Bariatric Surgery
St. Vincent Carmel Hospital
Bariatric Center of Excellence
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Obesity is Bad for your Patients Health!

Co-morbid Conditions related to obesity

• High blood pressure
• Diabetes Mellitus
• Sleep Apnea
• Hyperlipidemia
• Cardiac Disease
• Arthritis and Joint Pain
• Infertility
• Urinary Stress Incontinence
• GERD
• Premature Death

We need tools to assist with weight loss!

• Lifestyle modification with healthy diet and exercise
• Medications for weight loss
• Surgery

WHY WEIGHT LOSS SURGERY?

90-95% of morbidly obese people fail traditional methods of weight loss

THIS IS A LIFESTYLE CHANGE!

Surgery is just a tool!!!!

It does not guarantee weight loss or guarantee a person will keep their weight off unless changes are made in lifestyle regarding diet, exercise and psychological health
**Who is a Candidate?**

- BMI = weight(kg)/height(m²)
  - 19-25 = normal
  - 25-30 = overweight
  - 30 = obese
  - 35 = morbidly obese
  - 50 = super morbidly obese

**OBESITY: THE SIZE OF THE PROBLEM**

IN USA:
- > 66% of adults are overweight
- > 25% are obese (BMI > 30)
- > 20% are severely obese (BMI > 35)
- > 15% are morbidly obese (BMI > 40)

**Who is a Candidate?**

- Age 18-65, over 65 y.o. individualized
- BMI > 35 with or w/o co-morbidities
- Failed previous attempts at a medically supervised weight loss program
- No active history of alcohol or substance abuse
- Acceptable risk for surgery
- Realistic expectations of outcomes and commitment to long term follow-up

**Bariatric Surgical Principles**

**RESTRICTION**
- Create small gastric pouch
- Decrease food intake
- Create feeling of fullness
- Small outlet
- Delays emptying
- Stay full longer

**RESTRICTION & MALABSORPTION**
- Create small gastric pouch
- Decrease food intake
- Create feeling of fullness
- Small outlet
- Delays emptying
- Causes food to be poorly digested and absorbed

**Restrictive Bariatric Operations**

- Adjustable Gastric Band
- Sleeve Gastrectomy

- Roux-en-Y Gastric Bypass
- Biliopancreatic Diversion with Duodenal Switch

**Bariatric Operations**

- **Restrictive**
  - Adjustable Gastric Band
  - Sleeve Gastrectomy

- **Restrictive and Malabsorptive**
  - Roux-en-Y Gastric Bypass
  - Biliopancreatic Diversion with Duodenal Switch
Adjustable Gastric Band

- Restrictive
- Developed 1985
- Silicone® band lined with an inflatable balloon
- Induces weight loss through the restriction of food intake
- Induces early satiety and decreases hunger

Adjustable Gastric Band

- Inflation of the balloon tightens the band increasing weight loss
- Deflation of the balloon loosens the band and reduces weight loss.

Adjustable Gastric Band

Complications

**Early**
- Port Site infection 2%
- Outlet Obstruction 14%
- VTE .1%
- Perforation <1%

Adjustable Gastric Band

Complications

**Late**
- Slippage - 10%
- Erosion - 6%
- Esophageal dilation and dysmotility - 20%
- Pouch dilation 20%
- Port/tubing malfunction 17%
- Intolerance 5%

Adjustable Gastric Band

**ADJUSTABLE GASTRIC BAND STATS**

- 10% PROCEDURES
- LAPAROSCOPIC
- 45% EWL at 2 years
- MORTALITY RATE (30 day) - .09%
**Sleeve Gastrectomy**
- Newest of all procedures
- Restrictive
- Laparoscopic
- Subtotal gastric resection of the fundus and body to create a long, tubular gastric conduit along the lesser curve of the stomach
- Remove 80% stomach leaving a 2-4 oz pouch

**Sleeve Gastrectomy**
- Produces restriction and satiety
- Some metabolic affects due to accelerated gastric emptying of solid foods and reduction of Ghrelin levels
- Decreasing appetite and hunger
- No foreign materials
- Not reversible

**Sleeve Gastrectomy Stats**
- 45% of all Bariatric Cases - Now most commonly performed procedure in the USA
- Second most common procedure in Indiana
- 60-65% EWL at 2 years
- Mortality Rate (30 day) - .14%

