
 Cleveland Clinic 

Diets, Drugs or Surgery: What Works and How to Choose

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Today's Concepts

- Common Diet options
- Prescription medications
- When to call the Surgeon

Scope of the Problem

- 64% of Americans are now either overweight or obese
- Obesity-associated mortality is second only to smoking as a preventable cause of death
- The cost of medical care for obese patients is about 38% higher than normal weight persons

Obesity comes from excess calories

- Genetic factors responsible for 40% of variance in body mass
- Decreases in energy expenditure with increased caloric intake are responsible for the epidemic

Lavoisier 1780

$$\Delta E = Q - W$$

Change in Energy = Intake - Work

Overweight and Obesity

- BMI = Weight (kg)/height (m²)
- Overweight: 25-29.9
- Obese: ≥30
- Waist Circumference* - High risk
 - Men > 102cm (40 in)
 - Women > 88cm (35 in)
- *May need to be lowered for groups or individuals (e.g., Asian-Americans) who are known to have a higher incidence of Insulin Resistance

Where is the Rocket Science??
Losing 1 Pound

- To lose one pound of excess body fat 3,500 Kcal must be used
- This can be from a decrease in the intake of calories, an increase in the expenditure of calories or a combination of both!
- A decrease of 500Kcal/day yields a 1 lb weight loss /week

Methods of Obesity Management

- Diet
- Exercise
- Behavior Modification
- Pharmacologic Interventions
- Surgery

No Single Diet Regimen is Best

- Diet – Cornerstone of obesity management
- The true key is the number of calories consumed in relation to the amount of energy expended
- High carbohydrate vs low carbohydrate?
- Do not decrease intake to below 800 Kcal/day
- Consider having a Registered Dietitian available to your patients or for Diabetic patients have a Diabetes Educator

Exercise – Best Predictor

- Exercise is the best predictor of the long-term ability to keep weight off
- Intensity can vary – be creative – make it fun
- Cardiovascular vs Weight Training
- Compliance – largest obstacle in increasing long-term physical activity

Current Pharmacologic Options

- OTC – with & without ephedra
- Phentermines – CIV
- Phendimetrazine – CIII
- Diethylpropion – CIV
- Sibutramine – CIV
- Orlistat (Xenical) – not restricted ?Liver issues
- Alli – OTC orlistat
- Rimonabant (Acomplia) – NDA withdrawn 10/08

Phentermine Data

- FDA approved for “short term use”
- Long term, DBPC – 108 women + 1000 kcal Diet – 3 groups
- 1) Placebo; 2) Continuous phentermine 30mg/d; 3) Intermittent (4 weeks Rx – 4 weeks off)
- 36 wks: Continuous =12.2Kg; Intermittent = 13Kg; placebo 4.8 Kg (p<0.001)
- Best weight loss 1st 6 months

Munro JE, et al. Comparison of continuous and intermittent anorectic therapy of obesity. *BMJ* 1968;1:352-354.

Sibutramine Data

- 2yr Sibutramine + diet + exercise
- Sibutramine wt loss = 10.2 Kg
- Placebo = 4.7Kg
- Significant improvements were seen in lipoproteins, glucose, and uric acid

James WPT, et al. Effect of sibutramine on weight maintenance after weight loss: a randomized trial. Lancet 2000;356:2119-2125.

Orlistat Data

- 2 year weight loss study
- Orlistat: 8.8-10.3%
- Placebo: 5.8-6.1%
- Significant improvement in glucose control

Davidson MA, et al. Weight control risk factor reduction in obese subjects treated for 2 years with orlistat: a randomized controlled trial. JAMA 1999; 281:235-242.

As of August 2009
 32 cases of "serious liver injury" between 1999-2008
 27 cases hospitalized
 6 cases of liver failure
 2/32 US Cases
 FDA - No Definite association/ ongoing analysis of data

Antiobesity Drugs in the Pipeline

Drug Names	Trade Name	Company
Topiramate and Phentermine	Qnexa	Vivus
Leptin and Pramlintide	?	Amylin
Naltrexone and Bupropion	Contrave	Orexigen
Zonisamide and Bupropion	Empatic (Excalia)	Orexigen
Locaserin	?	Arena

Surgical Spin

At present, no therapy other than surgical intervention offers obese humans successful treatment on a **reliable** basis.

Only Bariatric surgery provides substantial long term weight reduction.

Explosion in Surgeons' Interest in Obesity Surgery in the U.S.

