

# Bariatric Surgical Choices

*The Current State of Surgical Intervention in Management of Morbid Obesity*

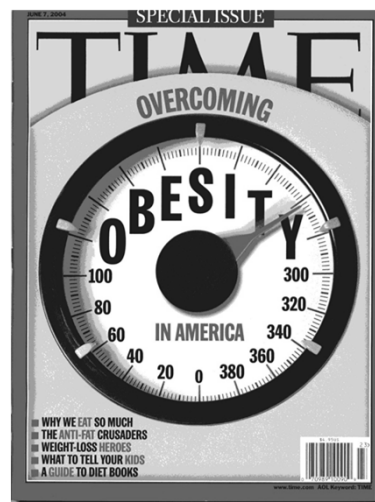
## Goals

- Obesity over the last decade
- Surgery has become a safer management strategy
- Surgical options for management

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## Obesity in the last decade



USA TODAY

## An overweight America comes with a hefty price tag

**Fat burden falls on taxpayers**

By Nanci Hellmich  
USA TODAY

Americans' extra weight costs the nation as much as \$93 billion in annual medical bills, and the government pays about half of that amount, a federally funded study shows.

This is the highest estimate yet of the medical costs of overweight and obesity. It's comparable to the annual medical bill for smoking, which was estimated at about \$76 billion a few years ago.

The new study by three economists, paid for by the U.S. Centers for Disease Control and Prevention, includes direct medical costs but not indirect costs such as time off work.

Almost 65% of people in the USA are either overweight or obese. Overweight is defined as roughly 10 to 30 pounds over a healthy weight; obesity is 30 or more pounds over. People who weigh too much are at an increased risk of heart disease, diabetes, many types of cancers and other illnesses.

The researchers used existing data to compare medical costs for overweight and obese people with the costs for people of normal weight. Their findings, in today's online issue of *Health Affairs*:

► Overall, annual medical costs for an obese person are about 37.7% more, or \$732 higher, than the costs for someone of normal weight.

► An obese recipient of Medicare (a program for the elderly) costs \$1,486 more a year than one of healthy weight.

► An obese nation on Medicaid (a program for the needy) costs \$864 more than a normal weight Medicaid recipient.

The annual medical spending attributable to overweight and obesity is about 9.1% of national medical costs. Those attributable to smoking range from 6.5% and 14.4%.

"There is an ongoing debate about whether obesity is an individual or societal issue," says the study's lead author, Eric Finkelstein, a health economist for RTI International in Research Triangle Park, N.C.

"The fact that Medicaid and Medicare, and ultimately taxpayers, are financing half the cost lends credence to the notion that obesity is not solely a personal issue," he says.

Others say this study is a wakeup call. "The government is going to get slam-dunked in future obesity costs if it doesn't address the problem now," says Anne Wolf of the University of Virginia Medical School. She has studied the economics of obesity.

"As the population ages and the prevalence of obesity continues to rise, Medicare is going to be picking up the health care tab for these people," she says.

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USA TODAY Staff

Wisconsin Medical Journal

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Official publication of the Wisconsin Medical Society

**OBESITY**

WHO Technical Report Series

894

**OBESITY: PREVENTING AND MANAGING THE GLOBAL EPIDEMIC**

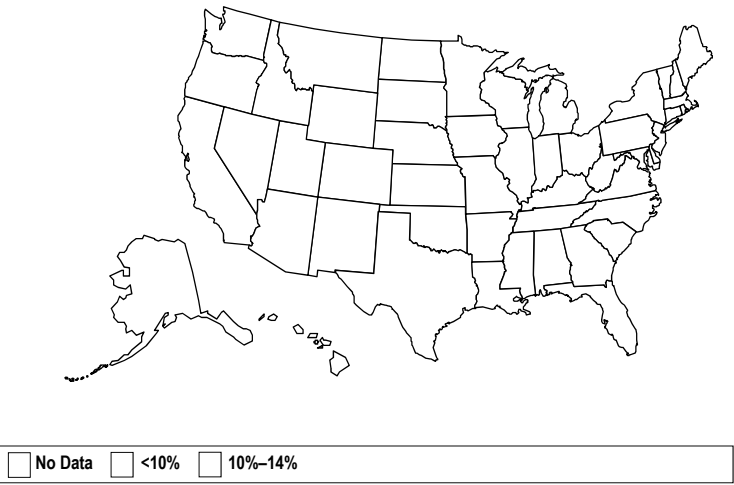
Report of a WHO Consultation

World Health Organization  
Geneva

### Obesity Trends Among U.S. Adults

"Maps of Trends in Diagnosed Diabetes and Obesity" April 2017, CDC's Division of Diabetes Translation

