

# Recurrent weight gain after Sleeve Gastrectomy: is it the patient's fault?

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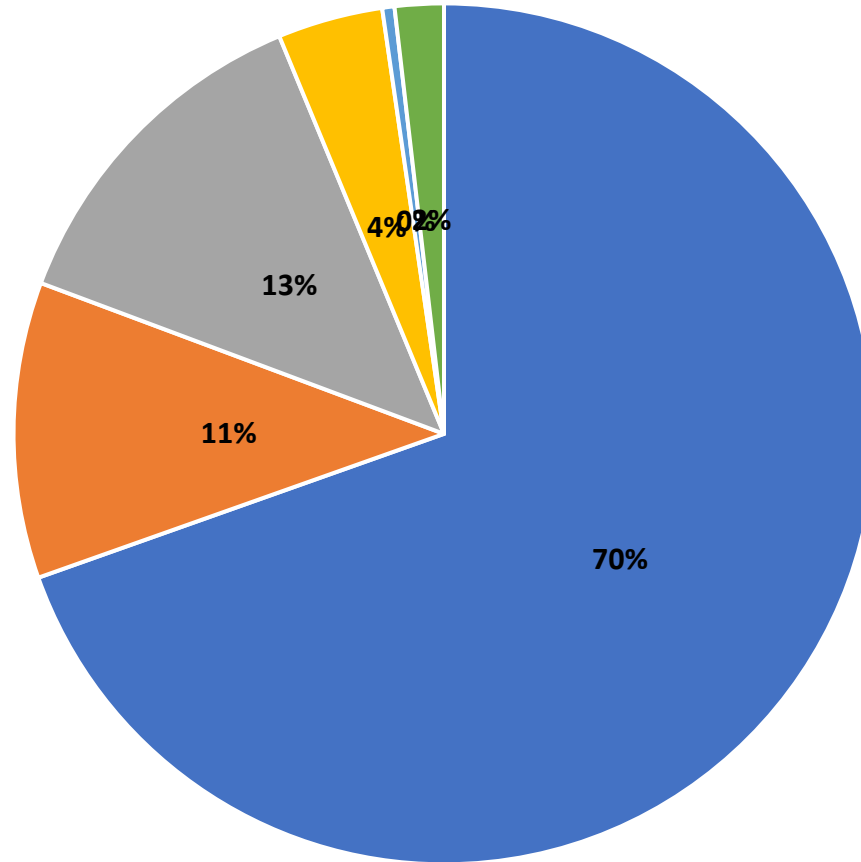


## CONFLICT OF INTEREST DISCLOSURE

**I have no potential conflict of interest to report**



# Case Mix



■ Sleeve ■ LRYGB ■ OAGB ■ Revisional ■ Sleeve Plus ■ IGB



# Obesity A Disease

- Scientifically obesity is a **disease**
- Come to recognize obesity's vast negative health impact

American Medical Association. House of Delegates Resolution 420: Recognition of obesity as a disease. Presented at: House of Delegates Annual Meeting; 2013.



## Obesity is a Disease

Obesity: **Excess/Non-typical fat (adipose) tissue that Impairs Health**

- Obesity is **Not Defined by Size** or Body Mass Index alone.
- Complex, Chronic & Progressive Neuroendocrine Disease.


### What is a Disease?

Alteration of Body Function	Characteristic Symptoms/Signs	Associated Harm*
<ul style="list-style-type: none"><li>• Change in Appetite Control/Regulation</li><li>• Altered Physiology<ul style="list-style-type: none"><li>◦ Inflammation</li><li>◦ Insulin Resistance</li><li>◦ Blood Flow</li><li>◦ Hormone Function</li><li>◦ Energy Use</li></ul></li></ul> 	<ul style="list-style-type: none"><li>• Increased Hunger</li><li>• Reduced Fullness</li><li>• Joint Pain</li><li>• Increased Body Fat Mass</li><li>• Impaired Mobility</li><li>• Snoring</li><li>• Low Self Esteem</li></ul> 	<ul style="list-style-type: none"><li>• Type 2 Diabetes</li><li>• High Blood Pressure</li><li>• Metabolic Syndrome</li><li>• Fatty Liver</li><li>• Heart Disease</li><li>• Stroke</li><li>• Depression/Anxiety</li><li>• Certain Cancers</li></ul> 

\* NOT EVERY PERSON LIVING IN A BIGGER BODY HAS IMPAIRMENT OF HEALTH  
NO IMPAIRMENT OF HEALTH = NO DISEASE OF OBESITY

Position Paper

# Obesity: a chronic relapsing progressive disease process. A position statement of the World Obesity Federation

G.A. Bray , K.K. Kim, J.P.H. Wilding

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## The three-bears theory

- Cognitive & emotional influences
  - to eat either too much, too little or just the right amount
  - Some eat to compensate for loneliness, anxiety, emotional conflicts and past or present deprivation
  - Obesity is merely the accidental result.
- Fails to explain how people of normal weight gauge the "right" amount to eat
  - since tiny caloric errors in eating can cause large weight gains or losses
- People using this theory treat obesity by reducing food intake to "normal" levels through dieting, psychotherapy, education and social action



