1. THE NATURAL HISTORY OF MORBID OBESITY WITHOUT SURGICAL INTERVENTION. Oluseun A. Sowemimo, MD, Jessie Moore, APRN, Rebecca Ross MD, John Courtney, MPH, Ursula McMillian, MD, Miriam Huang, MD, Peter Ojo, MD, Randolph B. Reinhold, MD, Hospital of Saint Raphael, New Haven, CT.

Background:
Mortality from bariatric surgery for the morbidly obese (MO) is widely reported, but little is known about mortality in MO patients who defer surgery. The annual death rates in the US for all persons in their 4 –5th decade is 0.2 – 0.5%.

Methods:
From our master bariatric data base of 1,438 patients between 1997 and 2004, we identified 207 patients who, while meeting NIH guidelines for surgical intervention, never returned for surgery. By phone interview, data was gathered on mortality, BMI, status of co-morbidities and surgical intervention elsewhere. Online search was conducted on any patient who was unreachable for any reason to determine if s/he died.

Results:
Responses from 101/207 patients (or family members) (49%) were received. Mean age of respondents was 45 yo (17-71). 62 % were female. Average BMI = 52 (35-83). 29% were diabetic; 50 % were hypertensive. Of 101 respondents, 24/101 patients had surgery elsewhere. None died following surgery. Of the remaining 77 patients, 7 (9%) died. Mortality at 1 year = 2/77 (2.6%) Of the entire series of 207 patients, follow-up revealed 16 (8%) died within the study period. Average age at death = 54 yo (17-79). Given the age distribution of this population, the expected number of deaths is <1.

Conclusion:
Mortality among MO patients who defer surgical intervention is > 10 times the expected rate.

2. THE OBESITY SURGERY MORTALITY RISK SCORE (OS-MRS): PROPOSAL FOR A CLINICALLY USEFUL SCORE TO PREDICT MORTALITY RISK IN PATIENTS UNDERGOING GASTRIC BYPASS* Dana D. Portenier, MD[1], Luke G. Wolfe, MS[1], Eric J. DeMaria, MD[1] . [1]Duke University, Durham, NC [2]Virginia Commonwealth University, Richmond, VA.

Background:
There is currently no clinically-useful scoring system to stratify mortality risk for patients undergoing gastric bypass (GBP).

Methods:
Prospectively-collected data from 2,075 consecutive patients undergoing GBP at a single university (1995-2004) were analyzed to determine pre-operative factors correlating with 90 day mortality.

Results:
Four independent variables (odds ratio/ 95% confidence interval) were correlated with mortality using multivariate analysis including BMI≥50 (3.60 / 1.44 to 8.99), male gender (2.80 / 1.32 to 5.92), hypertension (2.78 / 1.11 to 7.00), and a novel variable 'pulmonary embolus (PE) risk' (previous thrombosis/ PE / filter, right heart failure, obesity hypoventilation, odds ratio 2.62 / 1.12 to 6.12) . A 5th variable, age ≥45 (1.64 / 0.78 to 3.48), significant in univariate analysis, was added to the ultimate scoring system due to its significance in other studies.

A scoring system was developed by arbitrarily scoring the presence of each independent variable as equal to one 'point' resulting in an overall score between 0 and 5 points for each patient. Factors were grouped into 3 risk classes (A, B, or C) to increase the evaluable cases in each class (e.g. <1% of 2,075 patients accrued all 5 points). Mortality in Class A, B, and C groupings was statistically different from each of the other two classes.

points	n	deaths	Mortality rate	Risk Class (points)	Grouped Deaths/n	Class Mortality rate
0	356	0	0			
1	601	3	0.50	A (0-1)	3/957	0.31
2	596	7	1.17			
3	403	12	2.98	B (2-3)	19/999	1.91
4	101	6	5.94			

5	18	3	16.67	C (4-5)	9/119	7.56

Conclusion:
We propose a scoring system that stratifies mortality risk based upon 5 easy to identify preoperative risk factors. If validated by others, this scoring system may aid informed consent discussions, guide surgical decision-making, and allow standardization of outcome comparisons between treatment centers

3. DEVELOPMENT OF A BARIATRIC SURGERY-SPECIFIC RISK ASSESSMENT TOOL. Edward H Livingston, MD. UT Southwestern, Dallas, TX

Background:
Administrative databases have been increasingly used to assess bariatric surgery outcomes resulting in policy recommendations about bariatric practice. Surgical outcomes must be risk adjusted in order to fairly compare patients of varying potential risk to those for whom policies will apply. To date, the risk adjustment tools used for database analysis of bariatric surgical outcomes have been ones designed for other purposes and their sensitivity for bariatric outcomes have not been established.

Methods:
Bariatric surgical procedures contained in the National Hospital Discharge Summary for the years 1993-2003 were assembled into a database. The standard set of Elixhauser co-morbidity variables used by the Agency for Healthcare Research and Quality were entered into the database. Those variables that were significantly associated with adverse outcomes were entered into a stepwise-elimination logistic regression equation yielding a set of variables that are related to adverse outcomes from bariatric surgery. These were then prospectively applied to another database (National Inpatient Survey) to determine their sensitivity for predicting outcomes and were compared to the commonly used Charlson score.

Results:
Variables significantly correlating to bariatric adverse events are presented in the table. The c-index (a correlative index with 0.5 showing no and 1 a perfect relationship) for bariatric surgery mortality with the Charlson index is 0.52. For the Elixhauser-based system we developed it is 0.81.

Electrolyte Disorder	1.52	4.56 (2.66 7.81)
Complicated Diabetes	1.11	3.03 (1.20 7.66)
Anemia	1.08	2.93 (1.39 6.19)
Male Gender	0.47	1.60 (1.15 2.22)
Age	0.03	1.03 (1.02 1.05)
Depression	-0.71	0.49 (0.27 0.92)
Intercept	-4.33	

Conclusion:
We have developed a new risk-adjustment tool for bariatric surgery outcomes studies that use administrative databases. Its performance is clearly better than the commonly used Charlson comorbidity score. Bariatric studies that have used the Charlson index should not be considered adequately risk-adjusted.

4. MEDICAL-LEGAL ANALYSIS OF 100 MALPRACTICE CLAIMS AGAINST BARIATRIC SURGEONS.
Jeff Lord, MD[1], Daniel Cottam, MD[1], Bruce Wolf MD[2], Kelvin Higa, MD[2], Philip Schauer, MD[2]
[1]Surgical Weight Control Center, Fort Lauderdale, FL, [2]Cleveland Clinic, Weston, FL.

Background:
The malpractice crisis in bariatric surgery is skyrocketing. This study was intended to evaluate the nature and causes of bariatric surgery malpractice claims and to assist surgeons in developing prevention strategies.

Methods:
100 consecutive bariatric lawsuits were reviewed by a consortium of experienced bariatric surgeons.

Results:
Patients underwent bariatric surgery from 6/97 to 2/05. Forty-five percent of the cases reviewed were referred by defense attorneys. The surgical procedures included RYGBP (78%, 33% were open 45% laparoscopic), VBG (3%), "minigastric bypass" (6%), BPD-DS (4%), and 9 revisions. 32% involved an intraoperative complication and 72% required another operation.

The most common adverse events were leaks 53%, intra-abdominal abscess 33%, bowel obstructions18%, organ injury 10%, major airway events 10%, aspiration 8% and pulmonary embolism 8%. Final outcomes included death (53%), full recovery (28%), minor disability (12%) and major disability (7%).

The patients mean age of was 40 (range18 to 65), 75% female, 81% had BMI<60, 31% diabetic and 38% had sleep apnea. 42% of surgeons had <1-year experience with 26% having performed less than 100 cases. 69% of physicians are members of ASBS. Only 22% of the cases involved Bariatric specific consent forms.

Of the 100 cases, 28% showed evidence of negligence. Of these cases 82% resulted from a delay in diagnosis resulting primarily from misinterpreted vital signs (64%).

Conclusion:
This study found that delays in diagnosis was the most common feature of negligence involving bariatric malpractice cases. Bariatric surgeons should develop specific strategies to avoid the common causes of lawsuits.

5. THE SRC CONSORTIUM: A COALITION FOR QUALITY IMPROVEMENT. Walter J. Pories, MD[1], Gary M. Pratt, BS[2] [1] East Carolina University, Greenville, NC, [2]Surgical Review Corporation, Raleigh, NC.

Background:
No one – surgeons, hospitals, payers, and, especially patients – benefits from complications or poor results. Even so, we lack the methodology to improve surgical outcomes in an objective manner similar to the approaches used by industry.

Methods:
Surgical Review Corporation (SRC) has addressed this need through the Bariatric Surgery Consortium for Excellence where the experience of qualified centers is shared to identify approaches, procedures, and care paths that lead to improved results. To pursue this initiative, SRC has developed a paperless tracking system and a uniform outcomes database verified by site inspections, compatible with the NIDDK/LABS Consortium, compliant with HIPAA regulations, and protected by Peer Review.

Results:
Data from the first 106 ASBS Centers of Excellence document that 37,117 patients underwent bariatric operations with an aggregate 90-day mortality of 0.3 percent, significantly lower than the rates reported for other common abdominal operations. Additional data, current in June 2006, regarding complications, lengths of stay, readmissions, and re-operations will be reported at the ASBS annual meeting. The effects of these initiatives on payers and malpractice carriers will also be reported.

Conclusion:
The data from the first 106 ASBS Centers of Excellence document that 37,117 patients underwent bariatric operations with an aggregate 90-day mortality of 0.3 percent, significantly lower than the rates reported for other common abdominal operations. Additional data, current to June 2006, regarding complications, lengths of stay, readmissions, and re-operations will be reported at the ASBS annual meeting. The effects of these initiatives on payers and malpractice carriers will also be reported.

6. OUTCOMES AMONG ELDERLY BARIATRIC PATIENTS AT A HIGH VOLUME CENTER*. Stephanie E. Dunkle-Blatter, MD, Michael R. St. Jean, MD, FACS, Anthony T. Petrick, MD, FACS, Carly Whitehead, , William Strodel, MD, Peter Bennotti, MD, Christopher Still, MD, Mary Jane Reed, MD, Geisinger Medical Center, Danville, PA.

Background:
With a growing morbidly obese elderly population, management strategies and outcomes of treatment need to be evaluated.

Methods:
All bariatric cases from 2001 to 2005 at a single institution were reviewed. Pre-operative factors (weight/BMI, smoking status, co-morbidities, number of medications) and surgical data [operation performed, length of stay (LOS)] were recorded. Gastric bypass patients over 60 years of age were followed for a mean of 408 (+/-306) days and surgical outcomes were analyzed (reduction in medications, resolution of diabetes and hypertension, percent excess weight loss (%EWL), complications, and mortality.

Results:
Of 1,065 patients, 76(7.1%) were age 60 or older. Sixty one (5.7%) underwent gastric bypass. The mean BMI was 47.3(+/-6.7). Sixty one percent were current or former smokers. The mean number of co-morbidities was 9.8 (+/-3.7) including 69% with diabetes and 84% with HTN. The mean number of pre-operative medications was 10 (+/-4). Mean LOS was 2.9 (+/-1.6) days. Post-operatively, medications were reduced by 50%. Diabetes resolved (52.4%) or improved (45.2%) in 97.6%. Hypertension resolved (30%) or improved (46%) in 76%. Mean %EWL was 49.2%. The 30-day and 90-day minor and major complication rates were 22% and 6.8% (minor), and 3.4% and 10.2%, respectively. Operative mortality (within 90 days) was1.3%, compared with 0.92% mortality for patients less than 60 years of age (p=0.45).

Conclusion:
Despite greater co-morbidities, obesity surgery in the elderly (over 60 years of age) is safe, with less weight loss than the national average, and marked improvement in co-morbidities.

7. LOW MORTALITY IN A HIGH-RISK MEDICARE POPULATION UNDERGOING BARIATRIC SURGERY: A LARGE, SINGLE CENTER EXPERIENCE. David A. Provost, MD, Joshua Langert, John H. Rogers MPH, Sergio Huerta, MD, Edward H. Livingston, MD, University of Texas Southwestern Medical Center, Dallas, TX.

Background:
Large database reviews have demonstrated increased mortality among Medicare beneficiaries undergoing bariatric surgery, particularly in patients 65 years of age and older. We evaluated a large single-institution experience to test the hypothesis that bariatric surgery can be performed with a low mortality and acceptable morbidity in the high risk Medicare population.

Methods:
Institutional billing data identified Medicare beneficiaries undergoing bariatric surgical procedures between January 1997 and September 2005. The prospectively collected bariatric database was reviewed to determine patient demographics, operative procedure, peri-operative complications, and 30 day and/or in-hospital mortality.

Results:
340 Medicare patients were identified. Mean age was 52.0 years, mean weight was 154.3 kg with a mean BMI of 54.7. 18.2% of patients were male. Operative procedures were laparoscopic adjustable gastric banding (LAGB) in 165 (48.5%), Roux-en-Y Gastric Bypass (RYGBP) in 145 (42.6%, 53 Laparoscopic), and major revisional procedures in 30 (8.8%). There were 3 peri-operative mortalities (0.88%), all in open RYGBP patients. Major and minor peri-operative complication rates were 5.6% and 4.4%, respectively. Sixty-five patients were 65 years of age or older (mean age 67.6 years, mean weight 132 kg, mean BMI 47.7). 54 underwent LAGB, 4 laparoscopic RYGBP, 3 open RYGBP, and 4 revisions. Major peri-operative complications occurred in 6.1% and minor in 4.6%. There were no peri-operative mortalities in the 65 and older age group.

Conclusion:
Bariatric surgery can be performed safely in the Medicare population in a tertiary referral center. The low mortality of LAGB in patients 65 and older makes it an attractive option.

8. LAPAROSCOPIC BARIATRIC SURGERY IS SAFE FOR PATIENTS OLDER THAN 60 YEARS. David Hazzan, MD, Edward H. Chin, MD, Emily Steinhagen BA, Subhash Kini, MD, Daniel M. Herron, MD, Mount Sinai Medical Center, New York, NY.

Background:
Previous reports have questioned the safety and efficacy of laparoscopic bariatric surgery in older patients. The aim of this study is to investigate our results in this specific patient population.

Methods:
A retrospective chart review was performed of all laparoscopic bariatric procedures performed at Mount Sinai Medical Center in patients older than 60 years, from February 1999 to September 2005.

Results:
A total of 55 patients were identified (36 females and 19 males). Mean age was 61.45 years (range 60-70 years). Mean BMI was 46.2 kg/m^2 (range 38.1-61 kg/m2). Thirty three patients (60%) underwent Roux-en-Y gastric bypass, nine patients (16%) underwent gastric banding, and seven patients (13%) underwent biliopancreatic diversion with duodenal switch. Three patients (5.5%) had a revisional bariatric procedure and three patients (5.5%) underwent sleeve gastrectomy.

The mean operative time was 2.3 hours (range 1.1-5.5 hours). All procedures were performed laparoscopically, and here were no conversions. Mean length of stay was 2.8 days (range 1-14 days). There were no peri-operative mortalities (within 30 days). The morbidity rate was 7.3%, and included an anastomotic bleed that was treated conservatively, an empyema that required chest tube drainage, one urinary tract infection, and one wound infection.

Conclusion:
Laparoscopic bariatric surgery can be performed safely with low morbidity and mortality in the elderly population.

9. BARIATRIC SURGERY IN ADOLESCENTS: A LONG TERM FOLLOW-UP STUDY. Francesco S Papadia, MD, Giuseppe M Marinari, MD, Gian Franco Adami, MD, Giovanni Camerini, MD, Nicola Scopinaro, MD, Surgical Department, University of Genoa School of Medicine, Genoa, Italy

Background:
Benefits of bariatric surgery in adult obese patients are well established, but data are lacking regarding outcome of surgery in adolescents.

Aim of this study is to retrospectively assess operative morbidity and mortality, percent loss of initial excess weight (IEW%L), incidence of long-term complications and reoperations in a cohort of obese patients submitted to BPD before their 18th birthday.

Methods:
76 adolescent subjects have been submitted to BPD between 1976 and 2005. 7 patients with Prader-Willi syndrome and one affected by Turner syndrome were excluded from the study.

Results:
Patient population comprised 52 females and 16 males. Mean age was 16.8, mean BW at operation 125 kg (mean BMI 46 kg/m2). Operative mortality was nil. Mean follow-up (FU) is 11 years (2 to 23). Mean IEW%L at each patient's longest FU is 78. Prior to surgery, 33 patients were hypertensive (49%), 11 dyslipidemic (16%), 3 hyperglicemic and 2 type 2 diabetic. At the longest FU after surgery, only 6 patients were hypertensive; none were dyslipidemic or diabetic. A total of 19 reoperations were performed in 14 (20%) patients, including 7 revisions. 11 patients developed PM 1 to 10 years after BPD. Long-term mortality was 3%. 18 females gave birth to 28 healthy babies, 4 to 23 years after BPD. Two other patients had complicated pregnancy.

Conclusion:
Adolescents can be submitted to malabsorptive bariatric surgery with excellent long-term results and acceptable incidence of long-term complications.

10. BARIATRIC SURGERY IN ADOLESCENTS IS SAFE AND EFFECTIVE. Ricardo V. Cohen, MD, Jose S. Pinheiro, MD, Jose L. Correa MD, Carlos A. Schiavon, MD, Hospital Sao Camilo, Sao Paulo, Brazil.

