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Diabetes

Current Awareness Bulletin

June 2025

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New training via MS Teams available from the Academy Library:

- **Bitesize searching databases for evidence: a quick guide to help you develop your literature searching skills**
  45 minutes. Learn how to transform a question into a search strategy, and how to find the best evidence in a database.

  Next sessions: 22nd July @ 4pm, 27th August @ 1pm & 25th September @ 9am

- **Simple and painless evidence into practice (BMJ Best Practice and the LKS Hub)**
  30 minutes. Learn about quick and hassle-free ways to seamlessly incorporate evidence into your daily work.

  Next sessions: 9th July @1pm, 7th August @ 3pm & 5th September @ 3pm

- **Quickfire health literacy: communicating with patients more effectively**
  30 minutes. Learn about the communication barriers patients may encounter, and ways to ensure they get the most from their care.

  Next sessions: 7th July @ 4pm, 12th August @ 9am & 10th September @ 10am

Book a session today at https://forms.office.com/e/HyiSXfDaYV (these sessions will be held on a monthly basis)

General

How Europe is shaping the future of diabetes care

International Diabetes Federation. *Diabetes Research and Clinical Practice* 2025, 222: 112107.

[Regarding diabetes care, Europe represents a hallmark of choice for access, quality and affordability largely due to universal healthcare systems. These systems give citizens access to essential services such as routine screenings and access to treatment and supplies. Additionally, through research collaboration and open science initiatives, Europe has yielded advancements in diabetes treatment and prevention. Europe's history, culture, lifestyles, and societies differ from those in other regions, while distinct historical events, cultural developments and societal values shape the modern continent. EU and non-EU countries have cultural, historical and geographical ties and frequently cooperate on security, environmental protection and scientific research, with some non-EU countries participating in EU programmes.]

Prevalence of diabetes and disability among older adults in West Bengal and India: A comparative analysis

Das U, Kar N, Riba T, et al. *Diabetes & Metabolic Syndrome: Clinical Research & Reviews* 2025;19(4): 103236.

[**Background**: Aging is a heterogeneous process, and older adults are at greater risk of experiencing physical and functional health challenges. This study examines the comparative prevalence of diabetes-related disability among older adults in West Bengal and India.]

A step towards more physiological glucocorticoid dosing in congenital adrenal hyperplasia

Reincke M. *Lancet Diabetes & Endocrinology*, 2025, 13(4), pp.272-274.

[On Dec 12, 2024, the US Food and Drug Administration (FDA) approved crinecerfont for adults and paediatric patients with classic congenital adrenal hyperplasia.[1]]

Children with diabetes

0.9% Saline versus Ringer's lactate as initial fluid in children with diabetic ketoacidosis: a double-blind randomized controlled trial

Agarwal A, Jayashree M, Nallasamy K, et al. *BMJ Open Diabetes Research and Care* 2025;13: e004623

[**Introduction**: Ringer's lactate (RL), a balanced crystalloid by regenerating bicarbonate ion, may lead to early diabetic ketoacidosis (DKA) resolution and reduced hyperchloremia as compared with 0.9% saline (NS).]

Freely available online

Correction to Lancet Diabetes Endocrinol 2025; 13: 47–56

Lancet Diabetes & Endocrinology, 2025, 13(4), e.7.

[*Zimmermann AT, Lanzinger S, Kummernes SJ, et al. Treatment regimens and glycaemic outcomes in more than 100 000 children with type 1 diabetes (2013–22): a longitudinal analysis of data from paediatric diabetes registries.* Lancet Diabetes Endocrinol *2025;* ***13:*** *47–56.*]

Dapagliflozin approved by FDA for treatment of type 2 diabetes in children.
BMJ Best Practice; 2025.
https://bestpractice.bmj.com/topics/en-gb/786
[Type 2 diabetes in children usually presents after the onset of puberty, at a mean age of 14 years, with obesity being the primary cause. Often asymptomatic and diagnosed by screening in a high-risk individual (e.g., family history, obesity, acanthosis nigricans) or incidentally (e.g., glycosuria found during a school or sports examination). The development of insulin resistance and glucose intolerance can be prevented or delayed by lifestyle modifications that correct obesity in children. Goals of treatment are to promote weight loss and exercise capacity, normalise glycaemia and haemoglobin A1c (goal is <48 mmol/mol [<6.5%], and prevent long-term complications and comorbidities (e.g., retinopathy, hypertension, and dyslipidaemia). Initial treatment includes lifestyle modifications, metformin, and insulin. Glucagon-like peptide-1 (GLP-1) receptor agonists and sodium-glucose cotransporter-2 (SGLT2) inhibitors are approved in some countries as an additional non-insulin treatment option for children aged ≥10 years.]

Non-pharmacological management strategies for type 2 diabetes in children and young adults: A systematic review

Carino M, New R.H., Nguyen J, et al. *Diabetes Research and Clinical Practice* 2025, 222: 112045.

[**Purpose**: The evidence for effective non-pharmacological management of type 2 diabetes in children and young adults is scarce. This systematic review aims to identify the available

evidence for non-pharmacological interventions in managing type 2 diabetes in children and young adults.]

Co-morbidities (find here cardiovascular, kidney disease, neuropathy, diabetic retinopathy etc)

Cardiovascular Disease

AI-enabled opportunistic measurement of liver steatosis in coronary artery calcium scans predicts cardiovascular events and all-cause mortality: an AI-CVD study within the Multi-Ethnic Study of Atherosclerosis (MESA)

Naghavi M, Atlas K, Reeves A, et al. *BMJ Open Diabetes Research and Care* 2025;13: e004760

[**Introduction**: About one-third of adults in the USA have some grade of hepatic steatosis. Coronary artery calcium (CAC) scans contain more information than currently reported. We previously reported new artificial intelligence (AI) algorithms applied to CAC scans for opportunistic measurement of bone mineral density, cardiac chamber volumes, left ventricular mass, and other imaging biomarkers collectively referred to as AI-cardiovascular disease (CVD). In this study, we investigate a new AI-CVD algorithm for opportunistic measurement of liver steatosis.]

Freely available online

Association between interleukin-6, suPAR, and hsCRP with subclinical left ventricular dysfunction in type 1 diabetes: The Thousand & 1 study

Bahrami H.S.Z., Jørgensen P.G., Hove J.D., et al. *Diabetes Research and Clinical Practice* 2025, 222: 112071.

[**Aims**: To investigate the association between chronic inflammation and subclinical left ventricular dysfunction in type 1 diabetes (T1D).]

Association between Triglyceride-Glucose indices and ischemic stroke risk across different glucose metabolism statuses

Bian K, Hou C, Jin H, et al. *Diabetes Research and Clinical Practice* 2025, 222: 112064.

[**Background**: Triglyceride-glucose (TyG) related indices, including TyG, TyG-body mass index (TyG-BMI), and TyG-waist circumference (TyG-WC), have been identified as promising biomarkers for assessing insulin resistance (IR), a known risk factor for ischemic stroke. While previous research has highlighted the relevance of these indices in various metabolic disorders, their predictive utility for ischemic stroke across different glucose metabolic statuses has not been extensively explored.]

Association of quality of care and long-term mortality risk for individuals presenting with ST-segment myocardial infarction (STEMI) by diabetes mellitus status: A nationwide cohort study

Cole A, Weight N, Wijeysundera H.C., et al. *Diabetes Research and Clinical Practice* 2025, 222: 112092.

[**Aims**: This study aimed to assess how diabetes influences the quality of care and longer-term outcomes in contemporary STEMI cohorts.]

Cardio-renal protection in type 2 diabetes

Colagiuri S, Ceriello A. *Diabetes Research and Clinical Practice* 2025, 222: 112150.

[Diabetes complications are the result of a complex interplay of hyperglycaemia, cardiometabolic risk factors such as elevated blood pressure and lipids, obesity, and an unhealthy lifestyle (diet, physical inactivity, smoking). In addition, some complications increase the risk of other complications, with chronic kidney disease (CKD) associated with an increased risk of all-cause and cardiovascular (CVD) mortality, CVD events, and hospitalisation with heart failure (HF) [1]. This Chapter focuses on cardio-renal protection, a major driver of premature mortality and significant morbidity in people with type 2 diabetes mellitus (T2DM) (Fig. 6.1). Minimising cardio-renal complications requires effective and regular screening to detect CVD and CKD, and early comprehensive intervention, including consideration of newer blood glucose-lowering (BGL) medications with established cardio-renal protection (sodium-glucose cotransporter-2 [SGLT2] inhibitors and glucagon-like peptide-1 [GLP-1] receptor agonists) [1] in the context of the key pillars in diabetes management (Fig. 6.2).]

Comparative effect of aspirin versus clopidogrel monotherapy on incident type 2 diabetes in patients with atherosclerotic cardiovascular diseases: A target trial emulation study

Ju C, Xiong X, Lui D.T.W., et al. *Diabetes Research and Clinical Practice* 2025, 222: 112082.

[**Aims**: To compare the effects of low-dose aspirin and clopidogrel on the risk of incident type 2 diabetes among patients with ASCVD.]

Comparison of the metabolic profiles and their cardiovascular event risks of metformin users versus insulin users. A cohort study of people with type 2 diabetes from the UK Biobank

Chen L.J., Herder C, Xie R, et al. *Diabetes Research and Clinical Practice* 2025, 222: 112108.

[**Aim**: The aims of this study were to compare the metabolic profiles of type 2 diabetes mellitus patients with metformin and insulin monotherapy, to assess the associations of metabolites with major adverse cardiovascular events (MACE) distinctly for metformin-only and insulin-only users, and to test for effect modification by the glucose-lowering treatment.]

Correction to Lancet Diabetes Endocrinol 2024; 12: e2–11

Lancet Diabetes & Endocrinology, 2025, 13(4), e.7.

[*Emerging Risk Factors Collaboration/EPIC-CVD/Vitamin D Studies Collaboration. Estimating dose-response relationships for vitamin D with coronary heart disease, stroke, and all-cause mortality: observational and Mendelian randomisation analyses.* Lancet Diabetes Endocrinol *2024; **12:** e2–11.*]

Daytime napping and risk of incident main adverse cardiovascular events and mortality among adults with type 2 diabetes

Yang X.H., Liu Y, Jiang X.X., et al. *Diabetes Research and Clinical Practice* 2025, 222: 112067.

[**Aims**: To explore the link between daytime napping and the risk of major adverse cardiovascular events (MACE) and mortality in individuals with type 2 diabetes.]

Effect of sotagliflozin on major adverse cardiovascular events: a prespecified secondary analysis of the SCORED randomised trial

Aggarwal R, Bhatt D.L., Szarek M, et al. *Lancet Diabetes & Endocrinology*, 2025, 13(4), pp.321-332.

[**Background**: Sodium–glucose co-transporter (SGLT)-2 inhibitors have shown consistent benefit in improving heart failure-related outcomes but not ischaemic cardiovascular events such as myocardial infarction or stroke. We assessed if the dual SGLT1/2 inhibitor sotagliflozin improves ischaemic outcomes.]

