PURPOSE OF THE STUDY
This clinical study was conducted to better understand the mechanical properties of tissue and distribution of tissue thickness in stomach tissue.

The study measured the thickness of gastric specimen tissue excised from patients undergoing vertical gastric sleeve gastrectomy.

METHODS
A consecutive series of patients undergoing weight loss surgery with a vertical gastric sleeve at a single center were enrolled to the clinical study. During vertical gastric sleeve gastrectomy, the body of the stomach was divided beginning caudad and extending cephalad from the pyloric antrum to the cardiac notch. The divided stomach was then extracted through an access incision for tissue thickness measurements. The double wall thickness of the excised gastric specimen at 6 predetermined locations using a tissue-measuring device (TMD) that applied a pressure of 8g/mm² to tissue for 15 seconds.

RESULTS
• Data was collected for fifty patients undergoing weight-loss surgery involving vertical sleeve gastrectomy

• Patient gender, height, and weight were used as concomitant variables:
  o Thirty seven (37) women and thirteen (13) men were included in the study.
  o Mean age 41.8 years (range 18-62 years)
  o Mean weight prior to surgery 319 lb (range 215-579 lb)
  o Mean BMI for male patients 53.3 kg/m² (range 36.2 kg/m² to 84.2 kg/m²)
  o Mean BMI for female patients 49.4 kg/m² (range 31.3 kg/m² to 87 kg/m²)

In this clinical study, gender (p=0.0032) and location (p=0.0000) were determined to have a statistically significant influence on gastric specimen tissue thickness. The thickest tissue can be found near the pylorus, and thinnest tissue is found near the fundus, regardless of gender.

CONCLUSION
An important design goal for laparoscopic stapler manufacturers is to improve the performance of the devices for an increased range of tissue thickness. Elariny and his colleagues studied the thickness of excised stomach tissue in a clinical study enrolling 50 subjects. In this clinical study, gender (p=0.0032) and location (p=0.0000) were determined to have a statistically significant influence on gastric specimen tissue thickness. There is considerable variation in tissue thickness depending on location of the measurement and gender of the patient. The thickest tissue is found near the pylorus. In male patients, 5 percent of the time a surgeon will find tissue thicker than 4.6 mm, for women, a surgeon will encounter tissue thicker than 4.4 mm.

**This concludes the clinical synopsis of this publication**