Background:
If teenage obesity is epidemic and adult bariatric surgery is safe and effective, why not offer gastric bypass to these younger patients who may benefit the most avoiding life-threatening co-morbidities?

Methods:
We reviewed the data of 42 adolescent patients who underwent laparoscopic Roux-en-Y gastric bypass in our Institution (2.7 % of our patients). All patients went through psychiatric evaluation, understood the procedure and its life-long life style modifications, and had full parental support.

Results:
Most were men (35) with ages from 13 to 18 years. Mean BMI was 45 (41-50). Preoperative co-morbidities were as follows: hypertension: 16 patients, depression under treatment: 6, diabetes: 3, high serum insulin: 3, cholelithiasis: 3, arthropathy: 3, asthma: 2, and GERD: 1. Mean OR time was 55 minutes. There were no intraoperative or postoperative complications. Mean hospital stay was 30 hours. Mean follow-up was 48 months (3-60). 31 patients had a follow-up greater than 12 months. All patients were cured of their co-morbidities and mean BMI was 23.5. No postoperative psychiatric problems were detected.

Conclusion:
Adolescent patients benefit from laparoscopic gastric bypass with excellent weight loss, cure of comorbidities, and low morbidity.

11. PREFERENTIAL LOSS OF CENTRAL ADIPOSITY IN ADOLESCENTS AFTER GASTRIC BYPASS: A REPORT FROM THE PEDIATRIC BARIATRIC STUDY GROUP. Thomas H. Inge, MD, PhD, Shelley Kirk, PhD, Kimberly Wilson MS, Victor F. Garcia, MD, Stephen R. Daniels, MD, PhD Cincinnati Children's Hospital Medical Center, Cincinnati, OH.

Background:
Background: Epidemiologic studies have strongly linked central adiposity to risks of cardiovascular disease (CVD) among the obese. Central adiposity can be estimated by measurement of waist circumference, but this method does not discriminate between lean and fat mass and can be misleading due to difficulties with landmarks and excess skin in morbidly obese patients. Dual energy x-ray absorptiometry (DEXA) may provide more accurate measurement of changes in central adiposity in morbidly obese patients.

Methods:
Methods: Five morbidly obese female adolescents (mean age 18) were evaluated by standard anthropometric measures and DEXA at baseline (within 2 months of laparoscopic Roux-en-Y gastric bypass surgery) and again 1-year following (within 2 months of 1-year anniversary). Mean and SD for anthropometric variables were calculated, and differences evaluated using paired t-tests.

Results:
Results: Significant BMI and weight loss were seen in all subjects at 1-year (Table), with EWL of 63.4%. Significant reduction of both waist and hip circumferences were also observed. Overall fat-mass loss exceeded lean-mass loss by nearly 3-fold in this cohort ($p<0.01$). By DEXA, central fat (trunk) loss significantly exceeded peripheral fat (limbs) loss by 2-fold (18.1% vs. 9.3%; $p<0.01$), while cephalic fat mass was relatively preserved.

	Baseline	1-year	Difference	p value
BMI (kg/m^2)	52.5 ± 3.8	32.6 ± 3.9	- 19.9	<0.01
Waist Circumference (cm)	144.5 ± 8.7	107.4 ± 8.4	- 37.1	<0.01
Hip Circumference (cm)	146.8 ± 9.2	117.9 ± 9.1	- 28.9	<0.01
Waist:Hip ratio	0.98	0.91	-0.07	ns
Fat mass (kg)	68.3 ± 13.1	32.3 ± 4.6	-36.0	<0.01
Lean mass (kg)	68.5 ± 11.5	55.0 ± 8.6	-13.5	<0.01
% BF (total)	49.8 ± 5 %	37.0 ± 1 %	-12.8 %	<0.01
% BF (head)	22.4 ± 2 %	20.4 ± 1 %	-2.0 %	0.03
% BF (limbs)	50.2 ± 5 %	40.9 ± 3 %	-9.3 %	<0.01
% BF (trunk)	53.8 ± 6 %	35.7 ± 3 %	-18.1 %	<0.01

Conclusion:
Conclusions: These results demonstrate preferential loss of central adiposity in adolescents after 1-year of surgical weight loss and may be more informative than anthropometric measurements alone. Given the association between central fat and risk of subsequent CVD, adolescents may have reduced risk of CVD later in life.

12. THE INFLUENCE OF A LAPAROSCOPIC APPROACH FOR THE PERFORMANCE OF ROUX-EN-Y GASTRIC BYPASS ON SURGICAL OUTCOMES AT A UNIVERSITY HOSPITAL DURING THE PAST DECADE. **Sang K. Lee, MD, Janet Dix, PA-C, Michael S. Miller, Anna D. Miller, RN, C. Joe Northup, MD, Bruce D. Schirmer, MD, University of Virginia, Charlottesville, VA**

Background:
Laparoscopic Roux-en-Y gastric bypass (LRYGBP) was first performed at our institution in significant numbers beginning in 1999, and by 2001 was much more commonly performed than open RYGBP (ORYGBP). We hypothesized that improved outcomes have resulted from this conversion.

Methods:
We reviewed the medical records for all patients undergoing gastric bypass at our institution between 1994 and 2004. Patient demographics, operative data, postoperative recovery data, and long-term follow-up data were analyzed. Data are given as mean + SEM.

Results:
ORYGBP was performed for 363 patients and LRYGBP for 765 patients. Operative time was shorter for LRYGBP(198.8+2.6 vs. 223.5+3.9 minutes, p<0.001) as was length of hospital stay (3.1+0.1 vs. 5.1+0.2 days, p<0.01). Intraoperative complications (0.7 vs. 2.2%, p<0.03), total complications (14.5 vs. 57.3%, p<0.001), reoperation rates (8.8 vs. 41.3%, p<0.001), and 30-day mortality (0.3 vs. 1.7%, p<0.02) were lower for the LRYGBP group. Dramatic decreases were particularly seen in the incidence of incisional hernias (1.8 vs. 34.7%, p<0.001), and wound infections (1.8 vs. 7.4%, p<0.001). The incidence of pulmonary complications (2.1 vs. 4.4%, p<0.03) and pulmonary embolism (0.3 vs. 1.7%, p<0.02) was lower for the LRYGBP group. Percentage excess weight loss at one year was higher for LRYGBP (65.3±0.7 vs. 62.6±0.9%, p<0.03), but was not different between groups for years 2-5 of follow-up. Quality of life scale was not different between groups.

Conclusion:
Conversion to a laparoscopic approach for the performance of gastric bypass was associated with a marked decrease in postoperative complications and improvement in surgical outcomes.

13. SUBCUTANEOUS MARCAINE® PAIN PUMPS CAN ELIMINATE PCA USE, REDUCE HOSPITAL COSTS AND NARCOTIC USAGE WHILE PROVIDING SIMILAR PAIN RELIEF TO IV PCA. **Daniel R. Cottam,**

MD, Barry Fisher, MD, Jim Atkinson MD, Dan Link, MD, Peter Volk, MD, Cliff Friesen, MD, Surgical Weight Control Center, Fort Lauderdale, FL

Background:
The use of a Marcaine® pain pump has previously been reported to lower costs to hospitals while providing similar pain relief to narcotic based PCA pumps. However, these benefits have not been investigated in either laparoscopic or bariatric surgery.

Methods:
We prospectively randomized 20 LRYGBP patients to 2 groups. The first group received the On-Q® Marcaine® pain pump placed subxiphoid and radiating out in both directions caudally underneath the lowest rib. A bolus dose of Demerol® (25 to 75mg) or oral Roxicet® (5 to 10cc elixir) was started at 7 pm the night of surgery, depending on nurse and patient preference. The second group had a Demerol® PCA from the PACU till 6 am the following day. Both groups had the same surgery, anesthesiologists, anesthesia drugs, and post operative nausea prophylaxis.

Results:
There were no significant differences between the groups with regard to age, sex, pain scores, nausea scores, gas pain scores, antiemetic use throughout their stay or narcotic use in the PACU. However, there was a dramatic decrease in narcotic use between the two groups from the time the patients left the OR to 6 am (Demerol® by PCA mean 226 mg versus ON-Q 133 mg p=0.019).

Conclusion:
The use o f a Marcaine® pain pump offers the opportunity to dramatically reduce the use of narcotics post operatively in all bariatric patients by eliminating the PCA. This change should dramatically reduce costs for hospitals and reduce the incidence of respiratory failure from over sedation.

14. SAFETY AND EFFICACY OF RETRIEVABLE VENA CAVA FILTERS IN BARIATRIC SURGERY. Denis Halmi, MD, Evgeni Kolesnikov, MD,PhD, Obesity Surgery Center,Potomac Hospital, Woodbridge, VA

Background:
Background: Postoperative pulmonary embolism (PE) is the primary source of mortality after bariatric surgery. In conjunction with pharmacological thromboprophylaxis, SCDs and early ambulation preoperative placement of retrievable inferior vena cava (IVC) filter may reduce the risk of thromboembolic complications.

Methods:
Methods: Between June 2003 and October 2005 652 patients underwent Roux-en-Y Gastric Bypass. Female: 557, Male: 95, average age: 40.7 years (18-67), average BMI: 44.7 kg/m^2 (35-78), average operative time: 60.2 min (42-79).

High risk of PE group - 27 (4.1%) patients received preoperative retrievable IVC filters (Gunter Tulip, Cook) placed by Interventional Radiology two hours prior to the bypass surgery. In this group, there were: Male - 9, Female -18, average age – 47 years (31-66), average BMI- 48.7(38-75).

Indications for filter placement were: prior DVT/PE, thrombophlebitis, hypercoagulable state, pulmonary hypertension, inability to ambulate, BMI over 65, severe sleep apnea. Filters were removed 18.2±2 (15-21) days postoperatively.

Results:
Results: All 27 patients who have received prophylactic IVC filter tolerated the procedure well, without major complication. One retrievable filter was not removed due to prolonged hospitalization secondary to small bowel obstruction. No thromboembolic complications occurred in this high-risk group.

Conclusion:
Conclusion: Preoperative placement of retrievable IVC filters is an effective and safe measure in prophylaxis of PE in the high-risk bariatric patients. The filters can be placed efficiently just prior to the surgery and most filters can be removed 2 to 3 weeks postoperatively.

15. INFERIOR VENA CAVA FILTER PLACEMENT FOR PULMONARY EMBOLISM RISK REDUCTION IN THE SUPER MORBIDLY OBESE UNDERGOING BARIATRIC SURGERY*. Christa M. Trigilio-Black, PAC, Chad D. Ringley, MD, Corrigan L. McBride, MD, Victor J. Sorensen, MD, Jon S. Thompson, MD, Iraklis I. Pipinos, MD, Jason M. Johanning, MD, UNMC, Omaha, NE.

Background:
Pulmonary embolus (PE) is a leading cause of mortality following bariatric surgery. We evaluated our use of inferior vena cava (IVF) filters for PE risk reduction in high risk super morbidly obese bariatric surgery patients.

Methods:
IVF were inserted based on patient risk factors(immobility, previous DVT/PE, venous stasis, inability to tolerate a pulmonary embolism, O2 dependence). IVF were placed concomitant to bariatric surgery. We analyzed prospectively collected data on IVF and evaluated our incidence of PE associated mortality.

Results:
Since April 2003, 37 patients(12 male/25 female) underwent IVF with a mean age of 47.5 ± 10.0 years and BMI of 65.0 ± 13.1 kg/m^2 (47-105). All IVF patients had one or more significant risk factors for thromboembolic events. There were no documented instances of PE (one patient developed DVT) in our IVF group. There were no immediate or late complications related to IVF placement. There was one death secondary to rhabdomyolysis in a patient with a BMI of 105. Average filter placement time was 35.0 ± 9.6minutes. A non-significant reduction in the incidence of fatal PE was noted to coincide with our use of IVF placement (N=6, prior to IVF,5/577, 0.8%, after IVF institution,1/542, 0.2%).

Conclusion:
IVF for PE risk reduction is safe and feasible in the super morbidly obese. Our results confirm that PE is a significant cause of mortality in the bariatric surgery patient. Further studies are needed to confirm the efficacy of IVF for PE risk reduction and related mortality in the super morbidly obese.

16. IS THERE A BENEFIT TO PRE-OPERATIVE WEIGHT LOSS IN GASTRIC BYPASS PATIENTS? A PROSPECTIVE RANDOMIZED TRIAL*. Ramzi S. Alami, MD, John M. Morton, MD/MPH, Barry R.Sanchez MD, Robert Schuster, MD, Anna Peters, FNP, Myriam J Curet, MD, Stanford University School of Medicine, Stanford, CA.

Background:
Roux-en-Y Gastric bypass surgery is the leading surgical treatment of morbid obesity in the United States. The role of pre-operative weight loss in gastric bypass surgery remains unanswered. We performed a prospective randomized trial to help elucidate that role

Methods:
100 patients undergoing laparoscopic gastric bypass surgery were randomized to one of two groups pre-operatively. 50 were randomized to the weight loss group with a 10% weight loss requirement, while the remaining 50 had no weight loss requirements. Patients were followed prospectively. Variables analyzed include peri-operative complications, operative times and post-operative weight loss and resolution of co-morbidities

Results:
Data is currently available on 25 patients in the weight loss group and 30 in the non-weight loss group. The two groups had similar pre-operative characteristics and BMI.

	Wt Loss (n=25)	**No Wt Loss (n=30)**	**P**
Initial BMI (kg/m^2)	48.5	49.7	NS
Pre-op BMI (kg/m^2)	44.2	49.9	.001

OR Time (Minutes)	218.8	246.7	0.006
Surgery Time (Minutes)	153.2	170.1	NS
OR complications	2 (Oversew GJ/ Difficult intubation)	3 (Re-intubation/ Staple line mishap X2)	NS
3 Month % Excess Weight Loss	47.1	32	0.049
Time to surgery from initial consult (months)	5.2	4.3	NS

Conclusion:
Pre-operative weight loss is associated with decreased operating room times and better short-term post-operative percent excess weight loss. Pre-operative weight loss does not appear to affect complication rates. In this study, a pre-operative weight loss requirement does not lead to a significantly longer waiting period from initial consult to operation. Further analysis will help determine if these effects persist.

17. UTILIZATION OF THE INTRAGASTRIC BALLOON (BIB) IN PRE-OPERATIVE PREPARATION FOR SUPEROBESE PATIENTS WITH HIGH SURGICAL RISK. Jose Afonso A.S. Sallet, MD, Carlos Eduardo Pizani, MD, Fabio Luiz FB Bonaldi MD, Paulo Clemente PS Sallet, MD Instituto Sallet, Sao Paulo, Brazil.

Background:
Superobese patients show a high surgical risk (major complications in 30% and mortality rate of 5-12%). The present study evaluates the use of BIB as a preoperative procedure aiming an initial weight loss and reduction of surgical risk.

Methods:
From November 2000 to February 2005, 51 superobsese patients (mean BMI= 60.3 ± 10.1 kg/m²) were treated with the BIB for at least four months before surgical treatment: 40 male (BMI= 59.0 ± 9.6) and 11 female patients (BMI= 65.3 ± 11.7). They showed associated diseases, including systemic arterial hypertension (27 cases), diabetes mellitus (10 cases), sleep apnea (20 cases), hypercholesterolemia (10 cases) and osteoarthritis (16 cases).

Results:
Patients showed mean percent excess weight loss (%EWL) of 23.4 ± 11.0%, mean percent total weight loss (%TWL) of 13.6 ± 6.5%, and mean BMI reduction of 8.4 ± 4.9 Kg/m². More than 80% of patients showed improvement in hypertension and diabetes mellitus, with sleep apnea changed from severe to minimal. Surgical risk was reduced from ASA III-IV (before the BIB) to ASA II. All these patients underwent bariatric surgery (GBP, LAGB or BPD). Four patients had wound infection (8.3%). There was no mortality.

Conclusion:
The intragastric balloon is an effective preoperative technique for superobese patients with decreased co-morbidities and reduced surgical risk.

18. NSQIP AND BARIATRIC SURGERY: RISK FACTORS FOR BARIATRIC SURGICAL OUTCOMES. Edward H. Livingston, MD[1], David Arterburn, MD[2], Tracy L. Schifftner MS[3], William G. Henderson, PhD[3], Ralph G. DePalma, MD[4] [1]UT Southwestern, Dallas, TX, [2]University of Cincinnati Institute for the Study of Health, Cincinnati, OH, [3]National Surgical Quality Improvement Program, Denver , [4]VA Central Office, Washington, DC.

Background:
Risk-adjustment for surgical outcomes analysis is essential for quality assurance programs. To date, there has not been a formal analysis of bariatric surgery results with sufficient detail to develop risk-adjusted outcomes measures.

Methods:
Bariatric procedures performed at 12 approved VA medical centers were prospectively assessed using the NSQIP

methodology. Detailed pre and postoperative information was entered into the NSQIP package, as were long-term mortality data. Complications included any of the standard 21 VA-NSQIP complications. Logistic regression was performed using complications as the dependent variable and any of the preoperative risk factors that had p<0.2 on bivariate analysis.

