-Results still significant if

-Old/Young

-High or low HbA1C

- Many studies used old CGM types
- Excluding isCGM- enhance the result
- Only7 studies had continuous CGM use
- Excluding those with very poor control.
- Small numbers with hypoglycemia

Continuous Glucose Monitoring in Adults with Type 2 Diabetes: A Systematic Review and Meta-Analysis

Aim

Effects of real time or intermittently scanned CGM versus SMBG on glycaemic control

Participants

Adults with type 2 diabetes

Results

Randomised controlled trials n=12

Participants n=1248

Follow-up median 24 weeks

HbA_{1c} -3.43 mmol/mol (95%CI: -4.75 to -2.11)

Similar reduction in participants using insulin or oral agents only

TIR +6.36% (95%CI: 2.48 to 10.24)
TBR -0.66% (95%CI: -1.21 to -0.12)
TAR -5.86% (95%CI: -10.88 to -0.84)

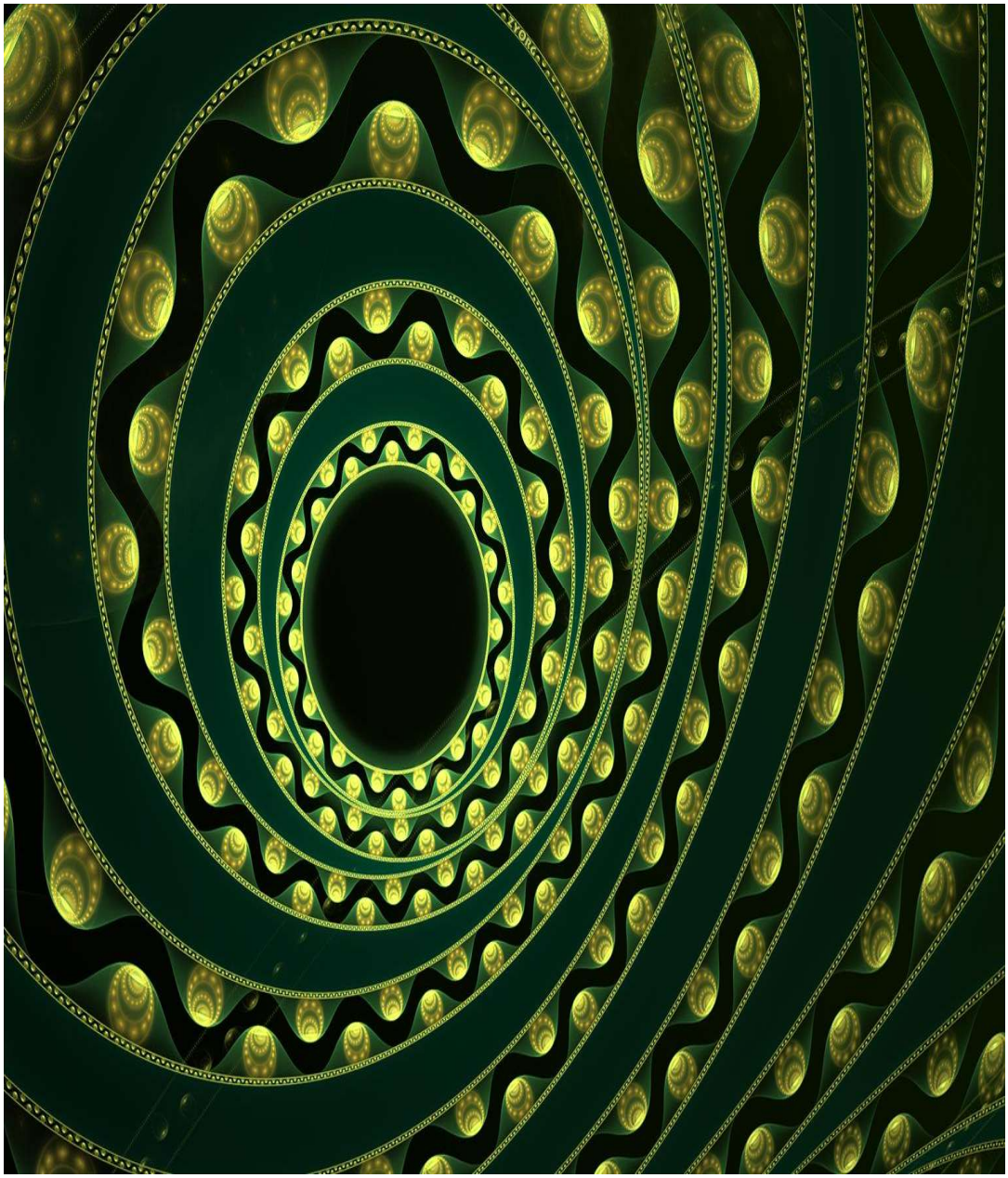
Conclusion

CGM use compared to SMBG is associated with improvements in glycaemic control in type 2 diabetes.

Using Intermittent RTCGM

- Initial trials (COMMITTED) had T2DM patients on oral hypoglycemics , 68 patients
- 12 week trial using Dexcom CGM
- Randomized 2:1 to rtCGM vs SMBG
- 3 sessions of rtCGM(10/7) at weeks 0, 4 and 8
- Hba1c< 7.5% goal at 12 weeks reached by
- 34.1% (rtCGM VS. 17.1 % SMBG)
- TIR increased
- No effect on TAR, TBR

Price DA, Deng Q, Kipnes M, Beck SE. Episodic real-time CGM use in adults with type 2 diabetes: results of a pilot randomized controlled trial. Diabetes Therapy. 2021 Jul;12(7):2089-99.




Mainstreaming of CGM

More recent evidence- 2025

- 6 month, randomised prospective RCT
- Outcome was reduction in time >10mmol
- 72 adults not on insulin or sulfonylurea were randomised to CGM alone /CGM +food log
- Protocol- No diabetes medication changes in the last 3 months
- CGM alone, reduced TAR 55->27%
- Similar reduction in CGM+ food log
- Mean TIR increased to 71% and 72%
- Hba1c less by 1.3% (P<0.001)
- Weight less by 7lb (p<0.001)at 6 months

Martens TW, Willis HJ, Bergenstal RM, Kruger DF, Karslioglu-French E, Steenkamp DW. A Randomized Controlled Trial Using Continuous Glucose Monitoring to Guide Food Choices and Diabetes Self-Care in People with Type 2 Diabetes not Taking Insulin. Diabetes Technology & Therapeutics. 2025 Jan 6.

From: **Multicenter Randomized Trial of Intermittently Scanned Continuous Glucose Monitoring Versus Self-Monitoring of Blood Glucose in Individuals With Type 2 Diabetes and Recent-Onset Acute Myocardial Infarction: Results of the LIBERATES Trial**

