GLP-1 Agonists and Meal Replacements

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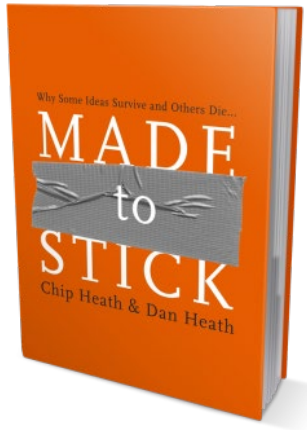
Objectives:

What are anti obesity medications?

Brief overview of GLP1 agonists

Nutritional needs on patients on GLP1 agonists

How do Meal replacements play a role?



Current Data - Obesity

- 13% of the global adult population is living with obesity
- 3 billion people lack access to healthy food
- 17% of CVD deaths are linked to obesity
- If current numbers continue to rise, 1 billion adults, or 12% of the world population, will be living with obesity by 2025.

What are anti -obesity medications and how do they work?

Anti Obesity Medications:

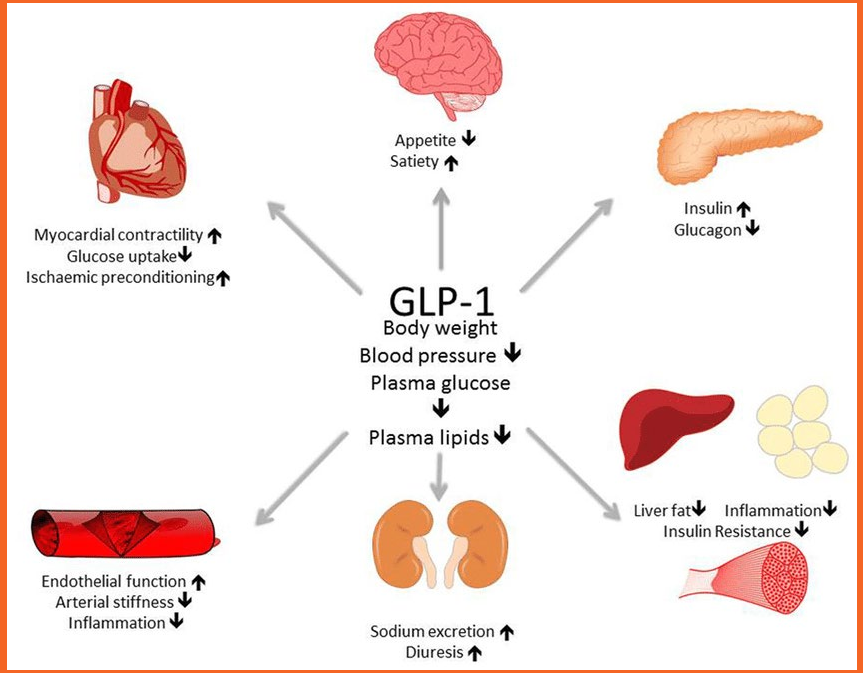
- Pharmacological agents that reduce or control excess body fat
- Medications alter one of the fundamental processes of the human body, weight regulation, by reducing appetite and consequently energy intake, increasing energy expenditure, redirecting nutrients from adipose to lean tissue, or interfering with the absorption of calories
- The United States Food and Drug Administration and the European Medicines Agency have approved weight loss medications for adults with either a body-mass index (BMI) of at least 30, or a body-mass index of at least 27 with at least one weight-related comorbidity

- Glucagon-like peptide-1 (GLP-1) represent a class of medications used to treat type 2 diabetes mellitus and, in some cases, obesity

