MCT2D Learning Community Monthly Calls

Weight Loss Medications

To receive CME/CE credit

TEXT 66612 to 833-256-8390

(by 1:00 PM on November 18)

Complete the evaluation online by December 3

at https://beaumont.cloud-cme.com

For assistance, email CHEcme@corewellhealth.org

Beaumont

Continuing Education Credits

CME/CE Accreditation: In support of improving patient care, Beaumont Health is jointly accredited by the Accreditation Council for Continuing Medical Education (ACCME), the Accreditation Council for Pharmacy Education (ACPE), and the American Nurses Credentialing Center (ANCC), to provide continuing education for the healthcare team.

This activity was planned by and for the healthcare team, and learners will receive 1.0 Interprofessional Continuing Education (IPCE) credit for learning and change.

Medicine CME: Beaumont Health designates this live activity for a maximum of 1.0*AMA PRA Category 1 Credit*™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Nursing CE: Beaumont Health designates this activity for a maximum of 1.0 ANCC contact hour. Nurses should claim only the credit commensurate with the extent of their participation in the activity.

Pharmacy CE: Beaumont Health designates this activity for 1.0 ACPE contact hour. ACPE Universal Activity Number (UAN): JA4008259-9999-23-054-L01-P; JA4008259-9999-23-054-L01-T. Learners should claim only the credit commensurate with the extent of their participation in the activity. Credit will be uploaded to the NABP CPE Monitor within 30 days after activity completion. Per ACPE rules, Beaumont Health does not have access nor the ability to upload credits requested after 60 days. It is the individual learner's responsibility to provide the correct NABP ID and DOB (MMDD) to receive credit.

Dietetic CPEU:

Commission on Dietetic Registration
the credentialing agency for the Academy of Nutrition and Dietetics

Completion of this RD/DTR profession-specific or IPCE activity awards CPEUs (One IPCE credit = One CPEU).

If the activity is dietetics-related but not targeted to RDs or DTRs, CPEUs may be claimed which are commensurate with participation in contact hours (One 60 minute hour = 1 CPEU).

RD's and DTRs are to select activity type 102 in their Activity Log. Sphere and Competency selection is at the learner's discretion.

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Disclosure

The following speakers and/or planning committee members have identified the following relevant financial relationship(s) with ineligible companies. All other individuals involved with this activity have no relevant financial relationships with ineligible companies to disclose.

- Lauren Oshman, M.D. (Course Co-Director): Stocks in publicly traded companies or stock options, excluding diversified mutual funds – Abbott, AbbVie, Johnson & Johnson, Merck & Co.

Mitigation of Conflicts of Interest: In accordance with the ACCME Standards for Integrity and Independence in Accredited Continuing Education, Beaumont Health implemented mechanisms to identify and mitigate relevant financial relationships with ineligible companies for all individuals in a position to control content of this activity.

Beaumont

The role of anti-obesity medications in T2DM management

Michigan Collaboration for Type 2 Diabetes

Dina Griauzde, MD, MSc
Assistant Professor, Department of Internal Medicine
University of Michigan
VA Ann Arbor Healthcare System
Diplomate, American Board of Obesity Medicine
Research Director, Michigan Medicine Weight Navigation Program
Co-medical Director, Weight Management and Metabolic Health Program, VAAAHS

Overview

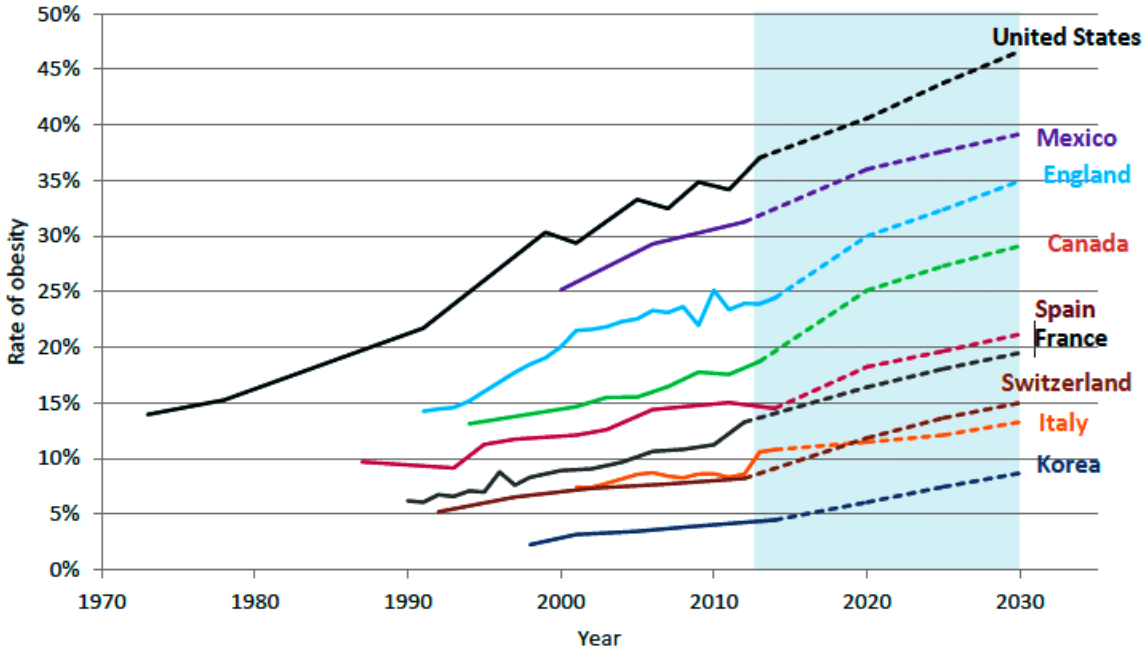
1. Pathophysiologic link between obesity and T2DM
2. Mechanism of action, efficacy, and safety of incretin mimetics for the treatment of obesity
3. Role for older anti-obesity medications in patient-centered obesity treatment
4. Case examples

Overview

1. **Pathophysiologic link between obesity and T2DM**
2. Mechanism of action, efficacy, and safety of incretin mimetics for the treatment of obesity
3. Role for older anti-obesity medications in patient-centered obesity treatment
4. Case example

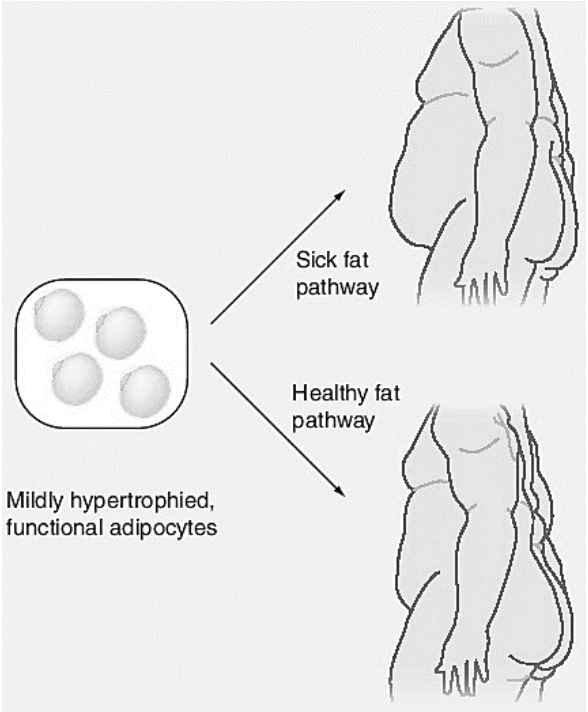
Obesity is a public health crisis

Projected global increase in obesity

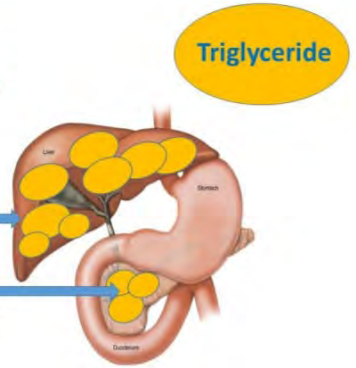


Obesity-Update-2017.pdf (oecd.org)

Pathophysiologic link between obesity and T2DM



Type 2 diabetes results in part from accumulation of fat in the liver and pancreas



Liver fat: linked to insulin resistance

Pancreatic fat: inhibits B cell function -cannot produce enough insulin

Bays et. al, *Expert Rev Cardiovasc Ther.* 2006
Hollingsworth et al. *Diabetologia.* 2011

MCT2D

Heterogeneity of obesity and its consequences

Visceral fat → metabolic dysfunction

Visceral fat (relative to BMI)

