

Diabetes

Current Awareness Bulletin

July 2026

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30 minutes. Learn about the communication barriers patients may encounter, and ways to ensure they get the most from their care.
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Book a session today at <https://forms.office.com/e/HyiSXfDaYV> (these sessions will be held on a monthly basis)

General

Artificial intelligence for interpreting diabetes data using clinician-curated benchmarks

Klonoff D.C., Healey E., Mandl K.D., et al. *Lancet Diabetes & Endocrinology*, 2026, 14(5), p.375.

[With the increased use of wearable devices for self-monitoring, data sources and inputs could grow exponentially. In both adults and children with diabetes, there is a need to interpret time series data from continuous glucose monitors (CGM) to make timely and safe insulin dose adjustments. Data interpretation from wearable devices is also a key element of diabetes education. ¹ Increasingly, artificial intelligence (AI) is seen as providing value in reducing the burden of data interpretation and to provide more informed predictions about dysglycaemia progression. ² However, for an AI tool to assist in data interpretation in a way that is useful for clinical care, it is essential to understand how experienced clinicians interpret the data themselves.]

Can artificial intelligence bridge the gaps for primary diabetes care in low-income and middle-income countries?

Guan Z., Li H., Hernández-Jiménez S., et al. *Lancet Diabetes & Endocrinology*, 2026, 14(5), pp.412-421.

[Artificial intelligence (AI) has the potential to improve primary diabetes care in low-income and middle-income countries (LMICs), where the rising burden of disease contrasts sharply with limited health-care resources. Emerging evidence shows the promise of AI for screening, risk prediction, monitoring, and personalised management of diabetes and its complications. However, substantial barriers remain, including infrastructure deficits, data fragmentation, equity and inclusivity challenges, limited prospective validation, and concerns about the acceptability, sustainability, and regulatory oversight of AI. The effective integration of AI into primary diabetes care will depend on coordinated investment in foundational infrastructure that includes large-scale development and rigorous validation of novel AI models for use by primary care physicians and patients across diverse populations. AI initiatives are also needed to support interdisciplinary and international collaborations spanning clinical, technical,

and policy domains to ensure successful implementation. By aligning technological innovation with health care needs, AI could evolve from a proof-of-concept tool to a practical enabler of equitable, scalable, and cost-effective diabetes care in LMICs. In this Personal View, we outline the major opportunities and challenges of applying AI to primary diabetes care in LMICs, and propose directions for future development and implementation.]

Development of a therapeutic patient education curriculum for healthcare professionals to improve diabetes care in the Eastern Mediterranean region

Correia J.C., El Khoury C.F., El Berri H., et al. *Diabetes & Metabolic Syndrome: Clinical Research & Reviews* 2026;20(5): 103431.

[**Aims:** Diabetes prevalence in the Eastern Mediterranean Region (EMR) is among the highest globally, yet structured therapeutic patient education (TPE) is inconsistently implemented. This study aimed to describe the multi-phase development, structure, and implementation planning of a WHO-led, diabetes-specific TPE curriculum tailored to the EMR.]

The oral–gut microbiome axis in diabetes mellitus: a systematic review and emerging clinical perspectives

Nee G.W., Agrawal K., Dalan R., et al. *Diabetes Research and Clinical Practice* 2026, 235: 113232.

[Emerging evidence suggests that diabetes mellitus (DM) is not only a metabolic disorder but also a mucosal disease shaped by microbial interactions across body niches. This review synthesizes current evidence on the oral–gut microbiome axis in DM, focusing on microbial transmission, functional overlap, and clinical relevance. A systematic search of six databases identified studies profiling paired oral and gut microbiomes in individuals with diabetes. Across included studies, consistent findings demonstrate concurrent dysbiosis in both niches. Notably, oral-associated taxa such as *Streptococcus*, *Prevotella*, *Fusobacterium*, and *Porphyromonas* were detected in the gut, suggesting ectopic colonization and inter-niche microbial transmission. Functional analyses revealed shared disruptions in key metabolic pathways, including short-chain fatty acid production and glycine betaine metabolism, with downstream effects on inflammation and insulin resistance. These microbial alterations correlated with established clinical markers such as HbA1c, fasting glucose, and inflammatory indices. Emerging machine-learning models integrating oral and gut microbiota demonstrated promising diagnostic performance (AUC > 0.83). Collectively, these findings support a potential bidirectional oral–gut axis associated with metabolic dysregulation in DM. Despite limitations including cross-sectional design and heterogeneity, this axis represents a novel target for biomarker development and therapeutic intervention. Future longitudinal and interventional studies are required to determine causal relationships and clinical utility.]

Progression of multiple long-term conditions (multimorbidity) in England: a population-based descriptive study of 49.6 million adults.

Slade E., Turner E.B., Pratt A., et al. *The Lancet Public Health* 2026;11(5): e280-e292.