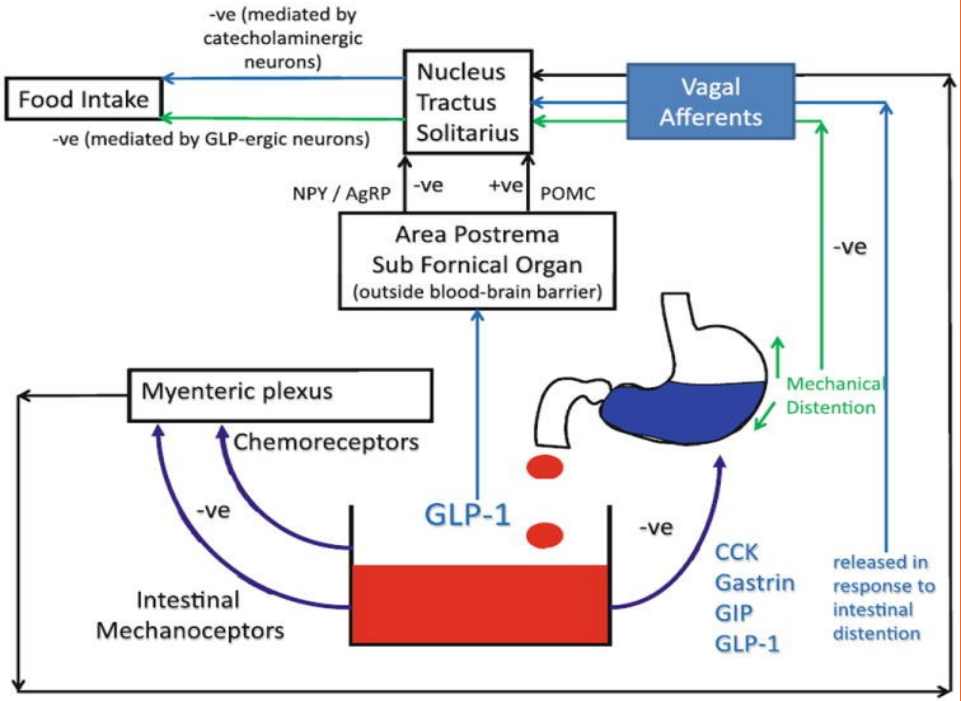
- Examples: exenatide, lixisenatide, liraglutide, albiglutide, dulaglutide, and semaglutide

- Glucagon-like peptide-1 and glucose-dependent insulinotropic polypeptide (GIP), both incretin hormones inactivated