2022 Annual Convention &
Scientific Sessions
October 19-22

A New Era in Chronic Weight Management

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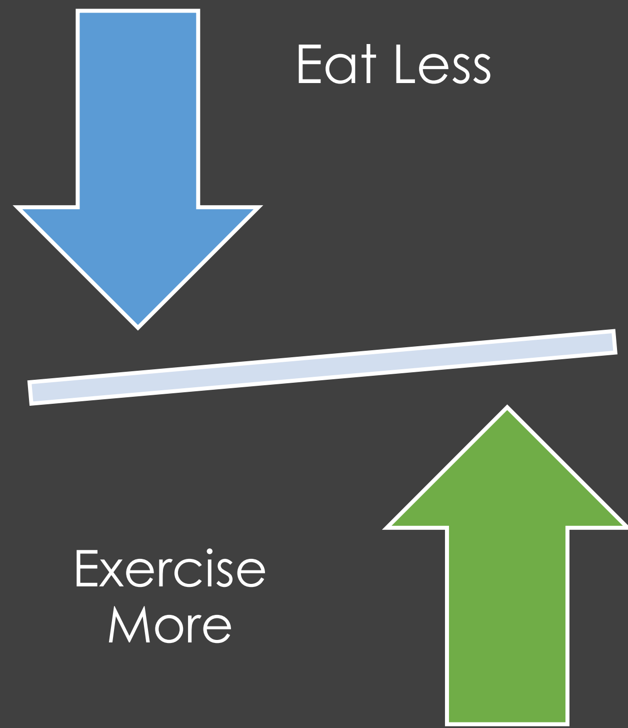
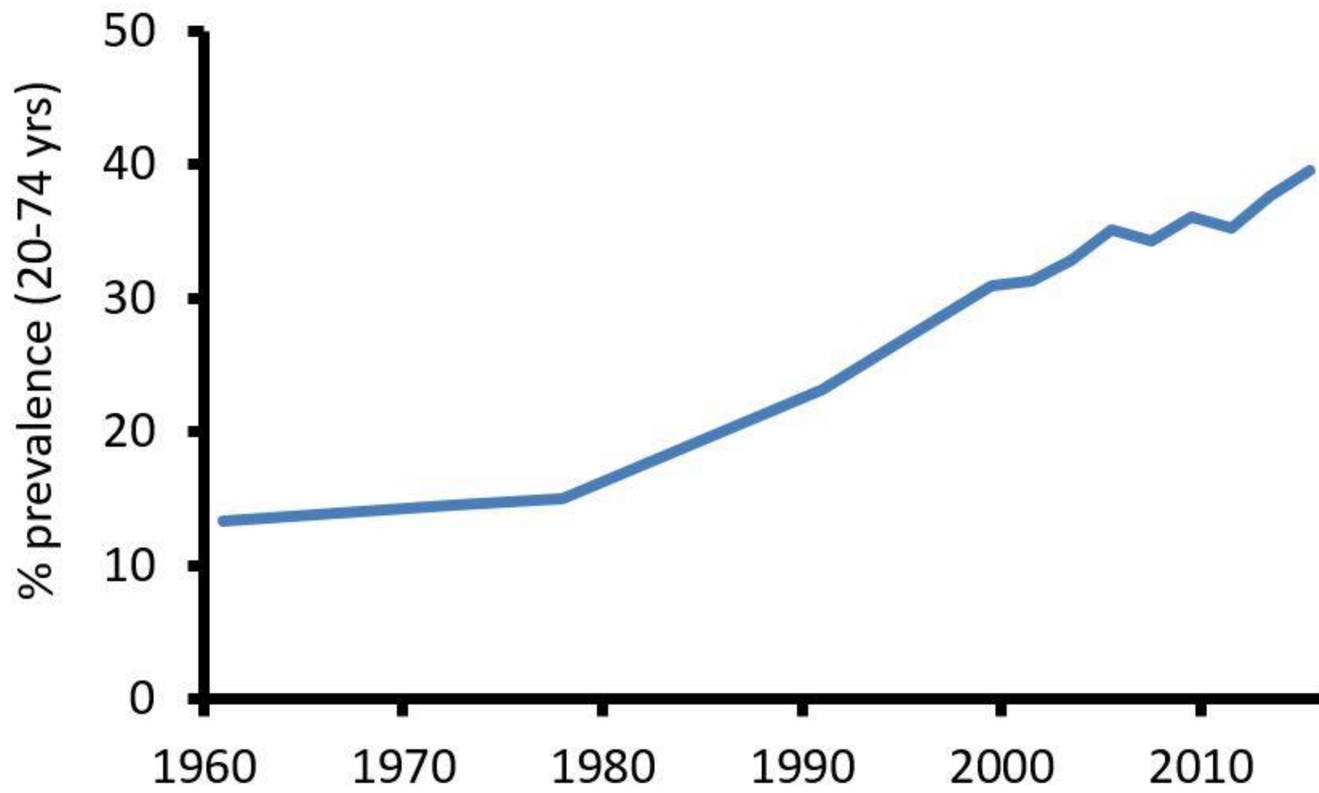
Disclosures