- Increased in South Asians
- Decreased in blacks

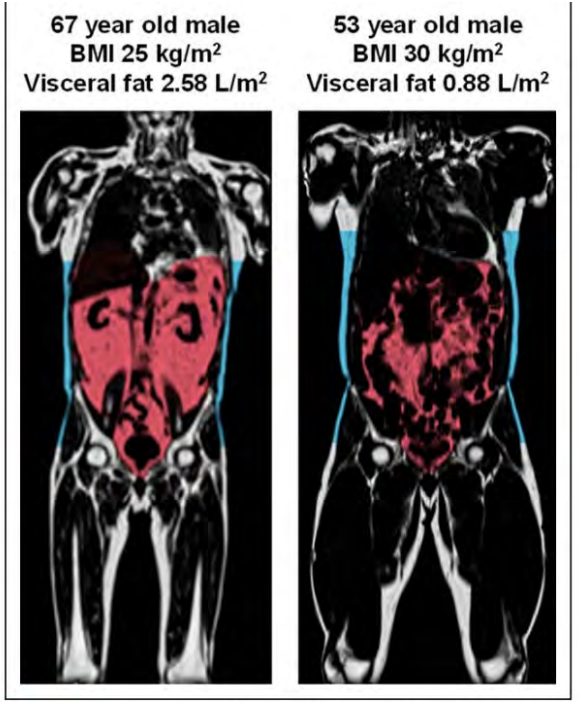
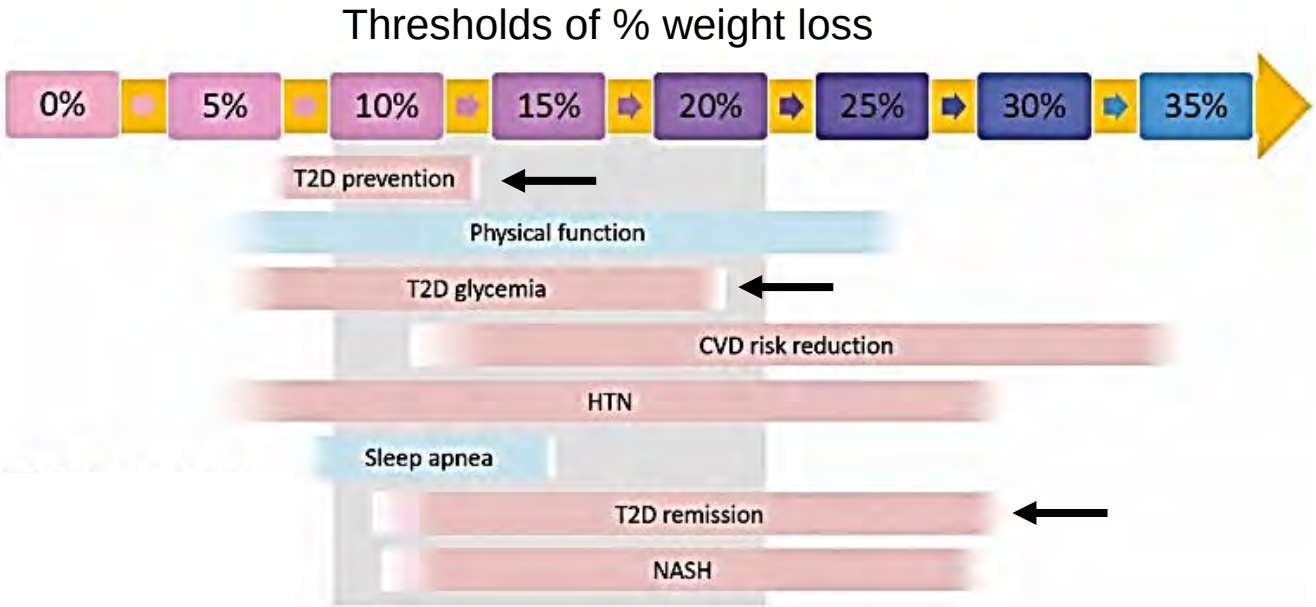


Figure 1. Extreme variation in abdominal fat distribution.

Needland et. al. Circulation. 2016

Weight loss improves health



”the essential goal of weight loss therapy is not the quantity of weight loss as an end unto itself but rather ***the prevention and treatment of complications*** *to enhance health and* ***mitigate morbidity and mortality****.*

Garvey. *J Clinical Endo and Met.*, 2022

AOMs are one option to support weight loss

BMI > 30 kg/m^2 **OR** > 27 kg/m^2 + ≥1 obesity-related condition*

AND

Non-achievement of weight or health goals with lifestyle change

OR

Suboptimal weight loss or weight regain after bariatric surgery

*If Asian, consider if BMI ≥ 25 or ≥ 23 + co-morbidities

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Suboptimal weight loss or weight regain after bariatric surgery

*If Asian, consider if BMI ≥ 25 or ≥ 23 + co-morbidities

Intended for **long-term use** in conjunction with **lifestyle change**

Generally, **≤ 5% weight loss** after 3 months on max dose is an indication to stop the medication and **try something else**

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What are incretin hormones?

Nutrient-stimulated gut hormones

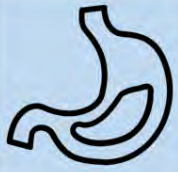
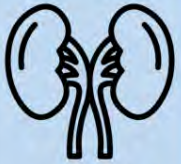
Stimulate insulin secretion in response to a meal

Two key hormones:

1. Glucagon-like peptide-1 (**GLP-1**)
2. Glucose-dependent insulinotropic polypeptide (**GIP**)

Mechanism of action

GLP-1

No prominent effect	Increase insulin Decrease glucagon	Decrease gastric emptying	Increase HR Cardio-protection	Increase meal-associated bone remodeling	Decrease caloric intake	Decrease sodium excretion
						
ADIPOCYTES	PANCREAS	STOMACH	HEART	BONE	CNS	KIDNEYS

Adapted from Nauck, *Diabetes Obes. Metab.* 2021

Mechanism of action

GLP-1

ADIPOCYTES	PANCREAS	STOMACH	HEART	BONE	CNS	KIDNEYS
No prominent effect	Increase insulin Decrease glucagon	Decrease gastric emptying	Increase HR Cardio-protection	Increase meal-associated bone remodeling	Decrease caloric intake	Decrease sodium excretion

ADIPOCYTES	PANCREAS	STOMACH	HEART	BONE	CNS	KIDNEYS
Increase glucose and TG uptake Increase TG storage	Increase insulin Increase glucagon	No prominent effect	Increase HR	Increase meal-associated bone remodeling	Uncertain	No prominent effect

GIP

Adapted from Nauck, *Diabetes Obes. Metab.* 2021

GLP-1 (and GIP) receptor agonists for T2DM

Generic drug name (brand name)	Dosing frequency
Exenatide (Byetta)	Twice daily
Exenatide extended release (Bydureon)	Weekly
Liraglutide (Victoza)	Daily
Dulaglutide (Trulicity)	Weekly
Semaglutide (Ozempic, Rybelsus)	Weekly, Daily
Tirzepatide* (Mounjaro)	Weekly

BOLD=higher doses FDA-approved for weight management
*Dual GLP/GIP receptor agonist

GLP-1 receptor agonists for weight management

Liraglutide (Saxenda)

- **Once daily injection**
- Titrated **weekly**

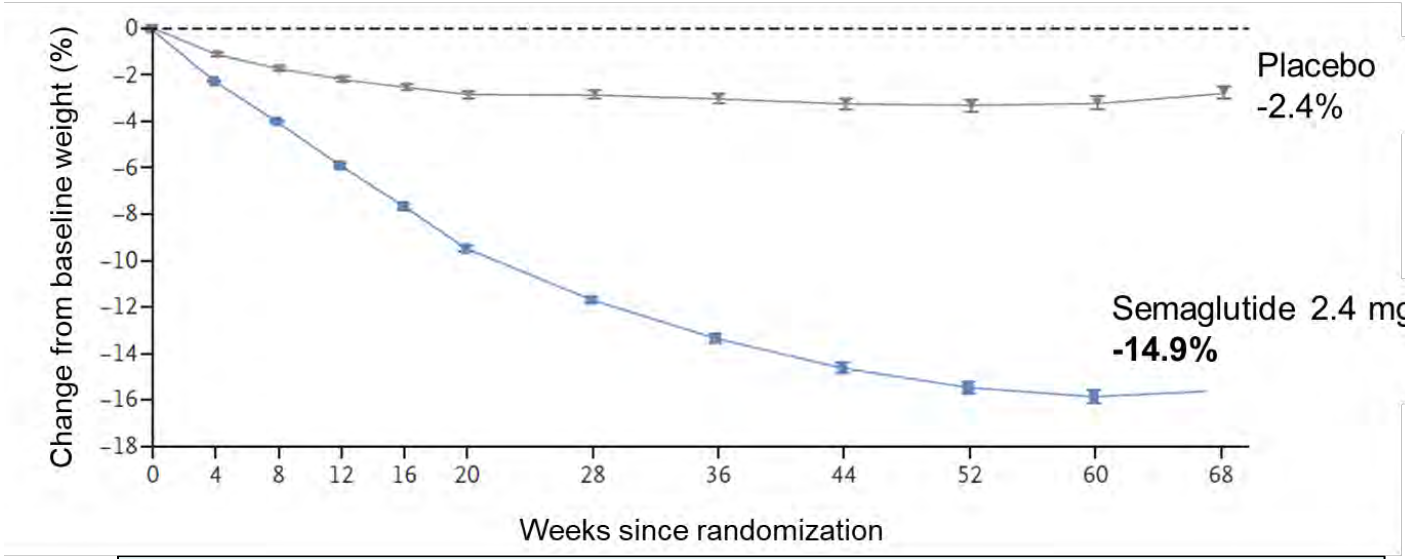
Semaglutide (Wegovy)

- **Once weekly injection**
- Titrated **monthly**

Adapted from Nauck, *Diabetes Obes. Metab.* 2021

Semaglutide 2.4 mg among patients with obesity (STEP 1 trial)

Mean % weight loss from baseline to 68 weeks (n=1961)

