

Muscle: The Organ that Powers Vitality

In this series, discover how skeletal muscle, the body's largest organ, impacts health and longevity. From regulating hormones and blood sugar to boosting brain health, muscles are far more than just a source of strength.

By [Sheramy Tsai](#) (Epoch Health / The Epoch Times) July 31, 2024 Updated: July 31, 2024

Part 3

Rethinking Obesity: Is America Facing a Muscle Crisis?

A new class of drugs, touted by influencers and celebrities, is rising in popularity, however, ‘not all weight loss is healthy.’

Numbers indicate that America has an obesity problem. According to a [2023 JAMA article](#), “U.S. obesity prevalence has surged over the last decade,” with 22 states reporting adult obesity rates at or above 35 percent.

Dr. Gabrielle Lyon, a physician specializing in muscle-centric medicine, offers a different perspective. “We don’t have an obesity epidemic—what we really have is a midlife muscle crisis,” she said in a [recent TED Talk](#).

This shift highlights a crucial yet often overlooked factor in weight management: muscle mass.

The Ozempic Issue

The issue of muscle mass versus fat becomes particularly critical as the world turns to a new class of drugs to aid in weight loss.

Medications such as Ozempic, known for their appetite-suppressing effects, promise significant weight loss and are gaining popularity. [According to a May KFF health tracking poll](#), 12 percent of Americans have used the drug. [A 2023 study in The Lancet](#) confirms its efficacy, showing that adults lose about 15 percent of their body weight on average with GLP-1 agonists.

Dr. Peter Attia, a physician specializing in longevity, wrote [on his website](#), “Not all weight loss is healthy.”

[A 2021 clinical trial](#) in the New England Journal of Medicine highlights a concerning downside: With GLP-1 agonists such as Ozempic, about 40 percent of the weight lost is lean mass, including muscle.

“GLP-1 agonists have been celebrated for their potency in reducing body mass, but lean mass accounts for an alarming proportion of this weight loss,” Dr. Attia wrote.

Dr. Attia also said that while GLP-1 agonists such as Ozempic can offer health benefits for obese individuals, they come with risks, especially for those with minimal weight to lose. He added that even obese patients can’t always afford significant lean mass loss, particularly those with sarcopenic obesity—a condition marked by excess fat and low skeletal muscle, common in older adults.

“Further reductions in lean mass among those with too little to begin with could pose a greater threat to health and longevity than the presence of excess fat,” Dr. Attia warned.

Lean mass loss is not exclusive to weight loss drugs. When individuals lose weight, they typically shed a combination of fat and fat-free mass, including muscle. Dr. Abud Bakri, an internal medicine doctor, [wrote on social media platform X](#), “ALL caloric restriction causes lean tissue loss, whether that’s through GLP-1, surgery, or aggressive dieting.”

The amount of muscle lost during a caloric deficit depends on factors such as protein intake, resistance training, hormonal status, sleep quality, and many other variables, Dr. Bakri told The Epoch Times in an email.

“Muscle loss is the Achilles’s heel of most conventional weight loss efforts, including GLP-1 agonists, that virtually guarantees that weight is regained as fat,” Dr. William Davis, cardiologist and author of the book “Super Gut,” told The Epoch Times.

“Obesity, at its core, is a disease of the muscle,” Dr. Lyon said in her Ted Talk. “We don’t have a battle of the belly. What we have is a battle of the bicep.”

3 Ways Muscle Aids Weight Management

Muscle plays a key role in managing our weight because it enhances our metabolism, using calories more effectively; regulates glucose, so we are less

likely to store calories as fat; and balances hormones, to keep us in better overall metabolic health.

Muscles Enhance Metabolism

We all know someone who seems to be able to eat anything without gaining weight, often attributed to having a “great metabolism.” But what does that really mean?

Metabolism encompasses all the biochemical processes that convert food into energy for essential functions such as cell growth, repair, and maintenance. The total energy used for these functions is known as the metabolic rate.