12,000,000 candidates / 1,000 surgeons

12,000 patients per surgeon

Busy non-exclusive General Surgeon – 100 cases per year

Over 20 years = 2,000 cases

Conclusion: There are more patients than Surgeons to provide care

NIH Consensus Conference (1990) Candidates for Bariatric Surgery

- Patients with BMI ≥ 35 kg/m² and significant medical co-morbid conditions
- Patients with BMI ≥ 40 kg/m²

NIH Consensus Conference (1990) Bariatric Surgery - Appropriate:

1. Non-surgical attempts at weight loss prerequisite with integrated diet, exercise, and behavior modification
2. Gastric restrictive or bypass procedures considered for well-informed highly motivated patients with acceptable risk profile
3. Careful selection by multi-disciplinary approach
Medical, surgical, psychiatric, and nutritional expertise
4. Experienced surgeon with multi-disciplinary support
5. Lifelong medical surveillance necessary

Obesity Surgery



“Gastric bypass for morbid obesity is a treatment like no other in medicine, as a single surgical procedure can cure 4 or 5 of the patient’s health problems.”

Harvey J. Sugerman, M.D.
MCV / VCU Dept of Surgery
Emeritus

Bariatric Surgery Options

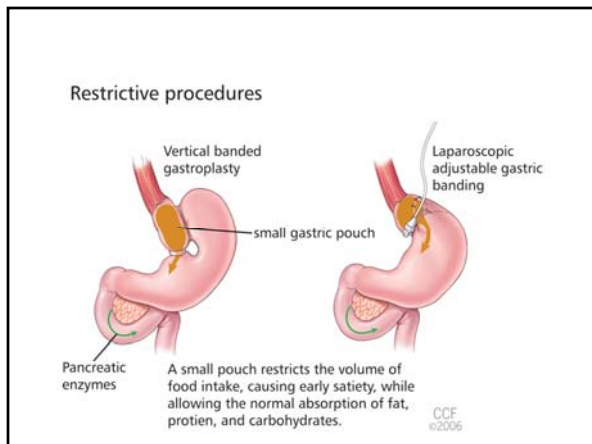
- Restrictive procedures
 - Gastroplasty (vertical banded)
 - Lap-Band
 - Sleeve gastrectomy
- Malabsorptive procedures
 - Distal bypass
 - Biliopancreatic diversion
 - Duodenal switch
- Combination restriction/malabsorption
 - Roux-en-y proximal gastric bypass

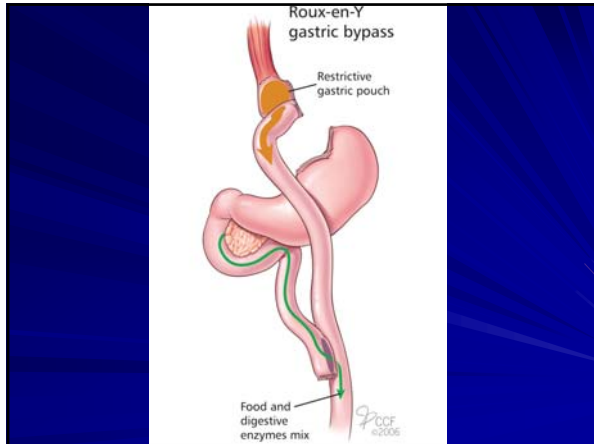
Laparoscopic Bariatric Surgery

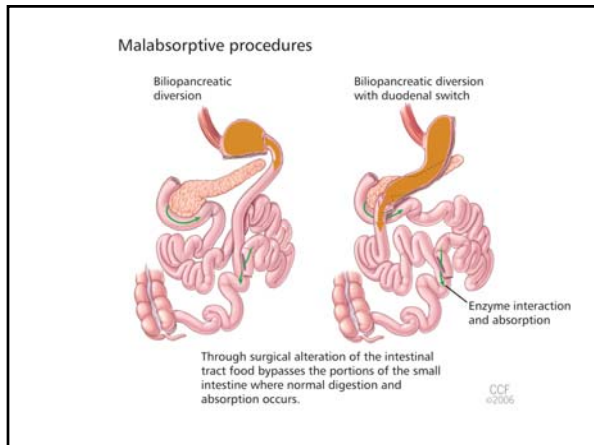
Explosion in Interest-Patients and Surgeons
Decreased disability and morbidity
Every procedure is being done somewhere via laparoscopic methods
Two Primary Procedures:
1. Laparoscopic adjustable gastric banding
2. Laparoscopic proximal gastric bypass

Laparoscopic Adjustable Gastric Band Advantages

Minimally invasive procedure
less pain, disability, hospitalization
technically easier than lap bypass
Less risk ?
Leak, wound complications, hernia
Reversible
Adjustable







Conclusions

- Laparoscopic access for bariatric surgery provides benefit to patients and is here to stay
- Today due to the tremendous increase in procedures bariatric surgery faces its greatest challenge as a specialty- poor outcomes will reverse the current legitimacy of this specialty
- We must continue to collect data and analyze outcomes to refine what we do and how we do it