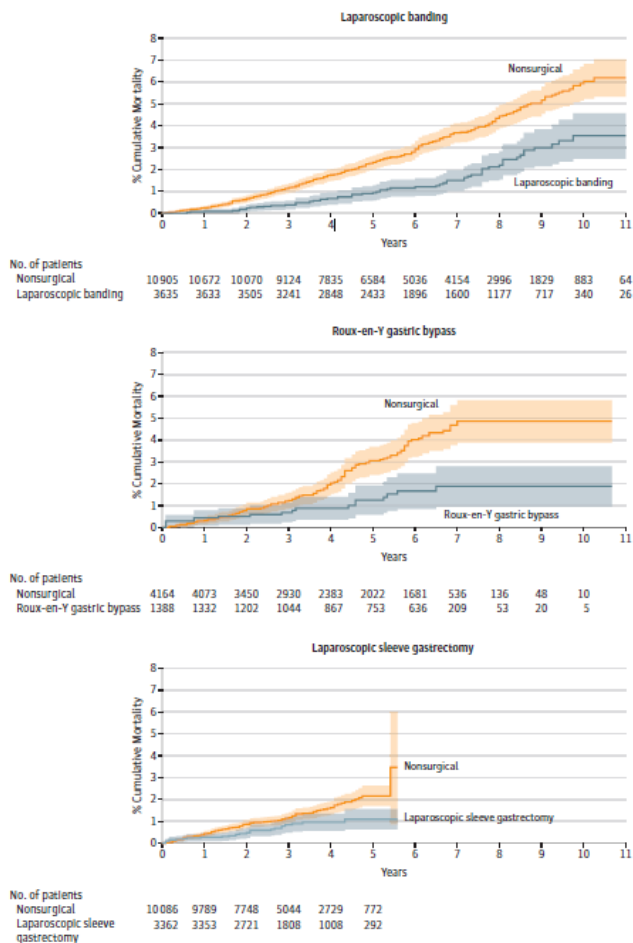
	SG	GBP
% Excess Weight loss	50%	57%
Remission of DM and dyslipidemia	Equivalent	Equivalent
Anti-hypertensive meds		Fewer meds
Early morbidity	9%	26%
Total reoperations/interventions	10%	18%

* Finnish study-240 patients with 80% follow up at 5 years

Association of Bariatric Surgery Using Laparoscopic Banding, Roux-en-Y Gastric Bypass, or Laparoscopic Sleeve Gastrectomy vs Usual Care Obesity Management With All-Cause Mortality

Orna Reges, PhD; Philip Greenland, MD; Dror Dicker, MD; Morton Leibowitz, MD; Moshe Hoshen, PhD; Ilan Gofer; Laura J. Rasmussen-Torvik, PhD; Ran D. Balicer, MD

Figure 3. Kaplan-Meier Estimated Mortality Curves for 3 Types of Surgical Patients and Matched Nonsurgical Obese Patients



- Israeli study-retrospective cohort study with 8385 bariatric surgery patients and 22155 matched non surgical patients
- 100% follow up to 4 years
- Secondary analysis demonstrated improved weight loss, DM remission, and lower HTN/dyslipidemia.

Bariatric Budget Impact Calculator

Summary

State of Wisconsin Employee Trust Fund

1. Assumed size of the covered population (employees and dependents):	247,000
2. Estimated number of morbidly obese members (NIH Definition):	18,772
3. Assumed average health care cost of morbidly obese members in 2015:	\$15,600
4. Estimated health care cost of morbidly obese members in 2015:	\$292,843,200
5. Morbid obesity trend rate:	Population Growth Rate: 8.00%
	Health Care Trend Rate: 12.00%
<hr/>	
6. Assumed unrestricted surgery rate per 1,000 morbidly obese members:	10.00
7. Projected weight loss surgeries in 2015 if coverage were provided:	188
8. Projected cost of weight loss surgery in 2015 if coverage were provided:	\$3,956,950
9. Surgery cost as a percent of total for morbidly obese members	1.4%
<hr/>	

Bariatric Budget Impact Calculator

Projection Summary

		<u>Unlimited Coverage</u>	<u>Limited Surgery Budget</u>	<u>Surgery Frequency Limitation</u>
Coverage Limitation		None	\$2.0 Mil/Yr	100 Surg/Yr
First Year Investment		\$4.0 Million	\$2.0 Million	\$2.1 Million
10 Year Net Savings		\$60.6 Million	\$25.9 Million	\$28.8 Million
Program Cost PEPM	2015	1.34	0.67	0.71
	2016	1.09	0.47	0.52
	2017	0.73	0.23	0.28
	2018	0.12	-0.12	-0.07
	2019	-0.71	-0.53	-0.52
<i>Years of Investment</i>		4	3	3
Break-Even Year		7	6	6
Internal Rate of Return		35.6%	37.5%	37.1%

