University of East Anglia

Norfolk and Norwich University Hospitals NHS
NHS Foundation Trust

The Year in Diabetes

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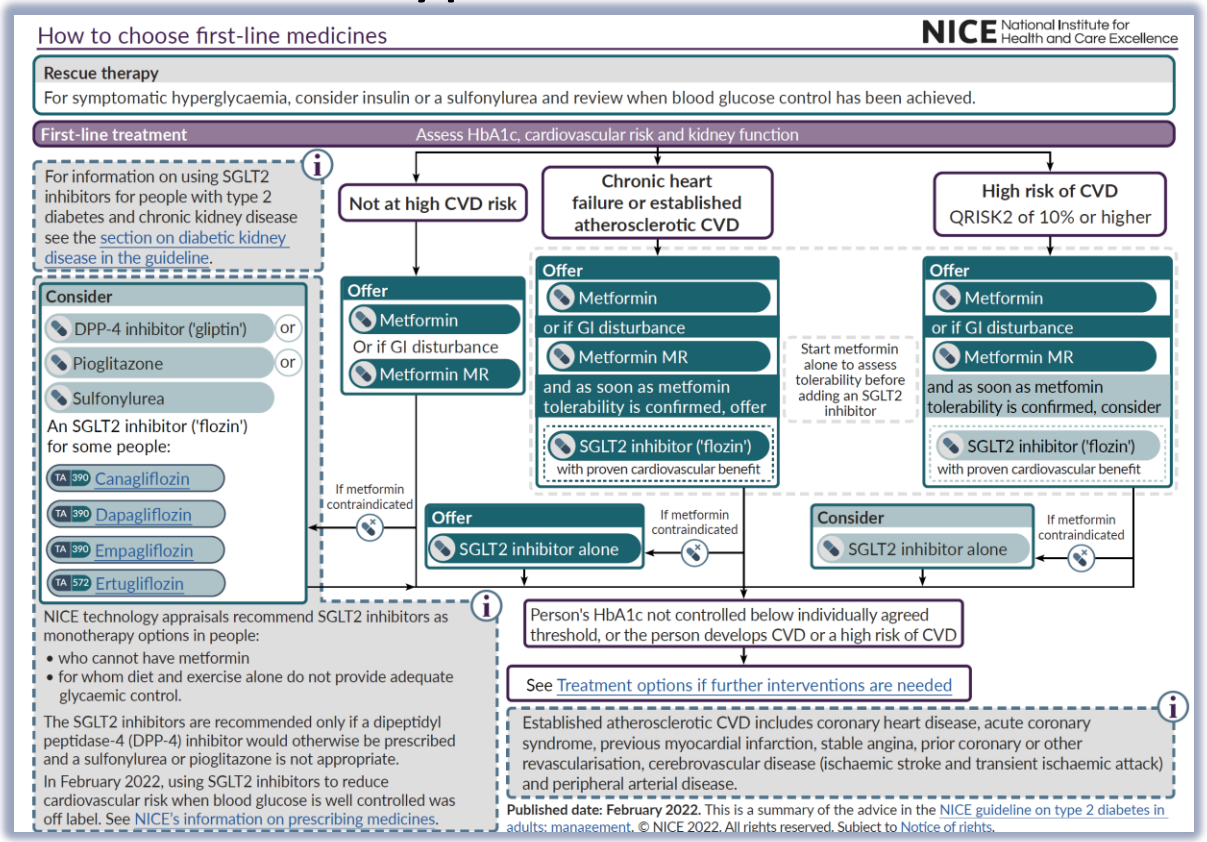
Disclosures

- In the last 12 months I have received honoraria, travel or fees for advisory boards from
  - AstraZeneca
  - Novo Nordisk
  - Boehringer-Ingelheim
  - Eli Lilly

