Bariatric Surgeon Presentation

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Memorial WEIGHT LOSS & WELLNESS CENTER

Memorial Bariatric Services

- Nationally accredited under the Metabolic and Bariatric Surgery Quality Improvement Program (MBSAQIP) administered through ACS and ASMBS
- Blue Distinction Center for Bariatric Surgery
- Strong multidisciplinary team
- Two experienced bariatric surgeons
- Over 2000 bariatric cases completed
- Extensive pre-operative and post-operative care

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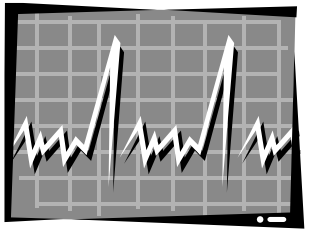
BMI = Weight in Kilograms / (Height)m^2



Categories:

- Normal: 19-24.9
- Overweight: 25-29.9
- Obese: 30-39.9
- Morbidly Obese: 40-49.9
- Super Morbidly Obese: 50-59.9

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Obesity Facts

- 35% OF ADULT POPULATION BMI >30
- 6% OF ADULT POPULATION BMI >40
- **210 BILLION OF USD ARE SPENT** ANNUALLY TO TREAT CO-MORBIDITIES ASSOCIATED WITH OBESITY (21% OF HEALTH EXPENDITURES)

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Co-Morbid Conditions Associated with Obesity

- Type 2 Diabetes (8.3% of the population)
- Hypertension
- Hyperlipidemia
- Sleep apnea
- Nonalcoholic fatty liver disease (85%) → Nonalcoholic steatohepatitis (25%) → Cirrhosis (25%)
- Coronary artery disease → Heart attack
- Atrial fibrillation→ Stroke
- Cardiomyopathy → Congestive heart failure

Co-Morbid Conditions Associated with Obesity

- GERD (acid reflux)
- Polycystic ovarian syndrome
- Osteoarthritis
- Infertility
- Gallbladder disease
- Poor quality of life
- Cancer

Metabolic Syndrome

Type 2 Diabetes +

Hypertension +

Hyperlipidemia +

↑ waist circumference (102 cm men; 88 cm females) +

= ↑morbidity and mortality

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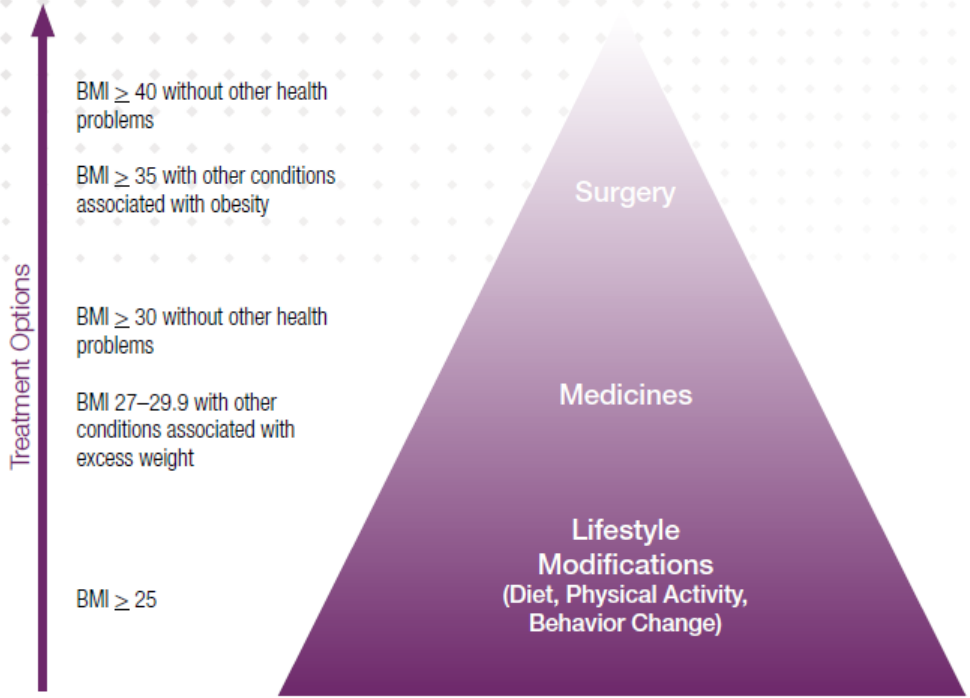
Bariatric Surgery Eligibility
-Walk 25 feet
-Do not wear home oxygen during the day



NIH Treatment Options

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Obesity Current Treatments

- Lifestyle Changes
  - Diet
  - Exercise regimen
    - Traditional lifestyle modification results in 3-7% total body weight loss
    - Those with morbid obesity - 95% regain in 5 years

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Obesity Current Treatments

- Pharmacotherapy
  - 10% total body weight with diet + exercise
  - Barriers to cost, compliance, side effects and relapse after stopping medication

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Optimal Procedure Selection

- Low morbidity and mortality
- Result in significant and durable weight loss
- Lead to improvement and resolution of obesity related co-morbidities and quality of life

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Surgical Options

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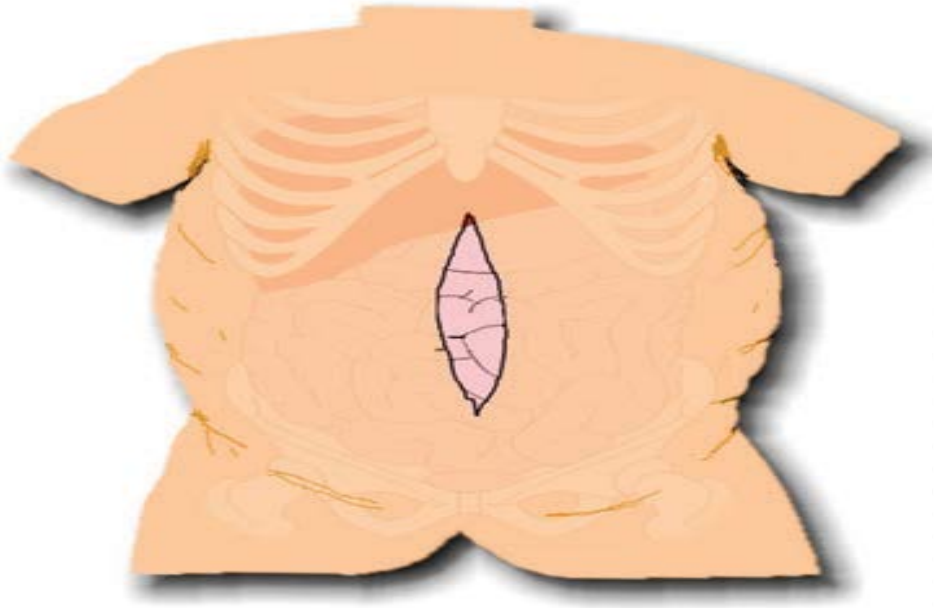
Open incision



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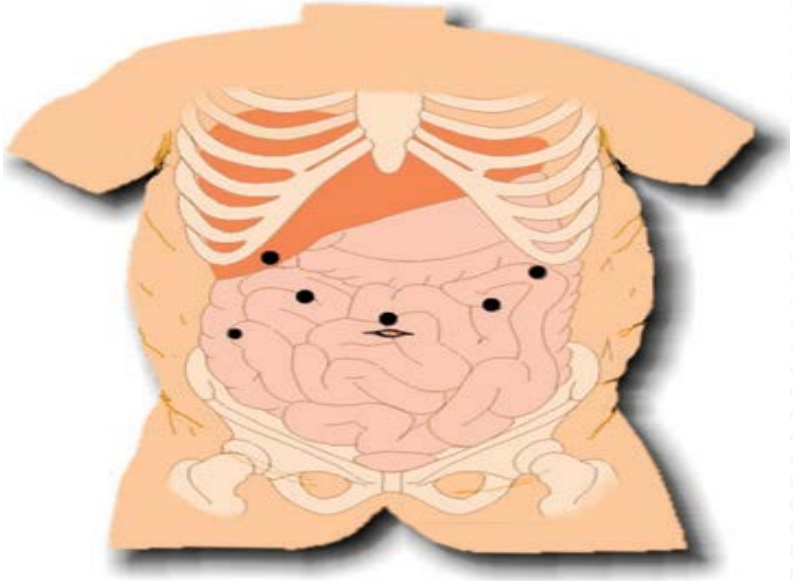
Laparoscopic technique