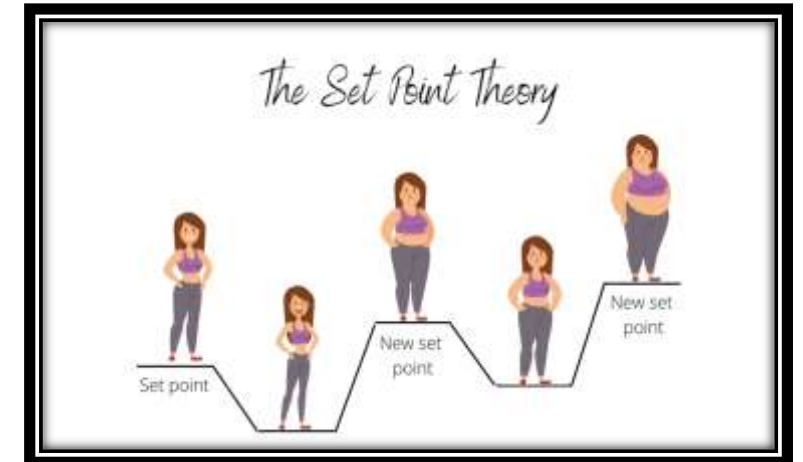
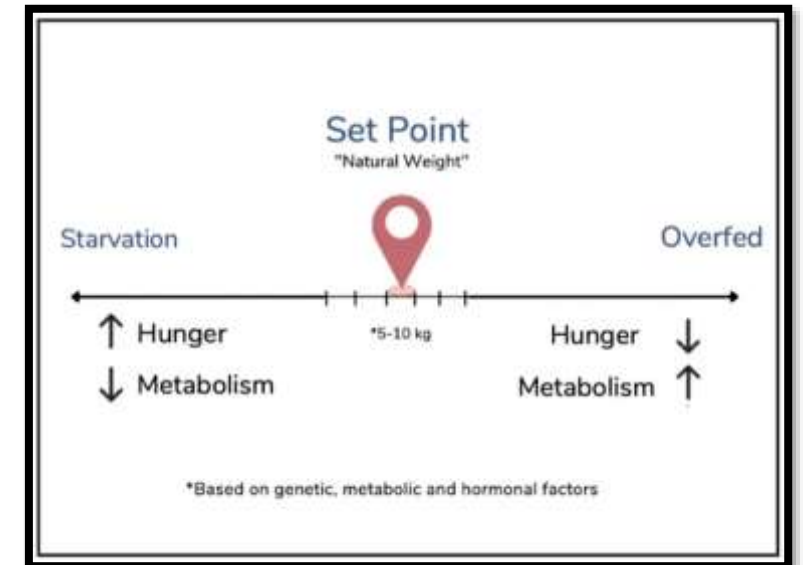
## Pica theory

