

Can GLP-1 Weight-Loss Drugs Boost Immunity?

Two experts at the University of Colorado Cancer Center look at GLP-1 medications' effects on cancer and autoimmune disease.

June 5, 2026 By University of Colorado Cancer Center and Greg Glasgow

GLP-1 drugs like Ozempic, Wegovy and Mounjaro have proven to be very effective in treating diabetes and helping people lose weight, but researchers at the [University of Colorado Anschutz Cancer Center](#) are doing studies to see if the medications have another function — improving the immune system.

“A lot of the papers looking at these drugs and their impact on immunity have shown that people who take them respond better to infections, they have better outcomes in the context of fighting different types of cancer, but no one has looked at what is directly happening to the immune cells,” says Claire Pillsbury, PhD, a postdoctoral fellow working in the lab of cancer center leader [Curtis Henry](#), PhD. “Based on data generated from our lab, we have evidence that these drugs may be directly stimulating immune cells, which could change the way the immune system responds to challenges.”

Starting with obesity

The research stems from the primary focus of Henry’s lab — looking at how comorbidities like obesity and aging promote cancer.

“Our main focus is to understand how immune dysfunction in aged people and those living with obesity allows cancer cells to escape eradication and to identify mechanisms to rejuvenate anti-tumor immunity in these demographics,” says Henry, deputy associate director in the Office of Faculty and Staff Relations. “In line with this goal, Claire is leading the charge in defining how weight-loss drugs directly and indirectly impact the function of immune cells. To our knowledge, we are one of the few groups working on defining how weight-loss drugs directly impact the function of innate and adaptive immune cells. Furthermore, Claire is currently defining how these therapies molecularly reprogram immune cells prior to and after stimulation.”

Pillsbury says the immune dysregulation that occurs in cancer patients living with obesity allows for the unchecked outgrowth of some cancers because the immune system is more exhausted and

less responsive to foreign invaders.

“By adding GLP-1 drugs, the idea is that you’re restoring a more normal or youthful immune state, so that those immune cells are better primed to control the tumor as it’s growing,” she says.

The inflammation factor

Looking at research done on people with obesity who take GLP-1 drugs, Henry and Pillsbury noticed that in addition to weight loss, patients saw improvements in immune function, including a decrease in inflammation. This effect has implications for people living with cancer as well as inflammation-driven autoimmune diseases like lupus and rheumatoid arthritis.

“In the future, we would like to work with our collaborators at CU to determine if weight-loss drugs can be combined with current standard-of-care approaches to augment anti-tumor immunity, particularly in the context of obesity,” Pillsbury says.

By the numbers

Pillsbury has applied for federal funding to study the effects of GLP-1s on immune response. In addition to conventional GLP-1 agonists like Ozempic and Wegovy, which only target the GLP-1 receptor, she is also researching medications like Mounjaro, which also targets the GIP receptor, and even the just-released retatrutide, which targets the glucagon receptor in addition to GLP-1 and GIP receptors.

“The drug companies believe that hitting more receptors induces better weight-loss effects, which does appear to be true, but when it comes to what this is doing across different immune populations, downstream signaling can be completely changed by adding on these extra agonists,” she says. “I want to know what to look out for and the best way to optimize these drugs’ usage across different populations.”

[This article](#) was originally published May 26, 2026, by the University of Colorado Cancer Center. It is republished with permission.