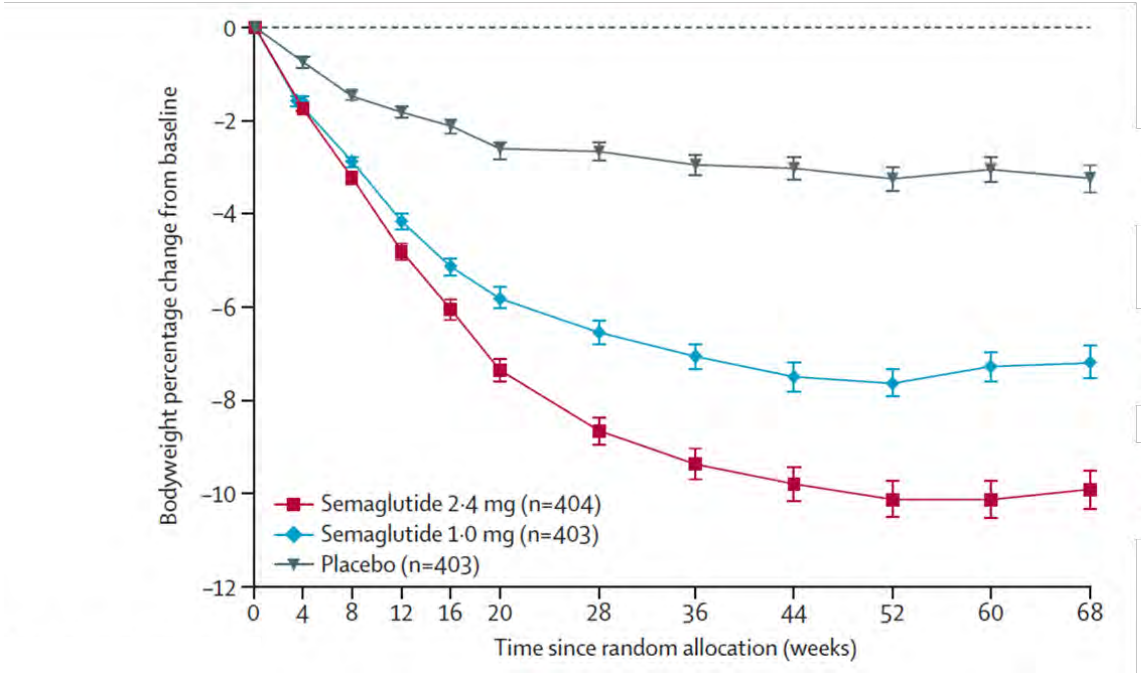


Among participants receiving semaglutide,
69% lost ≥ 10% body weight and **32% lost ≥ 20%** body weight

Wilding et al., *NEJM,* 2021

Semaglutide 2.4 mg among patients with T2DM (STEP 2 trial)

Mean % weight loss from baseline to 68 weeks (n=1210)



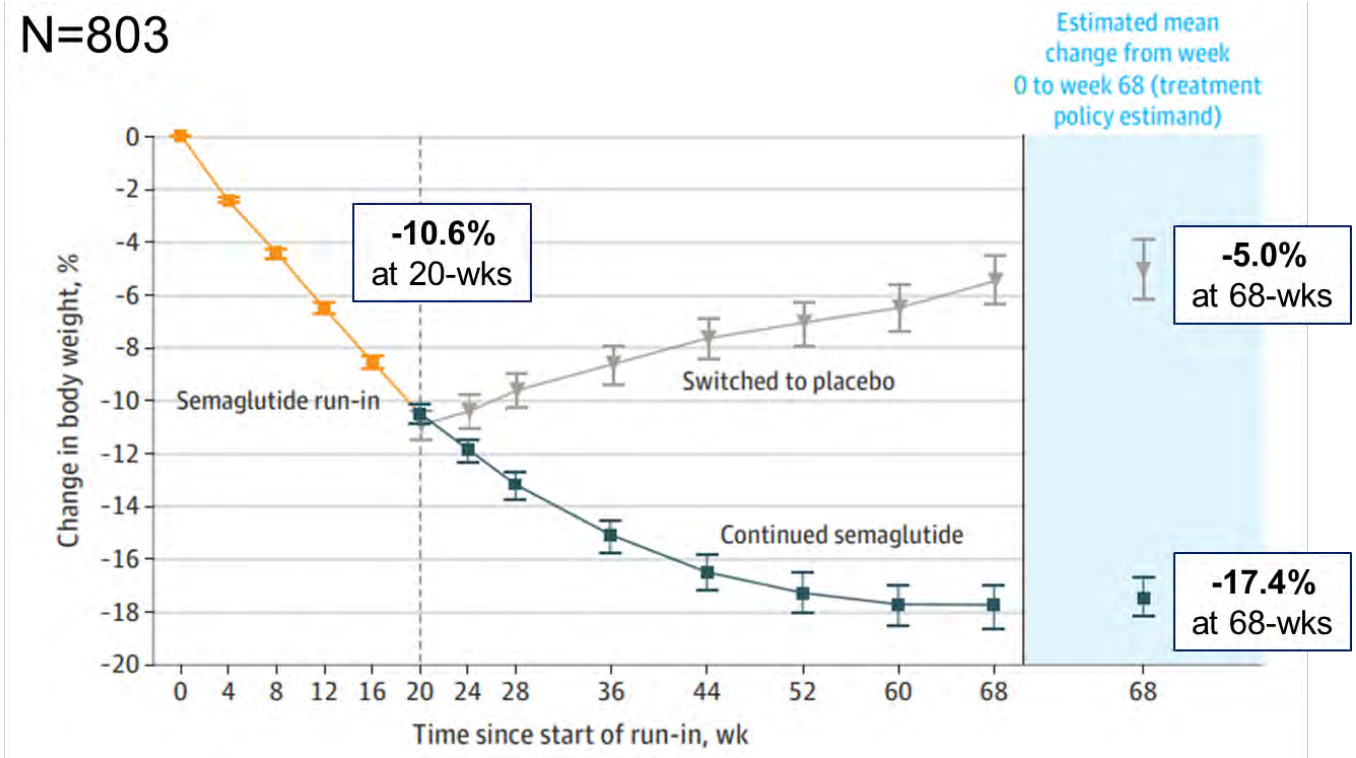
Placebo
-3.4%

Semaglutide 1.0 mg
−6.99%

Semaglutide 2.4 mg
-9.6%

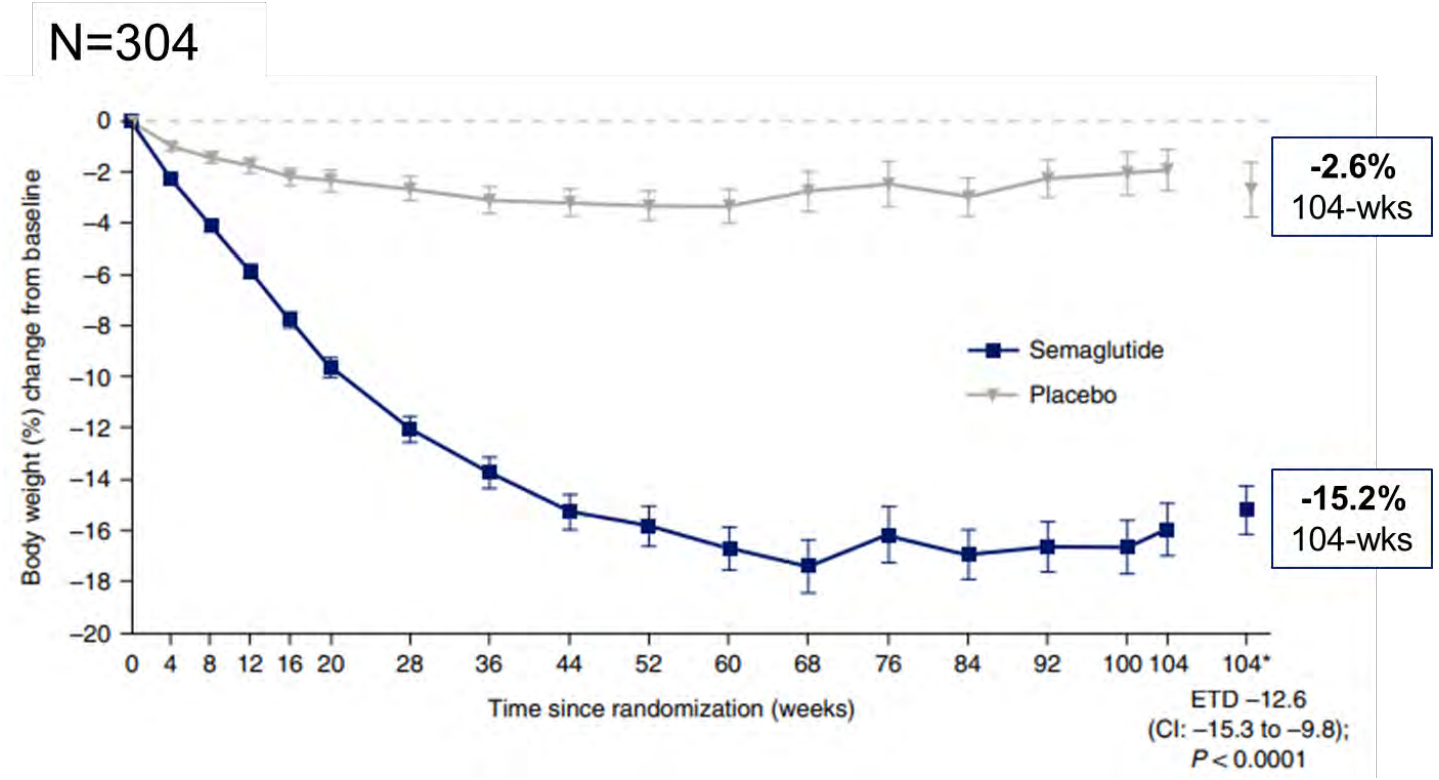
Davies et al. *Lancet.* 2021

Weight regain with discontinuation (STEP 4 trial)



Rubino et al. *JAMA*, 2021

Long-term efficacy (STEP 5)