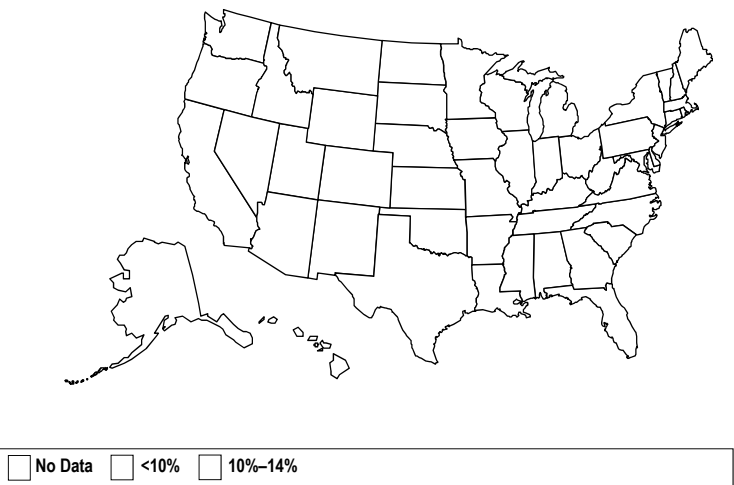
1985



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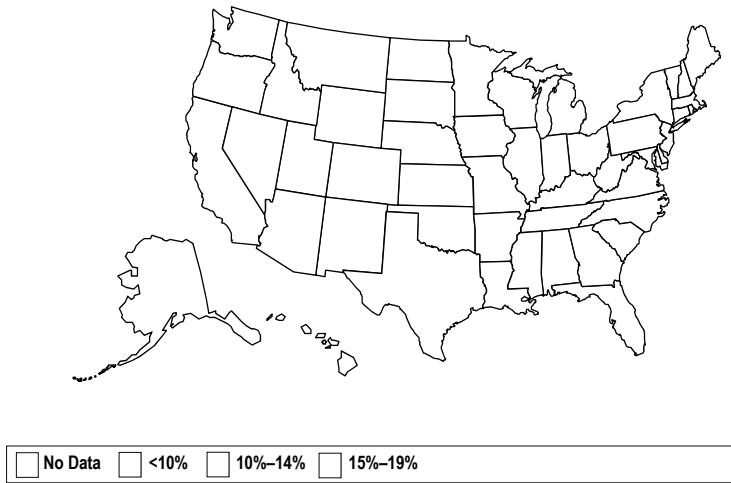
1990



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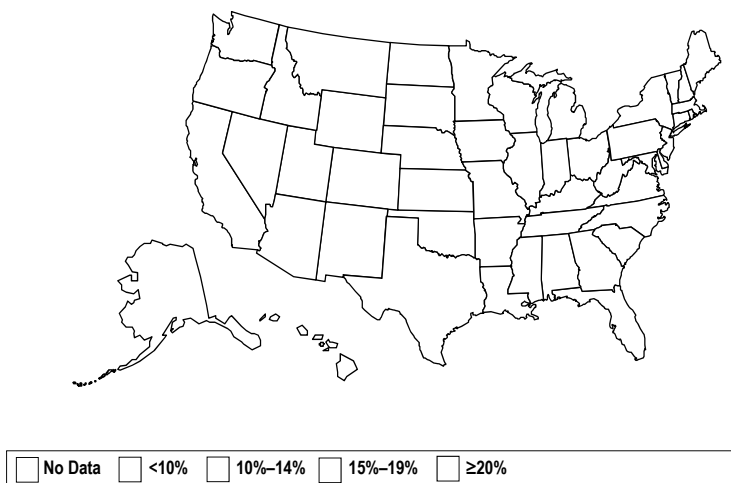
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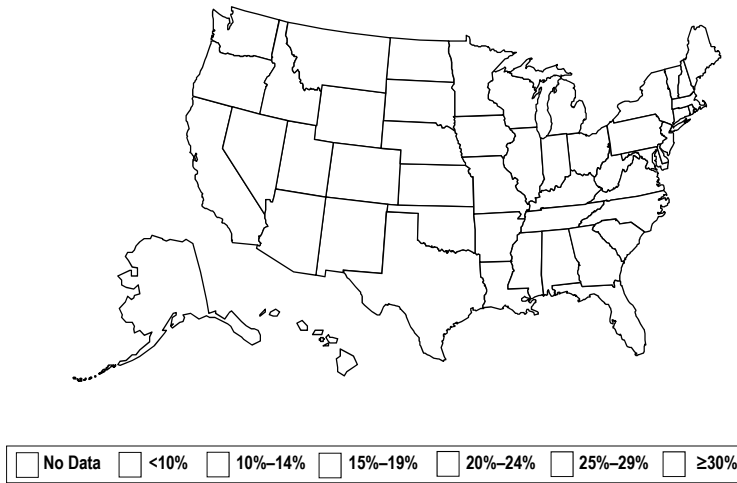
2000