100% of procedures

- Less invasive
- Less scarring
- Less pain
- Shorter recovery time
- Less risk of hernia and surgical site infection
- Better visualization



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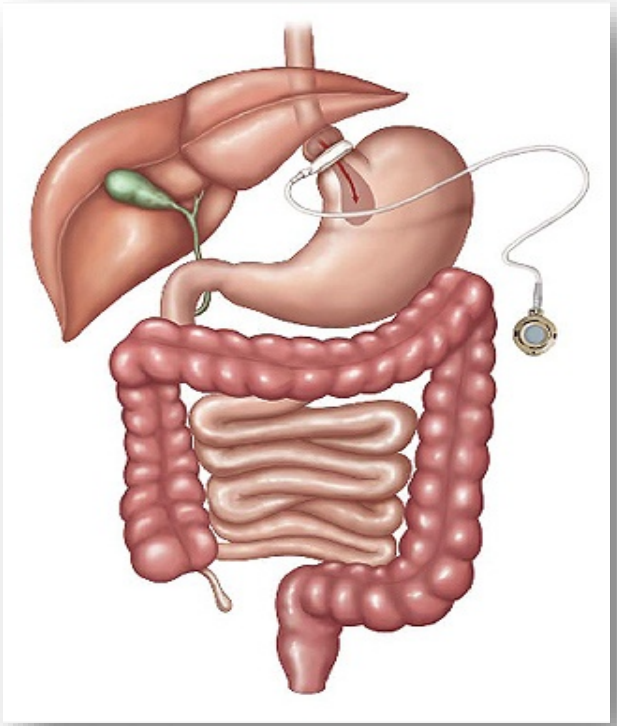
Bariatric Procedures

Laparoscopic Adjustable Gastric Band



Procedure Benefits

- Restrictive procedure, no malabsorption
- No change to anatomy
- Reversible and removable
- Outpatient

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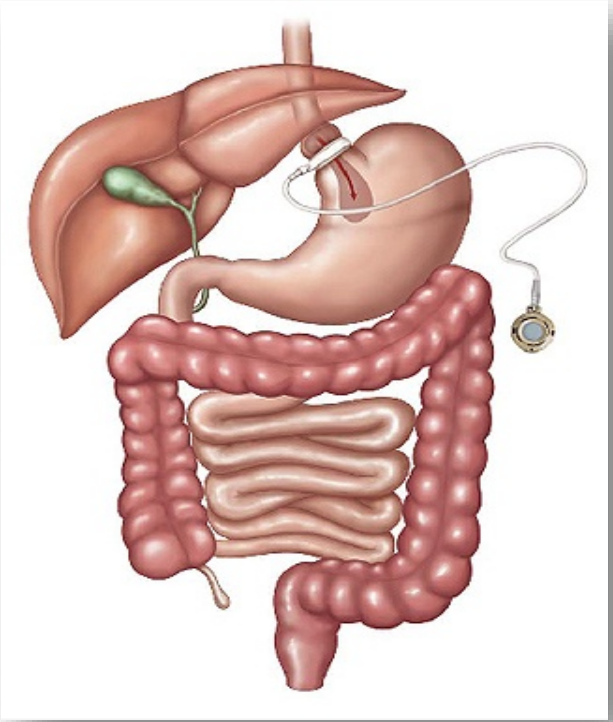
Bariatric Procedures

Laparoscopic Adjustable Gastric Band



Ideal Patient

- BMI 30-40
- Active
- Compliant
- Good support with multidisciplinary team approach
- Age 18-60

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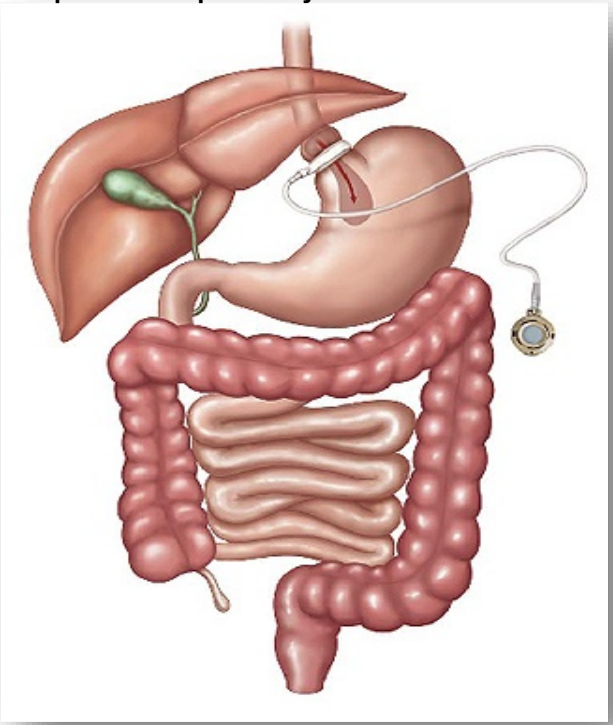
Bariatric Procedures

Laparoscopic Adjustable Gastric Band



Procedure Disadvantages

- Failure to lose weight (25%)
  - Slower weight loss (3 years)
  - Lower overall weight loss (40-50% EWL)
  - Cheatable
- **Long term tolerance**
  - **Explantation rate >50% at 5 years; 75% at 15 years**
  - **75% require another operation**
- Device related problems (25%)
  - Port Leakage
  - Device slippage
  - Erosion
- Anatomic and physiologic problems with the device (25%)
  - Nausea/vomiting/abdominal pain
  - GERD
  - Esophageal and pouch dilatation
- Multiple adjustments required

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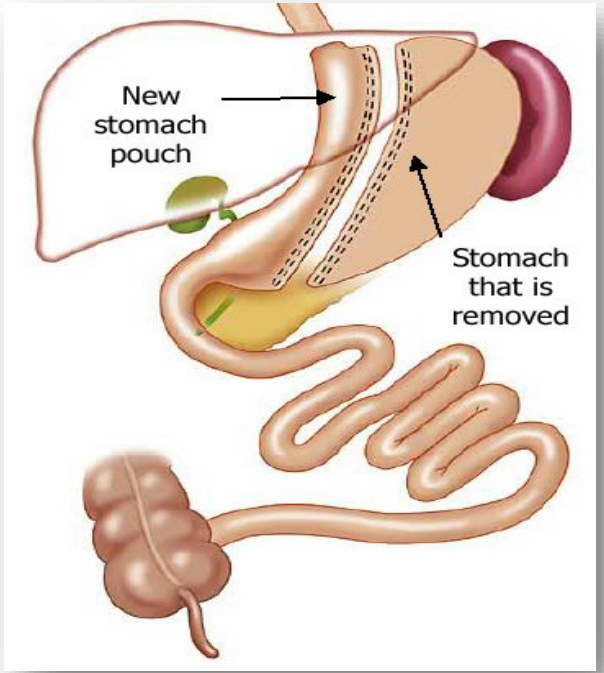
Bariatric Procedures

Laparoscopic Sleeve Gastrectomy



Procedure Benefits

- Shorter operative time (40 min)
- Overnight stay in the hospital
- **Restrictive** with no malabsorption
- No implanted medical device/no anastomosis/ no bypass of intestines
- Causes favorable changes in gut hormones (ghrelin) affecting hunger, satiety, and insulin resistance
- No risk of marginal ulcers and internal hernias
- **Pylorus preservation** (minimal risk of dumping, diarrhea, marginal ulcers)
- Good weight loss
  - **Total weight loss 20-25% at 5 years**
  - **BMI reduction 10-12 points at 5 years**

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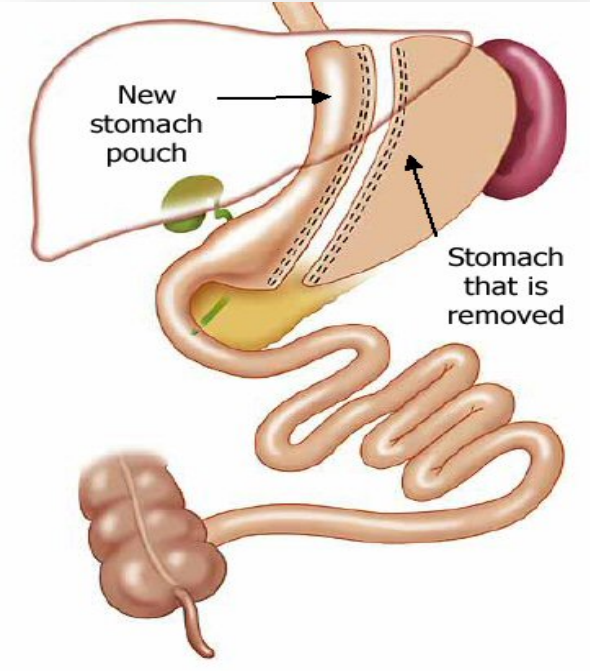
Bariatric Procedures