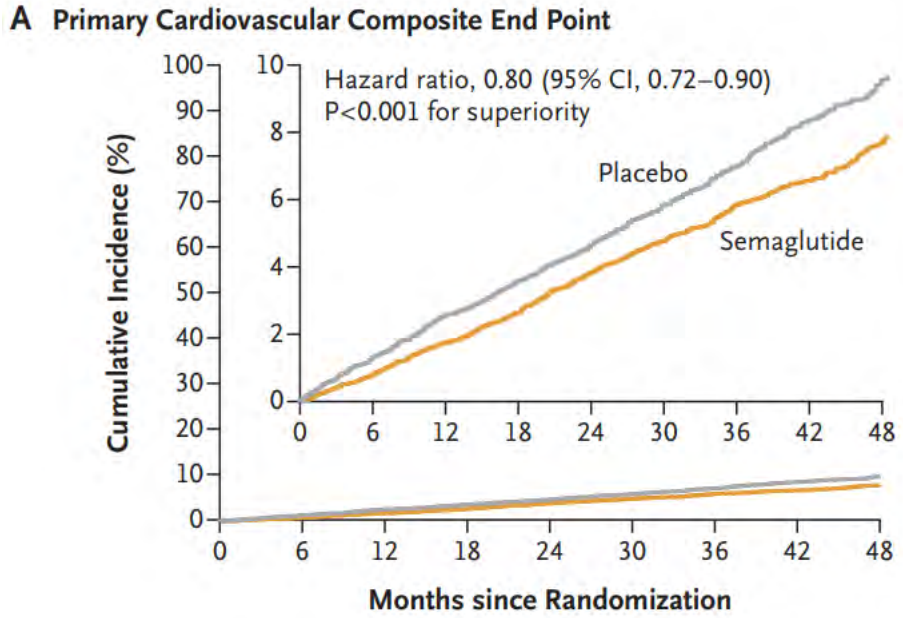
Garvey et al. *Nature Medicine*, 2022

Cardiovascular benefit

SELECT trial

- N=17,604 (41 countries)
- BMI ≥ 27, CVD, no T2DM
- Semaglutide 2.4 mg vs. placebo
- Followed for 5 years

- *Primary end point:* composite of death from CV causes, nonfatal MI, nonfatal stroke



Lincoff et al. NEJM, 2023

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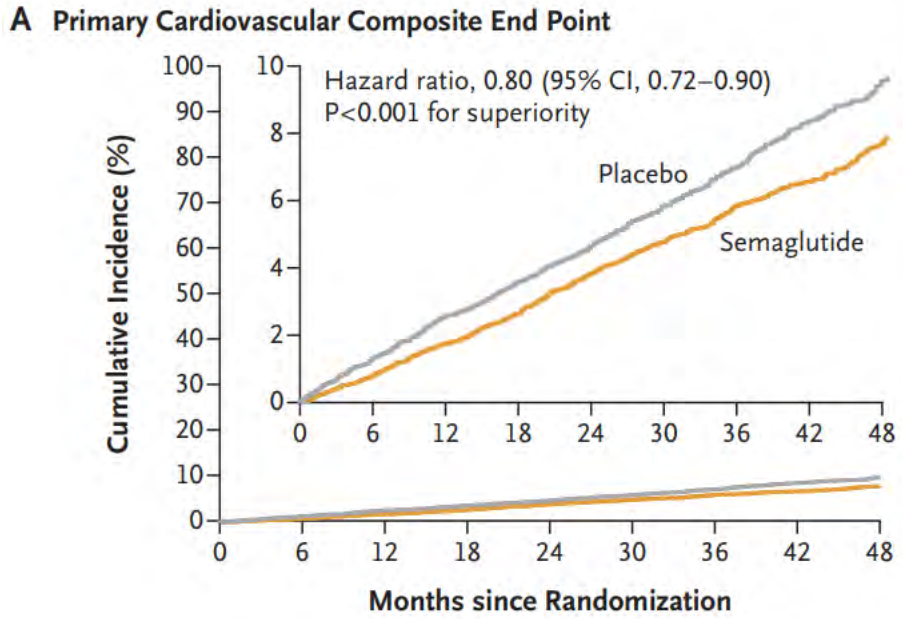


Consistent with outcomes from SUSTAIN-6 trial (CVD + T2D)

Lincoff et al. NEJM, 2023

Renal benefit

FLOW trial*

- N=3,534 (28 countries)
- T2DM + CKD
- Semaglutide 1.0 mg vs. placebo

- *Primary end point:* kidney failure or initiation of chronic kidney replacement therapy, persistent ≥ 50% reduction in eGFR, or death from kidney or CV causes

Novo Nordisk stops trial of Ozempic in kidneys as interim analysis shows success

Novo Nordisk already has a strong presence in the type 2 diabetes (T2D) and obesity markets.

GlobalData | GlobalData Healthcare | October 17, 2023

*Trial pending publication

Contraindications

WARNING: RISK OF THYROID C–CELL TUMORS

See full prescribing information for complete boxed warning.

- **In rodents, semaglutide causes thyroid C-cell tumors at clinically relevant exposures. It is unknown whether WEGOVY® causes thyroid C-cell tumors, including medullary thyroid carcinoma (MTC), in humans as the human relevance of semaglutide-induced rodent thyroid C-cell tumors has not been determined (5.1, 13.1).**
- **WEGOVY® is contraindicated in patients with a personal or family history of MTC or in patients with Multiple Endocrine Neoplasia syndrome type 2 (MEN 2). Counsel patients regarding the potential risk of MTC and symptoms of thyroid tumors (4, 5.1).**

Avoid in specific populations (MTC / MEN 2)

Benefits generally outweigh risks, as weight loss supports reduction in many other cancers

Warnings / Precautions

- Acute pancreatitis
- Acute gallbladder disease
- Hypoglycemia
- Acute kidney injury
- Increased heart rate
- Suicidal behavior / ideation
- Hypersensitivity reactions
- Diabetic retinopathy*

Endocrinology > Type 2 Diabetes

FDA Adds Intestinal Blockage Reports to Ozempic Labeling

— Joins other approved GLP-1 receptor agonists in noting the potential adverse reaction

by Sophie Putka, Enterprise & Investigative Writer, MedPage Today September 28, 2023

*Risk of retinopathy elevated among patients with T2DM if: baseline retinopathy and/or on insulin with suboptimal glycemic control.
FOCUS trial (NCT03811561) pending.

Wegovy® pakage insert

Side effects

Adverse Events	Semaglutide (n=1306)	Placebo (n=655)
Any adverse event	89.7%	86.7%
Serious adverse event	9.8%	6.4%
Serious AEs leading to discontinuation	7%	3.1%
Adverse events reported in ≥ 10% of participants		
Nausea	44.2%	17.4%
Vomiting	31.5%	15.9%
Diarrhea	22%	19%
Headache	15.2%	12.2%
Abdominal pain	10%	5.5%
Constipation	23.4%	9.5%

Wilding et al. *NEJM.* 2021

Tirzepatide (GIP/GLP-1 RA)

FDA NEWS RELEASE

FDA Approves New Medication for Chronic Weight Management

For Immediate Release: November 08, 2023

Tirzepatide (GIP/GLP-1 RA)

