



Systematic Review of Cost-Effectiveness Evaluations of FreeStyle Libre Continuous Glucose Monitoring Systems

Abbott

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Background

- Diabetes poses significant burden on healthcare systems across the world, leading to increased direct and indirect health spending^{1,2}
- Continuous glucose monitoring systems (CGMs), including FreeStyle Libre (FSL), have been associated with improved glycemic control in real-world studies and clinical trials^{3,4}
- CGMs are increasingly used for people with diabetes and becoming standard of care (T1D)⁵
- Medical guidelines are shifting towards recommending CGMs for all people living with diabetes on insulin⁵
- There are limited publications and awareness regarding the global economic value of FSL systems compared to other glucose monitoring methods in people living with diabetes

Methods

- Databases searched: EMBASE, MEDLINE, Cochrane Library (1995 – Feb 2024)
- Economic analyses of FreeStyle Libre (FSL) systems, intermittently-scanned CGM (isCGM), or flash glucose monitoring were included
- Non-English articles and conference abstracts were excluded
- Data extracted: model framework, inputs, funding source
- Study quality assessed using the CHEERS reporting guidance
- Outcomes of interest included – incremental costs, incremental quality-adjusted life years (QALYs), incremental cost-effectiveness ratios (ICERs)

Objective: Identify and synthesize economic evaluations of FSL Systems among people living with diabetes

