MEDICAL SCREENING AND FOLLOW-UP OF THE BARIATRIC SURGERY PATIENT

AMANDA G. FONTENOT, MD, ABOM

OBESITY MEDICINE DIRECTOR

DEPARTMENT OF BARIATRIC SURGERY

OCHSNER MEDICAL CENTER

DISCLOSURES

- None

OBJECTIVES

- Clarify the referral and clearance process for patients considering bariatric surgery
- Navigate pre and post operative medication changes
- Identify early and late post-op complications
- Special medication considerations
- Helping patients with pre-operative weight loss and weight regain

GETTING PATIENTS TO APPROPRIATE TREATMENT

- Several medical organizations have developed guidelines for obesity treatment
- Patients with BMI 25-27: focus on primary prevention with dietary and lifestyle intervention
- Patients with BMI 27-30 and no co-morbidity: treatment with dietary and lifestyle intervention

GETTING PATIENTS TO APPROPRIATE TREATMENT

- Patients with BMI 27-30 with co-morbidity: intervention with diet, exercise and possible pharmacotherapy. Refer to specialist/multi-disciplinary team if needed.
- Patients with BMI 30-35: intervention with diet, exercise and possible pharmacotherapy. Refer to specialist /multi-disciplinary team if needed.
- **Patients with BMI 35-40 with co-morbidity: treatment as above, and consider referral to bariatric surgeon.***

CRITERIA FOR BARIATRIC SURGERY

- BMI of 35-39.9 with obesity related illness (generally 2 or more)
- HTN
- DM2
- NASH
- OSA
- Lumbar stenosis
- Current BMI as a hindrance to other medical treatment

- BMI 40 and over regardless of co-morbid conditions

CONTRAINDICATIONS TO BARIATRIC SURGERY

- Uncontrolled or severe psychiatric illness
- Active substance abuse
- End organ failure (unless weight loss surgery is in pursuit of transplant)
- Expected pregnancy in 12-24 months.
- Uncorrectable coagualopathy
- Esophageal varices
- Inability to understand or comply with post-op instructions
- Active CAD/CHF

BARIATRIC SURGERY WORK-UP

- Surgical consult
- Nutrition consult(s) and clearance
- Psychological clearance
- +/-PCP clearance
- EKG
- +/- Cardiology, hepatology, heme, nephro clearance
- CXR
- Labs- BMP, LFTs, Vitamin levels, A1c, CBC, thyroid, h. Pylori
- Financial clearance /Insurance approval
- Other specialty clearances if applicable

CRUSH/CHEW/LIQUID MEDICATIONS

- Medications smaller than a pencil eraser (65 mm) can be continued perioperatively for sleeve and bypass
- Larger pills will need to be split, crushed or converted to liquid
- Time released pills >65mm will need to changed to IR to facilitate the above
- Changes to psych meds should be made 3 months in advance of surgery

ONE TO TWO WEEK LIQUID DIET

- Tolerance for some mild hyperglycemia over hypoglycemia
  - stop sulfonylureas
  - stop SGLT2s
  - stop prandial insulin or minimal ISS only
  - reduce long-acting insulin
- Patients without heart failure may not need diuretics
- Decrease doses of other BP meds. Consider digital HTN program

MEDICATIONS TO HOLD PRE-OPERATIVELY

- NSAIDs
- Fish oil/Omega 3
- Herbs or other OTC supplements (not from RDs)
- Warfarin- to bridge or not to bridge?
- Steroids and immune suppressants- need taper schedule and when to resume
- SGLT-2s (if you haven’t already!)

POST-OP MEDICATION CHANGES

- Rapid changes in blood pressure and blood sugar
  - Limited overall intake
  - Fluid status
  - Increased circulating levels of GLP-1
  - Weight loss

EARLY POST-OP COMPLICATIONS

- Similar risks to any other abdominal surgery
- Nausea vomiting
- Dehydration
- Leaks
- Strictures, twists
- Venous thromboembolism
- Patients seldom receive a foley during surgery, so if UTI symptoms check UA and culture.