**Sleeve Gastrectomy Indications**
- Staged operation
  - **First stage** - operation for high-risk patients, with the understanding that successful long-term weight reduction will require a second surgery
  - **Second stage** - conversion to duodenal switch or Roux-en-Y Gastric Bypass
- **primary operation**
  - inflammatory bowel disease,
  - severe small bowel adhesions from previous surgery,
  - the necessity to continue specific medications (immunosuppressant or anti-inflammatory agents),
  - pretransplant weight loss
  - patient refusal to undergo anatomic rearrangement of their intestinal anatomy or placement of an implanted device.
**Sleeve Gastrectomy Complications**

- Staple line bleeding - 1.2%
- Leakage – 1-2 %
- Stricture - 5%
- Iron deficiency anemia- 8%
- GERD- 16%

**Restrictive and Malabsorptive**

Roux-en-Y Gastric Bypass

- BPD with Duodenal Switch
- Laparoscopic
- 15-30 cc pouch — ½ to 1 ounce
- 50 -100 cm biliopancreatic limb
- 100-150 cm Roux limb

**Roux-en-Y Gastric Bypass**

- Developed 1960’s
- Second most performed Bariatric procedure in United States
- Most common procedure in Indiana
- 70 -75 % EWL- 2 years
- Mortality Rate (30 days) - .14%

**Gastric Bypass “Unfolded”**

- Restriction- mostly
  - Early satiety
- Malabsorption- some
- Reduction in hunger- due to changes in Ghrelin
- Dumping Syndrome- ingest too much sugar
**Gastric Bypass Complications**

**Early**
- Anastomotic or staple line leak – <1%
- Stomal Stenosis – 6%
- Marginal Ulcer – 8%
- GI Hemorrhage – 1%
- VTE – .1%

**Late**
- Marginal Ulcer – 2%
- Internal Hernia – 9%
- Bowel Obstruction – 5%
- Micronutrient Deficiencies:
  - Iron Deficiency
  - Calcium Deficiency
  - Vitamin D Deficiency
  - Vitamin B12 Deficiency
  - Vitamin B1 Deficiency

**Biliopancreatic Diversion with Duodenal Switch**

- First reported by Dr. Doug Hess 1986
- Restriction - some
  - remove 80% stomach
- Malabsorption:
  - Mostly
  - Bypass 60% of small intestine
  - Laparoscopic and open
  - Remove 80% stomach - form a 2-4 oz pouch
  - Remove gallbladder and appendix
  - Bypass small intestine
  - Common Channel - digestive enzymes mix with food in last 3 feet

**BPD ± DS Stats**

- Greatest weight loss of all bariatric procedures
- 80-85% EWL - 2 years
- Mortality Rate - 1.2%
- Greatest risk of vitamin and nutrient deficiencies

**BPD with Duodenal Switch Complications**

- Marginal Ulcer – .3%
- Stenosis – 1.2%
- Bowel Obstruction – .5%
- VTE – .4%
**BPD with Duodenal Switch - Complications**

- Diarrhea and foul smelling gas, with an average of 3-4 loose bowel movements a day
- Malabsorption of fat soluble vitamins (Vitamins A, D, E, and K)
- Iron deficiency
- Protein-calorie malnutrition, which might require a second operation to lengthen the common channel

**Expected Excess Body Weight Loss**

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Restrictive</th>
<th>Restrictive and Malabsorptive</th>
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<tbody>
<tr>
<td>Gastric Band</td>
<td>24 months - 45%</td>
<td>24 months - 70-75%</td>
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<td>5 years - 35%</td>
<td>5 years - 65-70%</td>
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<tr>
<td>Sleeve Gastrectomy</td>
<td>24 months - 65%</td>
<td>24 months - 80-85%</td>
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<tr>
<td></td>
<td>5 years - 60%</td>
<td>5 years - 75%</td>
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<td>Roux-en-Y Gastric Bypass</td>
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<td>BPD with Duodenal Switch</td>
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<tr>
<td></td>
<td>24 months - 80-85%</td>
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<td>5 years - 75%</td>
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**What I tell my patients**

Surgery is just a tool to help a person lose weight! It does not guarantee weight loss or guarantee they will keep their weight off unless they make changes in their lifestyle regarding their diet, exercise and psychological health.