Results:
586 procedures were performed between 1998 and 2005. In contrast to the female preponderance of other published bariatric surgery, the VA's population was 74% male. The 30-day mortality was 1.4% with an overall complication rate of 19.7%. Most of the complications had minimal clinical impact such that only 8.7% of the patients had unexpectedly long LOS. 95% ± Preoperative risk factors for complications were superobesity (Odds ratio, CI) OR=2.0 (1.3, 3.0) and smoking OR=1.8 (1.1, 2.9). A greater than 20-pack year history of smoking predicted difficulty in weaning from the ventilator postoperatively OR=5.16 (1.92 13.84).

Conclusion:
NSQIP analysis for VA bariatric surgery revealed two important modifiable preoperative risk factors for complications: Smoking and superobesity. Smoking cessation with pulmonary rehabilitation may prove important as a risk reduction strategy for patients undergoing bariatric procedures. Similarly, preoperative weight loss for the superobese with a program like the VA's MOVE (http://www.nchpdp.med.va.gov/BariatricSurgery.asp) may reduce postoperative complications.

19. OBESITY SURGERY 30-DAY OPERATIVE MORTALITY. Edward E. Mason, MD, PhD, Yu-Hui Huang, MS, Kathleen E. Renquist BS, Neal Kohatsu, MD, MPH, University of Iowa, Iowa City, IA.

Background:
With reported obesity surgery 30-day mortality rates of 0.1, 0.3 and 2.0%, there may still be room for improvement. Bypass segment obstruction, a rapidly lethal complication causing dilatation, necrosis and perforation of the stomach, has been reported years after gastric bypass but the risk begins at operation.

Methods:
Data was contributed from 1986-2004 to the International Bariatric Surgery Registry by 86 sites, representing 117 surgeons. Multiple logistic regression analysis was used to compare restrictive and bypass procedure 30-day mortality, with covariates gender, operation year, age and BMI (kg/m^2) at operation.

Results:
Operative 30-day mortality for all patients was 0.24% (93/38,501). Males were 2.9 times as likely to die within 30 days of operation (p<0.0001), as well as older and heavier patients (age p<0.0001, operative BMI p<0.0001). Forty-two of the 93 deaths occurred following discharge. The most common cause of death was pulmonary embolism (29%, 27/93); bypass 29% (23/80) and restrictive 31% (4/13). GI leak, causing 15% of deaths, was equally frequent after restriction and bypass operations. Nine patients died following small bowel obstruction and were exclusively after bypass. The odds of having a death within 30 days of a bypass procedure were 2.1 times that following a simple restrictive procedure (p=0.03; OR: 2.1; 95% CI: 1.1, 4.1).

Conclusion:
Risk of operative death is low, but twice as likely after bypass (0.27% vs. 0.14%). Early discharge places high importance upon informed care, vital signs and access to emergent readmission.

20. LAPAROSCOPIC ADJUSTABLE GASTRIC BANDING VERSUS LAPAROSCOPIC ROUX-EN-Y GASTRIC BYPASS: 5 YEARS RESULTS OF A PROSPECTIVE RANDOMIZED TRIAL. Luigi Angrisani, MD, Michele Lorenzo, PhD, Vincenzo Borrelli, MD, Monica Giuffra, BSc, Francesco Persico, MD, Carmine Fonderico, MD, Giuseppe Capece, MD, Carlo PDe Angelis, MD, Monica Ciannella, MD, S. Giovanni Bosco Hospital, Naples, Italy.

Background:
Prospective randomized comparison of Laparoscopic Adjustable Gastric Banding (LAGB) versus Laparoscopic Roux–en-Y Gastric Bypass (LRYGBP) is lacking.

Methods:
Lap-Band® via pars-flaccida and standard LRYGBP were performed. From January 2000 to November 2000, 51 patients (aged>19<50) were randomly allocated into: Group A (LB; n=27; 5M/22F; mean age: 33.3, range: 21-52; mean weight: 120, range: 92-150 Kg; mean BMI: 43.4, range: 40.1-49.2; %EW: 83.8, range: 36.9-128.8), Group B (LGBP; n=24; 4M/20F; mean age: 34.7, range 20-50; mean weight: 120, range: 95-147 Kg; mean BMI: 43.8, range 40-48.9; %EW: 83.3, range: 34.6-126.53). Operative time, re-operation with hospital stay, Kg, BMI, and %EWL, were collected. Failure was considered BMI>35. Data were analyzed by Student t-test ($p<0.05$ is considered significant).

Results:
Mean operative time was 60 (Group A) and 220 (Group B) minutes ($p<0.001$). Mortality was absent. 1 patient was lost. Re-operation rate (p=ns) was 4/26 (15.3%) and 3/24 (12.5%), with hospital stay ranging 2-3 days and 1 week-6 months in group A and B respectively. After 5 years mean weight was: 97.9 (range: 67-128) and 80 (range: 57-104) Kg, BMI was 34.9 (range 26.2-44.3) and 29.8 (range 24.7–40.5), mean %EWL was 47.5 and 66.6, with failure rate 10/26 (38.4%) and 1/24 (4.2%) in Group A and B respectively ($p<0.001$). Patients with BMI<30 were 3/26 (11.5%) and 15/24 (62.5%) in the same groups ($p<0.001$).

Conclusion:
LRYGBP compared to LAGB produces better weight loss and reduced number of failures, despite significantly longer operative time and life threatening complications. Predictive criteria of success for Lap-Band® need to be investigated.

21. COMPARATIVE STUDY BETWEEN LAPAROSCOPIC ADJUSTABLE GASTRIC BANDING AND LAPAROSCOPIC GASTRIC BYPASS. SINGLE-INSTITUTION FIVE YEAR EXPERIENCE IN BARIATRIC SURGERY*.

Sergio J. Bardaro, MD, Dennis Hong, MD, Jay Jan, MD, Laura Jul MD, MD, Emma Patterson, MD
Legacy Health System, Portland, OR.

Background:
Laparoscopic Roux-en-Y gastric bypass (LRYGBP) and laparoscopic adjustable gastric banding (LAGB) are common surgical procedures for morbid obesity, but few studies have compared LRYGBP and LAGB.

Methods:
All patients who underwent LRYGBP and LAGB in our practice were identified from a prospectively maintained database. Patients were allowed to choose between LRYGBP and LAGB. Age, sex, body mass index (BMI), complications, mortality and excess weight loss were examined.

Results:
From October 2000 to October 2005, 531 patients underwent LRYGBP and 422 patients underwent LAGB. Mean age was 42 and 46 years (P<.001). Mean preoperative BMI was 49 and 50.3 kg/m^2 (P=.04). Patient undergoing LRYGBP had longer operative times (134 versus 69 minutes, P<.001), more blood loss (36 versus 18 ml, P<.001), and longer hospital stays (2.4 versus 1.1 days, P<.001). Excess weight loss was 35%, 49%, 59%, 65%, 69%, 67%, 66%, 67% for LRYGBP versus 17%, 24%, 28%, 33%, 39%, 41%, 48%, 40% for LAGB at 3, 6, 9, 12, 18, 24, 36 and 48 month follow up (P<.05); at 60 months were 68% versus 58% (P=.84). Complications occurred in 32.8% (LRYGBP) and in 29.2% (LAGB) (P=.231). One death occurred in each group.

Conclusion:
LAGB patients have shorter operative time, less blood loss and shorter hospital stays compared with LRYGBP patients; but early weight loss is significantly greater after LRYGBP, although this difference appeared to significantly decrease after 4 years of follow up. There was no difference in complication rates between the groups although the LRYGBP complications involved greater morbidity.

22. THREE-YEAR FOLLOW-UP OF LAPAROSCOPIC ADJUSTABLE GASTRIC BANDING FOR PATIENTS WITH A BODY MASS INDEX < 35 KG/M^2. George A. Fielding, FRACS[1], Jennifer E. Duncombe, MBBS[2], Mannish Parikh, MD[1] [1]NYU School of Medicine, New York, NY, [2]Wesley Medical Centre, Brisbane, Australia

Background:
Many patients with a Body Mass Index (BMI) 30-35 kg/m^2 have tried hard to lose weight with no success and many have obesity-related co-morbidities. Asian patients with a BMI of 35 are considered morbidly obese. We report our 3 year follow-up with 93 laparoscopic adjustable gastric bands (LAGB) in patients with BMI 30-35.

Methods:
All patients were referred by their primary care physicians. All patients underwent complete pre-operative work-up including nutritional and psychological evaluation. A laparoscopic bariatric surgeon performed all operations at a university center with a comprehensive bariatric program. All data were prospectively collected and entered into an electronic registry. Characteristics evaluated for this study include pre-operative age, gender, BMI, presence of co-morbidities, percent excess weight loss (%EWL) and resolution of co-morbidities.

Results:
93 patients (76 females, 17 males) with BMI < 35 kg/m^2 underwent LAGB between 1996 and 2002. Mean age was 44.6 years [16-76]. Mean BMI was 32.7 [30-34 kg/m^2]. 42/93 (45%) had co-morbidities needing treatment, including diabetes, hypertension, hypercholesterolemia, asthma, and sleep apnea. There were no mortalities. Follow-up was 85% at 3 years. Mean BMI at 3 years was 27.6 + 3.7 kg/m^2, and mean %EWL was 53.8 ± 32.8%. All co-morbidities improved or completely resolved.

Conclusion:
LAGB is a safe and effective procedure in patients with BMI < 35 kg/m^2. As in the general American population, there are major implications for its use in Asian patients, even those living in the US, who sustain the effects of severe obesity at lower BMI.

23. THE INCIDENCE AND SEVERITY OF LIVER DISEASE IN MORBIDLY OBESE PATIENTS UNDERGOING GASTRIC BYPASS SURGERY. Neil E. Hutcher, MD, Louis G. Gelrud, MD, David Capuzzi, MD, Glenn Parker, Commonwealth Surgeons, Richmond, VA.

Background:
Nonalcoholic fatty liver disease is common in obese patients and can vary from steatosis to fibrosis to cirrhosis. The purpose of this study is to evaluate liver disease in patients undergoing gastric bypass surgery and to correlate preoperative co-morbidities with its presence and severity.

Methods:
Over a two-year period of time, 552 patients underwent gastric bypass surgery at Bon Secours St. Mary's Hospital by a single surgeon. These patients had no history of excess alcohol consumption or viral hepatitis and underwent liver biopsy at the time of surgery. Age, sex, body weight, BMI and the co-morbidities of diabetes mellitus, hypertension, sleep apnea, heart disease and dyslipidemia were recorded. Liver biopsies were evaluated for degree of steatosis, inflammation and fibrosis. The pathology was initially reviewed by a single department of pathology and then all confirmed by one pathologist.

Results:
Of the 552 patients examined, 406 had liver disease. All 406 had significant steatosis. Sixty seven patients had fibrosis with 24 patients having bridging fibrosis and some degree of cirrhosis. Advanced age, diabetes mellitus, hypertension and dyslipidemia correlated with the presence of liver disease but did not predict its severity. Hepatic damage did not correlate with BMI, body weight, gender nor sleep apnea.

Conclusion:
Significant liver disease occurs frequently in the obese population. It correlates best with the metabolic syndrome. The metabolic syndrome predicts its presence but not its severity. To adequately stage nonalcoholic fatty liver disease in the morbidly obese patient, it is recommended that a liver biopsy be done.

24. THE EVOLUTION OF SEVERE STEATOSIS AFTER BARIATRIC SURGERY IS RELATED TO INSULIN RESISTANCE*. Laurent Arnalsteen, Philippe Mathurin, Florent Gonzalez, Olivier Kerdraon, Emmanuelle Leteurtre, Thomas Jany, Sebastien Dharancy, Monique Romon, Francois Pattou, Chru Lille, Lille, France.

Background:
In severely obese patients (SOP), factors implicated in evolution of severe steatosis after bariatric surgery remain unresolved. The aim was to determine whether insulin resistance influences the histological effect induced by bariatric surgery

Methods:
We prospectively included 185 SOP (BMI>=35 kg/m²) referred for bariatric surgery. The evolution of insulin resistance (IR index = 1/QUICKI) and liver injury with consecutive biopsy were concurrently assessed prior to and one year after surgery.

Results:
At preoperative biopsy, 27% of SOP disclosed severe steatosis (>=60 %). In multivariate analysis, ALT (p=0.02) and IR index (p=0.03) were independent predictive factors of severe steatosis at baseline. One year after surgery, surgical treatment induced a decrease in BMI (9.5 kg/m², p<0.0001), steatosis score (7%, p<0.0001) and IR index (0.64, p<0.0001). In multivariate analysis, the IR index (p=0.03) was an independent predictive factor in persistence of severe steatosis one year after surgery and there was a trend toward significance for preoperative steatosis (p=0.07). Moderate or severe steatosis was more frequently observed in SOP who had conserved a higher IR index after surgery than in SOP who had improved their IR index: 47 % vs 21 %, p=0.02.

Conclusion:
Insulin resistance was independently associated with severe steatosis and was a predictor of its persistence after surgery. The amelioration of insulin resistance after surgery is connected with the decrease in fat amount. Taken together, our results support the key role of insulin resistance in the pathogenesis of severe steatosis and its amelioration as well.

25. BARIX: THE NEW ADIPOSITY INDICATOR TO AID BARIATRIC SURGERY. Stephen D. Wohlgemuth, MD FACS[1], David B. Stefan, MSEE[2] [1]Sentara Bariatric, Norfolk, VA, [2]Novaptus Systems, Inc, Chesapeake, VA

Background:
BMI offers little correlation between the pre-operative bariatric surgical candidate and the degree of surgical difficulty. Pre-operative subjects may have dramatically different physical characteristics, yet have an identical BMI. Research has discovered a new adiposity indicator which utilizes torso height, torso volume and torso surface area to produce a value, called the Barix. The Barix classifies the degree of adiposity of pre-operative surgical candidates, independent of subject weight. Examination has shown a relationship between a pre-operative subject's Barix value and the length and difficulty of the pending bariatric surgery.

Methods:
Pre-operative bariatric subjects of various body shapes were scanned using a white light whole body scanner. Torso height, volume and surface area information were extracted from the scan image. Each subject's Barix was calculated. Pre-operative weight, height and BMI were recorded. Pictures of each subject's liver were taken during the operation and the length of time and difficulty of each operation were documented.

Results:
BMI and Barix calculations were tabulated and compared to the length of each operation, liver size and body shape of the subject. The Barix value compared remarkably well to the size of the subject's liver and the length and difficulty of each operation. There was no correlation between the subject's BMI to the liver size or length and difficulty of each procedure.

Conclusion:
The Barix adiposity indicator appears to yield effective insight into the degree of difficulty of a pending bariatric surgical procedure, regardless of the subject's weight, physical appearance or BMI.

26. IMPROVED METABOLIC PARAMETERS, BUT NO CHANGE IN CARDIAC FUNCTION, AFTER BARIATRIC SURGERY*. **Joshua G. Leichman, MD[1], David Aguilar, MD[2], Snehal Mehta MD[3], Heinrich Taegtmeyer, MD, DPhil[1], Terry K. Scarborough, MD[1], Erik B. Wilson, MD[1], [1]University of Texas, Houston Medical School, Houston, TX, [2]Baylor College of Medicine, Houston, TX, [3]River Oaks Imaging and Diagnostics, Houston, TX.**

Background:
Obesity is a prerequisite for the metabolic syndrome. Both conditions are characterized by a state of chronic inflammation which can lead to derangements in cardiac function. Abdominal visceral adipose tissue is an important contributor of inflammation. We hypothesize bariatric surgery reverses the dysmetabolic state and improves cardiac contractile function.

Methods:
Consecutively enrolled patients with severe obesity had abdominal magnetic resonance imaging to quantify visceral adipose tissue area (VATA) and tissue Doppler imaging (TDI) echocardiography to measure left ventricular (LV) contractile function. Fasting blood chemistries were drawn to measure inflammatory markers and to calculate insulin sensitivity. All tests were performed before surgery and three months post-operatively.

Results:
Twenty-one patients were evaluated with a mean (± SEM) body mass index and age of 46 kg/m^2 (1.3) and 46 years (2.4), respectively. Single slice VATA was associated with increasing concentrations of serum high sensitivity C-reactive protein (hs-CRP) ($r=0.60$, $p<0.005$) and decreasing insulin sensitivity ($r=-0.47$, $p=0.03$). Left ventricular systolic function, as measured by TDI, negatively correlated with VATA ($r=-0.48$, $p=0.02$). hs-CRP was independently associated with VATA by multivariate linear regression analysis ($\beta=0.5$, $p<0.05$). Decreases in VATA with favorable changes in metabolic parameters were not associated with changes in LV contractile function three months after bariatric surgery.

Conclusion:
The data suggest that LV contractile function is influenced by visceral adipose tissue. The process is likely mediated by chronic inflammation. Changes observed with weight loss at three months are not accompanied by any improvement in LV contractile dysfunction. A longer period of observation may be needed.

27. THE IMPACT OF BARIATRIC SURGERY ON CARDIOVASCULAR MORBIDITY/THE IMPACT OF BARIATRIC SURGERY ON MUSCULOSKELETAL MORBIDITY. **Nicolas V. Christou, MD PhD, John S. Sampalis, PhD, McGill University, Montreal, Quebec, Canada**

Background:
We previously reported to this association that morbidly obese patients following RY gastric bypass (RYGBP) made less hospital and physician visits for cardiovascular related morbidity over a 5-year follow-up period compared to non-operated morbidly obese controls.

