



# Association of FreeStyle Libre Utilization and Glycemic Outcomes among People with Type 2 Diabetes Treated with Basal Insulin and Glucagon-like Peptide-1 Receptor Agonists

Eileen Huang<sup>1</sup>, Anila Bindal<sup>1</sup>  
<sup>1</sup> Abbott Diabetes Care, Alameda, CA, USA

## Background

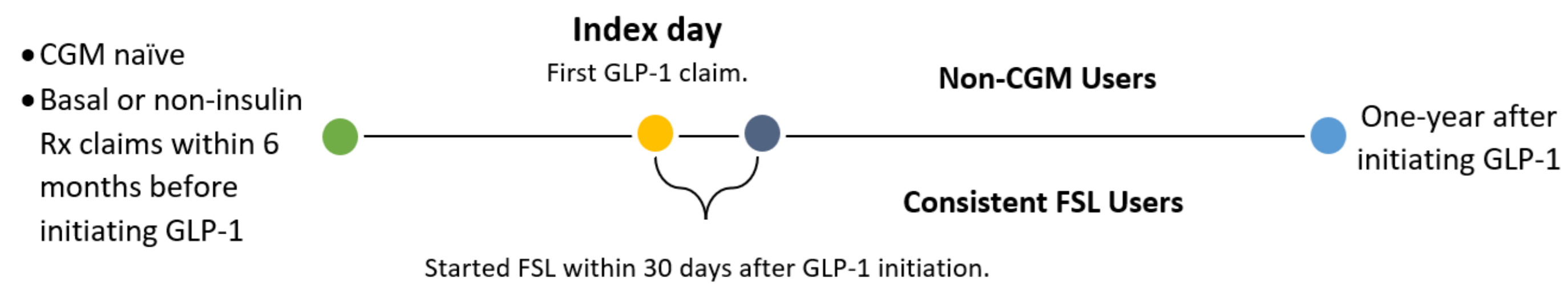
- FreeStyle Libre (FSL) continuous glucose monitoring (CGM) and glucagon-like peptide-1 receptor agonists (GLP-1) when used jointly is associated with significant improvement in glycemic outcomes<sup>1, 2</sup>.
- However, it is unknown if using FSL enhances GLP-1 adherence.
- This study assesses the relationship between consistent FSL utilization and GLP-1 discontinuation among people living with type 2 diabetes (T2D) on non-intensive therapy.

## Methods

### Study design:

This retrospective matched-cohort study analyzed data from Inovalon Insights administrative claims from March 1, 2017, to April 30, 2024.

### Figure 1. Study design



### Study population:

#### Inclusion criteria:

- T2D diagnosis
- ≥18 years old
- Initiation of GLP-1
- CGM-naïve prior to GLP-1 initiation
- Had continuous Rx insurance coverage 6 months prior to and 12 months after GLP-1 initiation
- Had basal or non-insulin Rx claims 6 months prior to GLP-1 initiation
- For consistent FSL users: initiated FSL within 30 days post GLP-1 initiation and had ≥0.8 proportion of days covered (PDC) within one year post GLP-1 initiation