Diabetes Care. 2022;46(2):441-449. doi:10.2337/dc22-1219

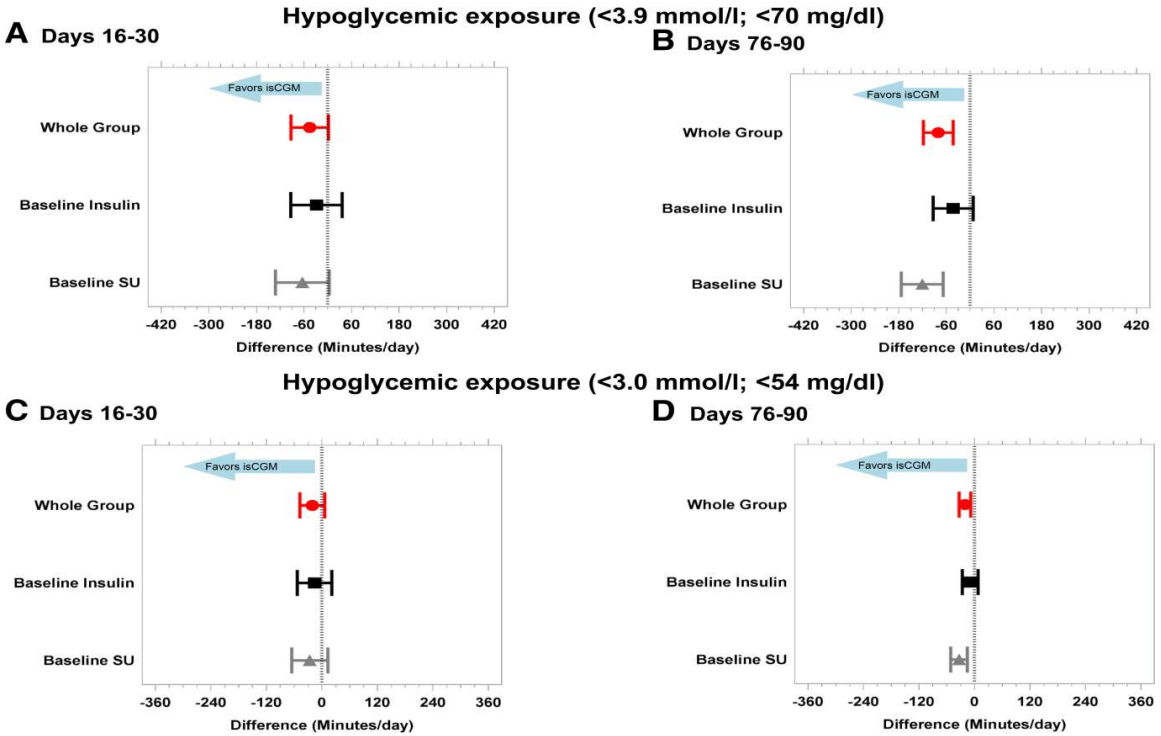
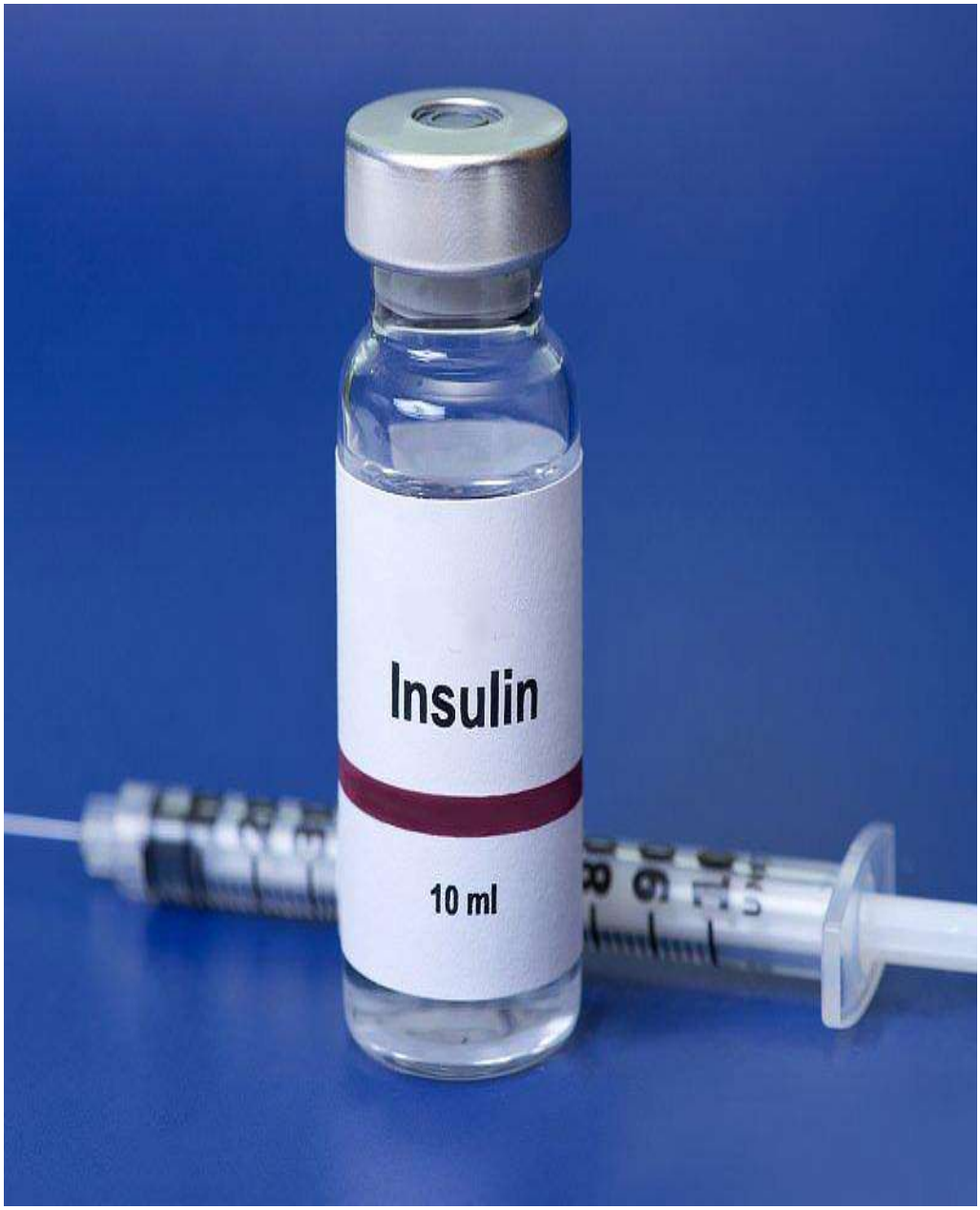