Lean muscle mass affects the body’s basal metabolic rate (BMR)—the calories burned at rest. Muscle tissue is metabolically active and requires more energy to maintain than fat tissue. Thus, more muscle means more calories burned at rest. However, the effects of BMR might not be as significant as believed. [A 2019 study](#) in *Frontiers in Nutrition* found that each kilogram of added muscle raises the BMR by only 13 calories per day. Researchers concluded that this change is “non-significant and non-meaningful,” challenging the belief that muscle hypertrophy—an increase in muscle size and strength—substantially boosts daily energy needs.

In her book, “Forever Strong,” Dr. Gabrielle Lyon expands on this idea. “You might have heard that muscle plays the biggest role in using calories and elevating our metabolism while we’re at rest. But don’t be fooled,” she wrote. While muscle does contribute to calorie burning, Dr. Lyon clarifies that “each pound of muscle burns only about ten calories at rest.”

“The metabolic power is this: Well-trained muscle tissue is more efficient and effective at utilizing calories,” she said.

Well-trained muscle refers to muscle tissue that has been conditioned and strengthened through regular exercise. It enhances metabolism by using energy for protein turnover, aiding the body in maintaining homeostasis.

This insight shifts the focus from the simplistic “calories in versus calories out” model to a more nuanced understanding of how muscle health influences overall energy expenditure and metabolic balance. While muscle itself may not dramatically increase the number of calories burned at rest, well-trained muscles

improve the body's ability to use calories more efficiently, supporting a healthier metabolism and better energy balance.

Muscles Regulate Glucose

Muscles are crucial in regulating glucose levels. During exercise, muscles use glucose for energy, lowering blood sugar levels. Excess glucose can convert to fat, leading to weight gain. Thus, muscles help prevent weight gain by effectively regulating glucose, aiding in weight loss. This is especially important for those with insulin resistance or diabetes, as it helps improve glucose control without relying solely on insulin.

A key benefit of resistance training is the production of myokines, hormones released during muscle contractions. [A 2022 study](#) in the International Journal of Molecular Sciences explained that myokines act as chemical signals, promoting glucose uptake in muscle cells and enhancing insulin sensitivity. This helps maintain stable blood sugar levels, reduces the risk of Type 2 diabetes, and supports overall metabolic health.

“Actively working and taxing your muscle tissue will not only help regulate your hormones but will also make you better able to regulate your blood sugar and improve your body composition,” Dr. Lyon wrote in her book.

Muscles Balance Hormones

Muscles aren't just for movement—they also play a significant role in balancing hormones.

“During the past couple of decades, it has been apparent that skeletal muscle works as an endocrine organ,” [a 2020 article](#) in Endocrine Reviews reads. Muscles produce and secrete hundreds of hormone-like substances that influence various physiological processes, including hormone regulation. These myokines help regulate the release of hormones such as insulin, aiding in metabolic stability.

Muscles also produce hormones such as irisin, which converts white fat to brown fat, enhancing energy expenditure.

“Irisin is secreted from muscles in response to exercise and may mediate some beneficial effects of exercise in humans, such as weight loss,” the “Handbook of Hormones” [reads](#).

Interleukin-6 (IL-6) is another hormone-like substance released by muscles during exercise. [Research](#) in Biological Sciences found that IL-6 boosts fat burning and improves insulin sensitivity, making it easier to lose weight and maintain metabolic health.

Muscle As Medicine

“We need to change the paradigm of medicine and think about muscle as medicine,” Dr. Lyon said in her Ted Talk.

In her book, she recommends resistance training and a “protein-forward” diet to combat muscle loss. Resistance training promotes muscle growth and maintenance, while protein supplies the building blocks for muscle repair and growth.

According to board-certified nutrition expert JJ Virgin, maintaining and building muscle benefits those using weight loss medications such as GLP-1 agonists. In [a podcast](#), she said that combining these medications with resistance training and a high-protein diet can mitigate muscle loss, leading to more sustainable and healthier weight loss.

Dr. Lyon’s advocacy for muscle as medicine urges a rethinking of traditional weight management strategies. Preserving and building muscle supports better health and enhances weight loss interventions. As people turn to weight loss drugs, surgery, and other methods, addressing muscle loss is crucial for maintaining overall health and achieving long-term success.

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