Weight Management: Surgery in the Treatment of Obesity

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Disclosures

- W.L. Gore and Associates
  - Speaking and teaching honoraria
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Objectives

- After this presentation, the learner will be able to:
  - Identify the indications for bariatric surgery
  - Describe the efficacy of different bariatric surgery interventions
  - Recognize short and long term complications of bariatric surgery
-

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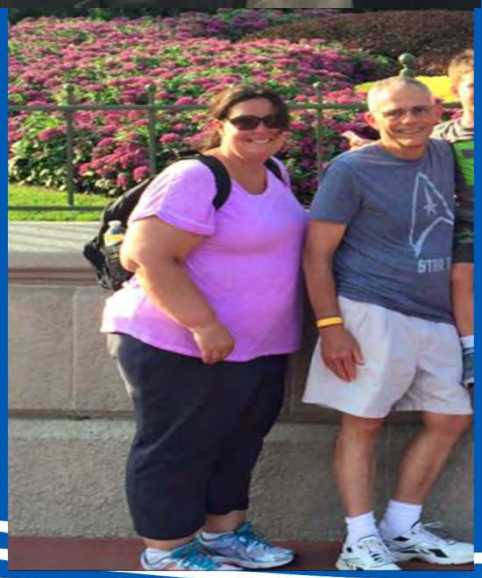
Mary's Story

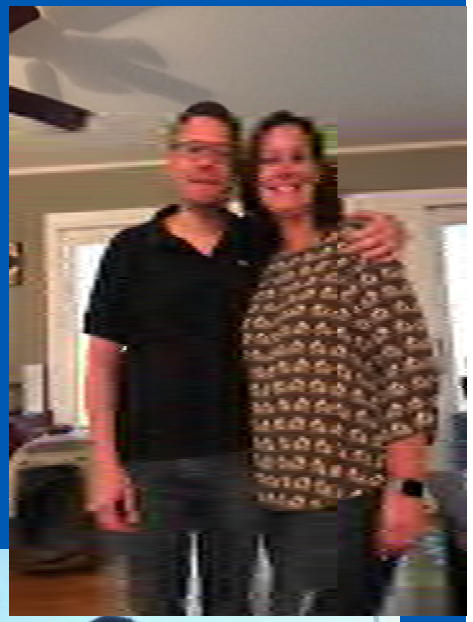
Gastric Bypass
May 2016

Consult Weight
286 lbs

Lost 33 lbs prior to surgery with SMWL & Pre-op Diet

At 3.5 years post op, now 179 lbs and counting





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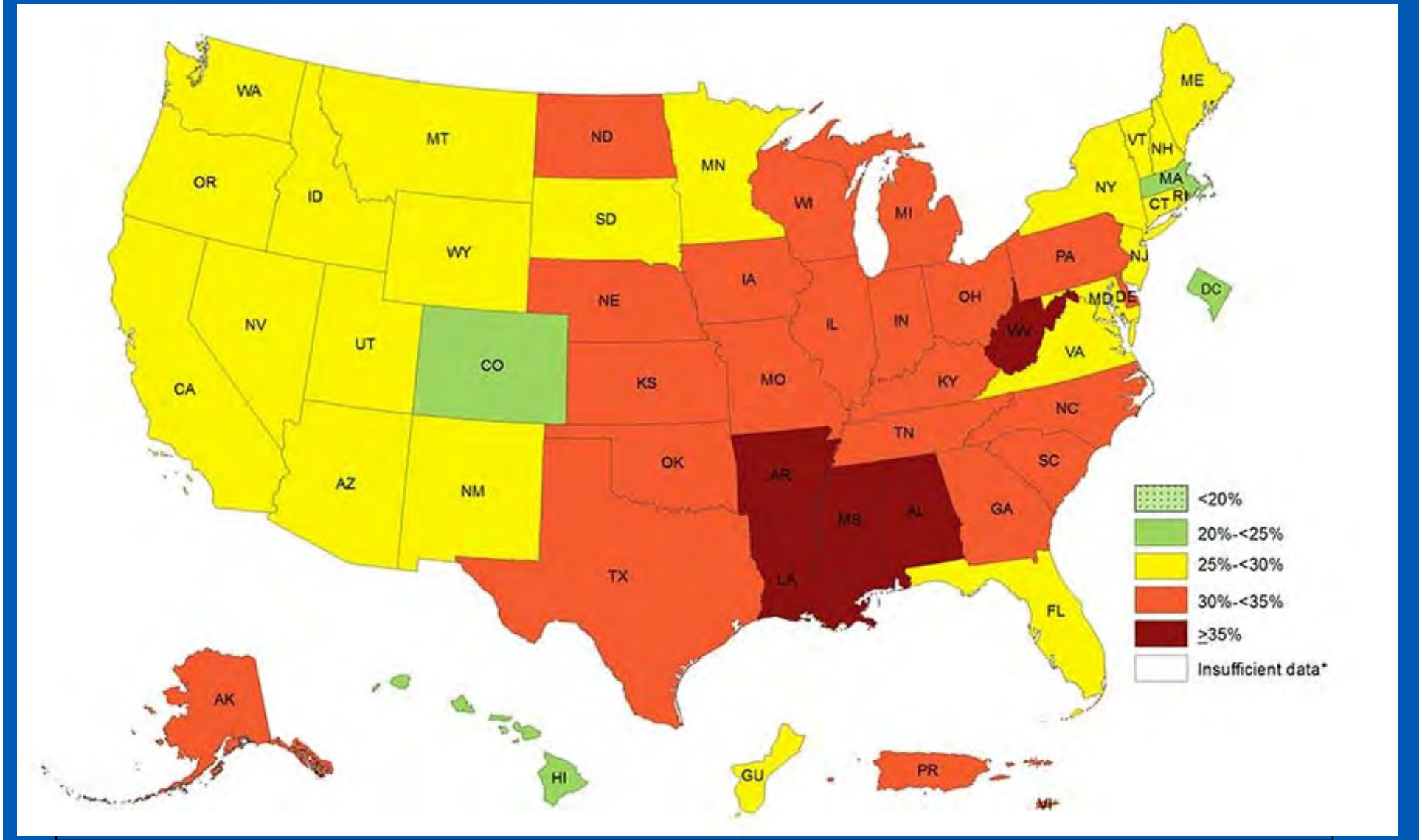
Obesity in the United States



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Obesity in the U.S.