Figure Legend:

Hypoglycemic exposure per day comparing two study groups. Analysis was performed for the whole group as well as for insulin and sulphonylurea (SU) users at baseline. A and B: Hypoglycemic exposure at <3.9 mmol/L (<70 mg/dL) at 16–30 (A) and 76–90 days (B). C and D: Hypoglycemic exposure at <3.0 mmol/L (<54 mg/dL) at 16–30 (C) and 76–90 days (D).

NZ evidence 2GOCGM

- 12 week multicentre RCT
- Patients with Type 2 diabetes
- >0.2units/kg of insulin per day
- 67 Patients with a mean age of 53 years
- Followed for 12 weeks
- Mean TIR changed from 37 to 53%
- Adjusted mean difference in TIR was 53%
- Mean Hba1c reduced from 85 to 64
- No severe hypo and DKA
- Particularly if sensor wear was 70%



Lever CS, Williman JA, Boucsein A, Watson A, Sampson RS, Sergel-Stringer OT, Keesing C, Chepulis L, Study protocol: glycaemic outcomes in people with type 2 diabetes initiating continuous glucose monitoring: the 2GO-CGM study.

Journal of Diabetes & Metabolic Disorders. 2023 Dec;22(2):1779-92.

CGM type 2 diabetes and culturally informed care

- CGM can support type 2 diabetes by providing opportunities to study impact of daily life
- 23 Patients, with Type 2 diabetes
- Using Libre 1 or 2
- Followed for 12 months
- Integrated Phone app for Carbs
- Kaiawhina supported phone visits
- Outcomes- Improved Hba1c as early as 3/12
- SGLT-2 and GLP-1RA use increased from 9/23 to 15/18(P<0.001)
- Improved Lipids (LDL)
- Improved DSMQ

Chepulis LM, Crosswell R, Moorhouse S, Morton H, Oehley M, Paul R, Crocket H. Technology-enhanced, culturally-informed primary care results in sustained improvements in biomarkers for Indigenous patients with type 2 diabetes–a pilot study. Journal of Primary Health Care. 2024 Jul 18.

