The Current State of Bariatric Surgery

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Disclosures

- No financial disclosures
- Personal disclosure: "I'm not only a bariatric surgeon, I'm also a patient"
- My weight loss journey

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Objectives

- Describe the current state of bariatric surgery
- Evaluate the metabolic effects of bariatric operations
- Discuss the optimal approach to the chronic management of the bariatric patient

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Why is Bariatric Surgery Important?

Obesity-related co-morbidities

- Degenerative joint disease
- Low back pain
- Hypertension
- Obstructive sleep apnea
- Gastroesophageal reflux disease
- Cholelithiasis
- Type 2 diabetes
- Hyperlipidemia
- Hypercholesterolemia
- Asthma
- Hypoventilation syndrome of obesity
- Fatal cardiac arrhythmias
- Right-sided heart failure
- Migraine headaches
- Pseudotumor cerebri
- Venous stasis ulcers
- Deep vein thrombosis
- Fungal skin rashes
- Skin abscesses
- Stress urinary incontinence
- Infertility
- Dysmenorrhea
- Depression
- Abdominal wall hernias
- Increased incidence of various cancers

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Contraindications

- Bulimia nervosa
- Untreated major depression or psychosis
- Uncontrolled and untreated eating disorders (e.g., bulimia)
- Current drug and alcohol abuse
- Severe cardiac disease with prohibitive anesthetic risks
- Severe coagulopathy
- Inability to comply with nutritional requirements including life-long vitamin replacement

Mechanick JI, Youdim A, Jones DB, Garvey WT, Hurley DL, McMahon MM, Heinberg LJ, Kushner R, Adams TD, Shikora S, Dixon JB, Brethauer S, American Association of Clinical Endocrinologists, Obesity Society, American Society for Metabolic&Bariatric Surgery . Clinical practice guidelines for the perioperative nutritional, metabolic, and nonsurgical support of the bariatric surgery patient--2013 update: cosponsored by American Association of Clinical Endocrinologists, The Obesity Society, and American Society for Metabolic&Bariatric Surgery. Obesity (Silver Spring). 2013;21 Suppl 1:S1.

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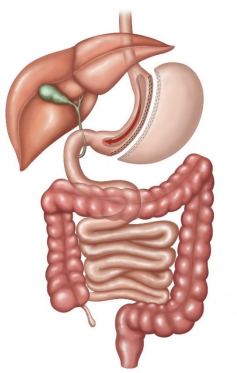
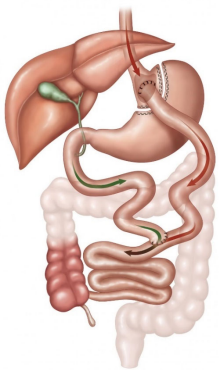
Review of Bariatric Operations

Traditionally described as Restrictive, Malabsorptive, or Combined

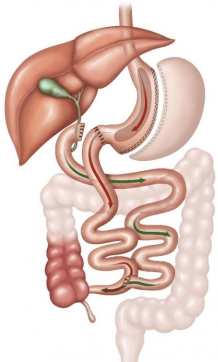
Sleeve Gastrectomy



Roux-en-Y Gastric Bypass



Biliopancreatic Diversion with Duodenal Switch BPD-DS



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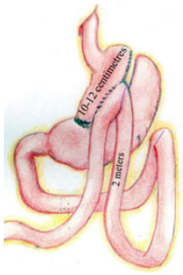
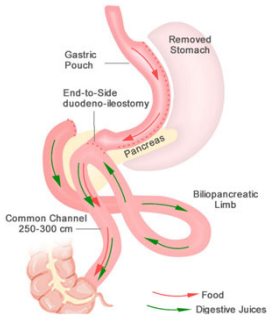
Investigational Procedures: 2022

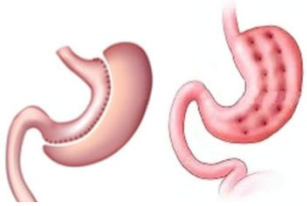
One Anastomosis Gastric
"Mini Gastric Bypass"



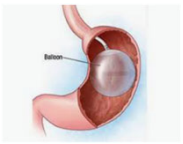
SADI-S
Single Anastomosis Duodeno-ileal bypass with sleeve gastrectomy



Endoscopic Sleeve Gastroplasty



Intragastric Balloon



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Which procedure is best?