### Exclusion criteria:

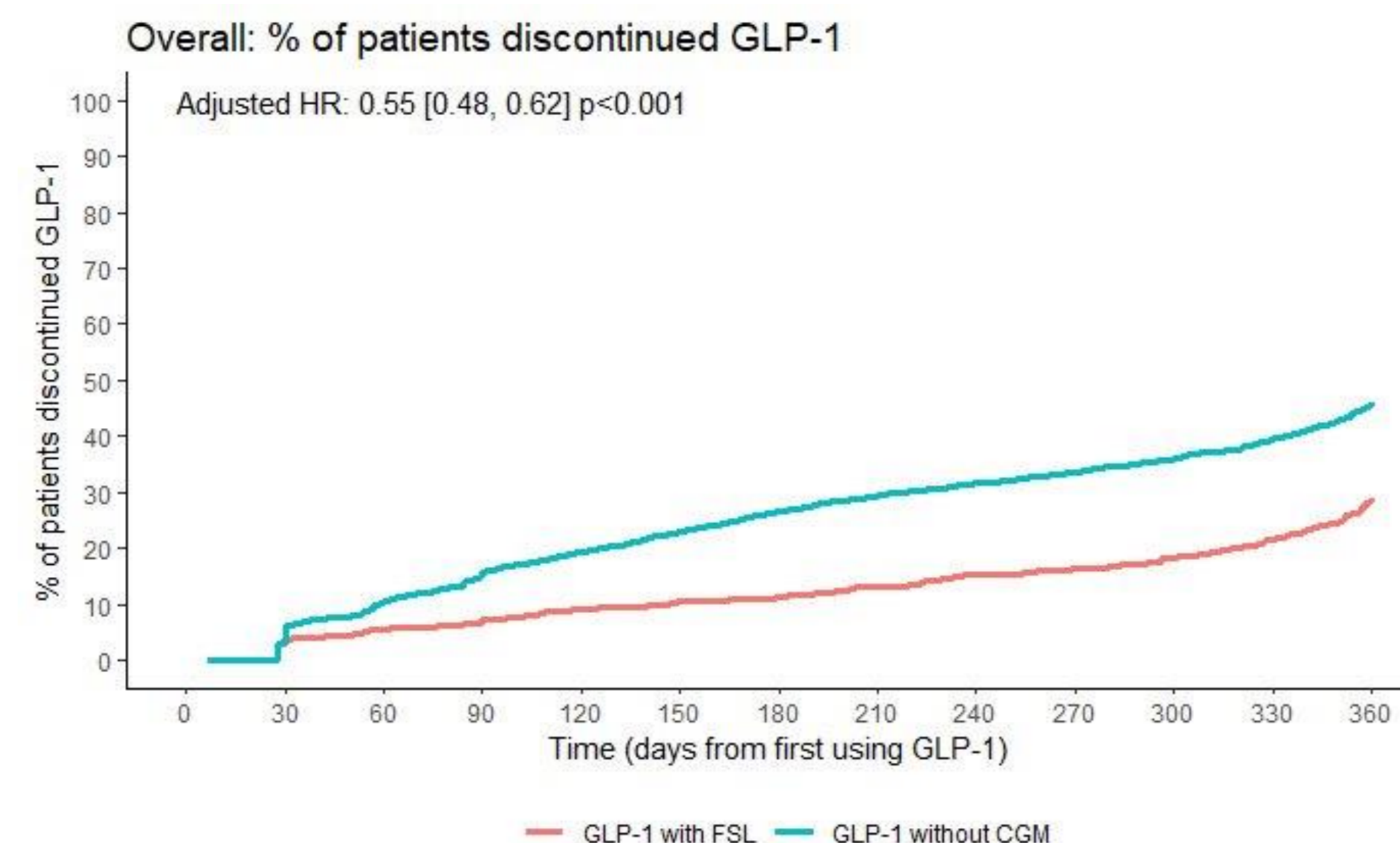
- T1D diagnosis
- Gestational diabetes diagnosis
- Rx claims of bolus or premix insulin during baseline and follow-up periods
- CGM use prior to starting GLP-1
- For non-CGM users: had CGM claims during the follow-up period
- For consistent FSL users: had non-FSL CGM claims during the follow-up period

### Analysis:

- Consistent FSL users were matched with non-CGM users (1:4) using propensity score matching on age, sex, race/ethnicity, and basal/noninsulin therapy.
- Matching was performed without replacement using exact nearest-neighbor matching algorithm.
- The primary outcome was GLP-1 discontinuation, defined as a gap of ≥90 days without GLP-1 supply.
- Multivariate Cox proportional hazards model was used to estimate the time to discontinuation.

## Results

### Figure 2. Overall % of patients discontinued GLP-1



- One year post GLP-1 initiation, 31.1% of consistent FSL users discontinued GLP-1, compared to 48.4% of non-CGM users.
- After adjusting for covariates, consistent FSL user were significantly less likely to discontinue GLP-1 compared to non-CGM users (HR: 0.55, 95% CI: [0.48, 0.62], p<0.001).

### Table 1. Demographics

Patient Characteristics	FSL & GLP-1 (n=878)	GLP-1 Only (n=3,512)	p value
Age (years)	54.3 ± 10.4	54.3 ± 10.3	0.967
<b>Gender</b>			0.964
Female	51.0%	51.1%	
Male	49.0%	48.9%	
<b>Race</b>			1.000
Asian or Pacific Islander	3.3%	3.3%	
Black or African American	5.9%	5.9%	
Hispanic or Latino	20.5%	20.5%	
White	36.9%	36.9%	
Other/Unknown	33.4%	33.4%	
<b>Insulin therapy</b>			1.000
Basal	27.7%	27.7%	
No Insulin	72.3%	72.3%	

## Conclusions

- This study suggests that regardless of therapy type, consistent FSL use is associated with a significantly lower risk of GLP-1 discontinuation, potentially enhancing adherence, and improving long-term glycemic control in people living with T2D on non-intensive therapy.

## References

- Wright EE, Roberts GJ, Chuang JS, Nabutovsky Y, Viridi N, Miller E. Initiating GLP-1 Therapy in Combination with FreeStyle Libre Provides Greater Benefit Compared with GLP-1 Therapy Alone. *Diabetes Technol Ther.* 2024 Oct;26(10):754-762. doi: 10.1089/dia.2024.0015. Epub 2024 May 31. PMID: 38669474.
- Miller E, Chuang JS, Roberts GJ, Nabutovsky Y, Viridi N, Wright EE Jr. Association of Changes in A1C Following Continuous Glucose Monitoring Acquisition in People with Sub-Optimally Treated Type 2 Diabetes Taking GLP-1 RA Therapy. *Diabetes Ther.* 2024 Sep;15(9):2027-2038. doi: 10.1007/s13300-024-01619-1. Epub 2024 Jul 15. PMID: 39008235; PMCID: PMC11330431.

## Acknowledgements

This study was funded by Abbott.