Overweight	BMI > 25 kg/m^2
Obese	BMI 30 to 34.9 kg/m^2
Severely Obese	BMI 35 to 39.9 kg/m^2
Morbidly Obese	BMI more than 40 kg/m^2 or BMI 35 to 39.9 kg/m^2 with associated medical problems (diabetes, high blood pressure, etc)
Super Obese	BMI > 50
Super Super Obese	BMI > 60

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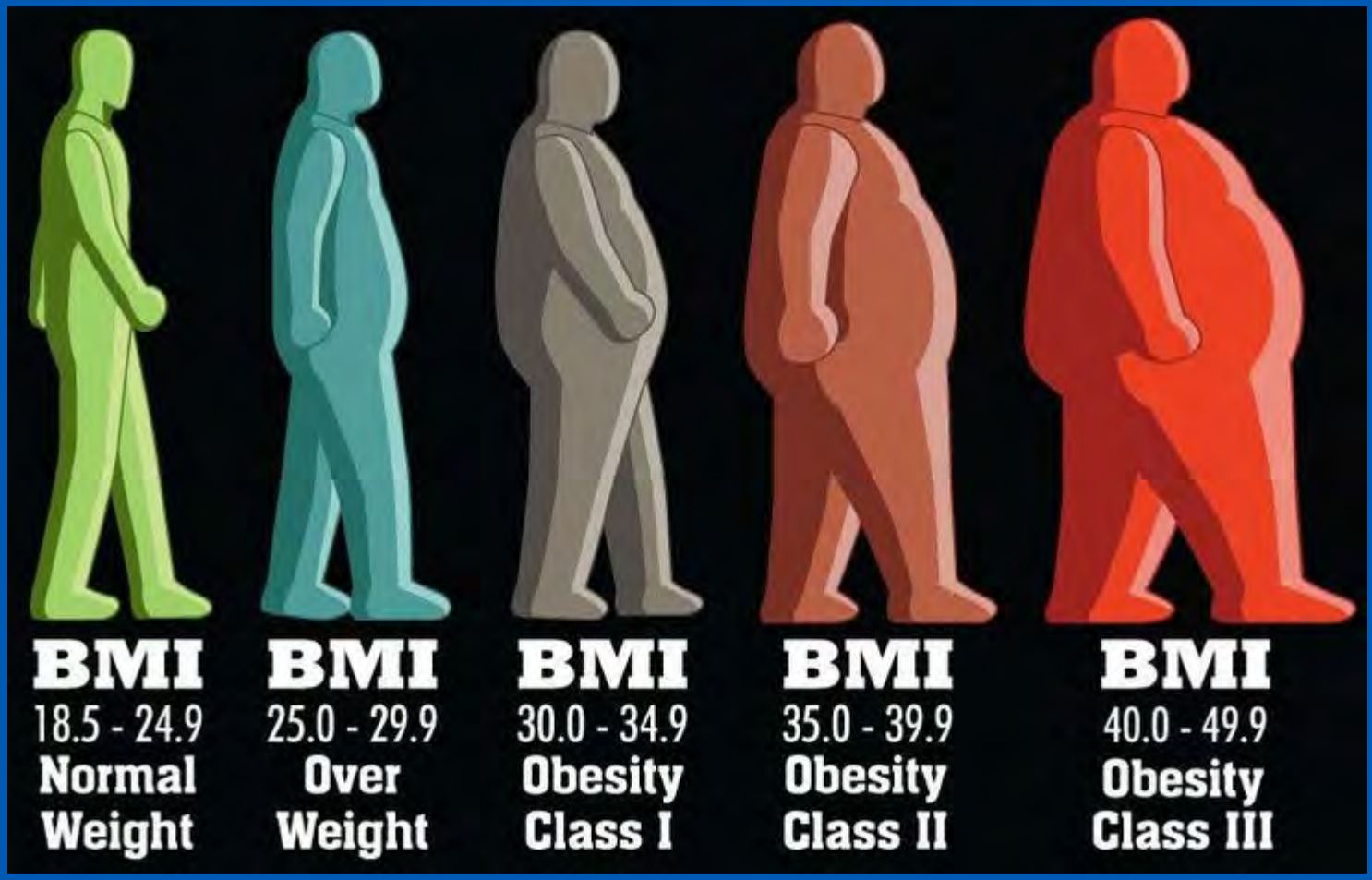
Obesity Classes



NIH Criteria for Bariatric Surgery (1991)

- Morbid Obesity with BMI > 40

- Severe obesity with BMI > 35 and comorbidity due to obesity
  - Hypertension
  - Hyperlipidemia
  - Obstructive sleep apnea
  - Type 2 diabetes
  - Osteoarthritis

-- PCOS
-- CAD
-- Depression

Other Criteria

- Failed medical weight loss

- All psychological and eating behaviors addressed
  - Binge eating
  - Emotional eating
  - Addictive behaviors

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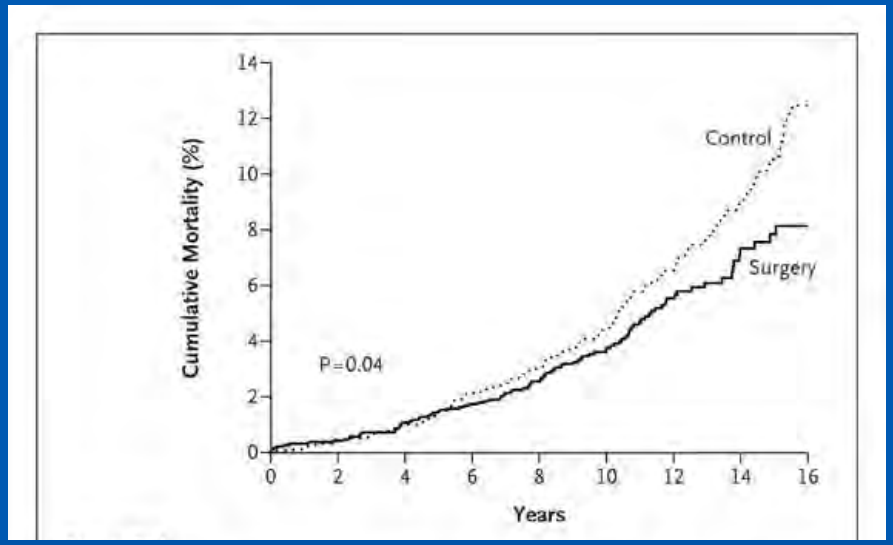
Surgical Weight Loss Strategies

- Weight loss surgery in the morbidly obese
  - The most effective approach for long-term weight loss
  - Improves health – significant reduction in co-morbidities
  - Reduces mortality
    - HR 0.75, p = 0.04



Effects of Bariatric Surgery on Mortality in Swedish Obese Subjects, NEJM, 2007.