Topics to be Covered

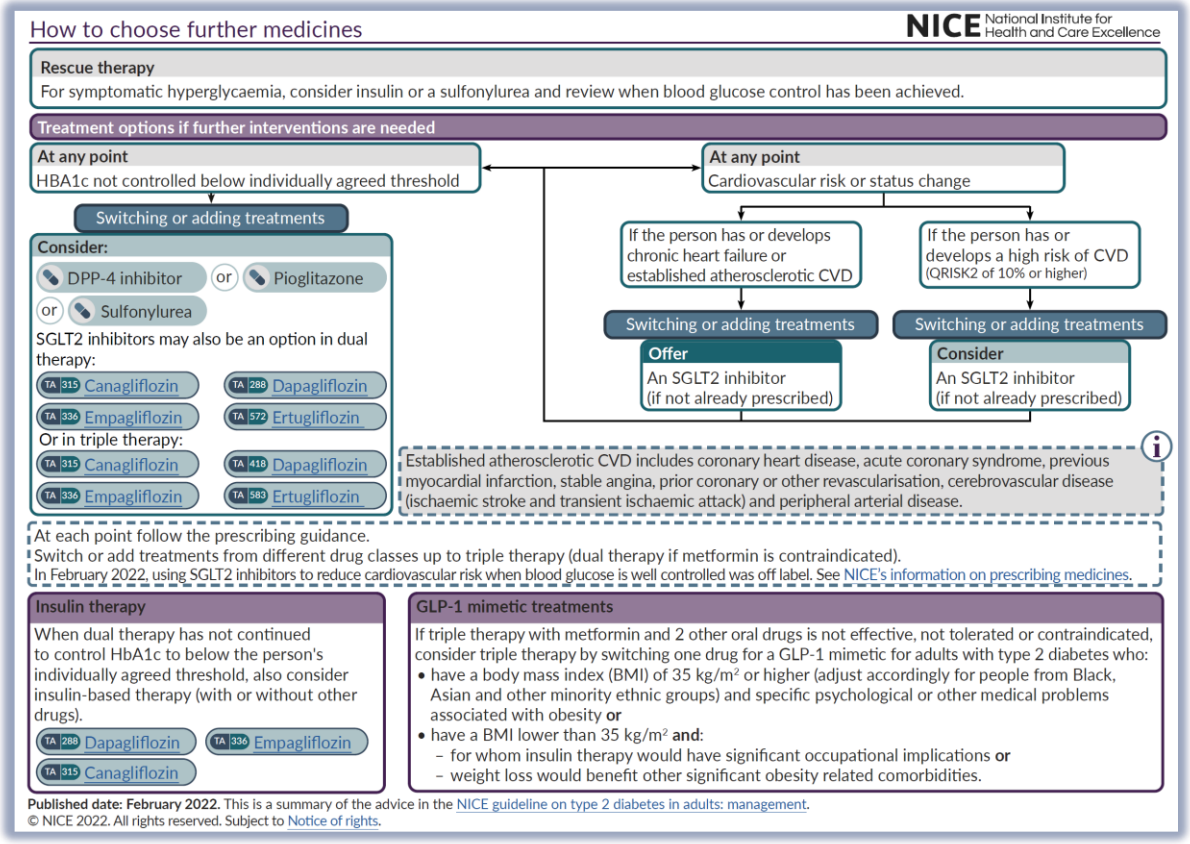
- NICE guidance
- Tirzepatide
- HHS
- TODAY study
- Accreditation
- What I have avoided is COVID and diabetes