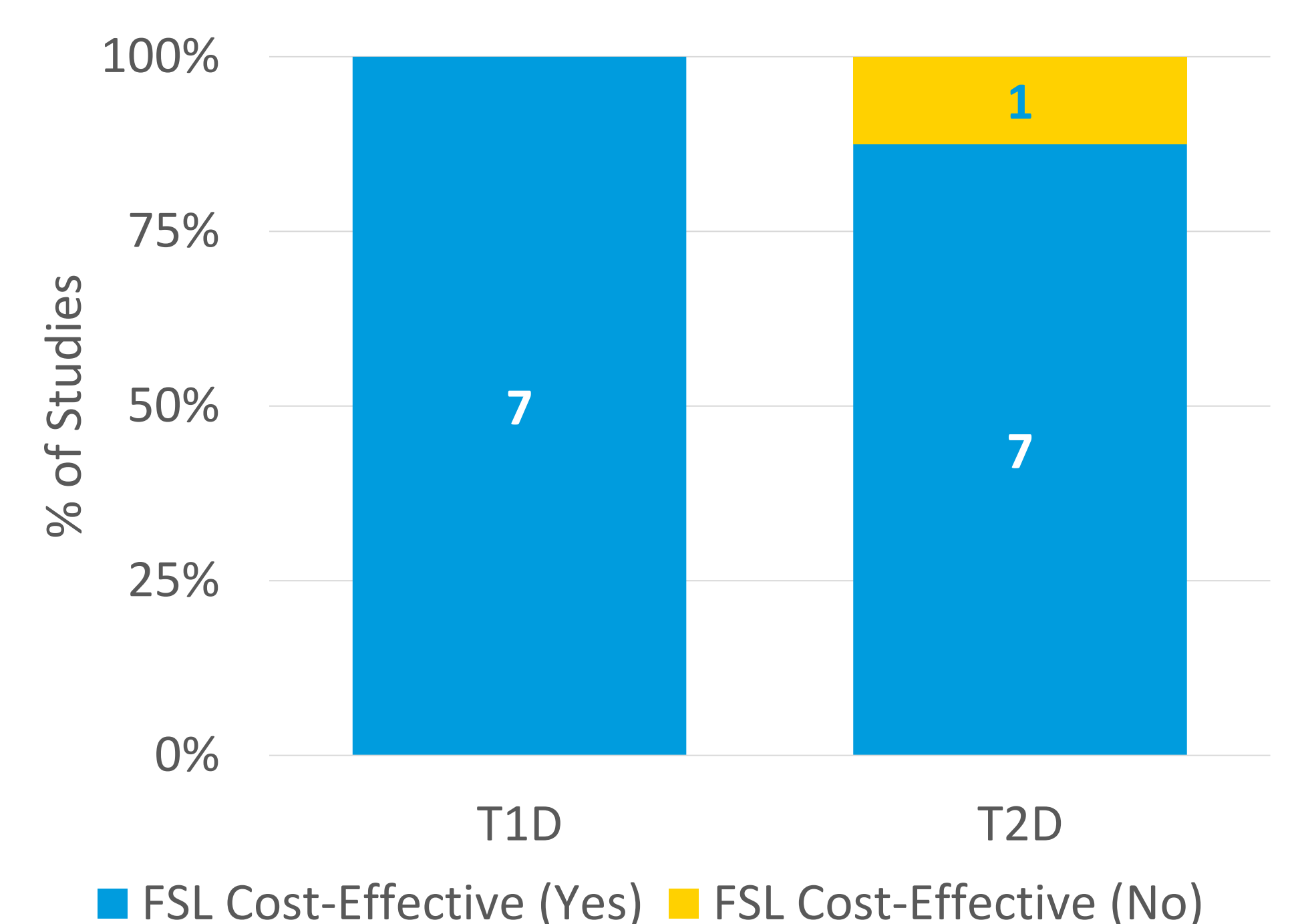
Results

- This systematic literature review identified a total of 20 cost-effectiveness studies for FSL systems, including 12 studies compared to SMBG or standard of care and 8 studies compared to other CGM or automated insulin delivery (AID) systems
- FSL systems demonstrated cost-effectiveness vs. SMBG across T1D and T2D populations with intensive insulin therapy in both Abbott-sponsored and non-funded studies (Table 1, Figure 1)
- Competitor funded studies found FSL systems were not cost-effective vs other CGMs, based on assumptions that are subject to debate (Table 2)

Table 1: Characteristics of Studies Comparing FSL Systems to SMBG or Standard of Care (N=12)

Reference	Country	Population	Comparator (vs FSL systems)	Funding	FSL Cost-Effective (Yes/ No)
Ajjan et al 2022 ⁶	UK	T2D	SMBG	Abbott	Yes
Ajjan et al 2023 ⁷	UK	T2D	SMBG	Abbott	Yes
Bahia et al 2023 ⁸	Brazil	T1D and T2D	SMBG	Non-Funded	Yes
Bidonde et al 2017 ⁹	Norway	T1D and T2D	SMBG	Abbott	Yes
Bilir et al 2018 ¹⁰	Sweden	T2D	SMBG	Abbott	Yes
Bilir et al 2018 ¹¹	Sweden	T1D	SMBG	Abbott	Yes
Elliott et al 2023 ¹²	UK	T1D	SMBG	Non-Funded	Yes
Emamipour et al 2022 ¹³	Netherlands	T1D	Pre vs Post	Non-Funded	Yes
Hua et al 2021 ¹⁴	Australia	T2D	Usual care	Sanofi	No
Jendle et al 2021 ¹⁵	Sweden	T2D	SMBG	Abbott	Yes
Rotondi et al 2022 ¹⁶	Canada	T1D	SMBG	Non-Funded	Yes
Zhao et al 2021 ¹⁷	China	T1D and T2D	SMBG	Abbott	Yes

Figure 1: Cost Effectiveness of FSL Systems vs SMBG or Standard of Care By Patient Population^a



^a Sum is greater than 12 since 3 studies included both people with T1D and T2D.

Table 2: Characteristics of Studies Comparing FSL Systems to other CGMs or AID Systems (N=8)

Author	Country	Population	Comparator (vs FSL systems)	Funding	FSL Cost-Effective (Yes/ No)	Notes
Alshannaq et al 2023 ¹⁸	Denmark	T1D	Dexcom G6	Dexcom	No	Cost-effectiveness analyses were dependent on biased assumptions for key model inputs, including: <ul style="list-style-type: none"> • Comparison to older FSL systems without alarms • Treatment effects of each system • Incident rate of severe hypoglycemia • Utility benefit for each system
Gardner et al 2024 ¹⁹	Singapore	T1D	MM780G	Medtronic	No	
Isitt et al 2022 ²⁰	Australia	T1D	Dexcom G6	Dexcom	No	
Jendle et al 2021 ²¹	Sweden	T1D	MM780G	Medtronic	No	
Jendle et al 2023 ²²	Multiple EU countries	T1D	MM780G	Medtronic	No	
Lambadiari 2022 ²³	Greece	T1D	MM780G	Medtronic	No	
Serne et al 2022 ²⁴	Netherlands	T1D	MM780G	Medtronic	No	
Visser et al 2024 ²⁵	Belgium	T1D	Dexcom G6	Dexcom	No	

Conclusion

- Based on this review, existing evidence suggests FreeStyle Libre systems are cost-effective compared to self-monitoring of blood glucose among people living with T1 and T2 on intensive insulin therapy
- Additional studies are needed to validate the cost-effectiveness of FSL systems compared to other CGM systems and AID systems, considering the wide range of available evidence, the appropriateness of the compared CGM systems, and the selection of modelling assumptions.

References



Disclosures

This study was funded by Abbott Diabetes Care, Inc YP, FLG and JT are Abbott employees.