Laparoscopic Sleeve Gastrectomy



Ideal Patient

- BMI 35-45
- No GERD or Barrett's
- Active
- ↑ Risk/Extremes of age
- Adhesions/hernias
- Transplant
- Staged procedure for BMI > 50 to reduce risk

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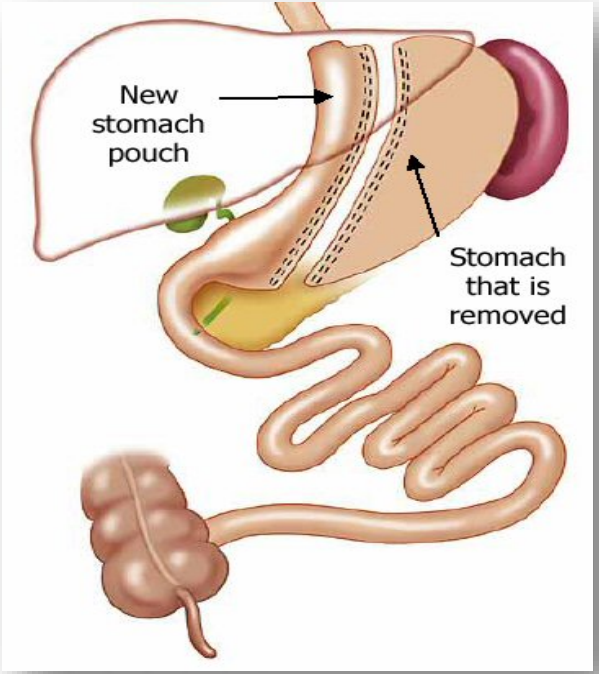
Bariatric Procedures

Laparoscopic Sleeve Gastrectomy



Procedure Disadvantages

- Chronic GERD
- Irreversible
- Higher weight recidivism rate
- Less total weight loss than malabsorptive operations

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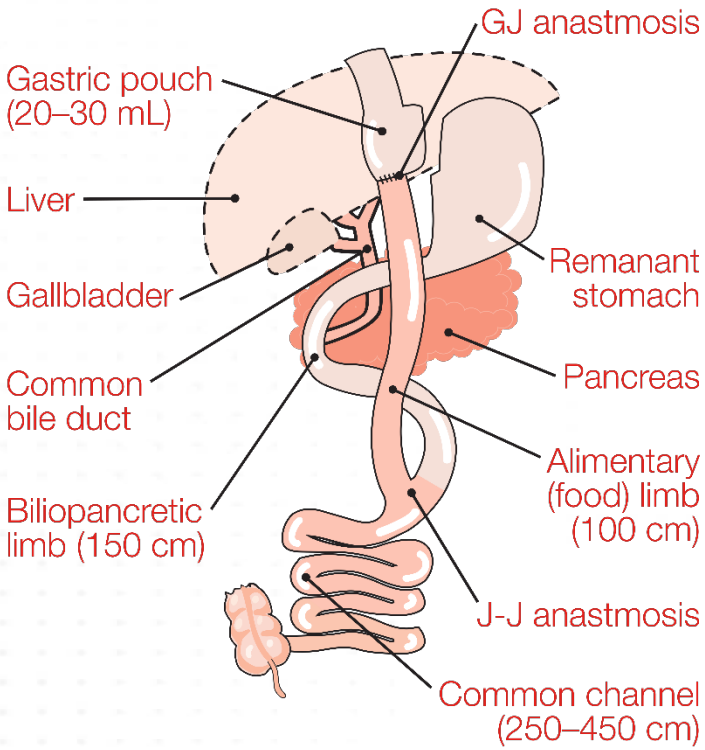
Bariatric Procedures



Procedure Benefits

- Current Gold Standard
  - Long-term experience over 50 yrs.
- Excellent weight loss benefits with acceptable risk of malnutrition and malabsortive complications
  - **Total weight loss 25-35% at 5 years**
  - **BMI reduction 12-15 points at 5 yrs**
- Can be **staged procedure** or **revisional procedure** for patients who failed a restrictive procedure (band or sleeve)
- Excellent option for treatment of reflux and metabolic disease

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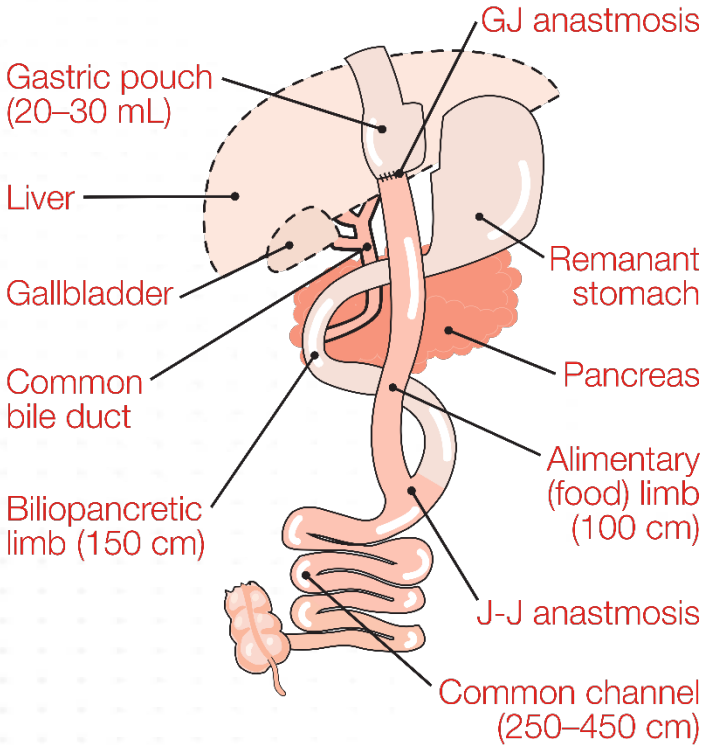
Bariatric Procedures



Ideal Patient

- BMI 35-50
- Type 2 Diabetes (< 10 years and not on insulin)
- Significant GERD
- Barrett's Esophagus
- Age 18-65
- No previous stomach and lower GI/hernia

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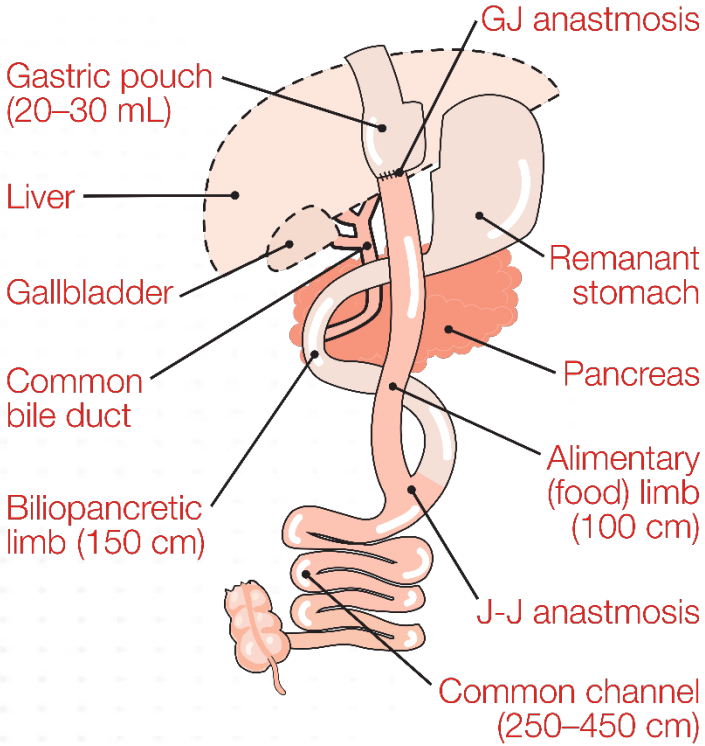
Bariatric Procedures



Procedure Disadvantages

- Changes anatomy, bypasses pylorus
  - Dumping syndrome (↑ sweets)
- Marginal Ulcers/Strictures/Internal Hernias (long term risk)
- Nutritional deficiencies
- More difficult to revise
- Recidivism
  - 20% for BMI ≤ 50
  - Up to 35% for BMI > 50