- Dependent on patient health history and risk factors
- Resolution of metabolic co-morbidities
  - BPD-DS > RYGB > Sleeve gastrectomy
- Risk of surgery (Although still low risk)
  - BPD-DS > RYGB > Sleeve gastrectomy
- Smoking recidivism
  - Highest risk of marginal ulcer (associated with smoking) in RYGB
- GERD
  - Relative contraindication for sleeve gastrectomy (BPD-DS)
  - RYGB highly effective treatment of GERD
- BPD-DS: Requires a highly compliant patient (protein and vitamin adherence)

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Is Bariatric Surgery Successful?

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Is Bariatric Surgery Successful?

Buchwald JAMA 2004

- Meta-analysis, >22,000 patients
- %EXCESS WL: 61.2%
- Diabetes resolution in 76.8%
  - Diabetes resolved or improved in 86%
- Hyperlipidemia improved in 70%
- Hypertension resolved in 61.7%
  - Resolved or improved 78.5%
- OSA resolved 85.7%
- **Metabolic operation**

Buchwald H, et al. Bariatric surgery: a systematic review and meta-analysis. JAMA. 2004 Oct 13;292(14):1724-37.

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Barriers to Surgery

The Numbers	Lack of Referral	Perceptions of Surgical Risk	Insurance

• <1% of eligible patients undergo bariatric surgery (400,000 cases annually in US)
• 20-25% attrition rate after referral
	• Patients 5x more likely to seriously consider bariatric surgery if recommended by PCP
	• Only 20% of patients were recommended bariatric surgery by PCP
		• Mortality risks
		  • 0.93% - total hip replacement
		  • 0.7% - laparoscopic cholecystectomy
		  • 0.13% - laparoscopic bariatric surgery
			• Not all insurances provide bariatric coverage, varies by state
			• Cash pay options available

Wee CC, Huskey KW, Bolcic-Jankovic D, Colten ME, Davis RB, Hamel M. Sex, race, and consideration of bariatric surgery among primary care patients with moderate to severe obesity. J Gen Intern Med. 2014;29(1):68–75. https://doi.org/10.1007/s11606-013-2603-1.

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Bariatric Surgery

The belief that diet, exercise and "will power" are the only tools for maintaining a healthy weight has proven to be false. Bariatric surgery is extremely effective for weight reduction which can have significant, positive effects on your health including reduced blood pressure, improvements in cardiovascular health and reduction or elimination of many other weight-related health issues. It may be a good choice for you.

What is bariatric surgery?
These procedures reduce or remove part of the stomach or create a bypass to the small intestine. They are usually minimally invasive with only small incisions and a quick recovery. Generally, a 1–2-day hospital stay is required.

Am I a good candidate?
If you have tried to lose weight through diet and exercise without success, but you are still committed to long-term lifestyle changes you may be a good candidate. To qualify you must have a Body Mass Index (BMI) of greater than 40, or a BMI greater than 35 with weight-related health issues.

Why have bariatric surgery?
According to the National Institutes of Health, bariatric surgery is the most effective therapy available for severe obesity and can result in substantial improvement in weight-related health problems.

Where can I learn more?
Ask your doctor and/or check out these videos at:
https://asmbs.org/patients/wls-patient-videos and
https://www.kansashealthsystem.com/care/treatments/bariatric-weight-loss-surgery

