

# **Surgical Procedures in Mangment of Metabolic Syndrome**

*Essay*

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general surgery*

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## List of Abbreviations

<b>BAE</b>	: Bariatric Arterial Embolization
<b>BPD-DS</b>	: Biliopancreatic Diversion with Duodenal Switch
<b>CVD</b>	: Cardiovascular Diseases
<b>CRP</b>	: C-Reactive Protein
<b>EBWL</b>	: Excess Body Weight Loss
<b>EEA</b>	: End to End Anastomosis
<b>EGIR</b>	: European Group for the Study of Insulin Resistance
<b>IDF</b>	: International Diabetes Federation
<b>IGT</b>	: Impaired Glucose Tolerance
<b>LAGB</b>	: Laparoscopic Adjustable Gastric Banding
<b>LRYBG</b>	: Laparoscopic Roux-en-Y Gastric Bypass
<b>LSG</b>	: Laparoscopic Sleeve Gastrectomy
<b>MGB</b>	: Mini Gastric Bypass
<b>NCEP</b>	: National Cholesterol Education Program
<b>PPAR<math>\gamma</math></b>	: Peroxisome Proliferation Activated Receptor Gamma gene

## *List of Abbreviations*

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- SADI-S** : Single Anastomosis Duodeno Ileal Bypass with Sleeve
- SASI** : Single Anastomosis Sleeve Ileal
- SMOB** : Swiss Study Group for Morbid Obesity
- WHO** : World Health Organization

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## **Abstract**

Bariatric surgery is currently the only method that provides weight loss for morbidly obese patients, with a resulting improvement in the accompanying diseases associated with obesity.

In addition metabolic surgery has become safer and less dangerous.

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### **Kye words**

Metabolic syndrome, Baritric surgery, Anastomosis, Laparoscopic

## **Introduction**

The metabolic syndrome is a combination of disorders that include: obesity, insulin resistance, impaired regulation of body fat and high blood pressure. The two most significant risk factors for development of the metabolic syndrome are visceral obesity and insulin resistance (*Haffner, 2006*).

Due to sedentary lifestyles and excessive calorie intake, metabolic syndrome is becoming increasingly common health problem in the world (*Grundy, 2008*). Complications related to the metabolic syndrome significantly reduce quality of life of the patients, and represents a huge socio-economic burden.

Bariatric surgery is currently the only modality that provides a significant, sustained weight loss for morbidly obese patients, with resultant improvement in obesity-related comorbidities (*Sjöström, 2012*).

### **Classification of surgical procedures:**

1. Malabsorptive procedures
2. Restrictive procedures
3. Mixed procedures (*Abell and Minocha, 2006*)

## **Aim of the work**

Is to review an important surgical procedures for treatment of metabolic syndrome, and to assess outcomes, weight loss and complications.

## **Pathophysiology and diagnosis of metabolic syndrome**

It is common to be a development of visceral fat, after which the adipocytes (fat cells) of the visceral fat increase plasma levels of TNF- $\alpha$  and alter levels of a number of other substances (e.g., adiponectin, resistin, and PAI-1). TNF- $\alpha$  has been shown not only to cause the production of inflammatory cytokines, but also possibly to trigger cell signaling by interaction with a TNF- $\alpha$  receptor that may lead to insulin resistance (*Hotamisligil, 1999*).

The progression from visceral fat to increased TNF- $\alpha$  to insulin resistance has some parallels to human development of metabolic syndrome. The increase in adipose tissue also increases the number of immune cells present within, which play a role in inflammation. Chronic inflammation contributes to an increased risk of hypertension, atherosclerosis and diabetes (*Whitney et al., 2011*).