NICE Guidance for Type 2 Diabetes in Adults – NG 28



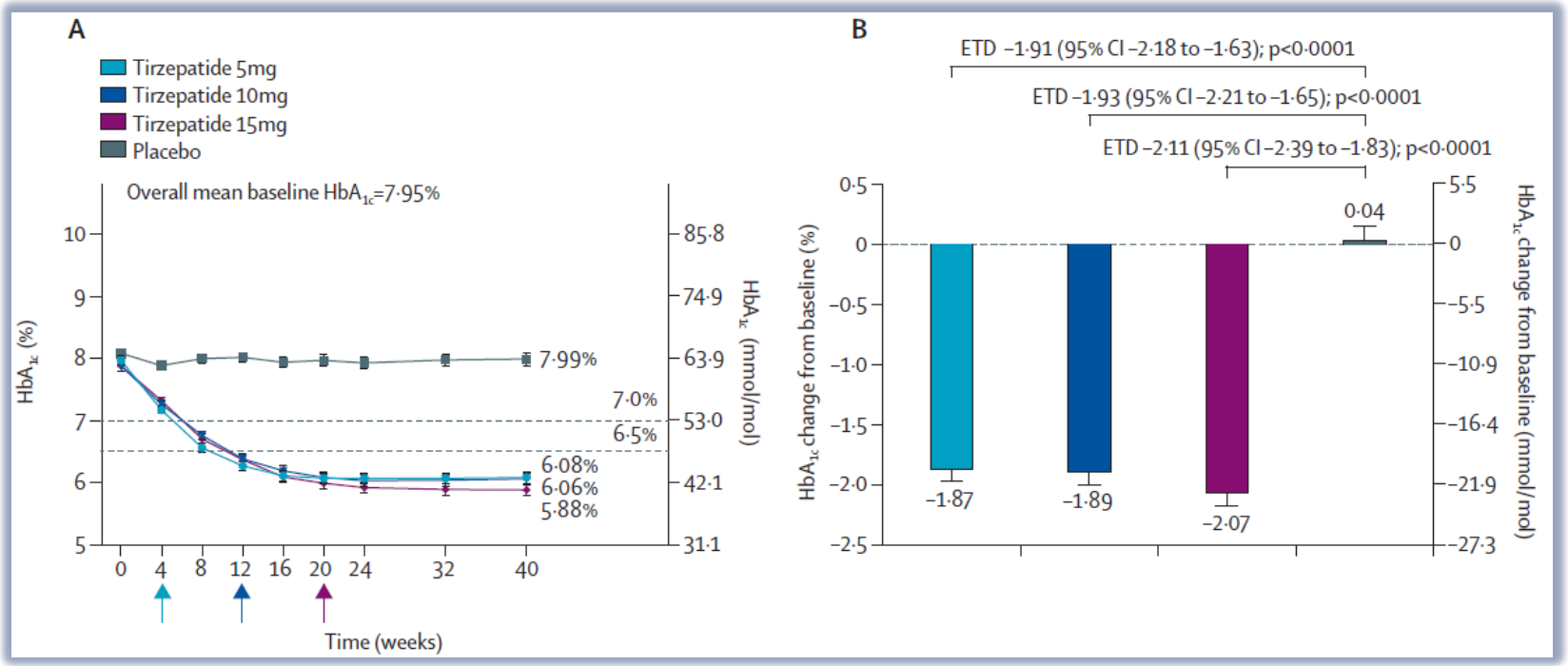
https://www.nice.org.uk/guidance/ng28

NICE Guidance for Type 2 Diabetes in Adults – NG 28