- No conflict of interest
- Some off-label uses will be mentioned


Count Calories
Eat Less
Exercise
More


Obesity prevalence in US adults, 1960-2016
% prevalence (20-74 yrs)
50
40
30
20
10
0
1960
1970
1980
1990
2000
2010

Obesity Trends* Among U.S. Adults

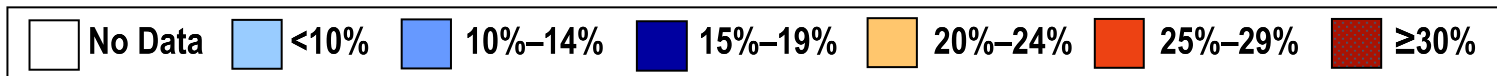
BRFSS, 1990, 2000, 2010

(*BMI ≥30, or about 30 lbs. overweight for 5’4” person)

1990

2000

2010



OBJECTIVES

- Define Obesity in modern terms
- Learn options to treat obesity including medication, but also nutrition, movement, behavioral & surgical
- Mention of myths & misconceptions about management of obesity

Adiposity-Based Chronic Disease (ABCD) is a new diagnostic term for obesity that explicitly identifies a chronic disease, alludes to a precise pathophysiologic basis, and avoids the stigmata and confusion related to the differential use and multiple meanings of the term "obesity."

[Adiposity-Based Chronic Disease as a New Diagnostic Term: The AACE/ACE Position Statement © 2017 | American Association of Clinical Endocrinology]

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Obesity is defined as a “chronic, relapsing, multi-factorial, neurobehavioral disease, wherein an increase in body fat promotes adipose tissue dysfunction and abnormal fat mass physical forces”. These may result in “adverse metabolic, biomechanical, and psychosocial health consequences.”

Why Is Obesity a Disease? - Obesity Medicine Association

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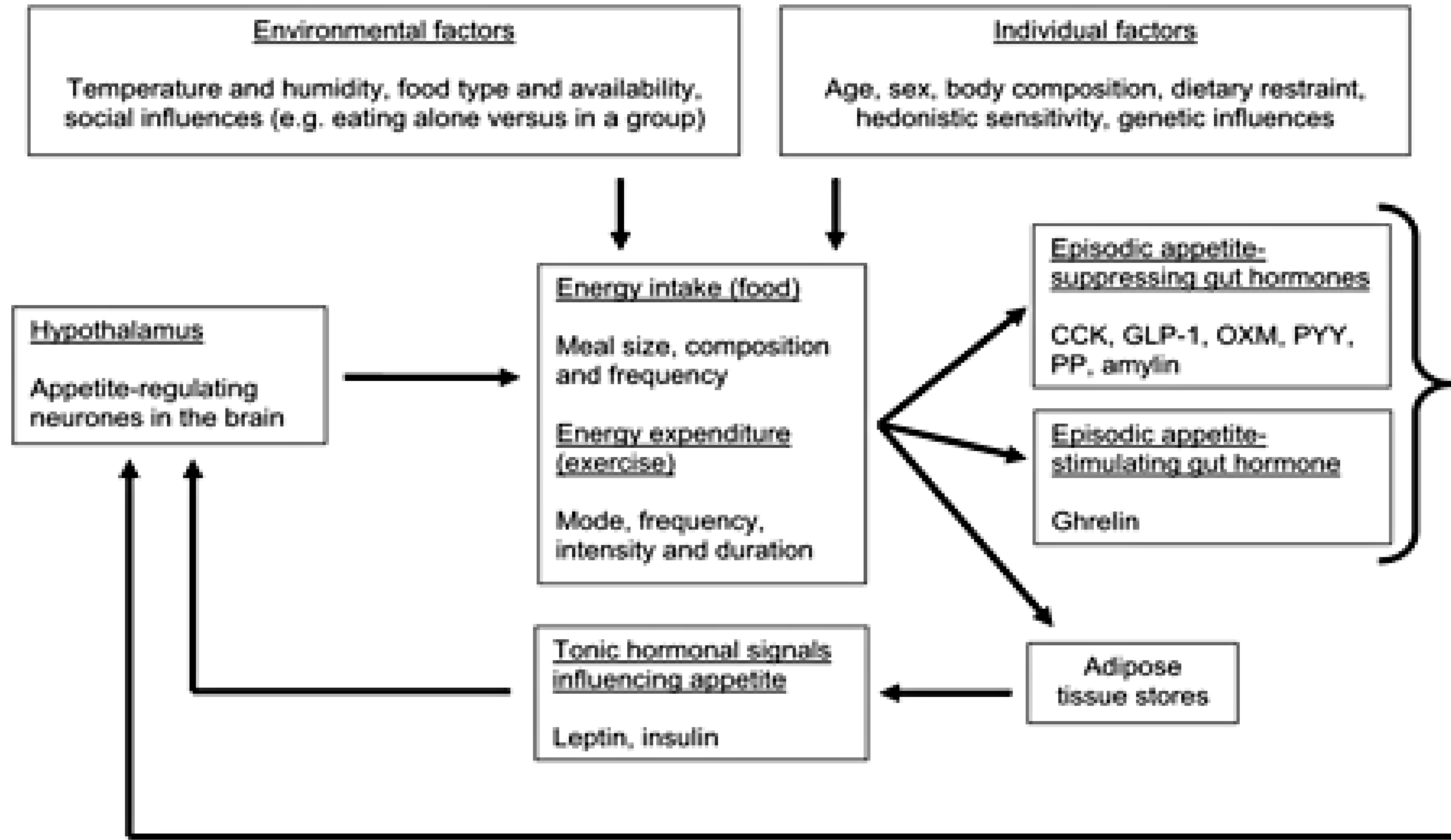
Appetite Regulating Hormones
Implications for Food Intake and Weight Control

