

Adults with Diabetes on GLP-1s Largely Maintain Their First-Year Weight Loss

Team A: Kersten Bartelt, RN; Joe Deckert, PhD

Team B: Jen Passini, MD; Eric Barkley

Last updated August 12, 2026 • Check for updates at EpicResearch.org

Key Findings:

- Among adults with diabetes who lost weight during their first year on a GLP-1 medication, most maintained or extended that loss when the GLP-1 was continued into the second year. At the two-year mark, 37.7% of semaglutide patients and 47.3% of tirzepatide patients had maintained their weight loss, and another 35.4% and 38.6%, respectively, had continued to lose weight.
- Regaining weight was less common. At the two-year mark, the share who had regained at least a quarter of their first-year loss reached 26.9% for semaglutide users and 14.2% for tirzepatide users.
- Full return to baseline weight was reached by 4.6% of semaglutide patients and less than 2% of tirzepatide patients at two years.

Glucagon-like peptide-1 (GLP-1) medications, a class that includes semaglutide and tirzepatide, are widely used both to manage type 2 diabetes and to support weight loss.¹ Research has shown substantial first-year weight loss.^{2,3} However, less is known about the weight trajectory among people who stay on a GLP-1 beyond a year, and patients with diabetes are an important group to examine separately because the metabolic factors of diabetes may make weight harder to keep off. Understanding how weight changes over a second year of treatment can help patients and clinicians set realistic long-term expectations.

We studied 38,621 U.S. adults with diabetes who started a GLP-1 medication, stayed on it continuously for at least a year, and lost at least five pounds during that first year. We then tracked their weight at monthly checkpoints from 13 to 24 months after starting treatment, measuring how much of each patient's first-year weight loss was retained or regained, or whether it was extended with further loss. Patients were followed only while they remained on the medication; anyone with a gap of more than 60 days between prescriptions was no longer counted from that point forward.

Among adults with diabetes taking semaglutide, most maintained or extended their first-year loss. One month past the one-year mark, 70.2% had held steady and 15.9% had continued to lose, with 13.9% having regained at least a quarter of their first-year loss. Over the second year, that regain share climbed steadily to 26.9% by the two-year mark, while 37.7% remained steady and 35.4% were still losing. Nearly 5% of patients regained all of the weight they had lost. Because patients were followed only while they stayed on semaglutide, the later checkpoints describe weight trends among continuing users and are skewed toward those who tolerated and responded to treatment.