[**Background:** Incidence of multiple long-term conditions (MLTCs), or multimorbidity, is inconsistently defined and infrequently reported at whole-population level. We aimed to measure the MLTC incidence and progression rates, examining the interaction between ethnicity and socioeconomic deprivation, using routinely collected health-care data covering the adult population of England, UK.]

Sarcopenia increases the odds of frailty in older hospitalized diabetic patients

Ao P., Yuan W., Ma Y., et al. *Journal of Diabetes and Its Complications*, 2026, 40(5), Article 109307.

[**Objective:** To determine whether frailty likelihood in diabetes patients is elevated by sarcopenia and to evaluate how its constituent elements, differentially modify this association.]

Secondary causes of diabetes: a crossroad of endocrinology and oncology

Hee N.K.Y., Lim Q.H., Khunti K., et al. *Lancet Diabetes & Endocrinology*, 2026, 14(5), pp.422-436.

[Cancer and diabetes share a bidirectional relationship, with cancer increasingly recognised as an associated factor of diabetes, both from the disease itself and its treatments. In this Review, we aim to: (1) summarise the distinct mechanisms of dysglycaemia arising from cancer and neuroendocrine tumour treatments, including targeted therapies such as PI3K–AKT–mTOR inhibitors, antibody–drug conjugates, immune checkpoint inhibitors, corticosteroids, and somatostatin receptor ligands; (2) examine the often overlooked aspect of the secondary cause of diabetes as an early manifestation of cancer; and (3) highlight research gaps and encourage a collaborative care approach to manage the rising rate of dysglycaemia as a result of cancer and its evolving treatments. To address the first two objectives, we incorporate relevant case vignettes to contextualise the discussions.]

Ten-Year Trends in Healthcare Use and Costs for People Living with Diabetes in France: Results from the Epicodiab Study Based on National Claims Data

Joubert M., Serusclat P., Casarotto E., et al. *Diabetes Therapy* 2026, 17(5): 735–752.

[**Introduction:** Diabetes remains a global public health concern, with increased prevalence and a significant economic burden. Yet, most studies do not differentiate between type 1 (T1D) and type 2 diabetes (T2D), despite distinct clinical trajectories and care needs. This study aimed to provide up-to-date data on healthcare use and diabetes care-related costs in France from 2011 to 2019 by type of diabetes.]

Trends in respiratory mortality among older U.S. adults with diabetes, 1999–2023

Wang Y and Guo N. *Diabetes Research and Clinical Practice* 2026, 235: 113215.

[**Aims:** To evaluate trends in respiratory-related deaths among U.S. adults aged ≥ 65 years with diabetes mellitus listed as a contributing cause of death.]

World Autism Awareness Day: autism and metabolic health

The Lancet Diabetes & Endocrinology. *Lancet Diabetes & Endocrinology*, 2026, 14(5), p.363.

[On April 2, World Autism Awareness Day aims to highlight the dignity and inherent worth of autistic people under the theme Autism and Humanity—Every Life Has Value. Now in its 18th year, the day seeks to recognise how all brains are wired differently and celebrates their unique strengths. Active participation in policy discussions in areas such as health, education, and economics is essential to address inequalities and strengthen communities. Yet, substantial gaps remain, particularly within health and clinical care. Autism spectrum disorder (ASD) is characterised by differences in social interactions and communication, alongside restricted, repetitive, and inflexible patterns of behaviour, interests, or activities. The autism spectrum is broad and heterogeneous, including people who have learning disabilities and are non-speaking, who require comprehensive support, to those who are fully independent. Autism is associated with a range of physical health outcomes, including emerging links with metabolic health. Autistic children have a 58% greater risk of developing obesity compared with their peers, especially between the ages of 2 to 5 years and 12 to 17 years. This trend continues into adulthood. Autism has also been linked with higher rates of both type 1 and type 2 diabetes. However, causality remains unclear and underlying mechanisms are largely unexplored, underscoring the need for further research.]

Children with diabetes

Co-design of an animated resource to understand inequities in access to diabetes technologies among children and young people with type 1 diabetes from ethnic minority groups and/or low socioeconomic areas

Tonga E., Evans M., Oliver N., et al. *Diabetes & Metabolic Syndrome: Clinical Research & Reviews* 2026;20(5): 103432.

[**Aims:** This study aimed to explore barriers to diabetes technology access and co-create an educational animation to address them.]

Differences in immune cell profiles around the time of islet autoimmunity seroconversion in children with and without type 1 diabetes

Hohsfield K.R., Carry P., Slack S., et al. *BMJ Open Diabetes Research and Care* 2026;14: e006015

[**Introduction:** Seroconversion (SV) marks islet autoimmunity (IA) onset and preclinical type 1 diabetes (T1D), yet the contributions beyond T and B lymphocytes remain unclear. We evaluated DNA methylation (DNAm)-derived immune cell ratios between T1D cases and controls around SV.]