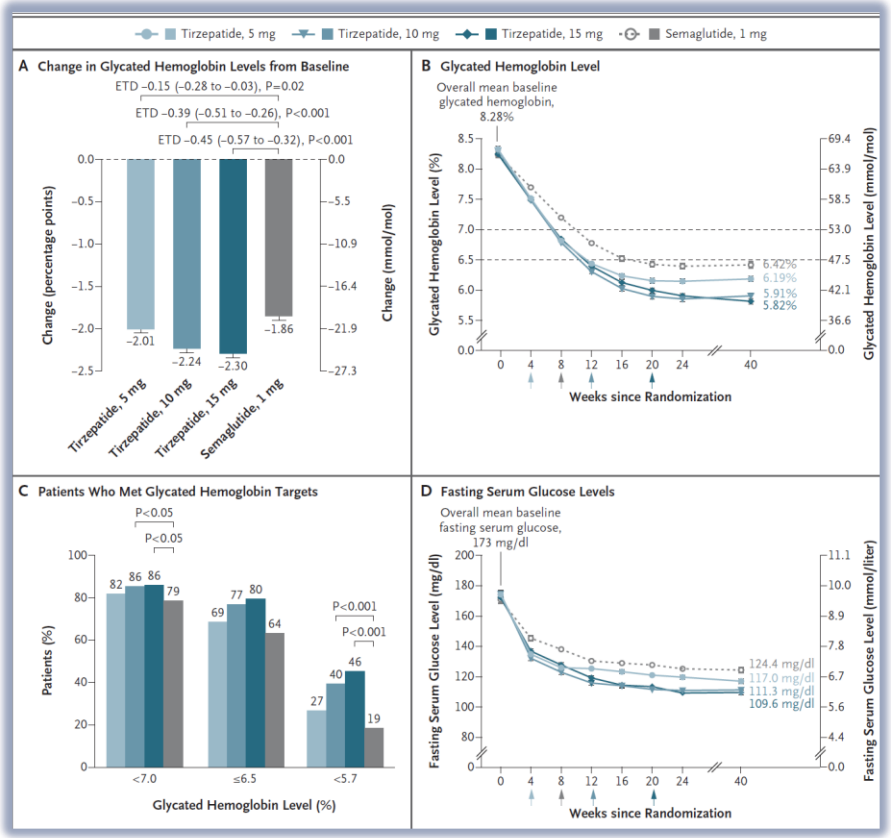
https://www.nice.org.uk/guidance/ng28

Tirzepatide vs Placebo in T2DM – HbA1c



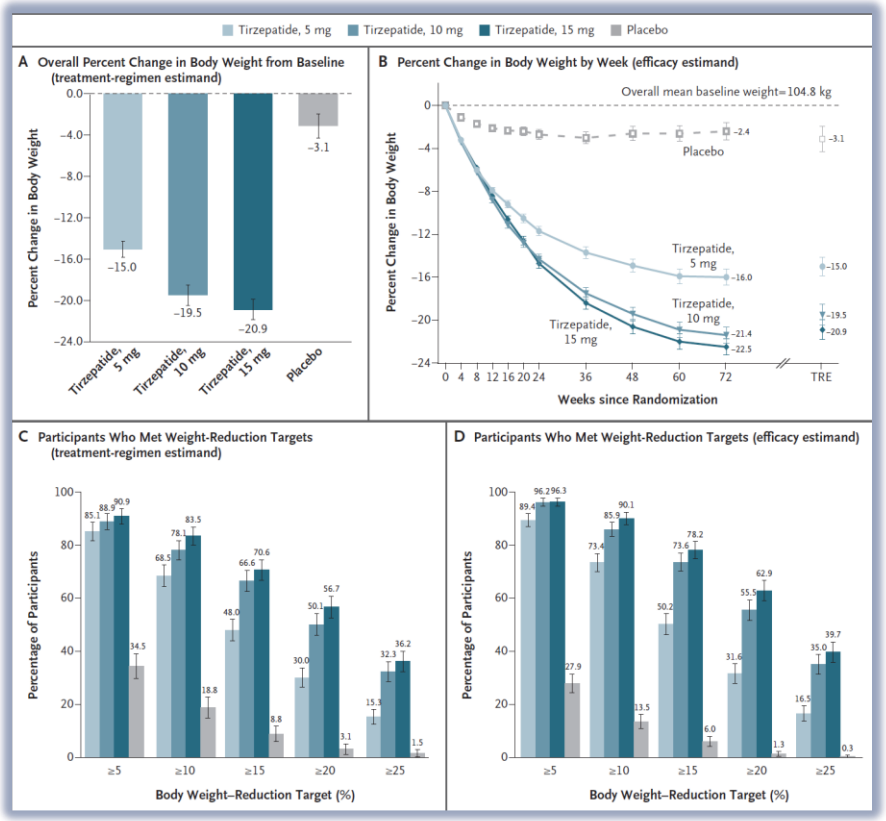
Rosenstock J et al Lancet 2021;398(10295):143-155

