Bariatric surgery is currently the most effective treatment for weight reduction in a morbidly obese population on the long term and has gained high popularity with more than half a million procedures worldwide yearly. Several surgical procedures have been developed in the last decades to achieve weight loss. Although various mechanisms have been proposed to account for its effectiveness, the role of the gut hormones is best established. This workshop will focus on the mechanisms of weight loss after bariatric surgery, the role of the gut-brain axis herein and the pros and cons of each type of operation.