Global differences in thyroid autoimmunity and hypothyroidism among children with type 1 diabetes: data from the SWEET database

Al-Abdulrazzaq D., Lazinger S., Raicevic M., et al. *Diabetes Research and Clinical Practice* 2026, 235: 113215.

[**Aims:** This study aims to report on the global differences in the prevalence of thyroid autoimmunity and hypothyroidism among children with T1D registered in the SWEET database and identifying the associated characteristics.]

HbA1c trajectories and risk of albuminuria in children and adolescents with type 1 diabetes followed into adulthood - a joint modeling approach of Danish nationwide register data

Rønn P.F., Svensson J., Wibaek R., et al. *Journal of Diabetes and Its Complications*, 2026, 40(5), Article 109317.

[**Aims:** We examined the association between HbA1c (current value and cumulative exposure) and albuminuria in individuals with childhood-onset type 1 diabetes (T1D).]

Islet autoantibody profiles at diagnosis of childhood type 1 Diabetes: Age-Dependent heterogeneity and clinical implications

Lehavi M., Margolis M.G., Yakobovich-Gavan M., et al. *Diabetes Research and Clinical Practice* 2026, 235: 113229.

[**Aims:** Type 1 diabetes (T1D) exhibits age-dependent autoimmune heterogeneity. We examined islet autoantibody (IA) profiles at the time of childhood diagnosis and their clinical significance.]

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

Cardiovascular Disease

Association of type 2 diabetes according to the number of cardiovascular risk factors within the recommended range with neuropathy – The Maastricht Study

Okoro C., Zhou T.L., Van der Kallen C.J.H., et al. *Diabetes Research and Clinical Practice* 2026, 235: 113212.

[**Aims:** Diabetic neuropathy is a frequent complication of type 2 diabetes, yet the relationship between cardiovascular risk factor control and neuropathy remains unclear. We investigated the association between the number of risk factors within guideline-recommended targets and neuropathy in type 2 diabetes.]

Beyond the heart: the urgent need for a dementia-forward diabetes agenda

Shao H., Li P., Kulshreshtha A. *Lancet Diabetes & Endocrinology*, 2026, 14(5), pp.364-365.

[The clinical practice of diabetes management has undergone a paradigm shift over the past two decades. GLP-1 receptor agonists and SGLT2 inhibitors have expanded the therapeutic focus beyond glycaemic control to meaningful cardiovascular protection. In parallel, major organisations such as the American Diabetes Association (ADA) have increasingly emphasised individualised targets, particularly for older adults and people with multimorbidity. Together, these advances have reshaped the mortality

landscape: earlier reviews and scientific statements estimated that roughly two-thirds to more than 70% of deaths among people with type 2 diabetes were attributable to cardiovascular causes; ^{1,2} by contrast, in this new analysis conducted by Dianna J Magliano and colleagues in *The Lancet Diabetes & Endocrinology*, ³ mortality due to cardiovascular disease declined in every assessed jurisdiction in the past decade and was no longer the universally dominant cause of death. Among people with diabetes, the average decline was between -8.3% (95% CI -10.7 to -5.9) and -25.4% (-28.0 to -22.8) per 5 years, and by the end of follow-up, cancer had become the leading cause of death among people with diabetes in four of 11 jurisdictions.]

Cardiovascular outcomes of GLP-1RA vs SGLT2i in MASLD and type 2 diabetes: real-world evidence

Yang C.C., Wu J.Y., Cheng Y.Y., et al. *Diabetes Research and Clinical Practice* 2026, 235: 113206.

[**Background:** Patients with metabolic dysfunction-associated steatotic liver disease (MASLD) and type 2 diabetes (T2D) are at high cardiovascular risk. Whether glucagon-like peptide-1 receptor agonists (GLP-1 RAs) provide cardiovascular protection comparable to sodium-glucose cotransporter-2 inhibitors (SGLT2is) remain uncertain.]

Cardiovascular-kidney-metabolic syndrome stages, stage transitions, and risk of cardiovascular disease and mortality: The Tehran Lipid and Glucose Study

Masrouri S., Ebrahimi N., Hasanpour A., et al. *Diabetes Research and Clinical Practice* 2026, 235: 113223.

[**Aims:** To evaluate the prevalence of cardiovascular-kidney-metabolic syndrome (CKM) and its association with cardiovascular disease (CVD) risk across CKM stages in a Middle Eastern population.]

Comparative effectiveness of sulfonylureas on kidney outcomes in adults with type 2 diabetes and moderate cardiovascular risk: a target trial emulation

Sklepinski S., Ratzki-Leewing A.A., Herrin J., et al. *BMJ Open Diabetes Research and Care* 2026;14: e005775

[**Introduction:** To assess the within-class variation in kidney outcomes following initiation of sulfonylurea therapy.]