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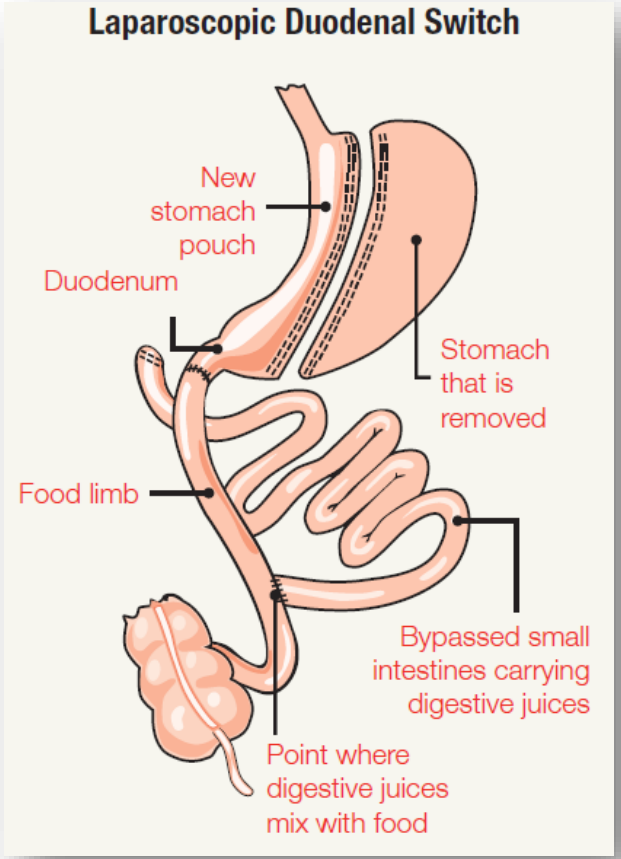

Procedure Benefits

- Greatest reduction in weight
  - **Total weight loss 40-50% at 5 years**
  - **BMI reduction 21-24 points at 5 yrs**
- Most effective in diabetes improvements
  - **97% remission for type II diabetes**
  - On insulin 5-10 yrs =88% remission
  - On Insulin > 10 years = 66% remission
- **Lowest recidivism (6%) at 5 years**

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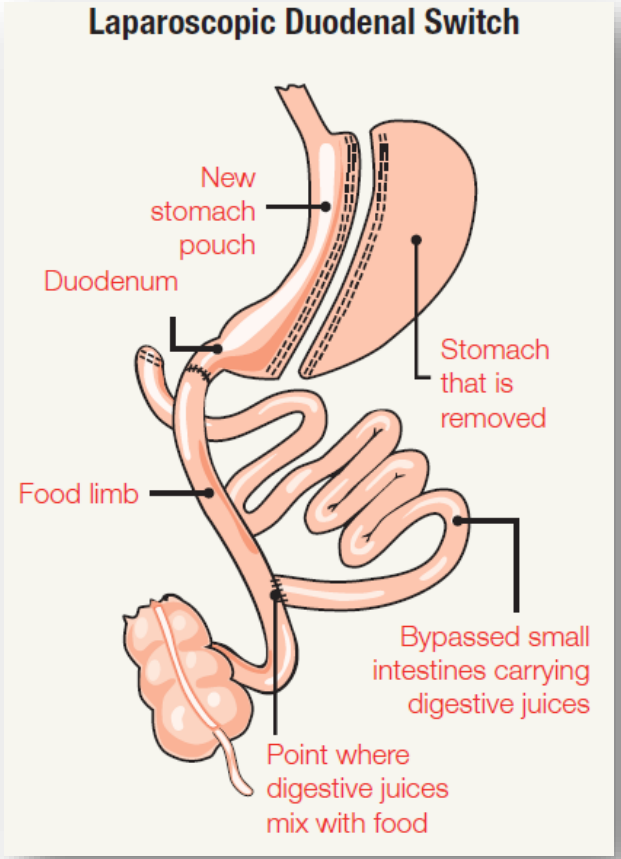
Bariatric Procedures



Procedure Benefits

- Pylorus function is maintained
  - No dumping syndrome
  - Helps maintain normal blood sugar levels
  - Prevents bile reflux into stomach
  - Lower risk of marginal ulcers and strictures compared to gastric bypass
- Can be **staged procedure** or **revisional procedure** for patients who failed a restrictive procedure (band, sleeve, or bypass)
- Causes favorable changes in gut hormones (ghrelin) affecting long-term hunger, satiety, and insulin resistance
- Euglycemia
  - Reduces risk of postprandial hypoglycemia

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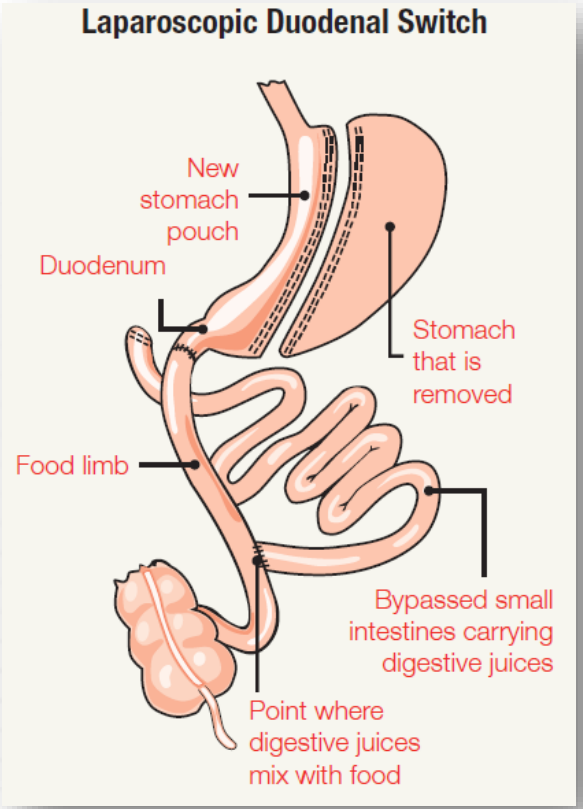
Bariatric Procedures



Ideal Patient

- High BMI > 50
- Poorly controlled Type 2 Diabetes
- Poorly controlled Hypertriglyceridemia
- Metabolic Syndrome
- Age 18-65
- Compliant patients – requires lifelong follow-up
- No history of Crohn's or intestinal resection surgery
- Not a good option for transplant patients

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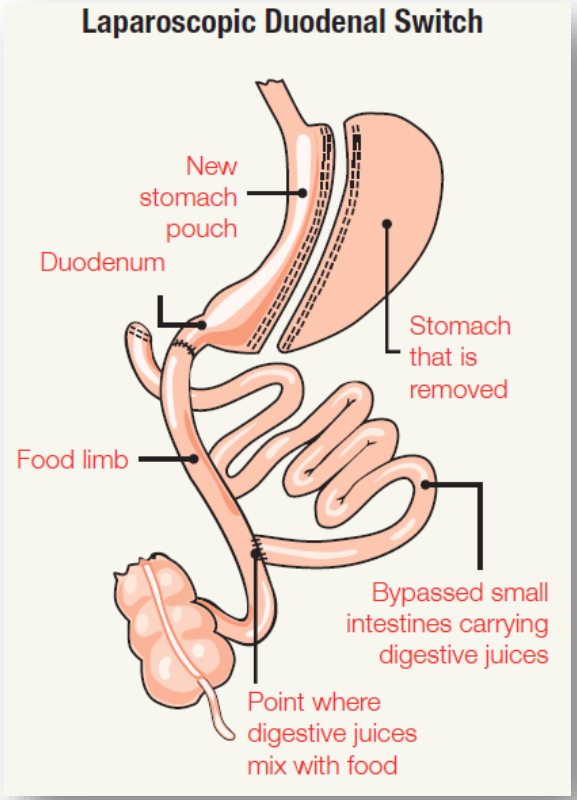
Bariatric Procedures



Procedure Disadvantages

- Highest surgical risk for nutritional deficiencies
  - Protein/calorie malnutrition with poor compliance <5%
  - Greater malabsorption of vitamins/minerals
- Longer OR time (2 ½ - 3 hours)
  - Higher risk of DVT/PE
- Risk of excessive weight loss and diarrhea with poor compliance
- More technically difficult to perform, staged operation may need to be done
- Risk of internal hernia