Question 1: Which of the following patients qualifies for bariatric surgery

- A. 35 yo woman BMI 46, no comorbidities
- B. 44 yo man BMI 35, diabetes, hypertension
- C. 69 yo woman BMI 55, CAD, HL, OSA, arthritis
- D. 54 yo man BMI 33, diabetes, hypertension, congestive heart failure, OSA
- E. All of the above
- F. All except D

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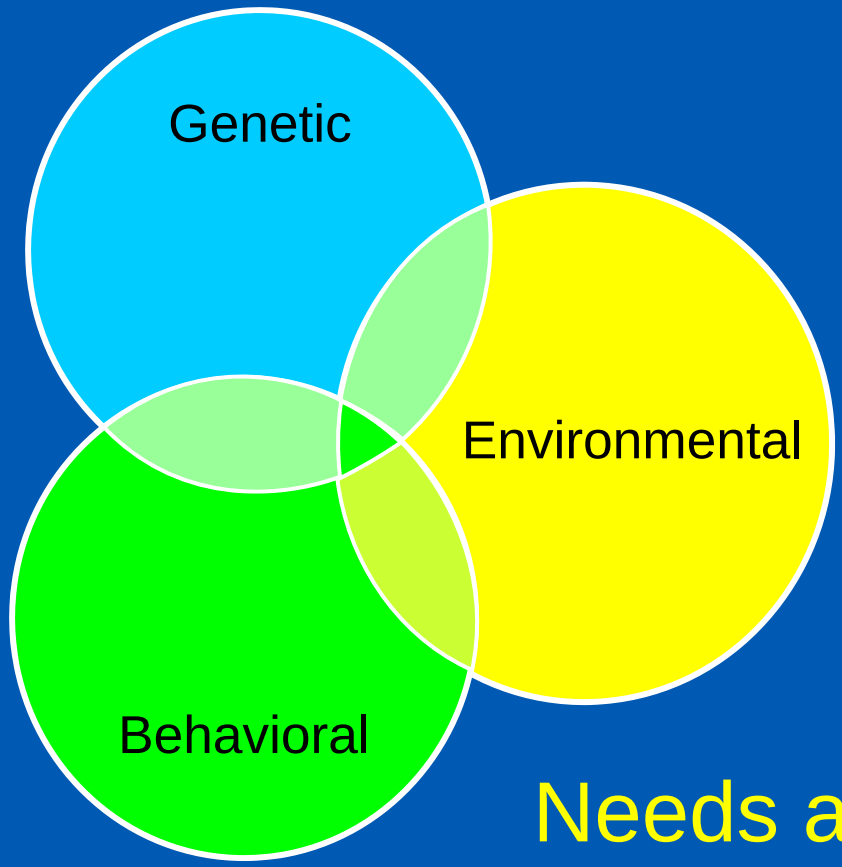
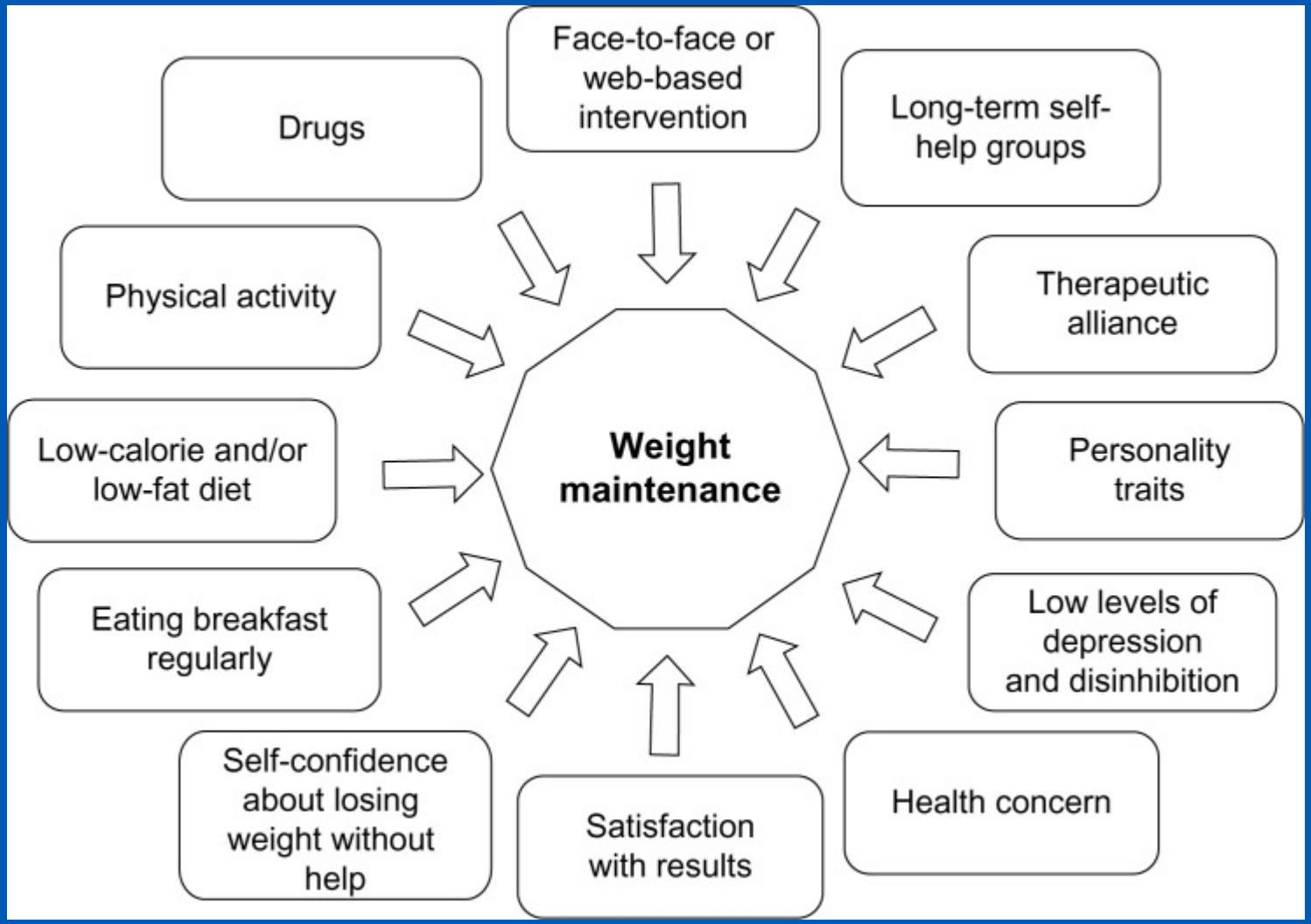
Morbid Obesity is a Complex Disease