Comparison of incidence patterns and risk profiles of ST-elevation and non-ST-elevation myocardial infarction in type 1 diabetes in Finland: a nationwide cohort study

Smidtslund P., Harjutsalo V., Thorn V., et al. *Lancet Diabetes & Endocrinology*, 2026, 14(5), pp.390-400.

[**Background:** The incidence and risk profiles of ST-elevation myocardial infarction (STEMI) and non-ST-elevation myocardial infarction (NSTEMI) are understudied in type 1 diabetes. We aimed to study the similarities and differences in the incidence and risk profiles of myocardial infarction subtypes in people with type 1 diabetes.]

Peri-coronary inflammation and coronary microcalcification activity in subjects with diabetes mellitus; a cross-sectional analysis

Smith B., Bellinge B., Francis R.J., et al. *Journal of Diabetes and Its Complications*, 2026, 40(5), Article 109316.

[**Introduction:** Coronary microcalcification activity (CMA) independently prognosticates cardiovascular disease risk. The relationship between dysfunctional peri-coronary adipose tissue (PCAT), a measure of local inflammation, and CMA has not been characterised in people with diabetes mellitus.]

Precision staging of Type 2 diabetes through Hypergraph-Based multimorbidity Profiling: From hepatic disruption to cardiovascular escalation

Cao X., Li X., Yu H., et al. *Diabetes Research and Clinical Practice* 2026, 235: 113166.

[**Background:** Multimorbidity in Type 2 Diabetes Mellitus (T2DM) profoundly influences disease progression and outcomes, yet conventional analytic approaches fail to capture its higher-order complexity.]

Revisiting the burden and patterns of myocardial infarction in type 1 diabetes

Avogaro A. and Fadini G.P. *Lancet Diabetes & Endocrinology*, 2026, 14(5), pp.365-367.

[Type 1 diabetes confers a cardiovascular burden that is often obscured by the young age of affected individuals and by the longstanding focus on microvascular rather than macrovascular complications. This misalignment has historically resulted in undertreatment of cardiovascular risk factors in people with type 1 diabetes, with cardiovascular consequences that remain evident today. In this context, the analysis by Patrik Smidtslund and colleagues¹ offers essential insights into the natural history of myocardial infarction in type 1 diabetes and challenges persistent assumptions about how coronary disease manifests in this population.]

Trends in cause-specific mortality among people with and without diabetes in high-income settings: a multinational, population-based study

Magliano D.J., Morton J.I., Chen L., et al. *Lancet Diabetes & Endocrinology*, 2026, 14(5), pp.380-389.

[**Background:** Cardiovascular disease has historically been the most common cause of death (COD) among people with and without diabetes. However, substantial progress has been made in the management of cardiovascular disease. We conducted a multinational analysis to establish whether this trend is still the case.]

Diabetic Neuropathy

Advances in the study of the glymphatic system and diabetes-related cognitive dysfunction

Xianrong X. and Xichang L. *Diabetes Research and Clinical Practice* 2026, 235: 113193.

[Diabetes-related cognitive dysfunction (DCI) is a common central nervous system complication of diabetes mellitus; however, its pathogenesis remains poorly understood despite its significant clinical impact. The glymphatic system (GS), a waste clearance pathway in the brain, has been implicated in various central nervous system disorders. This review aims to systematically elaborate on the central role of the glymphatic system in DCI. We first summarize neuroimaging evidence of glymphatic system dysfunction in diabetes, including a reduced DTI-ALPS index and enlarged perivascular spaces. Furthermore, we examine its mechanisms, including dysregulated AQP4, impaired perivascular space function, and compromised drivers like arterial pulsation and sleep. Finally, we discuss the potential of glymphatic-targeted therapies, from lifestyle adjustments to pharmacological agents, for ameliorating DCI. This review emphasizes that glymphatic system dysfunction is a key link connecting diabetic metabolic disturbances to cognitive decline, offering a novel perspective and direction for research in this field.]

Circulating proteomic markers are associated with measures of small and large fiber neuropathy and symptoms in type 2 diabetes

Ponirakis G., Al-Janahi I., Elgassim E., et al. *Journal of Diabetes and Its Complications*, 2026, 40(5), Article 109313.

[**Aims:** To explore associations between circulating proteomic pathways and structural, functional, and symptomatic measures of small- and large-fiber neuropathy and corneal immune activation in people with Type 2 diabetes (T2D).]

Development and validation of a risk prediction model for diabetic peripheral neuropathic pain in type 2 diabetes: A machine learning and statistical approach

Hong H., Chen Y., Bao J., et al. *Diabetes Research and Clinical Practice* 2026, 235: 113219.

[**Objective:** To identify independent risk factors for diabetic peripheral neuropathic pain (DPNP), construct a nomogram prediction model, and quantify the contribution of predictive factors using SHapley Additive exPlanations (SHAP) values.]