Dr. David Stensel, Loughborough University UK, Feb 2011



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Obesity Myths & Misconceptions

Weight Management

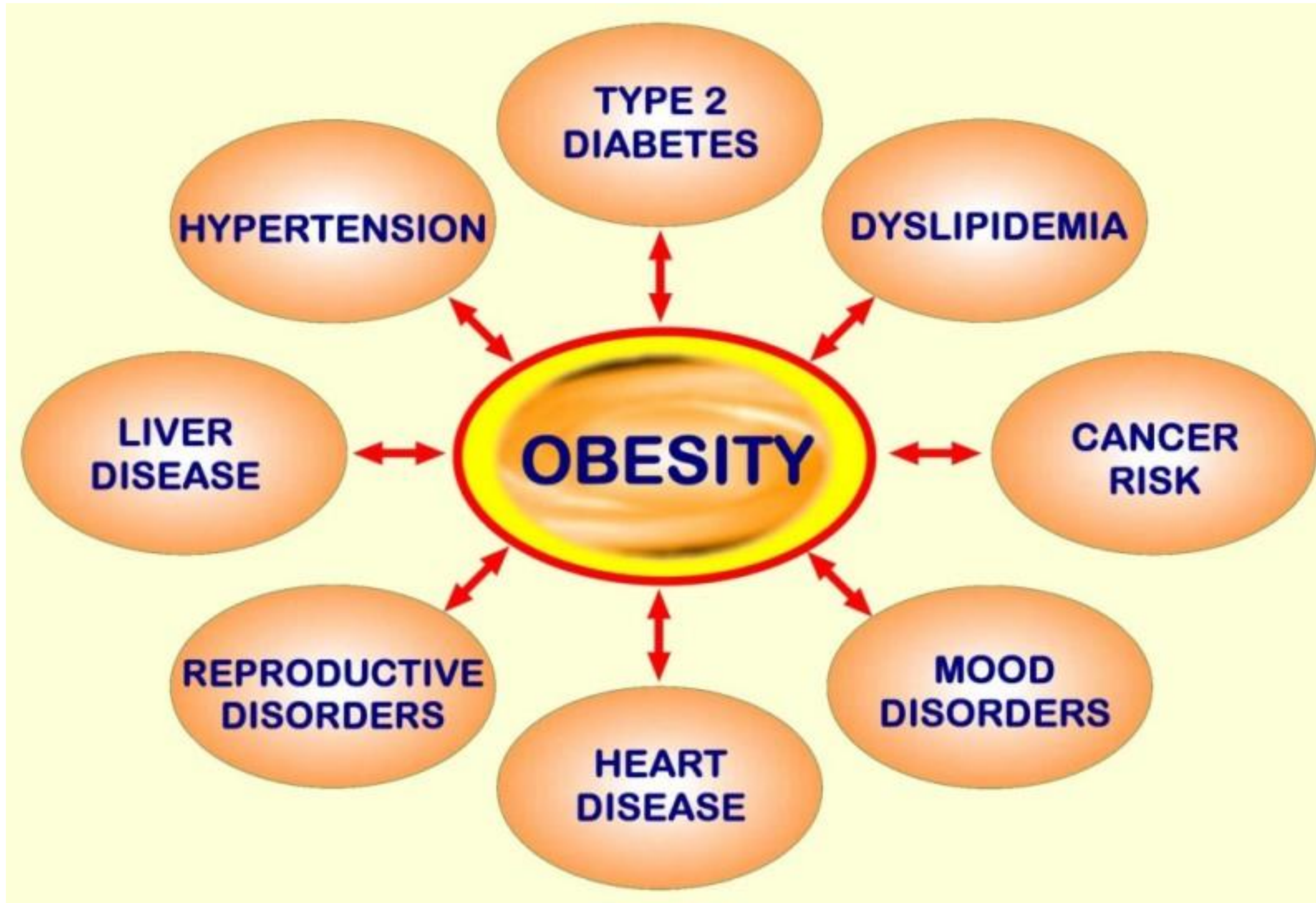
- Weight = Health
- Weight Loss = Better Health
- 3500 calorie deficit = 1 lb weight loss
- Once weight is lost, it the weight loss can be easily maintained