Obesity is a complicated disease. Many things contribute to being overweight :

1. Eating and exercise habits
2. Environmental issues
3. Genetic and metabolic factors

Needs a multidisciplinary solution



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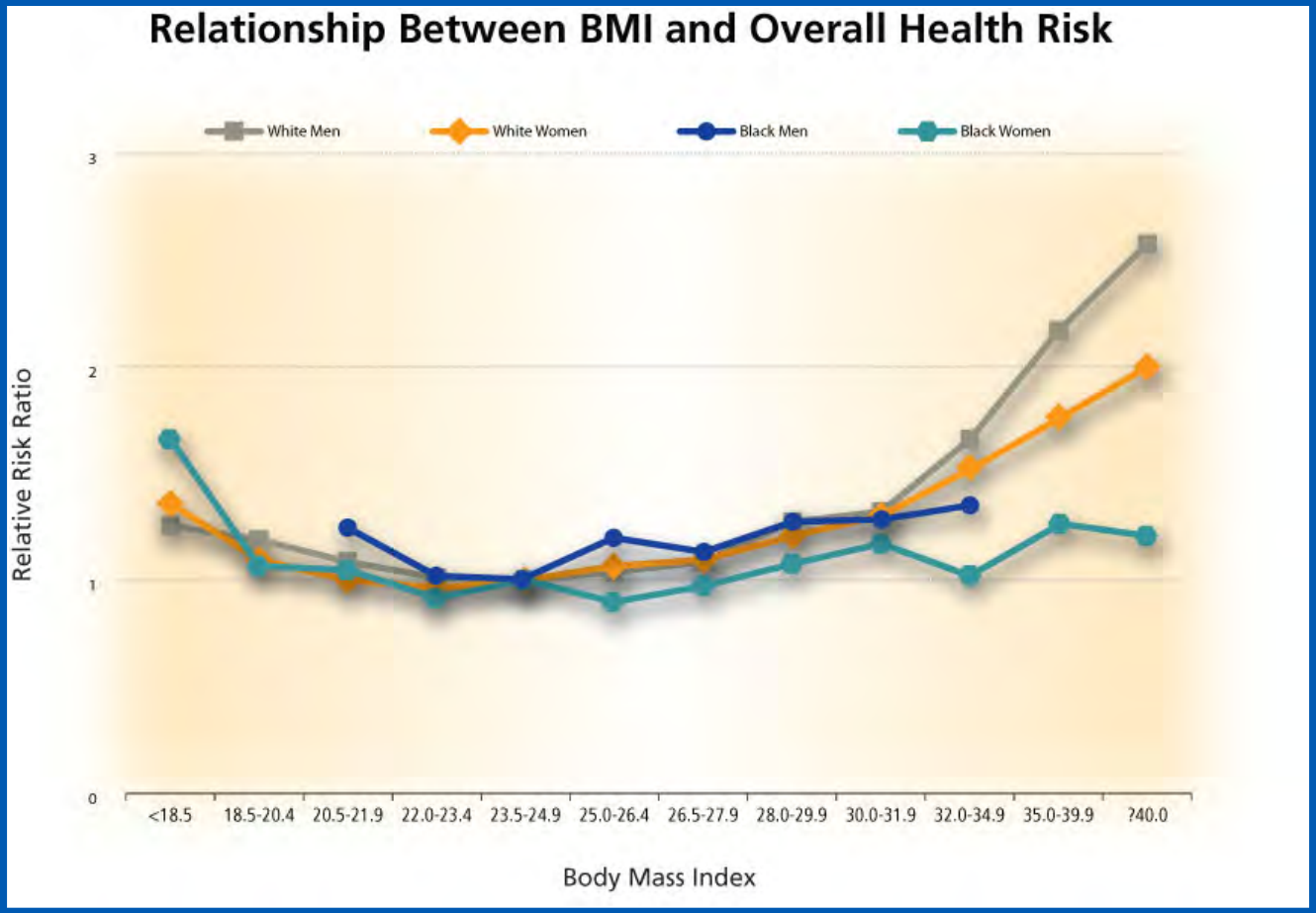
Health Risks and Increased Risk of Mortality



- Diabetes
- Hypertension
- Sleep apnea
- Depression
- Joint pain
- Infertility
- Cancer
- GERD
- Asthma

of US adults. *N Eng J Med*. 1999;341(15):1097-105.

Weight Loss Strategies

- Diet, exercise, medications, behavior modification
  - Long term durability

- Weight loss surgery in the severely obese
  - The most effective approach for long-term weight loss(1)
  - Improves health – significant reduction in co-morbidities
  - Reduces mortality –2.9% vs 14.3% in surgery vs non-surgery group(2)

References: 1. American Gastroenterological Association medical position statement on obesity. *Gastroenterology*. 2002 Sep;123(3):882-932. 2. Report of the Michigan Surgeon General. Accessible at www.michigan.gov/surgeongeneral/0,1607,7-216-33084_33097---,00.html. 2. Oluseun AS, Yood SM, Courtney J, et al. Natural history of morbid obesity without surgical intervention. Surgery for Obesity and Related Diseases 2007;3:73-77

Mechanisms of Bariatric Surgery

- Restriction
  - Reduced portion size
  - Early satiety
  - Decrease hunger drive
- Malabsorption
  - Reduces calorie absorption