The long-term impact of early HbA1c control on nephropathy, neuropathy, and retinopathy in type 2 diabetes: Findings from a large UK observational study

Aldafas R., Vinogradova Y., Crabtree T.S.J., et al. *Journal of Diabetes and Its Complications*, 2026, 40(5), Article 109292.

[**Introduction:** The evidence remains contradictory regarding the optimal glycaemic targets needed to address the long-term effects of hyperglycaemia in people with diabetes mellitus (T2DM). We examined the association between HbA1c levels and the risk of individual microvascular complications among people with T2DM.]

Peripheral nerve enlargement in patients with diabetic sensorimotor polyneuropathy: A systematic review and meta-analysis

Boers N., Hahn B., Eligh A.M., et al. *Diabetes Research and Clinical Practice* 2026, 235: 113226.

[This study aimed to summarize evidence on peripheral nerve enlargement in patients with diabetes, with and without diabetic sensorimotor polyneuropathy (DSP), compared with healthy controls. PubMed and Embase were systematically searched for ultrasound studies measuring the cross-sectional area (CSA) of peripheral nerves in patients with diabetes with and without DSP. The primary outcome was the weighted inter-group mean difference in CSA at all reported upper- and lower extremity sites. Forty-seven studies were identified, of which 41 were included in the *meta*-analyses. Patients with diabetes without DSP showed significantly larger CSA values than healthy controls at 3 of 11 anatomical locations, all located in the lower extremity. Patients with diabetes and DSP demonstrated increased CSA compared with controls at 9 of 14 sites, particularly at distal compression sites of the median and tibial nerves. Compared with patients with diabetes without DSP, those with DSP had significantly larger CSA values at 14 of 21 sites, with the greatest difference observed 4–5 cm proximal to the medial malleolus (pooled mean difference + 5.26 mm², 95% CI 0.94–9.57). In conclusion, peripheral nerve CSA is increased in diabetes and further enlarged in the presence of DSP, with the largest effects at distal compression sites.]

Sleep quality and diabetic neuropathy: A review and exploratory meta-analysis

Alraoui O.A., Borbjerg M.K., Klonoff D.C., et al. *Journal of Diabetes and Its Complications*, 2026, 40(5), Article 109311.

[Diabetic neuropathy and reduced sleep quality are both frequent complications of diabetes mellitus, yet their interaction and mutual influence remain poorly understood. This review aimed to synthesize current evidence on the association between diabetic neuropathy and sleep quality. A systematic literature search was conducted in PubMed, Embase, and the Cochrane Library. Of 1356 identified records, 32 studies met the inclusion criteria. Three randomized clinical trials were included in a post-hoc exploratory meta-analysis to evaluate the effect of gabapentinoids on Sleep Interference Scores in people with painful diabetic peripheral neuropathy. Our evidence synthesis showed that sleep disturbances were more prevalent in people with diabetic peripheral neuropathy compared to people without, especially in those experiencing neuropathic pain. Obstructive sleep apnea was common in individuals with autonomic neuropathy. Furthermore, poor sleep quality in diabetes mellitus may itself increase the risk of developing diabetic neuropathy. The pooled overall mean difference in Sleep Interference Scores was –1.07 (95% CI: –1.86 to –0.28), although heterogeneity was high ($I^2 = 83\%$). These findings indicate that poor sleep quality is highly prevalent in people with diabetic neuropathy, especially in those with neuropathic pain. Gabapentinoids appear to reduce Sleep Interference Scores in people with painful diabetic peripheral neuropathy.]

Eye Diseases

Customizing AI-based screening with real-world data: Practical insights from diabetic retinopathy

Poschkamp B., Kantz L., Augstein P., et al. *Acta Ophthalmologica* 2026, 104(3), pp.323-332.

[**Purpose:** Diabetic retinopathy (DR) is a leading cause of vision loss in middle-aged adults globally. Although artificial intelligence (AI)-based screening tools like IDx-DR (classification) and Thirona RetCAD (regression) have shown high sensitivity in controlled settings, real-world screening faces challenges due to missing or low-quality images and inadequate adaptation to local healthcare needs. The objective was to compare the performance of two AI-based DR screening algorithms (IDx-DR and RetCAD) that analyse non-mydratic images, against ophthalmologists' mydratic fundoscopy with image analysis and the impact of customized referral threshold modification ('Greifswald modification') on screening outcomes.]

Four-Year Outcomes of Faricimab in Diabetic Macular Edema

Sheth V.S., Schlottmann P., Lai T.Y.Y., et al. *Ophthalmology*, 2026, 133(5), pp.599-612.

[**Purpose:** The RHONE-X study ([ClinicalTrials.gov](https://clinicaltrials.gov) identifier, NCT04432831) evaluated long-term safety and tolerability (primary end points), and efficacy (exploratory end points) of faricimab, a dual angiopoietin-2 (Ang-2) and vascular endothelial growth factor A (VEGF-A) inhibitor, using a treat-and-extend (T&E) protocol in patients with diabetic macular edema (DME).]