FDA-approved for treatment of T2DM since 2022

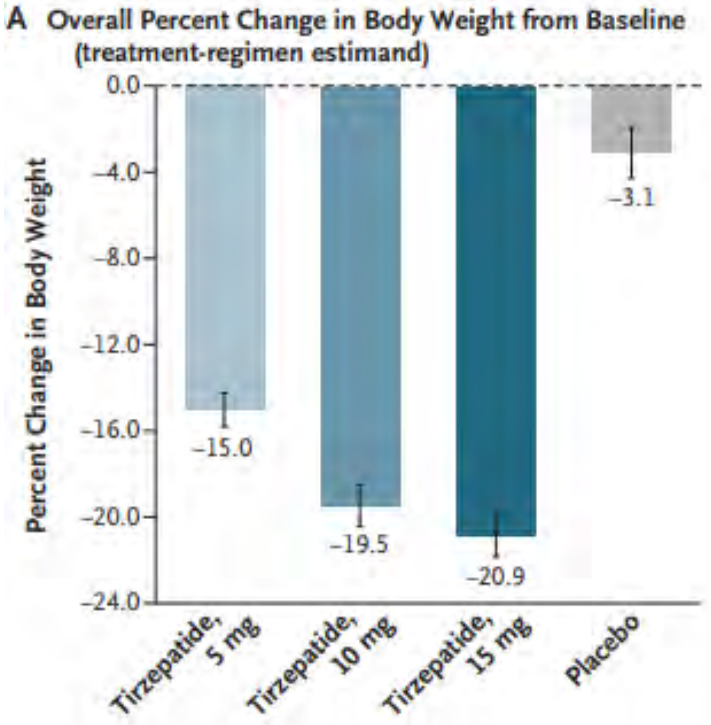
Acts at receptors for GLP-1 & GIP

Tirzepatide (GIP/GLP-1 RA) for obesity

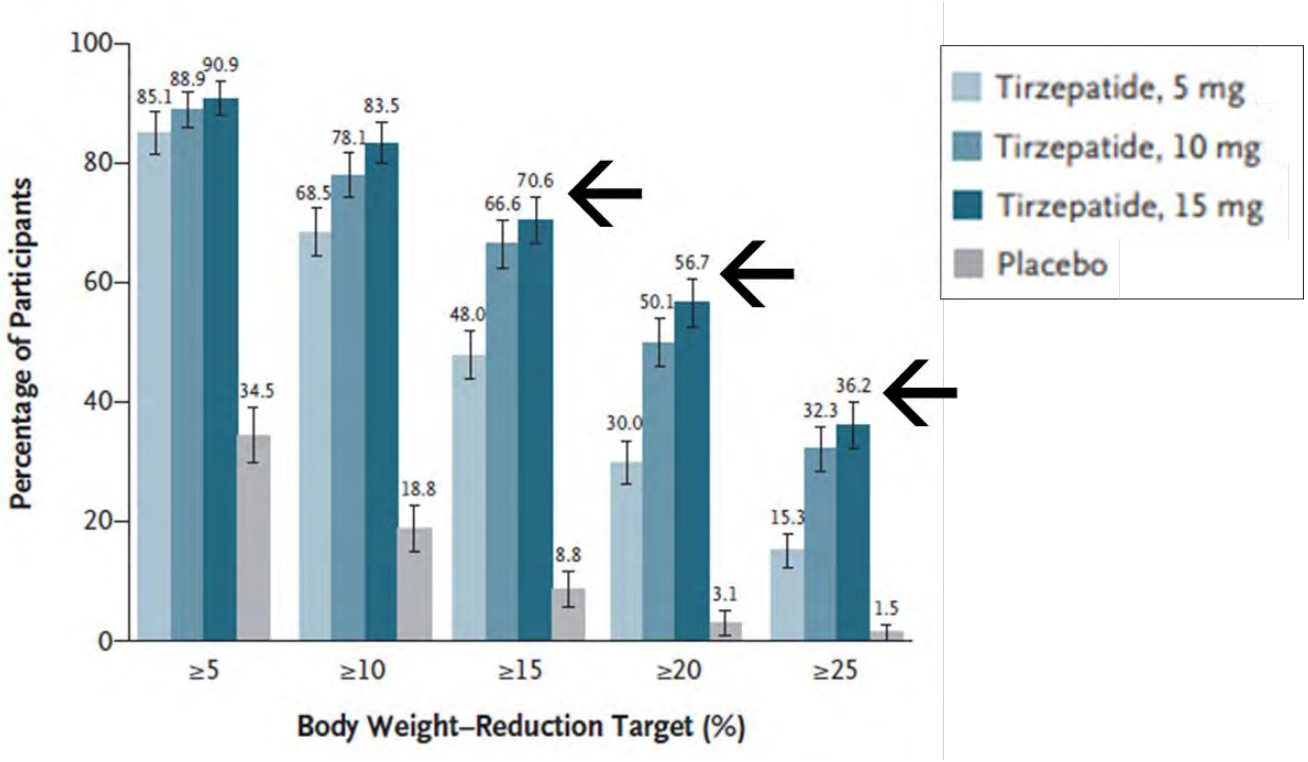
N=2,539

BMI ≥ 30 or ≥ 27
+ weight-related condition
(not T2DM)

Mean baseline BMI=38.0

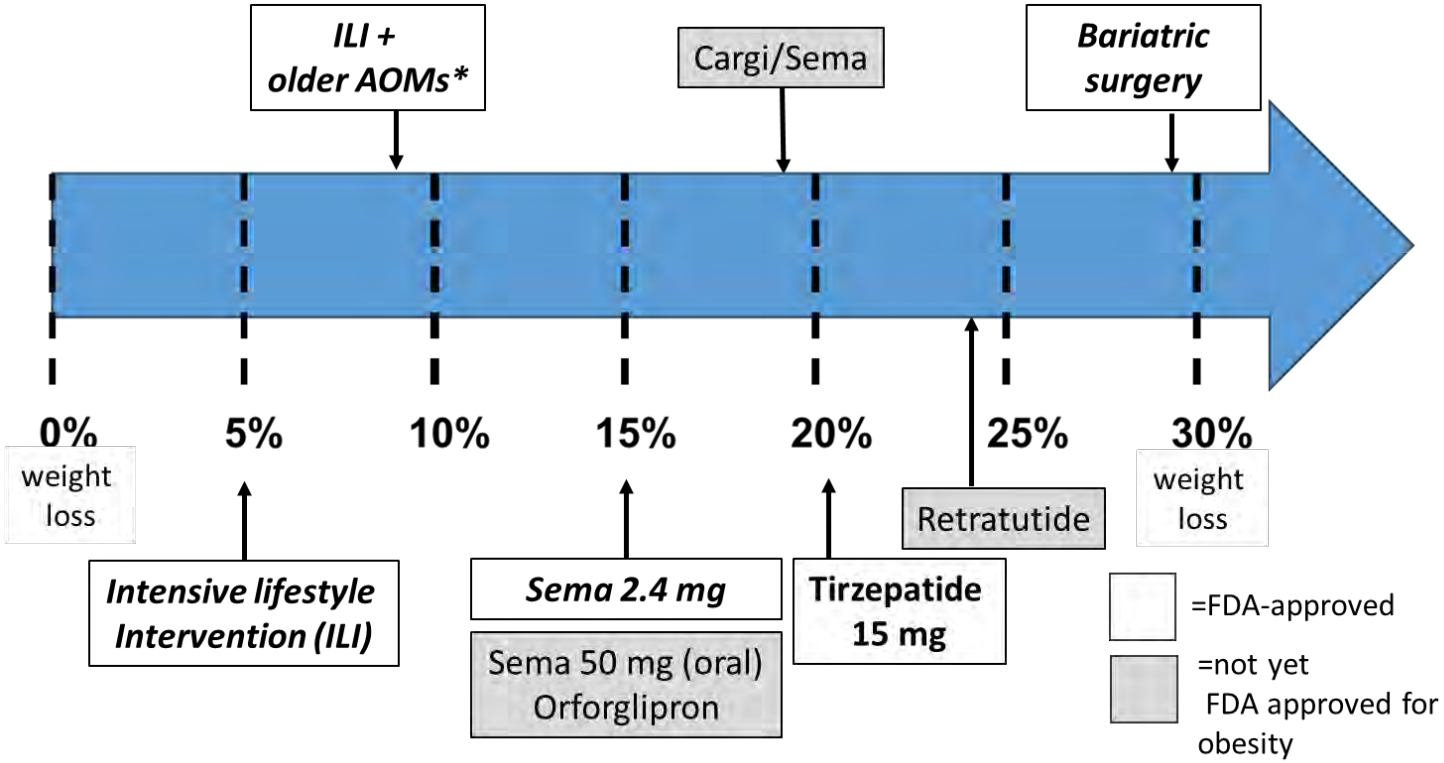


Achievement of weight loss thresholds



Jastrebroff et al. *NEJM.* 2022

Closing the weight management treatment gap



Challenges to use of injectable AOMs

1. Limited insurance coverage
2. High out-of-pocket cost
3. Drug shortages / limited availability

Limited insurance coverage

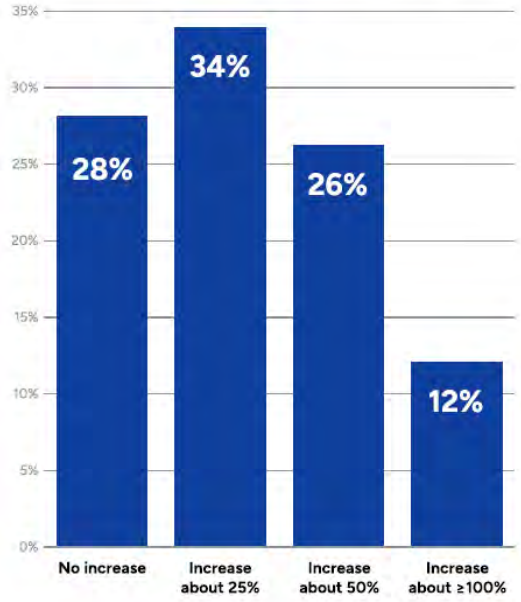
72% of health plan leaders expect GLP-1s to grow by 25% or more in 2023

Health plan leaders are already seeing the impact of increased GLP-1 utilization with 72% saying they expect a 25% or more increase in 2023 alone. **This could upend an organization's cost of care models, significantly increase pharmacy costs and threaten profitability and growth for the next decade.**

Pharmaceutical manufacturers, like Pfizer, have even more ambitious predictions, saying, "We're going full guns on this" (Bill Sessa, chief scientific officer at Pfizer's Internal Medicine Research Unit[1]). New oral GLP-1s are entering the drug pipeline in order to capitalize on growing market share. And Bank of America analyst, Geoff Meacham, predicts that **GLP-1 Mounjaro could be the first $100 billion drug, which is 4–5x the current best selling drug, Humira.**[2]

1 Reuters, "Novo Nordisk rivals see room to compete in $100 billion weight-loss drug market," May 4, 2023
2 Market Watch, "Bank of America: Lilly's tirzepatide could be the first $100 billion drug," October, 2022.

Expected Increase in Utilization of GLP-1 Prescriptions for Obesity and Weight Loss in 2023 (n=80)



A typical employer's drug spending could increase by more than 50% if half of employees who were eligible for Wegovy were to take it,

How Health Plan Leaders Are Handling the GLP-1 Cost Crisis [Survey Report] | Virta Health

MCT2D

Limited insurance coverage

PRIVATE PLANS COVERAGE for Anti-Obesity Meds

	SAXENDA Liraglutide Injectable - Daily	WEGOVY Semaglutide Injectable - Weekly	PHENTERMINE Generic - High Dose Oral - Daily w/ Meals	LOMAIRA Phentermine 8 Low Dose Oral - Daily w/ Meals	QSYMIA Phentermine - Topiramate Oral - Daily	CONTRAVE Naltrexone HCl - Bupropion HC Oral - 2x Day
AETNA	Preferred PA	Preferred PA	Preferred PA	Not Covered	Preferred	Not Covered
BCBSM*	$$$$$$ Non-Preferred PA	$$$$$$ Non-Preferred PA	Preferred	$$$$$$ Non-Preferred	$$$$$$ Non-Preferred PA	$$$$$$ Non-Preferred PA
EXPRESS SCRIPTS National Preferred	$$$$$$ Non-Preferred PA	Preferred PA	Preferred PA	Preferred	$$$$$$ Non-Preferred PA	$$$$$$ Non-Preferred PA
HAP	Not Covered	Not Covered	Preferred	Not Covered	$$$$$$ Non-Preferred PA	Not Covered
PRIORITY (TRADITIONAL)	Not Covered	Not Covered	Preferred	$$$$$$ Non-Preferred ST Must try generic first	$$$$$$ Non-Preferred** ST Must try generic first	$$$$$$ Non-Preferred ST Must try generic first
PRIORITY (OPTIMIZED)	Not Covered	Not Covered	Preferred	Not Covered	$$$$$$ Non-Preferred ST Must try generic first	$$$$$$ Non-Preferred ST Must try generic first
UNITED	Not Covered	Not Covered	Not Covered May be excluded from coverage or subject to PA in CT, NJ and NY	Not Covered May be excluded from coverage or subject to PA in CT, NJ and NY	Not Covered	Not Covered May be excluded from coverage or subject to PA in CT, NJ and NY

PA Prior Auth

ST Step Therapy

See last page of guide for links to available prior auth and step therapy documentation

Disclaimer: Information based on general formularies, unless otherwise noted and may not reflect employer-group specific policies and plans with pharmacy carve outs.

