WITHINGS

Research Published in Mayo Clinic Proceedings: Digital Health Reveals Body Composition Predicts GLP-1 Weight Loss Outcomes.

Withings research finds that muscle-to-fat ratio at the start of treatment is the strongest predictor of both how much weight is lost on GLP-1 therapy and whether it comes from fat or muscle. The peer-reviewed, real-world study, published in Mayo Clinic Proceedings: Digital Health, followed 396 GLP-1 users and matched 1635 non-users using data from Withings connected devices.

Boston, MA, July 29, 2026 – Withings, a pioneer in clinical-grade connected health devices, today announced the publication of a peer-reviewed study in *Mayo Clinic Proceedings: Digital Health* providing a real-world analysis of how body composition changes in individuals using GLP-1 receptor agonist therapy. The study found that the majority of weight lost during treatment comes from fat rather than muscle, while underscoring that individuals begin GLP-1 therapy with different body composition, reinforcing the importance of personalized monitoring throughout treatment.

Why this matters now
GLP-1 medications are prescribed at scale across the US, and one fear dominates the conversation: the medications eliminate muscle along with fat. Using causal-inference methods and a matched comparison group, this is one of the first studies to show what actually happens to body composition in a large, diverse, real-world population.

During treatment: mostly fat on average, but not for everyone
Across 396 GLP-1 users and 1,635 matched controls, starting treatment was associated with a median 9.8% reduction in total body weight over one year, about 10.2 kg per person, compared

with matched non-users. Of that weight loss, 7.5% came from fat mass versus just 2.3% in muscle. Put another way, muscle accounted for 21.6% of the total weight lost, comparable to the roughly 25% attributed to weight loss from dieting[2]. This demonstrated that the quality of weight loss on GLP-1s in this real-world population was at least as good as under a calorie-restricted diet. Blood pressure also improved, with systolic blood pressure falling about 2.5 mm Hg and diastolic pressure about 1.5 mm Hg. This was consistent even through the winter months, when blood pressure typically rises, a pattern visible only through frequent at-home monitoring. But these are averages, and the study shows they hide wide differences: some people lose far more muscle than others. For most, the weight coming off is largely the right kind, but "most" is not "everyone."

So who varies? Your starting body composition predicts it
The study's most original finding is that, among all the baseline factors it looked at (age, gender, BMI, and muscle-to-fat ratio), your starting muscle-to-fat ratio was the most consistent signal of weight-loss quality. People who start with more fat relative to muscle tend to lose more fat and spare more muscle, while those who start leaner lose proportionally more muscle. A simple body-composition reading before starting treatment can show which group you're closer to, and how closely to watch.

“One of the big fears with GLP-1s has always been muscle loss. For most people, most of the weight lost is fat. **But averages hide big differences**. Some people lose far more muscle than others. Your body composition before you start helps flag who's most at risk, and tracking it during treatment can catch an unhealthy loss early," said Agathe Chabassier, RWE Data Scientist at Withings.

After treatment: the moment that matters most
The Withings smart scales at the center of this study did more than measure weight: they tracked fat mass and muscle mass separately throughout treatment, giving researchers the granular picture that made this analysis possible. That same capability is valuable after treatment ends. Separate research has shown that weight often returns after stopping GLP-1 therapy, and that what comes back is not always what left: regained weight can skew toward fat rather than muscle (external literature, e.g. UC Davis Health; not a finding of this study).[1] Tracking body composition, not just total weight, during and after treatment gives users and their doctors the information they need to act early, whether that means adjusting protein intake, adding resistance training, or revisiting the care plan.

About the study
Titled "Real-world body composition and blood pressure changes following GLP-1 receptor agonist initiation: a causal inference study of connected device data," the study was led by Agathe Chabassier (Sorbonne Université / Inria / Withings) with researchers at Inria and Withings. It analyzed longitudinal data from adult US users of Withings devices who self-reported GLP-1 use via in-app survey between June 2023 and July 2024 (396 GLP-1 users and 1,635 matched controls for body composition; 148 and 524 for blood pressure). To address the usual real-world limitation of no comparison group, researchers matched each user to similar non-users on six months of pre-treatment data. The study followed GDPR and HIPAA standards; all participants gave digital informed consent. Funded in part via a CIFRE doctoral grant (ANRT); the funder had no role in study design, analysis or the decision to publish.

Withings Body Composition Scales

Withings smart body composition scales let users track key health biomarkers from home, no appointment required. They monitor muscle and fat percentages by body zone alongside heart and nervous system metrics, helping users work toward their health and fitness goals faster.

For the millions of Americans on, coming off, or considering GLP-1 therapy, this kind of at-home tracking can be especially valuable. Establishing a body-composition baseline before starting treatment, then checking in regularly during and after, helps reveal whether the weight being lost or later regained is fat or muscle. That means users can walk into their next appointment with a fuller picture of their progress than a single number on a scale can offer.

Withings' lineup now includes the recently launched BodyFit, the brand's entry point into body composition tracking, as well as the newly introduced BodyScan 2, which adds deeper cardiometabolic and longevity-focused insights.

About Withings
A pioneer in connected health since 2008, Withings serves millions of users worldwide and collaborates with leading research institutions including Stanford and Harvard. Its ecosystem spans FDA-cleared smart scales, hybrid smartwatches and blood pressure monitors that help people track their health and act early. Available at withings.com.

[1] *External literature on post-cessation weight regain (e.g. UC Davis Health), not a finding of the Withings study.*

[2] *Heymsfield SB, Gonzalez MCC, Shen W, Redman L, Thomas D. Weight loss composition is one-fourth fat-free mass: a critical review and critique of this widely cited rule. Obes Rev. 2014;15(4):310-321. The ~25% benchmark for standard dieting cited above comes from this analysis; not a finding of the Withings study.*

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Published paper: https://www.sciencedirect.com/science/article/pii/S2949761226000416