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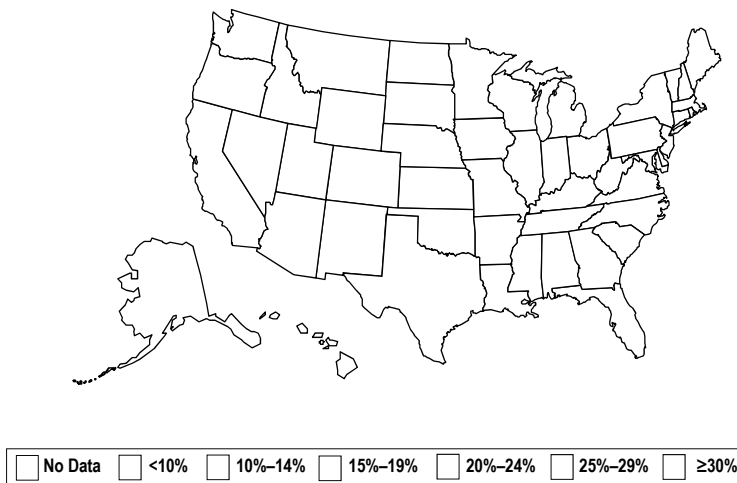
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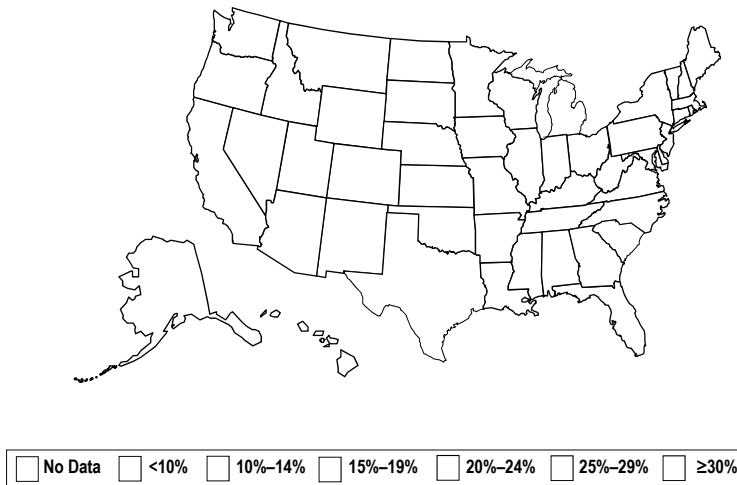
"Maps of Trends in Diagnosed Diabetes and Obesity" April 2017, CDC's Division of Diabetes Translation

2007



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"Maps of Trends in Diagnosed Diabetes and Obesity" April 2017, CDC's Division of Diabetes Translation  
2010



## Prevalence of Obesity

"Maps of Trends in Diagnosed Diabetes and Obesity" April 2017, CDC's Division of Diabetes Translation

By 2010, no state has a prevalence of obesity less than 20%

- 36 states had a prevalence equal to or greater than 25%
- 12 states had a prevalence equal to or greater than 30%.

