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Fat Loss vs Weight Loss: Helping GLP-1 Patients Focus on the Right Measurement

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Obesity specialist Carolynn Francavilla Brown, MD, was treating a woman in her late 40s, who was taking tirzepatide for several months — and successfully reaching her weight-loss goals — without any medication side effects. Based on the patient's continuing improvement, Francavilla Brown began up-titrating her medication dosage.

However, after taking the drug for about 5 months, the patient came for a visit feeling fatigued and weak.

An InBody scan showed that the patient had lost lean body mass, her water weight had shifted, and she was extremely dehydrated, according to Francavilla Brown, who owns and operates Green Mountain Partners for Health and Colorado Weight Care in Denver, Colorado. Francavilla Brown immediately decreased the patient's medication to the lowest dose and provided specific recommendations about her daily protein intake and hydration.

"She felt better, and we were able to see improvement in her body composition," Francavilla Brown said. "I tried to get her to do a little resistance training, but that was not as successful as I would have liked to see. But with the nutritional changes and decrease in the medication, she was more successful from a health perspective."

This patient case is a prime example of how, in some instances, losing weight with glucagon-like peptide 1 (GLP-1) agonists can impact muscle mass. To combat this health risk, more clinicians are now emphasizing on fat loss vs weight loss in patients taking GLP-1s. Weight loss refers to the overall decrease in weight from the body, which can include fat, muscle, and water, whereas fat loss refers only to the reduction of fat from the body.

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Studies show that GLP-1 agonists can greatly impact muscle mass. For example, a 2024 analysis in *The Lancet Diabetes & Endocrinology* found that muscle loss with GLP-1 receptor agonists (GLP-1 RAs) ranges from 25% to 39% of total weight lost over 36-72 weeks. This significant muscle loss is largely attributed to the magnitude of weight loss, rather than an independent effect of GLP-1 RAs, according to the analysis.

By comparison, nonpharmacological caloric restriction with smaller magnitudes of weight loss results in 10%-30% of muscle loss, *The Lancet* study found. In addition, the decline in muscle mass with GLP-1 RAs is several times greater than that expected from age-related muscle loss (0.8% per year based on 8% muscle loss per decade from ages 40 to 70 years).

Not all physicians are appropriately considering lean mass loss when treating patients with GLP-1 medications, which is troubling, said Michelle Look, MD, a San Diego-based primary care physician who specializes in sports medicine, wellness, and obesity.

"[Many primary care physicians] are only looking at weight loss," Look said. "That is concerning. If you have patients who are losing weight, but all of their weight is coming from muscle mass and not fat mass, that's a problem."

Long-term studies have shown the importance of muscle mass for function, bone health, and longevity, Look noted. Data from the Look AHEAD clinical trial, for instance, found that a long-term intentional weight-loss intervention was associated with greater bone loss at the hip in male patients with type 2 diabetes. Another recent study suggests long-term weight loss in older women could increase risk for poor health outcomes, such as greater risk for hip fracture.

Explaining to patients why they should be more focused on fat loss vs

weight loss can be challenging for some patients to understand, said Francavilla Brown.

"Most patients, and probably most prescribers, are really focused on the scale," she said. "Certainly, I would say for my average patient, the focus has been on the scale or a size of clothing. So this idea of muscle being a good thing and important to help — and that the scale doesn't tell the whole story — is certainly a new concept for the vast majority of my patients."

Talking to Patients About Fat Loss

Setting realistic treatment expectations with patients early in their weight-loss journey is key, said Shagun Bindlish, MD, a Dublin, California–based internal medicine physician and diabetologist.

Shift the conversation from weight loss to a healthy body composition, she suggests.

“What I have noticed is that a lot patients, when they start medication on a low dose, they are very fixated, again, on the scale,” Bindlish said. “They say: ‘I only lost 2 lb this week or I’m not seeing any change in my eating habits or eating patterns.’ So slow, steady fat loss has worked the best. A lot of the time, I do not escalate their dosage very fast. I tell them to be on same dose for up to 8-10 weeks. That really helps because 1-2 lb/wk is more realistic.”

Look frequently encounters patients who have set unreasonable weight-loss goals for themselves. Classically, a patient will say they want to achieve the same weight they were at years ago (at a certain age), she said.