Estimating direct tissue effects versus weight loss effects of incretin-based drugs for obesity on various chronic conditions

Sattar N, Lee M.M.Y. *Lancet Diabetes & Endocrinology*, 2025, 13(4), pp.347-354.

[The extent to which newer, incretin-based drugs for obesity improve disease outcomes via weight loss versus the direct effects of these drugs is the subject of intense interest. Although reductions in major adverse cardiovascular events appear to be predominantly driven by the direct tissue effects of such drugs, the associated weight loss effects must be relevant to the benefits observed in other major outcomes, albeit to differing extents. In this Personal View, we draw on evidence to support that weight loss is at least partly responsible (albeit to differing extents) for the reported benefits of incretin-based drugs for obesity in people living with heart failure with preserved ejection fraction, hypertension, chronic kidney disease, and type 2 diabetes. Concurrently, we propose that drug-induced weight loss is largely responsible for the reported improvements in osteoarthritis, obstructive sleep apnoea, and metabolic dysfunction-associated steatohepatitis outcomes. However, more evidence is needed to solidify these observations, including, when possible, trials comparing the effects of incretin-based drugs for obesity with calorie-reduced diets on both outcomes and mechanistic pathways. Such evidence has implications for public health and the design of future trials of novel drugs for obesity.]

Exploring the benefits of alirocumab as lipid-lowering therapy in people with diabetes and very high cardiovascular risk

Avogaro A, Buzzetti R, Candido R, et al. *Diabetes Research and Clinical Practice* 2025, 222: 112055.

[People with diabetes mellitus (DM) are at a higher risk (2–4 times) for cardiovascular (CV) death and atherosclerotic CV disease (ASCVD) than the general population. A multifactorial approach is recommended to reduce CV risk. Since low-density lipoprotein cholesterol (LDL-C) is a major causal and cumulative risk factor for ASCVD, the management of lipids is a fundamental element in global risk reduction. Intensive lipid lowering therapy (LLT), such as the addition of a proprotein convertase subtilisin/kexin type 9 inhibitor (PCSK9i), to achieve LDL-C goals and reduce the risk of first or recurrent CV events in people with DM at very high CV risk (VHCVR) of ASCVD (i.e. acute coronary syndrome, coronary artery disease, peripheral artery disease) is often required. Alirocumab, a monoclonal antibody against PCSK9, as lipid-lowering therapy offers significant CV benefits and a favourable safety profile in people with DM and a VHCVR, with or without previous CV events. This review highlights the role of LDL-C in the complex pathogenesis of atherosclerosis, summarises the guidelines for CV risk reduction related to LDL-C in patients with DM and a VHCVR, and focuses on the role of alirocumab in managing LDL-C and consequent CV risk reduction in these patients.]

HOMA-IR and TyG index differ for their relationship with dietary, anthropometric, inflammatory factors and capacity to predict cardiovascular risk

Sergi D, Spaggiari R, Nora E.D., et al. *Diabetes Research and Clinical Practice* 2025, 222: 112103.

[**Background**: HOMA-IR and the triglyceride-glucose index (TyG index) are surrogate indexes of insulin resistance. However, it remains to elucidate how HOMA-IR and the TyG index compare for their relationship with cardiometabolic health.

Aim: This study aimed at comparing HOMA-IR and the TyG index with regard to their relationship with anthropometric, dietary and inflammatory factors as well as ability to predict cardiovascular risk.]

Prevalence of cardiovascular risk and atherosclerotic cardiovascular disease in people with type 2 diabetes in the United Arab Emirates: Results from the prevalence of atherosclerotic cardiovascular disease in patients with type 2 diabetes across Middle East and African countries (PACT-MEA) study

Al Awadi F, Rashid F, Awada G, et al. *Diabetes & Metabolic Syndrome: Clinical Research & Reviews* 2025;19(4): 103224.

[**Aim**: Atherosclerotic cardiovascular disease (ASCVD) is a significant cause of morbidity and mortality in type-2 diabetes mellitus (T2D) patients. This subset analysis of the PACT-MEA study compares T2D data from the UAE with data from other Middle Eastern and African (MEA) countries.]

Progress in the treatment of vascular complications in type 2 diabetes by finerenone in combination with RAS inhibitors/SGLT-2i

Liu R, Qu Z, Feng Y, et al. *Journal of Diabetes and Its Complications*, 2025, 39(4), Article 108981.

[**Background:** Currently, the prevalence of diabetes is rising. Patients with diabetes often face high risks of kidney disease, cardiovascular disease, and retinal disease. Cardiovascular complications are the primary cause of morbidity and mortality in patients with type 2 diabetes mellitus. Finerenone is a novel non-steroidal mineralocorticoid receptor antagonist. Research has shown that finerenone provides renal, cardiac, and retinal protection in patients with type 2 diabetes. Currently, various drugs (angiotensin-converting enzyme inhibitors, angiotensin II receptor antagonists, sodium-glucose co-transporter 2 inhibitors) are effective in treating diabetic vascular complications, but each has its limitations. Combining finerenone with RAS Inhibitors/SGLT-2i may yield better clinical outcomes.]

Relationship between life’s essential 8, vitamin D, and cardiometabolic outcomes

Jia Q, Yang Y, Liu L, et al. *Diabetes Research and Clinical Practice* 2025, 222: 112057.

[**Aims**: To assess the association between cardiovascular health (CVH) and cardiometabolic outcomes and the impact of vitamin D on the relationship. Additionally, we seek to analyze the predictive ability of CVH metrics for cardiometabolic outcomes.]

Tirzepatide and major adverse limb events: Insights from a multicenter real-world analysis in PAD and diabetes patients

Wu J.Y., Tu W.L., Yu T, et al. *Diabetes Research and Clinical Practice* 2025, 222: 112083.

[**Aims**: Peripheral artery disease (PAD) is a major diabetic complication and a leading cause of amputation. While GLP-1 receptor agonists (GLP-1 RAs) provide cardiovascular and limb

protection, the impact of tirzepatide, a dual GLP-1/GIP receptor agonist, on major adverse limb events (MALEs) remains unclear. This study assessed tirzepatide's association with MALE risk in patients with PAD and diabetes using real-world data.]

Uncovering actionable cardiovascular risk subgroups in type 2 Diabetes: A latent class analysis

Geurten R.J., Hameleers N, Struijs J.N., et al. *Diabetes Research and Clinical Practice* 2025, 222: 112110.

[**Aims**: The study aimed to identify type 2 diabetes subgroups with varying, actionable cardiovascular disease (CVD) risk factor patterns and explored subgroup differences in characteristics and three-year CVD incidence.]

Diabetic Neuropathy

Comparative analysis of the therapeutic effects of pregabalin, gabapentin, and duloxetine in diabetic peripheral neuropathy: A retrospective study

Ahn J, Shahriarirad R, Kwon K, et al. *Journal of Diabetes and Its Complications*, 2025, 39(4), Article 109001.

[**Introduction:** This study aimed to compare the effects of pregabalin, gabapentin, and duloxetine on diabetic peripheral neuropathy (DPN) to guide tailored treatment.]

Prevalence and risk factors of painful diabetic neuropathy: A systematic review and meta-analysis

Tao Y, Zhang H.Y., MacGilchrist C, et al. *Diabetes Research and Clinical Practice* 2025, 222: 112099.

[Painful diabetes-related peripheral neuropathy (PDPN) is a common and debilitating complication of diabetes, contributing significantly to morbidity and healthcare costs. This systematic review and *meta*-analysis aim to determine the global prevalence of PDPN among individuals with diabetic peripheral neuropathy (DPN) and to identify associated risk factors. A comprehensive search of four English and three Chinese databases was conducted for observational studies on PDPN prevalence up to June 22, 2024. Of the 41 studies included, the pooled global prevalence of PDPN was 46.7 % (95 % CI, 41.8–51.7). In subgroup analysis, significant statistical differences were observed in prevalence estimates between different diagnostic methods for neuropathic pain, with neuropathic-specific pain scales indicating higher rates ($P = 0.03$). Studies with mean diabetes duration of less than 10 years or more than 15 years reported higher prevalence ($P < 0.01$). Significant risk factors for PDPN included older age (OR = 1.02, 95 % CI, 1.01–1.04), female gender (OR = 1.58, 95 % CI, 1.19–2.11), BMI ≥ 30 kg/m ^{2} (OR = 1.62, 95 % CI, 1.43–1.83), longer diabetes duration (OR = 1.05, 95 % CI, 1.01–1.08), and nephropathy (OR = 1.32, 95 % CI, 1.24–1.40). Targeted screening and standardized diagnostic tools are urgently needed to enhance PDPN management and mitigate its burden globally.]

Raster Scan Optoacoustic Mesoscopy for detecting microvascular complications in diabetes mellitus: A narrative brief review

Pantazopoulos D, Gouveri E, Ntziachristos V, et al. *Diabetes Research and Clinical Practice* 2025, 222: 112095.

[Diabetes mellitus (DM) may lead to microvascular and macrovascular complications. Screening for these complications is crucial, and so non-invasive methods with high-dissemination potential are needed. Diabetic peripheral neuropathy (DPN) is particularly challenging to screen due to the lack of reliable clinical markers and endpoints. In this context, Raster Scan Optoacoustic Mesoscopy (RSOM) emerges as a highly promising technique that offers hybrid, non-invasive imaging of optical absorption using light-induced ultrasound waves within tissue without the use of contrast agents. RSOM provides high-resolution visualisation of micro-vasculature and other tissue structures along with functional information. The technique has already assessed microvasculature loss as a function of diabetes progression and used it to characterise DPN severity. RSOM has also shown that cutaneous vessels in the mesoscopic range (mean diameters of 30–40 μm) are most prominently affected by DM and that the mean number of cutaneous vessels was lower in subjects with DM than in healthy participants ($p < 0.001$ and $p < 0.05$, respectively). Although experience is still limited, we present an overview of the novel technique in relation to its potential for detecting early DM onset and development of microvascular complications.]

A single blinded randomized controlled trial assessing the effect of photobiomodulation therapy on neuron specific biomarkers in type II diabetes mellitus patients with peripheral neuropathy

Anju M, Velladath S.U., Maiya G.A., et al. *Diabetes Research and Clinical Practice* 2025, 222: 112087.

[**Background**: Diabetic peripheral neuropathy is one of the most devastating complications of long-term diabetes mellitus, associated with functional limitations and poor quality of life.]

What does nerve ultrasound contribute to the evaluation of diabetic polyneuropathy over time? A prospective follow-up observational study of people with type 2 diabetes

Heiling B, Lehmann T, Müller N, et al. *Diabetes Research and Clinical Practice* 2025, 222: 112115.