The Path to Surgery

- Information gathering
- Pre-visit screening
- Assessments
- Work-up (tests/studies)
- Classes (ABC)
- Follow up visits + class D
- Pre-op visits and labs
- Surgery

****CAN TAKE UP TO 7 MONTHS**

Post-op follow-up

□ Week 2 (after surgery)

- PA or Surgeon
- Dietitian

□ Week 6

- PA or Surgeon
- Dietitian

□ Month 3

- PA or Surgeon
- Dietitian
- Labs

□ Month 6

- PA or Surgeon
- Dietitian
- Labs
- Health Psychologist

□ Month 12 (yearly thereafter)

- PA or Surgeon
- Dietitian
- Labs
- Health Psychologist

UW Health Hospital and Clinic



**UW Health Medical and Surgical
Weight Management Program**

MBSAQIP
METABOLIC AND BARIATRIC SURGERY
ACCREDITATION AND QUALITY IMPROVEMENT PROGRAM
ACCREDITED CENTER

Bariatric Surgery, UW Health at The American Center



4602 Eastpark Blvd, Madison

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SWEDISHAMERICAN

A DIVISION OF UW HEALTH



Our Surgeons



Michael Garren



Jacob Greenberg

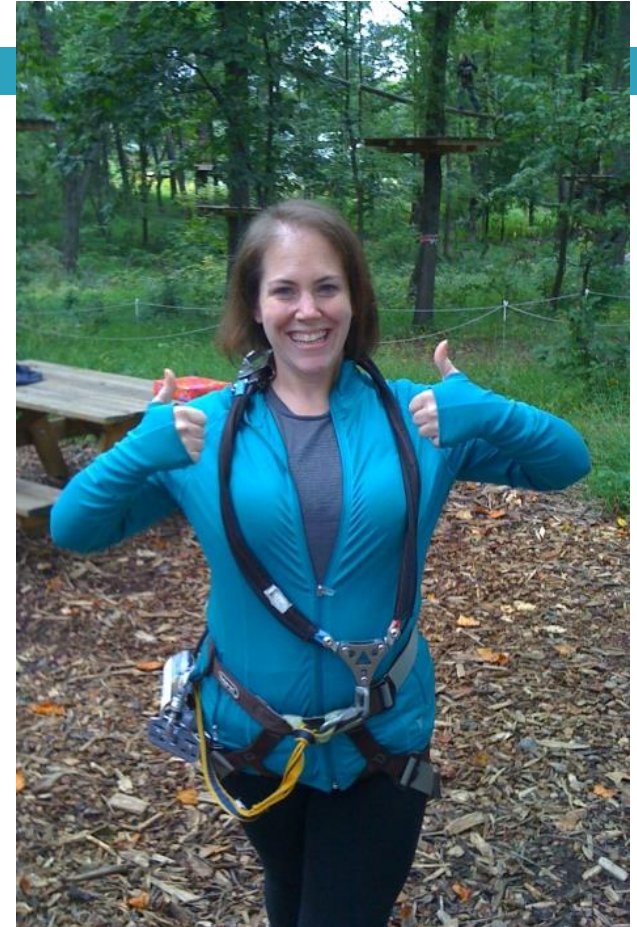
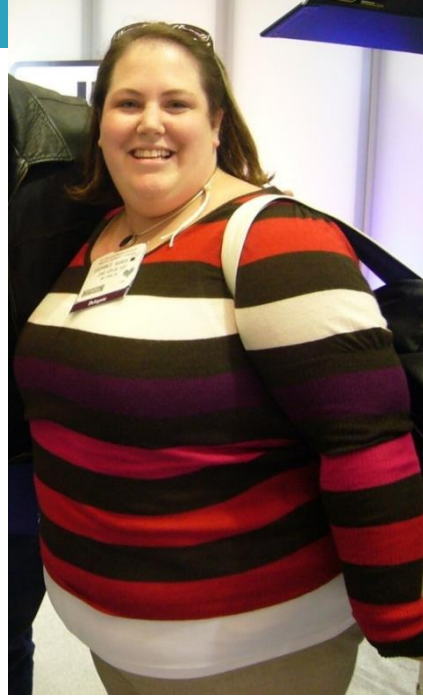


Luke Funk



Anne Lidor

Other Success Stories...



Visit our website:

www.uwhealth.org/weight-loss-surgery/bariatric-surgery