Inflammatory biomarkers as prognostic tools for diabetic retinopathy progression: a prospective study

Johansen M.S., Stidsen J.V., Hansen A.L., et al. *Diabetes Research and Clinical Practice* 2026, 235: 113195.

[**Aims:** This study aimed to evaluate the prognostic potential of circulating inflammatory biomarkers, specifically hsCRP, IL-6, TNF- α , and CD163, for predicting diabetic retinopathy (DR) in adults with recently diagnosed type 2 diabetes.]

Intravitreal Aflibercept 8 mg for Diabetic Macular Edema

Do D.V., Wykoff C.C., Sivaprasad S., et al. *Ophthalmology*, 2026, 133(5), pp.577-588.

[**Purpose:** To follow up the previously published comparison of aflibercept 8 mg at extended dosing intervals versus aflibercept 2 mg every 8 weeks (2q8) in patients with diabetic macular edema (DME) through 48 weeks, we now report efficacy, durability, and safety analyses through 96 weeks.]

The long-term impact of early HbA1c control on nephropathy, neuropathy, and retinopathy in type 2 diabetes: Findings from a large UK observational study

Aldafas R., Vinogradova Y., Crabtree T.S.J., et al. *Journal of Diabetes and Its Complications*, 2026, 40(5), Article 109292.

[**Introduction:** The evidence remains contradictory regarding the optimal glycaemic targets needed to address the long-term effects of hyperglycaemia in people with diabetes mellitus (T2DM). We examined the association between HbA1c levels and the risk of individual microvascular complications among people with T2DM.]

Optical coherence tomography angiography changes in patients with diabetic retinopathy treated with panretinal photocoagulation: A systematic review and meta-analysis

Zhang C., Xia Z., Mao W., et al. *Survey of Ophthalmology*, 2026, 71(3), pp.847-857.

- [We evaluated retinal microvascular changes in patients with diabetic retinopathy (DR) treated with panretinal photocoagulation (PRP), using optical coherence tomography angiography (OCTA). Nineteen studies were included that assess changes in vessel density (VD) within the superficial capillary plexus (SCP), the deep capillary plexus (DCP), and the foveal avascular zone (FAZ) area.

PRP was associated with a significant increase in VD in the SCP, particularly in the foveal region, with greater improvements observed during long-term follow-up. In contrast, changes in the DCP were less consistent; however, a mild increase in foveal VD was noted over time. Additionally, a borderline reduction in FAZ area was observed after PRP, suggesting enhanced macular perfusion. These findings highlight the localized and time-dependent vascular effects of PRP and support the use of OCTA as a non-invasive, layer-specific tool for monitoring treatment outcomes in DR.]

Prospective validation of deep-learning algorithms for diabetic retinopathy screening: A systematic review and meta-analysis

Wang T.W., Luo W.T., Tu Y.K., et al. *Survey of Ophthalmology*, 2026, 71(3), pp.827-846.

- [Deep-learning (DL) algorithms are widely promoted for diabetic-retinopathy (DR) screening, yet their prospective diagnostic accuracy is not well defined. PubMed, EMBASE and ClinicalTrials.gov were searched to April, 2025, for prospective evaluations of DL systems using color-fundus images. Two reviewers screened records, extracted data, and applied QUADAS-2. Hierarchical bivariate random-effects models produced pooled sensitivity and specificity for referable and vision-threatening DR), analyzed separately at patient and eye level. Twenty-one prespecified moderators were explored with uni- and multi-variate meta-regression; publication bias was assessed with Deeks' test Seventy-three studies from 23 countries (255,330 examinations) met the criteria. Pooled patient-level sensitivity was 0.94 (95 % CI 0.92–0.95) and specificity 0.90 (95 % CI 0.87–0.93); eye-level values were 0.93 (95 % CI 0.91–0.95) and 0.94 (95 % CI 0.92–0.96). DR subtype, retinal-field strategy, camera form factor, and prevalence independently explained heterogeneity ($p < 0.05$). Performance matched or exceeded pivotal FDA trials (IDx-DR, EyeArt). AI gradability was $\geq 95\%$ in 60 % of cohorts, including handheld and smartphone systems. DL-based DR screening achieves consistent, high accuracy across devices and care settings, enabling scalable deployment in primary care, pharmacies, and mobile clinics. Quality assurance and ongoing monitoring are essential to maximize population-level benefits.]

Pseudophakic macular edema: Review and new insights on treatment and prophylaxis

Campos A., Mota C., Cruz H., et al. *Survey of Ophthalmology*, 2026, 71(3), pp.817-826.