LATE POST-OP COMPLICATIONS

- Ulcer/perforation
- Gallstones
- Small bowel obstruction
- Internal hernia
- Lactose intolerance
- Nausea and vomiting
- Adhesions
- Dumping syndrome
- Reflux
- Vitamin deficiencies
- Protein malnourishment
- Hair and skin changes
- ETOH abuse

FOLLOW-UP AFTER BARIATRIC SURGERY

- Routine follow-up post-op 2 weeks, 6 weeks, 3 months, 6 months and 1 year
- Annual follow up with labs there after
- Address weight stalls/ plateaus sooner rather than later
- Patients that reach expected goal weights at 1-2 years generally have better long term outcomes

ANNUAL LABS

- BMP
- Liver function panel
- CBC
- Iron and TIBC
- B12
- B1
- B6
- Folate
- Lipid panel
- A1c
- TSH
- Vit D
- Copper
- Selenium
- Vit A
- Pre-albumin

FOR A LIFETIME

SPECIAL MEDICATION CONSIDERATIONS

ULCERS

- NSAIDs are to be avoided for life
- Smoking increases risks
- Steroid use should be avoided or limited when possible
- Treatment with “triple therapy”
- EGD for definitive dx, to check margins and for healing

MEDICATIONS WITH WEIGHT POSITIVE EFFECTS

- Anti-depressants
- Anti-seizure meds
- Sulfonyureas
- Thiazolidinediones
- Insulin
- Anti-psychotics
- Depo-provera
- Fertility treatments
- Chronic steroids
- Sleep medications
- Beta-blockers

WEIGHT REGAIN AFTER BARIATRIC SURGERY

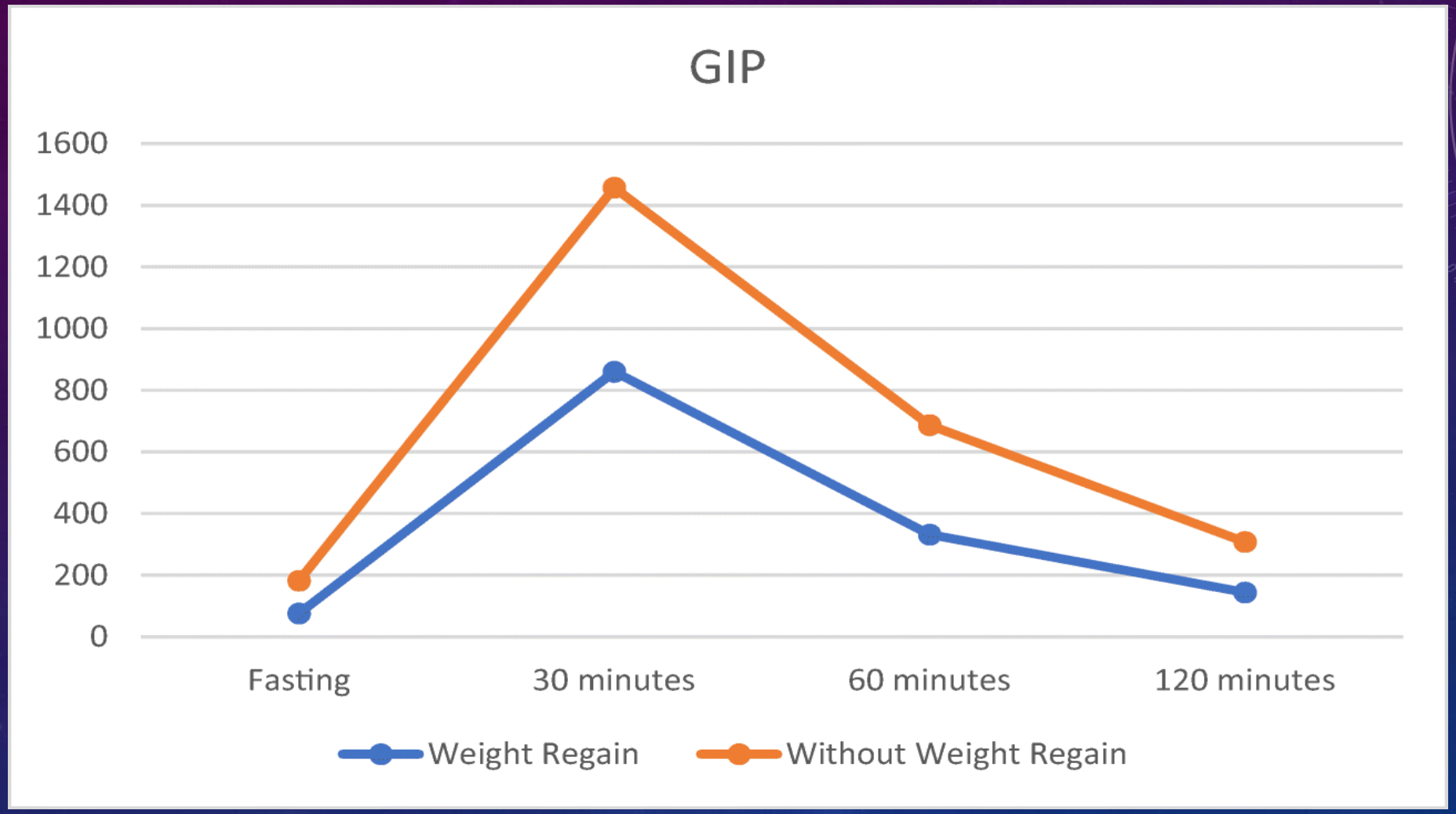
- Estimated to be occur in 50% patients (from weight nadir)
- Some loss of improvement in comorbidities with increase in weight or BMI
- Possible correlation with circulating gastrointestinal hormones in LRNY
- Possible correlation with body composition changes