**Priority coverage for Qsymia determined by: "Employers plan rider determines weight loss coverage"

Affording your Weight Loss Medication

Weight loss medications can be expensive and not covered by health insurance. If you have a diagnosis of type 2 diabetes, some of the medications may be more affordable. If you do not have a diagnosis of type 2 diabetes, please complete this worksheet and return it to Dr. Oshman. You can return this as an attachment on the portal.

Find your insurance company contact information on the back of your insurance card.

If you cannot locate your card, you can search the web for your insurance companies phone number.

Basic information

Do I have prescription drug coverage? [ ] Yes [ ] No

Do I have a deductible for medications? [ ] Yes [ ] No

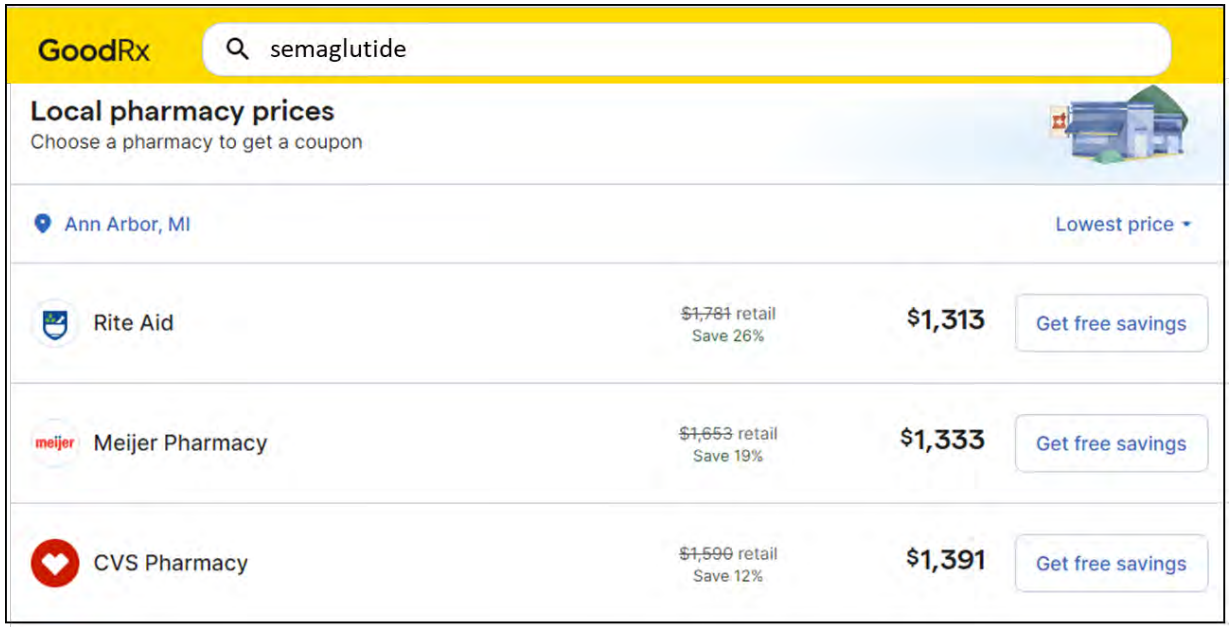
If yes, what is my yearly deductible? $_____

How much of my deductible has been met? $_____

For each medication answer the following questions:

Medication name	Covered?	Preferred ?	Co-pay?
[ ] Wegovy (semaglutide)	Y or N	Y or N	Y or N
[ ] Saxenda (semaglutide)	Y or N	Y or N	Y or N
[ ] Contrave (bupropion/naltrexone)	Y or N	Y or N	Y or N
[ ] Qsymia (phentermine/topiramate)	Y or N	Y or N	Y or N
[ ] Adipex-P (high dose phentermine)	Y or N	Y or N	Y or N
[ ] Generic phentermine	Y or N	Y or N	Y or N
[ ] Lomaira (low dose phentermine)	Y or N	Y or N	Y or N

High out-of-pocket cost



Tirzepatide for weight management (Zepbound) list price: $1059.87
Approximately 20% less than semaglutide 2.4 mg.

Drug shortages

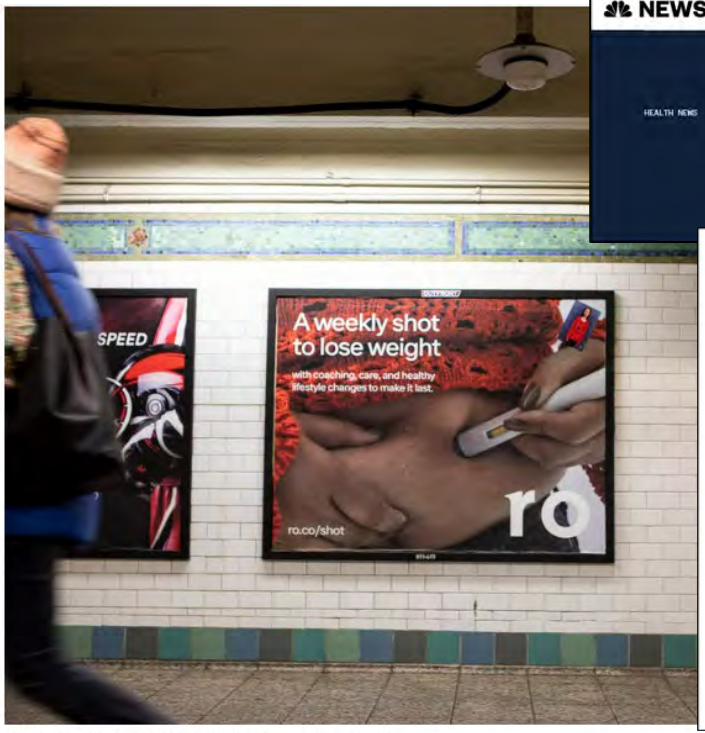


Photo by Amelia Holowaty Krales / The Verge

NEWS People with diabetes struggle to find Ozempic as it soars in popularity as a weight loss aid

HEALTH NEWS

People with diabetes struggle to find Ozempic as it soars in popularity as a weight loss aid

FIRST OPINION

How the Wegovy shortage is making life impossible for my patients — and for me

By Jody Dushay Sept. 15, 2023 Reprints

CNN health Life, But Better Fitness Food Sleep Mindfulness Relationships

Ozempic prescriptions can be easy to get online. Its popularity for weight loss is hurting those who need it most

By Annette Choi and Han Vu, CNN

Published 7:47 AM EDT, Fri March 17, 2023

[Who wins when telehealth companies push weight loss drugs? - The Verge]

Compounded semaglutide

Compounding is legal when drugs are on shortage

Safety concerns relate to unauthorized use of salt vs. base form of semaglutide.

Patients who choose to use compounded semaglutide should obtain the medication **from state-licensed pharmacies** and informed of **potential limitation** of compounded peptides.

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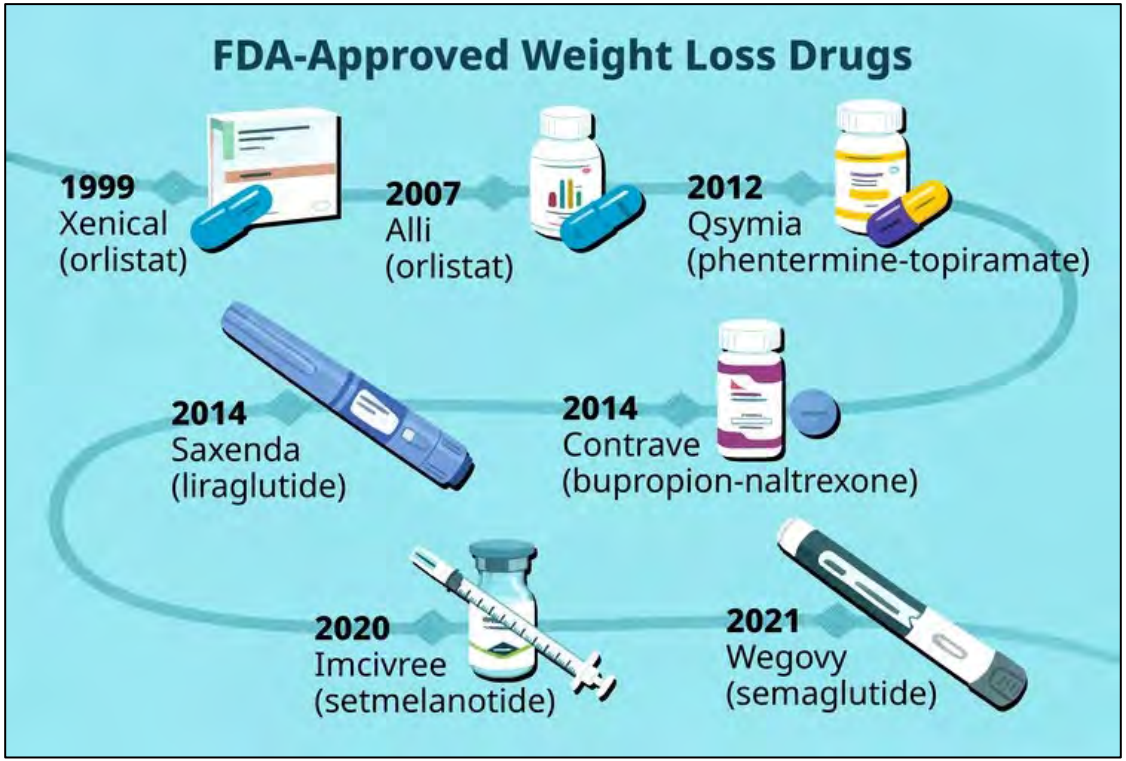
Patient-centered obesity treatment