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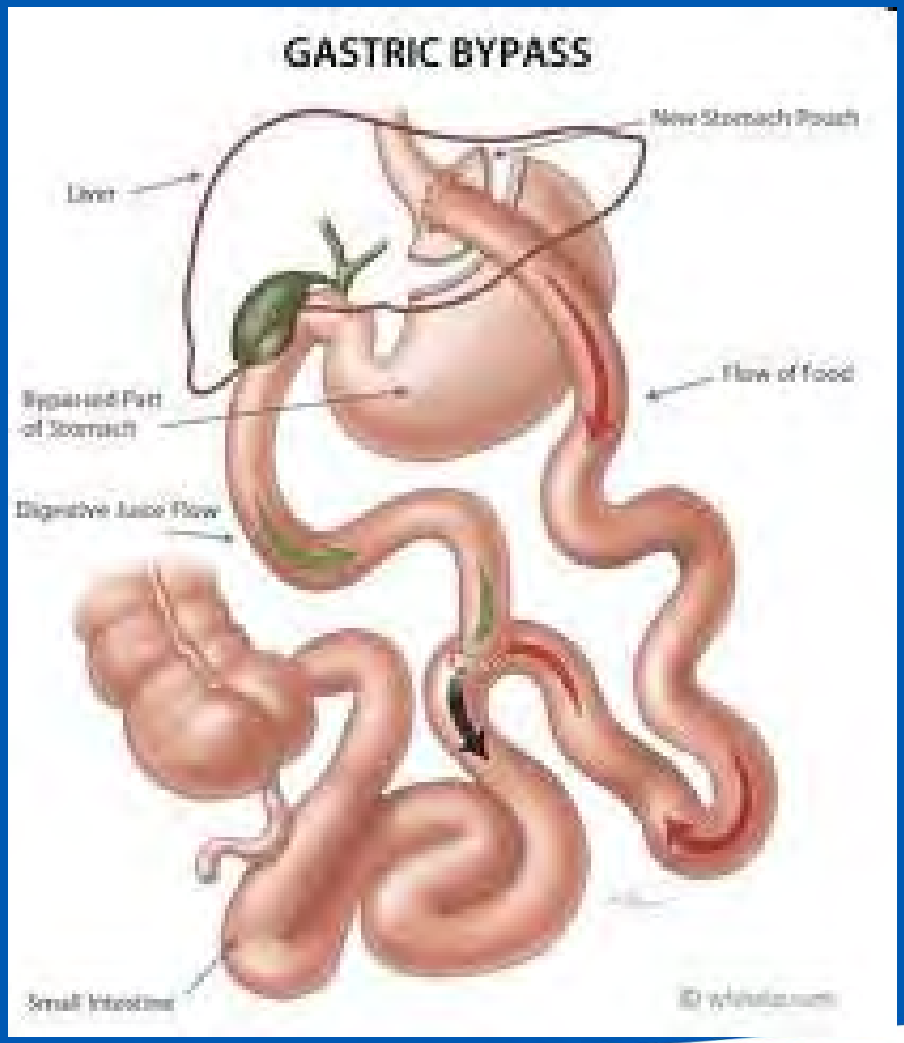
Current Surgical Options

- Restrictive operations
  - Sleeve gastrectomy
  - Adjustable gastric band
  - Endoscopic gastric balloon or sleeve gastroplasty
- Combined restrictive malabsorptive
  - Gastric bypass
  - Duodenal switch

Roux-en-Y Gastric Bypass

- First done in 1967.
- Laparoscopic – 1993
- Restriction and malabsorption
- Excellent weight loss
- 1-2% incidence of major complications