BMI 30-39 Obesity

BMI >40 Severe Obesity

- Overdx
  - large framed
  - muscular
  - AfricanAmerican
- Underdx
  - small framed
  - Asian

Clinical Problems Caused by or Associated with Obesity



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Evidence Regarding Therapeutic Weight Loss for Complications of Obesity

Obesity Complication	% WL for Therapeutic Benefit
Diabetes Prevention	3 to 10%
Hypertension	5 to >15%
Dyslipidemia	3 to >15%
Hyperglycemia (↑A1c)	3 to >15%
NAFLD	10%
Sleep Apnea	10%
Osteoarthritis	5 to 10%
Urinary Stress Incontinence	5 to 10%
GERD	Women 5 to 10% Men 10%
PCOS	5 to 15%

Diabetes Care Vol 38, Aug 2015

Obesity Principles / Osteopathic Principles

Fat Mass Disease - Structural

- Neck circumference & OSA
- Weight Bearing Joint & OA
- Central Obesity &
  - Restrictive Lung Disease
  - GERD
  - Bladder Dysfunction
  - LE Edema

Fat Function Disease

- Inflammation
  - Heart Disease
  - DVT
- Hormonal
  - Diabetes
  - Fertility issues
  - Appetite Dysregulation

Lean Body Mass – Structure and Function

- Measure body composition via bioimpedance, DEXA
- Lean body mass (LBM) includes muscle, bone, organs, & fluids. Dry lean mass is minus the fluids.
- Avoid loss of LBM during weight loss
- Eat to support LBM, eg. proteins
- Exercise to support LBM and avoid loss of LBM during aging and during active weight loss
- Prevent/Treat Sarcopenia, Sarcopenic Obesity, Frailty

NUTRITION

MOVEMENT

BEHAVIORAL

SURGERY

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Options to Treat Obesity - Nutrition

Base on Patient's personal preference & access.

No one diet is best for all

- Low fat
- Mediterranean
- Nutritional Ketosis/Low Carb
- Intermittent fasting
- Plant based
- Meal replacements

Options to Treat Obesity - Movement

Exercise for Health

Exercise to Prevent Overweight & Obesity

Exercise to Maintain weight loss – note:

60 min/day 7 d/wk

may be required!!!

Aerobic & Resistance

- How much!
- How often
- How intense
- HIIT (high intensity interval training)

Sedentary

Non-Exercise Activity Thermogenesis (NEAT)

- Work, play, hobbies, chores, shopping….