Aim: We now examine in detail the cardiovascular morbidity improved/prevented by RYGBP.

Methods:
Observational two-cohort study. The treatment cohort (n=1,035) included patients having undergone bariatric surgery at the McGill University Health Centre between 1986 and 2002. The control group (n=5,746) included age and gender matched morbidly obese patients who had not undergone weight-reduction surgery identified from the Quebec provincial health insurance database (RAMQ). Subjects with medical conditions (other then morbid obesity) at cohort-inception into the study were excluded. The cohorts were followed for a maximum of five years from inception.

Results:
The cohorts were well matched for age, gender and duration of follow-up. Bariatric surgery resulted in significant reduction in mean percent excess weight loss (67.1%, $p<0.001$). With respect to medical and surgical interventions for cardiovascular conditions (table) surgery patients had significantly reduced rates for coronary artery bypass, coronary angioplasty, and coronary catheterization, treatment for arrhythmias, aortic aneurism repair, endarterectomy and medical treatment for diabetes.

	Cohort Bariatric		Control		Relative Risk			
Diagnosis:	**N**	**%**	**N**	**%**	**Estimate**	**95% CI**		**P-value**
Pulmonary Edema	6	0.58%	79	1.37%	0.42	0.184	0.964	0.033
Angina Pectoris	52	5.02%	548	9.54%	0.53	0.400	0.695	0.001
Myocardial Infarction	35	3.38%	274	4.77%	0.71	0.502	1.002	0.052
Treatment for Arrhythmias	20	1.96%	623	10.8%	0.18	0.115	0.277	0.001
Coronary Artery Bypass Graft	7	0.65%	135	2.36%	0.28	0.135	0.614	0.001
Endarterectomy	11	1.05%	210	3.65%	0.29	0.159	0.531	0.001
Coronary Angioplasty	10	0.98%	158	2.76%	0.36	0.186	0.663	0.001
Aortic Aneurism Repair	24	2.32%	237	4.12%	0.64	0.509	0.807	0.001
Coronary Catheterizations	75	7.26%	778	13.5%	0.65	0.528	0.779	0.001
Medical Treatment for Diabetes	91	8.82%	778	13.4%	0.65	0.528	0.799	0.001
Vascular Surgery for Peripheral Bypass	7	0.65%	46	0.80%	0.82	0.382	1.866	0.848
Cardiac Pacemaker	5	0.46%	31	0.54%	0.84	0.349	2.297	0.995

Conclusion:
We conclude that bariatric surgery improves/prevents most cardiovascular related co-morbidities.

28. BARIATRIC SURGERY IN PATIENTS WITH CARDIOMYOPATHY. Carol A. McCloskey, MD[1], Gautam Ramani, MD[1], Michael Mathier MD[1], Philip R. Schauer, MD[2], Samer G. Mattar, MD[3], George M. Eid, MD[1], Anita P. Courcoulas, MD[1], Bethany Sacks, MD[1], Baiju Gohil, MD[1], Ramanathan C. Ramesh,MD[1] , [1]University of Pittsburgh, Pittsburgh, PA, [2]Cleveland Clinic, Cleveland, OH, [3]Indiana University, Indianapolis, IN

Background:
Longstanding morbid obesity can be associated with severe cardiomyopathy. In addition, morbidly obese patients have a significantly increased mortality associated with cardiac transplantation. This often precludes them from being transplant recipients. The safety and efficacy of bariatric surgery in patients with severe cardiomyopathy has not been studied. The effect of surgical weight loss on postoperative cardiac function is also unknown.

Methods:
Retrospective analysis of a database of patients with cardiomyopathy and ejection fraction (EF)<35% that underwent bariatric surgery (1997 to 2005) was performed. Short-term morbidity/mortality, length of stay (LOS), percent excess weight loss (EWL), pre/post-operative EF and change in co-morbidities were assessed.

Results:
Of 13 patients, 10 (77%) were male, 3 (23%)were female. Mean body mass index (BMI) was 51.4 kg/m^2 (42.3-65.5). There were 9 laparoscopic Roux-en-Y gastric bypasses (LRYGBP), 1 open RYGBP, 2 laparoscopic sleeve gastrectomies, and 1 laparoscopic gastric banding. Mean EF was 22% (10-35%). There were no deaths. Complications were pulmonary edema in one, transient renal insufficiency in two. Mean LOS was 4d. In patients with at least 1yr follow-up (46%), mean percent EWL was 41.5%, mean BMI was 42. Of 9 patients that had follow-up echocardiograms, EF improved in 6 (67%). One (8%) had no change. Two patients had transplant evaluations preoperatively. One had a successful transplantation, and the other is currently awaiting transplantation.

Conclusion:
Bariatric surgery in patients with cardiomyopathy is safe and feasible. Surgical weight loss can result in improvement in EF. In addition, surgical weight loss provides a bridge to transplantation in patients who are otherwise prohibited secondary to their morbid obesity.

29. SEVERITY OF DEPRESSION AS A PREDICTOR OF SURGICAL OUTCOMES: THE IMPACT OF GENDER AS A MODERATOR. **Jeffrey J. Lauzon, MA, LPC[1], A. Daniel le Grange, PhD[2], [1]Illinois Institute of Technology, Chicago, IL, [2]University of Chicago Hospitals, Chicago, IL**

Background:
Research indicates that the association between depression and obesity may be strongest among the most obese individuals. Results from a recent study conducted by Averbukh and colleagues (2003) indicate that depression scores before surgery were positively correlated with net weight loss following surgery at one-year follow-up. Several studies have demonstrated a positive relationship between depression and obesity among women, but not men (Faith, Matz & Jorge, 2002). Unfortunately, the depression-obesity relationship has not examined gender as a moderating variable in predicting outcomes beyond one year.

Methods:
Participants (N=277) who underwent gastric bypass surgery from October 1998 to April 2001 completed baseline Beck Depression Inventories (Beck et al., 1961) and were followed up at 1 and 2-years after surgery. Changes in weight were measured by %EWL. Regression analysis was conducted at each of two follow-up time points to examine the relative contribution of severity of depression as measured by BDI, using gender as a moderator, to the prediction of weight loss at follow-up.

Results:
Results indicate that severely depressed men lose a significantly higher percentage of excess weight than severely depressed women at one-year follow up ($p < .007$). At 2-year follow-up both severely depressed men and women lose a significantly higher percentage of excess weight than their non-severely depressed counterparts; however, the gender moderator loses significance ($p < .552$) over time.

Conclusion:
Severity of depression appears to be a robust predictor of post-surgical weight loss over time. Gender appears to be a significant moderator in the depression-weight loss equation at one-year, but not at two years post-surgery.

30. RACIAL VARIATIONS IN FAT METABOLISM MAY AFFECT THE SUCCESS OF DIETS AND BARIATIC SURGERY. **John R. Pender, MD[1], Hisham A. Barakat, PhD[1], Kenneth G. MacDonald MD[1], William H. Chapman, MD[1], Lynis Dohm, PhD[1], Paul S. MacLean, PhD[2], Robert C. Hickner, PhD[1], Walter J. Pories, MD[1] , [1]East Carolina University, Greenville, NC, [2]University of Colorado Health Sciences Center, Denver, CO.**

Background:
African American women (AW) tend to lose less weight following diets and bariatric surgery. To explore these observations, we compared lipoprotein subpopulation distribution and lipolysis in AW and Caucasian women (CW).

Methods:
Lipoprotein subpopulation distribution in the plasma of 51 lean women (29 CW, 22 AW, BMI <30), 50 obese women (27 CW, 23 AW, BMI>30), and 43 obese women with type 2 diabetes (27 CW, 16 AW) by magnetic resonance spectroscopy. Hormone sensitive lipase (HSL), basal and isoproterenol-stimulated lipolytic (ISL) rates were measured in subcutaneous and omental adipose tissue obtained during open bariatric surgery in 27 CW and 24 AW subjects. Endothelial nitric oxide synthesase (eNOS) was measured in the same tissues with enzyme linked immunoabsorbent assay.

Results:
Basal lipolytic rates in AW were 53% and 44% lower ($p<0.05$) than in CW (Metabolism 51,2002:1514), while there were no differences in HSL or ISL. Higher VLDL-trigylerides and low density lipoprotein cholesterol(LDL-C) were found in the CW but not in AW (Obesity Research 2000:8;62). While there were higher levels of eNOS in obese than in lean subjects (417.1±78.9 vs. 216.7±29.9), there were no differences in eNOS between the two racial groups (Metabolism 54, 2005:1368).

Conclusion:
Racial differences in the metabolism of fat probably contribute to the success or failure of bariatric surgery.

31. A COMPARISON OF OUTCOMES AFTER LAPAROSCOPIC ADJUSTABLE GASTRIC BANDING IN AFRICAN-AMERICANS AND CAUCASIANS. Manish S. Parikh, MD, Helen Glo, BA, Christopher C. Chang BS, Dinee W. Collings, BA, George A. Fielding, MD, Christine J. Ren, MD, New York University School of Medicine, New York, NY.

Background:
It has been suggested that race may affect outcomes after bariatric surgery. This study compares outcomes in terms of weight loss and co-morbidity resolution between African-Americans and Caucasians after laparoscopic adjustable gastric banding (LAGB).

Methods:
Data from over 1,000 patients undergoing LAGB between July 2001 and July 2004 were prospectively collected and entered into an IRB-approved electronic registry. Propensity score matching analysis was used to match Caucasians (C) to African-Americans (AA), based on age, gender and preoperative BMI. Preoperative co-morbidities (diabetes, hypertension, obstructive sleep apnea, and hypercholesterolemia) were compared. Operative (OR) time, length of stay (LOS), co-morbidity resolution and %EWL were compared.

Results:
58 AA LAGB patients were matched to 65 C LAGB patients based on age, gender and preoperative BMI. The preoperative mean age and BMI were 37 ± 19 years, and 47 ± kg/m^2, respectively. 62% of the AA group and 55% of the C group had 1 or more co-morbidities (p=NS). Median OR time and LOS were similar in both groups: 50 minutes and 23 hours, respectively. Both groups had similar improvement or resolution of all co-morbidities. %EWL with follow-up is listed in the table below:

	1yr %EWL	1 yr f/u	2yr %EWL	2yr f/u	3yr %EWL	3yr f/u
African-American	39.0 +/- 18.9	81% (47/58)	42.7 +/- 21.1	79% (42/53)	40.5 +/- 22.5	65% (13/20)
Caucasian	49.0 +/- 18.3	95% (62/65)	53.9 +/- 20.1	82% (47/57)	56.9 +/- 22.0	67% (23/33)
p value	.0017	.0124	.0052	.6685	.0119	.8421

Conclusion:
Even though African-Americans lost less weight than Caucasians after LAGB, their weight loss still delivered resolution of co-morbidities.

32. LONG-TERM IMPROVEMENT OF GASTROINTESTINAL COMPLAINTS FOLLOWING WEIGHT LOSS IN PATIENTS UNDERGOING LAPAROSCOPIC ROUX-EN-Y GASTRIC BYPASS (LRYGBP). Donald E. Yarbrough, MD, Ruth R. Leath, MPH, Teresa D. Leeth RN, Ronald H. Clements, MD, University of Alabama, Birmingham, AL.

Background:
Previous reports suggest obese patients experience more intense gastrointestinal (GI) symptoms than normal-weight individuals. While LRYGBP is effective at weight loss, it is unknown whether GI symptoms improve long-term after surgery and to what extent.

Methods:
Subjects underwent LRYGBP between 10/2002-9/2005 and preoperatively completed a validated, 19-point GI symptom survey (GISS). Symptoms were grouped into six clusters: abdominal pain, irritable bowel, GERD, reflux, sleep disturbance, and dysphagia. Postoperative GISS were collected at one- and two-years. Student's t-tests were used to analyze improvement in GI symptoms following LRYGBP.

Results:
400 patients (85% female) completed the GISS preoperatively. Mean age was 47 (± 16) years, mean preoperative BMI 48 (± 7), and mean %EBWL at 1 and 2 years follow-up was 73% (± 15) and 80% (± 17) respectively. 177 of 309 (57%) eligible at one year and 82 of 178 (46%) eligible at two years completed a follow-up GISS. Postoperative GI symptoms were significantly improved over preoperative results for all six GISS clusters (p<0.02), and improvement

was maintained at two years follow-up (Table 1). Of note, Caucasian patients (n=322) experienced significantly worse GI symptoms preoperatively than African-American patients (n=78) ($p<0.05$), but there was no difference observed postoperatively.

Table. Mean GISS cluster scores ±SD for LRYGB patients pre- and post-operatively.

	Pre-Op	1 Year	2 Years
N	400	177	82
Abdominal Pain	24.7 (±19.8)	14.71 (±13.2)	14.4 (±13.6)
p-value	Ref	< 0.0001	< 0.0001
p-value	na	Ref	0.8
Irritable Bowel	19.8 (±14)	15.9 (±11)	13.9 (±10.3)
p-value	Ref	0.0005	< 0.0001
p-value	na	ref	0.1
GERD	40.5 (±21.6)	15.6 (±15.3)	21.1 (±16.2)
p-value	Ref	< 0.0001	< 0.0001
p-value	na	Ref	0.01
Reflux	33.9 (±22.9)	8. (±11.8)	10.4 (±12.5)
p-value	Ref	< 0.0001	< 0.0001
p-value	na	ref	0.45
Sleep Disturbance	47.3 (±28.6)	22.4 (±24.1)	32.6 (±27.5)
p-value	Ref	< 0.0001	< 0.0001
p-value	Na	Ref	0.005
Dysphagia	13.9 (±21.5)	5.7 (±12.1)	9.0 (±15.5)
p-value	Ref	< 0.0001	0.02
p-value	Na	ref	0.1

Conclusion:
Weight loss following LRYGBP significantly improves common GI complaints observed in obese patients. Intensity of symptoms normalized and improvement was sustained at 2 years follow-up.

33. PREGNANCY OUTCOMES AFTER GASTRIC BYPASS SURGERY. Tuoc N. Dao, MD, Joseph Kuhn, MD, Dale Ehmer MD, Tammy Fisher, RN, Todd M. McCarty, MD, Baylor University Medical Center, Houston, TX.

Background:
There are limited data to support the delay of pregnancy for the first year after gastric bypass surgery. The purpose of this study is to compare outcomes of patients who become pregnant within the first year after surgery.

Methods:
A retrospective review was performed to identify patients who became pregnant after their gastric bypass surgery from 2001-2004. Data sources included medical records and telephone interview.

Results:
Of 2,423 patients who had undergone bariatric surgery from 2001-2004 nineteen patients became pregnant within the first postoperative year. The average patient age at pregnancy was 31 y (range 25-39), and the average BMI was 34 (range 25-50). There were 15 live births (35-40 weeks), 3 miscarriages, and 1 ectopic pregnancy. Nutritional deficiencies included one patient with anemia that improved with supplements. Average weight change during pregnancy was a 4 pound weight gain (range loss of 70 lbs to gain of 31 lbs). The average fetal birth weight was 2,943 grams (range 1,786-3,940). No congenital defects were seen. Problems during pregnancy included transient preterm labor n=1, pregnancy induced hypertension n=1, placental abruption resulting in emergent caesarean section n=1, and bed rest n=1. No problems related to the bypass surgery were seen.

Conclusion:
The course of pregnancy within the first year after weight loss surgery did not carry any significant episodes of

malnutrition or adverse fetal outcomes. No pregnancies were affected by complications of bariatric surgery. Patient and physician anxiety over poor outcomes of pregnancy during the first year after bariatric surgery can be allayed.

34. THE USE OF POLYFLEX STENTS IN THE TREATMENT OF ESOPHAGEAL AND GASTRIC LEAKS AFTER BARIATRIC SURGERY. Jeraldine Orlina, MD, Royd Fukumoto, MD, James McGinty, MD, Julio Teixeira, MD, St. Luke's Roosevelt Hospital, New York, NY.

Background:
Metallic stents have been used in the esophagus for strictures, perforations, and anastomotic leaks. These stents, however, are difficult if not dangerous to remove. Recently, removable stents made of Polyflex, a silicone coated plastic, have been used to temporarily bypass anastomotic leaks after esophagectomy and colectomy. To date, the use of stents in bariatric patients has not been reported. We are presenting Polyflex stents as a novel approach to the management of intestinal leaks after bariatric surgery.

Methods:
Between October and November 2005, four patients received Polyflex stents for upper intestinal leaks after various bariatric surgeries. Points of leakage were: sleeve gastrectomy staple line, gastric pouch, esophagus, and gastro-jejunostomy anastomosis. Three out of four patients had multiple prior intestinal reconstructions.

Results:
Stents restored intestinal continuity without radiographic leak in all patients. All patients reported post-operative nausea, which resolved in less than 24 hours in three out of four patients. The remaining patient experienced nausea for 3 days. Each patient was advanced to a soft puree diet. All patients report early satiety as their only long-term symptom. The current duration of stent placement ranges from 2 to 4 weeks, with stent removal planned for between 6 and 8 weeks.

Conclusion:
Polyflex stents are useful in bypassing upper intestinal leaks after various bariatric surgeries. They provide a temporary bridge for wound healing with continued oral intake. Stenting provides a minimally invasive option in the management of leaks, especially for those who are critically ill or have hostile abdomens.