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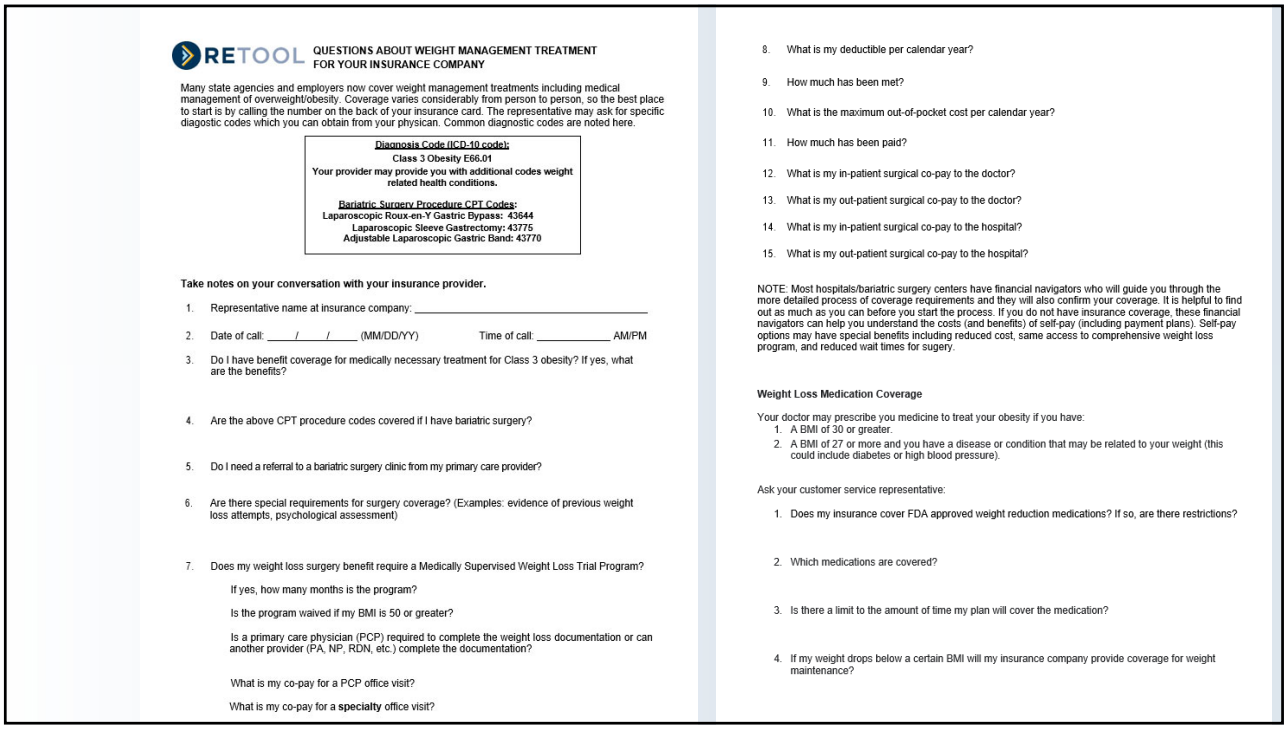

RETOOL **QUESTIONS ABOUT WEIGHT MANAGEMENT TREATMENT FOR YOUR INSURANCE COMPANY**

Many state agencies and employers now cover weight management treatments including medical management of overweight/obesity. Coverage varies considerably from person to person, so the best place to start is by calling the number on the back of your insurance card. The representative may ask for specific diagostic codes which you can obtain from your physican. Common diagnostic codes are noted here.

Diagnosis Code (ICD-10 code):
Class 3 Obesity E66.01
Your provider may provide you with additional codes weight related health conditions.

Bariatric Surgery Procedure CPT Codes:
Laparoscopic Roux-en-Y Gastric Bypass: 43644
Laparoscopic Sleeve Gastrectomy: 43775
Adjustable Laparoscopic Gastric Band: 43770

Take notes on your conversation with your insurance provider.

1. Representative name at insurance company: _____
2. Date of call: _____/_____/_____ (MM/DD/YY) Time of call: _____ AM/PM
3. Do I have benefit coverage for medically necessary treatment for Class 3 obesity? If yes, what are the benefits?
4. Are the above CPT procedure codes covered if I have bariatric surgery?
5. Do I need a referral to a bariatric surgery clinic from my primary care provider?
6. Are there special requirements for surgery coverage? (Examples: evidence of previous weight loss attempts, psychological assessment)
7. Does my weight loss surgery benefit require a Medically Supervised Weight Loss Trial Program?

