



## Monthly Medical Moment: April 2025

### Prescription Weight Loss Medications and Over-the-Counter Supplements – Trends and Updates

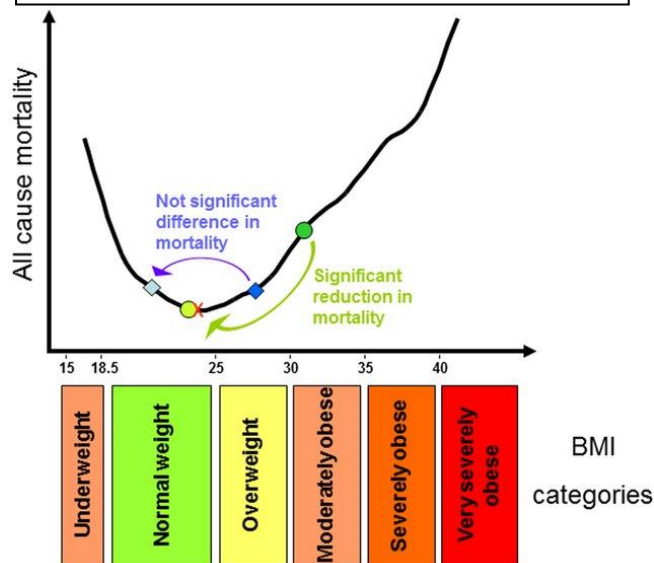
#### WHO, WHY, and some CAUTIONS<sup>1</sup>

- Weight loss improves other health problems, like blood sugar, hypertension, cholesterol, joint pain, and sleep apnea
- Medications do NOT replace diet and exercise – medications work best WITH diet and exercise
  - After 1 year, adults taking prescription medications WITH diet and exercise lost 3-12% more body weight than people who do not take medications
- In general, you might be a candidate for prescribed weight loss medications if you are an adult:
  - With a BMI of 30 or greater, or
  - A BMI of 27 or greater + weight-related health problems (such as high blood pressure, diabetes)
- National weight loss medication use has been increasing - the more that people use weight loss medications, side effects that are considered to be rare may be seen more often
- Weight loss medications may not be for everyone – there may be OTHER reasons for weight gain that weight-loss medications might not treat or could make worse, like not getting enough sleep or avoiding eating triggers

#### WHY WE USE BODY MASS INDEX (BMI)<sup>2-4</sup>

- While there are many factors that play into constituting good health, BMI is just one health indicator that is quick, safe, low-cost, non-invasive, easy to obtain, and reliable as a screener
- It is a ratio of weight to height, and does not directly measure body fat. BMI is divided into several categories, including underweight, normal weight, overweight, and obese
- Prior studies have shown a relationship between BMI and mortality (death) – over a given time period, the risk for mortality is lowest among individuals with normal range BMI's (though other health factors may alter your risk)

*The BMI and all-cause mortality curve show a lower risk for mortality in the normal weight range; weight loss from obese categories to a normal category can significantly reduce risk for mortality<sup>4</sup>*



#### HOW WELL THESE MEDICATIONS WORK<sup>5-8</sup>

- Medications like orlistat, phentermine-topiramate, bupropion/naltrexone, and GLP-1 agonists like liraglutide have been associated with 3-10% body weight loss at the 1–2-year mark – research is ongoing

#### COMPOUND PHARMACIES – CAUTION<sup>9</sup>

- Compounding means that a licensed pharmacist, licensed physician, or person under the supervision of a licensed pharmacist combines/mixes/alters ingredients of a drug to create a medication
- Compounded drugs are NOT FDA-approved – the FDA is not responsible for verifying the safety, effectiveness, or quality of these marketed drugs
- It is illegal for some drugs to be compounded like retatrutide
- Compounded drugs may contain salt forms (like semaglutide acetate or semaglutide sodium) that may act differently than approved drugs, or contain the wrong drug or harmful/toxic ingredients
- Multiple adverse events including hospitalizations have been reported due to dosing errors related to compounded injectable weight loss medications (health care professional miscalculations, patients self-measuring and self-administering medications, drugs containing too-high doses)

#### DIETARY SUPPLEMENTS - CAUTION

- Weight-loss supplements bought over the counter are NOT medications – the individual manufacturers who sell these products determine if their products are safe and if labels are truthful (you might be getting more or less than what's written on a label)
- Over-the-counter supplements have a wide variety of ingredients, which can be toxic or interfere with your medications! Some ingredients may only have been tested in animals or in laboratories for short periods of time using poor-quality ingredients
- Reading the research – when medical research articles say findings are “significant,” it usually refers to *statistical* significance; *clinical* significance is different (e.g., a supplement may have statistically “significant” reductions in waist circumference, but clinically it may only be as small as <1 cm!)