35. ANASTOMOTIC STENOSIS FOLLOWING ROUX-EN-Y GASTRIC BYPASS: A RATIONAL APPROACH TO TREATMENT. Daniel E. Swartz, MD, Victor Gonzalez, MD, Edward L. Felix MD, Advanced Bariatric Center, Fresno, CA.

Background:
Anastomotic stenosis, a common sequela to Roux-en-Y gastric bypass (RYGBP), has a reported incidence of 1.6 to 27% and recurs in 17 – 33%. No guidelines for optimal treatment exist. The aim of this study was to develop guidelines to treat stenosis that achieve the lowest recurrence rate using the smallest dilation size.

Methods:
This prospective two-part study enlisted consecutive patients undergoing RYGBP who developed an anastomotic stenosis. In part I, all patients regardless of grade of stenosis were dilated to 12 mm and followed for recurrence. In part II, patients were dilated based on their grade of stenosis (12 mm for low, 13.5 mm for medium,15 mm for high) and followed for recurrence.

Results:
121 patients developed anastomotic stenosis among 1,203 consecutive RYGBP (10 %). There were no differences in sex, mean age, preoperative BMI, and weight loss at one year. In part I, recurrence rates for low, medium and high grade stenosis were 2.5%, 32% and 56%. In part II, rates were 8.3%, 9.1% and 46%. Mean number of additional dilatations per patient with recurrence in part I were 1.0, 1.4 and 2.0 while in part II were 1.0, 1.0 and 1.3.

Conclusion:
Stenosis grade can predict risk of recurrence and determine optimal dilation size. Low grade stenosis dilated to 12 mm and medium to 13.5 mm can achieve definitive treatment in over 90% of patients. High grade stenosis predicts recurrence in 50% of patients but increasing the balloon size from 12 to 15 mm reduced the overall number of recurrences.

36. A RANDOMIZED DOUBLE BLINDED STUDY OF THE EFFECT OF 21MM VS 25MM CIRCULAR STAPLED GASTROENTEROSTOMY ON POSTOPERATIVE STENOSIS IN LAPAROSCOPIC RNY GASTRIC BYPASS. **Barry L. Fisher, MD, Daniel Cottam, MD, Brian Grace PAC, University of Nevada School of Medicine, Las Vegas, NV.**

Background:
A reduction in the postoperative complication rate is the most pressing issue facing bariatric surgery today. There have been no randomized blinded studies of the most common complication, stenosis. This randomized double blinded study compares sizes 21 and 25 circular staplers for incidence of stenosis following LRYGBP

Methods:
One hundred ten patients were randomized to undergo 21mm or 25mm circular stapled gastroenterostomy. 55 had 21 mm and 55 had 25 mm anastomosis. There was no other difference in the operative technique. Stenosis was defined as dysphagia leading to endoscopy within ten weeks of surgery, in which a 9 mm diameter endoscope would not pass through the gastroenterostomy without dilatation. Surgeons and patients were blinded to the stapler type.

Results:
8 patients with 21 mm and 2 patients with 25 mm anastomoses underwent endoscopy for dysphagia. 6 patients with 21 mm and 1 patient with 25 mm anastomosis were found at endoscopy to have measurable stenosis. One patient required repeat endoscopy for dilation. Odds ratio of .17 (Or 6.1 times greater risk of having stenosis with 21 mm stapler). Eleven cases of 25mm anastomoses are needed to prevent a single endoscopy.

Conclusion:
There is a six times higher rate of stenosis and a four times higher rate of endoscopy when comparing the 21 mm circular stapler to a 25mm stapled anastomosis in LRYGBP. Adoption of a 25mm stapled anastomosis will reduce stenosis and save millions of dollars in endoscopy costs.

37. BRAZILIAN MULTICENTRIC STUDY OF THE INTRAGASTRIC BALLOON. **Jose Afonso A.S. Sallet, MD, João B.J.M. Marchesini, MD, Carlos Eduardo PI Pizani MD, Paulo Clemente P.S. Sallet, MD, Fabio Luiz FB Bonaldi, MD Instituto Sallet, Sao Paulo, Brazil.**

Background:
The intragastric balloon has been used in obese patients as a restrictive gastric procedure inducing early satiety and weight loss. This prospective study assesses both the safety and effectiveness of the intragastric balloon (BIB) in the treatment of obese patients.

Methods:
From November 2000 to April 2005, after the Brazilian Ministry of Health's approval of the BIB protocol, 908 overweight and obese patients were treated with the intragastric balloon. 635 completed a 6-month follow-up: 260 male (BMI= 42.8±10.7 kg/m²) and 375 female patients (BMI= 35.5±7.8 kg/m²), (mean BMI= 38.5±9.8 kg/m²). All patients were encouraged to take part in a multidisciplinary program involving clinical, psychiatric, physical training, and dietary approaches

Results:
After a 6-month follow-up subjects showed significant reductions in percent excess weight loss (%EWL= 44.8±30.5%) and percent of total weight loss (%TWL= 12.5±6.7%). The main side effects were nausea/vomiting (266 cases, 42%), and epigastric pain (133 cases, 21%), requiring prosthesis removal in 25 patients (4%). Minor complications were reflux esophagitis (76 cases, 12%) and symptomatic gastric stasis (63 cases, 10%) which were clinically controlled. In Balloon impaction occurred in 2 cases (0.3%) and in one patient (0.15%) there was spontaneous deflation of the balloon leading to a small-bowel sub-occlusion which was solved by laparoscopy.

Conclusion:
The intragastric balloon (BIB®) is effective to temporarily control obesity, inducing a %EWL of approximately 45%. It is not associated with mortality and shows minimal risk of major complications. Results regarding subsequent follow-up (after BIB removal) are necessary to a better assessment of its effectiveness.

38. INTRAGASTRIC MUCOSECTOMY AND SLEEVE MUCOMUSCULAR GASTROPLASTY FOR MORBID OBESITY. Abdullah D. Aldahian, Mohammad Alnaami, KSU-KKUH, Riyadh, Saudi Arabia

Background:
Endoscopic use of the intragastric space may be easy and less expensive in order to narrow the stomach in the morbidly obese. All current morbid obesity procedures are done around the stomach and are expensive.

Methods:
All available procedures for treatment of morbid obesity are done outside of the stomach. The hypothesis was to suture the anterior to the posterior wall of the stomach from the gastroesophageal junction for 12 cm distally, 1 cm from the lesser curvature of the stomach after excising the mucosa. It was believed that exposing muscle to muscle and cut mucosa to each other would initiate fibrosis with a permanent fusion of the posterior to the anterior wall of the stomach. The procedure was done in 5 experimental animals. Food and water was given to the animal postoperatively.

Results:
During a follow up of 3 months, the animals lost 10% of their initial weight.

Conclusion:
The procedure was safe and feasible. Long term follow-up is needed to assess the merits of the procedure.

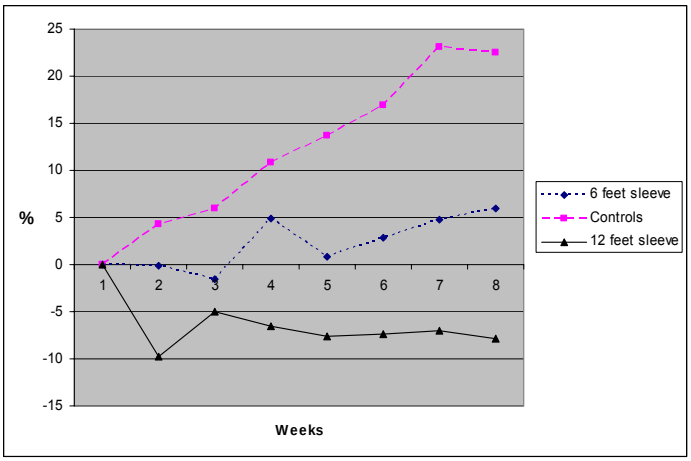
39. EFFECT OF A POLYETHYLENE ENDOLUMINAL DUODENO-JEJUNAL TUBE (EDJT) ON WEIGHT GAIN. A FEASIBILITY STUDY IN A PORCINE MODEL. Luca Milone, MD, Michel Gagner, MD, FACS, Kazuki Ueda MD, Sergio Bardaro, MD, Yoon Ki-Youg, MD, New York Presbyterian Hospital, Weill College of Medicine of Cornell University, New York, NY.

Background:
To verify the technical feasibility of an Endoluminal Duodeno-Jejunal Tube (EDJT) in reducing the weight gain in a living porcine model and its safety in a short-medium survival time.

Methods:
Eight 45 Kg Yorkshire pigs were used for this study. Four pigs were used as controls; whereas, three pigs had a 6-feet and one a 12-feet EDJT implanted which was fixed to the first portion of the duodenum above the ampulla of Vater with a solenoid circumferential suture via a duodenotomy. The EDJT is a 3.5 cm wide and 0.05 mm thick polyethylene tube.

The intent was to avoid the mixing of food and bilio-pancreatic juice for the entire length of the endoluminal tube.

Results:
Each pig was evaluated daily for distress symptoms and weighed weekly for 7 weeks. No major complications were observed. The percentage weight change 7 weeks after surgery between the control group, the 6-feet group, and the 12-feet group was 22.5%, 6%, and -2.8%, respectively. The EDJT groups (6-feet and 12-feet) presented significantly slower weight gain than the control group ($p=0.005$)



Conclusion:
The use of an Endoluminal Duodeno-Jejunal Tube is safe; no major complications, such as obstruction, intussusceptions or pancreatitis occurred. The EDJT dramatically slowed weight gain in a porcine model compared to controls. A trend of better weight gain was obtained with the longer tube.

40. THE EFFECT OF GASTRIC BYPASS (GBP) ON VITAMIN D NUTRITIONAL STATUS (VDN). Arthur M. Carlin, MD, D. Sudhaker Rao, MB, BS, FA, Kelli M. Yager MS, MPH, Jeffrey A. Genaw, MD, Nayana Parikh, BSc, Henry Ford Hospital, Detroit, MI.

Background:
We previously reported a high prevalence (60%) of vitamin D depletion (-D), defined as serum 25-hydroxyvitamin D (25-OHD) level ≤ 20 ng/ml, in preoperative morbidly obese patients. We now present the effect of GBP on VDN in these patients.

Methods:
We prospectively studied 106 morbidly obese patients having GBP. Routine postoperative oral supplementation consisted of 800 IU vitamin D and 1,500 mg calcium. Serum calcium (Ca), parathyroid hormone (PTH), and 25-OHD were measured preoperatively, 6 and 12 months postoperatively.

Results:
The mean age was 46 ± 9 years; 86% women and 68% white. Preoperatively and at 6 and 12 months postoperatively the prevalence of –D was 56%, 32% and 33%; mean 25-OHD was 20, 28, and 26 ng/ml; and hyperparathyroidism (HPT) in 42%, 38% and 46%, respectively. Ca was normal in 91%. At 6 and 12 months postoperatively %EWL was 54% and 66% respectively and %EWL did not correlate with 25-OHD or PTH. At all time points, blacks had a higher incidence of –D than whites ($p = 0.003$). At 12 months after GBP, HPT was still more common in patients with –D (58% vs. 9%; $p < 0.001$).

Conclusion:
With customary supplementation VDN is improved after GBP, but –D persists in a third of patients; blacks are at a significantly greater risk than whites. HPT does not improve and those with –D have a significantly higher rate of HPT. Further prospective studies are needed to determine how to optimize VDN and avoid potential long term skeletal complications after GBP.

41. MARKERS OF BONE AND CALCIUM METABOLISM AND EFFECTIVENESS OF SUPPLEMENTATION FOLLOWING GASTRIC BYPASS AND LAPAROSCOPIC ADJUSTABLE GASTRIC BANDING. Mary F. DiGiorgi, MPH, Amna Daud, MD MPH, William B. Inabnet MD, Beth Schrope, MD PhD, Meredith Urban-Skuro, MS RD,

Nancy Restuccia, MS RD, Marc Bessler, MD, Center for Obesity Surgery Columbia University Medical Center, Columbia, MO

Background:
Several studies have suggested that morbid obesity is associated with vitamin D deficiency and secondary hyperparathyroidism. Studies have also suggested that there is an increase in vitamin D deficiency, bone resorption, and secondary hyperparathyroidism following gastric bypass surgery for morbid obesity. Few studies have evaluated vitamin D metabolism following laparoscopic adjustable gastric banding and none have compared these results to those after gastric bypass.

Methods:
Data on all patients undergoing primary gastric bypass (GBP; n=950) and laparoscopic adjustable gastric banding (LAGB; n=250) surgery at a tertiary-referral center from 6/1,996 through 12/04 were reviewed from a prospective database. All patients were advised to take at least 1,200 mg calcium and 800-1200 IU of vitamin D daily. Vitamin D levels were available for a total of 429 pre GBP (n=310) and LAGB (n=119) patients. Patient characteristics (age, gender, initial BMI, and co-morbidities) and markers for bone metabolism (25-OH Vitamin D, corrected serum calcium, Alkaline Phosphatase (in patients with normal GGT), and parathyroid hormone (PTH)) were evaluated pre-operatively and 3, 6, 12, and 24 months post-operatively. An analysis of variance (anova) and chi-square were performed.

Results:
All pre-op lab values, gender, age and comorbidities were similar between GB and LAGB patients, except initial BMI which was significantly greater in GB patients (50.2 vs 47.2). See table for laboratory value results.

	Gastric Bypass (n=310)					Lap Band (n=119)				
	Pre	3M	6M	12M	24M	Pre	3M	6M	12M	24M
Vit D	17†	22	21†	23†	19*	19†	26	27	25	28*
Alk Phos	80†	92	88†	80*@	94*†@	75†	78@	83@	68*†@	55*†@
% vit D def (<20)	71*	40	49	38	58	59	25	22	27	17
% Hi PTH (>65)	27*	0	8@	37@	50*	10*	14	21	0	0*

*Significantly different from lap band counterpart (p<.05)
†Significantly different from pre op values (p<.05)
@Significantly different within group over time (p<.05)

Conclusion:
LAGB patients achieve more significant improvement in vitamin D levels than GB patients. This may suggest increased effectiveness of supplementation in a purely restrictive procedure. The percentage of patients with an elevated PTH increased in GB patients while falling in LAGB patients. Alkaline Phosphatase increased over time in the GB patients, yet decreased in the LAGB patients suggesting increased bone turnover. Alkaline Phospatase and PTH findings may be secondary to ineffectiveness of calcium and vitamin D supplementation after gastric bypass. Therefore close attention to lab values and careful repletion is critical for long term bone health after gastric bypass surgery. With adequate supplementation LAGB patients improved their markers for bone health.

42. **EXPECTANT MANAGEMENT OF THE ASYMPTOMATIC GALLBLADDER AT THE TIME OF ROUX-EN-Y GASTRIC BYPASS (RYGBP).** **Dana D. Portenier, MD, John P. Grant, MD, Hilary S. Blackwood RN, MSN, A, Aurora D. Pryor, MD, Ross L. McMahon, MD, Eric J. DeMaria, MD, Duke University**

Background:
Based on the claim that about one-third of patients develop gallstones within 6 months of RYGBP, many have recommended pre-op ultrasound (US) on all patients and/or prophylactic cholecystectomy (CCY), or ursodiol to prevent stone formation.

Methods:
Prospective data were collected on 1,158 consecutive patients followed for at least 6 months post-RYGBP (2000 – 2005) to assess our practice of not routinely removing the gallbladder and not administering ursodiol.

Results:
277 (24%) had undergone CCY before RYGBP. Of the remaining 881 asymptomatic patients, 495 had preoperative US. Stones were identified in 98 (20%), sludge in 5 (1.0%), and polyps in 6 (1.2%). Of 809 patients with gallbladders left in situ following RYGBP, only 54 (6.7%) became symptomatic and required delayed CCY. Average excess weight loss at the time of delayed CCY was 60%. The risk of having delayed CCY appears to occur within the first 2 years after RYGBP as none of 173 patients followed from 23 to 214 months has required CCY.

GB U/S Status	**No. Patients**	**#GB Removed at RYGBP**	**# Patients at Risk**	**#GB Removed Later**	**% Removed**	**Months After RYGBP**	**Mean Months Postop**
Not Done	386	16	370	15	4	1-19	8.8
Normal	397	27	370	29	7.8	3-23	11.2
Gallstones	98	29	69	10	14.5	2-23	9.5
TOTAL	**881**	**72**	**809**	**54**	**6.7**	**1-23**	**10.2**

Conclusion:
Although CCY should be performed whenever symptoms mandate, the value of routine preoperative US and CCY is not apparent. Waiting until symptoms develop may simplify the operative procedure due to significant weight loss. As no patient has required CCY beyond 2 years, the risk for gallbladder disease appears to occur within the weight loss time frame. Using an expectant approach, most patients undergoing RYGB will not require CCY.

43. ROUTINE CHOLECYSTECTOMY IS NOT MANDATORY DURING SURGERY FOR THE MORBIDLY OBESE. Scott J. Ellner, DO, Tamara Myers, BS, Jeannine Giovanni, MD, Carlos A. Barba, MD, Saint Francis Hospital and Medical Center, Hartford, CT

Background:
Rapid weight loss is a risk factor for gallbladder disease. Despite this many bariatric patients do not develop gallbladder pathology. We report our single institution experience of 621 bariatric operations without the routine use of cholecystectomy.