   If yes, how many months is the program?

   Is the program waived if my BMI is 50 or greater?

   Is a primary care physician (PCP) required to complete the weight loss documentation or can another provider (PA, NP, RDN, etc.) complete the documentation?

   What is my co-pay for a PCP office visit?

   What is my co-pay for a **specialty** office visit?
8. What is my deductible per calendar year?
9. How much has been met?
10. What is the maximum out-of-pocket cost per calendar year?
11. How much has been paid?
12. What is my in-patient surgical co-pay to the doctor?
13. What is my out-patient surgical co-pay to the doctor?
14. What is my in-patient surgical co-pay to the hospital?
15. What is my out-patient surgical co-pay to the hospital?

NOTE: Most hospitals/bariatric surgery centers have financial navigators who will guide you through the more detailed process of coverage requirements and they will also confirm your coverage. It is helpful to find out as much as you can before you start the process. If you do not have insurance coverage, these financial navigators can help you understand the costs (and benefits) of self-pay (including payment plans). Self-pay options may have special benefits including reduced cost, same access to comprehensive weight loss program, and reduced wait times for sugery.

Weight Loss Medication Coverage

Your doctor may prescribe you medicine to treat your obesity if you have:
1. A BMI of 30 or greater.
2. A BMI of 27 or more and you have a disease or condition that may be related to your weight (this could include diabetes or high blood pressure).

Ask your customer service representative:

1. Does my insurance cover FDA approved weight reduction medications? If so, are there restrictions?
2. Which medications are covered?
3. Is there a limit to the amount of time my plan will cover the medication?
4. If my weight drops below a certain BMI will my insurance company provide coverage for weight maintenance?

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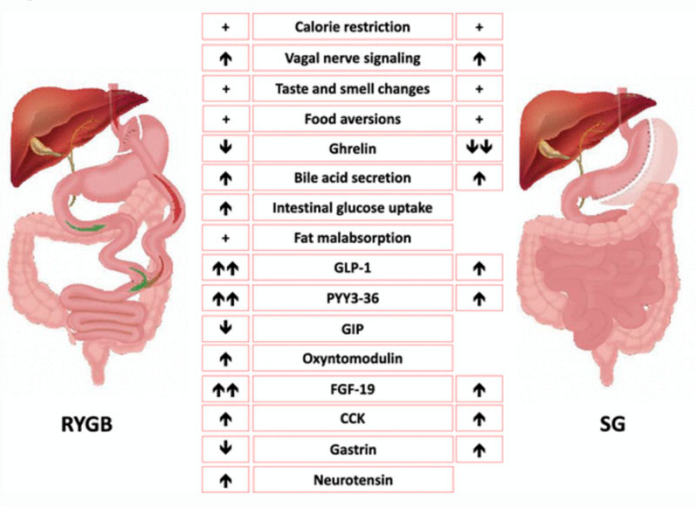
Surgical Mechanisms of Weight Loss

METABOLIC Operations – In Addition to Restrictive and Malabsorptive



Mechanisms underlying the weight loss effects of RYGB and SG: Similar, yet different

Pucci A, Batterham RL. Mechanisms underlying the weight loss effects of RYGB and SG; similar yet different. J Endocrinol Invest. 2019; 42(2): 117–128.

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Surgical Mechanisms of Weight Loss

- Metabolic effects
- Decreased appetite
- Altered behavioral response to food
- Relative increase in energy expenditure
- Alters "physiologic set point"