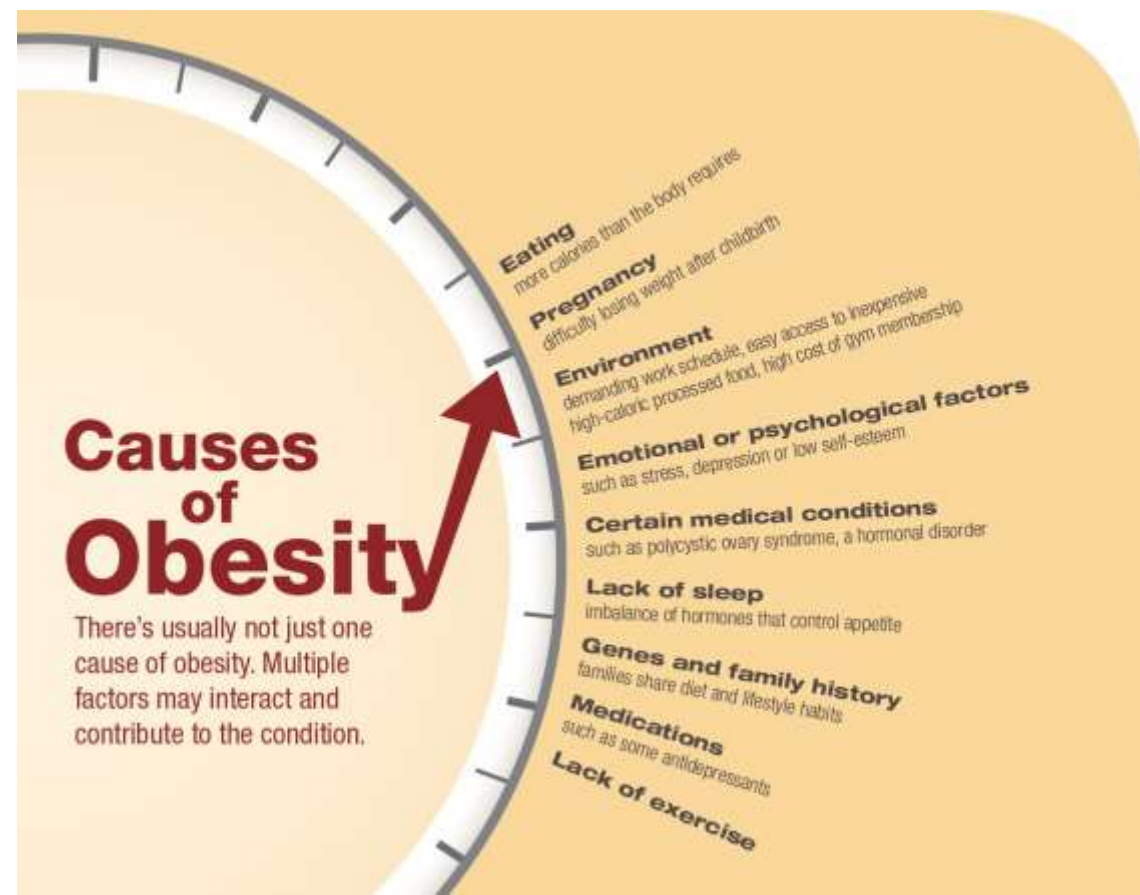
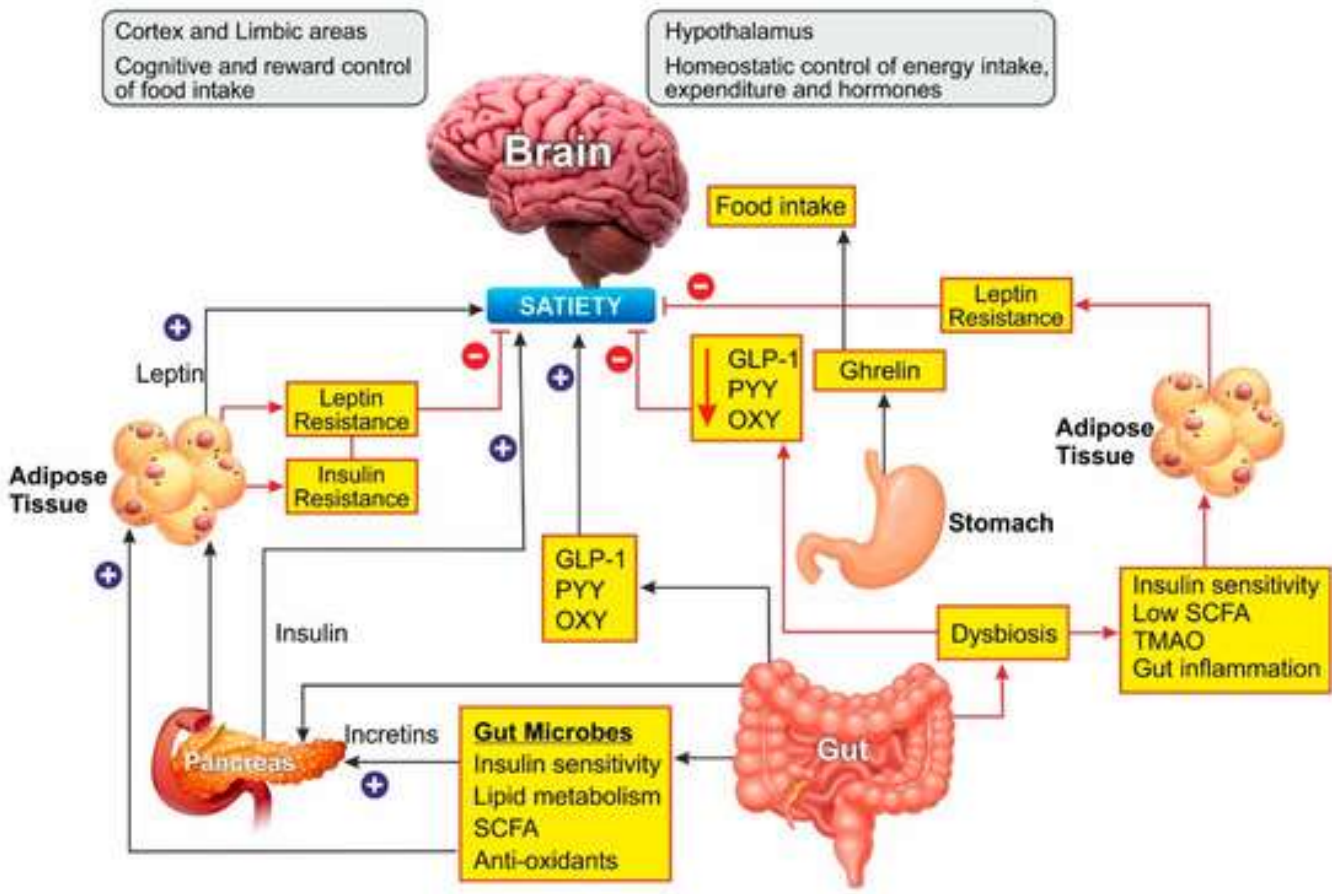
- Obesity because of an inappropriate mixture of nutrients
  - Essential amino acid such as tryptophan, a precursor in the synthesis of neurotransmitter serotonin. In this example, if serotonin deficiency is repaired, there would be no carbohydrate binges and therefore no obesity
  - Artificial sweeteners, gratify the "sweet tooth" without calories. However, some research suggests that this sweetness actually stimulates appetite and food intake
- Emphasize the composition rather than the quantity of food as the key to weight control
  - CHO help by producing brain chemicals and d-fenfluramine could help through the same mechanism