[**Aims**: Studies using peripheral nerve ultrasound have shown moderate nerve enlargement in individuals with diabetic polyneuropathy (DPN). Neither extent, course, consistency, nor clinical significance of this finding is clear.]

Eye Diseases

Predicting diabetic retinopathy based on biomarkers: Classification and regression tree models

Tao T, Liu K, Yang L, et al. *Diabetes Research and Clinical Practice* 2025, 222: 112091.

[**Objective**: We choose the classification and regression tree (CART) model as the analysis tool to identify clinical indicators that assess the risk factors for diabetic retinopathy (DR) and to determine the key risk factors associated with DR.]

Relationship of haptoglobin phenotype and levels with sight-threatening diabetic retinopathy in type 2 diabetes: A Fenofibrate Intervention and Event Lowering in diabetes (FIELD) substudy

Ong K.L., Januszewski A.S., Francis H, et al. *Diabetes Research and Clinical Practice* 2025, 222: 112080.

[**Aims**: Haptoglobin (HP) phenotype has been reported to modulate fenofibrate benefit on coronary artery disease in type 2 diabetes. It is unknown whether HP phenotype and levels modulate fenofibrate benefit on sight-threatening diabetic retinopathy (STDR).]

Kidney Disease

Cardio-renal protection in type 2 diabetes

Colagiuri S, Ceriello A. *Diabetes Research and Clinical Practice* 2025, 222: 112150.

[Diabetes complications are the result of a complex interplay of hyperglycaemia, cardiometabolic risk factors such as elevated blood pressure and lipids, obesity, and an unhealthy lifestyle (diet, physical inactivity, smoking). In addition, some complications increase the risk of other complications, with chronic kidney disease (CKD) associated with an increased risk of all-cause and cardiovascular (CVD) mortality, CVD events, and hospitalisation with heart failure (HF) [1]. This Chapter focuses on cardio-renal protection, a major driver of premature mortality and significant morbidity in people with type 2 diabetes mellitus (T2DM) (Fig. 6.1). Minimising cardio-renal complications requires effective and regular screening to detect CVD and CKD, and early comprehensive intervention, including consideration of newer blood glucose-lowering (BGL) medications with established cardio-renal protection (sodium-glucose cotransporter-2 [SGLT2] inhibitors and glucagon-like peptide-1 [GLP-1] receptor agonists) [1] in the context of the key pillars in diabetes management (Fig. 6.2).]

Composite renal outcome in prospectively performed biopsy proven diabetic kidney disease versus non-diabetic kidney disease: A longitudinal follow up

Neogi S, Basu M, Mukhopadhyay P, et al. *Diabetes & Metabolic Syndrome: Clinical Research & Reviews* 2025;19(4): 103237.

[**Aims**: This study was undertaken to evaluate differences in composite renal outcomes between diabetic kidney disease (DKD) and non-diabetic kidney disease (NDKD) (prospectively performed, biopsy proven), along with predictors of renal outcome in subjects with DKD.]

Estimating direct tissue effects versus weight loss effects of incretin-based drugs for obesity on various chronic conditions

Sattar N, Lee M.M.Y. *Lancet Diabetes & Endocrinology*, 2025, 13(4), pp.347-354.

[The extent to which newer, incretin-based drugs for obesity improve disease outcomes via weight loss versus the direct effects of these drugs is the subject of intense interest. Although reductions in major adverse cardiovascular events appear to be predominantly driven by the direct tissue effects of such drugs, the associated weight loss effects must be relevant to the benefits observed in other major outcomes, albeit to differing extents. In this Personal View, we draw on evidence to support that weight loss is at least partly responsible (albeit to differing extents) for the reported benefits of incretin-based drugs for obesity in people living with heart failure with preserved ejection fraction, hypertension, chronic kidney disease, and type 2 diabetes. Concurrently, we propose that drug-induced weight loss is largely responsible for the reported improvements in osteoarthritis, obstructive sleep apnoea, and metabolic dysfunction-associated steatohepatitis outcomes. However, more evidence is needed to solidify these observations, including, when possible, trials comparing the effects of incretin-based drugs for obesity with calorie-reduced diets on both outcomes and mechanistic pathways. Such

evidence has implications for public health and the design of future trials of novel drugs for obesity.]

Guideline-directed medical therapies (GDMTs) for chronic kidney disease with type 2 diabetes (CKD + T2D): Translation of lessons learned from the management of heart failure

Rollins J, Hong A.L., Schroader B, et al. *Journal of Diabetes and Its Complications*, 2025, 39(4), Article 108985.

[Although guideline-directed medical therapy (GDMT) is an evidence-based, proven approach to manage chronic kidney disease and type 2 diabetes (CKD + T2DM), adherence is low and multifactorial. Opportunities exist to improve care delivery, thus delaying disease progression, avoiding unnecessary costs, and potentially improving quality of life for patients both diagnosed and yet to be diagnosed.]

Hemoglobin glycation index and rapid kidney function decline in diabetes patients: Insights from CHARLS

Zhang F, Zhou R, Bai Y, et al. *Diabetes Research and Clinical Practice* 2025, 222: 112054.

[**Aims**: This study aimed to assess the relationship between hemoglobin glycation index (HGI) and risk of rapid kidney function decline (RKFD) in diabetic patients.]

Management of metabolic dysfunction-associated steatotic liver disease (MASLD) in type 2 diabetes

Colagiuri S, Ceriello A. *Diabetes Research and Clinical Practice* 2025, 222: 112151.

[**Background**: Metabolic dysfunction-associated steatotic liver disease (MASLD), previously termed non-alcoholic fatty liver disease (NAFLD), is defined as steatotic liver disease (SLD) in the presence of one or more cardiometabolic risk factors (including type 2 diabetes mellitus [T2DM] and intermediate hyperglycaemia) and the absence of harmful alcohol intake. The change in nomenclature from “non-alcoholic” to “metabolic dysfunction” reflects an evolving understanding of these conditions and their metabolic links [1]. MASLD is the most common chronic liver disease and is closely linked with T2DM, intermediate hyperglycaemia, and obesity. In addition to adverse liver outcomes, MASLD is associated with an increased risk of adverse cardio-renal outcomes. Other forms of SLD include alcohol-related liver disease (ALD) (alcohol intake >50 g/day for females and >60 g/day for males) and MASLD with moderate increased alcohol intake (MetALD) (alcohol intake 20–50 g/day for females and 30–60 g/day for males) [1].]

Quantitative assessment of metabolic memory and its prediction of renal function decline in patients with type 2 diabetes: A retrospective observational study

Oniki K, Shigaki T, Kajiwara-Morita A, et al. *Diabetes & Metabolic Syndrome: Clinical Research & Reviews* 2025;19(4): 103225.

[**Aims**: This study quantitatively assesses metabolic memory by modeling the relationship between hyperglycemic exposure and renal function decline in patients with type 2 diabetes (T2D).]

SGLT2 inhibitor use and renal outcomes in low-risk population with diabetes mellitus and normal or low body mass index

Lee Y.S., Park G, Lee K, et al. *BMJ Open Diabetes Research and Care* 2025;13: e004876

[**Introduction**: Recent post hoc analyses indicate that patients with normal or low body mass index (BMI) benefit from sodium-glucose cotransporter-2 (SGLT2) inhibitor use. We aimed to evaluate the effects of SGLT2 inhibitors on renal and patient outcomes in patients with diabetes and normal or low BMI.]

SGLT2 inhibitors and nephrolithiasis risk in patients with type 2 diabetes: A cohort study and meta-analysis

Yeh J.A., Liu Y.C., Huang A.H., et al. *Diabetes Research and Clinical Practice* 2025, 222: 112088.

[**Aims**: This study aimed to evaluate the relationship between sodium-glucose cotransporter 2 inhibitor (SGLT2i) use and nephrolithiasis risk.]

Time reallocation to moderate-to-vigorous physical activity and its association with chronic kidney disease prevalence in Chinese adults with type 2 diabetes

Xu M, Xu T, Li J, et al. *Diabetes Research and Clinical Practice* 2025, 222: 112116.

[**Aims**: To examine the isotemporal substitution association of replacing moderate-to-vigorous physical activity (MVPA) with other behaviors on the prevalence of chronic kidney disease (CKD) among Chinese adults with type 2 diabetes mellitus (T2DM).]

Visit-to-visit lipid variability and adverse kidney events in real-world type 2 diabetes patients

Su H.Y., Chang Y.H., Yang C.Y., et al. *Diabetes Research and Clinical Practice* 2025, 222: 112093.

[**Aim**: To examine the association between long-term variability in low-density lipoprotein cholesterol (LDL-C) and the development of adverse kidney events among type 2 diabetes patients.]

What does renal failure teach us about our National Health System?

Avogaro A. *Lancet Diabetes & Endocrinology*, 2025, 13(4), p.276.

[After 45 years, I am retiring from the Italian National Health Service. If someone were to ask me what I think of the Italian National Health Service after all these years, I would consider Brenner's theory on single nephron hyperfiltration injury. [1] In chronic kidney disease, the progressive loss of functional nephrons—caused by conditions like hypertension and diabetes—forces the remaining nephrons to compensate through hyperfiltration and increased workload. This adaptive mechanism, mainly mediated by angiotensin II, temporarily sustains kidney function but ultimately accelerates damage. Eventually, as the surviving nephrons become overburdened and exhausted, the inevitable decline towards end-stage kidney disease occurs.]

Complications (find here atherosclerosis, claudication, diabetic foot, ulcers etc)

Diabetes-associated Periodontitis

Effect of non-surgical treatment in diabetes-associated periodontitis on immune/inflammatory and oxidative stress biomarkers: A pilot study

Oliveira S.B., Silveira A.L.P.A., Kim Y.J., et al. *Journal of Diabetes and Its Complications*, 2025, 39(4), Article 108999.

[**Aims:** To investigate the effects of non-surgical periodontal treatment on the levels of cytokines, sIgA, antimicrobial peptides, oxidative and antioxidative agents in comparison between patients with and without diabetes.]

Diabetic Ketoacidosis

0.9% Saline versus Ringer's lactate as initial fluid in children with diabetic ketoacidosis: a double-blind randomized controlled trial

Agarwal A, Jayashree M, Nallasamy K, et al. *BMJ Open Diabetes Research and Care* 2025;13: e004623

[**Introduction**: Ringer's lactate (RL), a balanced crystalloid by regenerating bicarbonate ion, may lead to early diabetic ketoacidosis (DKA) resolution and reduced hyperchloremia as compared with 0.9% saline (NS).]

Freely available online

Diabetes and pregnancy

Changes to insulin pump settings throughout pregnancy for individuals using assisted hybrid closed-loop therapy versus sensor-augmented pump therapy

King J, Buschur E, Garcetti R, et al. *Journal of Diabetes and Its Complications*, 2025, 39(4), Article 109000.

[**Aims:** We compared changes in insulin pump settings and insulin distribution throughout pregnancy and early postpartum for participants with type 1 diabetes using sensor-augmented pump therapy (SAPT) or hybrid closed-loop (HCL) therapy without a pregnancy-specific glucose target.]

