

**1<sup>st</sup> PLACE**      **Blunting of adaptive thermogenesis as a potential additional mechanism to promote weight loss after gastric bypass**  
**Presenter: Matthew Browning MS**      **Program/Facility: Virginia Commonwealth University**

**Investigators:** Matthew G. Browning MS<sup>1</sup>, Charlotte Rabl MD<sup>2</sup>, Jad Khoraki MD, Guilherme M. Campos MD FACS FASMB<sup>3</sup>

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**Objective:** Adaptive thermogenesis (AT) is described as a change in resting metabolic rate (RMR) that is greater than would be predicted from changes in lean body mass (LBM) and fat mass (FM) alone during periods of energy imbalance. Whereas an AT-related downregulation of RMR has been implicated in suboptimal weight loss and weight regain after nonsurgical weight loss, defense against AT may underpin the durable weight loss after laparoscopic Roux-en-Y gastric bypass (LRYGB) and other bariatric surgeries. However, methodological differences across the few studies that have evaluated postoperative AT limit interpretation as to the effects of these procedures on RMR. Our aim was to quantify AT 6 months after LRYGB and laparoscopic adjustable gastric banding (LAGB). **Methods:** Changes in body composition and RMR were assessed in 13 severely obese adults 6 months after LRYGB (n=8) and LAGB (n=5). AT was calculated as the difference between measured RMR and RMR predicted from LBM, FM, age, and sex before and after surgery. **Results:** RMR significantly decreased after LRYGB ( $270 \pm 96$  kcal/d,  $p < .01$ ) but not after LAGB. Despite significantly greater reductions in weight, FM, and LBM with LRYGB than LAGB, AT responses after LRYGB ( $15 \pm 110$  kcal/d,  $p = .7$ ) and LAGB ( $42 \pm 97$  kcal/d,  $p = .4$ ) were similar ( $p = .7$ ). **Conclusion:** Despite significant weight and body composition changes, AT was minimal after LRYGB. A blunting of AT may be an additional mechanism that favors sustainable weight loss with LRYGB.

**2<sup>nd</sup> PLACE**      **Optimal Perioperative Low Molecular Weight Heparin Dosing in Bari-atric Surgery: A Prospective Study**  
**Presenter: Jenny M. Held, MD**      **Program/Facility: Naval Medical Center Portsmouth**

**Investigators:** Jenny M. Held, MD; Christian McEvoy, MD, MPH; Collette Ho, RN; Laura M. Fluke, DO; Robert B. McLendon, MD; Ryan D. Restrepo, MD; Matthew L. Leatherman, DO; Kevan Mann, MD

**Objectives:** Venous thromboembolism (VTE) is the leading cause of mortality after bariatric surgery. The ASMBS currently recommends chemoprophylaxis in all patients undergoing bariatric procedures. The standard of care for bariatric patients at our institution is perioperative subcutaneous (SQ) enoxaparin. Enoxaparin administration can be monitored using anti-factor Xa level; previous studies define 0.18-0.44 units/mL as the appropriate range for anti-factor Xa level. **Methods:** A prospective study was conducted on patients undergoing laparoscopic Roux-en-Y gastric bypass, sleeve gastrectomy, or gastric band removal. Exclusion criteria included prior history of VTE, hypercoagulability, or anticoagulation use. Consent was obtained during preoperative appointment. Preoperative serum anti-factor Xa and creatinine levels were obtained. Patients received the first dose of 40mg SQ enoxaparin within three hours of surgery; dosing was continued every 12 hours during admission. Repeat anti-factor Xa levels were obtained in the post-anesthesia care unit and 4 hours after the third dose. The anti-factor Xa levels were compared to the expected range. **Results:** Of 81 patients consented, 54 (45 women, 9 men) underwent surgery and completed necessary laboratory testing. Average age was 44.6 years (st dev 9.8) and BMI was 40.3 (st dev 4.0). Average anti-factor Xa level 4 hours after the third dose was 0.29 (st dev 0.10). Majority of the patients (n=40) had an anti-factor Xa level within the prophylactic range of 0.18-0.44; 8 patients were supra-prophylactic and 6 were sub-prophylactic. The anti-factor Xa level at 4 hours after the third dose of enoxaparin did not correlate with patient weight, preoperative creatinine or medical comorbidities. **Conclusions:** Standard enoxaparin dosing of 40mg SQ every 12 hours beginning preoperatively for VTE prophylaxis after bariatric surgery is effective in reaching prophylactic anti-factor Xa levels. However, neither patient weight nor serum creatinine is predictive of whether a patient will achieve a prophylactic reduction in anti-factor Xa level. This study confirms that further research into the pharmacokinetics of enoxaparin dosing in patients with obesity is warranted.