Myths & Misconceptions for Nutrition & Movement

- Calorie counting required
- All calories are the same
- Artificial sweeteners (zero calorie) don’t count
- Exercise to burn calories
- Exercise to lose weight
- Persons with disabilities can’t exercise
- Get in an hour of exercise daily, and then relax
- Sedentary time doesn’t count if you are at work
- Since sleep doesn’t burn calories, less is better

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Options to Treat Obesity - Behavioral

Screen for Eating Disorders, especially Binge Eating Disorder (BED)

- **5 A's**
  - Ask, Assess, Advise, Agree, & Assist/Arrange
    - Sturgiss E, van Weel C. The 5 As framework for obesity management: Do we need a more intricate model? Can Fam Physician. 2017 Jul;63(7):506-508. PMID: 28701434; PMCID: PMC5507219.
- **AVOID shaming, blaming**
- **Motivational Interviewing**
- **Screening tools**, eg.
  - Depression
  - Addictions including food/sugar
  - QOL
- **Frequent follow up**

Myths & Misconceptions - Behavioral

- Eating is all about willpower
- Shaming motivates
- Our patients with obesity have not tried to lose weight
- Discussions regarding weight are futile
- My staff and I are unbiased in regards to our patients with obesity
- What works for me will work for my patient's too
- Lose the weight, then maintaining is easy

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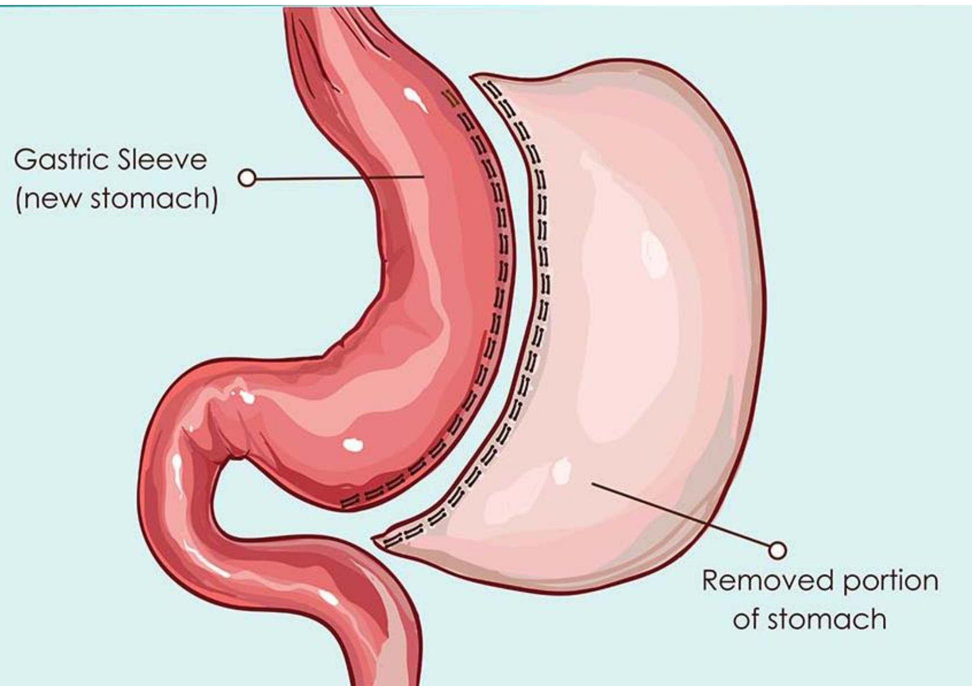
Options to Treat Obesity - Surgery



- Adjustable Gastric Banding
- Roux en y Gastric Bypass
- Sleeve Gastrectomy
- SADI-S: Single Anastomosis Duodenal-Ileal Bypass with Sleeve Gastrectomy
  - Newest. Replaces biliopancreatic diversion with duodenal switch

asmbs.org/patients/bariatric-surgery-procedures#band

Myths - Surgery

- Surgery alone results in significant weight loss long term
- Surgery is the only way to lose weight
- After 1 year, follow up is no longer needed
- You can eat anything you want because you had gastric bypass
- Surgery can be reversed