Diabetes and pregnancy: A call for terminology standardization in clinical practice

Carranza E.A.A., Casella J.A.L., Concepción-Zavaleta M.J. *Diabetes Research and Clinical Practice* 2025, 222: 112102.

[Currently, there is no unified consensus on the terminology used to describe diabetes in the context of pregnancy, leading to confusion among clinicians and challenges in research. This review article proposes a set of terms to classify diabetes during pregnancy based on timing and diagnostic criteria, whether before or during pregnancy. A review of previous documents addressing terminology and classification was conducted, identifying four main terms: (1) pregestational diabetes mellitus, referring to diabetes diagnosed before pregnancy; (2) early gestational diabetes mellitus, diagnosed before 24 weeks of gestation; (3) late gestational

diabetes mellitus, diagnosed at or after 24 weeks of gestation; and (4) diabetes in pregnancy, diagnosed at any gestational age. This proposal does not include an analysis of hyperglycemia's pathophysiological mechanisms or specific diagnostic criteria. The proposed classification could serve as a foundation for a global initiative to establish a consensus on terminology for diabetes in pregnancy. A universally accepted terminology would reduce clinical confusion, provide a framework for defining diagnostic criteria, facilitate research on maternal and fetal complications, and support studies exploring the postpartum progression of diabetes.]

The safety profile of usage of glucagon-like peptide-1 receptor agonists in pregnancy: A pharmacovigilance analysis based on the Food and Drug Administration Adverse Event Reporting System.
Zhou J, Wei Z, Lai W, et al. *British Journal of Clinical Pharmacology* 2025;91(4):1272-1280.
[**Aims**: The use of (GLP-1 RAs) among pregnant women is escalating, yet safety data remain insufficient. This study aims to comprehensively assess adverse drug reactions (ADRs) associated with GLP-1 RAs in pregnant women using the US Food and Drug Administration Adverse Event Reporting System (FAERS) database.]

Switching to insulin lispro U-200 in a pregnant woman using a 780G advanced hybrid closed-loop led to a rapid improvement in glucose metrics

Mendoza L.C., Cohen O, Smaniotto V, et al. *Diabetes Research and Clinical Practice* 2025, 222: 112047.

[Maintaining tight glucose levels during pregnancy is crucial and challenging. We describe a pregnant woman with type 1 diabetes and obesity, treated with an advanced hybrid closed-loop MiniMed 780G since pre-pregnancy, who displayed a sustained improvement in her glucometrics after switching to lispro U-200.]

Diabetes mellitus Type 1

Association between interleukin-6, suPAR, and hsCRP with subclinical left ventricular dysfunction in type 1 diabetes: The Thousand & 1 study

Bahrami H.S.Z., Jørgensen P.G., Hove J.D., et al. *Diabetes Research and Clinical Practice* 2025, 222: 112071.

[**Aims**: To investigate the association between chronic inflammation and subclinical left ventricular dysfunction in type 1 diabetes (T1D).]

Correction to Lancet Diabetes Endocrinol 2025; 13: 175–76

Lancet Diabetes & Endocrinology, 2025, 13(4), e.7.

[*Beran D, Bandini A, Bosi E, et al. Type 1 diabetes screening: need for ethical, equity, and health systems perspective.* Lancet Diabetes Endocrinol *2025; **13:** 175–76.*]

An evaluation of YouTube videos on glucose sensor devices and type 1 diabetes mellitus: User perceptions, device features, and content reliability

Molu B, Molu G. *Diabetes Research and Clinical Practice* 2025, 222: 112069.

[**Aim**: The aim of this study is to evaluate the performance, comprehensiveness, reliability, and quality of English-language YouTube videos related to new glucose sensor devices.]

Increased risk of dementia in Type 1 diabetes: A systematic review with *meta*-analysis

Li L, Wong D, Fisher C.A., et al. *Diabetes Research and Clinical Practice* 2025, 222: 112043.

[This systematic review and *meta*-analysis aimed to synthesize evidence on the association between Type 1 diabetes mellitus (Type 1 diabetes) and dementia risk. A systematic search of CINAHL, EMBASE, MEDLINE, PSYCINFO, and Web of Science databases identified 19 relevant studies for inclusion. Studies, published in English, were assessed for quality using the QUADAS-2 tool, and data were extracted for synthesis. A *meta*-analysis of six studies reporting hazard ratios (HR) for dementia risk in individuals with Type 1 diabetes versus controls was conducted. The pooled HR for all-cause dementia was 1.50 (95 % CI: 1.25–1.80, $p < 0.001$), indicating a 50 % increased risk of dementia in people with Type 1 diabetes compared to controls. This review provides robust evidence linking Type 1 diabetes to increased dementia risk and highlights the need for targeted screening and preventive strategies for this population. Further research is necessary to explore the mechanisms underlying the association between Type 1 diabetes and dementia.]

Long-term outcomes and challenges of islet transplantation in type 1 diabetes

Chetboun M, Pattou F. *Lancet Diabetes & Endocrinology*, 2025, 13(4), pp.264-265.

[β-cell replacement is a validated therapy for severe forms of type 1 diabetes. [1] In patients with frequent severe hypoglycaemic events, allogeneic pancreatic islet transplantation results in better glycaemic control than insulin therapy alone, enhances quality of life, and reduces and even in some cases eliminates the need for insulin injections. [2] Davide Catarinella and colleagues [3] from IRCCS Ospedale San Raffaele (Milan, Italy) report the 20-year results of islet transplantation in 79 patients, providing valuable real-world insights into specific risks and long-term outcomes of islet transplantation.]

Long-term outcomes of pancreatic islet transplantation alone in type 1 diabetes: a 20-year single-centre study in Italy

Catarinella D, Melzi R, Mercalli A, et al. *Lancet Diabetes & Endocrinology*, 2025, 13(4), pp.279-293.

[**Background**: Islet transplantation has the potential to cure type 1 diabetes by restoring endogenous insulin production. However, its success relies on balancing improved glycaemic control with the risks of immunosuppressive therapy. This study aimed to evaluate long-term outcomes of islet transplantation alone for type 1 diabetes, focusing on the effects of islet mass and immunosuppressive regimens on graft survival and insulin independence, and weighing glycaemic control benefits against the risks of immunosuppressive therapy.]

The need for a type 1 diabetes scorecard

De Beaufort C, Beran D, Ajmal S, et al. *Lancet Diabetes & Endocrinology*, 2025, 13(4), pp.277-278.

[The predicted global rise in diabetes prevalence, coupled with related mortality and inequity, has led WHO to launch the Global Diabetes Compact. [1] This initiative sets evidence-based targets for global diabetes care, emphasising universal access to affordable insulin and glucose monitoring for individuals with type 1 diabetes, and for achieving adequate glycaemic control in at least 80% of people with diabetes by 2030. Achieving these targets requires public health strategies for expanding access to health-care systems, insulin, disease management tools, and education to address the challenges of living with type 1 diabetes. This work also requires robust indicators to monitor progress, measure outcomes, and evaluate cost-effectiveness. In fact, the notion of an indicator (ie, a quantitative metric used to assess

performance, measure achievement, and ensure accountability) is essential. Unfortunately, diabetes outcome indicators at an international (and national) level are still limited and provide insufficient information on the cost-effectiveness of interventions specific to diabetes. [2]]

Proposed Practical Guidelines to Improve Glycaemic Management by Reducing Glycaemic Variability in People with Type 1 Diabetes Mellitus

De Torres-Sánchez A, Ampudia-Blasco F.J., Murillo S, et al. *Diabetes Therapy* 2025, 16(4): 569-589.

[**Introduction**: For decades, glycaemic variability (GV) was ignored in clinical practice because its precise assessment was challenging and there were no specific recommendations to reduce it. However, the current widespread use of continuous glucose monitoring (CGM) systems has changed this situation. Associations between high GV and risk of hypoglycaemia, onset of macro- and microvascular complications and mortality have been described in type 1 diabetes (T1D). It is therefore important to identify the causes of excessive glycaemic excursions and make recommendations for people with T1D to achieve better glycaemic management by minimising GV in both the short term and the long term.]

Freely available online

Real-world evidence supporting the use of advanced hybrid closed loop in poorly controlled type 1 diabetes patients

Graf S, Hofer G, Hirschmann R, et al. *Diabetes Research and Clinical Practice* 2025, 222: 112035.

[**Background**: The advanced hybrid closed loop (a-HCL) algorithm includes automated basal and correction bolus insulin with customizable glucose targets. This study aimed to evaluate the effectiveness of a-HCL compared to predictive low glucose suspension (PLGS) and standard hybrid closed-loop (s-HCL) systems and to identify patient populations experiencing the greatest glycemic improvement after transitioning to a-HCL.]

A scoping review exploring research investigating the influence of carbohydrate counting on eating behaviour and/or disordered eating in type 1 diabetes

Rigby K.R., Iturbe I, Candler T, et al. *Diabetes Research and Clinical Practice* 2025, 222: 112068.

[**Aims**: To evaluate evidence describing a potential association between carbohydrate counting (CC) in type 1 diabetes and eating behaviours and/or disordered eating behaviour (DEB).]

Diabetes mellitus Type 2

Based on the multi-theory model perspective, what are the influencing factors of health behavior change among community-dwelling elderly patients with type 2 diabetes in China? A qualitative study

Huai P, Zhang B, Zhang L, et al. *Diabetes Research and Clinical Practice* 2025, 222: 112096.

[**Background**: The high prevalence of chronic diseases in the elderly, especially type 2 diabetes, poses a major challenge to the global health system. In China, elderly patients with type 2 diabetes mainly rely on family and community for long-term management. In view of the importance of health behavior change in improving the health of patients with chronic diseases, the multi-theory model (MTM), as the fourth generation of theoretical model in the

field of health behavior change, provides a new perspective for promoting patients' behavior change in chronic disease management and has been widely used in many health fields. However, from the perspective of research methods, the application of multi-theory model in qualitative research is less, accounting for only 6 % of the total research. In terms of research objects, there is no research applied to diabetes patients. Therefore, this study adopts qualitative research methods and takes MTM theory as the guiding framework to deeply analyze the factors of health behavior change in elderly patients with type 2 diabetes in the community. This paper aims to provide a basis for the development of targeted intervention strategies, explore and optimize MTM constructs, provide a reference for future empirical research, and promote a better understanding and application of MTM.]

Bodyweight loss and remission of type 2 diabetes

Birkenfeld A.L., Bergman M. *Lancet Diabetes & Endocrinology*, 2025, 13(4), pp.265-267.