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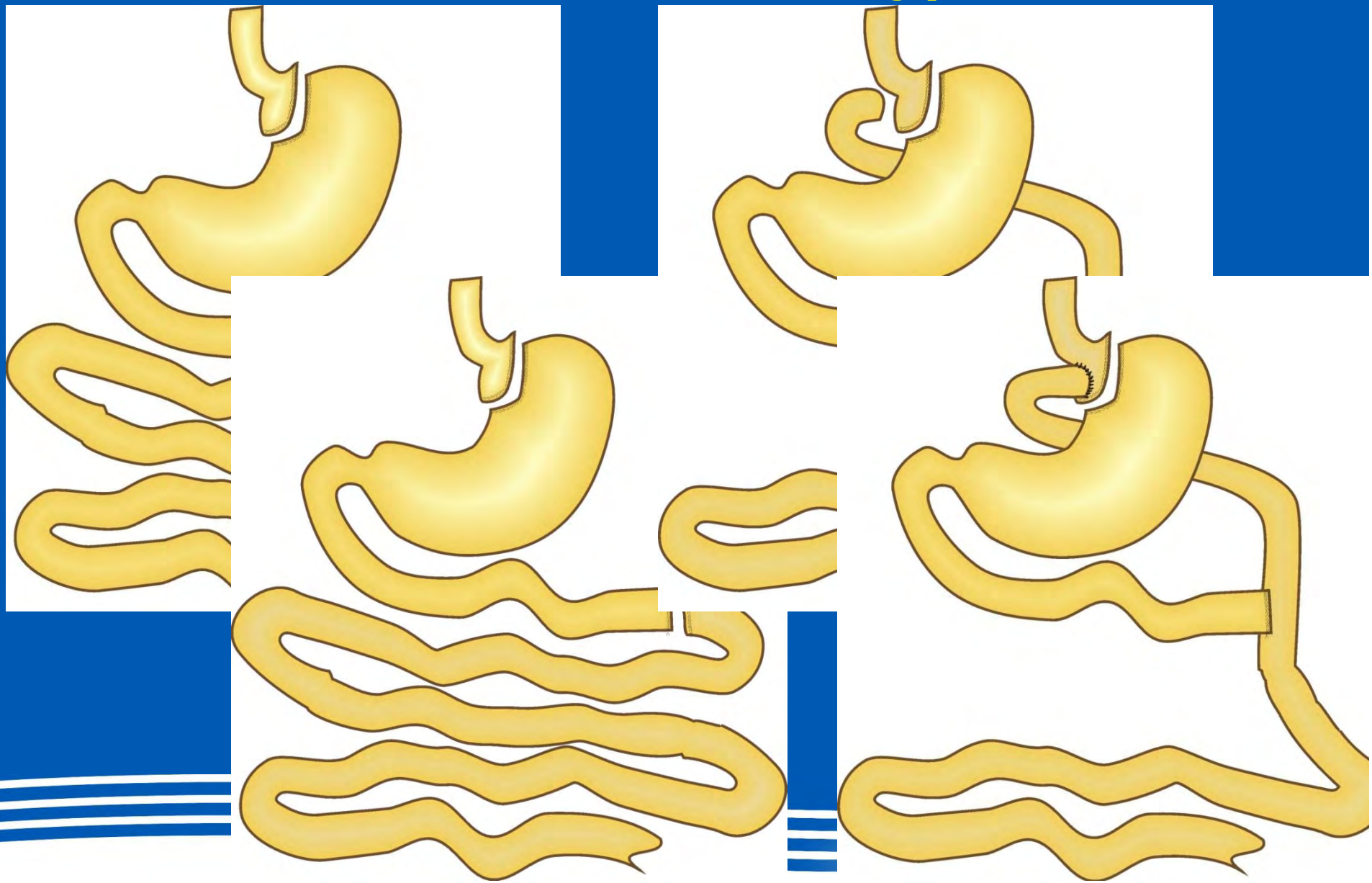
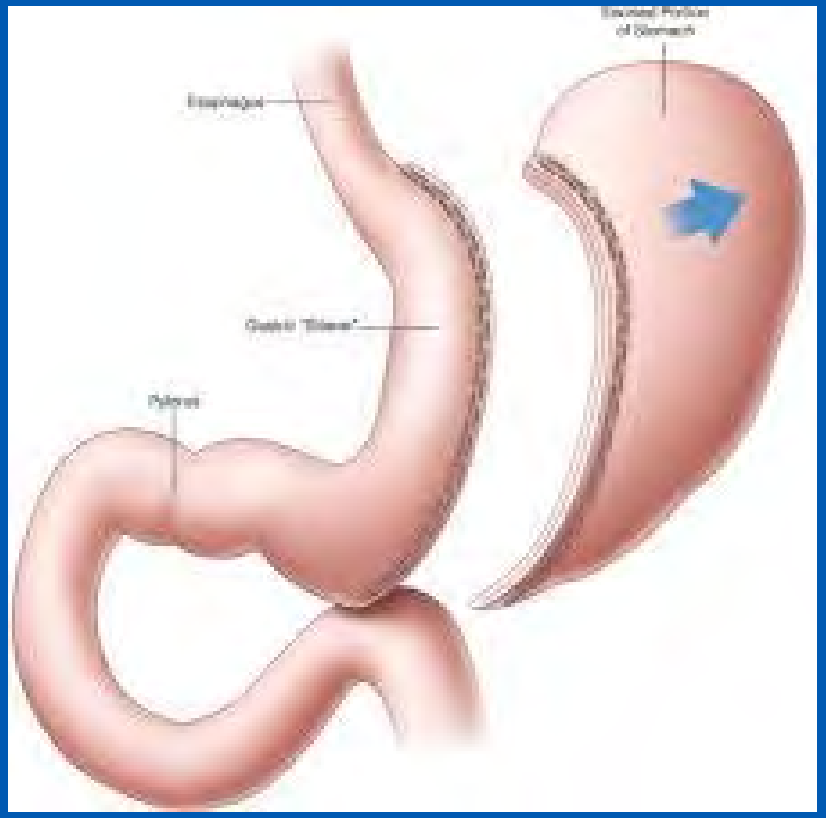
Roux-en-Y Gastric Bypass



Sleeve Gastrectomy

- Restrictive
- Decreases hunger
- 1-2% major complication rate
- Small intestines unaltered
- Can be converted in future if poor weight loss



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Adjustable Gastric Band

- Creates a small “stomach pouch”
- Least amount of weight loss
- Largely abandoned in last 3-5 years
- Long term removal rates
- 50-50 operation
  - 50% excess weight loss
  - <50% long term success

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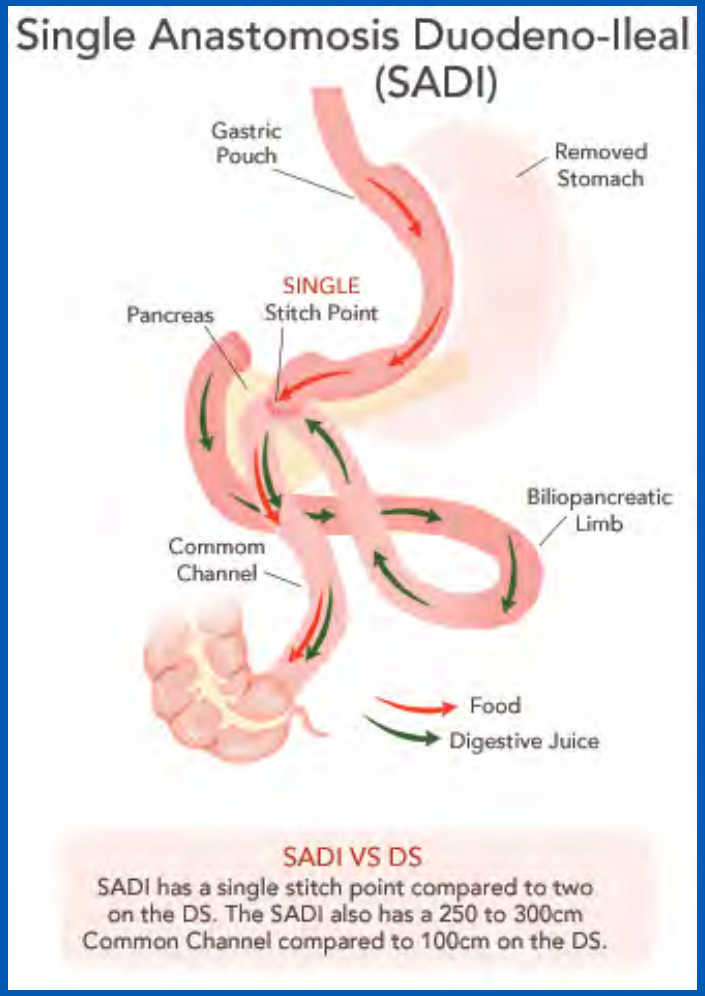
Single Anastomosis Duodenal Switch

- Newer operation
- High rates of weight loss / co-morbidity resolution
- Similar complications to gastric bypass
- Awaiting long term data



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	Duodenal Switch	Gastric Bypass	Sleeve Gastrectomy	Lap Band
Follow Up	3 years	30 years	10 year	10 year
% EWL	80%	70%	60%	45%
Success	80-90%	70-80%	60-70%	50%
Diabetes Resolution	>90%	70-90%	50-60%	30-40%
Mortality	0.5%	0.13%	0.6%	0.1%
Major Complication	2%	2%	2%	1%

Bariatric Surgery in US
2015 – 196,000 operations

• Sleeve gastrectomy	53.8 %
• Gastric bypass	23.1 %
• Gastric band	5.0 %
• BPD-DS	1.0 %
• Revisions	13.6 %
• Other	3.2 %

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Gastric Balloon

- FDA approved
- Inserted during endoscopy
- Removed in 6 months
- Low complication rate
- 30% excess weight loss in short term

- Not currently covered by insurance

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Endoscopic Sleeve Gastroplasty

- Endoscopic suturing of the stomach (similar to a sleeve)
- Low complication rate
- 6 month weight loss
  - 40-50% excess weight
- Not covered by insurance

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Question 2: Which of the following operations will result in > 50% Excess Weight Loss?

