CLOSER LOOK

MEMORANDUM

Bimagrumab decreases muscle mass loss caused by semaglutide use in full results of BELIEVE trial – March 2, 2026

Nature Medicine just published full results of the phase 2, 48-week BELIEVE trial (n=507) by a team of researchers, led by Dr. Steven Heymsfield (Louisiana State University), who evaluated Lilly's bimagrumab alone or in combination with semaglutide for the treatment of obesity. As background, Tufts University's Dr. Ronenn Roubenoff trial presented the results at ADA 2025 by showing that bimagrumab, a monoclonal antibody that blocks activin type II receptors, significantly enhances weight loss while preserving lean mass when used in combination with Novo Nordisk's Ozempic (semaglutide). Specifically, the article shows that at Week 48, combination therapy leads to 20% weight loss, compared with 3%, 10%, and 15% with placebo, bimagrumab alone, and semaglutide alone, respectively. Notably, fat mass loss fell by 42% with combination therapy vs. 5%, 25%, and 25% with the other interventions, underscoring a highly favorable body composition profile impact, with notable reductions in adiposity. Meanwhile, bimagrumab appears to decrease muscle mass loss caused by semaglutide:

- Muscle mass increased by 2.5% with bimagrumab monotherapy;
- Remained relatively constant (-0.5%) with placebo; and
- Decreased by 3% and 7% with combination therapy and semaglutide monotherapy, respectively.

Bimagrumab also led to additional benefits on waist circumference, visceral adipose tissue (VAT), grip strength, and the inflammatory biomarker hsCRP. Specifically, the mean waist circumference reduced by 4.7 cm with placebo compared to 10.7 cm with bimagrumab, 13.6 cm with semaglutide, and 19.4 cm with combination at Week 48. The percent reduction in VAT was 2.1% with placebo, 40.2% with bimagrumab, 29.5% with semaglutide, and 54.8% with combination. Finally, hsCRP reduced 16% with placebo, 55% with semaglutide, and 83% with combination.

In all, results support both cardiometabolic and functional benefits beyond weight loss alone.

-- by Kat Moon, Esther Min, Elizabeth Rose, Monica Oxenreiter, and Kelly Close