[Remission in Latin denotes "to return". In the literal sense then, diabetes remission implies restoration of hyperglycaemia to normal glucose regulation. Growing evidence suggests that bodyweight loss is key to achieving type 2 diabetes remission, defined as HbA 1c less than 6·5% (or <48 mmol/mol) at least 3 months after cessation of glucose-lowering pharmacotherapy. 12 Type 2 diabetes remission can further be divided into partial remission (HbA 1c <6·5% [<48 mmol/mol] or fasting plasma glucose [FPG] <126 mg/dL [<7·0 mmol/L]) or complete remission (HbA 1c <6·0% [<42 mmol/mol] or FPG <100 mg/dL [<5·6 mmol/L]). 3 Given the increasing number of people living with type 2 diabetes worldwide, we need to better understand the nature, confounding factors, and course of type 2 diabetes remission.]

Comparison of the effectiveness and safety of GLP-1 receptor agonists for type 2 diabetes mellitus patients with overweight/obesity: A systematic review and network meta-analysis

Wen Z, Sun W, Wang H, et al. *Diabetes Research and Clinical Practice* 2025, 222: 111999.

[**Objective**: To evaluate the effectiveness and safety of different Glucagon-like peptide-1 receptor agonists (GLP-1RAs) in treating type 2 diabetes mellitus (T2DM) with overweight/obesity using a systematic review and network *meta*-analysis.]

The efficacy of resistance exercise training on metabolic health, body composition, and muscle strength in older adults with type 2 diabetes: A systematic review and Meta-Analysis

Feng M, Gu L, Zeng Y, et al. *Diabetes Research and Clinical Practice* 2025, 222: 112079.

[This systematic review and *meta*-analysis evaluated the efficacy of Resistance Exercise Training (RET) on metabolic health, body composition, and muscle strength in older adults with type 2 diabetes (T2DM). Electronic databases were systematically searched and *meta* -analyses were conducted using random-effects models. Meta-regression analyses were also performed to explore potential sources of heterogeneity. Nineteen randomized controlled trials (RCTs) met the inclusion criteria. RET significantly improved hemoglobin A1c (MD: −0.51, P < 0.0001) and fasting blood glucose (mean differences: MD: −1.43 mg/dl, P = 0.04), though insulin levels remained unchanged. Lipid profile analysis revealed significant reductions in triglycerides (MD: −0.32, P = 0.03), total cholesterol (MD: −7.08, P = 0.005), and low-density lipoprotein (MD: −1.91, P = 0.05), without significant changes in high-density lipoprotein. RET increased lean mass and reduced waist circumference but had no effect on body weight and fat mass. Muscle strength improved significantly, but there was no impact on blood pressure or heart rate. These findings suggest that RET is beneficial for enhancing glycemic control, lipid profiles, lean mass, and muscle strength in older adults with T2DM, while its effects on body

weight, fat mass, and cardiovascular health remain inconclusive. Further studies are needed to explore long-term effects.]

Examining causal relationships between educational attainment and type 2 diabetes using genetic analysis: findings from the EPIC-InterAct study through Mendelian randomisation.

Macciotta A, Sacerdote C, Giachino C, et al. *Journal of Epidemiology & Community Health* 2025;79(5):373-379.

[**Introduction**: Observational studies have shown that more educated people are at lower risk of developing type 2 diabetes (T2D). However, robust study designs are needed to investigate the likelihood that such a relationship is causal. This study used genetic instruments for education to estimate the effect of education on T2D using the Mendelian randomisation (MR) approach.]

Freely available online

Exploring genetic risk factors for β-cell deterioration in type 2 diabetes mellitus: Insights from longitudinal C-peptide analysis

Morita S, Shimajiri Y, Matsuoka Y, et al. *Diabetes Research and Clinical Practice* 2025, 222: 112049.

[**Aims**: Insulin secretion in type 2 diabetes mellitus deteriorates over time, but the factors influencing the degree of deteriorates remain unclear. This study aims to specifically identify genetic factors associated with this decline.]

IDF global clinical practice recommendations for managing type 2 diabetes – 2025

Ceriello A, Colagiuri S. *Diabetes Research and Clinical Practice* 2025, 222: 112152.

[**Introduction**: Diabetes is a major global health challenge, with an estimated 589 million adults in 2024 living with diabetes, of whom almost one-in-two were undiagnosed. In addition, another 1.1 billion adults worldwide had impaired glucose tolerance or impaired fasting glycaemia predisposing them to an increased risk of developing type 2 diabetes mellitus (T2DM). These numbers are projected to increase significantly over the next two decades [1]. T2DM is the most common type of diabetes, accounting for over 90 % of all diabetes worldwide, and is associated with increased all-cause mortality and macrovascular and microvascular complications. There is strong evidence that the T2DM burden can be reduced by controlling hyperglycaemia and associated risk factors, diagnosing earlier, and preventing high-risk individuals from progressing to T2DM. The global burden of T2DM continues to increase despite the wealth of existing evidence on diabetes care and prevention. Optimal diabetes management is not reaching the majority of individuals who could benefit. Poor glycaemic control is common in T2DM and does not meet the World Health Organization (WHO) goal of 80 % of people with diagnosed diabetes achieving good glycaemic control [2].]

Impact of bodyweight loss on type 2 diabetes remission: a systematic review and meta-regression analysis of randomised controlled trials

Kanbour S, Ageeb R.A., Malik R.A., et al. *Lancet Diabetes & Endocrinology*, 2025, 13(4), pp.294-306.

[Background: Bodyweight loss is associated with type 2 diabetes remission; however, the quantitative relationship between the degree of bodyweight loss and the likelihood of remission, after controlling for confounding factors, remains unknown. We aimed to analyse the relationship between the degree of bodyweight loss and diabetes remission after

controlling for various confounding factors, and to provide estimates for the effect sizes of these factors on diabetes remission.]

Impact of sodium-glucose cotransporter-2 inhibitors on ovarian cancer risk in patients with type 2 diabetes mellitus: A multi-institutional TriNetX study

Hung C.H., Wu J.Y., Weng Y.S., et al. *Diabetes Research and Clinical Practice* 2025, 222: 112109.

[**Introduction**: Women with type 2 diabetes mellitus (T2DM) have an increased risk of ovarian cancer. Sodium-glucose cotransporter 2 inhibitors (SGLT2i) impact on the risk of ovarian cancer in women with T2DM remains unclear. Therefore, this study aims to assess the association between SGLT2i use and the risk of ovarian cancer in patients with T2DM.]

Integrating social determinants of health into global approaches to early-onset type 2 diabetes

Seo J.E., Rizzo M, Powell-Wiley T.M. *Journal of Diabetes and Its Complications*, 2025, 39(4), Article 108982.

[We are seeing an exponential rise in early-onset type 2 diabetes mellitus (T2DM), defined as new onset T2DM among individuals aged 18–45 years. [1] This rapid increase in early-onset T2DM is a direct result of the global obesity epidemic, which contributes to the development of cardiovascular-kidney-metabolic syndrome and increasing cardiovascular disease burden, [2] particularly in low- and middle-income countries (LMICs). [3, 4] Until recently, there has been a paucity of definitive research identifying those most affected by early-onset T2DM in global populations. [5] Addington and colleagues address this important research gap by using the nationwide Danish Diabetes Register to explore the incidence of early-onset T2DM in Denmark from 1996 to 2020, capturing over 8 million individuals. [6] They demonstrated that, in accordance with other countries, [1] Denmark saw an increase in early-onset T2DM incidence, with a greater effect size seen in women. They further characterized relevant clinical and sociodemographic risk factors, observing that male gender, pre-existing comorbidities, and measures of sociodemographic disadvantage such as low income or single marital status were all associated with increased diabetes-related micro- and macrovascular complications. Given that early-onset T2DM is linked with worse, earlier-onset, and prolonged complications, [5] these findings highlight the unmet needs of this emerging population.]

Non-pharmacological management strategies for type 2 diabetes in children and young adults: A systematic review

Carino M, New R.H., Nguyen J, et al. *Diabetes Research and Clinical Practice* 2025, 222: 112045.

[**Purpose**: The evidence for effective non-pharmacological management of type 2 diabetes in children and young adults is scarce. This systematic review aims to identify the available evidence for non-pharmacological interventions in managing type 2 diabetes in children and young adults.]

Nutrition and diet in type 2 diabetes management

Harris S. *British Journal of Nursing* 2025;34(8):S11-S18.

[This article aims to provide health professionals involved in diabetes management with nutrition options to support their advice and guidance when speaking to patients. The review examines dietary strategies for managing type 2 diabetes, focusing on their impact on glycaemic control, weight loss and long-term health outcomes. Diets and nutrition options,

including the Mediterranean and Nordic diets, low calorie consumption and medical nutrition therapy, can be effective in regulating blood glucose levels, improving lipid profiles and reducing the risk of cardiovascular disease. Health professionals need a comprehensive understanding of optimal nutrition plans to personalise dietary interventions and improve patient outcomes.]

Poor glycemic status as a risk factor for dementia in type 2 diabetes population: Findings from the Taiwan's National Health Insurance Database

Lin C.L., Chien W.C., Lin C.P., et al. *Diabetes Research and Clinical Practice* 2025, 222: 112065.

[**Aim**: This study explored the association between poor glycemic status (PGS; hyperglycemia, hypoglycemia, or their combination [mixed]) and dementia risk in patients with type 2 diabetes (T2D).]

The promise and pitfalls of "Make America Healthy Again"

Tallie L.S., Popkin B. *Lancet Diabetes & Endocrinology*, 2025, 13(4), pp.274-275.

[The "Make America Healthy Again Movement" (MAHA) is arguably the largest, most energised movement to date to address the USA's twin epidemics of obesity and type 2 diabetes. Although MAHA does not focus exclusively on these health issues, concerns about the food supply and its contributions to diet-related non-communicable diseases (NCDs), particularly for children, have played a central role. Over the last year, media and policy makers have paid unprecedented attention to topics once relegated to nutrition scientists, including food marketing, food labelling, school nutrition, and ultra-processed foods more generally. However, there are crucial questions about whether this attention will lead to meaningful, evidence-based policies. The MAHA movement offers tremendous potential to transform the food system but also carries serious risks unless policies are based on science. Moreover, the politicisation of food and chronic disease issues could disrupt the scientific and federal regulatory infrastructure, making it harder to address America's most pressing health needs in the future.]

Rational application of weight loss therapies according to new obesity guidelines in Asian Indians: A perspective for low-income settings

Misra A. *Diabetes & Metabolic Syndrome: Clinical Research & Reviews* 2025;19(4): 103226.

[Obesity and abdominal obesity are also rising in low and middle income groups, women and occurring in youth [1 2 3]. The assessment and management of increasing obesity and type 2 diabetes (T2D) in South Asian populations presents unique challenges. For example, South Asians exhibit a distinctive metabolic phenotype characterized by increased body fat, abdominal obesity, low skeletal muscle mass, and high level of insulin resistance even at normal or modestly elevated body mass index (BMI) levels [4, 5]. The background of an increasing imbalanced diet and sedentary lifestyle poses additional challenges [6, 7]. This profile translates into an early and substantial burden of T2D and related complications such as hypertension, dyslipidemia, and metabolic dysfunction-associated steatotic liver disease at lower weight thresholds compared to Western populations [8].]