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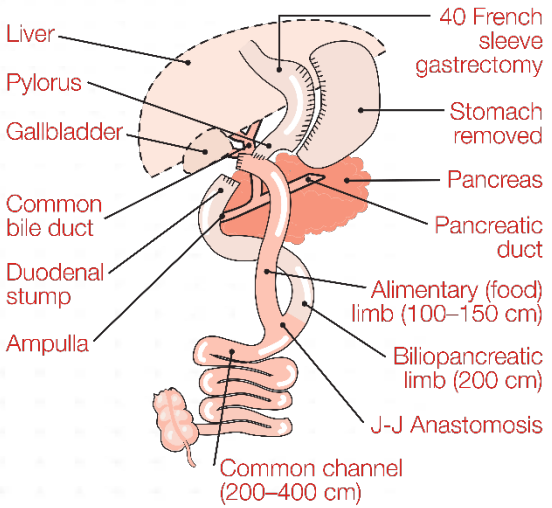
Bariatric Procedures

Procedure Benefits



- Benefits similar to duodenal switch without malabsorptive disadvantages
- Pylorus function is maintained
  - No dumping syndrome
  - Helps maintain normal blood sugar levels
  - Prevents bile reflux into stomach
  - Lower risk of marginal ulcers and strictures compared to gastric bypass
- Improved weight loss and Type 2 Diabetes resolution over gastric bypass or sleeve gastrectomy
  - **Total weight loss 35-45%**
  - **BMI reduction 15-21 points**
- Fewer possible GI side effects compared to gastric bypass or duodenal switch
- Lower risk of nutritional and vitamin deficiencies compared to the duodenal switch
- Can be revised or used as a revision to a traditional duodenal switch for better weight loss

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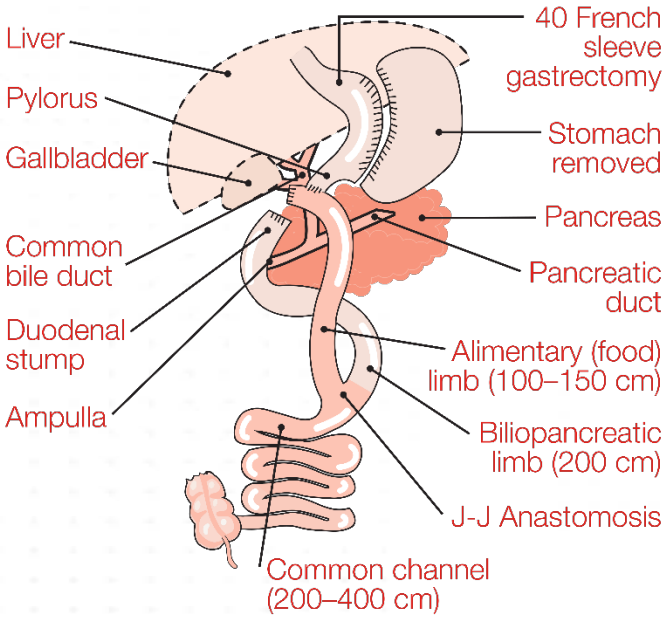
Bariatric Procedures



Ideal Candidate

- BMI 40-55
- Age 18-65 years
- Metabolic syndrome (DMII, hypertension, hyperlipidemia)
- No history of Crohn's disease
- No previous resection of ileocecal valve or intestinal surgery
- Not a good option for transplant patients
- Willing to participate in life-long follow up

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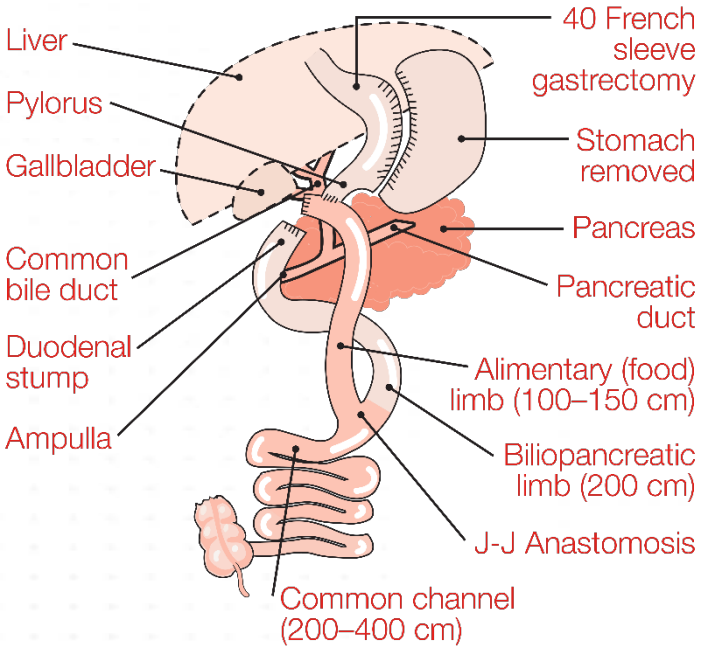
Bariatric Procedures



Procedure Disadvantages

- Longer operative time (1.5-3 hours)
- Unknown long term weight loss and metabolic results
- Risk of internal hernia

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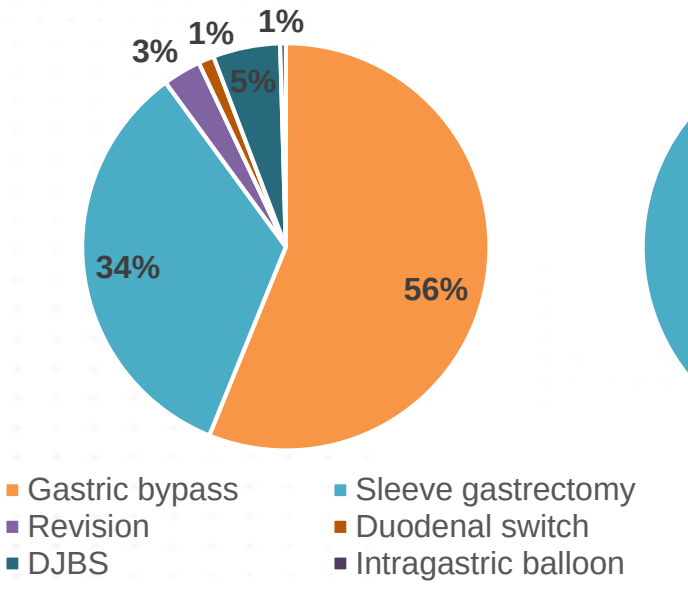
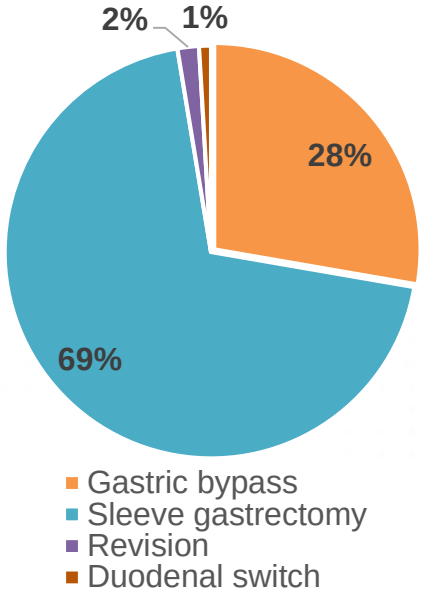
Bariatric Surgery Case Distributions

January 2016-December 2020

MMC



MBSAQIP



	MMC	MBSAQIP
Gastric Bypass	631	228960
Sleeve Gastrectomy	380	575361
Revision	34	13866
Duodenal Switch	14	7711
DJBS	60	No data
Intragastric Balloon	5	No data