Methods:
From October 2003 to August 2005, 621 patients underwent laparoscopic adjustable gastric banding (LAGB), laparoscopic Roux-Y gastric bypass (LRGBP) or open (ORGBP). Preoperatively, each patient was evaluated with an abdominal ultrasound (AUS) to elucidate the presence of gallstones. Patients with previous cholecystectomy were excluded. Symptomatic patients with AUS findings consistent with gallbladder disease had concomitant cholecystectomy at the time of their bariatric operation. Asymptomatic patients with positive or negative ultrasound findings did not have a cholecystectomy at the time of their bariatric operation.

Results:
Of 621 patients who underwent bariatric surgery, 170 (27%) had a previous cholecystectomy and were excluded. Of the remaining 451 patients (LAGB 98, LRGBP 184, ORGBP 169) 25 had a positive AUS with symptoms and a cholecystectomy at the time of the bariatric operation. Follow-up ranged from 4-25 months. Of the asymptomatic patients 324 had a negative AUS and 102 patients presented with AUS positive gallbladder pathology. Postoperatively, 29 (9%) asymptomatic/AUS negative patients developed symptoms with a positive AUS. Of the patients with no symptoms and a positive preoperative AUS 9 (9%) developed symptoms. Thirty-eight patients (LAGB 5, LRGBP 20, ORGBP 13) went on to have an elective laparoscopic cholecystectomy.

Conclusion:
The development of symptomatic/AUS positive gallbladder pathology was low after morbid obesity surgery warranting that mandatory cholecystectomy is not needed at the time of operation.

44. PERFORMANCE ON A CADAVERIC PORCINE LAPAROSCOPIC JEJUNO-JEJUNOSTOMY MODEL ENABLES ACCURATE EVALUATION OF TECHNICAL SKILLS IN THE OPERATING ROOM.

Camilo Boza, MD[1], Rajesh Aggarwal, MD[2], Alex Escalona, MD[1], Philip Bellilio, MD[1], Nicolas Devaud[1], Ara Darzi, MD[2], Luis Ibanez, MD[1] ,[1]Pontificia Universidad Catolica, Santiago, Chile, [2]Imperial College London, London, UK.

Background:
Laparoscopic Roux-en-Y gastric bypass (LRYGBP) is an effective surgical therapy for morbid obesity, but has a long and arduous learning curve. Fellowships aim to reduce the learning curve through preceptorship-based practice. However, many surgeons commence training on anaesthetized porcine model which is expensive and requires specialist facilities. The aim of this study was to develop and assess the use of a cadaveric porcine model for assessment of skills acquisition in LRYGBP.

Methods:
Porcine small bowel was filled with thickened solution, divided into 50cm lengths, and placed into a video-box trainer in a U-shape. This provided the illusion of two adjacent pieces of small bowel. Eight surgeons with varying laparoscopic bariatric surgical experience (median 38 LRYGBPs, range 0-340) performed a side-to-side stapled jejuno-jejunostomy on the model, and also on patients scheduled for LRYGBP. Assessment was by time taken, dexterity parameters (path length and number of movements) and scored by two reviewers on a video-based rating scale.

Results:
There were significant correlations between performance on the porcine model and patient for dexterity measures, i.e. left hand path length ($r=0.86$, $p=0.007$), right hand path length ($r=0.81$,$p=0.02$) and total number of movements ($r=0.74$,$p=0.04$), though not for time taken ($r=0.67$,$p=0.07$). There was also a significant correlation on video-based rating scores ($r=0.80$, $p<0.001$).

Conclusion:
This model is an accurate representation of a jejuno-jeunostomy in the human procedure. It is inexpensive, easy to`make, and does not require any special storage or handling facilities. This study also stresses the importance of dexterity as key factors for assessment of laparoscopic skill.

45. A COMPARISON OF THE EFFECTS OF GASTRIC BYPASS (GBP) AND THE BILIOPANCREATIC DIVERSION WITHE THE DUODENAL SWITCH (BPD/DS) ON BODY COMPOSITION 1 TO 2 YEARS AFTER SURGERY.

Gladys Wit Strain, PhD[1], Michel Gagner, MD[1], Alfons Pomp MD[1], William B. Inabnet, MD[2]
[1] Weill/Cornell, New York, NY [2]Columbia, New York, NY.

Background:
GBP is the most common surgery for weight loss in the United States. The BPD/DS is less routinely performed, perhaps because of its technical difficulty and metabolic concerns. The objective of this study was to determine if these procedures had differential effects on weight loss and body composition.

Methods:
Body composition was measured by bioimpedance methodology (Tanita 310 validated for morbid obesity) at initial consultation, and follow-up measurements were completed one to two years after surgery.

Results:
Thus far 47 patients with GBP and 18 with BPD/DS have follow-up measurements. Prior to surgery the Body Mass Indexes (BMI) were not different, pre-GB 48.5 ± 6.3 and pre-BPD/DS 52.2 ±10.8 ($p=0.08$). Percentage body fat also did not differ: GBP 48.9 ± 8.2 % and BPD/DS 47.9± 5.1% ($p= 0.65$). After surgery GBP BMI was 32.7± 5.8, BPD/DS

29.9 ± 6.1 (p= 0.09). GBP patients % body fat changed from 48.9± 8.2 % to 33.4±11.0% and BPD/DS decreased from 47.9 ± 5.1% to 24.8±10.6% (p=0.006). Further analysis revealed BMI had decreased 15.8± 5.3 units after GBP and 21.9±6.0 units after BPD/DS (p= 0.0002). The change in fat was 15.6± 9.1% after GBP and 22.3± 7.8% after BPD/DS (p= 0.008).

Conclusion:
The BPD/DS was more effective in reducing the BMI and promoting fat loss than the GBP. The assessment of the impact of these two surgeries on an individualized basis offers additional information. Longitudinal measurements of physiologic variables is essential for meaningful patient evaluations of bariatric procedures.

46. VAGAL BLOCKING FOR OBESITY CONTROL (VBLOC): STUDIES OF PANCREATIC AND GASTRIC FUNCTION AND SAFETY IN A PORCINE MODEL. **Katherine S. Tweden, PhD[1], Michael G. Sarr, MD[2], Michael Camilleri, MD[2], Michael L. Kendrick, MD[2], Frank G. Moody, MD[3], Michael D. Bierk, DVM[1], Mark B. Knudson, PhD[1], Richard R. Wilson, MD[1], Mehran Anvari, MD, PhD[4],[1]EnteroMedics Inc, St. Paul, MN, [2]Mayo Clinic College of Medicine, Rochester, MN, [3]University of Texas Health Science Center at Houston, Houston, TX, [4]McMaster University, Hamilton, Canada.**

Background:
Algorithms for vagal blockade utilizing intermittent, high-frequency electrical current are being evaluated for obesity treatment. The physiologic effects targeted are: (1) reducing food consumption and inducing early satiation and prolonged satiety by inhibiting gastric accommodation and contractile activity; and, (2) reducing calorie absorption by inhibiting pancreatic exocrine secretion (PES).

Historically, vagotomy for refractory ulcers resulted in short-term loss of appetite and body weight that usually resolved, although the mechanism(s) are unclear.

AIM: To evaluate the effects of intermittent, high-frequency electrical vagal blockade on PES and gastric contractions.

Methods:
In a chloralose-anesthetized (non-vagolytic) porcine model, electrodes were placed on anterior and posterior vagal trunks at the esophagogastric junction. PES, gastric contractions, heart rate (HR), blood pressure (BP) and blood glucose were measured before, during and after repeated applications of high-frequency algorithms. Vagal nerve morphology and function were evaluated in active (n=5) and control (n=2) animals after eight weeks of electrode implantation.

Results:
Vagal blockade decreased PES >80% (0.36±0.10 vs. 0.04±0.01 ml/h, n=4, p<.001). PES returned to baseline values within 5-30 minutes post-blockade. Gastric contractions occurred at a frequency of 4.0±0.1/min (n=2) during vagal stimulation as compared to 0.4±0.2/min (n=2) during vagal blocking. HR, BP and glucose remained unchanged. Vagal function and histopathology were normal at eight weeks.

Conclusion:
•Vagal blocking reversibly inhibits PES and gastric contractions.
•Safety of vagal blocking and electrode implantation is demonstrated in a porcine model.
•Physiologic changes during intermittent vagal blockade may offer potential for treating obesity without long-term loss of efficacy.

47. LAPAROSCOPIC SLEEVE GASTRECTOMY IN A PORCINE MODEL: PRELIMINARY STUDY OF GASTRIC WRAPPING USING PTFE DUAL MESH TO PREVENT GASTRIC ENLARGEMENT. **Kazuki Ueda, MD[1], Michel Gagner, MD, FACS[2], Luca Milone MD[2], Sergio J. Bardaro, MD[2] ,[1]Kinki University School of Medicine, Osakasayama, Japan, [2]Weill Medical College of Cornell University, New York, NY.**

Background:
The safety and efficacy of a laparoscopic approach to sleeve gastrectomy for morbid obesity has been well established. However, re-operative procedures or an additional malabsorptive procedure will be necessary because of inadequate weight loss because of stomach dilatation. To prevent the gastric dilatation postoperatively, we designed the sleeve gastrectomy with wrapping using PTFE dual mesh (Gore-Tex DualMesh Biomaterial, WL Gore, Flagstaff, AZ).

Methods:40
Five Yorkshire female pigs weighing 20-25 kg were used for this study. Three pigs underwent the sleeve gastrectomy with wrapping using PTFE dual mesh (wrapping group) and 2 pigs underwent simple sleeve gastrectomy (control group). In the wrapping group, one pig underwent the procedure laparoscopically. The operative procedure in wrapping group required: 1) omental dissection with left gastroepiploic vessel and short gastric vein dissection, 2) creation of the gastric sleeve using Endo-GIA 45-4.8 (United States Surgical Corp., Norwalk, CT, U.S.A.), 3) creation of two windows and tunnels at the lesser omentum, 4) wrap of the gastric sleeve with PTFE dual mesh, attached with Endo-GIA 45-4.8. The animals were weighed weekly after surgery.

Results:
Operative time was slightly longer in the wrap group than the control group. The removed stomach was similar in both groups. Postoperative complications were vomiting and regurgitation until 3 days postoperatively. Postoperative weight gain up to 8 weeks after surgery was significantly less in the wrapped than in the control group (p=.0006).

Conclusion:
Sleeve gastrectomy with wrapping using PTFE dual mesh is feasible to reduce the weight gain, although further investigation is needed.

48. BURST STRENGTH EXPERIMENTAL TEST OF STAPLE LINE SUTURES WITH AND WITHOUT SURGISIS®. Jose S. Pinheiro, MD, Ricardo V. Cohen, MD, Jose L. Correa, MD, Carlos A. Schiavon, MD, Hospital Sao Camilo, Sao Paulo, Brazil.

Background:
Surgical staplers are widely used in general surgery, have replaced conventional sutures and have become standard practice in many operations. Two of the most frequently reported problems associated with surgical staplers are staple line failure and bleeding. Surgisis® SLR TM (Cook, Bloomington, IN, USA) is a porcine small intestinal submucosal membrane applied over the staple line which might help prevent these problems.

Methods:
Forty animals (canine model developed at the University of São Paulo, São Paulo, Brazil) were submitted to general anesthesia and laparotomy. A 50 cm small bowel limb was removed using a linear stapler device. Burst strength pressures of 40 stapled closures were obtained. The biodegradable membrane was applied over the stapling device and was used on the same bowel segment creating a 30 cm limb. Burst strength pressures of the 40 stapled closures with and without the biodegradable membrane were measured. Suture line bleeding and ease of use of the membrane were also observed. Data were compared (t-test). Dogs were sacrificed after the procedure. Two surgeons with experience in staple devices performed all procedures.

Results:
Mean burst pressures of the staple line were 209.3 mmHg (SD±76.4 mmHg) and 441.3 mmHg (SD±128.6) without and with the biodegradable membrane, respectively, p=0.002. There was no in-vivo suture line bleeding. The biodegradable membrane was easy to use.

Conclusion:
The biodegradable membrane was able to increase the burst strength pressures of the stapled bowel segments. It might help prevent suture line leaks.

49. DOWNREGULATION OF MACROPHAGE MIGRATION INHIBITORY FACTOR (MIF) BY INSULIN DURING THE STEADY STATE PLASMA GLUCOSE TEST, NEW INSIGHTS IN MIF REGULATION. **Jeroen Nijhuis, MD[1], Francois Mvan Dielen, MD[2], Wim A. Buurman PhD[1], Jan Willem M. Greve, MD, PhD [2] , [1]University Maastricht, General Surgery, Maastricht, The Netherlands, [2]Universital Hospital Maastricht, General Surgery, Maastricht, The Netherlands.**

Background:
MIF is a cytokine associated with insulin resistance (IR). Increased MIF plasma levels were reported in morbidly obese patients. Moreover, MIF mRNA expression in mononuclear cells (MC) were increased in morbid obesity.

Insulin was reported to regulate MIF production ex-vivo. Moreover, MIF mRNA expression in MC decreased with increasing insulin sensitivity. To clarify regulation of MIF by insulin, we compared the effect of supra-physiological insulin levels in morbidly obese patients with different degrees of IR.

Methods:
IR was measured using Steady State Plasma Glucose (SSPG) levels. Measurement of SSPG levels requires supra-physiological administration of insulin. SSPG levels were measured preoperatively, 3 and 6 months postoperatively (Group A, 11 subjects) and 3 years postoperatively (group B, 11 subjects). Plasma MIF levels were measured during the SSPG test at timepoints 0 and 180 minutes.

Results:
IR was still present in group A. Group B showed increased insulin sensitivity. During SSPG testing plasma MIF levels significantly decreased from 0.54 +/- 0.39 ng/ml (t=0) to 0.25 +/- 0.14 ng/ml (t=180) in group A. Plasma levels of MIF in group B did not decrease (0.37 +/- 0.26 ng/ml (t=0) and 0.30 +/- 0.2 ng/ml (t=180)).

Conclusion:
This study is the first to show that insulin is able to regulate MIF production in vivo. Supra-physiological levels of insulin could only decrease plasma MIF levels in patients with severe insulin resistance (group A). Therefore we hypothesize that the increased MIF plasma levels observed in morbidly obese individuals could result partially from increased insulin resistance.

50. PREVALENCE OF HELICOBACTER PYLORI INFECTION AMONG PATIENTS UNDERGOING BARIATRIC SURGERY. **Ruth O'Mahony, MD, Tolga Erim, MD, Samuel Szomstein MD, Raul Rosenthal, MD, Cleveland Clinic Florida, Weston, FL.**

Background:
Thirty percent of Americans have a BMI over 30 (5% over 40), resulting in an increased demand for bariatric surgery. Twenty to 50% of people living in industrialized countries are infected with Helicobacter (H) pylori, which is believed to be involved in peptic ulcer disease and gastric cancer.

Our objective was to compare the prevalence of H. pylori in patients undergoing bariatric surgery with the general population.

Methods:
We collected H. pylori serologies on 240 morbidly obese patients, and 2,444 non-morbidly obese patients at the Cleveland Clinic Health System from 2003-2005. Hypothesis testing was performed using chi-square, logistic regression, and t-test as appropriate. STATA 8.0 was used for analysis.

Results:
H. pylori prevalence was 61.3% in the bariatric surgery group versus 48.2% in the general population control group ($P<0.001$). Bariatric patients had a 1.7 fold increased likelihood of having H. pylori when compared with controls (95% CI 1.3-2.2). Age greater than 35 was an independent risk factor for H. pylori infection ($P=0.002$) in both the bariatric and control groups. There was no association found between BMI and H. pylori status within the bariatric group.

Conclusion:
The prevalence of H. pylori infection among bariatric patients is significantly higher than the age-gender matched general population control group. Gastric bypass surgery renders a portion of the GI tract inaccessible to endoscopic screening or treatment for H. pylori infection. Therefore, patients undergoing evaluation for bariatric surgery should be evaluated for infection with H. pylori and treated preoperatively if infected.

51. IMPROVEMENT OF CLINICAL OUTCOMES FOR LAPAROSCOPIC GASTRIC BANDING PATIENTS BY USING THE INSUFLOW® PRE-CONDITIONING GAS DEVICE FOR THE PNEUMOPERITONEUM. Richard A Benavides, MD, Robert Powell, MD, Alvin Wong MD, Hoang Nguyen, MD, Surgery Center of Richardson, Richardson, TX.

Background:
Pre-conditioning gas by warming and humidification for the pneumoperitoneum has been shown to improve laparoscopic outcomes. It has been shown that this is due to preventing desiccation of the peritoneum, thereby reducing tissue inflammatory response. Few comparisons have been done comparing traditional cold dry, warmed only and warm humidified carbon dioxide.

Methods:
Evaluation of 113 (n=113) patients was done as a prospective, controlled, randomized, double blind study of laparoscopic gastric banding comparing traditional cold dry (n=35) vs. warm dry (Stryker Heated Insufflator Tubing (620-030-407)) (n=40) vs. warm humidified (Insuflow – 35o C/95% Relative Humidity)(n=38). Pain medications were given based on Verbal Assessment Pain Scores (VAS) and standardized for all groups based upon their score. Parameters of interest were: recovery room length of stay, pain location and intensity, and total pain meds used over 10 days.