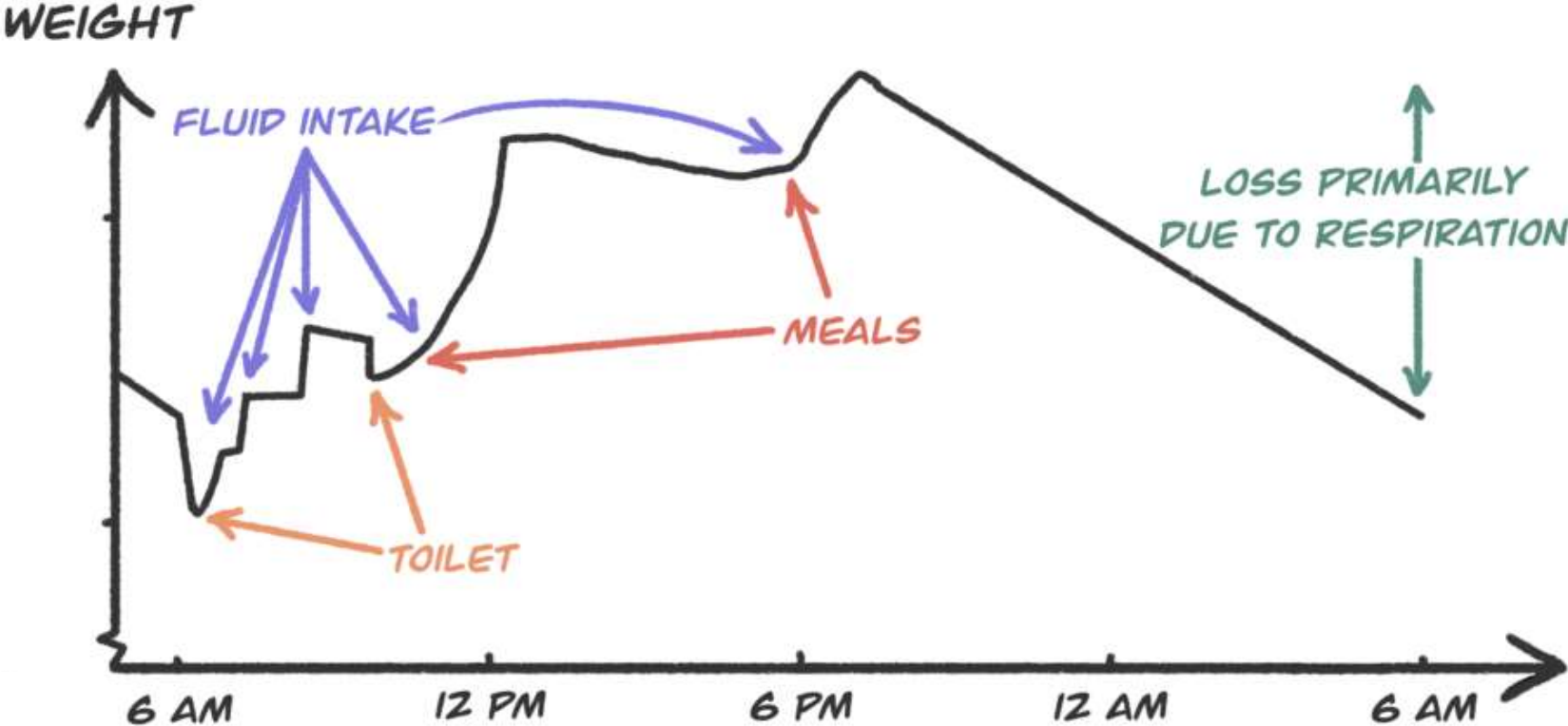
# Fat-stat theory

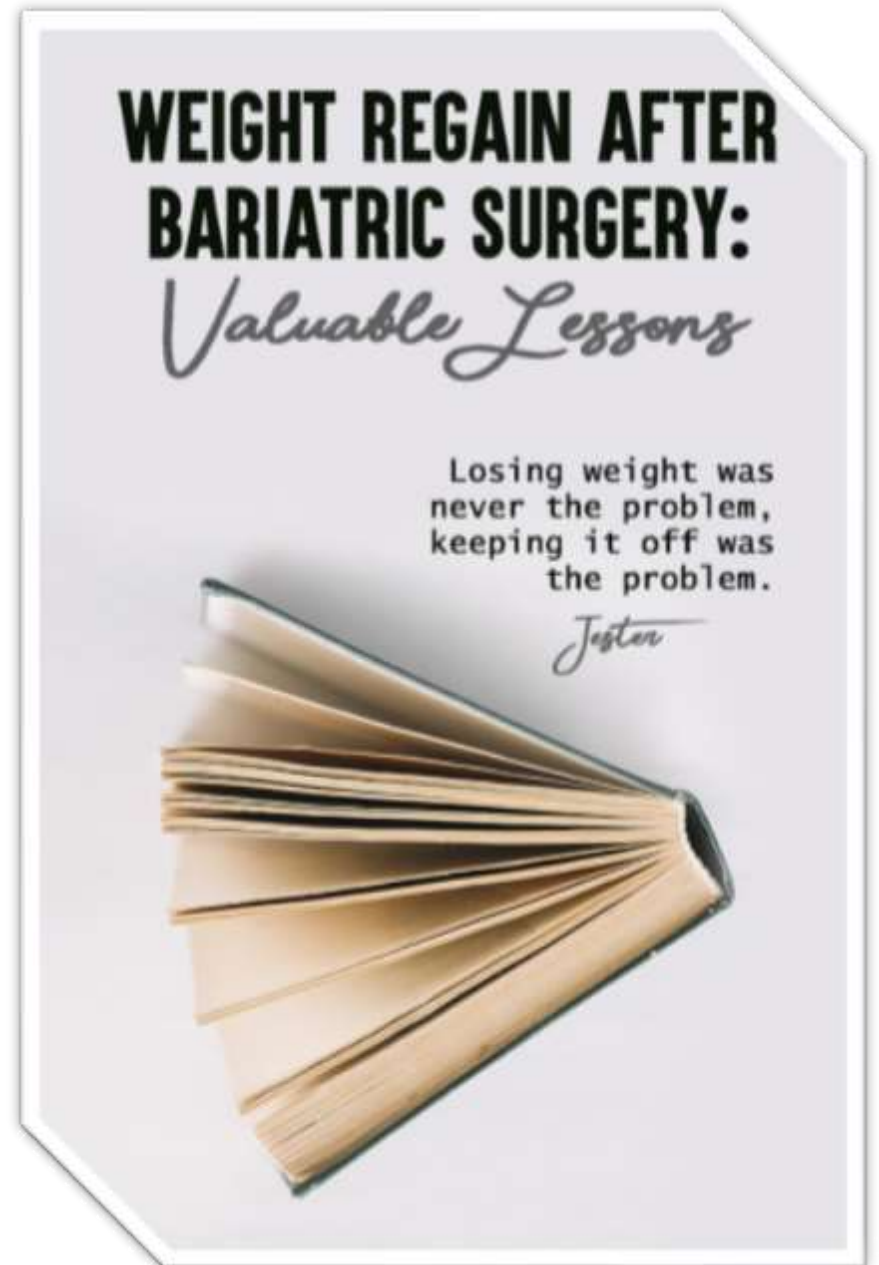
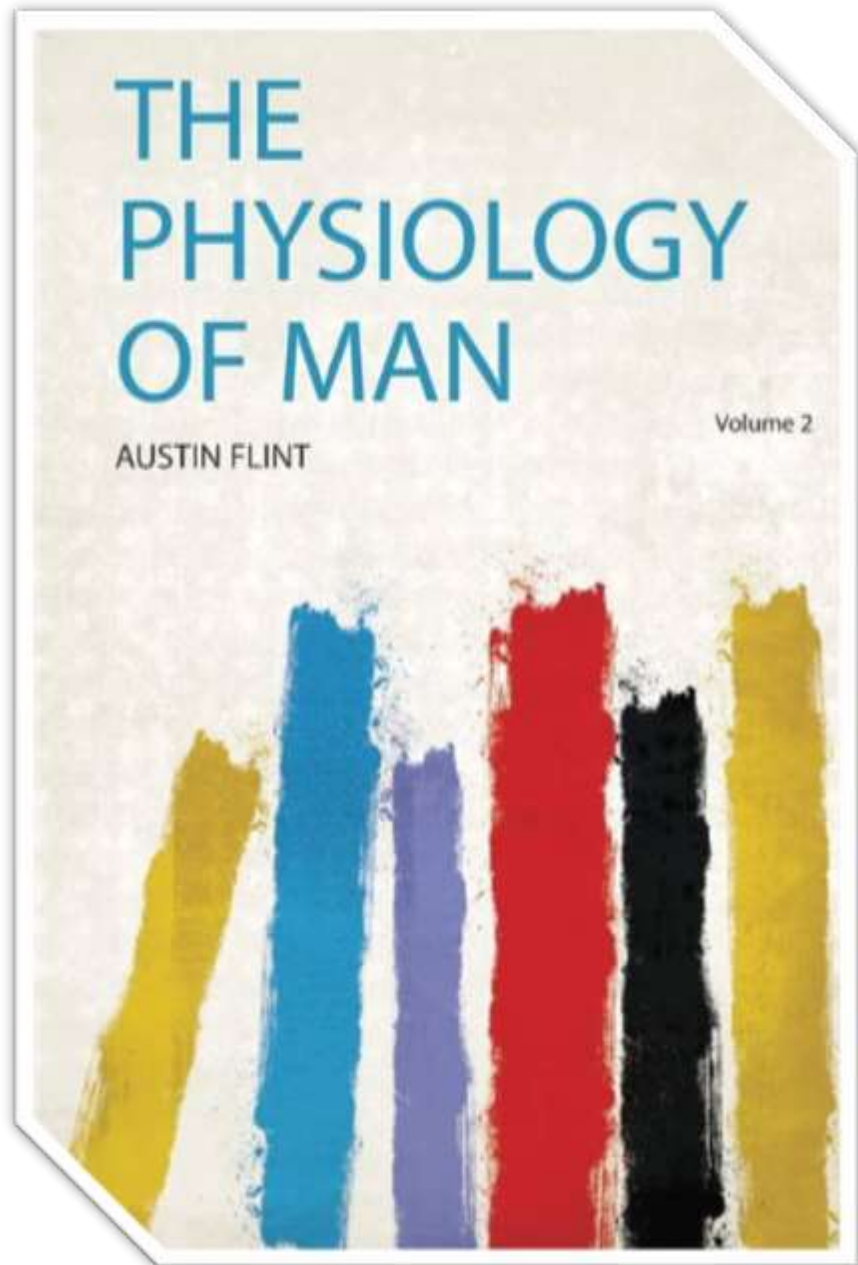
- Programmed to accumulate a certain amount of body fat and eat enough to maintain the level of fat determined by a hypothetical "setpoint" mechanism
  - Setpoint is, in turn, set by certain genetic and environmental influences
  - Long haul the body focuses on fat stores, not food intake
  - Explains how normal weight is maintained by people who give no thought to how much they eat
- Treatment, using this theory, focuses on environmental influences that might affect the level of the setpoint mechanism, such as physical activity, high fat content in the diet