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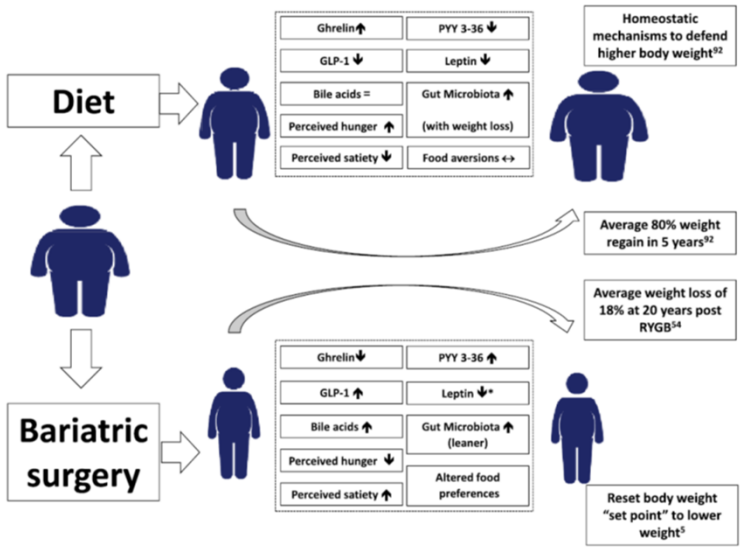
Biological Defense of Obesity



Kaplan LM, et al. Body weight regulation and obesity. J Gastrointest Surg. 7(4):443-451.

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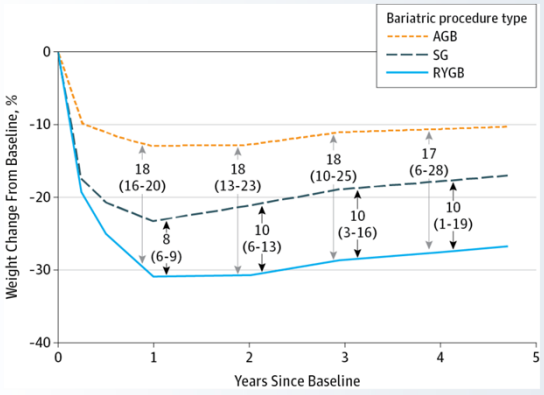
Weight Loss Trends Post Surgery



6-12 months
Honeymoon period

18-24 months
Weight loss nadir

2 years +
Maintenance

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Referring Patients for Bariatric Surgery

Who to refer

- BMI > 40
- BMI > 35 with obesity-associated co-morbidities
  - BUT…2022 ASMBS and IFSO consensus guidelines: BMI >35 or BMI >30 with co-morbidities (will take time for insurance adoption)
- Patients who have "failed"/had inadequate results with medical management
- Refer EARLY. Odds ratio 12.88 of achieving healthy weight if initial BMI < 40 [1]

Is surgery covered?

- Insurance companies dictate coverage parameters and varies by provider
- Financial navigation is first step of referral process.
  - Patient will be informed of coverage and required estimated co-pay
  - Patient provided with cash pay program information if insurance does not cover bariatric surgery

1. Varban OA, Cassidy RB, Bonham A, et al. Factors Associated With Achieving a Body Mass Index of Less Than 30 After Bariatric Surgery. *JAMA Surg.* 2017;152(11):1058–1064. doi:10.1001/jamasurg.2017.2348.

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The Process

Pre-operative evaluation

- New patient informational seminar, appointments with surgeon, dietician, psychologist
- Medical evaluation for appropriateness of surgery
- Education on recommended dietary and lifestyle changes prior to surgery
- Overview of post-operative diet progression and recommended long-term dietary and activity changes

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The Process

Post-operative

- Surgeon, dietician, and psychologist evaluations, monthly support group meetings
  - Evaluations at 10 days, 6 weeks, 3 months, 6 months, 9 months, 1 year, 18 months, then annually
  - Dietary and activity progression
  - Monitoring weight loss progression and co-morbidity resolution.
  - Long-term monitoring of vitamins and nutrients

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The Process

Obesity is a chronic and difficult to treat disease.