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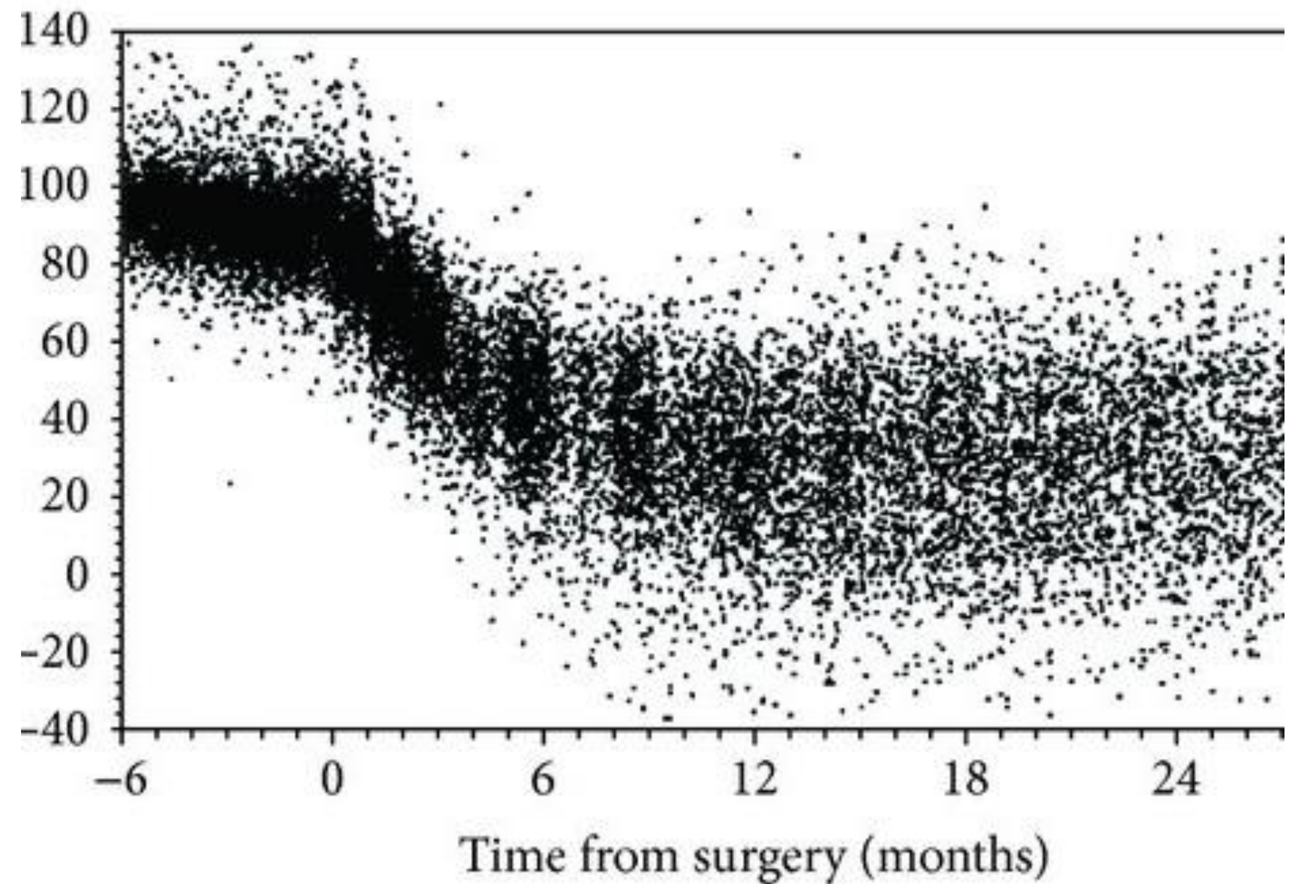
Images/Graphs of Bariatric Surgery Results

- Each dot represents a patient's results (scatter graph)
- Linear results (as typically displayed) don't point out individual variations
- Bariatric surgery measures in % of EXCESS weight loss, Not % of weight loss



Obesity Treatment Options BMI Based

BMI	25-26	27-29	30-39	40 & up
	Normal	Overweight	Obesity	Severe Obesity
Prevention	X	X		
Rx Lifestyle	X	X	X	X
Hydrogel	X	X	X	
Medication		X	X	X
Surgery			X	X

Compensatory Regulation After Weight Loss. Metabolic Adaptation

Person with **Obesity** ⟶ Person with **Weight Loss**

Energy Gap

↑**Hunger**

↑ Ghrelin

↓ GLP-1, PYY, CCK, Insulin, Leptin

↓**Energy Expenditure**

↓ RMR, TEF

↓ Satiety, Satiation

↑ Energy Efficiency

Weight Regain Risk

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Medications in Treatment of Obesity

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Options to Treat Obesity – Medications to Manage Food Intake

- Phentermine
- Phentermine/Topirimate (Qsymia)
- Naltrexone ER/Buproprion ER (Contrave)
- Liraglutide 3.0 mg
- Semaglutide 2.4 mg
- Orlistat
- Hydrogel