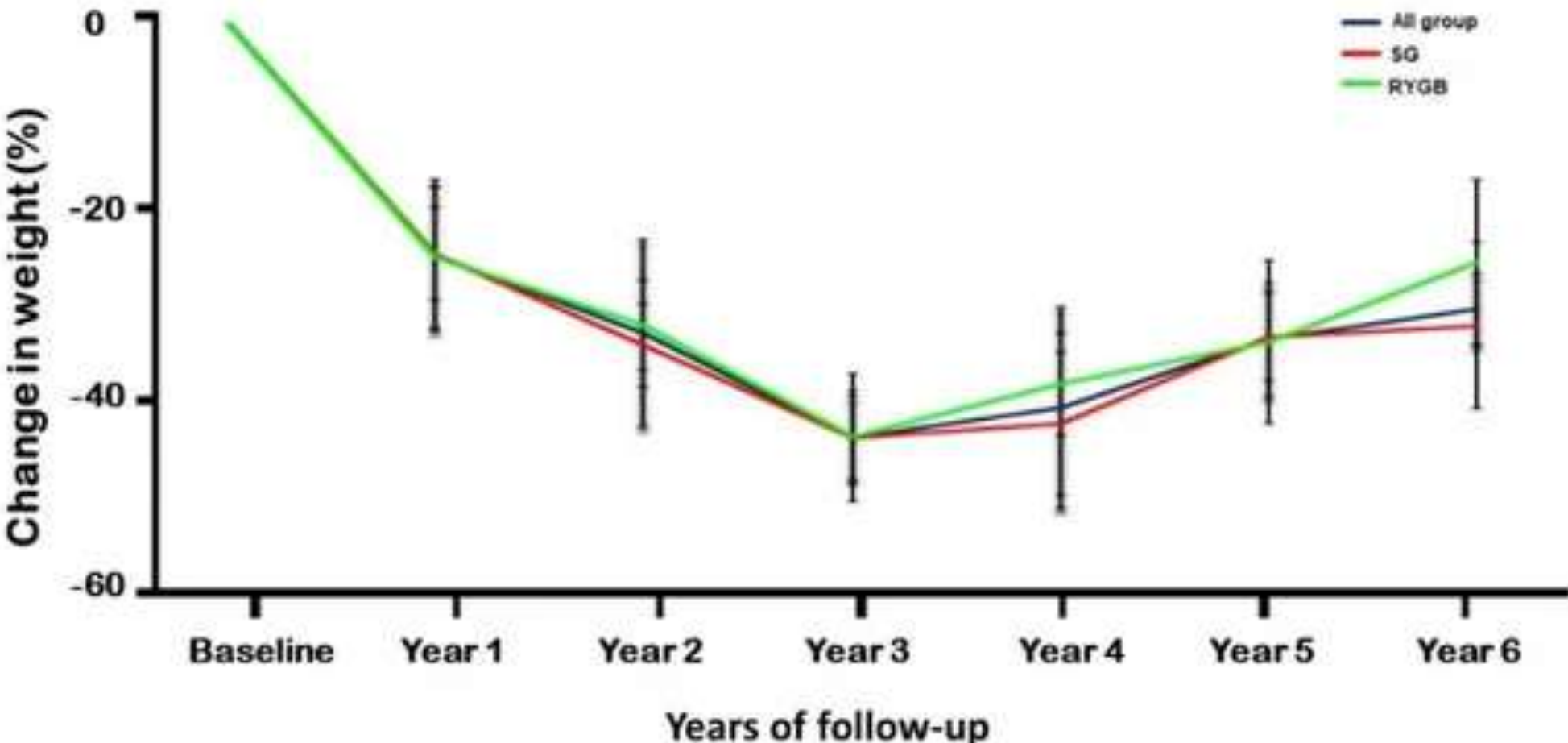
# WEIGHT CHANGES OVER A 24 HOUR PERIOD





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# Change in weight by types of surgery

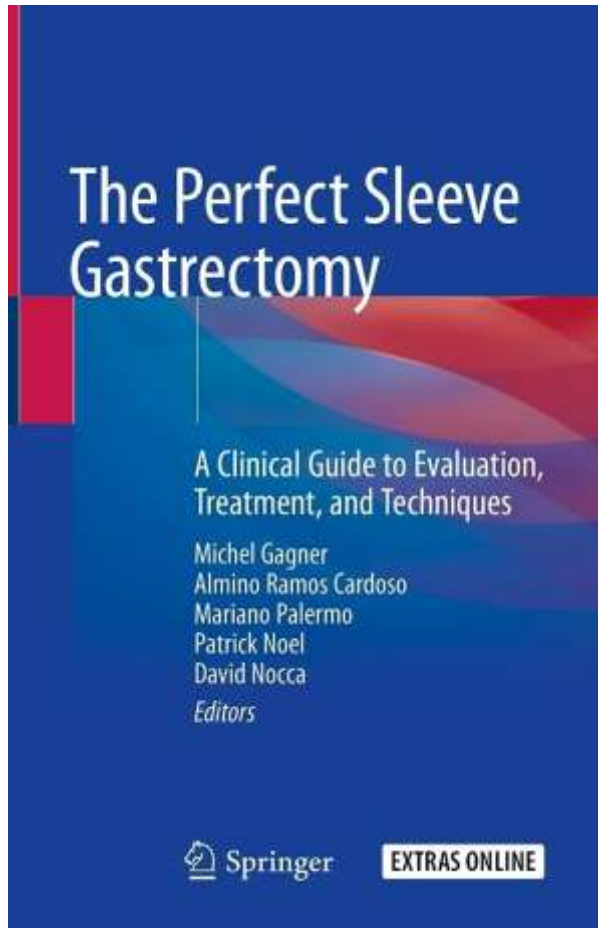


Calorie restriction	+
Vagal nerve signaling	↑
Taste and smell changes	+
Food aversions	+
Ghrelin	↓↓
Bile acid secretion	↑
Intestinal glucose uptake	
Fat malabsorption	
GLP-1	↑
PYY3-36	↑
GIP	
Oxyntomodulin	
FGF-19	↑
CCK	↑
Gastrin	↑
Neurotensin	