Weight Change During the Second Year of Semaglutide Use

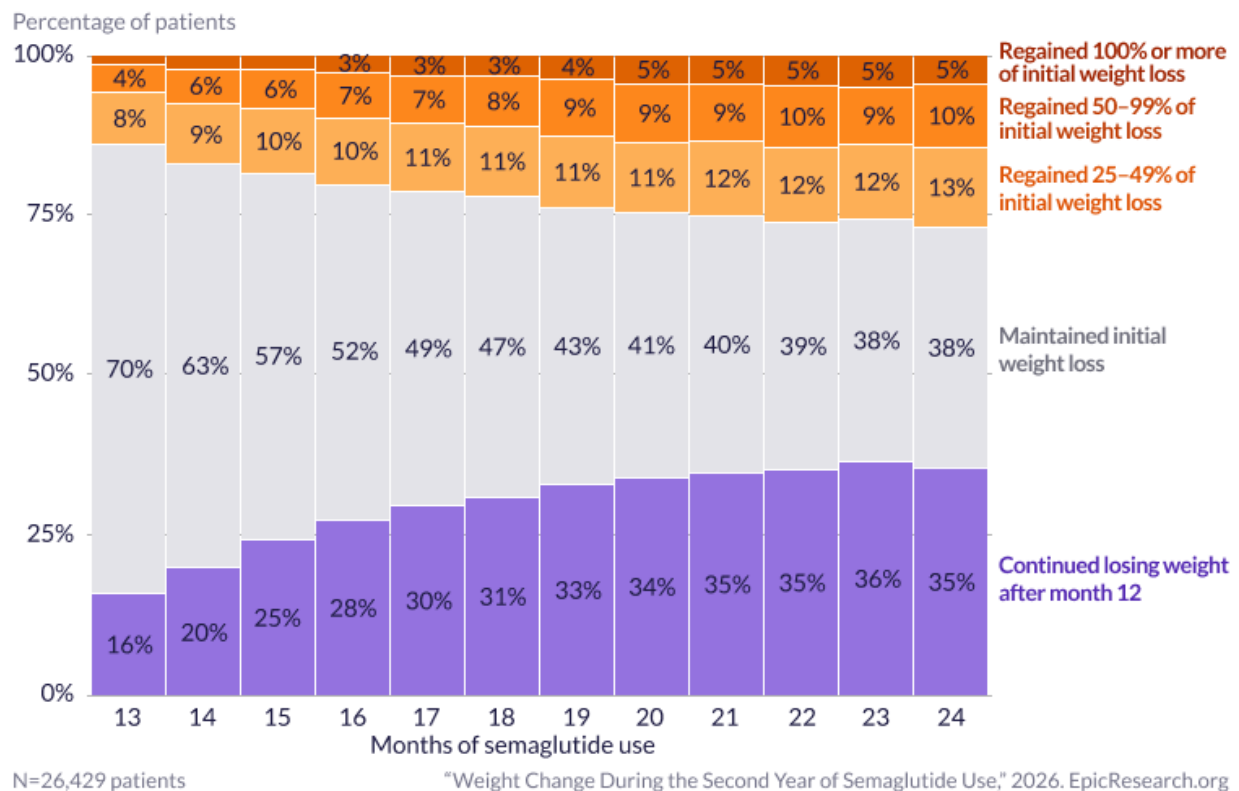


Figure 1. The distribution of patients with diabetes by whether they continued to lose weight, maintained their weight loss, or regained a portion of their first-year semaglutide weight loss, at monthly checkpoints from 13 to 24 months after starting treatment.

Tirzepatide patients with diabetes maintained their first-year loss more consistently and had lower regain rates than patients prescribed semaglutide. At one month past the one-year mark, 81.0% had held steady, and only 7.3% had regained at least a quarter of their loss. By the two-year mark, 47.3% remained steady and 38.6% were still losing, while meaningful regain reached 14.2% and full return to baseline stayed low at 1.6%. This again reflects weight trends among those who remained on the medication rather than all who started it.