- Pharmacologic measures can be utilized pre-operatively, within mid-term post-op time period, or for long-term weight regain

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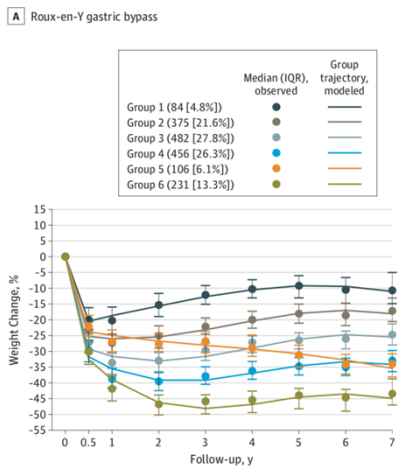
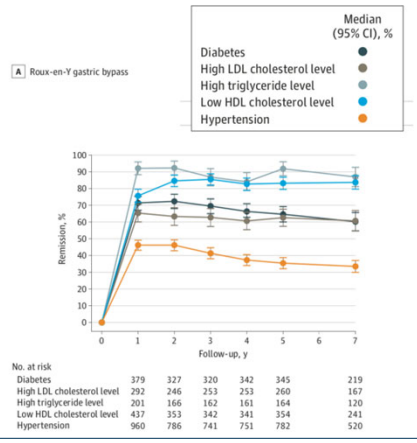
Long Term Outcomes After Bariatric Surgery

Variability in Weight Loss



Remission of Comorbid Conditions



Courcoulas AP, et al. Seven-Year Weight Trajectories and Health Outcomes in the Longitudinal Assessment of Bariatric Surgery (LABS) Study. JAMA Surg. 2018 (153)5:427-434.

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Post-Op Management of the Bariatric Patient

Follow-Up

- Surgeon
  - Regular visits through 18 Months
  - Annual visits

Medical Monitoring

- Short term: Leak, VTE, PE, Hernia, Anastomotic stricture
- Long term: internal hernia, reflux esophagitis, anatomic complications

Dietary Monitoring

- Monitor for nutritional and vitamin deficiencies
- AACE/TOS/ASMBS Guidelines for Perioperative Nutritional, Metabolic, and Nonsurgical Support

Evaluate diet and ACTIVITY compliance

Monitor for appropriate weight loss progress

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Pre- and Post-op Nutrition

- 10-day pre-op diet
  - Low calorie / low carb (reduces size of liver to make surgery safer)
- Stage 1-3: first 6 weeks
  - Clear Liquid to full liquid to pureed/blended
- Stage 4: 6-12 weeks
  - Soft diet
  - Avoid carbonation, alcohol, caffeine, tough meats, rice, pasta, bread, dried and skin on fruit, popcorn and high fiber cereal, seeds and nuts and greasy foods.
- Stage 5
  - Regular diet (when tolerating soft foods)

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Long Term Nutritional Management to Avoid Complications

Protein

- 60-120g of protein/day to maintain lean body mass during weight loss and for long term

Supplements

- Long-term vitamin/mineral supplementation
- Malabsorptive procedures requiring potentially more extensive replacement therapy to prevent nutritional deficiencies

Monitoring and Adherence / Macro and Micronutrient Deficiencies

- MVI
- Iron
- Calcium
- Vitamin D
- Viamin B12
- Thiamine (in MVI; high risk of deficiency with chronic N/V)

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ASMBS Guidelines for Post Surgical Management

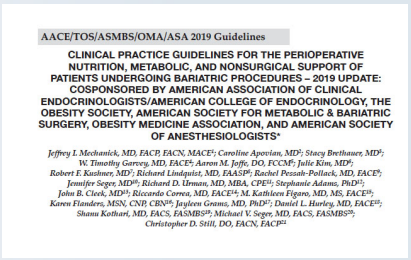
Postprocedure checklist*

Checklist item		LAGB	SG	RYGB	BPD/DS
Early postoperative care					
✓	Monitored telemetry at least 24 hr if high risk for MI	✓	✓	✓	✓
✓	Protocol-derived staged meal progression supervised by RD	✓	✓	✓	✓
✓	Healthy-eating education by RD	✓	✓	✓	✓
✓	Multivitamin plus minerals (no. of tablets for minimal requirement)	1	2	2	2
✓	Elemental calcium (as calcium citrate), mg/d	1200–1500	1200–1500	1200–1500	1800–2400
✓	Vitamin D, at least 3000 units/d, titrate to >30 ng/mL	✓	✓	✓	✓
✓	Vitamin B_{12} as needed for normal range levels	✓	✓	✓	✓
✓	Maintain adequate hydration (usually >1.5 L/d PO)	✓	✓	✓	✓