- [Pseudophakic cystoid macular edema (PCME) is a common complication of cataract surgery that may rarely result in vision loss. In most cases PCME resolves spontaneously, which makes it challenging to establish the efficacy of therapeutic and prophylactic interventions. Although no consensus exists regarding management or prevention, most surgeons advocate prophylaxis primarily for high-risk eyes. Nevertheless, the costs associated with preventive measures have risen substantially in recent years. In this review, we summarize the current evidence on the epidemiology, pathogenesis, diagnosis, risk factors, treatment, and prophylaxis of PCME, to provide a comprehensive understanding of its clinical indications and the cost-effectiveness of available strategies.]

Rate and Risk of Nonarteritic Anterior Ischemic Optic Neuropathy with Semaglutide Use for Diabetes and Weight Loss

Liu Z., Raveendran D., Furlanos S., et al. *Ophthalmology*, 2026, 133(5), pp.589-598.

[**Topic:** This systematic review and meta-analysis evaluates the rate and risk of nonarteritic anterior ischemic optic neuropathy (NAION) in adults receiving semaglutide for diabetes or weight loss.]

Kidney Disease

Acylcarnitines and prediction of renal function decline in type 2 diabetes

Trischitta V., Fontana A., Shah H., et al. *BMJ Open Diabetes Research and Care* 2026;14: e005748

[**Introduction:** We comprehensively investigated whether serum acylcarnitine levels are associated with and predict the decline of glomerular filtration rate (GFR) in type 2 diabetes.]

Comparative effectiveness of sulfonylureas on kidney outcomes in adults with type 2 diabetes and moderate cardiovascular risk: a target trial emulation

Sklepinski S., Ratzki-Leewing A.A., Herrin J., et al. *BMJ Open Diabetes Research and Care* 2026;14: e005775

[**Introduction:** To assess the within-class variation in kidney outcomes following initiation of sulfonylurea therapy.]

High-normal levels of B-type natriuretic peptide are associated with chronic kidney disease progression independent of albuminuria in individuals with diabetes: an observational cohort study

Murakoshi M., Kamei N., Tanaka M., et al. *Diabetes Research and Clinical Practice* 2026, 235: 113192.

[**Aims:** To evaluate the independent prognostic value of B-type natriuretic peptide (BNP) for chronic kidney disease (CKD) progression in comparison with urinary albumin-to-creatinine ratio (UACR), protein-to-creatinine ratio (UPCR), and dipstick proteinuria, and assess its incremental value when added with UACR.]

Impact of angiotensin-like 4 (ANGPTL4) protein and O-linked β -N-acetylglucosamine(O-GlcNAc) in diabetic nephropathy

Pandey A., Badruddeen, Akhtar J., et al. *Diabetes Research and Clinical Practice* 2026, 235: 113211.

[Diabetic nephropathy (DN) is a chronic renal complication characterized by persistent proteinuria, glomerular hypertrophy, impaired filtration capacity, and progressive renal fibrosis, ultimately leading to a gradual decline in kidney function. DN remains one of the leading causes of end-stage renal disease worldwide, contributing substantially to morbidity and mortality. Although the precise etiology of DN is not fully elucidated, its development is closely linked to prolonged hyperglycemia, renal hyperfiltration, accumulation of advanced glycation end products (AGEs), activation of pro-inflammatory cytokines, and oxidative stress-mediated injury. These pathogenic events involve multiple diabetes-associated pathways, including protein kinase C activation and increased reactive oxygen species (ROS) generation. O-linked β -N-acetylglucosamine (O-GlcNAc) modification is a dynamic post-translational protein modification that is significantly upregulated in DN and plays a critical role in regulating cellular signaling pathways associated with disease initiation and progression. This review summarizes current evidence on the role of O-GlcNAcylation in modulating molecular mechanisms underlying DN. Furthermore, Angiotensin-like 4 (ANGPTL4) has emerged as a key regulator of lipid metabolism through inhibition of lipoprotein lipase and interactions with integrins, influencing vascular permeability, oxidative stress, and tissue remodeling. Increasing evidence suggests that ANGPTL4 plays a pivotal role in DN onset and progression.]

Integrated multicompartiment urinary long non-coding RNAs profiling (cellular, cell-free, and extracellular vesicle) for better differential diagnosis of biopsy-proven diabetic and non-diabetic kidney disease beyond conventional markers

Basu M., Neogi S., Pal R., et al. *BMJ Open Diabetes Research and Care* 2026;14: e006123

[**Introduction:** Renal involvement in type 2 diabetes (T2DM) can be due to diabetes (diabetic kidney disease, DKD) or other causes (non-DKD, NDKD) or both (mixed kidney disease). Available clinical and laboratory parameters have limitations in predicting a diagnosis (gold standard renal biopsy). Long non-coding RNAs (lncRNAs) evaluated in preclinical models but unexplored in biopsy-proven kidney disease in T2DM. We aimed to determine whether there is differential expression of lncRNAs in DKD (compared with NDKD).]