Weight Change During the Second Year of Tirzepatide Use

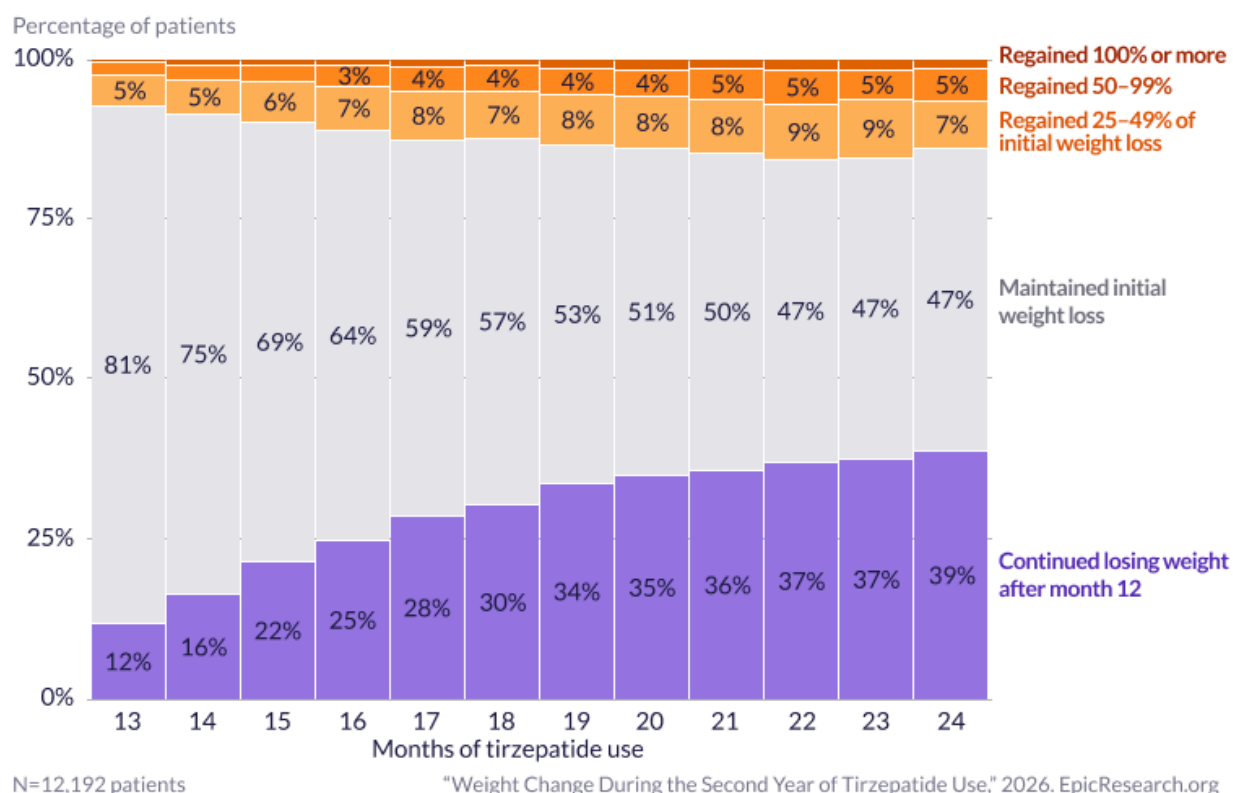


Figure 2. The distribution of patients with diabetes by whether they continued to lose weight, maintained their weight loss, or regained a portion of their first-year tirzepatide weight loss, at monthly checkpoints from 13 to 24 months after starting treatment.

These data come from Cosmos, a dataset created in collaboration with a community of Epic health systems representing more than 310 million patient records from 2,100 hospitals and more than 49,000 clinics from all 50 U.S. states, Canada, Lebanon, and Saudi Arabia. This study was completed by two teams that worked independently, each composed of a clinician and research scientist. The two teams came to similar conclusions. Graphics by Brian Olson.

References

1. Müller TD, Finan B, Bloom SR, et al. Glucagon-like peptide 1 (GLP-1). Mol Metab. 2019;30:72-130. doi:10.1016/j.molmet.2019.09.010
2. Wilding JPH, Batterham RL, Calanna S, et al. Once-Weekly Semaglutide in Adults with Overweight or Obesity. N Engl J Med. 2021;384(11):989-1002. doi:10.1056/NEJMoa2032183
3. Little D, Deckert J, Bartelt K, Ganesh M, Stamp T. Weight Change With Semaglutide. Epic Research. <https://epicresearch.org/articles/diabetes-drug-helps-with-weight-loss-in-both-diabetics-and-non-diabetics>. Accessed on June 26, 2026.

Data Definitions

Term	Definition
Study period	1/1/2022 to 5/1/2026
Study population: inclusion	Adult patients (18+) with diabetes with all of the following: • First exposure to a GLP-1 medication lasting over one year

	- At least one GLP-1 order or dispense with no gap >60 days between consecutive orders/dispenses during the first year (each order/fill assumed to cover 60 days) - Weight readings within 30 days of beginning the GLP-1 and within 30 days of the one-year mark - Weight loss of at least five pounds in the first year - Receives care in the United States
Study population: exclusion	Any of the following before starting the GLP-1: Bariatric surgery Malignancy CKD stage 4+ CHF Additional exclusion: - Patients who switch GLP-1 type during the first year of exposure - Patient-reported GLP-1s only (no order or dispense)
Index date	Date of first GLP-1 order or dispense meeting continuity criteria
Follow-up window	Discrete weight measurement checkpoints monthly from 13 to 24 months after the index date
Censoring	A patient is censored at a given checkpoint if any of the following apply: - More than 60 days since the last GLP-1 order or dispense Pregnancy - Development of CHF, amputation, or CKD stage 4+
Exposure	Weight change relative to first year of GLP-1 use, by GLP-1 ingredient
Outcome	Percent of the initial weight loss retained or regained at each monthly checkpoint, calculated as: $(\text{weight at checkpoint} - \text{weight at year one}) / (\text{weight at year one} - \text{weight on index date}) \times 100$
GLP-1 medication	Orders or dispenses for: - Semaglutide (Ozempic, Wegovy, Rybelsus) - Tirzepatide (Mounjaro, Zepbound)
Diabetes	Type 1 diabetes: ICD-10-CM E10* Type 2 diabetes: ICD-10-CM E11* Other specified diabetes: ICD-10-CM E08*, E09*, E13*
Bariatric surgery	CPT codes 43644, 43645, 43770, 43775, 43842, 43843, 43845, 43846, 43847, 43848
Malignancy	ICD-10-CM codes C00*–C96*
Pregnancy	ICD-10-CM codes O* or a pregnancy episode
Amputation	A procedure with ICD-10-PCS code 0Y6* or a diagnosis with ICD-10-CM Z89.41*–Z89.44*, Z89.51*, or Z89.56*
CKD stage 4+	ICD-10-CM N18.4, N18.5, N18.6
CHF	ICD-10-CM code I50*
Stratifications	GLP-1 ingredient
Model specifications	Descriptive analysis: percent of year-1 weight loss retained at monthly checkpoints from 13 to 24 months, reported overall and within each ingredient
Limitations	Patients were followed only while on the GLP-1, so later checkpoints are enriched for adherent responders (survivor bias) and reflect weight trends among continuing users, not all initiators. Dosage changes alter the expected weight trajectory. Patients switching directly between GLP-1 types are excluded. Lifestyle and dietary factors influencing weight regain are not captured in EMR data.