ELSEVIER

Review article

American Society for Metabolic and Bariatric Surgery Integrated Health Nutritional Guidelines for the Surgical Weight Loss Patient 2016 Update: Micronutrients



AACE/TOS/ASMBS/OMA/ASA 2019 Guidelines

CLINICAL PRACTICE GUIDELINES FOR THE PERIOPERATIVE NUTRITION, METABOLIC, AND NONSURGICAL SUPPORT OF PATIENTS UNDERGOING BARIATRIC PROCEDURES – 2019 UPDATE: COSPONSORED BY AMERICAN ASSOCIATION OF CLINICAL ENDOCRINOLOGISTS/AMERICAN COLLEGE OF ENDOCRINOLOGY, THE OBESITY SOCIETY, AMERICAN SOCIETY FOR METABOLIC & BARIATRIC SURGERY, OBESITY MEDICINE ASSOCIATION, AND AMERICAN SOCIETY OF ANESTHESIOLOGISTS*

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Stages of Bariatric Life

Dietician and psychologist follow-up intervals

The Honeymoon
- 6-12 months
- Able to lose without tremendous effort
- Rapid weight loss and feeling better
- Don't feel hungry- but be prepared by resumption of hunger

Returning to Reality
- 18 months
- Recurrence of hunger/Feeling hunger pains again
- Resumption of cravings

Maintenance
- 2 years and beyond
- Finding a way to successfully co-exist with food
- Dealing with weight regain

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Addressing Weight Regain

Inadequate Post-op Weight Loss

- </= 15% Total body weight loss = failure (failure of the operation, not the patient)

Weight Regain

- 10-20% of max weight lost expected (i.e. lose 100lbs, regain 10-20lbs)
- 40-50% or more of maximum weight loss is excessive regain

Reasons

- Dietary non-compliance
- Binge eating, grazing
- Lack of nutritional counseling
- Psychological issues
- Surgery-related
- Dissipated GLP-1, PYY changes- levels return to pre-weight loss levels

Evaluation for Recurrence of Co-morbidities

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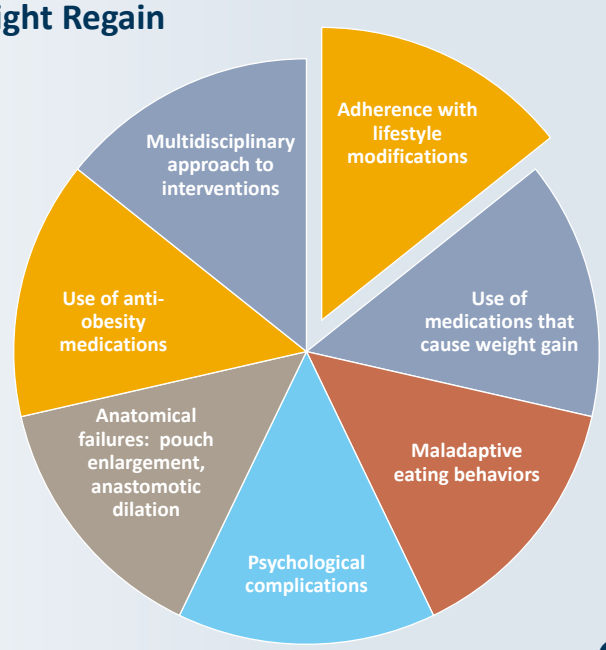
Consensus Statements on Weight Regain After Surgery?

Many considerations, but no evidence-based recommendations on treatment of weight gain after surgery consensus statements.