Phentermine

see also Diethylpropion, Phendimetrazine, Benzphetamine

- MOA: sympathomimetic effect on hypothalamus
- FDA 1959, limited to 12 weeks. Schedule IV CS
- Dose: 8 mg premeal TID
  or 15 mg qd or bid,
  or 30 mg, or 37.5 mg daily
- Weight loss:
  6-7% at 28 weeks
- UDS +amphetamine

- Side Effects:
  Dry mouth
  possible anxiety/elevated HR & BP
- Contraindication:
  Pregnancy
  caution in:
  CAD, CVD, dysrhythmia,
  QT prolongation,
  avoid MAOI's

Phentermine/Topirimate (Qsymia)

- MOA: sympathomimetic & blocks neuronal excitability, ↓glutamate, ↑GABA
- FDA 2012, Schedule IV CS
- Dose: 3.75 mg/23 mg po qd x 2 weeks, then **7.5** mg/**46** mg. IF insufficient WL then 11.25 mg/69 mg x 2 weeks then 15 mg/92 mg daily
- Weight Loss:

62-70% achieved ≥ 5% WL
37-47% " ≥ 10% WL
32% " ≥ 15% WL

- Side Effect: dry mouth, changes in mood, changes in taste (dysgeusia)
- Contraindication:

Pregnancy (black box warning)
Hyperthyroid
Glaucoma
MAOI within 30 day
Caution: nephrolithiasis

- Off Label: phentermine alone + Topamax alone

https://qsymia.com

Naltrexone ER/Bupropion ER (Contrave)

- MOA: ↓ reuptake of Norepinephrine & dopamine reuptake. POMC synergy
- FDA: 2014
- Dose: 8 mg/90 mg -> 32 mg/360 mg

Wk 1	1 tab a.m.	0
Wk 2	1 tab a.m.	1 tab p.m.
Wk 3	2 tab a.m.	1 tab p.m.
Wk 4 & onward	2 tab a.m.	2 tab p.m.

- Weight Loss:

42-55% achieve 5% WL

21% " 10% WL

- Side Effects: Nausea, HA
- Off Label: Naltrexone (Vivitrol) alone + bupropion (Wellbutrin)
- Contraindication:

Pregnancy

Opioid medication

Seizure & Sz meds

Depression (↑ suicide risk)

Anorexia N, Bulemia N

AUD or OUD and/or withdrawal

https://contrave.com/

Liraglutide (Saxenda)

- MOA: GLP-1 agonist
- FDA 2014
- Dose: Daily SC injection pen, to abd, thigh, upper arm. Include

NovoFine Needles 8 mm × 30 G

Wk 1	Wk 2	Wk 3	Wk 4	Wk 5 +
0.6 mg	1.2 mg	1.8 mg	2.4 mg	3.0 mg

- Weight Loss:

1 year 10.8%

- Side Effect:

Nausea, Inj site rxn, Hypoglycemia, may slow gastric emptying

- Contraindication:

Pregnancy
Pancreatitis
Gallbladder dz
self or FMHx of Medullary Thyroid Ca or MEN2

Off Label: lower DM dose(Victosa) also a/w ↓ appetite

https://www.saxenda.com/

Semaglutide

- MOA: GLP-1 agonist
- FDA 2017 DM, 2021 for WL
- Indication
  - Prefilled single dose pens
  - SC weekly injection

  Ozempic for DM,
  Wegovy 2.4 mg SC for Obesity
  - Note Daily po titrating doses

  Rybelsus for DM

- SE & Contraindications: See liraglutide
  Monitor glucose
- Dosing:
  - Weekly SC in abdomen, thigh, or upper arm

  0.25 mg SC weekly x 4 weeks
  0.50 mg SC weekly x 4 weeks
  Continue q4wk dosing increase until
  2.4 mg SC weekly is reached.
- Weight Loss:

  83% patients achieved ≥ 5% WL
  66% " ≥ 10% WL
  30% " ≥ 20% WL

Orlistat (Alli, Xenical)

- MOA: Lipase Inhibitor
- FDA 1999
- DOSE: OTC 60 mg po tid with low fat meals, or RX 120 mg po bid with low fat lunch and dinner
- Weight Loss:

  4% WL in 1 year

- Side Effects:

  Oily stool.

