

HEALTH NEWS

✓ Fact Checked

Ozempic Can Cause Major Loss of Muscle Mass and Reduce Bone Density



By [Cathy Cassata](#) on May 2, 2023 — [Fact checked](#) by Jill Seladi-Schulman, Ph.D.



Weight loss medications like Ozempic and Wegovy can help people drop pounds quickly, but they can also cause a rapid loss of muscle mass and bone density unless lifestyle changes are made. anandaBGD/Getty Images

- **Rapid weight loss from taking GLP-1 medications like Ozempic and Wegovy can cause a decrease in muscle mass, lessen bone density, and lower your resting metabolic rate, leading to sarcopenia.**
- **Sarcopenia is the gradual loss of muscle mass, strength, and function and is typically associated with aging.**
- **Lifestyle changes such as increasing protein intake and incorporating strength and resistance training can help combat**

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Many people taking [glucagon-like peptide 1 \(GLP-1\)](#) drugs like [Ozempic](#) or [Wegovy](#) (semaglutide) and [Mounjaro](#) (tirzepatide) experience rapid weight loss.

“According to a [clinical trial of Ozempic](#), after 68 weeks on the medication, 86.4% of participants lost 5% or more of their body weight, and 69.1% lost 10% or more of their body weight.”

While weight loss can bring about health benefits, losing weight rapidly can also cause a decrease in muscle mass, lessen bone density, and lower your resting metabolic rate, leading to [sarcopenia](#) — the gradual loss of muscle mass, strength, and function.

“Sarcopenia affects the elderly population and typically is associated with aging. However, rapidly losing weight with GLP-1s like Ozempic or Wegovy without the proper diet and exercise can also cause sarcopenia (sometimes referred to as ‘[skinny fat](#)’) at any age, negatively affecting a person’s quality of life by reducing their stamina and ability to perform daily activities, such as easily walking up stairs,” [Dr. Rekha Kumar](#), a practicing endocrinologist in NYC and Chief Medical Officer of [Found](#), told Healthline.

Sarcopenic obesity mimics [obesity](#), she added, and occurs when a person’s [BMI](#)  is in the normal or low range, but their levels of lean muscle are so low that fat and bones are the only metabolically active tissue.

“[It’s] important to note that a lower body weight does not always mean that a person is healthier. After some weight loss is achieved and a person reaches a plateau, it is important to assess body composition.”

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What the science says about sarcopenia and GLP-1 drugs like Ozempic

Data that is raising concern about sarcopenia as it relates to GLP-1 drugs is driven by a small portion of participants who underwent DEXA (dual-energy X-ray absorptiometry), which measures bone mineral density using spectral imaging, said **Dr. Karl Nadolsky**, endocrinologist and diplomate at the **American Board of Obesity Medicine**.

“Of this subset, the total mass loss was nearly 14 kg and while nearly 8.5 kg (about 60%) was fat loss, the 5 kg lean mass loss reported was 38%, which is on the high end of what we’d expect,” he told Healthline. “That said, DEXA is certainly imperfect in splicing the details of this body composition change as adipose tissue includes plenty of ‘lean mass.’ Additionally, the placebo group lost more lean mass (-1.83kg) than fat mass (1.37kg), which shows potential error.”

Nadolsky pointed out that rapid weight loss, in general, will reduce resting metabolic rate to some degree.

For instance, a **meta-analysis**  showed that people who underwent **bariatric surgery** demonstrated over 8kg of fat-free mass and lean body mass loss within 1 year post-bariatric surgery, which reflected 21% and 22% of total body weight loss, respectively.

“Any time people lose weight, one-quarter to one-third of that weight can be muscle, and the faster we lose, the more likely we are to lose muscle. While 20% reduction in muscle mass seems normal for someone losing weight, the problem is the length of time in which this muscle loss occurs,” said Kumar.

Because the weight loss process on GLP-1s is so fast, she said people need to be extra vigilant in their nutritional intake, specifically increasing

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“Additionally, while a benefit of GLP-1s has generally shown positive cardiovascular outcomes data (less heart attacks, less strokes, less cardiovascular death), I predict that this benefit won’t be there if patients have sarcopenic obesity,” said Kumar.

How lifestyle changes can help prevent muscle mass and bone density loss while taking GLP-1s

The following lifestyle changes can help prevent a decrease in muscle mass and bone density while losing weight fast for those who take GLP-1 medications like Ozempic or Wegovy.

Increase protein intake

A [systematic review and meta-analysis](#)  found that dietary trials with higher protein result in less lean mass loss and more fat mass loss compared to lower protein intake.

“Nutrition should also [optimize protein](#) in a personalized way,” said Nadolsky.

To maximize muscle preservation during active weight loss, Kumar said to focus on consuming 25-30 grams of [protein](#) per meal.

“Additionally, eating protein reduces hunger, so fill up on it along first with non-starchy [vegetables](#) and then move onto carbs if you’re still hungry, in order to ensure you are consuming enough protein at each meal,” Kumar said.

She recommends low/nonfat [Greek yogurt](#) and cottage cheese in place of sour cream, and meal prepping lean protein, such as [air-fried](#) chicken breast, so that it’s easily accessible. Additionally, adding beans to salads, choosing quinoa over rice or pasta, and supplementing with [protein powders](#) and drinks are good ways to get more protein.

Strength and resistance training
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Resistance training mitigates all muscle loss that occurs during caloric restriction, according to a [meta-analysis](#) ✓.

“It is imperative to incorporate some sort of individualized resistance training for everyone undergoing therapeutic weight loss interventions,” said Nadolsky.

Kumar explained that strength and resistance training does the following:

- Preserves muscle during weight loss so that you’re losing fat instead of muscle mass.
- Increases your metabolism, helping your body burn more calories throughout the day, even when at rest.
- Improves mobility, quality of daily life, and increases both your lifespan and “healthspan,” the period in which you are in good health.

She suggests starting with 2-3 [strength workouts](#) per week.

“Fit it in when you can. Keep dumbbells at your desk at work to get a few reps in during a break, do a quick set of lunges down the hallway, or challenge yourself to hold a plank during the commercial break of your favorite TV show,” Kumar said.

Prioritize quality sleep

Healthy, restorative, and consistent sleep patterns impact various hormones involved in body weight regulation and muscle strength, such as cortisol and growth hormone, said Kumar.

“Optimal circadian patterns of these hormones can contribute to a healthier body composition,” she said. “Conversely, sleep deprivation can lead to increased levels of your hunger hormone, causing more food cravings.”

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The risk of muscle loss and sarcopenic obesity while taking GLP-1s is one reason Kumar stressed that people on these medications should be under the supervision of a medical expert and supported by a nutrition expert, “such as a registered dietitian who can ensure they are meeting protein needs and avoiding health risks,” she said.

Nadolsky said physicians need to embrace the potential adverse effects of some lean mass loss when they are treating people with obesity and help patients mitigate that with resistance training and protein optimization.

However, he also pointed out that research shows despite whatever lean mass loss accompanied weight loss while taking GLP-1s, the individual’s health improved.

“The improved health includes cardiometabolic health (like [type 2 diabetes](#) and reduced cardiovascular outcomes) along with physical function and quality of life,” said Nadolsky. “We should not be using obesity pharmacotherapy or surgery in those who do not have the disease of obesity and thus the benefits will outweigh any of those risks if utilized in the indicated patient population.”

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