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Understanding GLP-1 and its Pairing with Strength Training

Why resistance exercise plays a pivotal role in long-term success with GLP-1 medications

GLP-1 medications are effective weight-loss drugs that have become well-known and accessible recently (3). They can yield 15–20% weight reductions in adults, previously only possible after bariatric surgery (Gross). The effects of GLP-1s increase postprandial insulin secretion from pancreatic β-cells, suppress glucagon secretion from α-cells, slow gastric emptying, and reduce appetite (Gross).

As much of a "miracle weight-loss drug" as the media has made it out to be, it is intended to be used in adjunct to lifestyle interventions to be successful.

If you're taking this drug or considering it, exercise should be an essential variable to include. In this article, we'll look at some reasons you should exercise, primarily via resistance training, to lose the most weight while on GLP-1 and reduce weight regain when you're off.

Exercise protects against losing muscle mass

Being in a caloric deficit alone can result in 10-30%, even 40% in some cases, of the weight lost from muscle mass. This is detrimental, as muscle mass is metabolically active and contributes to many physiological processes. Some studies show that GLP-1 use without exercise leads to similar lean muscle mass loss patterns (6).

Yet, other studies show a muscle atrophy-protecting effect (8, 9, 11). However, studies showing a muscle-loss-protecting effect were done on mice and measured for muscle in ways that differed greatly from those in humans. Furthermore, the human subject trials varied in length and dose, which makes it hard to conclude that GLP-1 use prevents muscle loss while losing fat at this time, and we don't know if exercise was a variable controlled for.

Why exercise when taking GLP-1s?

If you're on a GLP-1, wouldn't you want to do everything possible to leverage its effectiveness and lose the most weight while on it? How does exercise influence weight loss outcomes in those who are on GLP-1? One recent randomized control trial split participants into an exercise group, a GLP-1 group, and a combined group (7).

The results showed that the combined group, which did 150 minutes of cardio a week, lost 6.1% in abdominal fat. The exercise group lost 2.6%, and the GLP-1 group lost 2.8%. When exercise is leveraged with GLP-1, the weight loss effect is more substantial, leading to a lower risk of type 2 diabetes and cardiovascular disease. Interestingly, GLP-1 alone was only marginally better than 150 minutes of cardio per week.

Most available studies on exercise and GLP-1s used only cardio-based training and didn't use any out-of-the-ordinary guidelines. Most used the basic "150 minutes per week at moderate intensity" guideline. Future research should investigate the best exercise types while on GLP-1 (5).

In sum, many studies show that combined exercise and GLP-1 produce the best results, both during and after discontinued use (1; 3, 2021).

Exercise to maintain weight loss after GLP-1 deprescription

One study found that two-thirds of the weight loss was regained after one year off GLP-1 (4). Other studies show that weight regain after GLP-1 use is common (2; 10). Only some people can use GLP-1 for the long term, so what if an established exercise routine during GLP-1 use could result in maintained weight loss?

A study investigated whether weight loss was sustained better one year after termination of a GLP-1, supervised exercise program, or combined for one year (4).

In the study, participants who received supervised exercise instruction maintained a weight loss of at least 10% of initial body weight one year after treatment termination compared with those who received liraglutide alone or placebo (4). Weight regain during the one-year post-treatment phase was 6 kg larger for participants who had previously received liraglutide alone than participants who had previously received supervised exercise alone, despite similar initial weight loss.

These results show that adding supervised exercise during GLP-1 use improves weight loss maintenance after treatment termination. Other randomized control trials show similar results, too, with the best results coming from supervised exercise exceeding the 150-minute/week guideline (Lundgren, 2021; 10).

Conclusion

As more research comes out, it is clear that GLP-1 is a powerful and safe weight-loss medication. It doesn't seem to be going anywhere, and people are pouring money into it. Both patients and insurance companies want the best results from the drug, and exercise plays a vital role in its long-term success.

Exercise can protect against many adverse physiological effects, such as muscle and bone loss and increased resting heart rate. It is also intended to be used with GLP-1, leading to much higher weight loss rates. Weight maintenance is the hardest part, however, and exercise has been shown to prevent weight regain after discontinued use of the drug.

Until more specific exercise guidelines for using a GLP-1 are released, the typical weight loss guidelines can be used, such as 150 or more minutes a week of moderate-intensity cardio and, very importantly, at least two resistance training sessions a week.

If you use a GLP-1, lean into these powerful reasons to exercise to get the best outcomes on your journey.

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