Resistance exercise training and its impact on metabolic syndrome in type 2 diabetes: A systematic review and meta-analysis of randomized controlled trials

Han C, Xue H, Yang S, et al. *Diabetes Research and Clinical Practice* 2025, 222: 112077.

[This *meta*-analysis investigated the impact of resistance exercise training (RET) on metabolic syndrome (MetS) markers in patients with type 2 diabetes mellitus (T2DM) by synthesizing evidence from randomized controlled trials (RCTs). A systematic search was conducted in four databases up to September 2024. Data were analyzed using random-effects models to calculate mean differences (MD) and 95 % confidence intervals (CI). Fifty RCTs involving 2271 participants (1186 in the intervention group, 1085 in the control group) were included. RET significantly improved key MetS markers, including reductions in fasting blood glucose (MD = −7.09 mg/dl; $p < 0.00001$), triglyceride (MD = −14.05 mg/dl; $p < 0.0001$), systolic (MD: −4.13 mmHg; $p = 0.0004$) and diastolic (MD: −2.03 mmHg; $p = 0.02$) blood pressure, and waist circumference (MD = −2.18 cm; $p < 0.00001$). Additionally, RET was associated with increased high-density lipoprotein levels (MD: 1.86 mg/dl; $p = 0.002$). Subgroup analyses indicated consistent benefits across varing intervention durations and participant genders, underscoring the broad applicability of RET for diverse T2DM populations. These findings suggest that RET is an effective intervention for improving MetS markers in individuals with T2DM. However, limitations such as high heterogeneity and small sample sizes may affect generalizability.]

Type 2 diabetes mellitus in people with intellectual disabilities: Examining incidence, risk factors, quality of care and related complications. A population-based matched cohort study

Baksh R.A., Pape S.E., Chan L.F., et al. *Diabetes Research and Clinical Practice* 2025, 222: 112090.

[**Aims**: People with intellectual disabilities are at higher risk of type 2 diabetes mellitus (T2DM) but there are currently gaps in our understanding related to risk of new onset, care of T2DM and complications.]

Reports

Type 2 diabetes – spotlight audit 2023/24 .
Healthcare Quality Improvement Partnership (HQIP); 2025.
https://www.hqip.org.uk/resource/type-2-npda-2023-24/
[The National Paediatric Diabetes Audit (NPDA) has published a report on the care provided to children and young people (CYP) with Type 2 diabetes by paediatric diabetes units (PDUs) in England and Wales between 1 April 2023 and 31 March 2024.]
Freely available online

Diagnosis

Cost-effectiveness of diabetes screening and diagnosis services for people with TB in the Philippines

Yamanaka T, Castro M.C., Cox S.E., et al. *Diabetes Research and Clinical Practice* 2025, 222: 112085.

[**Aim**: Tuberculosis (TB) remains a leading cause of death in low- and middle-income countries, and diabetes is a known risk factor for progression to active TB disease. While the Philippines national strategic plan for TB aims to screen 90 % of TB cases for diabetes, the cost-effectiveness of screening is not well known.]

Is the burden of diabetes in Australia underestimated? Comparison of diabetes ascertainment using linked administrative health data and an Australian diabetes registry

Cox E, Gale J, Falster M.O., et al. *Diabetes Research and Clinical Practice* 2025, 222: 112113.

[**Aims**: To compare an algorithm for identifying individuals with diabetes using linked administrative health data with an Australian diabetes registry (National Diabetes Services Scheme, NDSS).]

Glucose monitoring and control

Blood glucose-lowering therapies – Non-insulin options for type 2 diabetes

Colagiuri S, Ceriello A. *Diabetes Research and Clinical Practice* 2025, 222: 112147.

[**Early and intensive glycaemic control**: Evidence strongly suggests that good glycaemic control is the key to decreasing the risk of both micro- and macrovascular complications in type 2 diabetes mellitus (T2DM) [1]. Furthermore, early and intensive glycaemic control has a legacy effect in decreasing the risk of developing complications even after 24 years, compared to non-intensive glycaemic control [2]. This legacy effect underscores the long-term benefits of early and intensive glycaemic control in reducing cardiovascular and kidney disease events and all-cause mortality. Globally, poor glycaemic control in people with T2DM is common, being observed in 45–93 % of individuals, with considerable inter- and within-country variations [3]. Consequently, improving glycaemic control remains an unmet need and a key diabetes care priority. In addition, intensive multifactorial risk factor management (blood glucose, blood pressure, lipids) reduces microvascular complications and long-term cardio-renal events and mortality [4 5].]

Characterisation of transfusion-dependent prediabetes using continuous glucose monitoring: The Haemoglycare study

Zanfardino A, Ozen G, Ippolito G, et al. *Diabetes Research and Clinical Practice* 2025, 222: 112076.

[**Aims**: Continuous Glucose Monitoring (CGM) may help detect early dysglycemia in Transfusion-Dependent Thalassemia (TDT) patients, though previous reports suggest it may overestimate prediabetes prevalence. This study analyzed glucose-related metrics in TDT patients with negative diabetes screening tests, compared with healthy controls. A secondary objective was to assess the association between TAR140 > 6 % and clinical/laboratory characteristics of patients.]

Combined effects of time-restricted eating and exercise on short-term blood glucose management in individuals with Type 2 Diabetes Mellitus: The TREx study, a randomised controlled trial

Bravo-Garcia A.P., Radford B.E., Hall R.C., et al. *Diabetes Research and Clinical Practice* 2025, 222: 112081.

[**Aims**: Time-restricted eating (TRE) is a chrono-nutrition strategy where the daily ‘eating window’ is reduced to 8–10 h. We investigated the acute (14-h) effects of TRE, with and without post-meal exercise, on blood glucose and insulin concentrations in people with type 2 diabetes mellitus.]

Continuous glucose monitoring with low-glucose alerts in insulin-treated drivers with diabetes: A randomized crossover study

Maeda R, Onoue T, Mizutani K, et al. *Diabetes Research and Clinical Practice* 2025, 222: 112074.

[**Aims**: This study aimed to evaluate the effectiveness of continuous glucose monitoring (CGM) with low-glucose alerts for preventing hypoglycemia in insulin-treated drivers with diabetes.]

Glycaemic control assessment and targets in type 2 diabetes

Colagiuri S, Ceriello A. *Diabetes Research and Clinical Practice* 2025, 222: 112146.

[**Background**: Glycaemic control is a treatment pillar for reducing the risk of both micro- and macrovascular complications in type 2 diabetes mellitus (T2DM) [1], and early and intensive glycaemic control has a legacy effect in reducing cardiovascular and kidney disease events and all-cause mortality even after 24 years [2]. Assessing and monitoring glycaemia are essential components of guiding treatment decisions to achieve and maintain target glycaemic control.]

Glycemic and non-glycemic benefits of initial triple therapy versus sequential add-on therapy in patients with new-onset diabetes: results from the EDICT study

Abdul-Ghani M, Puckett C, Abdelgani S, et al. *BMJ Open Diabetes Research and Care* 2025;13: e004981

[**Introduction**: To compare carotid intima–media thickness (cIMT) and liver fat content in subjects who maintained good glycemic control for 6 years on initial triple therapy with metformin/exenatide/pioglitazone versus sequential add-on therapy with metformin followed with glipizide and basal insulin in subjects with new-onset diabetes.]

Freely available online

Implications of the use of 1-hour post-load plasma glucose value during an oral glucose tolerance test (OGTT) for the diagnosis of dysglycemia among a cohort of high-risk Thai people

Thewjitcharoen Y, Chatchomchuan W, Wanothayaroj E, et al. *Diabetes Research and Clinical Practice* 2025, 222: 112056.

[Implications of the use of 1-hour post-load plasma glucose value during an oral glucose tolerance test (OGTT) for the diagnosis of dysglycemia among a cohort of high-risk Thai people.

Aims: The recent International Diabetes Federation (IDF) statement recommended using the 1-hour plasma glucose (1-h PG) during oral glucose tolerance test (OGTT) for diagnosing dysglycemia. This study aimed to examine the prevalence of dysglycemia among high-risk Thai people.]

Perspectives on Stringent Glycemic Control and Weight Loss Among Patients with Type 2 Diabetes in China: A Survey Study

Zhang J, Li A, Quan J, et al. *Diabetes Therapy* 2025, 16(4): 591-612.

[**Introduction**: Although current guidelines for type 2 diabetes (T2D) underscored the importance of attaining glycemic control and weight management goals, the patient perspectives on achieving these goals remained unclear in China. This study aimed to

understand Chinese patients' perspectives on stringent glycemic control (hemoglobin A1c [HbA1c] ≤ 6.5%) and weight loss (≥ 10%) and their treatment preferences.]

Freely available online

Practical Approaches to Continuous Glucose Monitoring in Primary Care: A UK-Based Consensus Opinion

Fernando K, Alabraba V, Welsh J.B., et al. *Diabetes Therapy* 2025, 16(4): 749-762.

[**Introduction**: Type 2 diabetes (T2D) imposes significant personal challenges and societal costs. Continuous glucose monitoring (CGM) is recognised as a state-of-the-art tool, but remains underutilised. Adoption of CGM in primary care should be informed by a broader understanding of the technology's capabilities and limitations.]

Freely available online

Using continuous glucose monitoring to prescribe an exercise time: a randomised controlled trial in adults with type 2 diabetes

Chang C.R., Roach L.A., Russell B.M., et al. *Diabetes Research and Clinical Practice* 2025, 222: 112072.

[**Purpose:** Growing evidence suggests the exercise timing, time-of-day it is performed, is important for maximizing glycemic benefits in type 2 diabetes (T2D). This randomized controlled trial investigated the impact of utilizing continuous glucose monitoring to personalise exercise timing on peak hyperglycaemia and cardiometabolic health in people with T2D.]

When glucose time in range is not tight, is it lax? Considering new terminology for CGM targets

Wang R, Kyi M, O'Neal D, et al. *Lancet Diabetes & Endocrinology*, 2025, 13(4), pp.270-272.

[Since the landmark Diabetes Control and Complications trial (DCCT) [1] showed that intensifying glucose management reduces microvascular complications, endeavours to optimise glycaemia have been at the forefront of improving diabetes care. Historically, HbA 1c has been the benchmark used to assess chronic complication risk. However, HbA 1c is an indirect measure of glycaemic exposure and subject to confounding factors. Over the past decade, continuous glucose monitoring (CGM) devices have enabled greater granularity in assessing glycaemia, and their use is now widespread. By consensus, CGM glucose concentrations have been defined as in range when at 3·9–10·0 mmol/L, below range when at less than 3·9 mmol/L, and above range when at more than 10·0 mmol/L. [2]]

Hyperglycaemia

Detection of diabetes and intermediate hyperglycaemia, and prevention of type 2 diabetes

Colagiuri S, Ceriello A. *Diabetes Research and Clinical Practice* 2025, 222: 112145.