## ASMBS Consensus & American College of Surgeons

### Clinically severe obesity

- Life threatening condition
- Shortens life expectancy
- Associated with significant comorbid conditions
- "The diseases associated with morbid obesity markedly reduce the odds of attaining an average life span and raise annual mortality tenfold or more."

## American Heart Association

Scientific Statement AHA March 2011

- "Bariatric surgery can result in long-term weight loss and significant reductions in cardiac and other risk factors for some severely obese adults."
- First statement by the American Heart Association focused solely on bariatric surgery and cardiac risk factors.

## American Association of Clinical Endocrinologists

AACE Task Force on Obesity July 2011

- Declared that “there is significant clinical evidence to declare obesity as a disease state...Surgical therapy for obesity, or ‘bariatric surgery,’ is indicated for certain high-risk patients,” having “‘clinically severe obesity.’”
- “The comorbidities of severe obesity affect all the major organ systems of the body. Surgically induced weight loss will substantially improve or reverse the vast majority of these adverse effects from severe obesity.”

## American Diabetes Association

2011 Position Statement: Standards of Medical Care in Diabetes

- “Bariatric surgery may be considered for adults with BMI  $> 35$  kg/m<sup>2</sup> and type 2 diabetes, especially if the diabetes or associated comorbidities are difficult to control with lifestyle and pharmacologic therapy.”

## 1991 NIH consensus

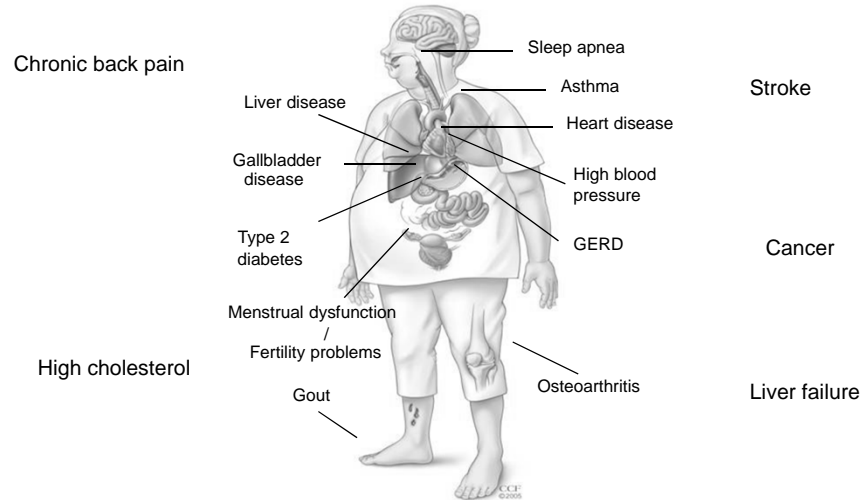
- “Experience with drug therapy for clinically severe obesity has been disappointing...”

## International Diabetes Federation

2011 Position Statement

- “Bariatric surgery is an appropriate treatment for people with type 2 diabetes and obesity... Surgery should be an accepted option in people who have type 2 diabetes and a BMI of 35 or more. Surgery should be considered as an alternative treatment option in patients with a BMI between 30 and 35 when diabetes cannot be adequately controlled by optimal medical regimen, especially in the presence of other major cardiovascular disease risk factors.”

## Obesity causes Metabolic Disease



## Obesity Therapy

- Dietary therapy
- Physical activity
- Behavior therapy
- Pharmacotherapy
- Surgery

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## Surgery has become a safer management strategy\*

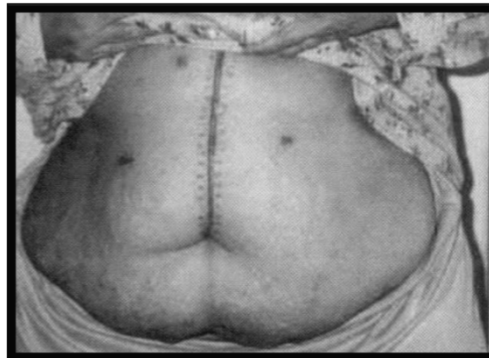
- Risk of death 0.1%
  - Lap chole 0.7%
  - Hip replacement 0.93%
- Overall Risk of complications 4%
- Laparoscopic operations increased from 20.1% in 2003 to 90.2% in 2008
- Patient with BMI > 30 have a 50-100% increased risk of death
  - RouxY Bypass patients have risk reduction by 30-40%