- A. Gastric Bypass
- B. Sleeve Gastrectomy
- C. Duodenal Switch
- D. Gastric Balloon Placement
- E. All except D

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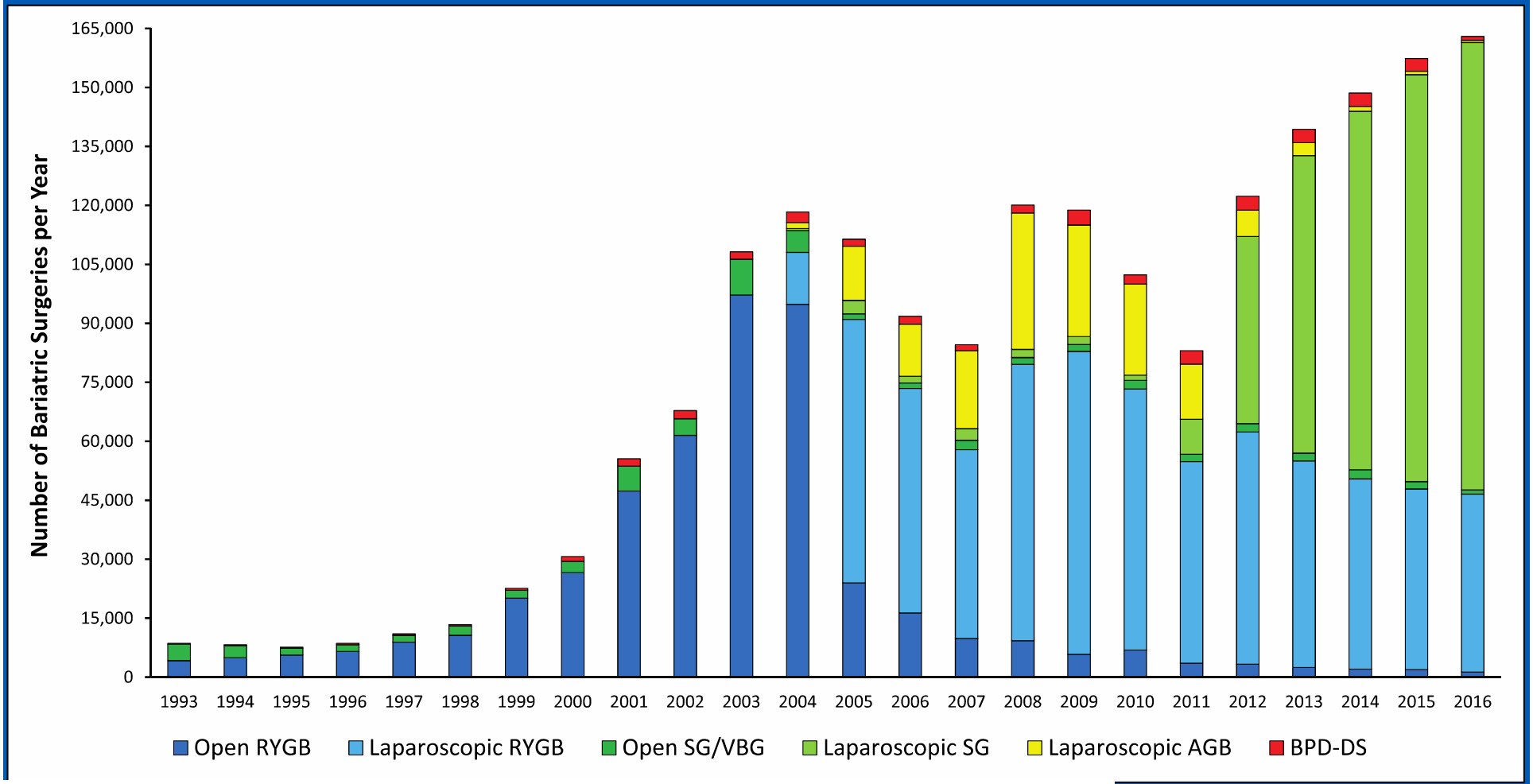
Bariatric Surgery Trends: Utilization



Changes in Utilization of Bariatric Surgery in the United States From 1993 to 2016

Guilherme M. Campos, MD, PhD,✉ Jad Khoraki, MD, Matthew G. Browning, PhD, Bernardo M. Pessoa, MD, Guilherme S. Mazzini, MD, PhD, and Luke Wolfe, MS

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Bariatric Surgery Trends: Utilization

- Adult eligibility for bariatric surgery
- 1993: 11,775,017 (6.4% of US population)
- 2004: 19,027,087 (9.9%)
- 2016: 32,420,287 (14.7%)

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Bariatric Surgery Risks

- Leak
- Bleeding
- Stricture or obstruction
- Blood Clots (DVT / PE)
- Wound infection, abscess
- Ulcers
- Nutritional deficiencies
- Post prandial hypoglycemia