Image source: One Size Does Not Fit All - MacuLogix Academy

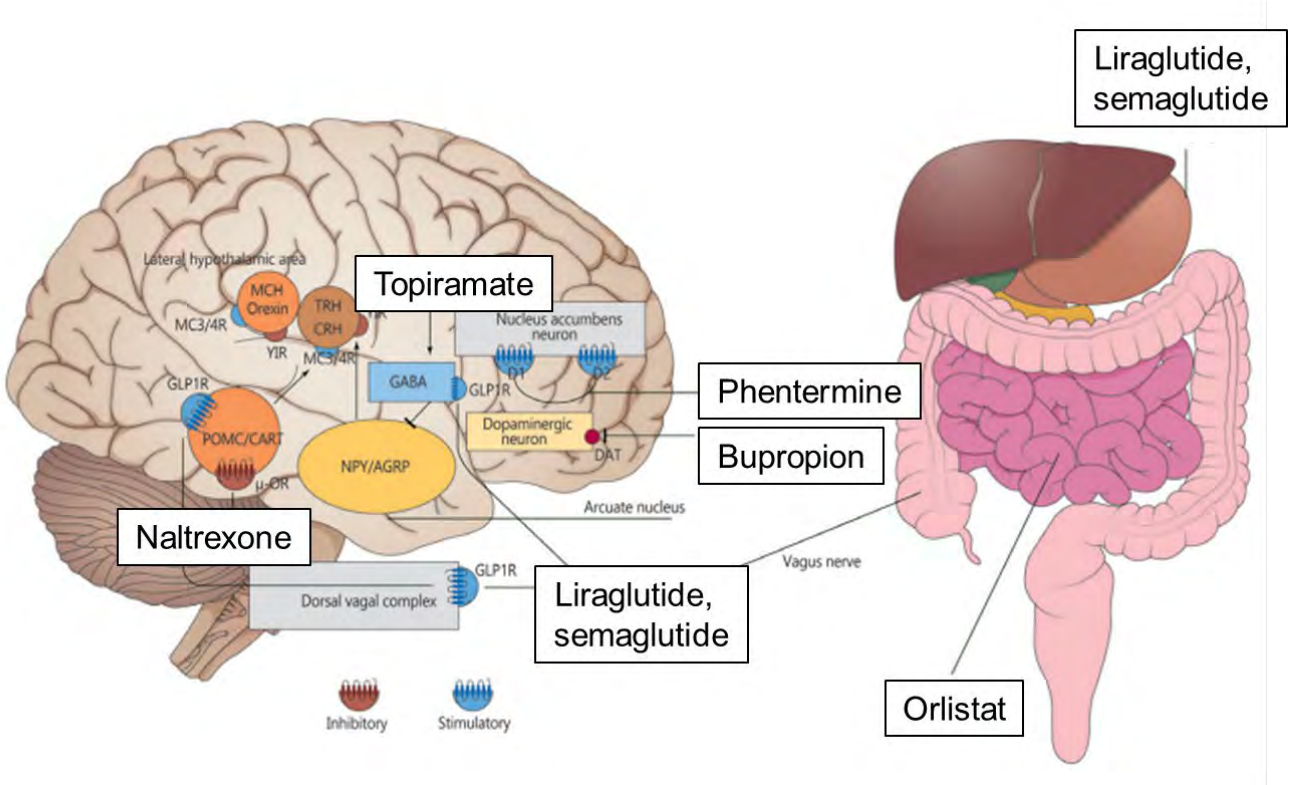
Older AOMs may be ideal for some patients



What's New in Obesity Treatment? (verywellhealth.com)

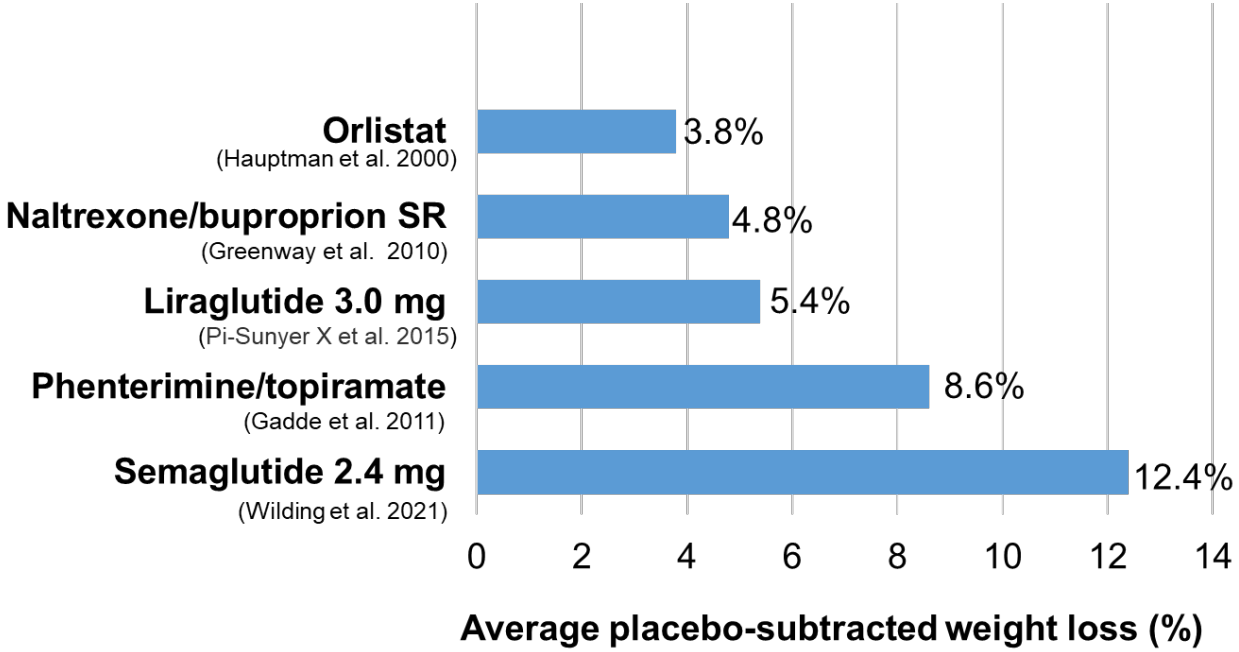
MCT2D

Mechanisms of actions



Son et al, *Diabetes Metab J.* 2020

Average efficacy of AOMs at 1 year*

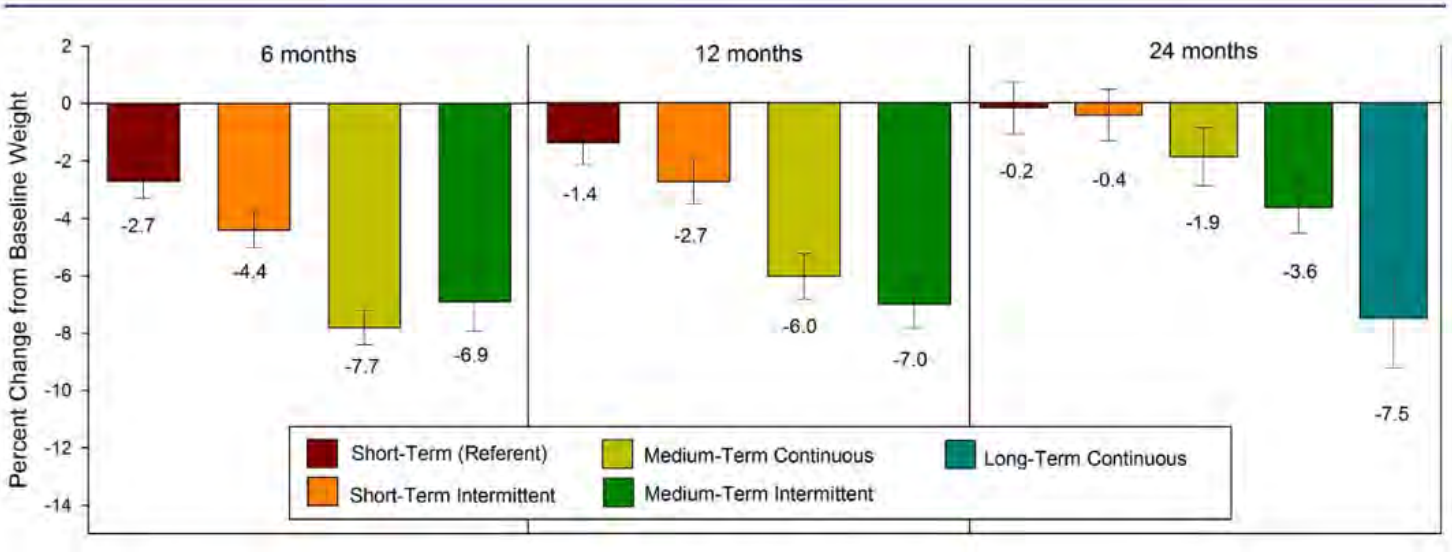


*At max dose among patients *without* T2DM

Tchang et al. *Endotext.* 2021
Srivastava and Apovian. *Nat. Rev. Endocrinol.* 2017

Phentermine monotherapy

N=13,972



Observational data suggests effective and safe long-term; know state prescribing law and document off-label use

Lewis et al. *Obesity*. 2019

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All AOMs can support ≥5% and ≥10% weight loss

Anti-obesity medication	≥ 5% weight loss
Tirzepatide 15 mg[1]	91%
Semaglutide 2.4 mg[2]	86.4%
Phentermine/topiramate[3]	70%
Liraglutide[4]	63%
Naltrexone/bupropion[5]	48%
Phentermine[6]	46%
Orlistat[7]	25%

[1]Jastrebroff et al. *NEJM.* 2022
[2]Wilding et al., *NEJM,* 2021
[3]Gadde et. al, Lancet, 2011
[4]Greenway et. al, Lancet, 2010
[5]Pi-Sunyer, *NEJM, 2015*
[6]Bays et al, *Obesity Pillars.* 2022
[7]PI_Xenical-brand_FINAL.PDF