Nguyen, N. T., et al. (2011). Trends in use of bariatric surgery, 2003 – 2008. *Journal of the American College of Surgeons*. 213(2) pp. 261-266. doi:10.1016/j.jamcollsurg.2011.04.030

Agency for Healthcare Research and Quality (AHRQ). (2007). Statistical Brief #23. Bariatric Surgery Utilization and Outcomes in 1998 and 2004. Accessed October 2013 from <http://www.hcup-us.ahrq.gov/reports/statbriefs/sb23.jsp>

Dolan, J. P., et al. (2009). National mortality burden and significant factors associated with open and laparoscopic cholecystectomy: 1997–2006. *Journal of Gastrointestinal Surgery*. 13(12) pp.2292-2301. Accessed October 2013 from <http://www.ncbi.nlm.nih.gov/pubmed/19727976>

## Surgery has become a safer management strategy



Surgery has become a safer management strategy

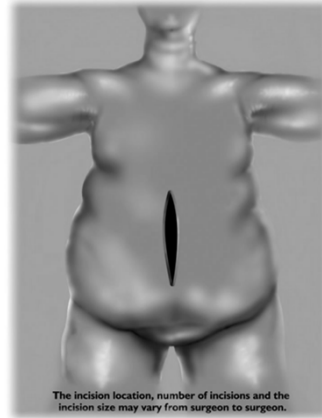


Surgery has become a safer management strategy

- Technology allows surgeons to operate with less invasive techniques
  - Faster return to normal physiology
  - Shorter hospitalizations
- Better preoperative management
  - Optimize co morbid conditions
  - Better patient education
- Quality measures

## Open Surgery

Large 10 to 14 inch incisions are used to access the stomach and intestines for the surgery



## Laparoscopy

Minimally Invasive Surgery

Surgeons manipulate surgical instruments from outside the body while viewing the procedure on the video monitors



## Robotic Surgery

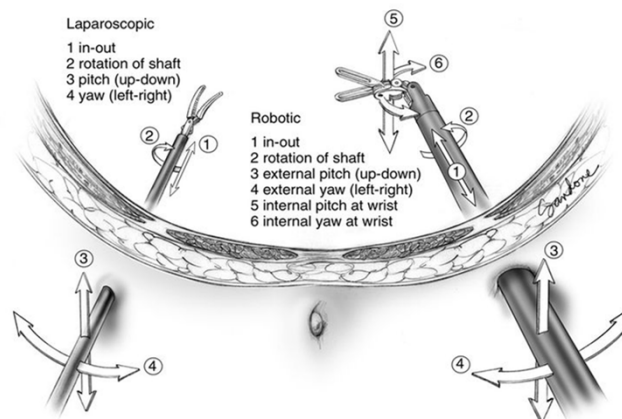
3 Dimensional high definition imaging.

Surgeon directs precision movement of the tiny instruments, using console controls

Robotic system scales and replicates movements, while eliminating hand tremors

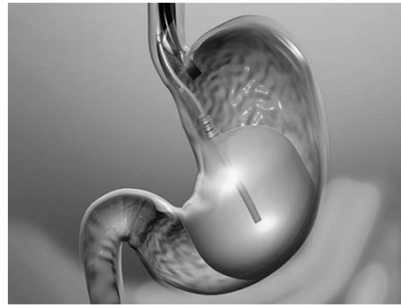


## Robotic Surgery



## Endoscopic Surgery

Innovations in endoscopic technology allow basic tissue manipulation and implantation of devices to assist in weight loss



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## Surgical options for management

### Restrictive

- Adjustable gastric banding
- Vertical gastric sleeve
- Endoscopically placed intragastric balloons

### Restrictive and Malabsorptive

- Biliopancreatic diversion (BPD) Duodenal Switch
- RouxY gastric bypass (RYGB)

## Surgical options for management

### Restrictive

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### Restrictive and Malabsorptive