Tirzepatide vs Semaglutide in T2DM – HbA1c



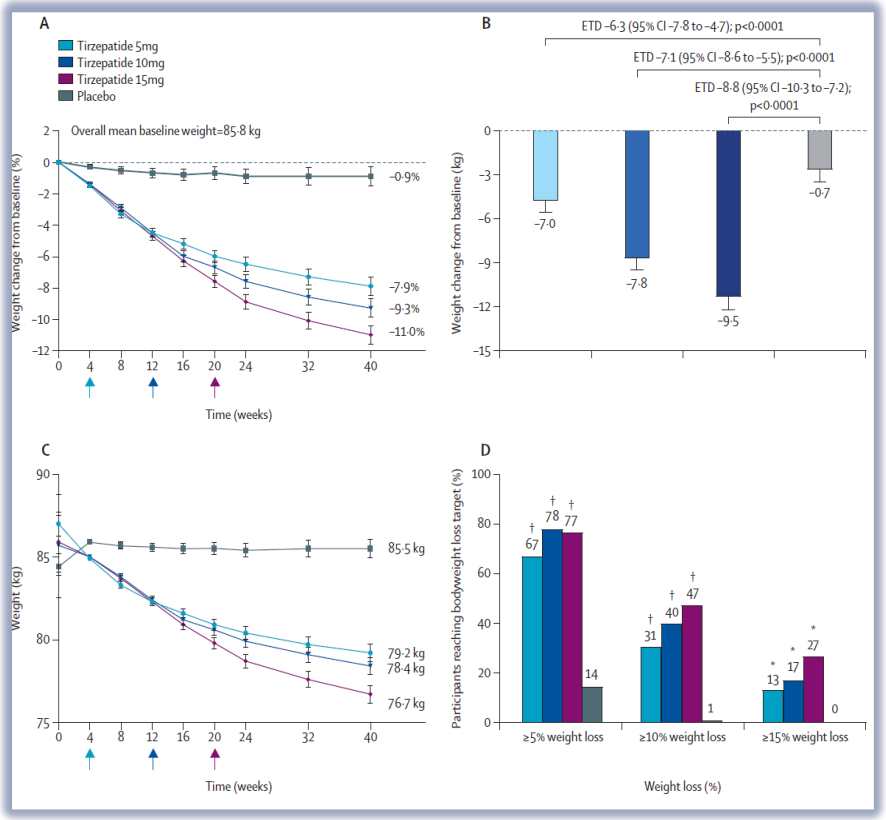
Frias JP et al NEJM 2021;385(6):503-515

Tirzepatide vs Placebo in Obesity - Weight



Jastreboff et al NEJM 2022 DOI: 10.1056/NEJMoa2206038

Tirzepatide vs Placebo in T2DM - Weight