Results:
Insuflow group had statistically significant differences from the other 2 groups showing improvement in all parameters considered. The warm dry group (Stryker Heated Insufflator Tubing) had significantly more pain medication use and increased shoulder and chest pain over the other two groups.

Conclusion:
Heated dry gas increased shoulder pain and pain medication use compared to traditional cold dry gas. The least amount of pain intensity and pain medication group was in the Insuflow group. Changing the quality of gas insufflation to warmed, humidified (Insuflow group) showed significant statistical reduction in shoulder pain, recovery room length of stay and decreased pain medication requirements up to 10 days postoperatively in laparoscopic gastric banding patients.

52. DOES EPIDURAL ANAESTHESIA HAVE AN INFLUANCE ON POSTOPERATIVE RECOVERY AND LUNG FUNCTION AFTER VARIOUS BARIATRIC OPERATIONS. Hermann Nehoda, MD, PhD, Barbara Erne, MD, Monika Lanthaler MD, Franz Aigner, MD, Univ. Hospital Innsbruck, Innsbruck, Austria.

Background:
Morbidly obese patients have a reduced total lung capacity compared with those with normal weight because of intra-abdominal fat masses that stretch the diaphragm and push it cranially. We hypothesized that anesthesia techniques may influence the postoperative recovery of these patients. An epidural single-shot anesthesia (EDA) with Bupivacain® may shorten length of stay at the post-anesthesia care unit (PACU) when compared with general anesthesia.

Methods:
We included 32 morbidly obese patients (BMI 42,2 SD 5,9) undergoing laparoscopic gastric banding, gastric bypass, rebanding or gastric pacing. All patients underwent preoperative lung function testing and arterial blood gas analysis. We randomly assigned these patients to receive general anesthesia (group A) or general anesthesia combined with EDA (group P), and prospectively studied the effects on postoperative recovery. The predefined criteria for patient discharge from PACU were oxygenation over 90% for more than 20 minutes breathing ambient air.

Results:
Thertee was no significant difference in length of stay between the two groups (p=0,167) in the PACU. Patients in group P showed better preoperative oxygenation than group A, but were worse postoperatively. Patients undergoing

gastric bypass surgery who underwent EDA (group P) required only one third of the postoperative opiates compared with patients in group A.

Conclusion:
Patients in group P compared with group A had neither improved postoperative recovery nor reduced length of stay in the PACU. However, patients undergoing gastric bypass operations required less opiates with EDA compared with general anesthesia.

53. VERTICAL BANDED GASTROPLASTY VS. ADJUSTABLE GASTRIC BANDING: A PROSPECTIVE LONG-TERM FOLLOW UP STUDY. Karl A. Miller, MD, Emanuel Hell, MD, Antonia Pump, MD, Surgical Department, Clinic Hallein, Hallein, Austria.

Background:
Vertical banded gastroplasty (VBG) has been in clinical use since 1979 and the adjustable gastric band (AGB) since 1985. The aim of this study was to compare the outcome, short- and long-term complications of the two procedures.

Methods:
Within a period of 6 years (1995-2001) 1,117 gastric restrictive procedures were performed in the course of a prospective non-randomized comparative trial. 563 VBG´s and 554 AGB´s by two surgeons were entered into the study. Patient selection was performed by admittance to one of the two surgeons. The Bariatric Analysis and Reporting Outcome System (BAROS) were performed to evaluate the postoperative health status and quality of life.

Results:
The mean duration of follow up was 75 months with a minimum of 4 years (range, 48 to 134 months) with an overall follow-up rate of 92%. No statistically significant differences of outcome were noted for weight loss, reduction of co-morbidity or improvement in quality of life following AGB or VBG in the short-term follow-up of 3 Years. The 30 day mortality rate was 0.4% (2 patients) in the VBG and 0.2% (1 patient) in the AGB group. The overall re-intervention rate on the long-term follow-up was 29,1 % for the VBG and 8,3 % for the AGB group ($p<0,001$). The excess weight loss (EWL) was significantly higher in the VBG after 12 months (58% vs. 42%, $p>0,05$). On the long-term follow-up no significant difference in weight loss was observed (62 % for VBG and 64 % for AGB, $p=0.92$). The BAROS score in the short term (3 years) was good to excellent in the VBG and AGB group in 94% and 90% but long term follow-up was significantly in favor of the ASGB group, 84 % vs. 58%, respectively, $p<0,01$.

Conclusion:
This long-term follow-up study shows that VBG and AGB are effective restrictive procedures in terms of weight loss. A lower re-operation rate with a better health status as well as higher quality of life for the ASGB patient group has been documented.

54. A TECHNIQUE FOR PREVENTING PORT SITE COMPLICATIONS IN LAPAROSCOPIC ADJUSTABLE GASTRIC BANDING. Scott J. Ellner, DO, Syed Ali, MD, Jeannine Giovanni, MD, Carlos A. Barba, MD
Saint Francis Hospital and Medical Center, University of Connecticut Medical School, Hartford, CT.

Background:
Laparoscopic adjustable gastric banding (LAGB) is a safe, controlled, and reversible method for achieving weight loss in the morbidly obese patient. Port site related complications such as infection, tube leaks, dislodgement, poor access, and 'flipping' of the port have proven to be the Achilles' heel for LAGB surgery. We report our experience with a novel technique to anchor the port to the abdominal wall to prevent these complications.

Methods:
We developed a technique of port site fixation using a synthetic mesh as an anchor to the fascia of the abdominal wall which is buttressed with 5 mm tacks placed under direct visualization. Two hundred LAGB patients had port placement in this fashion. We compared the outcomes of this port fixation group of patients to our first 100 patients with conventional fixation using sutures alone.

Results:
Of our first 100 LAGB patients 10 (10%) developed port site related complications. Five patients had flipped ports. Two developed wound infections and three had tube perforations. Of the 200 patients with mesh fixation one patient

developed a tube perforation and a second patient asked to have the port repositioned for personal reasons (1% complication rate). Furthermore, the time to anchor the port with mesh and tacks was 5 minutes compared to 12 minutes for suturing alone ($p<.05$).

Conclusion:
In our experience this new technique, port site mesh fixation for LAGB, is safe, prevents common port site complications and is more expeditious than direct suture anchoring of the port originally described.

55. INTRABAND MANOMETRY FOR BAND ADJUSTMENT: CONCEPTS, LIMITS AND PERSPECTIVES.

Wolfgang Lechner, Michael Gadenstotter, Ruxandra Ciovica, Werner Kirchmayr, Gerhard Schwab
Hospital of Krems, Krems, Austria.

Background:
Laparoscopic gastric banding has become a routine procedure in the treatment of morbid obesity. Postoperative band adjustment is an essential part of it. We present a new method of band adjustment based on in-vivo measurement of the intra-band pressure.

Methods:
The data of 40 band adjustments are presented. All patients underwent gastric banding using the Swedish adjustable gastric band (SAGB) in *pars flaccida* technique.

25 measurements were done 6 weeks postoperatively at the first adjustment, 15 records during adjustments more than a half year after the band implantation. Measurements were performed according to two different protocols investigating basic pressures and dynamic pressures during bolus application.

Results:
The basic concepts of intra-band manometry are demonstrated. The in-vivo intra-band pressures correlated to the amount of outflow obstruction which can be regulated by band adjustment. The dynamic pressures inside the band have a strong correlation to the esophageal peristalsis, primary and secondary. The method is limited if there is pouch dilatation or very week peristaltic action.

Conclusion:
Intra-band manometry is a reliable method to control band adjustment without need for x-ray studies in low pressure bands. This physiologic method of adjustment provides information about esophageal outflow obstruction produced by the gastric banding device and about esophageal function.

56. THE USE OF BIOABSORBABLE STAPLE REINFORCEMENT MATERIAL IN GASTRIC BYPASS: A PROSPECTIVE RANDOMIZED CLINICAL TRIAL.

Karl A. Miller, MD, Antonia Pump, MD, Peter Herbst, MD
Surgical Department, Clinic Hallein, Hallein, Austria.

Background:
Staple-line failure, although uncommon, can result in significant morbidity and even mortality. Staple-line buttressing has been developed to improve staple-line strength, decrease bleeding and minimize the risk of leak. Many different products are currently available. However, most have not been proven in clinical trials for their clinical relevance.

Methods:
From April 2004 to March 2005, 48 morbidly obese patients with laparoscopic Roux-en-Y gastric bypass (LRYGBP) were enrolled in the study. Patients were randomly allocated to 2 groups according to the use of polyglucolide acid and trimethylene carbonate (Seamguard ® Group A, n= 24) or not (Group B, n= 24) by an investigator initiated study. All patients had a barium x-ray 3 months and 12 months postoperatively.

Results:
Peri- and postoperative mortality were absent. Intra-operative methylene blue test was positive in one patient (Group B). No conversions to laparotomy were required. No patient required re-operation or transfusion because of extraluminal bleeding and no anastomotic leak was detected in either group postoperatively. Mean number of clips used was significantly lower in Group A patients (2 vs. 22, $p<0.001$). The operating time was significantly less in Group A patients (115±48 (85-210) vs. 167±65 (120-240), $p<0.01$. The postoperative hemoglobin was significantly

higher in Group A 12.8±2.1 (9.2-15.4) vs. Group B 10.2±3.7 (8.1-13.8), p<0.01. Gastro-gastric fistula was detected in 3 Group B patients.

Conclusion:
Synthetic reinforcement material minimized staple-line bleeding and saved operating time with no animal source contamination. No adverse events could be observed related to the buttressing material.

57. ANTECOLIC VERSUS RETROCOLIC ALIMENTARY LIMB IN ROUX-EN-Y LAPAROSCOPIC GASTRIC BYPASS: COMPARATIVE STUDY. Alex Escalona, MD, Nicolas Devaud, MD, Gustavo Perez, MD, Fernando Crovari, MD, Luis Ibez, MD, Pontificia Universidad Católica de Chile, Santiago, Chile.

Background:
Laparoscopic Roux-en-Y Gastric Bypass (LRYGBP) has become the most common surgical treatment for morbid obesity. Technical aspects in this procedure, such as alimentary limb route are still controversial. The aim of this study was to compare short term results of patients with LRYGBP and antecolic alimentary limb route to those with the retrocolic route.

Methods:
754 patients who underwent LRYGBP were prospectively followed between August 2001 and August 2005. Patients´ demographic and clinical data, together with their surgical short term results were registered. Of theses patients, 300 underwent retrocolic LRYGBP and were compared to 454 patients who underwent antecolic LRYGBP. The mean age was 37 ± 10 years. 552 (73 %) of these patients were female with a mean BMI of 41.3 ± 5 (kg/m^2). The median follow up was 15.8 months.

Results:
28 patients (9,3%) of the retrocolic vs. 8 (1.8%) of the antecolic group presented bowel obstruction during the post operative period (p<0.001). Among retrocolic patients, 24 (86%) developed internal hernias vs. 3 (38%) in theantecolic patients. Retrocolic O.R.= 0.17 for internal hernia compared to the antecolic limb route (p<0.001). Hernia sites were through the transverse mesocolon (67%), jejuno-jejunostomy mesentery (29%) and Petersen defect (4%).There were no significant differences in sex, age, BMI and operative time between both groups.

Conclusion:
A higher rate of bowel obstruction or internal hernia was observed in retrocolic compared to antecolic LRYGBP. The retrocolic route of alimentary limb has a significant risk for this postoperative complication.

58. FACTOR Xa LEVELS DO NOT APPEAR TO CORRELATE WITH RISK OF BLEEDING IN PATIENTS RECEIVING LOW MOLECULAR WEIGHT HEPARIN (LMWH) FOR DEEP VEIN THROMBOSIS (DVT) PROPHYLAXIS FOLLOWING ROUX-EN-Y GASTRIC BYPASS. John T. Paige, MD[1], Vonda Gaitor-Stampley, NP[1], Biswanath P. Gouda, MD, MPH[1], P. Gre Scalia, MD[2], Teresa E. Klainer, MD[1], William J. Raum, MD[1], Louis F. Martin, MD[1], [1]LSU, New Orleans, LA, [2]Glen Falls, New York, NY

Background:
Pulmonary embolism (PE) remains a leading cause of death after Roux-en-Y gastric bypass. Currently, various regimens of low molecular weight heparin (LMWH) are used for perioperative deep vein thrombosis (DVT) prophylaxis. Factor Xa has been suggested as a potential marker of LMWH activity. We have developed a perioperative prophylactic DVT regimen for our bariatric patients in which they receive a dosage of LMWH based on their body mass index (BMI). We looked at whether Factor Xa levels correlated with bleeding risk.

Methods:
A retrospective, single institution review of 102 patients undergoing a gastric bypass from November 2003 to April 2004 was performed. Twelve patients received transfusions. Factor Xa levels were present for 7 of 12 patients requiring transfusions and 74 of 90 patients not requiring transfusions. The average Factor Xa level for each group was compared.

Results:
The transfusion rate for the group was 11.7% with an average of 2.6 units of blood given (std dev 1.2). There was no

statistical difference between the average Factor Xa value for transfused and non-transfused patients (0.13 ± 0.08 vs. 0.16 ± 0.19, p = 0.7).

Conclusion:
Factor Xa levels do not appear to correlate with bleeding risk in patients receiving LMWH prophylaxis following gastric bypass. Determining such risk may require another marker.

59. POST DISCHARGE PROPHYLACTIC ANTICOAGULATION IN GASTRIC BYPASS PATIENTS - HOW SAFE. Peter B. Ojo, MD, Bolanle Asiyanbola, MD, Geoffrey Nadzam, MD, FACS, Denise Barajas, MD, FACS, Steve Yood, MD, FACS, Elmer Valin, MD, FACS, Randolph Reinhold, MD, FACS, Hospital of Saint Raphael, New Haven, CT.

Background:
It is becoming an increasingly common practice to discharge patients on prophylactic anticoagulation because pulmonary embolism (PE) is a common causes of mortality after gastric bypass (GBP). This study was undertaken to: 1) determine the incidence of major bleeding in GBP patients discharged on prophylactic LMW heparin – Lovenox® and 2) to determine if the risk of bleeding correlated with the dose used.

Methods:
Retrospective chart review of all open GBP cases from June 2004 - August 2005. (n=338). 127 patients were sent home on Lovenox® for 2wks. Indications were: BMI>50 with chronic venous stasis and/or obstructive sleep apnea, previous history of PE or DVT, sedentary lifestyle or BMI >60. The study group was divided into two groups: 40mg bid and 60mg bid Lovenox® as shown.

Major bleeding was defined as bleeding occurring during the period of Lovenox® use associated with either a drop of the HCT by 5 points, and/or bleeding related readmission or intervention. Excluded were patients who were on Coumadin® or those treated with therapeutic Lovenox®.

Results:
The groups were similarly matched for age, BMI and risk factors. No episode of major bleeding occurred after discharge in either group.

	BMI < 60	**BMI ≥ 60**	**Total**
LOV 40	40	19	59
LOV 60	44	24	68
Total	84	43	127

Conclusion:
The use of Lovenox® for prophylactic anticoagulation for 2 weeks after open GBP is not associated with risk of major bleeding.

60. AN EARLY COHORT OF 60 MORBIDLY OBESE US TEENAGERS UNDERGOING LAPAROSCOPIC ADJUSTABLE GASTRIC BANDING. George Fielding, FRACS, Christine Ren, FACS, Evan Nadler FACS, Alison Youn, RN, NYU School Medicine, New York, NY.

Background:
Surgery currently offers the only hope of sustained weight loss for morbidly obese patients. There is a rapidly expanding population of morbidly obese teenagers who face the same health risks as adults. Laproscopic adjustable gastric band (LapBand®) surgery has been offered to these teenagers as therapy for their obesity.

Methods:
Data has been collected for co-morbidity, safety, follow-up and weight loss on all teenagers (13-19 yrs) who have undergone LapBand® surgery at our institution since 2001

Results:
Sixty teenagers (F48, M12; 16.1yrs; 52 Caucasian; wt 296 lbs; BMI 47) have had LapBand® surgery. Forty-seven are < 1 year follow-up. The last 18 patients (age 14-17yrs) have been done under an FDA IDE, since June 2005. There are an additional 6 patients currently being evaluated. Co-morbidity included dyslipidemia 22%, depression 20%, diabetes 20%, back pain 20%, asthma 17%, hypertension 14%, PCOS 14% and sleep apnea 7%. Funding for surgery has been by insurance, self-pay, and most recently by philanthropy. Mean OR time was 35 mins. All patients were discharged under 24 hrs, with a recent trend to same day discharge. There was no mortality, complications, or acute readmissions related to surgery. All patients are attending follow-up. BMI is 35kg/m^2, and EWL is 57%, for the 13 teens at 1 year.

Conclusion:
Lap-band surgery may become the treatment of choice for morbidly obese teens due to its safety and effectiveness.

61. PREDICTIVE FACTORS OF FAILURE AFTER LAPAROSCOPIC GASTRIC BANDING. Philippe Mognol, MD, Jean-Pierre Marmuse, Bichat, Paris, France.

Background:
Adjustable gastric banding is a popular bariatric operation in Europe. Contrasting results have been published. The objective of this work was to validate predicting factors that would predict failure after adjustable gastric banding.