by dipeptidyl peptidase-4 (DPP-4), stimulate insulin secretion after an oral glucose load via the incretin effect

GLP1 agonists



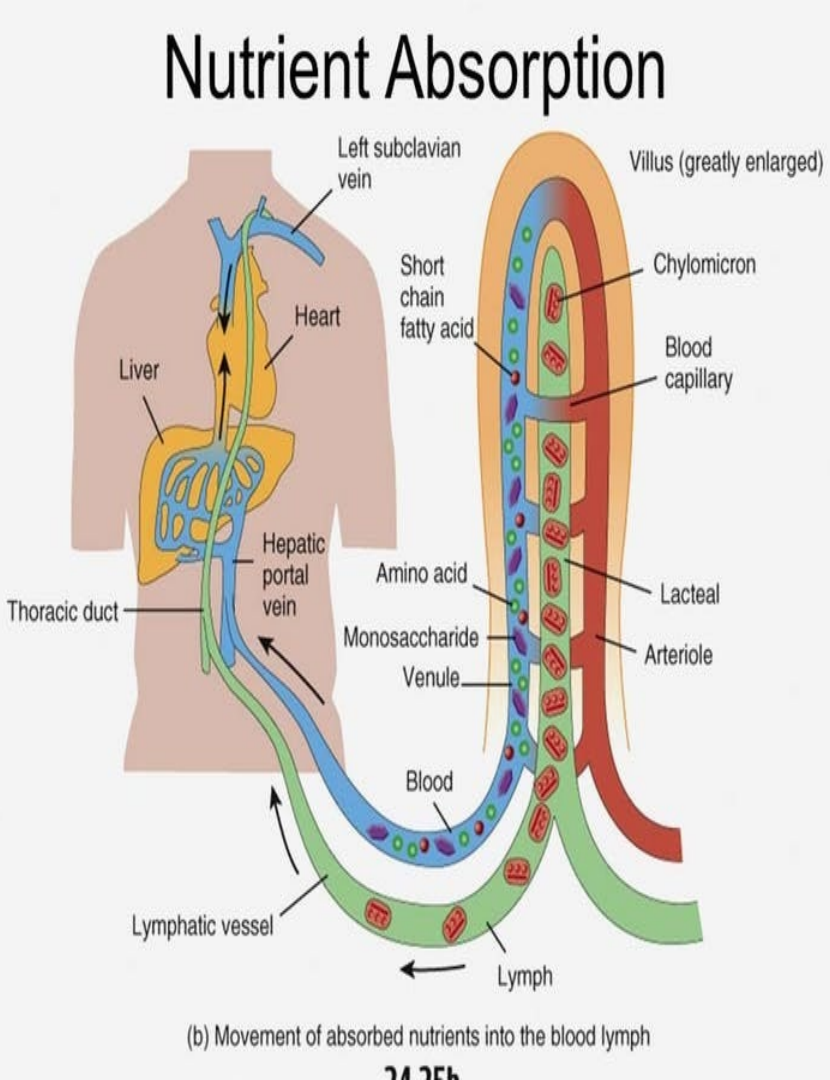
These medications tend to work via one or more of these mechanisms:



The role of GLP-1 in modulating appetite. GLP-1 has effects on central and peripheral receptors. Afferent branches of the vagus relay information from chemoreceptors and mechanoreceptors in the gastrointestinal tract to the nucleus tractus solitarius (NTS). Circulating hormones could theoretically directly stimulate areas outside the blood brain barrier although the role of this pathway is of uncertain significance in normal physiology (–ve denotes an inhibitory effect, while + ve denotes a permissive/enhancing effect)

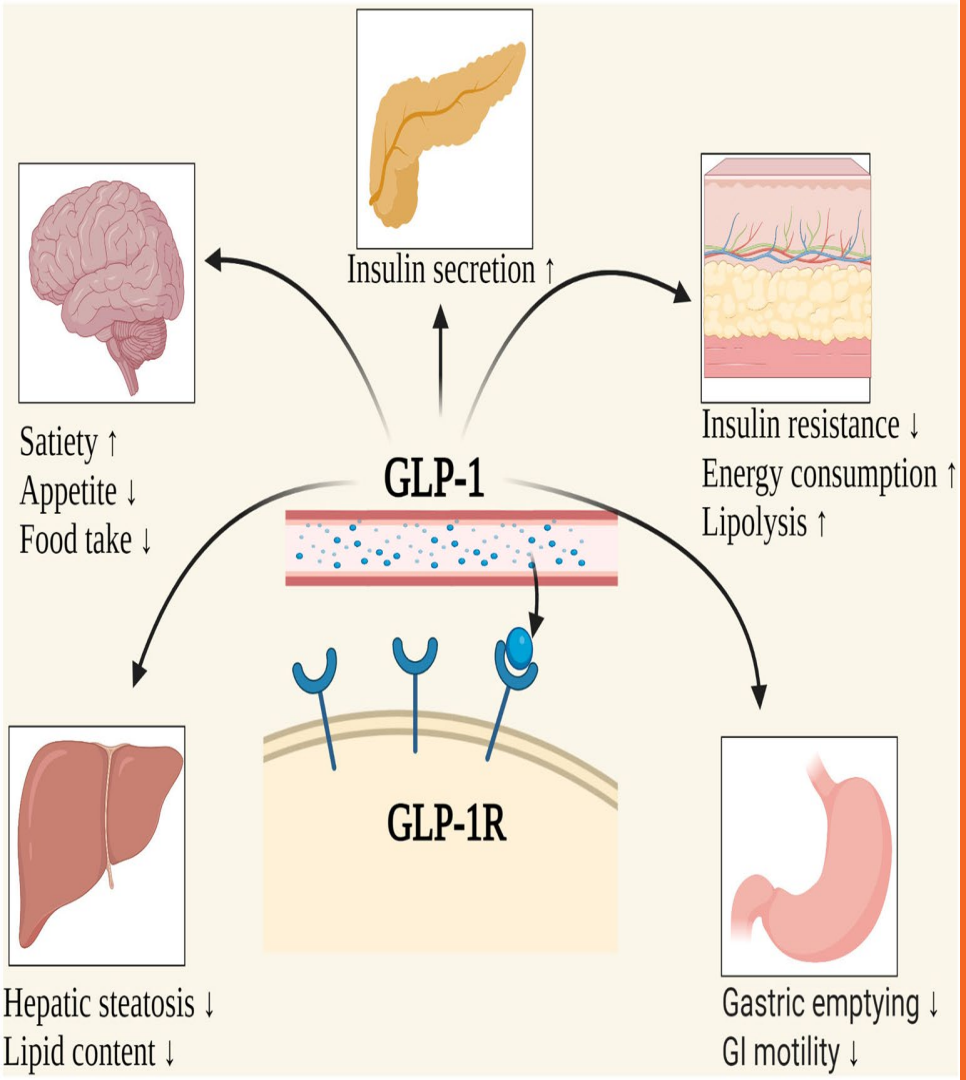
1. Reducing Appetite

making you feel fuller, so you eat fewer calories



2. Reducing the absorption of nutrients

such as fat, making you take in fewer calories



3. Increasing fat burning

making you burn more calories

Are Meal Replacements an Important Adjunct to Anti-Obesity Medications for Maintaining Healthy Nutrition ?

2020 study funded by Novo Nordisk

- Estimated mean energy intake was reduced by 47 percent for people using Semaglutide — a GLP-1 receptor agonist — for 20 weeks.1

- Inclusion of nutritional meal important for individuals prescribed anti-obesity medications to meet their nutritional needs to support a healthy metabolism while actively losing weight.

Nutritional Needs of Patients on Anti-Obesity Medications

Optimal Protein Intake:

- Protein is essential to the synthesis and maintenance of lean muscle, major organs and metabolic functions in the body.
- When calorie intake is reduced, the body may utilize protein as source of energy which can decrease lean muscle mass.
- It is recommended to consume at least 1.2 to 1.6 grams of protein per kilogram of body weight per day.
- Semaglutide and protein intake can help maintain a healthy body composition.

Adequate Fiber Intake:

- Dietary fibers, particularly soluble prebiotic fibers, increase satiety, promote healthy blood sugar levels and support gut health.
- Fiber can also ameliorate digestive discomfort including constipation associated lower food intake, reduce bloating and support beneficial microflora, immune health and nutrient absorption.
- It is recommended to have a daily fiber intake of 28 grams per day.

Appropriate Micronutrient Intake:

- Meeting the daily required levels of vitamins and minerals is important for overall health and metabolism.