All AOMs can support ≥5% and ≥10% weight loss

Anti-obesity medication	≥ 5% weight loss	≥ 10% weight loss
Tirzepatide 15 mg[1]	91%	83%
Semaglutide 2.4 mg[2]	86.4%	69.1%
Phentermine/topiramate[3]	70%	48%
Liraglutide[4]	63%	33%
Naltrexone/bupropion[5]	48%	25%
Phentermine[6]	46%	21%
Orlistat[7]	25%	17%

[1]Jastrebroff et al. *NEJM.* 2022
[2]Wilding et al., *NEJM,* 2021
[3]Gadde et. al, Lancet, 2011
[4]Greenway et. al, Lancet, 2010
[5]Pi-Sunyer, *NEJM, 2015*
[6]Bays et al, *Obesity Pillars.* 2022
[7]PI_Xenical-brand_FINAL.PDF

Consider co-morbidities

Co-morbidity	AOM option
Depression Substance use disorder	Bupropion/naltrexone
Migraines Seizures	Phentermine/topiramate
ADD/ADHD	Phentermine
T2DM Prediabetes Cardiovascular disease HFpEF	GLP-1 (GIP) RA

Overview

1. Pathophysiologic link between obesity and T2DM
2. Mechanism of action, efficacy, and safety of incretin mimetics for the treatment of obesity
3. Role for older anti-obesity medications in patient-centered obesity treatment
4. **Case example**

Overview

1. Pathophysiologic link between obesity and T2DM
2. Mechanism of action, efficacy, and safety of incretin mimetics for the treatment of obesity
3. Role for older anti-obesity medications in patient-centered obesity treatment
4. **Case example**

Case: Mr. C

https://www.obesityaction.org/gallery/lifestyle/?paged=77

Case: Mr. C

- 65-year-old male w/ obesity (BMI 51), T2DM (on glipizide, HbA1c 7.5%), HTN & history of gastric sleeve
  - Highest pre-surgical weight: 385 lb.
  - Weight at time of surgery: 301 lb.
  - Post-surgical weight target: 238 lb.
  - Post-surgical weight nadir: 280 lbs.

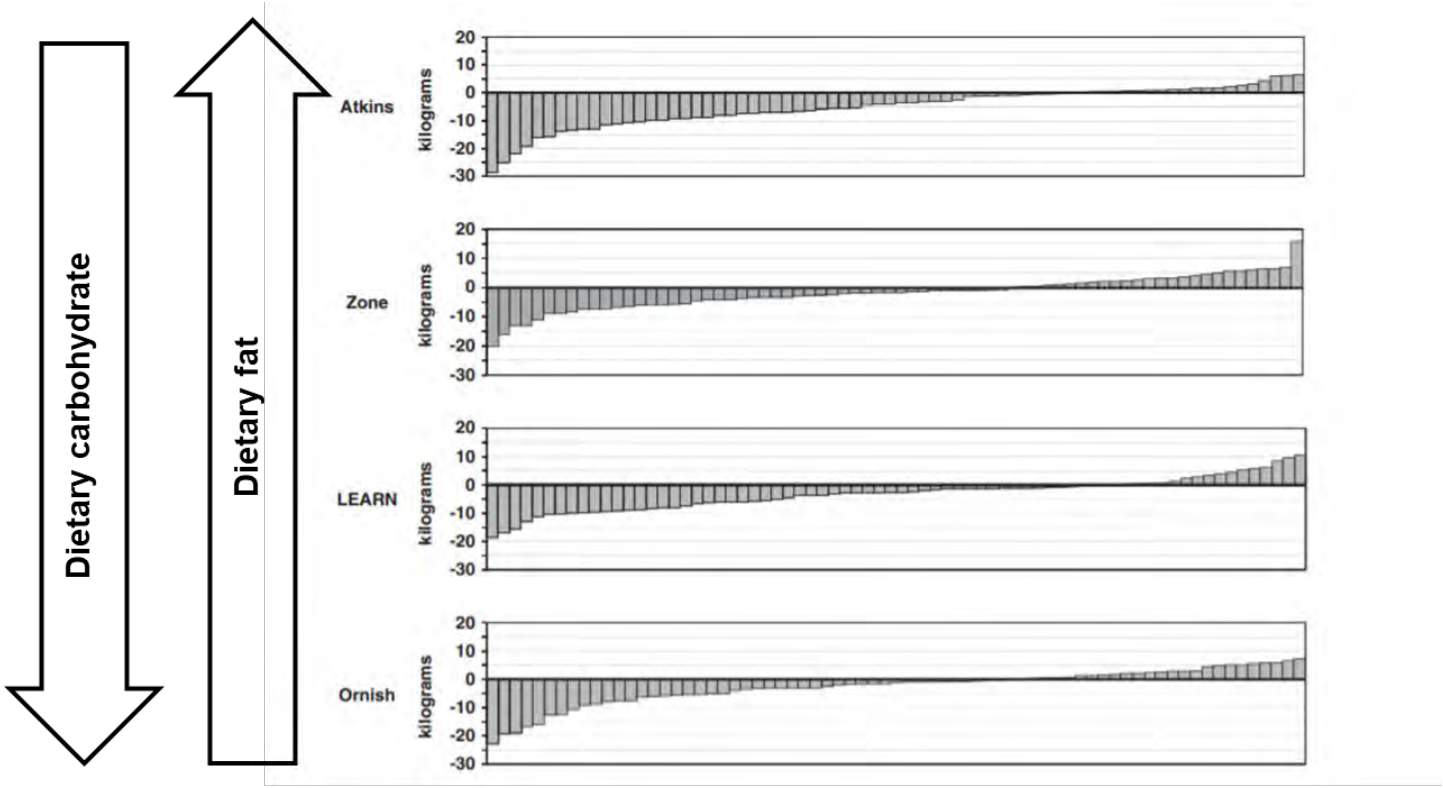
- Current weight: 354 lb.

- Patient-reported barriers:
  - Shame and sense that he's disappointing others
  - Diet high in processed carbohydrates and fast food
  - Eating many small low-fat meals / snacks throughout the day to control
  - Food cravings

Case: Mr. C

- ❑ Address and minimize shame
- ❑ Stop obesogenic obesity treatments
- ❑ Develop individually-tailored dietary plan
- ❑ Select medication

There is no “one-size-fits-all” diet



Gardner CD. *International Journal of Obesity Supplements;* 2012

Example low-carbohydrate meal plan

Modified Ketogenic Diet Meal Planning: Plan Your Plate

The Basics:

1) Fill half the plate with non-starchy vegetables.
2) Cook vegetables in healthy fats or use a fatty dressing or sauce.
3) Add 3-5 ounces of protein.
4) Other foods to include in moderate amounts with meals or snacks:
    a. Nuts and seeds (see below for total carbs in each)
    b. Small amounts of certain fruit
    c. Full fat dairy
    d. Sauces and condiments (choose low carb versions)
    e. Lots of herbs and spices
    f. Small amounts of keto-friendly sweeteners
5) Drink plenty of water and other carbohydrate free beverages.

(1) (2) (3) (4) (5)





Initiated and titrated liraglutide

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

3-month follow-up

3-month follow-up:

- 298 lb. (←354 lb.); **16% weight loss**
- Improved mood, self-confidence, and mobility
- Expressed desire to lose an additional 60 lbs.
- Switched from liraglutide (Saxenda) to semaglutide (Wegovy)

Switching between GLP-1 RAs

Weekly to **daily** medication: advise patient to take first dose of the daily medication **7 days** after the last dose of the weekly medication.

Daily to a **weekly** medication: advise patient to take the first dose of the weekly medication one day after the last dose of the daily medication.
Choose equivalent or a lower dose when switching to avoid side effects.

Agent	Frequency	Equivalent Doses						
Dulaglutide	Weekly		0.75 mg	1.5 mg	3.0 mg	4.5 mg		
Semaglutide	Weekly		0.25 mg	0.5 mg	1.0 mg	2.0 mg		
Liraglutide	Daily	0.6 mg	1.2 mg	1.8 mg	2.4 mg	3.0 mg		
Oral Semaglutide	Daily	3 mg	7 mg	14 mg				
Tirzepatide	Weekly		2.5 mg	5.0 mg	7.5 mg	10 mg	12.5 mg	15.0 mg

6-month follow-up

- 268 lb. (← 298 lb. ← 354 lb.); **24 % weight loss**
- Waxing and waning motivation adhere to low-carb, despite high enjoyment of the eating pattern
- Food costs = primary barrier
- Discussed budget-friendly low carb foods/meals

Obesity medicine training

AMERICAN BOARD of OBESITY MEDICINE

Physicians
60 CMEs
4-hour exam
Home - American Board of Obesity Medicine (abom.org)

Obesity Medicine Association

NP/PA
60 CE credits
NP and PA Certificate in Obesity Medicine - Obesity Medicine Association

ashp
pharmacists advancing healthcare®

Pharmacists
20.5 hrs. of ACPE CE
70-question exam
Weight Management Certificate (ashp.org)

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Summary

- Weight loss can improve glycemic control among patients with T2D
- GLP-1 RAs and dual GLP-1 / GIP agonists are the most effective options, on average, for medical weight management
- All AOMs can be highly effective for many patients and can be used as part of patient-centered care
- Ensure patients understand the need for lifestyle change and need for life-long use

Questions?

dhafez@med.umich.edu

Weight-centric approach to chronic disease management

	T2D	Hypertension	CVD	ABCD/obesity
Biomarker target	HbA_{1c}	Blood pressure	LDL cholesterol	% weight loss
Reason for target	Prevent complications			
Complications	CKD, retinopathy, neuropathy, CVD	CHF, stroke, CKD	MI, stroke, amputation	T2D, HTN, NAFLD/NASH, CVD risk, CKD, sleep apnea, osteoarthritis

*May require tailoring to patients' preferences

Garvey. *J Clinical Endo and Met.*, 2022

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