“I will tell patients, especially older women, that might not be a good goal for you because when you lose that much weight, you’re also going to lose some lean mass,” Look said. “We typically expect our patients to lose fat mass to muscle mass on a ratio of 3:1. It helps to explain to patients what makes up the components of your body weight and the importance of retaining muscle mass.”

Having the right tools to track fat loss is essential, added Francavilla Brown. At her clinic, she uses body composition testing with bioelectrical technology to measure fat loss. Using technology — like bioimpedance or dual-energy x-ray absorptiometry scans — are ideal ways to measure fat loss, she said.

“But patients might also use waist circumference or other measurements at home,” Francavilla Brown said. “There’s also really cheap scales that will give body fat percentage. They’re not always as accurate as we would like, but they can give some idea of a trend over time.”

Look said. In addition, there are other anthropometric measurements that can give physicians an idea about patients' muscle mass, she noted. At her clinic, Look administers functional testing on all geriatric patients. Patients complete a sit to stand test where they stand up or walk across the room for a certain amount of time.

"We do that with our geriatric patients to look at their muscle function," Look said. "I think that primary care [physicians] can easily do this in their office to give them some insight because if patients are getting weaker and not stronger or maintaining their function, these are red flags that perhaps, you should slow down on their weight loss."

Getting Patients Back on Track

If patients on GLP-1s start losing muscle mass, immediately slowing down their weight loss and righting the course is critical, obesity specialists said.

Bindlish recently had two patients taking GLP-1s who both lost about 20 lb each. The first patient, a 45-year-old male patient, had incorporated lifestyle changes, such as resistance training, strength-building activities, and increased protein intake. The second patient, a 55-year-old female patient, did not make such lifestyle changes and lost more muscle during the weight drop. The first patient experienced about 10% fat loss and 10% muscle loss compared with the second patient who experienced 15% muscle loss and about 6% fat loss, she said.

To address the problem, Bindlish first completed a body composition analysis on the female patient, and with the detailed analysis, explained how to differentiate between fat and weight loss, she said.

"She was feeling weak in her arms and legs, and that's the reason she was not doing the weight training because she lost quite an amount of muscle mass," she said. "So I helped her start working with a personal trainer and learn how to get more protein. We're still working on it, but I'm seeing she has started incorporating some changes in her lifestyle that's helping."

Look similarly helped a patient get back on track who was losing too much muscle mass. The male patient, in his late 50s, had severe arthritis and needed hip surgery, but the orthopedic surgeon would not operate until he lost weight. Look treated him with a newer GLP-1 RA, and the patient experienced a dramatic response where he lost significant weight in a short period of time, she said.

When Look analyzed his body composition, she found the patient had lost much more muscle mass than fat mass. Look held off on increasing his medication dose until she could spend more time adjusting the patient's nutrition program. One problem was the patient's lack of appetite after taking his medication. Look explained to him the importance of nutrition and why he still needed to eat.

"In general, we want 1.2-1.5 g of protein in his eating program [per kg of body weight], and then to really work on ways to help him increase muscle mass or at least hang on to his muscle mass," she said. "We started with resistance bands. We changed his eating program. We slowed down his weight loss until he could work with our program on fixing his eating program and getting his activity up."

Three months later, the patient was still losing weight, but he was losing less lean muscle mass, Look said. Increasing protein and getting patients to do more resistance training are central to decreasing lean mass loss with weight loss, she stressed.

"Lifestyle is still important, even in the era of these new highly effective meds, and perhaps, it's even more important," Look said.

Address Misconceptions

To help patients think about fat loss and not fixate so heavily on scale numbers, Bindlish advises physicians to consider how misinformation could be playing a role.

For example, a common fear among patients is that eating protein or lifting weights will lead to bulking up. Many patients also compare themselves with others who have lost weight, particularly those who have lost weight more quickly, she said.

"I always tell them that everybody's body is different," said Bindlish. "The impact you are going to have vs your friend can be totally variable. It's very important to address these psychological barriers and all the misinformation around it right from the beginning."

Personalization is key, Bindlish said. Every patient's journey is different, and physicians should tailor their treatment plans to each patient's individual needs, age, and medical history, she noted. Ensuring that patients understand treatment with GLP-1 agonists should be continually managed and not a quick fix, she said.

"It is not about just losing weight but creating sustainable habits," Bindlish said. "You really have to pick and choose what you can do long-term. And patient empowerment and support are so important. It's ongoing education,

encouragement at every step, and follow-ups. It helps to keep patients motivated and committed to healthy fat loss, not overall weight loss."