RATES AND CONSEQUENCES OF WEIGHT REGAIN

- Large scale studies with variable end points and measurements
- LRNY vs SG vs LGB
- Significant weight/BMI regain can decrease long-term health benefits

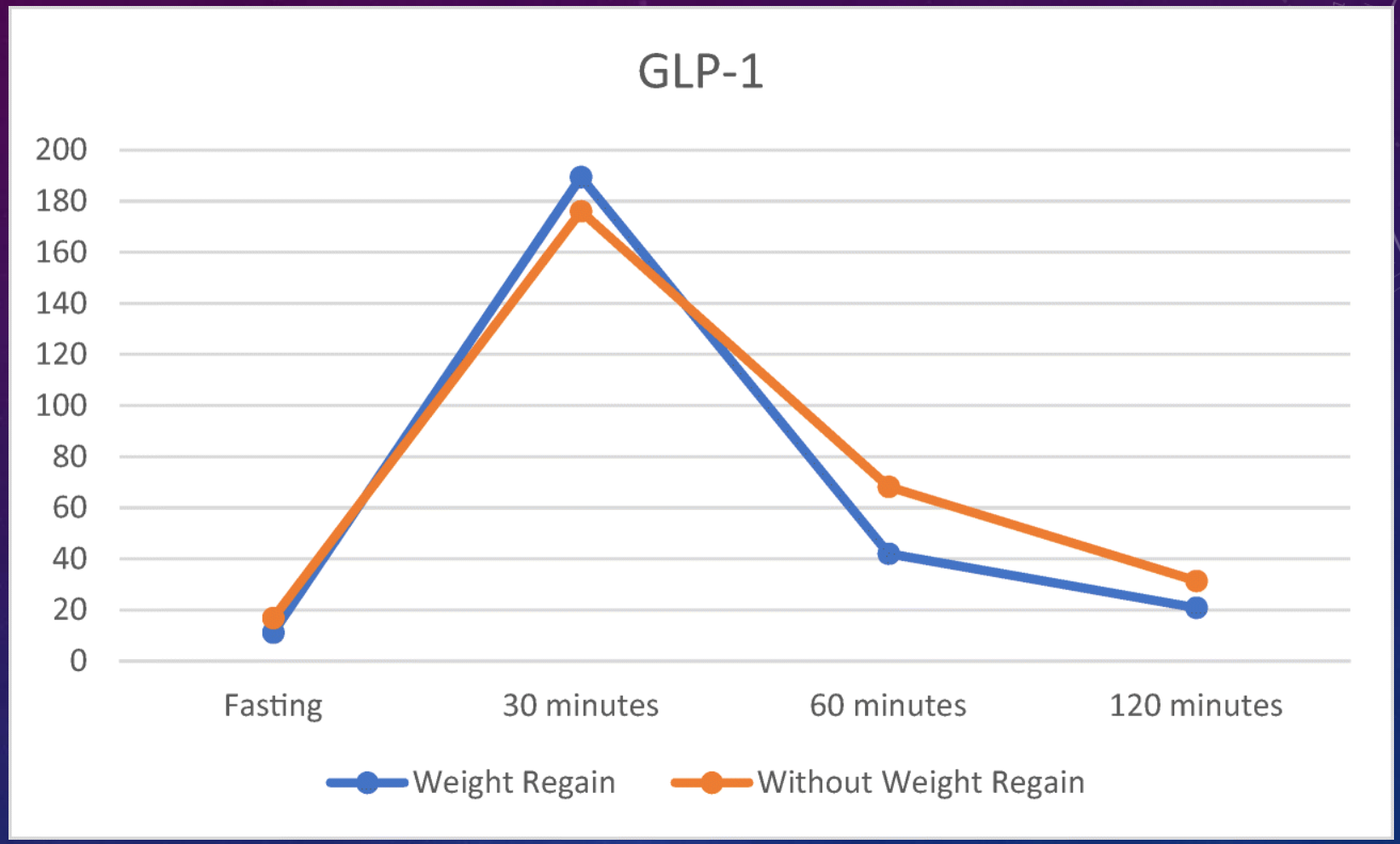
CAUSES OF RE-GAIN OF WEIGHT

- Increase in appetite/cravings (calorie intake, grazing, binging)
- Decrease in circulating gut hormones
- Differences in body composition
- Poor activity or decrease in activity level
- Medications associated with weight gain
- Stressful life events