[**Background**: In 2024, an estimated 589 million adults aged 20 to 79 were living with diabetes, giving a prevalence of 11.1 %. Almost one-in-two (42.8 %; 251.7million) adults with diabetes were undiagnosed, with considerable regional differences [1]. In addition, the global prevalence of impaired glucose tolerance (IGT) was 12.0 % and that of impaired fasting glucose (IFG) was 9.2 % [1]. Individuals with undiagnosed type 2 diabetes mellitus (T2DM) and intermediate hyperglycaemia (IH) are at increased risk of adverse outcomes and premature mortality. Type 2 diabetes is a silent, progressive disease with chronic

hyperglycaemia often preceded by IH. Earlier detection of T2DM provides an opportunity to intervene with evidence-based care and studies over the last three decades confirm that progression from IH to T2DM can be prevented or delayed. Tests used for the early detection of diabetes and IH include fasting plasma glucose (FPG), 2 h PG during a 75 g oral glucose tolerance test (OGTT), or glycated haemoglobin (HbA1c). Programmes for the detection of undiagnosed T2DM and the prevention of progression to T2DM in high-risk individuals are well-accepted strategies to reduce the burden of diabetes.]

Evaluation of the Regulatory Effect of the Pan-PPAR Agonist Chiglitazar on the Dawn Phenomenon

Li W, Wang Y, Liu C, et al. *Diabetes Therapy* 2025, 16(4): 731-748.

[**Introduction**: The dawn phenomenon (DP), characterized by early morning hyperglycemia, poses a significant challenge in diabetes management and is associated with increased glycemic variability and long-term complications. Despite its clinical impact, effective therapeutic strategies remain limited. Chiglitazar, a novel pan-PPAR agonist, has demonstrated benefits in improving lipid metabolism and insulin sensitivity, but its potential role in mitigating DP remains unexplored. This study evaluates the regulatory effect of chiglitazar on DP and investigates its possible mechanisms beyond lipid modulation.]

Freely available online

In-Hospital Management of Hyperglycemia: The Role of Insulin Degludec

Wangnoo S.K., Baruah M.P., Lodha S, et al. *Diabetes Therapy* 2025, 16(4): 547-568.

[**Introduction**: Hyperglycemia is a common and challenging condition in hospitalized patients both with and without a history of diabetes. Managing hyperglycemia effectively is critical in reducing complications, mortality, and the length of hospital stays. Insulin degludec (IDeg), an ultralong-acting basal insulin, has a well-established efficacy and safety profile in terms of managing hyperglycemia in outpatients; it has demonstrated benefits in clinical practice across various patient populations. This review aims to assess the evidence on its clinical suitability, as well as efficacy and safety, for managing hyperglycemia across different inpatient populations. The review specifically focuses on outcomes such as glycemic control, glycemic variability, safety (particularly hypoglycemia risk), dosing flexibility, ease of titration, and use in special populations.]

Freely available online

The influence of diabetes and hyperglycemia on short and long-term mortality after the first-ever known COVID-19 infection

Soto B.A., Varella A.C., Cavalcante M.R.N., et al. *Diabetes Research and Clinical Practice* 2025, 222: 112100.

[**Aims**: To evaluate previous diabetes and hyperglycemia in post-COVID-19 mortality.]

The prognostic value of the stress hyperglycemia ratio for all-cause mortality in stroke patients with diabetes or prediabetes

Jin M, Bao Z, Hong X, et al. *Journal of Diabetes and Its Complications*, 2025, 39(4), Article 108979.

[**Background:** The stress hyperglycemia ratio (SHR), originally proposed in 2015 by Robert et al., is more significantly relevant and predictive of critical illness than absolute hyperglycemia. Several studies have validated the association between stress hyperglycemia ratio and

cerebrovascular disease. However, the value of stress hyperglycemia ratio for severe stroke patients admitted to the ICU remains uncertain. The aim of this study was to investigate the relationship between stress hyperglycemia ratio and clinical short- and long-term prognosis of critically ill patients with acute ischemic stroke (AIS).]

Reduced glomerular filtration rate in individuals with intermediate hyperglycemia and type 2 diabetes as defined by 1-hour post-load glucose levels according to the newly released IDF criteria

Fiorentino T.V., De Vito F, Natale R.M., et al. *Diabetes Research and Clinical Practice* 2025, 222: 112075.

[**Aims**: Recently, the International Diabetes Federation (IDF) has recommended determination of 1 h-post-load glucose (PG) to diagnose intermediate hyperglycemia (IH) and type 2 diabetes (T2DM). Herein, we investigate the implication of IDF recommendation in identifying subjects with chronic kidney disease (CKD).]

Insulin therapies

Blood glucose-lowering therapies – Insulin options for type 2 diabetes

Colagiuri S, Ceriello A. *Diabetes Research and Clinical Practice* 2025, 222: 112148.

[**Background**: Insulin therapy is an often-used therapeutic option in people with type 2 diabetes mellitus (T2DM) when glycaemic control is not achieved with non-insulin blood glucose-lowering therapies. The decision to use insulin therapy should not only consider glycaemic control but also take into account the individual's views on insulin safety, cultural values and beliefs, social influences, religious considerations, health literacy, and language barriers. The diverse landscape of insulin types allows for customisation to address specific requirements of the individual. Advances in the manufacture and design of commercial insulin have guaranteed supplies and led to insulins with different pharmacokinetics as well as the potential for more flexible and personalised treatment regimens. The emergence of biosimilar insulins provides an opportunity to decrease cost and increase global insulin access. The development of fixed-dose combinations (FDCs) of basal insulin and glucagon-like peptide-1 (GLP-1) receptor agonists adds to the range of insulin-related treatments.]

Impact of automated insulin delivery (AID) systems on quality of life (QoL): Validation of the AID-QoL questionnaire

Papa G, Cannarella R, Finocchiaro C, et al. *Journal of Diabetes and Its Complications*, 2025, 39(4), Article 108984.

[**Background and aim:** Evidence supports the efficacy of automated insulin delivery (AID) systems in improving glycometabolic outcomes. However, limited data are available on their impact on quality of life (QoL). This study aimed to develop and validate a questionnaire to assess QoL in subjects with type 1 diabetes mellitus (T1DM) using AID system (AID-QoL).]

Once-Weekly Insulin Icodec Versus Once-Daily Insulin Degludec in Insulin-Naive Chinese Participants with Type 2 Diabetes: A Post Hoc Analysis of ONWARDS 3

Li Y, Kar S, Li C, et al. *Diabetes Therapy* 2025, 16(4): 685-699.

[**Introduction**: This post hoc analysis evaluated subgroup data from China (Chinese mainland, n = 100; Taiwan, n = 45) in ONWARDS 3, a 26-week, randomized, double-blind, double-dummy, treat-to-target, phase 3a trial comparing the efficacy and safety of once-weekly insulin

icodec (icodec) versus once-daily insulin degludec (degludec) in insulin-naive participants with type 2 diabetes (T2D).]

Freely available online

Time to Initiation of Omnipod DASH® vs. Tubed Insulin Pump Therapy: A Time-and-Motion Study

Gordon C.A., Graf M, Hopley C.D., et al. *Diabetes Therapy* 2025, 16(4): 629-644.

[**Introduction**: There is currently a limited understanding of the process of initiating standard insulin pump therapy (IPT) and how this differs with pump type. A time-and-motion study was conducted in Germany and the United Kingdom (UK) to evaluate the time required for initiation with a tubeless insulin pump (a pod) versus other tubed pumps.]

Freely available online

Transitioning between automated insulin delivery systems: A focus on personalisation

Beato-Víbora P.I., Chico A, Moreno-Fernandez J, et al. *Diabetes Research and Clinical Practice* 2025, 222: 112070.

[**Background**: Automated insulin delivery (AID) systems are the most effective treatment for type 1 diabetes (T1D). When targets are not achieved, transitioning between AID systems is an option. The aim was to assess the impact of switching between systems on glucose control and user satisfaction.]

Management of diabetes (diet, exercise, lifestyle)

Dietary Quality Analysis Methods for the Type 2 Diabetes Mellitus Population: A Scoping Review.

Santana C.A., Dias-Santos J, Santana-Silva C, et al. *Journal of Human Nutrition and Dietetics* 2025;38(2):e70050.

[**Background**: High diet quality is associated with improved glycemic control in type 2 diabetes mellitus (T2DM) patients. Thus, mapping the dietary analysis methods that lead to the assessment of diet quality is essential for promoting glycemic control in individuals with T2DM. Therefore, this scoping review aimed to map and synthesize the available evidence on the use of dietary analysis methods to assess diet quality in individuals with T2DM.]

Available with an NHS OpenAthens password for eligible users

Do household ties matter for diabetes awareness and self-care behaviors? Insights from the Hispanic community health study/study of latinos

Flórez K.R., Whalen A.M., Estrella M.L., et al. *Diabetes Research and Clinical Practice* 2025, 222: 112053.

[**Objective**: Examine the association of household ties with diabetes awareness and self-care behaviors among Hispanic/Latinos.]

Influence of perceived health provider communication, diabetes duration and age at diagnosis with confidence in diabetes self-care

Ortz C.L., Duncan M.S., Leshi O, et al. *BMJ Open Diabetes Research and Care* 2025;13: e004645

[**Introduction**: Several factors influence individuals' confidence to perform diabetes-related self-care activities, including perceived patient-provider communication, diabetes duration and age at diagnosis. It has been well-documented that patient-provider communication is essential when managing chronic diseases such as diabetes; however, the impact of this communication with diabetes duration and age at diabetes diagnosis on confidence in performing self-care behaviors is obscure.]

Freely available online

A scoping review exploring research investigating the influence of carbohydrate counting on eating behaviour and/or disordered eating in type 1 diabetes

Rigby K.R., Iturbe I, Candler T, et al. *Diabetes Research and Clinical Practice* 2025, 222: 112068.

[**Aims**: To evaluate evidence describing a potential association between carbohydrate counting (CC) in type 1 diabetes and eating behaviours and/or disordered eating behaviour (DEB).]

Weight control in type 2 diabetes management

Colagiuri S, Ceriello A. *Diabetes Research and Clinical Practice* 2025, 222: 112149.

[There is a close relationship between diabetes and obesity. Obesity is estimated to be responsible for around 218 million cases of type 2 diabetes mellitus (T2DM) and is associated with a seven-fold increased risk of developing T2DM compared with a healthy weight. Globally, obesity is responsible for around 43 % of T2DM cases. However, this relationship varies across countries. In the US and UK, obesity contributes to an estimated 80–90 % of T2DM while in many Asian countries people develop T2DM at a lower body weight, with one study showing that 63 % of people with T2DM in India had an ideal body weight at diagnosis. The increasing rates of childhood obesity are a major factor in the increase of childhood T2DM [1].]