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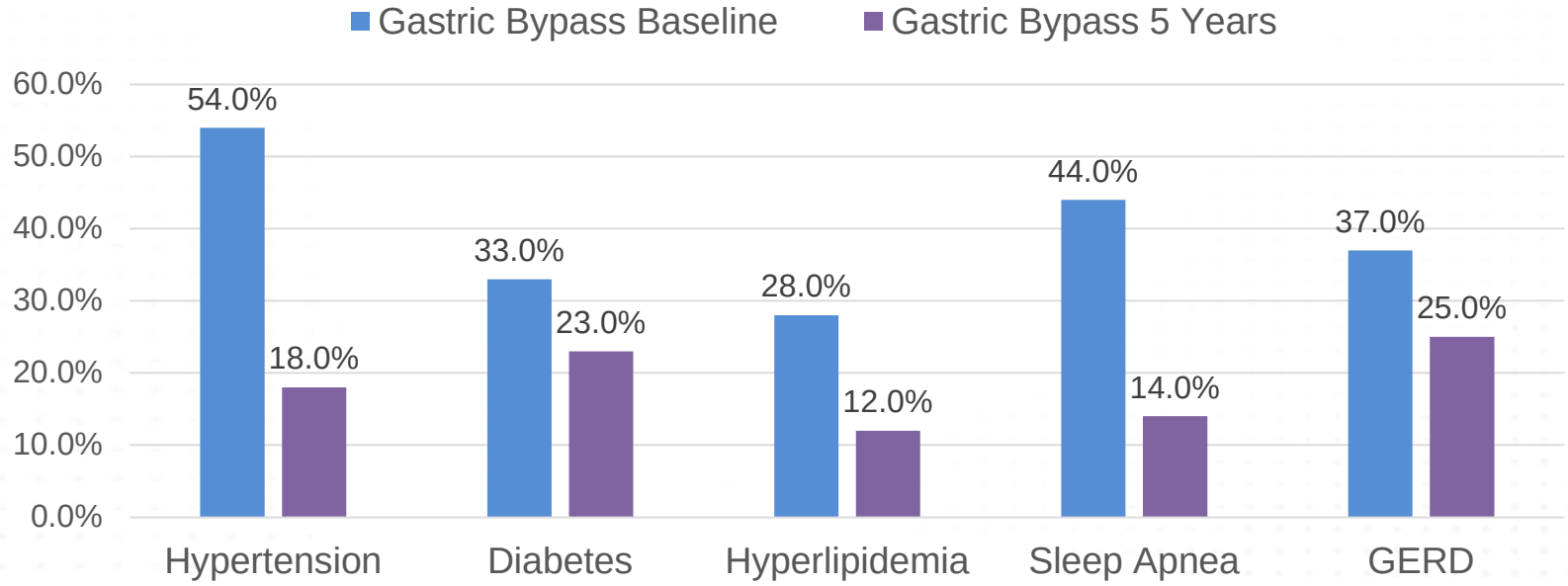
Outcomes after Gastric Bypass Co-morbidity Prevalence



89% of Gastric Bypass patients experienced a remission of 1 or more comorbidities at 5 years

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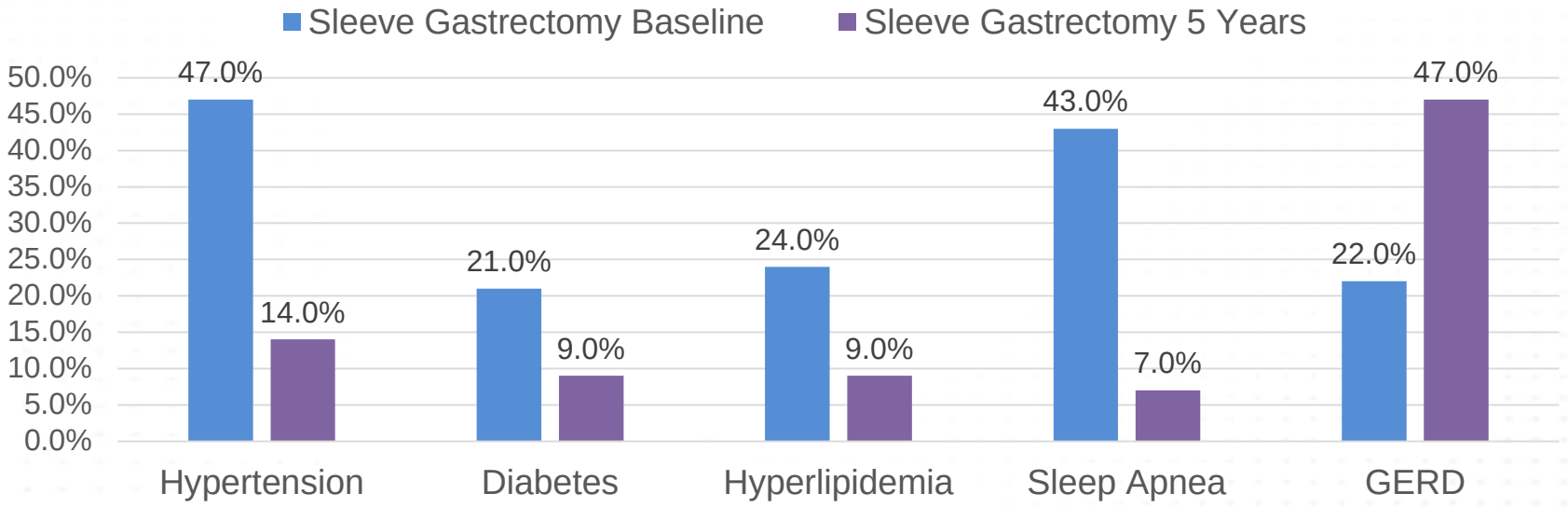
Memorial Bariatric Services data

Outcomes after Sleeve Gastrectomy Co-morbidity Prevalence



78% of Sleeve Gastrectomy patients experienced a remission of 1 or more comorbidities at 5 years

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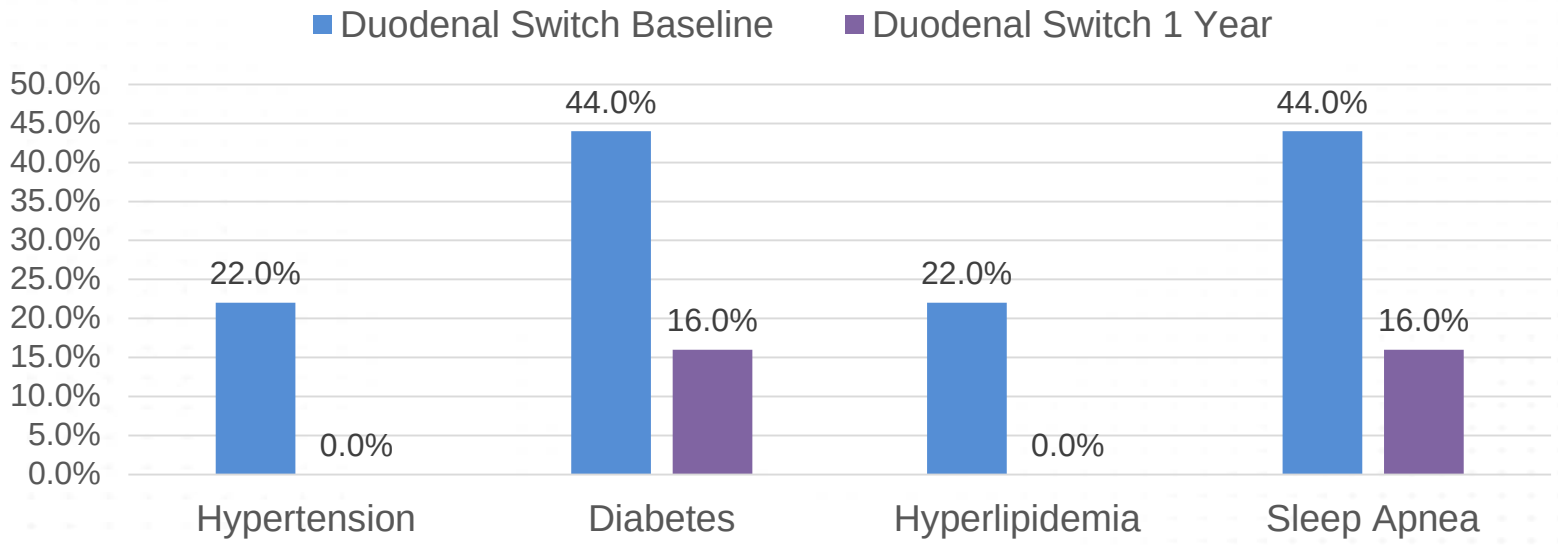
Memorial Bariatric Services data