Weight measurements vary in setting, timing, and instrumentation across encounters.

Table 1. Weight Change During the Second Year of Semaglutide Use, Overall

Month	N	Continued Loss (%)	Maintained (%)	Regain 25 to 49 (%)	Regain 50 to 99 (%)	Full Regain (%)
13	26,429	16	70	8	4	2
14	23,748	20	63	9	6	2
15	24,758	25	57	10	6	3
16	20,462	28	52	10	7	3
17	17,557	30	49	11	7	3
18	20,613	31	47	11	8	3
19	14,937	33	43	11	9	4
20	12,691	34	41	11	9	5
21	11,875	35	40	12	9	5
22	10,205	35	39	12	10	5
23	9,030	36	38	12	9	5
24	10,275	35	38	13	10	5

Table 2. Weight Change During the Second Year of Semaglutide Use, Female

Month	N	Continued Loss (%)	Maintained (%)	Regain 25 to 49 (%)	Regain 50 to 99 (%)	Full Regain (%)
13	17,413	14	74	7	4	1
14	15,681	19	66	9	5	2
15	16,042	24	60	9	5	2
16	13,427	27	54	10	6	3
17	11,620	29	51	10	7	3
18	13,061	31	49	10	7	3
19	9,719	33	45	11	8	3
20	8,378	34	43	11	8	4
21	7,826	35	41	11	8	4
22	6,723	36	40	12	9	4
23	5,989	37	39	11	9	5
24	6,506	36	39	12	9	4

Table 3. Weight Change During the Second Year of Semaglutide Use, Male

Month	N	Continued Loss (%)	Maintained (%)	Regain 25 to 49 (%)	Regain 50 to 99 (%)	Full Regain (%)
13	9,015	20	63	10	6	2
14	8,065	23	56	11	7	3

15	8,715	26	51	12	7	3
16	7,033	29	48	12	8	4
17	5,934	30	45	12	9	4
18	7,549	31	43	12	10	4
19	5,216	33	39	12	11	5
20	4,312	33	39	12	11	6
21	4,049	34	38	12	11	6
22	3,481	34	37	12	11	6
23	3,040	36	36	13	10	6
24	3,768	34	35	13	12	5

Table 4. Weight Change During the Second Year of Tirzepatide Use, Overall

Month	N	Continued Loss (%)	Maintained (%)	Regain 25 to 49 (%)	Regain 50 to 99 (%)	Full Regain (%)
13	12,192	12	81	5	2	1
14	10,666	16	75	5	2	1
15	10,943	22	69	6	3	1
16	8,872	25	64	7	3	1
17	7,511	28	59	8	4	1
18	8,887	30	57	7	4	1
19	6,075	34	53	8	4	1
20	5,116	35	51	8	4	2
21	4,696	36	50	8	5	2
22	3,964	37	47	9	5	2
23	3,519	37	47	9	5	2
24	4,247	39	47	7	5	2

Table 5. Weight Change During the Second Year of Tirzepatide Use, Female

Month	N	Continued Loss (%)	Maintained (%)	Regain 25 to 49 (%)	Regain 50 to 99 (%)	Full Regain (%)
13	7,691	10	84	4	2	0
14	6,854	14	78	5	2	1
15	6,826	20	72	5	2	1
16	5,639	24	66	6	2	1
17	4,797	29	60	6	3	1
18	5,414	31	58	6	3	1
19	3,886	34	54	7	4	1
20	3,279	36	52	7	4	2
21	3,012	35	51	8	4	1
22	2,578	38	48	8	5	2

23	2,244	38	48	7	5	1
24	2,620	40	48	6	5	2

Table 6. Weight Change During the Second Year of Tirzepatide Use, Male

Month	N	Continued Loss (%)	Maintained (%)	Regain 25 to 49 (%)	Regain 50 to 99 (%)	Full Regain (%)
13	4,499	14	76	6	2	1
14	3,811	20	69	7	3	1
15	4,113	24	64	8	4	1
16	3,231	25	60	8	4	2
17	2,712	27	56	10	5	1
18	3,473	29	56	9	5	1
19	2,188	34	51	9	6	1
20	1,837	33	49	11	5	2
21	1,684	36	47	10	6	2
22	1,386	35	46	10	6	3
23	1,275	36	45	12	5	3
24	1,627	37	46	10	6	2