Mental health and diabetes

Diabetes and suicide: a nationwide longitudinal cohort study among the Japanese working-age population.

Komura Y, Inoue K, Ishimura N, et al. *Journal of Epidemiology & Community Health* 2025;79(5):340-346.

[**Background**: Although the mental health burden of diabetes has received substantial attention, there is limited evidence on whether the risk of suicide—a severe consequence of mental health problems—increases among individuals with diabetes. Therefore, this study investigated the association between diabetes and suicide in Japan.]

Glucagon-Like Peptide-1 receptor agonists, dual GIP/GLP-1 receptor agonist tirzepatide and suicidal ideation and behavior: A systematic review of clinical studies and pharmacovigilance reports

Di Stefano R, Rindi L.V., Baldini V, et al. *Diabetes & Metabolic Syndrome: Clinical Research & Reviews* 2025;19(4): 103238.

[**Aims**: Suicide is a global public health concern, accounting for nearly 700,000 deaths annually. Although well-established risk factors, including mental health disorders, are widely recognized, emerging concerns have surfaced regarding a potential association between glucagon-like peptide-1 receptor agonists (GLP-1 RAs), the dual Gastric Inhibitory Polypeptide (GIP)/GLP-1 Receptor Agonist tirzepatide and suicidal behavior. This systematic review aims

to synthesize the available evidence on the potential association between these drugs and suicidal behavior.]

Pharmacological management of diabetes

The antitumor effects of metformin are potentially mediated through LPA receptor inhibition

Sato K, Ogasawara H, Ikeda Y, et al. *Diabetes Research and Clinical Practice* 2025, 222: 112094.

[**Aims**: Although metformin has antitumor effects, the detailed mechanism of action, particularly with respect to the cellular responses mediated through G protein-coupled receptors (GPCRs), remains unclear.]

Comparison of efficacy and safety of pioglitazone and SGLT2 inhibitors in treating Asian patients in MASLD associated with type 2 diabetes: A meta-analysis

Liu L, Deng Y, Yang L, et al. *Journal of Diabetes and Its Complications*, 2025, 39(4), Article 108998.

[**Objective:** To comprehensively evaluate the therapeutic efficacy of pioglitazone and SGLT2 inhibitors (SGLT2i) in patients with MASLD and Type 2 Diabetes(T2DM).]

Correction to Lancet Diabetes Endocrinol 2024; 12: 523–34

Lancet Diabetes & Endocrinology, 2025, 13(4), e.7.

[*Eckard AR, Wu Q, Sattar A, et al. Once-weekly semaglutide in people with HIV-associated lipohypertrophy: a randomised, double-blind, placebo-controlled phase 2b single-centre clinical trial.* Lancet Diabetes Endocrinol *2024;* ***12:*** *523–34*]

Dapagliflozin approved by FDA for treatment of type 2 diabetes in children.
BMJ Best Practice; 2025.
https://bestpractice.bmj.com/topics/en-gb/786
[Type 2 diabetes in children usually presents after the onset of puberty, at a mean age of 14 years, with obesity being the primary cause. Often asymptomatic and diagnosed by screening in a high-risk individual (e.g., family history, obesity, acanthosis nigricans) or incidentally (e.g., glycosuria found during a school or sports examination). The development of insulin resistance and glucose intolerance can be prevented or delayed by lifestyle modifications that correct obesity in children. Goals of treatment are to promote weight loss and exercise capacity, normalise glycaemia and haemoglobin A1c (goal is <48 mmol/mol [<6.5%], and prevent long-term complications and comorbidities (e.g., retinopathy, hypertension, and dyslipidaemia). Initial treatment includes lifestyle modifications, metformin, and insulin. Glucagon-like peptide-1 (GLP-1) receptor agonists and sodium-glucose cotransporter-2 (SGLT2) inhibitors are approved in some countries as an additional non-insulin treatment option for children aged ≥10 years.]

Development and validation of an individual weight-loss model for patients with diabetes treated with metformin

Han Y, Zhang J, Wang W, et al. *Diabetes Research and Clinical Practice* 2025, 222: 112073.

[**Aims**: To develop a machine learning model for predicting weight loss response to metformin in Chinese patients with type 2 diabetes.]

Drug adherence, glycemic control, and weight reduction with subcutaneous semaglutide in real-world management of type 2 diabetes

Cohen C.M., Mosenzon O, Aharonovich A, et al. *Diabetes Research and Clinical Practice* 2025, 222: 112086.

[**Background**: We describe changes in HbA1c and body-weight and the relationship between drug adherence and clinical response in a large real-world cohort of patients with type 2 diabetes (T2D) treated with subcutaneous semaglutide for up to three years.]

GLP-1 RA and dual GIP/GLP-1 RA treatment in MODY: a descriptive case series

Mehdi A.Z., Deng L, Chase C.L., et al. *BMJ Open Diabetes Research and Care* 2025;13: e004885

[**Introduction**: Glucagon-like peptide-1 receptor agonists (GLP-1 RA) and dual glucose insulinotropic polypeptide (GIP)/GLP-1 RA are widely prescribed, but their effectiveness in different subtypes of maturity-onset diabetes of the young (MODY) is unknown.]

Freely available online

Influence of gut bile acid composition on the glucose-lowering effect and safety of metformin.

Yoon D.Y., Kim J, Cho J.Y, et al. *British Journal of Clinical Pharmacology* 2025;91(4):1208-1215.

[**Aims**: This study evaluates how changes in intestinal bile acid composition, induced by cholestyramine, a bile acid sequestrant, affect metformin's pharmacodynamics (PD).]

Insulin Sensitivity and Beta-Cell Function Following Tirzepatide in Japanese Patients with Type 2 Diabetes: A SURPASS J-mono Analysis

Hamamoto Y, Oura T, Hirase T. *Diabetes Therapy* 2025, 16(4): 717-729.

[**Introduction**: The objective of this work was to assess the association of tirzepatide with changes in insulin sensitivity and beta-cell function in Japanese patients with type 2 diabetes (T2D).]

Freely available online

The Long-Term Cost-Effectiveness of Oral Semaglutide Versus Lower-Cost Liraglutide in the UK

Elnaggar M, Mansinho J.N., Malkin S.J.P., et al. *Diabetes Therapy* 2025, 16(4): 613-628.

[**Introduction**: Glucagon-like peptide-1 (GLP-1) receptor agonists represent efficacious therapies for treating type 2 diabetes. Oral semaglutide is the only orally administered GLP-1 receptor agonist currently available and has been associated with reductions in glycated hemoglobin and body weight versus once-daily injectable liraglutide after 52 weeks in the PIONEER 4 clinical trial. As lower-cost liraglutide formulations have recently been developed, the present analysis evaluated the long-term cost-effectiveness of oral semaglutide 14 mg versus liraglutide 1.8 mg at lower acquisition costs in the UK.]

Freely available online

A Multicenter, Retrospective Study to Evaluate the Effectiveness and Safety of Imeglimin in Patients with Type 2 Diabetes Mellitus in a Real-World Clinical Setting (INDI-TIMES Study)

Shaikh S, Sharma S.K., Phatak S, et al. *Diabetes Therapy* 2025, 16(4): 645-661.

[**Introduction**: Imeglimin is a novel oral antidiabetic drug that was approved for use in India in October 2022. Thus far, no large-scale studies on the effectiveness and safety of imeglimin for the treatment of type-2 diabetes mellitus (T2DM) have been conducted in the Indian population. The objective of this study was to evaluate the effectiveness and safety of imeglimin in Indian patients with T2DM in a real-world setting.]

Freely available online

O-SEMA-FAST: A Prospective, Non-interventional Study Investigating Oral Semaglutide Use in Adults with Type 2 Diabetes Mellitus During Ramadan

Hassanein M, Alawadi F, AlKadhim I, et al. *Diabetes Therapy* 2025, 16(4): 663-684.

[**Introduction**: Oral semaglutide, a glucagon-like peptide 1 receptor agonist, requires administration on an empty stomach with up to 120 mL of water, followed by no intake of food, beverages, or other oral medications for at least 30 min to ensure optimal absorption. These instructions can be challenging to adhere to during Ramadan when patients fast for extended periods. The O-SEMA-FAST study assessed the impact of fasting on adherence to oral semaglutide dosing instructions and its subsequent effects on glycaemic control and body weight.]

Freely available online

Sodium–glucose co-transporter inhibitors—who would have guessed?

Norhammar A, Ritsinger V. *Lancet Diabetes & Endocrinology*, 2025, 13(4), pp.268-270.

[“Prediction is very difficult, especially about the future”; whether it is the Nobel laureate Niels Bohr or others who have spoken on this matter, this is definitely true and a demanding reality in medical research. [1] For the pharmaceutical industry, predicting the effectiveness of drugs is a major concern, and finding a blockbuster drug is challenging but highly warranted. Few people had predicted the broad effects of the sodium–glucose co-transporter (SGLT) inhibitor class when initially developing a diabetes drug that increased glucose excretion in urine. In the early phases of developement, SGLT inhibitors received little interest and attention even among diabetologists, as increased glucose in urine was considered to give unpleasant side-effects. Fortunately, several pharmaceutical companies developed and investigated their SGLT inhibitor compounds, including cardiovascular safety profiles. Today, the well known era of the SGLT inhibitor class, with extension of their diabetes indication to the prevention and treatment of heart failure and kidney disease even in patients without diabetes, is remarkable.]

Tirzepatide for Older Adults with Type 2 Diabetes and Without Obesity: A Post Hoc Analysis of the SURPASS Clinical Trials

Rasouli N, Wilding J.P.H., Kwan A.Y.M., et al. *Diabetes Therapy* 2025, 16(4): 701-715.

[**Introduction**: Tirzepatide, a once-weekly glucose-dependent insulinotropic polypeptide/glucagon-like peptide-1 receptor agonist approved in the US for treating type 2 diabetes (T2D) and obesity, has demonstrated significant improvements in glycated hemoglobin A1c (HbA1c) and clinically meaningful weight loss in the SURPASS-1 to -5 clinical trials. This post hoc analysis examined the safety and efficacy results for tirzepatide in older participants with T2D who do not have obesity.]

Prevention of diabetes (diet, exercise, lifestyle)

Implementing a Low-Calorie diet to Enhance weight loss in the diabetes Prevention Program during a humanitarian Crisis: A pilot pragmatic randomized trial in Venezuela

González-Rivas J.P., Infante-García M.M., Mechanick J.I., et al. *Diabetes Research and Clinical Practice* 2025, 222: 112051.

[**Background**: Preventing type 2 diabetes during humanitarian crises is under-researched. In Venezuela, a third of adults have prediabetes amid a prolonged crisis.

Aim: This study assessed the effectiveness of an intensive weight reduction strategy aimed at achieving a 7% weight loss in Venezuelan individuals with elevated risk of type 2 diabetes.]
