



**OUTCOMES FOLLOWING LAPAROSCOPIC  
ROUX-EN-Y GASTRIC BYPASS (LRYGB) VARY  
BY SEX: ANALYSIS OF 83,059 MORBIDLY  
OBESE WOMEN AND MEN**

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## Disclosure Statement of Financial Interest

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Nothing To Disclose

# Introduction

- Significant variation in the pre-operative clinical characteristics between women and men seeking LRYGB
- Age, weight, BMI and the distribution of weight-related medical conditions
- Whether or not the post-operative response to LRYGB for weight, BMI and the resolution or persistence of obesity co-morbidities also varies by sex is unknown

# Objective

- To identify statistically and clinically significant variations in long-term outcomes between women and men who underwent LRYGB

# Methods

- Pre-operative and follow-up data at 2, 6, 12, 18 and 24 months after surgery on 83,059 patients from the Surgical Review Corporation's BOLD database who underwent LRYGB
- Retrospective analysis of two groups: Women (n=65,325) and Men (n=17,734)
- Data included age, weight, BMI, and 29 weight-related medical conditions

# Methods

- Statistics:
  - Continuous variables by ANOVA with baseline and treatment in the model
  - Distribution of obesity co-morbidities by a general linear model
    - Modified for binomial distribution to account for dichotomous variables

# Results

- Pre-operatively, morbidly obese patients were divided into two groups based on sex
  - **83,059:** 65,325 women and 17,734 men
- Post-op analysis:
  - **2 months:** 63,625 women and 17,333 men
  - **6 months:** 36,708 women and 9,816 men
  - **12 months:** 20,755 women and 5,390 men
  - **18 months:** 5,472 women and 1,356 men
  - **24 months:** 4,316 women and 1,049 men

# Weight Loss

- Male weight higher at baseline and remained higher through 24 months
- Male weight loss > female at all data points
- In spite of greater weight loss, male BMI remained higher through 24 months

# Cardiovascular

- PHT increased men>women through 12 months
- CHF, PVD, HTN, and angina increased men>women through 24 months
- Women were not affected more frequently than men in any cardiovascular co-morbidity

# Pulmonary

- OHS increased in men through 12 months
- OSA increased in men through 24 months
- Asthma increased in women through 24 months

# Endocrine and Metabolic

- Diabetes, gout and dyslipidemia increased in men through 24 months
- Only pseudotumor cerebri was increased in women

# Abdominal and Hepatobiliary

- Cholelithiasis, panniculitis, GERD and stress urinary incontinence higher in women
- Increased female GERD may contribute to increased female asthma
- Liver disease and abdominal hernia higher in men

# Somatic

- Variations by sex in back pain, musculoskeletal pain, and impaired functional status resolved after 12 months
- Lower extremity edema did not vary by sex

# Psychological and Behavioral

- Female mental health diagnosis, depression, psychological impairment were increased
- Conversely, women attended post-LRYGB support groups more often
- Tobacco, alcohol, and substance abuse higher in men
- Increased alcohol intake may contribute to increased male liver disease

# Results

- Men had 17 obesity co-morbidities greater than women
- Women were higher in 9 co-morbidities

# Conclusion

- Women:
  - Persisted higher in cholelithiasis, abdominal panniculitis, GERD, stress incontinence, and in serious mental health conditions
- Men:
  - Failed to resolve cardiopulmonary/vascular issues and metabolic derangements (diabetes, gout, dyslipidemia)
  - Developed abdominal hernia and were functionally impaired more than women

# Conclusion

- In spite of greater weight loss, at 24 months BMI was higher for men
- Increased alcohol consumption may contribute to increased male liver disease

# Conclusion

- Outcomes following LRYGB vary significantly between men and women
- Women may benefit more from LRYG than do men
- This advance knowledge may facilitate optimized LRYGB management