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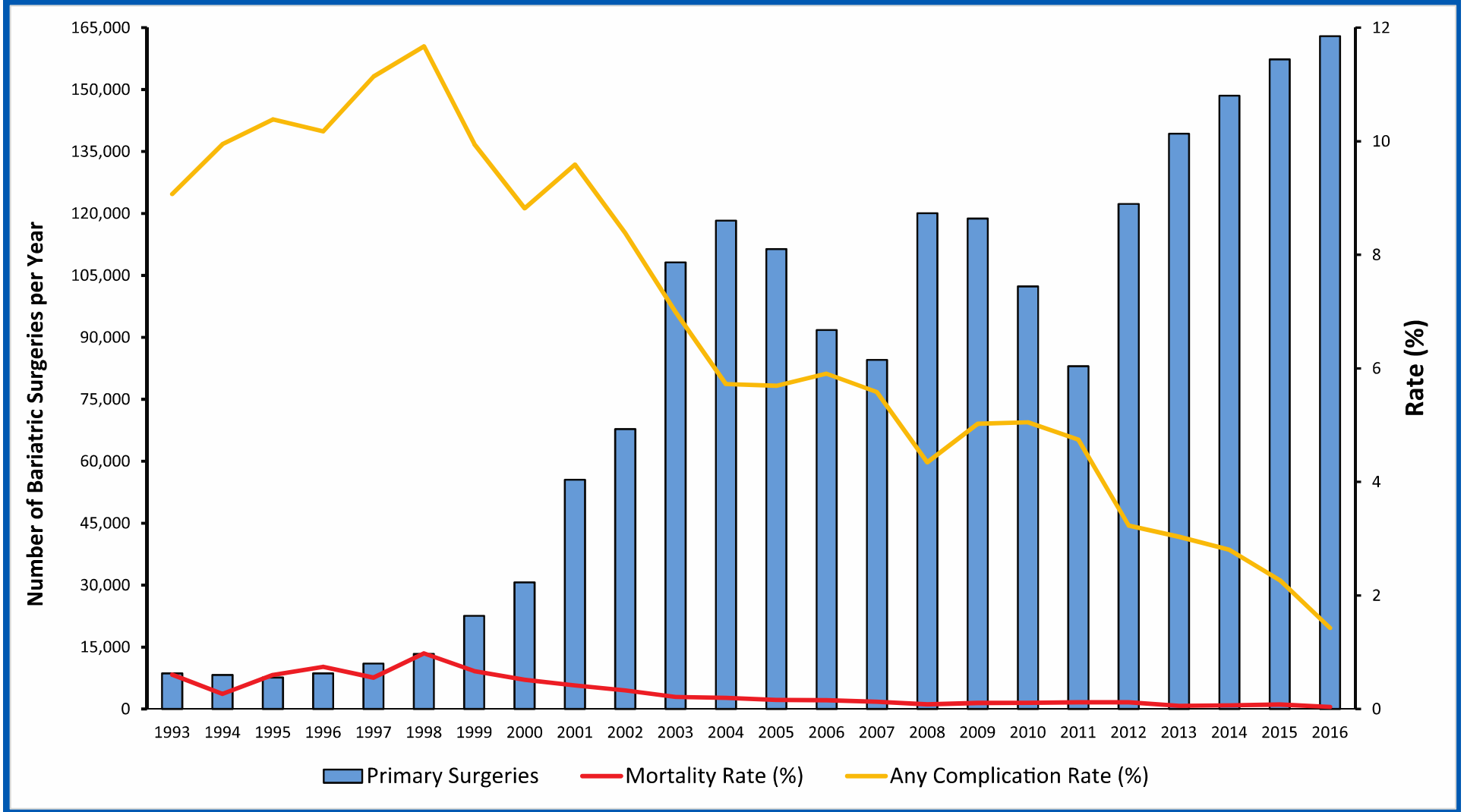
Bariatric Surgery Trends: Safety



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Question 3

- True or False: Laparoscopic gastric bypass carries a higher risk of anastomotic leak and other complications than laparoscopic sigmoid resection for diverticulitis

- A. True
- B. False

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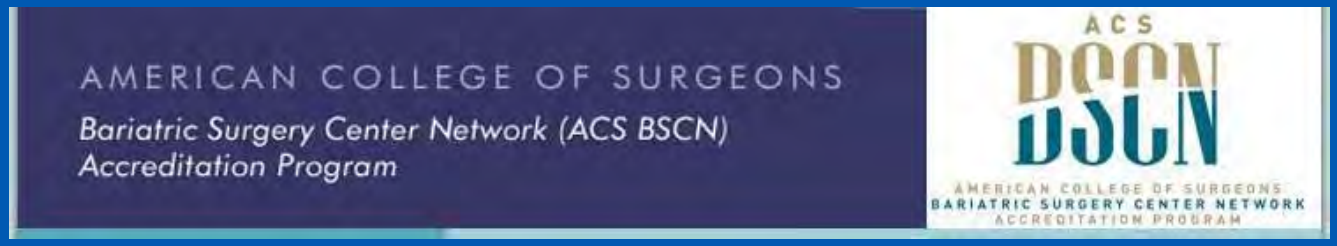
NorthShore Bariatrics

- American College of Surgeons Center of Excellence for Bariatric Surgery
- Preferred provider for various private insurance companies



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NorthShore Bariatric Surgery Program

Pre-operative Process

- Consultation with surgeon and bariatric nurse
- Initial evaluation
  - Blood work – vitamins, blood counts
  - Possible sleep study
  - Possible diabetes nurse educators
- Insurance verification / requirements

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NorthShore Bariatric Surgery Program

Pre-operative Preparatory Program

- Same process regardless of operation
- Medically-supervised weight loss
  - At least 2 months – may be longer (insurance)
  - Weight loss goal
- Psychiatric evaluation
- Dietitian evaluation and education

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NorthShore Bariatric Surgery Program

Pre-operative Preparatory Program

- Attend support group
- Smoking / drug cessation
  - Testing
- Improvement in HgbA1C
  - < 7.0 %
- Insurance approval
  - 3-6 weeks after submitted

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NorthShore Bariatric Surgery Program

Pre-surgical Requirements

- History and physical
- Labs
- EKG and possible cardiac clearance
- Endoscopy (bypass only)
- Two – six week liquid diet and fresh, raw veggies

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NorthShore Bariatric Surgery Program

Day of Surgery

- Day of surgery admission
- Surgery 1.5 – 3 hours depending on case
- Admission to surgical unit (no ICU)
- Begin liquid diet Post Op Day # 1
- Hospital stay 1-2 nights average

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NorthShore Bariatric Surgery Program

Follow up

- Post-operative office visits
  - 2 weeks, 6 weeks, 3 months, 6 months
- Band adjustments
- Interval laboratory testing
- Dietary follow up required
- Once stable, yearly for life

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Summary

- Surgery is the most effective treatment for morbid obesity
- It reduces health risks and increases longevity, while having very low risk
- Comprehensive program design and long term follow up are critical to success

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