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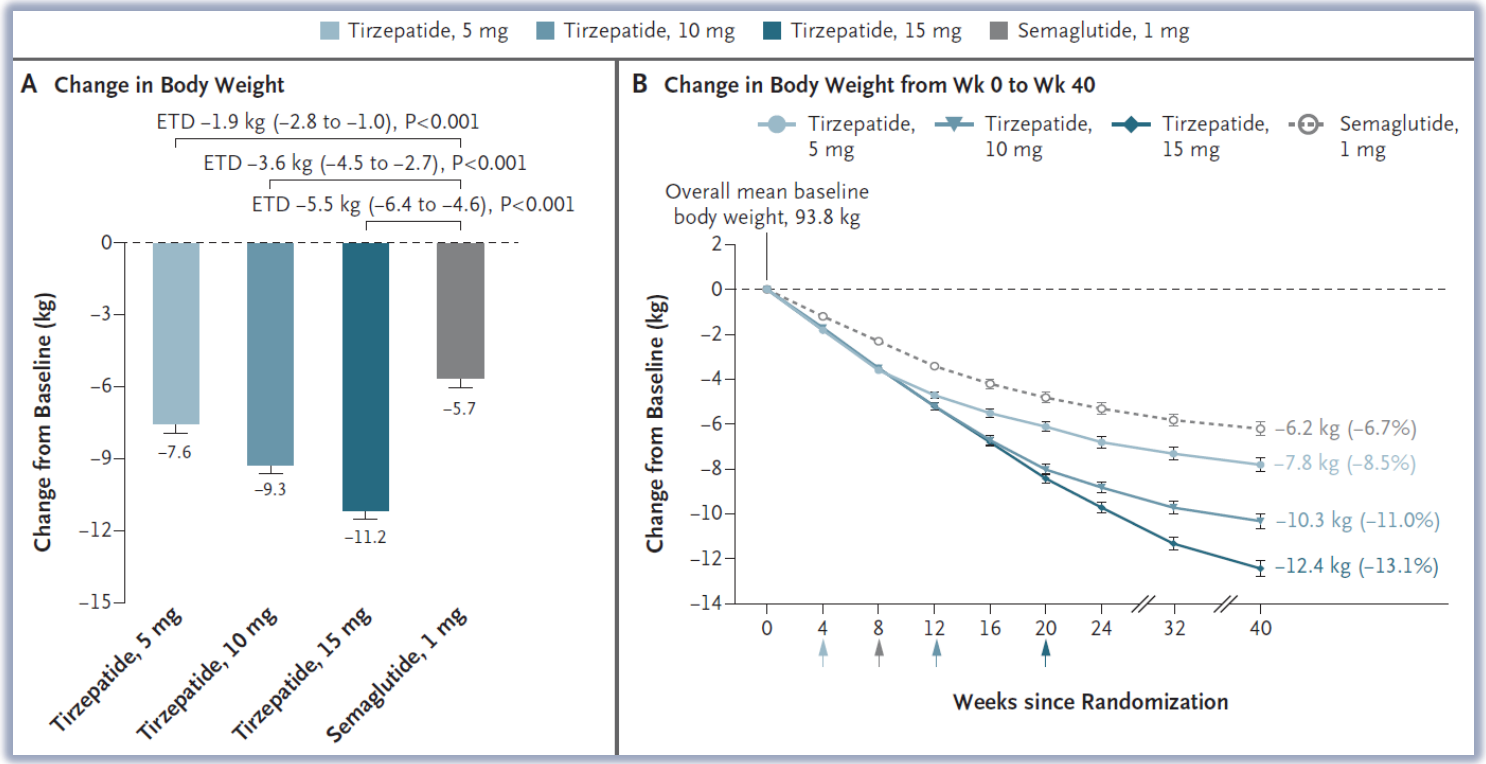
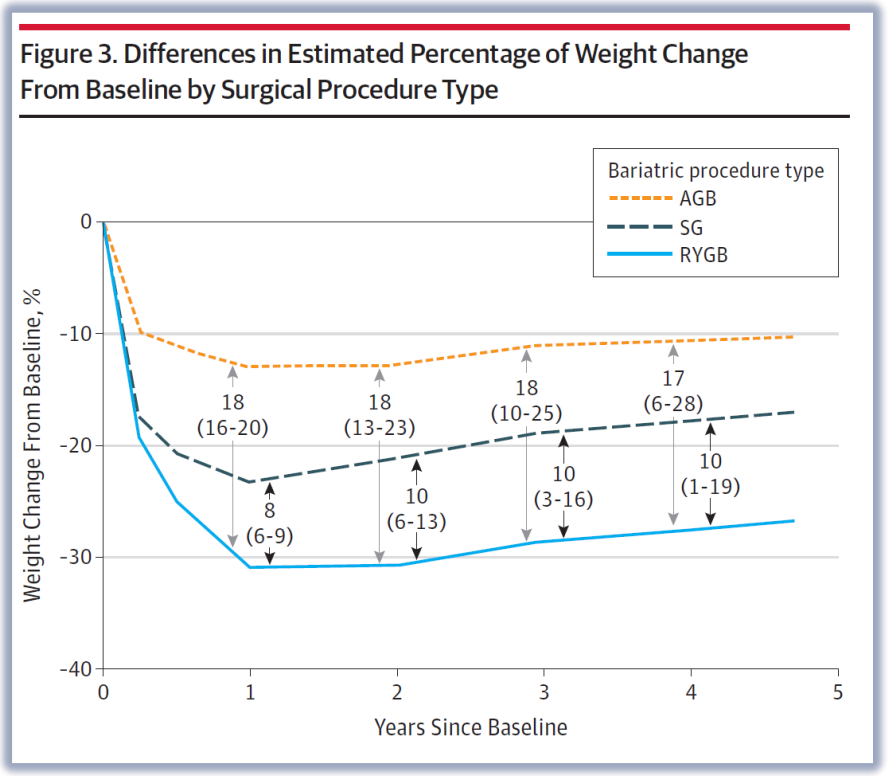
Tirzepatide vs Semaglutide in T2DM – Weight



Frias JP et al NEJM 2021;385(6):503-515

Compared to Metabolic Surgery



Maciejewski ML et al JAMA Surg 2016;151(11):1046-1055

Is Excessive Weight Loss Bad in T2DM?