Methods:
Over a period of 6 years 670 patients with morbid obesity were treated with gastric banding. Preoperative data, postoperative weight loss and long-term complications were prospectively obtained and retrospectively analyzed. Failure was defined as band related complications or insufficient weight loss.

Results:
Mean age of the patients was 40 years with a mean preoperative BMI of 45 kg/m^2. Excess weight loss at 12, 24, and 36 months was 45%, 53% and 55%, respectively. Concerning age and sex, there was no difference in term of weight loss and complications rate. However, a BMI more than 50 kg/m^2 had a strong predictive value. Patients called 'super obese', BMI >50, had a high rate of failure (80%) even though the weight loss was often large in absolute value, but the BMI at the follow up remained high, > 40. Perigastric dissection led to 20.5% slippages, compared with 2.6% with *pars flaccida* technique.

Conclusion:
Laparoscopic gastric banding can achieve an effective weight loss. Pathways to choose the best surgical method for the individual patient are necessary to reduce failures after gastric banding. Meanwhile the initial BMI appears to be the most important predictive factor of success or failure.

62. DOES (POUCH) SIZE REALLY MATTER? Atul K. Madan, MD, David S. Tichansky, MD, Jerry C. Phillips MD, University of Tennessee, Memphis, TN.

Background:
The mechanism of weight loss after gastric bypass surgery is still unclear. Restriction, malabsorption, and hormonal changes may all play a role. Herein, we investigate one aspect of restriction: pouch size. Our hypothesis is that a small pouch with no fundus present leads to more weight loss.

Methods:
Upper gastrointestinal radiological(UGI) studies were reviewed by three blinded experts(2 bariatric surgeons and 1 radiologist) to determine pouch and fundus size. Pouch and fundus size was graded as follows: SI–smaller than average pouch, SII–average pouch (determined as 1½ times the diameter of small bowel), SIII–larger than average pouch, SIV–over 3 times the size of an average pouch; F0–no fundus present, FI–slight fundus present, FII–fundus noted, FIII–large amount of fundus noted, FIV–majority of pouch was fundus. Percentage excess weight loss (%EWL) and successful weight loss (A: greater than 50% EWL, B: within 50% of ideal body weight, C: loss of greater than 25% of preoperative weight) were calculated.

Results:
59 patients were included with 97% follow-up(>1 year). Average follow-up was 19.4 months (range: 6.6 to 35.8

months). No SIV or FIV were noted. There were no statistical significant differences between in %EWL or success for either pouch size or fundus size as noted in the table.

Grade	%EWL	Success A	Success B	Success C
SI	70%	92%	78%	92%
SII	74%	100%	93%	86%
SIII	64%	100%	87%	100%
F0	72%	92%	77%	92%
FI	69%	92%	71%	92%
FII	72%	94%	87%	94%
FIII	66%	100%	83%	83%

Conclusion:
There may be a trend toward lower mean %EWL with larger pouches and large amount of fundus. However, there are no statistically significant differences. Larger pouches and the presence of large fundus (within reason) still result in a high rate of success after laparoscopic gastric bypass.

63. PROSPECTIVE RANDOMIZED DOUBLE BLINDED TRIAL OF BANDED VERSUS STANDARD GASTRIC BYPASS IN PATIENTS WITH SUPEROBESITY - EARLY RESULTS.

Marc Bessler, MD[1], Amna Daud, MD, MPH[1], Mary F. Digiorgi, MPH[1], Lorraine Olivero-Rivera, FNPCS[1], Janice Blok, PA[2]
[1]Center For Obesity Surgery, Columbia University And New York Presbyterian Hospital, New York, NY, [2]New York Presbyterian Hospital, New York, NY.

Background:
Banded gastric bypass has been reported to result in superior weight loss compared to standard non-banded gastric bypass. However, adequate comparison of these procedures has not been reported

Methods:
90 patients have been enrolled in this prospective randomized double blinded trial comparing banded versus non banded gastric bypass for treatment of superobesity. The banding technique involved placement of 1.5x5.5 cm polypropylene band around the proximal gastric pouch of a standard gastric bypass following the technique of Capella. Chi-square and analysis of variance were performed to determine differences in patient characteristics (gender, age and initial BMI) as well as percent excess weight lost (%EWL) at 6, 12, 24 and 36 months post op, improvement or resolution of co-morbidities and complications in banded versus non-banded gastric bypass groups.

Results:
As expected there were no differences in patient characteristics and incidence of co-morbidities between the banded and non banded groups. There were no significant differences in resolution of co-morbidities. There were no significant differences in %EWL at 6, 12 and 24 months; however banded patients achieved significantly higher %EWL at 36 months. Intolerance to meat and bread was higher in banded patients. The overall complications were not significantly different between the groups. There have been no band erosions to date. There were no deaths in either group and rate of follow-up was 92%.

	Banded (n=46)	Non-Banded (n=44)	P value
BMI (kg/m^2)	59.4	59.7	NS
Female %	56.5	73.8	NS (0.09)
Age (yrs)	40.6 ± 7.4	42.6 ± 7.2	NS
6 mos %EWL	43.1	24.7	NS
12 mos %EWL	64.0	57.4	NS
24 mos % EWL	64.2	57.2	NS
36 mos % EWL	73.4	57.7	<0.05
Complications %(n)	23.9 (11)	29.5 (13)	NS
% of patients achieving 50%EWL	63%	45%	NS (0.09)

Conclusion:
These results suggest that although initial weight loss was not significantly different between the two groups, the

banded patients continue to lose weight up to three years. The polypropylene band appears to be well tolerated. We plan longer follow-up to confirm the possibility of further weight loss or prevention of weight regain in the banded group as well as long-term band complications.

64. ENDOSCOPY AND UPPER GI CONTRAST STUDIES ARE COMPLEMENTARY IN THE EVALUATION OF WEIGHT REGAIN AFTER BARIATRIC SURGERY. Stacy A. Brethauer, MD, Valentine N. Fonsam, MD, Vadim Sherman MD, Philip R. Schauer, MD, Bipan Chand, MD, Cleveland Clinic Foundation, Cleveland, OH.

Background:
Patients are presenting with increasing frequency for failed weight loss or weight regain after bariatric surgery. Detailed anatomic and behavioral information is required to select appropriate candidates for re-operation.

Methods:
Patients referred for weight regain after bariatric surgery who had completed both endoscopy (EGD) and a contrast study (UGI) were included. Surgical endoscopy and radiology reports were reviewed. All patients received extensive nutritional counseling.

Results:
Between 1/03 and 10/05, 23 patients qualified (19 women, 4 men, average age 50). 16 patients had undergone gastroplasty (Group A) and 7 had undergone RYGBP (Group B). The average BMI was 44 at the time of referral (range 33 to 58). In group A, there were 8 staple line disruptions. Six were seen on UGI and EGD, one on UGI only and one on EGD only. UGI diagnosed one dilated esophagus not appreciated on EGD, and EGD provided additional information for 7 patients (2 Barrett's, 6 abnormal pouch size, 2 enlarged stomas). In Group B, UGI detected one dilated esophagus and one dilated Roux limb not appreciated on EGD, and EGD detected 5 enlarged pouches and 3 enlarged stomas not reported on UGI. 19 patients (83%) have been offered a revisional procedure based on these results.

Conclusion:
Endoscopy and gastrointestinal contrast studies are complementary in the evaluation of patients with weight regain after bariatric surgery. Both studies detect the majority of staple line disruptions. UGI may detect esophageal or Roux limb abnormalities more frequently than EGD while EGD provides more useful pouch and stoma information.

65. QUALITY OF LIFE AND RESOLUTION OF CO-MORBIDITIES IN SUPER OBESE PATIENTS REMAINING MORBIDLY OBESE FOLLOWING ROUX-EN-Y GASTRIC BYPASS. John C. Bennett, MD, Christopher Northup, MD, University of Virginia, Charlottesville, VA

Background:
Morbidly obese patients in the superobese category (BMI ≥60) often remain morbidly obese (BMI ≥35) following gastric bypass. We hypothesized that even though many of these patients remain morbidly obese after surgery, they still see a significant improvement in co-morbidities and quality of life.

Methods:
Patients who had undergone RYGBP and had a BMI ≥35 at one year follow-up were identified in our database. The records of 120 patients were reviewed for the presence of co-morbidities as well as quality of life. The resolution of co-morbid conditions was evaluated and the patients were given a Quality of Life self-assessment.

Results:
The average preoperative and postoperative BMI's were 63.2 and 43.7, respectively. Preoperatively, the incidence of co-morbidities were Diabetes (35%), Hypertension(50.8%), hyperlipidemia (15%) and GERD(34.2%). At one year follow-up the cure rates for each of the co-morbid conditions were Diabetes (73.8%), Hypertension (62.3%), Hyperlipidemia (38.9%) and GERD (87.8%%). In addition, over 90% of patients felt they had a significant improvement in their quality of life.

Over 90% of patients felt that they were better postoperatively in the areas of overall health and ability to move about. 80% had improved ability to exercise, energy levels, self esteem and physical appearance. 70% saw their ability to work and their social relationships as improved. 56 % felt that their sexual relationships had improved

Conclusion:
Patients that remain morbidly obese following surgery do achieve adequate resolution of co-morbid conditions following RYGBP. In addition there is also a significant improvement in quality of life.

66. SURGICAL REVISION OF THE LOOP (MINI) GASTRIC BYPASS (MGBP) PROCEDURE: MULTI-CENTER REVIEW OF COMPLICATIONS AND CONVERSIONS TO ROUX-EN-Y GASTRIC BYPASS (RYGBP).
William H. Johnson, MD[1], Adolfo Z. Fernandez, MD[2], Eric J. DeMaria, MD[3],[1]Duke University Medical Center, Durham, NC, [2]Wake Forest University Baptist Medical Center, Winson-Salem, NC [3]Duke University Medical Center, Virginia Commonwealth University Health System, Durham, NC.

Background:
The claim that the MGBP with its loop gastrojejunostomy is safer and equally effective to the RYGBP has been promoted before validation. Rumors of unreported complications and accuracy of follow-up are additional concerns. This study was undertaken to identify MGBP patients who required revisional surgery in 3 hospitals within the region of the U.S. where the MGB procedure originated to assess the claim that revision to RYGBP is rarely needed.

Methods:
The databases of three medical centers were retrospectively searched to identify patients undergoing surgical revision after MGBP, all of which were done elsewhere.

Results:
Thirteen patients presented with complications after undergoing MGBP. Complications included gastrojejunostomy leak (2), reflux (6), intractable marginal ulcer (2), acute GI bleed, malabsorption (2), and weight gain. Ten of the patients required conversion to RYGBP. Three patients required multiple abdominal explorations.

Conclusion:
This preliminary review confirms that MGBP does require revision in some patients and that conversion to RYGBP is a common form of revision, despite the fact that the denominator of MGBP cases performed during this time frame is not known. The need for MGBP revision is underestimated as the data reflect the experience of only 3 hospitals. Most worrisome is the frequency of complications being managed by surgeons who did not perform the original procedure. A randomized trial comparing MGBP to RYGBP is indicated before widespread adoption of the loop procedure. A national registry to record complications of MGBP is proposed to gain insight into the need for revision after MGBP.

67. A 2-DECADE SPECTRUM OF REVISIONAL BARIATRIC SURGERY AT A TERTIARY REFERRAL CENTER.
Elizabeth M. Nesset, MD, Michael L Kendrick, MD, Scott G. Houghton, MD, Jane L. Mai, Geoffrey B. Thompson, MD, Florencia G. Que, MD, Kristine M. Thomsen, Michael G. Sarr, MD, Mayo Clinic, Rochester, MN

Background:
Ineffective weight loss or complications of previous bariatric surgery often require revisional bariatric procedures. Our aim was to define indications, operative approach, and outcomes of revisional bariatric procedures over 2 decades at a tertiary center.

Methods:
From our prospective database (n=1,584) from 1985-2003, 224 (14%) underwent revisional bariatric procedures. Follow-up (mean 7 yr; range 3 mo-19 yr) was obtained (from patient records and questionnaires and was current in 98%). Patients were grouped according to operative indications: Group A—unsatisfactory weight loss (n=103), the majority were gastroplasties or dehisced gastric bypasses; Group B mechanical/symptomatic/nutritional complications (n=96), the majority were complications of gastroplasties or gastric bypass; and Group C severe nutritional/metabolic problems (n=25), usually stenosed gastroplasties, jejunoileal bypasses, or malabsorptive procedures.

Results:
Operative mortality was 0.9% (1 pulmonary embolus, 1 cardiac arrest). Serious operative morbidity was 25% (wound

infection 12%, leak 3%, pulmonary embolus 2%, anemia/hemorrhage 2%, pneumonia/prolonged ventilation 2%, other 4%). 96% underwent conversion to or revision of Roux-en-Y gastric bypasses (RYGBP). Group A achieved substantial weight reduction in mean BMI from 51 to 38, resolution of complications occurred in 84% of Group B, and nutritional/metabolic problems were resolved in 78% of Group C. Patients after 1991 were more likely to present with mechanical/symptomatic/metabolic complications rather than for unsuccessful weight loss (p=0.003).

Conclusion:
Revisional bariatric surgery is safe and effective in experienced centers. Complications (mechanical/symptomatic/nutritional) or unsatisfactory weight loss after primary bariatric procedures can be treated effectively with revision to RYGBP.

68. ANATOMIC FINDINGS AND OUTCOMES FOLLOWING ANTIREFLUX PROCEDURES IN MORBIDLY OBESE PATIENTS UNDERGOING LAPAROSCOPIC ROUX-EN-Y GASTRIC BYPASS. **Todd A. Kellogg, MD, Raphael Andrade, MD, Michael Maddaus, MD, Bridgit Slusarek, RN, Henry Buchwald, MD, PHD, Sayeed Ikramuddin, MD, University of Minnesota, Minneapolis, MN.**

Background:
We report outcomes of laparoscopic takedown of Nissen fundoplications with conversion to a Roux-en-Y gastric bypass (RYGBP)

Methods:
January 2001 and October 2005 we identified patients at the University of Minnesota who underwent laparoscopic Nissen takedown with conversion to RYGBP.

Results:
Ten patients were identified. Eight patients had GERD preoperatively of whom 5 underwent a pH probe study. In one patient the pH study was negative. There were no conversions to open. Seven prior procedures were performed laparoscopically. Seven patients were female. The average BMI preoperatively was 44.1, range (35-61) mean age was 47. Mean follow-up was 16.3 months, range (3-38 months). BMI at follow-up was 30.6. Operating time was 321 minutes, range (222-472 minutes). Length of stay was 3.1 days, range (2-4 days). There were no major short term complications. Minor complications included drain site infections (3) with abscesses (2) one requiring readmission, pressure sore of the lateral aspect of the foot (1),pneumonias (2). No strictures were observed. One internal hernia occurred. There was 100% improvement in GERD symptoms with complete resolution in 7/8 (88%). Wrap disruption was present in 5/8 symptomatic patients. Herniation of the wrap was present in 1/8.One patient had both herniation and wrap disruption.

Conclusion:
Laparoscopic conversion of a Nissen to RYGBP can be performed safely. Disruption of the wrap is the most common finding in symptomatic obese patients followed by herniation of the wrap. Symptom resolution may be more durable than primary anti-reflux surgery in this patient population.

69. REVERSAL OF ROUX-EN-Y GASTRIC BYPASS: INDICATIONS, TECHNIQUE, AND OUTCOMES. **Christopher L. Bell, MD, Jamison D. Feramisco, PhD, John H. Rogers, MPH, David A. Provost, MD, University of Texas Southwestern Medical Center, Dallas, TX.**

Background:
Roux-en-Y gastric bypass (RYGBP) is the most commonly performed procedure for the treatment of morbid obesity. Although rarely reported, late complications may necessitate RYGBP reversal. The indications, technique, and outcomes following reversal of RYGBP are presented.

Methods:
We retrospectively reviewed the institutional bariatric database and identified patients who had undergone RYGBP reversal. Factors evaluated included patient demographics, indication for reversal, and outcomes.

Results:
Ten patients were identified who had undergone reversal of RYGBP. All patients were female and the mean age was 45 years (35-66 years). Indications for RYGBP reversal included severe nutritional complications in 7 patients and opioid dependent intractable abdominal pain with no definable etiology in 3. Severe nutritional complications included: malnutrition (4 patients), intractable dumping syndrome (1), intractable nausea and vomiting (1), and short bowel syndrome following midgut volvulus (1). 4 patients with nutritional complications had gastrostomy tube placement for enteral feeding prior to reversal without resolution of symptoms. All patients underwent excision of Roux limbs and restoration of gastric continuity. Seven patients underwent Heineke-Mikulicz pyloroplasty at the time of RYGBP reversal. Of the 3 who did not undergo pyloroplasty, 2 patients experienced delayed gastric emptying prolonging hospital stay. Mean time interval between RYGBP and reversal was 3.6 years (0.31-12.8 years). Mean length of hospital stay after RYGBP reversal was 8.7 days (3-21 days). All patients experienced resolution of symptoms and there were no perioperative mortalities.

Conclusion:
Reversal of RYGBP can be successfully performed to resolve symptoms including severe nutritional complications and intractable abdominal pain.