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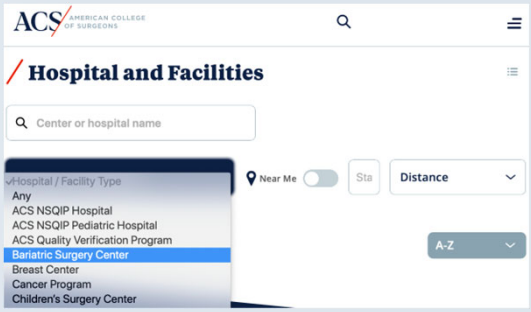
Refer to Center of Excellence

- Search for a center that is an ASMBS Center of Excellence
  - Hospital and Facilities | ACS (facs.org)
  - Select "Bariatric Surgery Center
  - Enter your zip code (improves functionality versus the "near me" function)
  - Kansas City, Topeka, Wichita, Tulsa
  - University of Kansas Health System
    - https://www.kansashealthsystem.com/care/treatments/bariatric-weight-loss-surgery
    - 913-588-1277
    - Website includes patient education video



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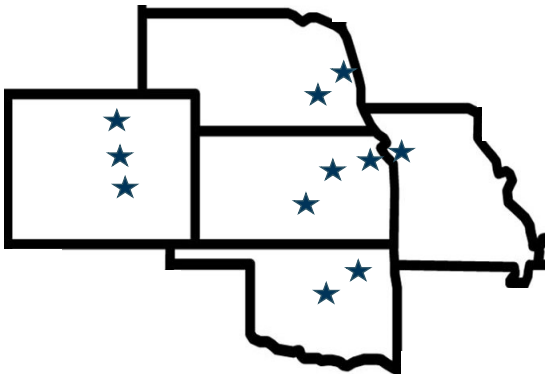
Regional Bariatric Surgery Centers of Excellence



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Bariatric Surgery Centers of Excellence in Kansas

- Kansas City
  - The University of Kansas Health System
  - Menorah Medical Center
  - Minimally Invasive Surgery Hospital
  - North Kansas City Hospital
  - Saint Luke's Hospital
  - The Bariatric Center of Kansas City, LLC
- Wichita
  - Ascension Via Christi
  - Wesley Woodlawn Hospital
- Topeka
  - The University of Kansas Health System
  - Stormont Vail Health

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Bariatric Surgery Centers of Excellence in Colorado

- Denver
  - Denver Health Medical Center
  - HCA Rose Medical Center
  - Saint Joseph Hospital
  - The Medical Center of Aurora
  - University of Colorado Hospital Aurora
  - HCA Sky Ridge Medical Center
  - Lutheran Medical Center
- Colorado Springs
  - Centura Penrose Hospital
  - Evans Army Community Hospital – Ft. Carson
- Other
  - Parker Adventist Hospital – Parker, CO
  - Poudre Valley Hospital – Ft. Collins

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Bariatric Surgery Centers of Excellence

- Nebraska
  - Lincoln
    - Bryan Medical Center
  - Omaha
    - CHI Health Immanuel
    - Methodist Hospital
    - The Nebraska Medical Center
- Oklahoma
  - Tulsa
    - Ascension St. John Medical Center
  - Oklahoma City
    - INTEGRIS Baptist Medical Center
    - OU Medicine

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Questions?

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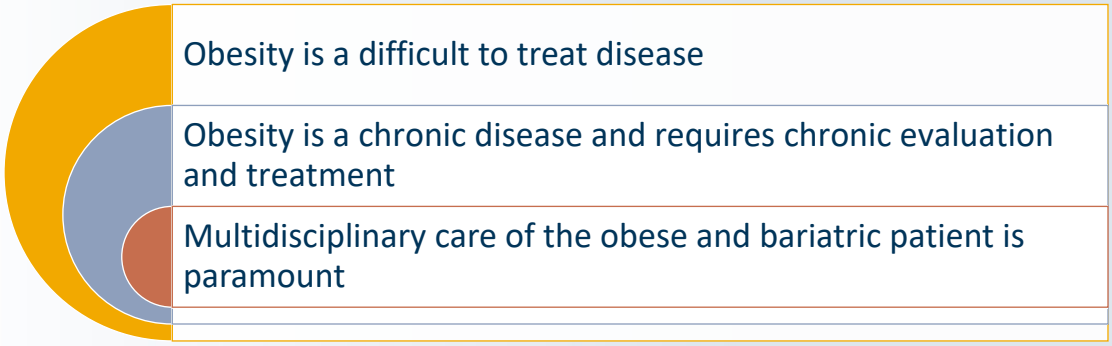
Summary



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