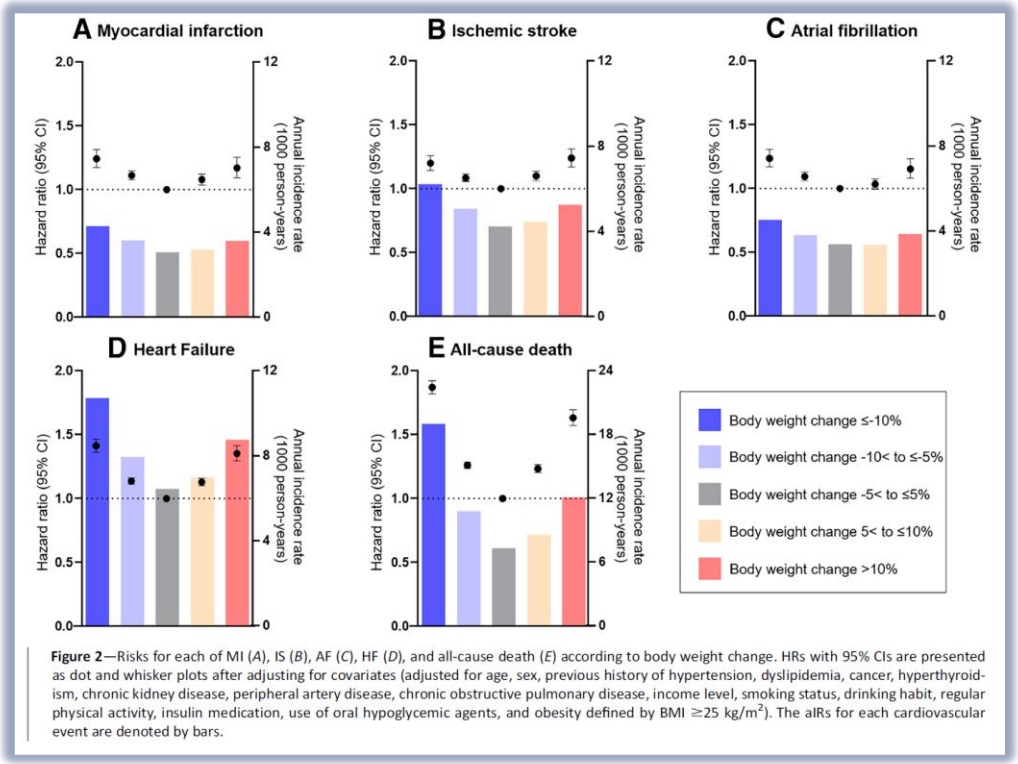


Figure 2—Risks for each of MI (*A*), IS (*B*), AF (*C*), HF (*D*), and all-cause death (*E*) according to body weight change. HRs with 95% CIs are presented as dot and whisker plots after adjusting for covariates (adjusted for age, sex, previous history of hypertension, dyslipidemia, cancer, hyperthyroidism, chronic kidney disease, peripheral artery disease, chronic obstructive pulmonary disease, income level, smoking status, drinking habit, regular physical activity, insulin medication, use of oral hypoglycemic agents, and obesity defined by BMI ≥25 kg/m^2). The aIRs for each cardiovascular event are denoted by bars.

- 1.5M people with T2DM followed up for a median of 7 years

Park CS et al Diabetes Care 2022;45(5):1239-1246

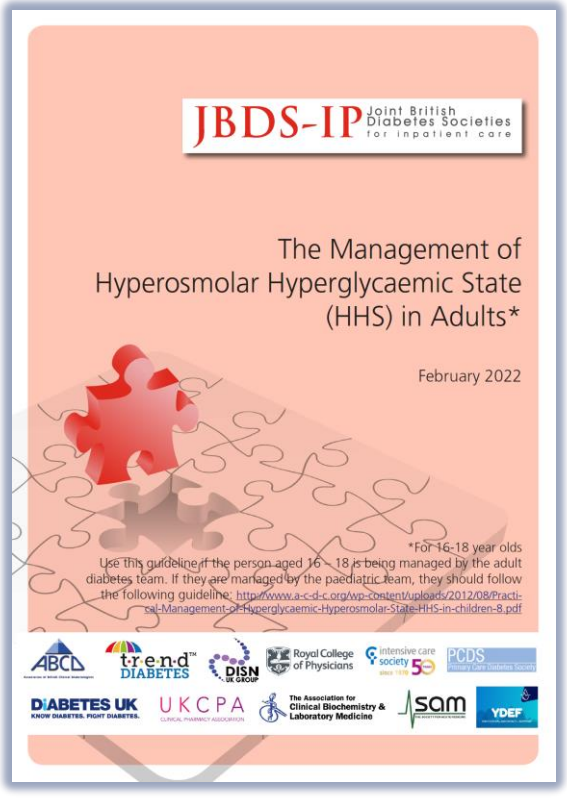
Is Excessive Weight Loss Bad in T2DM?