**Supplements You May See Advertised for Weight Loss that are NOT FDA-Approved<sup>10-13</sup>**

**CAUTION: THERE ARE MANY MORE OUT THERE!**

Supplement	What the Research Says	Possible Side Effects (lists are longer, consult with your physician)
Berberine	Based on a few studies, possible small decreases in BMI and waist circumference though no significant declines in body weight	Diarrhea, constipation, gas, upset stomach; can cross the placenta and has been associated with newborn brain damage related to high bilirubin; may increase the effects of some blood pressure medications (risk of too low blood pressure) and anti-diabetes drugs (risk of too low blood sugar)
Bitter orange	Based on small clinical trials of poor quality, there is a possible increase in resting metabolic rate and energy expenditure; inconclusive effects on weight loss	Chest pain, anxiety, headache, increased blood pressure, increased heart rate, muscle and bone pain
Caffeine (such as from guarana, kola nut, yerba mate, or other herbs)	Based on short-term clinical trials of combination products, possible modest effect on body weight, or decreased weight gain over time at intakes less than 400-500 mg/day	Nervousness, jitteriness, vomiting, elevated heart rate
Capsaicin	Based on a few clinical trials, it might reduce energy intake but had no effect on body weight	Gastrointestinal distress, burning sensation, decreased HDL, increased insulin levels; may interact with aspirin, antidiabetic medications, blood thinners
Carnitine	Based on a few clinical trials with weight loss as a secondary outcome, there were possible modest reductions in body weight	Nausea, vomiting, diarrhea, cramps, fishy body odor, may increase trimethylamine N-oxide (TMAO) which is linked to greater cardiovascular disease risk
Chitosan	Based on small clinical trials of poor quality, minimal effect was found on body weight	Gas, bloating, constipation, indigestion, nausea, heartburn
Chromium	Based on several clinical trials of variable quality, minimal effects on body weight and body fat were seen	Headache, watery stools, vertigo, nausea, vomiting, weakness, hives
Creatine	May enhance performance in high-intensity, short-duration exercise	Weight gain, cramping, dehydration, diarrhea, dizziness, possible decrease in kidney function
Conjugated linoleic acid (CLA)	A few clinical trials have showed minimal effects on body weight and body fat	Abdominal discomfort, constipation, diarrhea, possible effects on lipids and glucose regulation
Garcinia cambogia (hydroxycitric acid)	Based on several short-term clinical trials with variable quality, little to no effects on body weight were found	Headache, nausea, upper respiratory tract symptoms, mania, liver damage, gastrointestinal symptoms
Green tea and green tea extract	Several clinical trials with and without caffeine have showed possible modest effect on body weight	Constipation, abdominal discomfort, nausea, increased blood pressure, liver damage
Guar gum	Several clinical trials of good quality showed no effect on body weight	Abdominal pain, gas, diarrhea, nausea, cramps
Hoodia	Very little research exists in humans, though limited findings show no effect on energy intake or body weight (based on one study)	Headache, dizziness, nausea, vomiting
Probiotics	Several clinical trials have shown inconsistent effects on body fat, waist/hip circumference, and body weight	Gastrointestinal symptoms (gas)
Raspberry ketone	In studies in which it was included with other ingredients, there is insufficient research to draw significant conclusions	To be determined; may reduce the effect of warfarin; may increase effects if taking other stimulant medications
Yohimbe	Very little quality research exists looking at yohimbe specifically for weight loss – current findings show no effect on body weight (insufficient research)	Headache, anxiety, agitation, high blood pressure, rapid heartbeat, heart attack, heart failure



Chitosan



Garcinia  
cambogia



Hoodia



Yohimbe

**National Aeronautics and Space Administration  
Goddard Space Flight Center Health Units**



<b>Prescription Weight-Loss Medications FDA-Approved for Long-Term Use<sup>1</sup></b> Most popular from 2017-2024: phentermine, semaglutide, liraglutide, tirzepatide <sup>14</sup>		
<b>Medication</b>	<b>How It Works</b>	<b>Possible Side Effects</b> <i>(lists are longer, consult with your prescribing physician)</i>
Orlistat (Xenical)	Pill taken 3 times per day; reduces the amount of fat absorbed by the body	Changes in bowel habits (oily/loose stools, stomach pain) – NOT for patients who have trouble absorbing nutrients from the food they eat
Phentermine-topiramate (Qsymia)	Pill taken once daily; may decrease appetite, may make you less hungry or feel full sooner	Headaches, insomnia, dry mouth, diarrhea, difficulty concentrating/thinking – NOT for patients with glaucoma, hyperthyroidism, or if taking monoamine oxidase inhibitors (MAOIs)
Naltrexone-bupropion (Contrave)	Pill taken 1-2 times per day; may make you feel less hungry or full sooner	Nausea, vomiting, diarrhea, change in sense of taste, headache, excessive sweating, ringing in the ears – NOT for patients with uncontrolled high blood pressure, seizures, anorexia or bulimia nervosa, if taking MAOIs, opioids, bupropion, benzodiazepines, antiepileptics, barbiturates
Liraglutide (Saxenda)	Daily injection; mimics a natural hormone called glucagon-like peptide 1 (GLP-1) that regulates appetite and food intake	Headache, heartburn, difficulty urinating, new or worsening depression/mood changes, nausea, vomiting – NOT for patients with a history of medullary thyroid cancer or multiple endocrine neoplasia syndrome type 2 (risk for thyroid tumors)
Semaglutide (Wegovy)	Weekly injection; mimics GLP-1 (Ozempic is the version FDA-approved for diabetes treatment, and Rybelsus is the pill version)	Nausea, vomiting, diarrhea, heartburn, burping, rash, decreased urination - NOT for patients with a history of medullary thyroid cancer or multiple endocrine neoplasia syndrome type 2 (risk for thyroid tumors)
Setmelanotide (Imcivree)	Daily injection; activates brain pathways that regulate appetite and food intake, and calories used; approved for ages 6 years and older with obesity due to specific, rare, genetic conditions including proopiomelanocortin (POMC) deficiency, proprotein convertase subtilisin/kexin type 1 (PCSK1) deficiency, leptin (LEPR) receptor deficiency, and Bardet-Biedl syndrome (BBS)	Skin darkening, rash, headache, nausea, vomiting, diarrhea, pain in the back/joints/arms/legs, muscle spasms, hair loss
Tirzepatide (Zepbound)	Weekly injection; mimics GLP-1 and glucose-dependent insulinotropic polypeptide (GIP) to regulate appetite and food intake (Mounjaro is the FDA-approved version to treat diabetes)	Nausea, diarrhea, vomiting - NOT for patients with a history of medullary thyroid cancer or multiple endocrine neoplasia syndrome type 2 (risk for thyroid tumors)

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