Outcomes after Duodenal Switch Co-morbidity Prevalence



Remission	**100%**	**65%**	**100%**	**65%**

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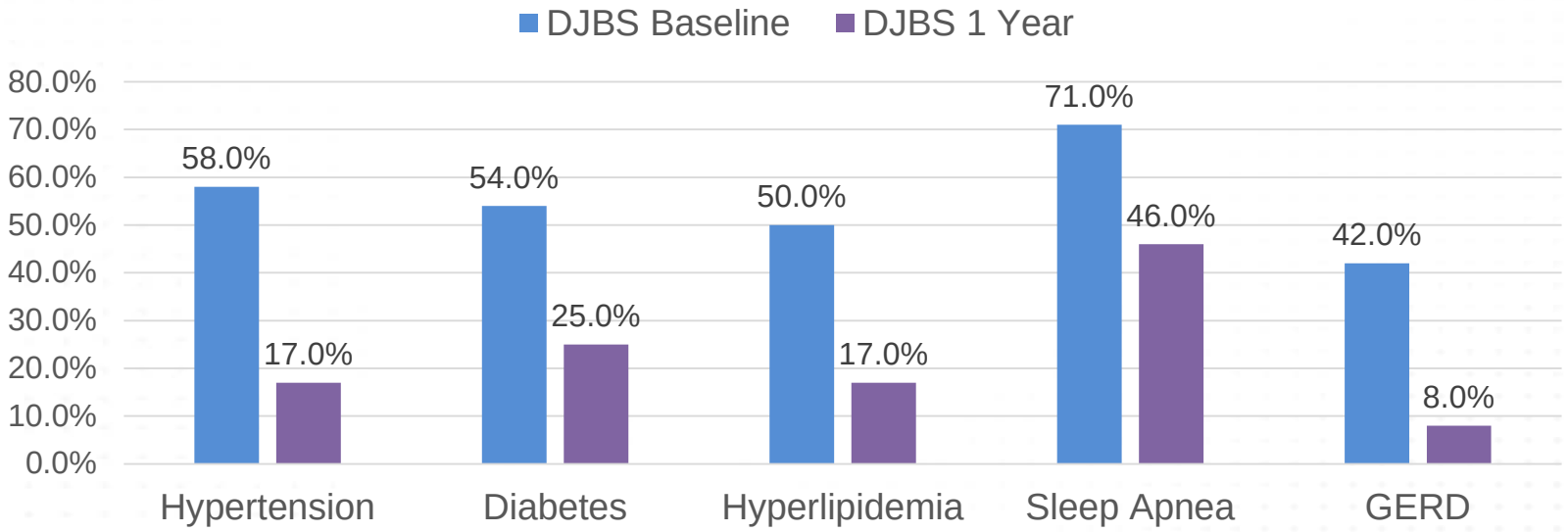
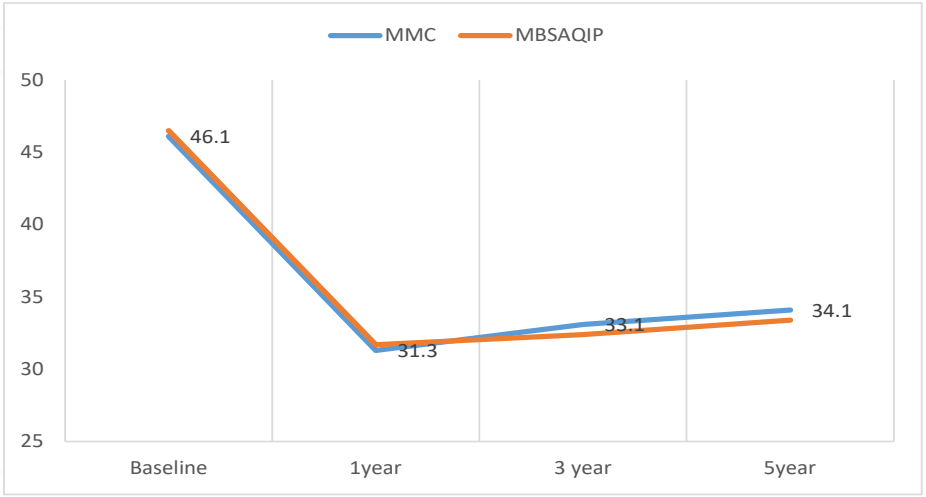
Outcomes after Duodenal-Jejunal Bypass Co-morbidity Prevalence



Memorial Bariatric Services data

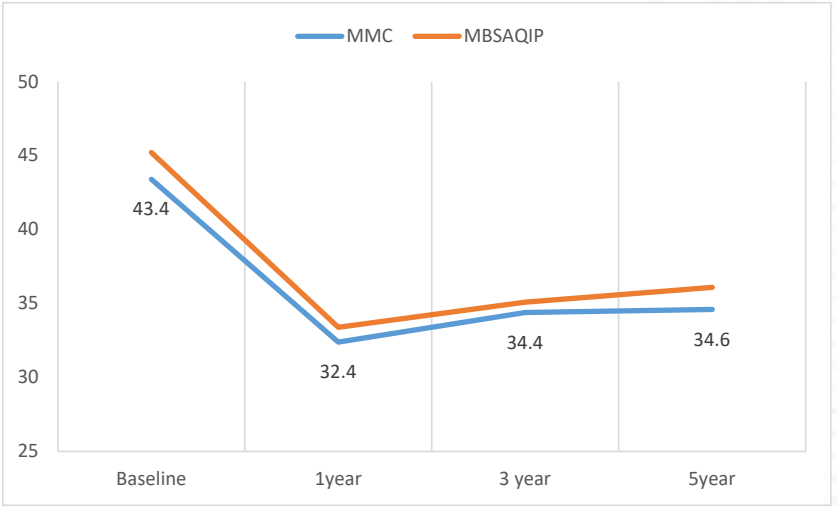
BMI Reduction after Bariatric Surgery

GASTRIC BYPASS



n	884	700	302	98

SLEEVE GASTRECTOMY



n	603	485	224	106

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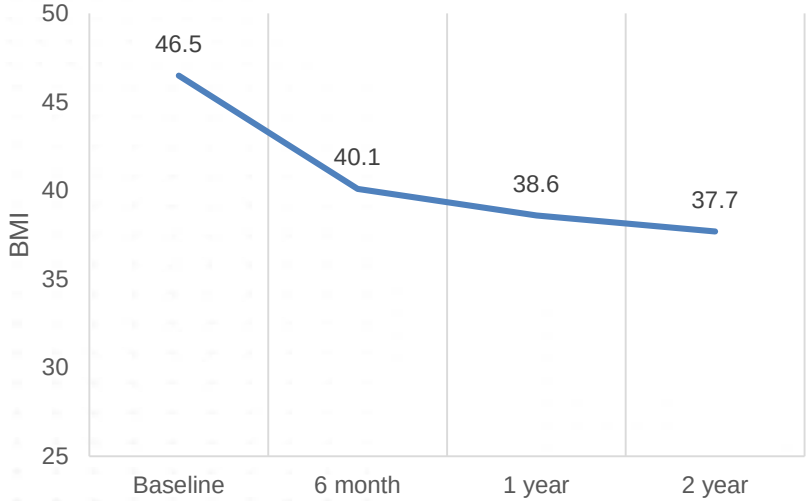
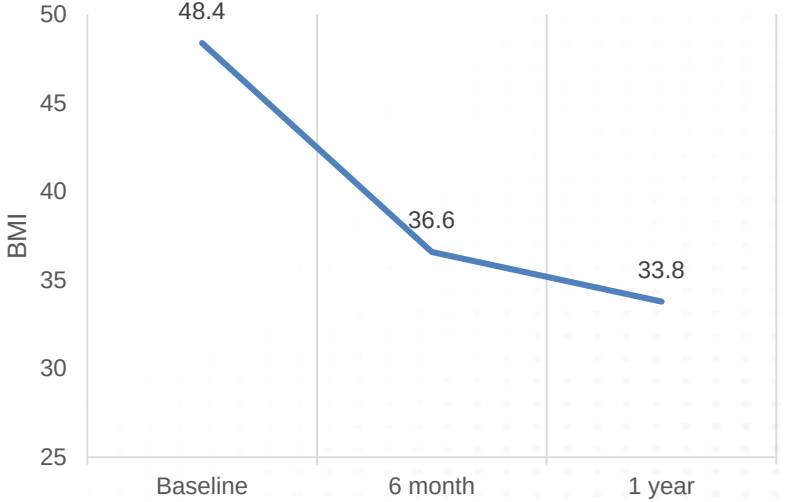
BMI Reduction after Bariatric Surgery

DUODENAL SWITCH



n=10 patients

DUODENAL-JEJUNAL BYPASS



n=24 patients

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30 Day Bariatric Surgery Outcomes

January 2016 – December 2020

Procedure	Cases	Re-admit	Re-op	Intervention*	ED visit	SSI	Mortality
Gastric Bypass	631	33 (5.2%)	16 (2.5%)	4 (0.6%)	58 (9.1%)	7 (1.1%)	0 (0%)
Sleeve Gastrectomy	380	7 (1.8%)	4 (1%)	0 (0%)	13 (3.4%)	1 (0.2%)	0 (0%)
DJBS	60	2 (3.3%)	0 (0%)	0 (0%)	5 (8.3%)	0 (0%)	0 (0%)
Duodenal switch	14	1 (7.1%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Total	**1085**	**43 (3.9%)**	**20 (1.8%)**	**4 (0.3%)**	**41 (3.7%)**	**8 (0.7%)**	**0 (0%)**

***Endoscopic procedures not associated with an operation and procedures completed by interventional radiology**

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Why would you want to enter our program?