Weight Change During the Postintervention Follow-up of Look AHEAD

- 3999 people randomised to intensive lifestyle or diabetes support and education followed for 8 years
  - Weight gainer – 307 (+11.8±9.1% weight gain) — 10% had died at 8 years
  - Weight stable – 1561 (+1.2±5.8%) — 14%
  - Steady losers – 1732 (-7.8±5.4%) — 18%
  - Steep losers – 380 (-17.7±6.6% weight loss) — 30%

Wing RR et al Diabetes Care 2022;45(6):1306-1314

Hyperosmolar Hyperglycaemic Syndrome



[Management of Hyperosmolar Hyperglycaemic State (HHS) | ABCD (Diabetes Care) Ltd]

Current Diagnostic Criteria

Hyperglycemia		>30 mmol/L (540 mg/dL)
Hyperosmolarity		>320 mOsm/kg
	Calculation	2 × Na (mmol/L) + glucose (mmol/L) + urea (mmol/L)
Lack of acidosis	Ketones	Low
	pH	>7.3
	Bicarbonate	>15 mmol/L
Mental status changes		Present

- No unified diagnostic criteria
- HHS and DKA frequently occur together – treat as DKA
- No clear criteria for resolution

Dhatariya KK et al Curr Diab Rep 2017;17(5):33-39

HHS - Criteria for Resolution

- Calculated serum osmolality falls to <300 mOsm/Kg
- Hypovolaemia has been corrected (urine output ≥0.5 ml/kg/hr)
- Cognitive status is back to the pre-morbid state
- Blood glucose <15 mmol/L (270mg/dl)

Management of Hyperosmolar Hyperglycaemic State (HHS) | ABCD (Diabetes Care) Ltd

Treatment Options in Type 2 Diabetes in Adolescents and Young Adults (TODAY) Study - Retinopathy

- T2DM followed for ~12 years mean age 25.4 ± 2.5 years
  - 49% prevalence of any retinopathy
  - 39% for mild or mild non-proliferative
  - 6% moderate to severe non-proliferative
  - 3.8% proliferative
- All associated with traditional risk factors HbA1c, lipids, BP, BMI, but mainly HbA1c

Today Study Group Diabetes Care 2022;45(5):1049-1055

Treatment Options in Type 2 Diabetes in Adolescents and Young Adults (TODAY) Study - Pregnancy

- 260 pregnancies, mean age 21.5 ± 3.2, BMI 35.6 ± 7.2 Kg/m^2 diabetes duration 8.1 ± 3.2 years
  - Only 13.5% used contraception
  - 65% had complications
  - Pregnancy loss in 25.3%
  - Preterm birth in 32.6%
  - HbA1c >64mmol/mol in 31.9%
  - 35% had chronic hypertension
  - 25% had nephropathy
  - 7.8% SGA, 26.8% LGA, 17.9% macrosomia

Diabetes Care 2022;45(5):1038-1045

Treatment Options in Type 2 Diabetes in Adolescents and Young Adults (TODAY) Study - Nephropathy

- 677 people average age of diagnosis 14, followed up for 10.2 ± 4.5 years
- Raised HbA1c, BP, triglycerides, urate, beta cell dysfunction all significantly contribute to renal impairment

- At higher risk of nephropathy than those with type 1

Today Study Group Diabetes Care 2022;45(5):1056-1064
Fan Y et al Diab Res Clin Pract 2022 https://doi.org/10.1016/j.diabres.2022.110030 published 4/8/22

Treatment Options in Type 2 Diabetes in Adolescents and Young Adults (TODAY) Study - Neuropathy

- 674 people mean age 14 at diagnosis, followed for 10.2 years, 38.5% men had neuropathy vs 27.2% female
- BMI, HbA1c, male, all associated with increased risk

Today Study Group Diabetes Care 2022;45(5):1065-1072

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Accreditation

JBDS-IP
Joint British Diabetes Societies for inpatient care

Royal College of Physicians

GIRFT
GETTING IT RIGHT FIRST TIME

Other Things Not Discussed

- The (un)affordability of NICE guidance on CGM availability
- Time in Range as a new FDA requirement
- Looming hypoglycaemia
- Peri-partum glycaemic targets
- SGLT2i use in heart or renal failure in those with or without diabetes, and for acute inpatient use
- Etc etc etc

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