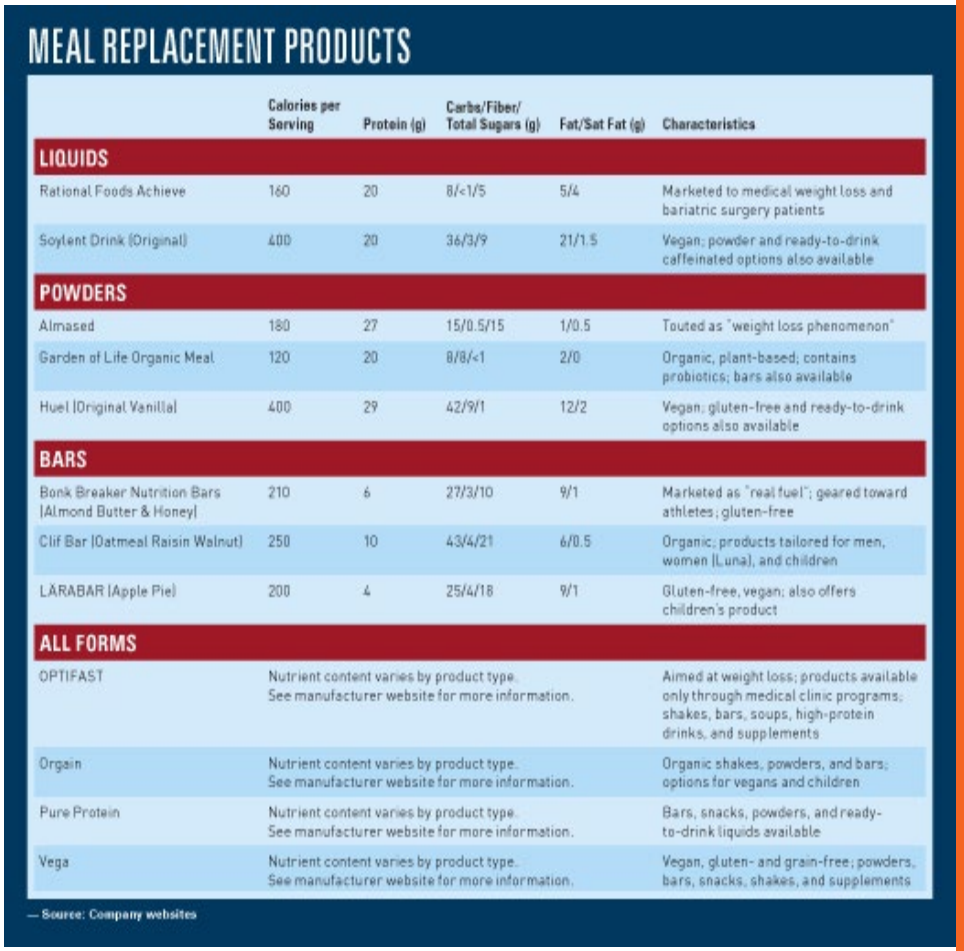
- Daily intake of essential micronutrients is essential for metabolic functions including energy utilization, cognitive wellbeing, and to promote optimal health.

Meal replacements acts as a bridge for fulfilling these nutritional deficiencies!

What are meal replacements?

- A drink, bar, soup, etc. intended as a substitute for a solid food, usually with controlled quantities of calories and nutrients.

- Usually contain from 200 to 250 calories per serving with the addition of 20 or more vitamins and minerals and low fat and sugar.



MEAL REPLACEMENT PRODUCTS

	Calories per Serving	Protein (g)	Carbs/Fiber/ Total Sugars (g)	Fat/Sat Fat (g)	Characteristics
LIQUIDS					
Rational Foods Achieve	160	20	8/<1/5	5/4	Marketed to medical weight loss and bariatric surgery patients
Soylent Drink (Original)	400	20	36/3/9	21/1.5	Vegan; powder and ready-to-drink caffeinated options also available
POWDERS					
Almased	180	27	15/0.5/15	1/0.5	Touted as "weight loss phenomenon"
Garden of Life Organic Meal	120	20	8/8/<1	2/0	Organic, plant-based; contains probiotics; bars also available
Huel (Original Vanilla)	400	29	42/9/1	12/2	Vegan; gluten-free and ready-to-drink options also available
BARS					
Bonk Breaker Nutrition Bars (Almond Butter & Honey)	210	6	27/3/10	9/1	Marketed as "real fuel"; geared toward athletes; gluten-free
Clif Bar (Oatmeal Raisin Walnut)	250	10	43/4/21	6/0.5	Organic; products tailored for men, women (Luna), and children
LÄRABAR (Apple Pie)	200	4	25/4/18	9/1	Gluten-free, vegan; also offers children's product
ALL FORMS					
OPTIFAST	Nutrient content varies by product type. See manufacturer website for more information.				Aimed at weight loss; products available only through medical clinic programs; shakes, bars, soups, high-protein drinks, and supplements
Orgain	Nutrient content varies by product type. See manufacturer website for more information.				Organic shakes, powders, and bars; options for vegans and children
Pure Protein	Nutrient content varies by product type. See manufacturer website for more information.				Bars, snacks, powders, and ready-to-drink liquids available
Vega	Nutrient content varies by product type. See manufacturer website for more information.				Vegan, gluten- and grain-free; powders, bars, snacks, shakes, and supplements