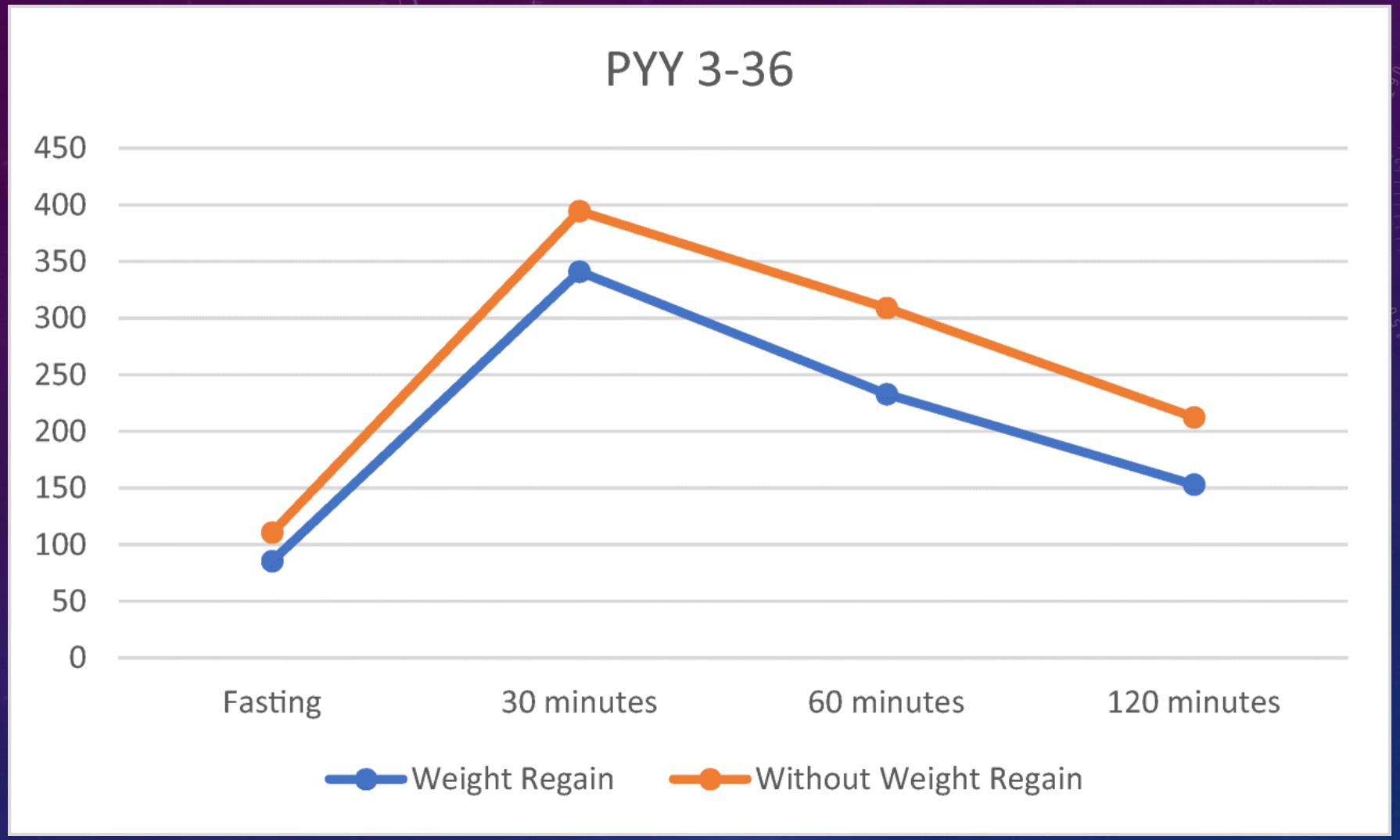


From: Relationship of Body Composition Measures and Metabolic Basal Rate with Gastrointestinal Hormones in Weight Regain 5 Years After Gastric Bypass

Gastrointestinal Inhibitory Polypeptide (GIP)



From: Relationship of Body Composition Measures and Metabolic Basal Rate with Gastrointestinal Hormones in Weight Regain 5 Years After Gastric Bypass



From: Relationship of Body Composition Measures and Metabolic Basal Rate with Gastrointestinal Hormones in Weight Regain 5 Years After Gastric Bypass