- Comprehensive
- Certified
- Safety
- Extensive nutrition education
- Extensive medical evaluation
- Long term surveillance
- Support groups
- Hospital based/Springfield Clinic and SIU staffed

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Endoscopic Options

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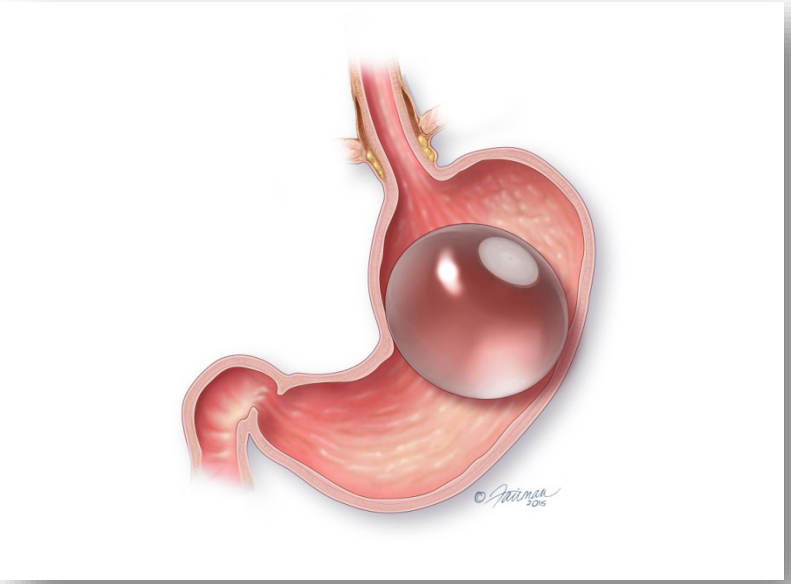
Balloon Procedure

Intragastric Balloon



Benefits

- Outpatient endoscopy with sedation
- No incision
- No scar
- Easy to perform
- Faster recovery
- Safe
- Affordable?

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Intragastric Balloon

- **MECHANISMS OF ACTION**

I. DELAY GASTRIC EMPTYING

II. GASTRIC VOLUME REDUCTION

III. BARORECEPTOR STIMULATION- “STRETCH” RECEPTORS THAT AFFECT SATIETY AND HUNGER CONTROL BY ALTERING GUT HORMONES

Indications

1) PREEMPTIVE THERAPY BMI>30 AT RISK OF DISEASE DEVELOPMENT

2) METABOLIC THERAPY BMI>30 WITH COMORBIDITIES

3) PRIMARY THERAPY BMI> 30-40 (WEIGHT LOSS)

4) PREPARATION FOR SURGERY BMI >40 WHO ARE HIGH RISK

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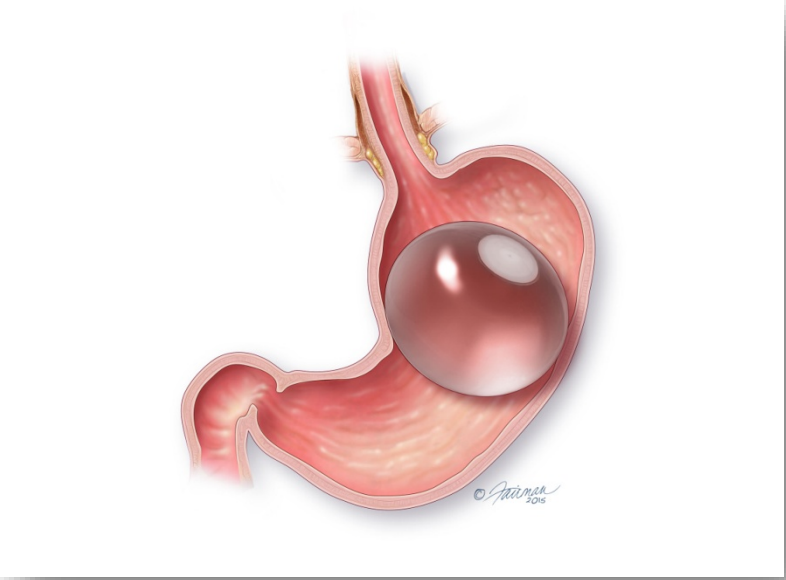
Balloon Procedure

Intragastric Balloon



Best

- Ages 18-65
- BMI- 30-40 KG/M2
  - PREEMPTIVE,METABOLIC,PRIMARY THERAPY
- SUPER OBESE BMI >50 IN
  - PREPARATION TO BARIATRIC SURGERY
- HIGHER RISK BMI>40 PATIENTS
  - Surgery optimization
- No previous stomach or GI surgery
- Multidisciplinary team approach

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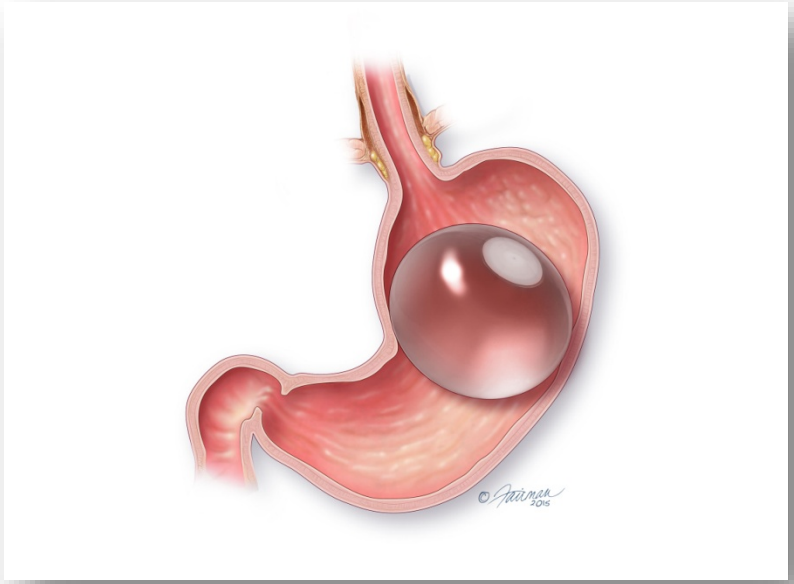
Balloon Procedure

Intragastric Balloon



Disadvantages

- Device related GI side effects
  - Nausea/Vomiting/Abd Pain
  - GERD
  - Rare: obstruction, perforation, aspiration pneumonia, death
  - Device intolerance 5%
  - Durability?

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Balloon Outcomes

1) **Weight loss 17.8 kg in the range of (4.9** kg-28.5 kg)

2) **%TWL -10-15 (1 year)**

3) **%EWL- 25 (1 year)**

4) **BMI REDUCTION- 4-9 KG/M2 (1 year)**

5) SIGNIFICANT IMPROVEMENT OF **COMORBIDITIES AND QOL**

6) MUST BE USED WITH A **MDT** APPROACH TO ACHIEVE MAXIMUM BENEFIT

7) IT IS SAFE AND EFFECTIVE IN PRODUCING A **SHORT TERM WEIGHT** LOSS IN ABOUT ⅔ OF PATIENTS

8) **DATA IS LACKING ON SUCCESS OF** WEIGHT MAINTENANCE AND EVOLUTION OF COMORBIDITIES BEYOND 2 YEARS

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- The Pre-Operative Evaluation Phase is essential for selecting appropriate patients to ensure safe and quality outcomes

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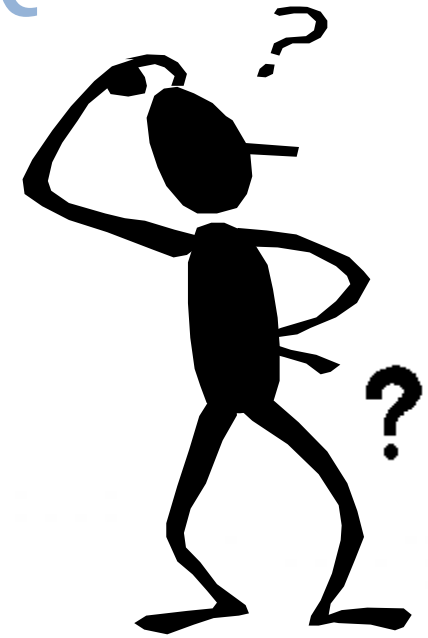
Questions?



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