— Source: Company websites

General nutritional contents of meal replacement products

Clinical studies

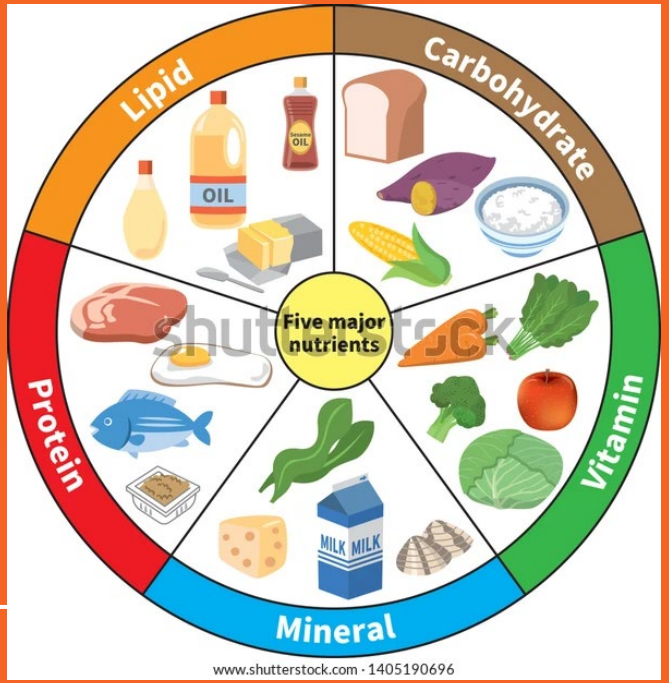
- Dr. Holly F. Lofton, Clinical Associate Professor of Medicine and Surgery at NYU Langone Health, also stressed the important role of proper nutrition —as well as behavior education—in conjunction with anti -obesity medication therapy.

- The clinical importance of using meal replacements with anti-obesity medications is also stressed in a white paper that compiles the research of six highly regarded medical professionals on the importance of supplying proper nutrition to people utilizing the current diabetes/weight loss medications, including semaglutide or other GLP-1RAs.

How does meal replacement aid during weight loss medications?

Full of nutrients

- A meal replacement shake is one way to make sure you have a healthy option if you know you won't have time to stop and eat.
- It might be easy to stop by a fast-food restaurant, where many options aren't healthy. Plus, you'll probably spend more on a burger than you would on a meal replacement shake.



Low calories

- A meal replacement shake is a good addition to your diet if you're watching your weight or trying to lose weight. One downfall when losing weight is feeling hungry, and meal replacement shakes can help you overcome that obstacle.

Added fiber

- In addition to protein that helps you feel full, meal replacement shakes are often high in fiber. This helps healthy digestion, so you don't get bloated or have constipation.

Conclusion:

- Rise of GLP-1 agonist drugs will continue
- GLP 1 agonists diet plan should include meal replacements, providing 15 to 25 grams of protein, and three to six grams of dietary fiber.
- Supplemental vitamins and minerals are also recommended.
- A nutritional supplementation is needed when calorie intake is significantly reduced due to these medications which is best provided with meal replacements.

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