ADJUVANT MEDICAL WEIGHT LOSS TREATMENT

POTENTIAL BENEFITS OF ADJUVANT MEDICAL TREATMENT

- Increased preoperative weight loss (Ard et al)
- Decreased post-operative BMI
- Weight loss after recidivism
- Greater benefits with higher pre-operative BMI (BMI>50) (Zubaidah Nor Hanipah et al)
- Greater benefits with Higher BMI at initiation of treatment (BMI >36)
- Many of the weight loss medications have shown to be effective (Sudlow et al)

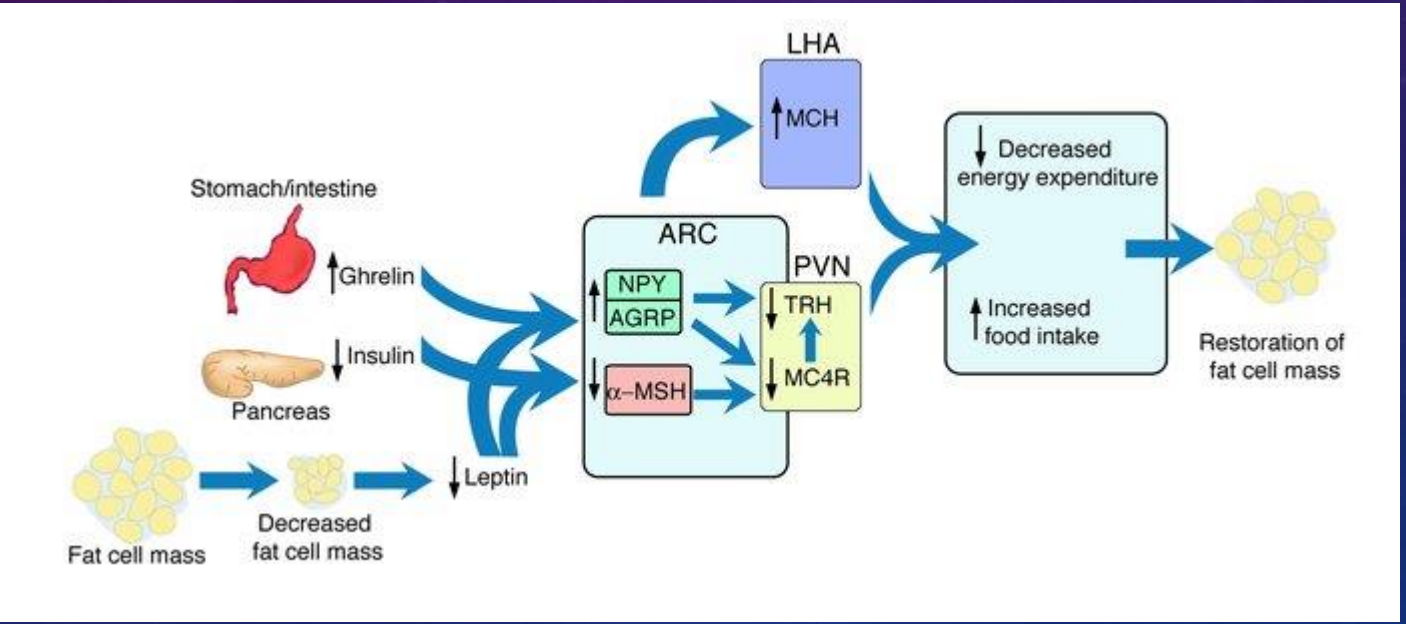
HOW CAN ANTI-OBESITY MEDICATIONS (AOM) HELP WITH WEIGHT REGAIN