  Risks stool incontinence
- Contraindication:

  pregnancy,

  GI malabsorption,

  gallbladder dx
- Beware may affect absorption of other medications
- Off label: tx constipation

https://xenical.com/

Hydrogel

- MOA: Cellulose expansion
- FDA 2020 for BMI 25-40
- Dose: (1 pod of 3 capsules)
  3 capsule p o with 16-20 oz water taken 20 min prior to Lunch & Dinner
- Weight Loss:
  58% achieve ≥ 5% WL

- Side Effect: abdominal distension/bloat/pain, BM irreg, diarrhea
- Caution/Contraindication
  pregnancy
  GI anatomic change or dysfunction

1) https://get.myplenity.com/ 2) www.gelesis.com

Options to Treat Obesity – Off Label Medications

Off label use consent

Beware of laws in your state

- Metformin
- SGLT2 inhibitors
- Topiramate (Topamax)
- Bupropion (Wellbutrin, Zyban)
- Liraglutide DM dose
- Semaglutide DM dose
- Phentermine > 12 wks

endocrineweb.com/conditions/obesity/obesity-medications#off-label-drugs

MISC Obesity Related Medications

Setmelanotide (Imcivree)

- For genetic mutation Obesity & Hyperphagia
  - MC4R=melanocortin-4 receptor
  - Bardet-Biedl syndrome (BBS)
- FDA 2020
- For adults and children

imcivree.com

Lisdexamphetamine (Vyvanse)

- For Binge Eating Disorder (BED) and/or ADHD
- BED – Binge/out of control eating with marked distress ≥ weekly x ≥ 3 months
- Majority of people with BED also have obesity or severe obesity
- Schedule II, FDA 2007
- NOT FDA approved for treatment of Obesity

vyvanse.com/binge-eating-disorder

Options to Treat Obesity – AVOID Medications Associated with Weight Gain

- **Antidepressants**
  - SSRI paroxetine (Paxil) & sertraline (Zoloft)
  - TCA amitriptyline
- **Antipsychotics**
  - Mirtazapine (Remeron)
- **Anticonvulsants**
  - Gabapentin (Neurontin)
  - Valproic acid, Divalproex (Depakote)
  - Carbamazepine (Tegretol)
- **Mood stabilizers**
  - Lithium
- **Steroids**
  - Prednisone & methylprednisolone
- **Diabetes**
  - Insulin Analogs
  - Sulfonylureas
  - Thiazolidinediones
- **Antihypertensives**
  - Alpha blockers
  - Betablockers
  - CCB Amlodipine
- **Antihistamines**
- **Hormonal contraceptives**
  - Medroxyprogesterone (Depo-Provera)

www.drugs.com/article/weight-gain.html

Myths & Misconception - Medications

- Only Rx meds until patient reaches goal, then stop
- Insurance won't cover treatment of obesity
- Anti-obesity medications cannot be combined
- No medications required if/after bariatric surgery
- Most OTC supplements are safe & effective for weight loss

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CASE STUDY 1

- Jane is 56 year old female with diabetes, dyslipidemia, hypertension, severe obesity, sleep apnea, NAFLD, arthritis. She can lose weight short term but regains her weight. She takes basal insulin, glipizide, and metformin. Which is NOT an appropriate step in her care?
    - a) Ask, Assess, Advise, Agree, & Assist/Arrange care
    - b) Consider a GLP-1 agonist to reduce and replace insulin and glipizide
    - c) Consider bariatric surgery
    - d) Dismiss her as non-compliant because she keeps regaining weight

CASE STUDY 2

- Jack is a 29 year old male on antipsychotic medications. He now has overweight, pre-diabetes, and has a past history of opiate use disorder. He continues to use tobacco. He comes to you because he is concerned about his continuous weight gain. Which below is NOT an appropriate next step?
  - a) exercise and his preferred nutritional ketosis diet
  - b) referral to a dietitian and/or obesity medicine specialist along with coordination of care with his psychiatrist.
  - c) sleeve gastrectomy
  - c) metformin and naltrexone ER/bupropion ER along with intensive counselling and follow up

Treat & Reduce Obesity Act of 2021

- Bipartisan bill, introduced yearly since 2013
  - S 596 and HR 1577
- To advocate and follow: www.congress.gov
- Proposes CMS coverage
  - 1) Intensive Behavioral Therapy
  - 2) Anti-Obesity Medications

Resources

- Obesity Medicine Assoc. obesitymedicine.org
- American Assoc of Clinical Endocrinologists. ProAACE.com
- American Society for Metabolic & Bariatric Surgery. ASMBS.org
- The Obesity Society. Obesity.org
- American Board of Obesity Medicine. ABOM.org
- Obesity Action Coalition. www.obesityaction.org

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