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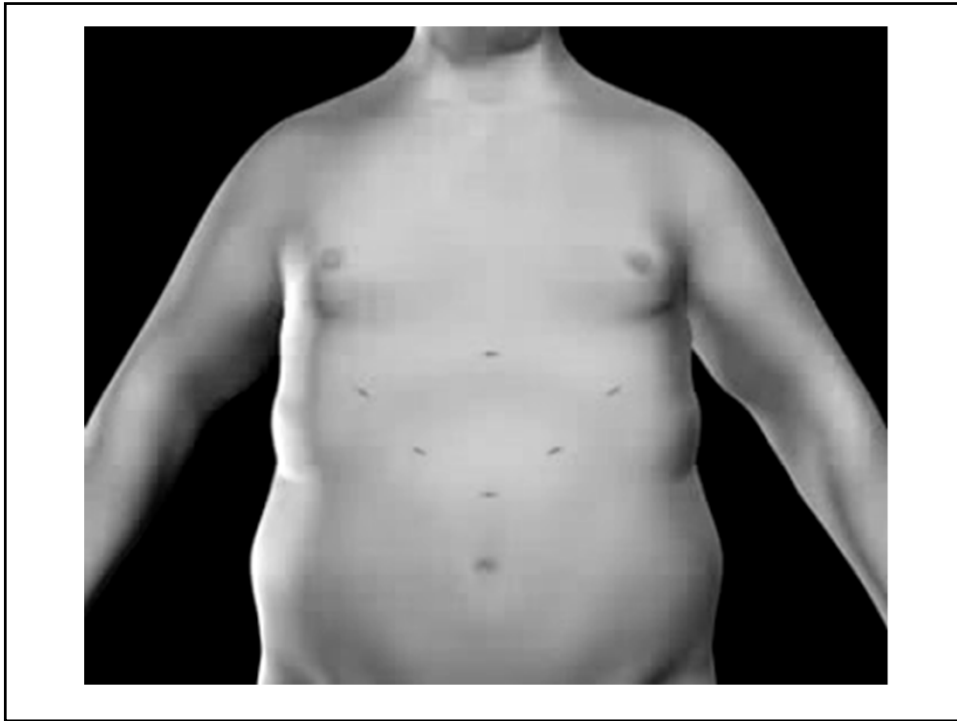
## Restrictive

- Restrictive procedures alter the sensation of satiety
  - Limits total PO intake
  - Create a net negative calorie balance
  - Increase the duration of satiety
  - Does not alter absorption

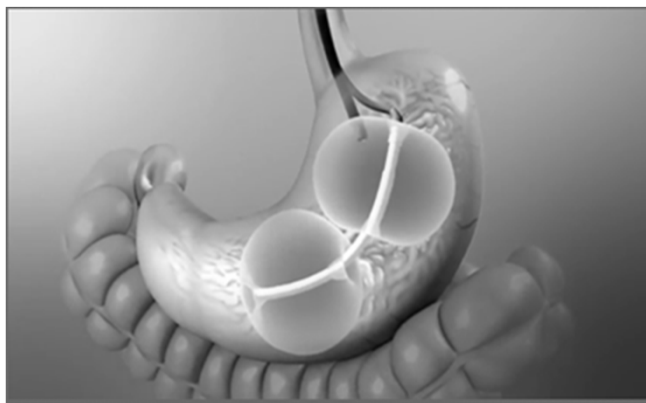
## Restrictive

- At risk for GERD
- Have a higher risk of inadequate weight loss
- Conversion to more effective operations
- Subject to patient's dietary compliance – patients will absorb every calorie they consume
- Probably require significantly greater follow up coaching, dietary counseling
- May require adjustments (ie Lap Band) or extraction (intragastric balloons)





## Intragastric Balloons



## Surgical options for management

### Restrictive

- Adjustable gastric banding
- Vertical gastric sleeve
- Endoscopically placed intragastric balloons

### Restrictive and Malabsorptive

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## Surgical options for management

### Restrictive

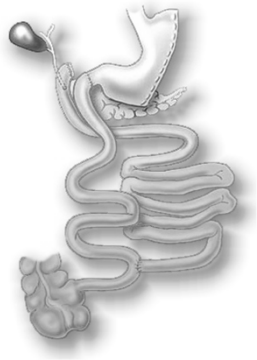
- Adjustable gastric banding
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### Restrictive and Malabsorptive