SG



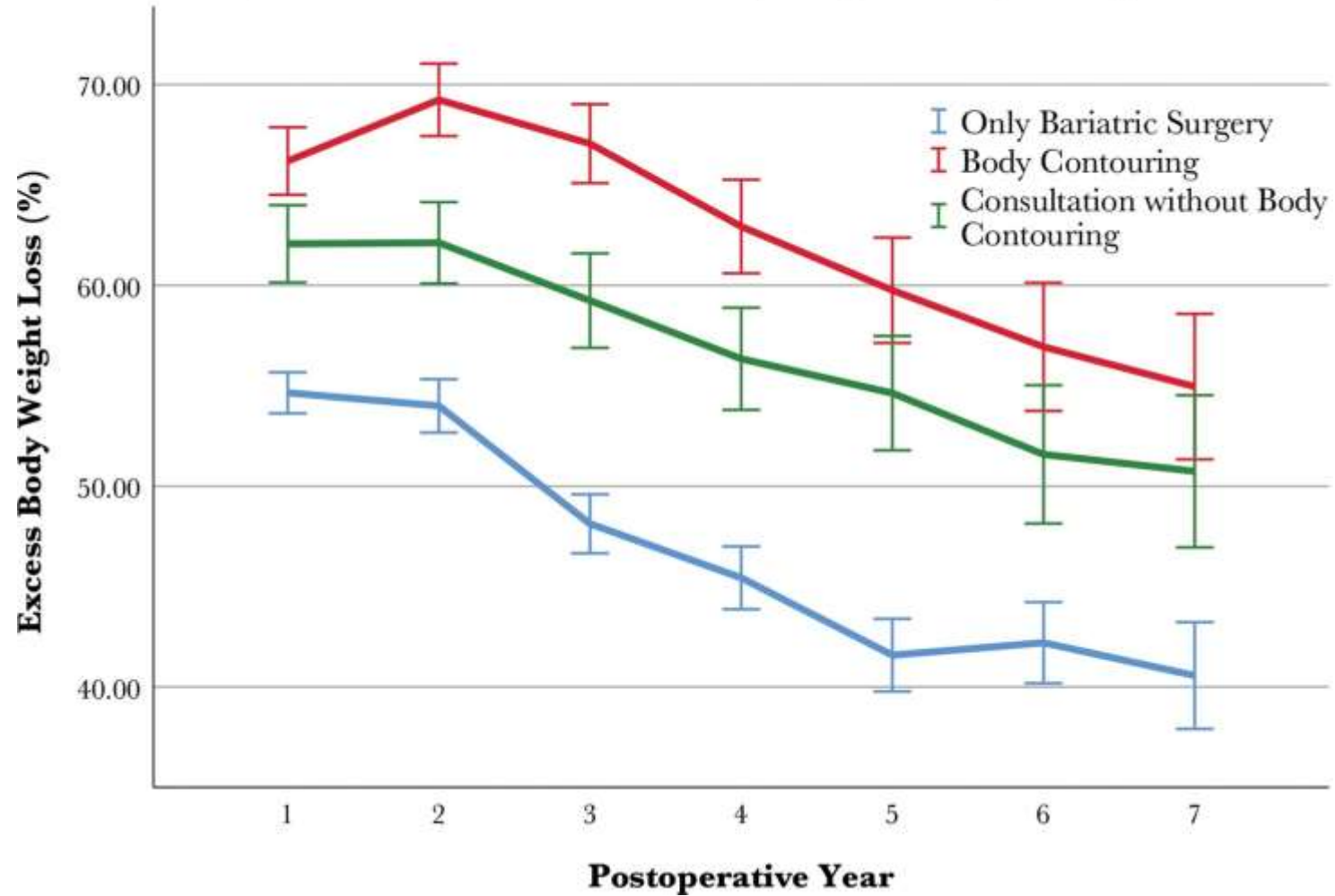


# The first modified Delphi consensus statement on sleeve gastrectomy

Mahawar Kk etal. Surg Endosc. 2021 Dec;35(12):7027-7033



**Unadjusted Mean Plot of Excess Body Weight Loss by Postoperative Year**



## 4<sup>th</sup> IFSO Global Registry Report 2018



- Patients treated prior to 2017 were eligible for follow-up
- At 1 year, only about 40% of patients had weight change data documented
- % of follow-up data collected after this procedure has significantly decreased
  - 2012 – 2016, % of weight loss data collection over a 1-year follow-up 23.8% - 33.7% for LSG
  - 2-year basis less than 1 in 10 patients had follow-up data collected at that time



Welbourn, R et al. Fourth IFSO Global Registry Report 2018. OBES SURG 29, 782–795 (2019).



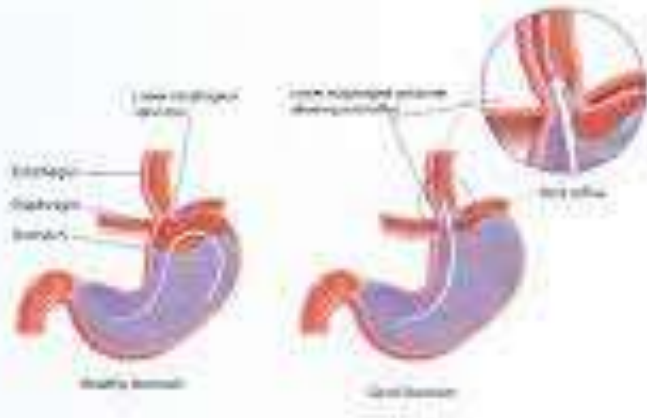
# Medication



Drug	Main use
Insulin, sulphonylureas, thiazolidiniones	Diabetes
Beta-blockers	Hypertension
Corticosteroids	Inflammatory disease
Cyproheptadine	Allergy, hay fever
Antipsychotics	Psychosis
Sodium valproate	Epilepsy
Tricyclic antidepressants	Depression
Lithium	Bipolar disorder

From references 3, 9, 10, 11, 12.

# ACID REFLUX AFTER GASTRIC SLEEVE



## HAIRLOSS IN BARIATRIC COMMUNITY


Hair loss is a cause of stress for WLS patients



Patients undergoing WLS may have hair loss after surgery due to the lower intake and inadequate absorption of **protein, iron, biotin, zinc, vitamin B 12, and healthy fats.** Supplementation is required in order to help prevent hair loss a specific bariatric nutrient formula can help prevent hairloss.



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NO

Innocent until proven guilty