- Decrease the appetite and cravings to promote dietary compliance
- Increase satiety
- Induce dysgeusia
- Simulate properties of gut hormones
- Some with secondary benefits for fatigue, insulin resistance/glycemic control, mood

AVAILABLE AOM (FDA APPROVED)

- Phentermine (1959)
- Diethylpropion (1959)
- Phendimetrazine (1961)
- Benzphetamine (1973)
  - Stimulant sympathomimetics work at CART
  - Short-term use
  - Scheduled III or IV
- Naltrexone-bupropion SR(2014)
  - Stimulates POMC and blocks opioid receptor POMC inhibitors
- Orlistat (1999)
  - Inhibits lipase to decrease fat absorption in the GI tract
- Phentermine-Topiramate ER(2012)
  - Stimulant + effects on GABA and CA
- Liraglutide 3 mg (2014)
  - GLP-1 receptor agonist, slows gastric emptying, increases satiety by enhancing POMC/CART

INTERNAL FACTORS REGULATING APPETITE AND METABOLISM



AVAILABLE MEDICATIONS

- Topiramate
- Dulaglutide
- Liraglutide 1.8 mg
- Semaglutide (subcutaneous)
- Semaglutide (oral)
- Naltrexone

CHOOSING AN APPROPRIATE WEIGHT LOSS MEDICATION

- Increased appetite and cravings
  - Stimulant anorectics
  - Topiramate (+/- stimulant anorectic)
- Impulse control/ History of substance abuse
  - Topiramate
  - Bupropion/naltrexone
  - Relative contraindication of stimulants in history of substance abuse
- Poor satiety/increased eating frequency
  - GLP1a
  - Topiramate

- Insulin resistance
  - GLP1a
  - Metformin

REFERENCES

- NCHS Data Brief ■ No. 167 ■ October 2014
- Ruopeng A, et al. Educational disparity in obesity among U.S. adults, 1984–2013. Annals of Epidemiology, 2015-09-01, Volume 25, Issue 9, Pages 637-642.e5
- Pickett, K et al. Wider income gaps, wider waistbands? An ecological study of obesity and income inequality. J Epidemiol Community Health 2005;59:670–674. doi: 10.1136/jech.2004.
- Mechanick J et al. CLINICAL PRACTICE GUIDELINES FOR THE PERIOPERATIVE NUTRITIONAL, METABOLIC, AND NONSURGICAL SUPPORT OF THE BARIATRIC SURGERY PATIENT—2013 UPDATE: COSPONSORED BY AMERICAN ASSOCIATION OF CLINICAL ENDOCRINOLOGISTS, THE OBESITY SOCIETY, AND AMERICAN SOCIETY FOR METABOLIC & BARIATRIC SURGERY★Endocr Pract. 2013 Mar-Apr; 19(2): 337–372.
- doi: 10.4158/EP12437.GL

- ASMBS.org
- Zhao H, Jiao L.**Comparative analysis for the effect of Roux-en-Y gastric bypass vs sleeve gastrectomy in patients with morbid obesity: Evidence from 11 randomized clinical trials (meta-analysis).** Int J Surg. 2019 Dec;72:216-223. doi: 10.1016/j.ijsu.2019.11.013. Epub 2019 Nov 20.
- Toolabi K et al. **Comparison of Laparoscopic Roux-en-Y Gastric Bypass and Laparoscopic Sleeve Gastrectomy on Weight Loss, Weight Regain, and Remission of Comorbidities: A 5 Years of Follow-up Study.** Obes Surg. 2020 Feb;30(2):440-445. doi: 10.1007/s11695-019-04183-x.
- Pereira S, Saboya C, Ramalho A. **Relationship of Body Composition Measures and Metabolic Basal Rate with Gastrointestinal Hormones in Weight Regain 5 Years After Gastric Bypass.** Obes Surg. 2020 Jan 2. doi: 10.1007/s11695-019-04342-0.