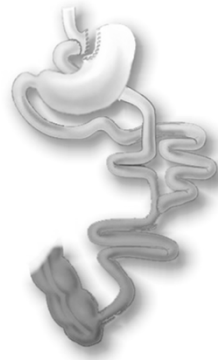
- Biliopancreatic diversion (BPD) Duodenal Switch
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## Restrictive and Malabsorptive

*Biliopancreatic Diversion*



*Gastric Bypass*



## Restrictive and Malabsorptive

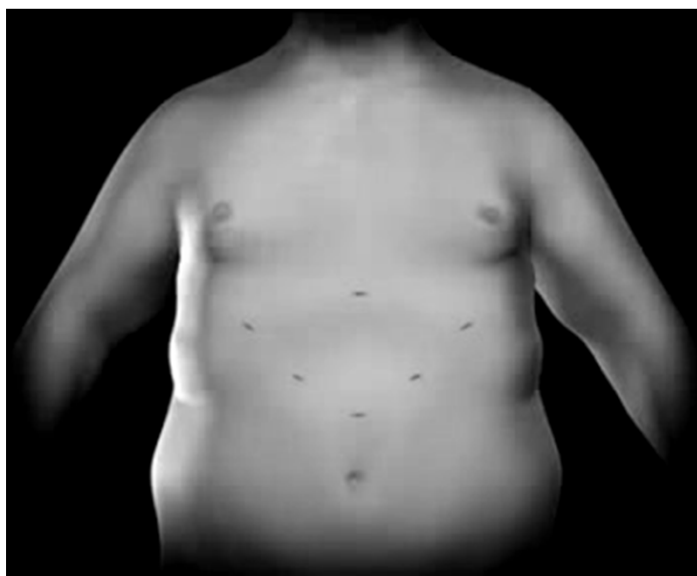
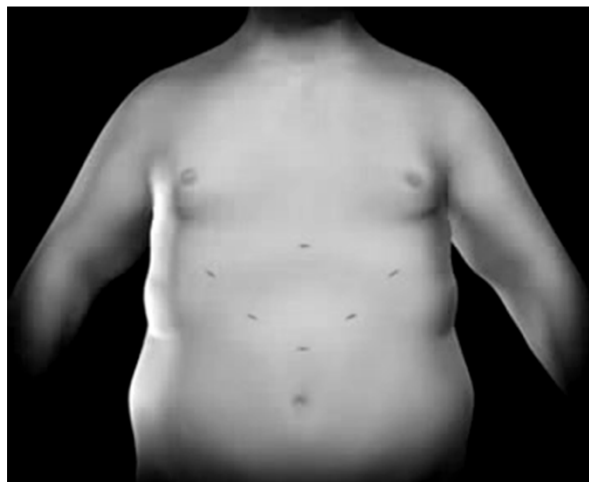
- Procedures combine effective methods of restriction in combination with a malabsorptive component
- Restrictive procedures alter the sensation of satiety
- Malabsorption due to shortened length of bowel to allow food and digestive enzymes to absorb

## Restrictive and Malabsorptive

- Works through dual mechanisms – limited calorie intake and limited absorption of calories
- Are less subject to patient's dietary compliance – patients will only absorb portions of every meal they consume.
- Requires nutritional supplementation and follow up

## Restrictive and Malabsorptive

- Roux Y bypass is potentially best choice for reflux
- Lower risk of inadequate weight loss, weight recidivism
- Requires potential supplementation of iron, calcium, B12, and other micronutrients (fat soluble vitamins)



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## Our Experience



**Pre-op BMI 34**  
**Current Weight 280 lbs.**

• Diabetic Meds		
Diabetic Meds	- discontinued -	
• Novalog	\$260.42	- discontinued -
• Lantus	\$318.07	- discontinued -
• Actos	\$305.21	- discontinued -
• Dyslipidemia Meds		- discontinued -
• Zocor	\$17.80	- discontinued -
• Zetia	\$96.06	
• Hypertension		
• Lisinopril	\$10.24	
• Reflux		
• Nexium	\$10.24	- discontinued -
• Nexium	\$156.14	
<b>Monthly cost of meds:</b>	<b>\$10.24</b>	
<b>Monthly cost of meds:</b>	<b>\$1067.90</b>	