Adherence Matters

- 7669 Individuals identified from 2019-2021 using market research database
- 63% T2DM
- 3567-isCGM/1280 used rtCGM
- More adherence in rtCGM group 59.7 % vs. 37.6%
- Adherence to CGM associated with greater reduction in Hba1c
- More people reaching <7.0% and 8.0%

Nemlekar PM, Hannah KL, Green CR, Norman GJ. Association between adherence, A1C improvement, and type of continuous glucose monitoring system in people with type 1 diabetes or type 2 diabetes treated with intensive insulin therapy. Diabetes Therapy. 2024 Mar;15(3):639-48.

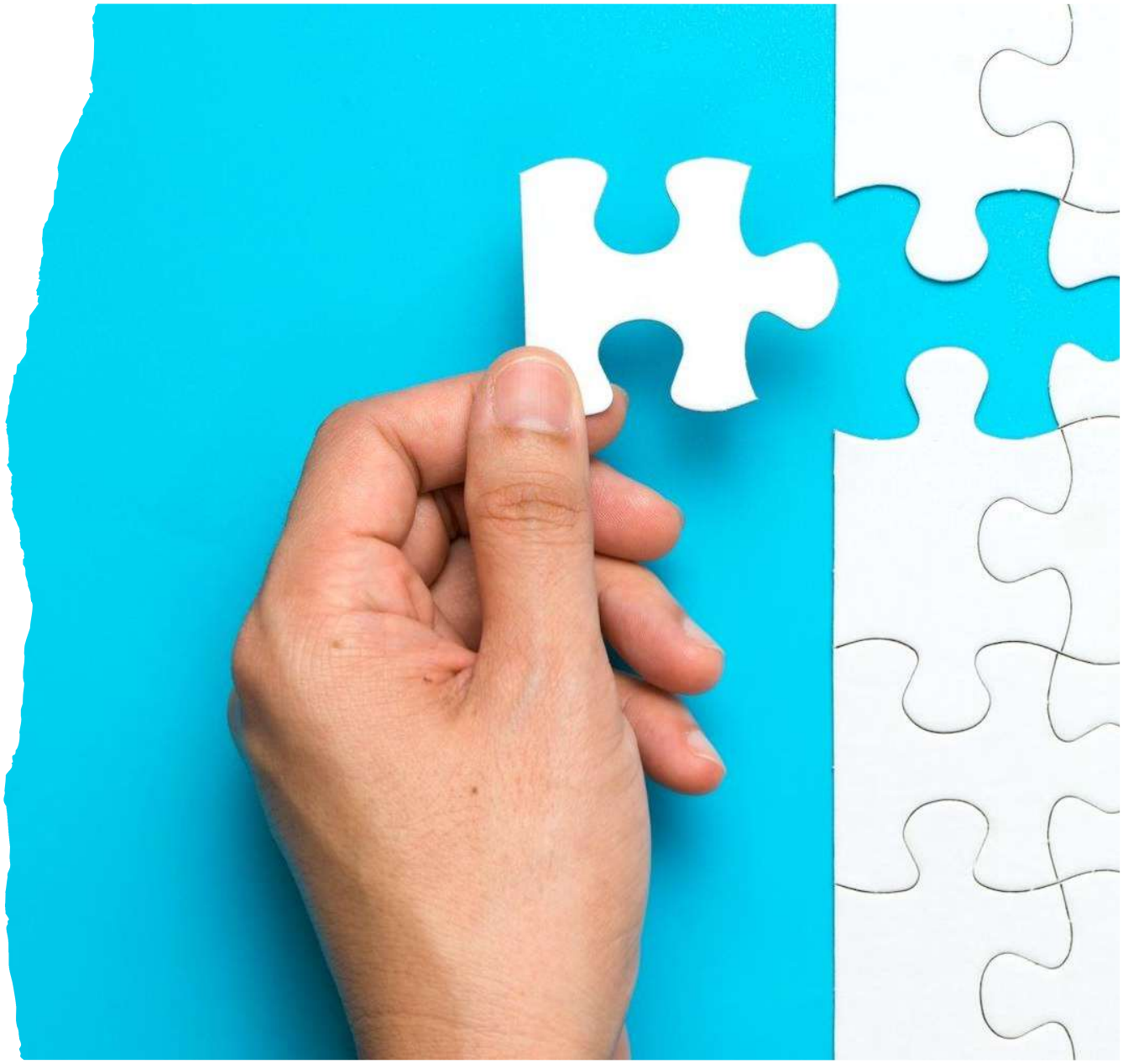
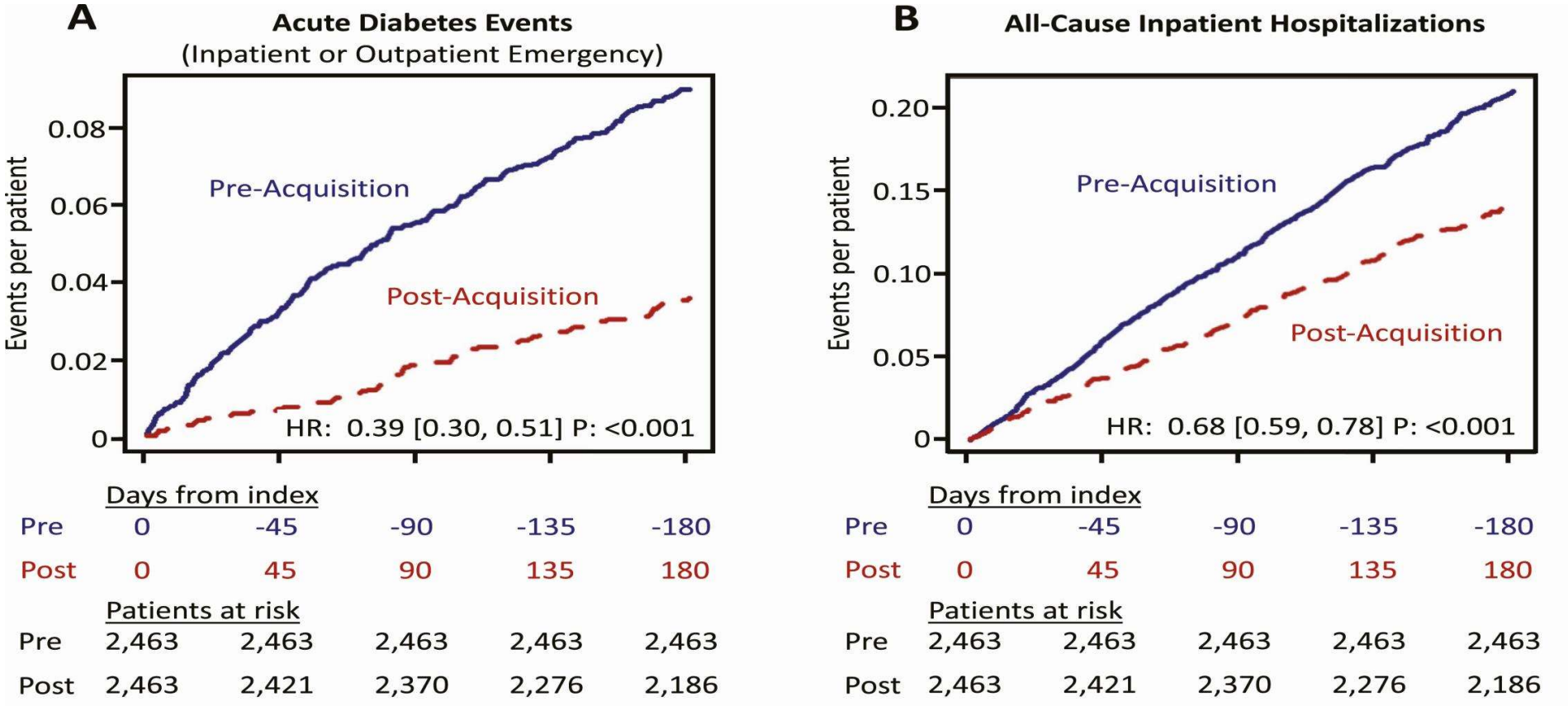
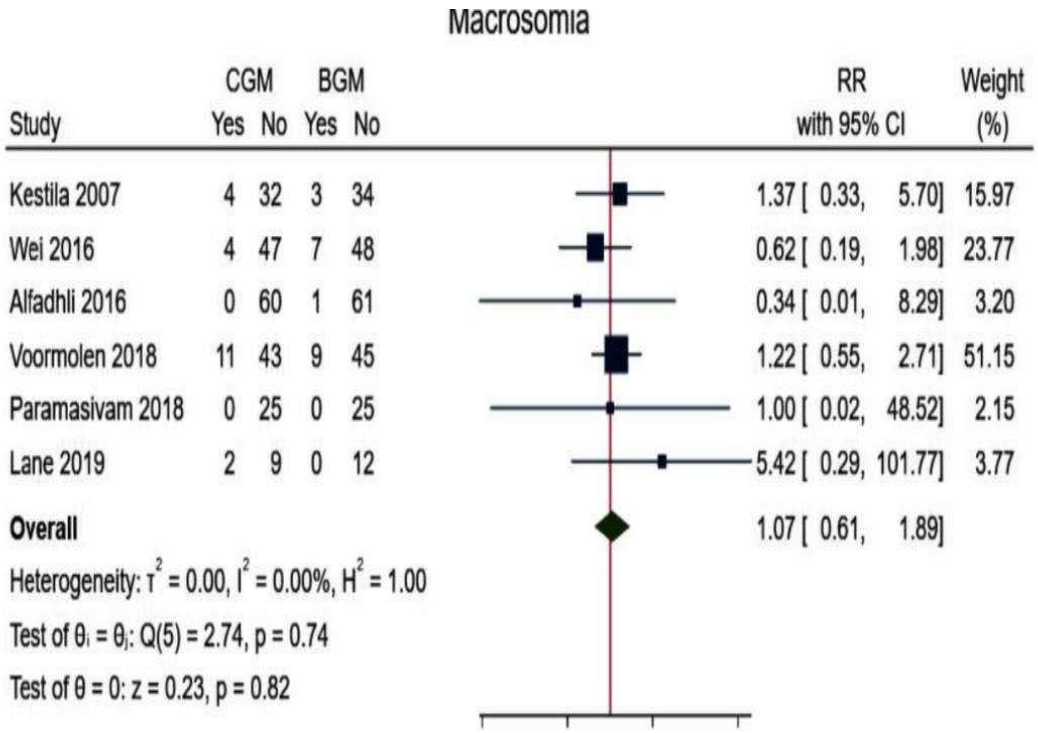


Figure 1. Changes in ADE (A) and ACH (B). Figure shows reduction in acute diabetes-related events (ADE) and all-cause ...



J. Endocr. Soc., Volume 5, Issue 4, April 2021, bvab013, https://doi.org/10.1210/jendso/bvab013

Gestational Diabetes



García-Moreno RM, Benítez-Valderrama P, Barquiel B, González Pérez-de-Villar et alL. Efficacy of continuous glucose monitoring on maternal and neonatal outcomes in gestational diabetes mellitus: a systematic review and meta-analysis of randomized clinical trials. Diabetic Medicine. 2022 Jan;39(1):e14703.