The long-term impact of early HbA1c control on nephropathy, neuropathy, and retinopathy in type 2 diabetes: Findings from a large UK observational study

Aldafas R., Vinogradova Y., Crabtree T.S.J., et al. *Journal of Diabetes and Its Complications*, 2026, 40(5), Article 109292.

[**Introduction:** The evidence remains contradictory regarding the optimal glycaemic targets needed to address the long-term effects of hyperglycaemia in people with diabetes mellitus (T2DM). We

examined the association between HbA1c levels and the risk of individual microvascular complications among people with T2DM.]

Low visceral fat and kidney disease risk in men with diabetes

Zoccali C. and Mallamaci F. *Lancet Diabetes & Endocrinology*, 2026, 14(5), pp.367-368.

[Diabetic kidney disease is a leading cause of kidney failure and premature death in people with diabetes. ¹ Obesity is central to this burden, yet risk assessment still relies largely on BMI, which cannot distinguish fat from lean mass or metabolically harmful visceral depots from less harmful subcutaneous depots. In *The Lancet Diabetes & Endocrinology*, Juan Shi and colleagues ¹ move beyond the question of how much fat to where it is stored and—crucially—to who carries it.]

Prediction of worsening of renal function by the combination of an initial decline in renal function and blood pressure-lowering effect after renin–angiotensin system blockade in patients with type 2 diabetes mellitus (JDDM 83)

Miyazawa I., Araki S., Yokoyama H., et al. *Journal of Diabetes and Its Complications*, 2026, 40(5), Article 109309.

[Aims: This study investigated the effect of an initial decline in the estimated glomerular filtration rate (eGFR) and blood pressure lowering after renin–angiotensin system (RAS) blockade on subsequent renal function in patients with type 2 diabetes mellitus.

Methods: A retrospective follow-up study was conducted on 5345 patients with an eGFR >60 mL/min/1.73 m². The patients were grouped by initial eGFR decline: group 1 (<0%), group 2 (0%–10%), group 3 (10%–20%), and group 4 (≥20%), and subgrouped by the reduction in systolic blood pressure (SBP) (≥ or <10 mmHg). The risk of progression to an eGFR <15 mL/min/1.73 m² was evaluated.

Results: The mean initial eGFR decline was $-2.6\% \pm 12.1\%$ and SBP reduction was -7.9 ± 16.6 mmHg. During the 8-year follow-up, as the initial eGFR decline increased, the subsequent annual rate of eGFR decline increased (group 1, -0.87 ; group 2, -3.21 ; group 3, -5.38 ; group 4, -8.90 , mL/min/1.73 m²/year). The adjusted hazard ratio increased with a greater initial eGFR decline (hazard ratio: 4.31 for group 4 vs group 1). This risk was accelerated if the reduction in SBP was <10 mmHg.

Conclusions: Assessing the initial eGFR decline and SBP reduction after starting an RAS inhibitor may predict long-term renal function.]

Pre-treatment estimated glomerular filtration rate trajectory modifies the renoprotective effect of finerenone in patients with chronic kidney disease associated with type 2 diabetes

Iwamoto T., Hidaka S., Iwamoto M., et al. *Journal of Diabetes and Its Complications*, 2026, 40(5), Article 109308.

[Aims: In this study, we aimed to investigate whether pre-treatment estimated glomerular filtration rate (eGFR) trajectory modifies the effects of finerenone on kidney function and albuminuria in patients with chronic kidney disease (CKD) associated with type 2 diabetes (T2D) (CKD-T2D).]

Sex-specific and BMI-specific associations between visceral fat and diabetic kidney disease in patients with diabetes: a large-scale multicentre prospective cohort study

Shi J., Zhao D., Wang J., et al. *Lancet Diabetes & Endocrinology*, 2026, 14(5), pp.401-411.

[Background: There are few large-scale prospective studies on directly measured visceral fat area (VFA) and diabetic kidney disease, with inconsistent findings across sex and BMI. We aimed to investigate the association between VFA and incident diabetic kidney disease risk and to examine how this association differs by sex and BMI.]

Liver Disease

Cardiovascular outcomes of GLP-1RA vs SGLT2i in MASLD and type 2 diabetes: real-world evidence

Yang C.C., Wu J.Y., Cheng Y.Y., et al. *Diabetes Research and Clinical Practice* 2026, 235: 113206.

[**Background:** Patients with metabolic dysfunction–associated steatotic liver disease (MASLD) and type 2 diabetes (T2D) are at high cardiovascular risk. Whether glucagon-like peptide-1 receptor agonists (GLP-1 RAs) provide cardiovascular protection comparable to sodium–glucose cotransporter-2 inhibitors (SGLT2is) remain uncertain.]

MASLD as a crucial component in the pathogenesis, evaluation and management of type 2 diabetes in Asian Indians

Kuchay M.S., Bajpai A., Misra A. *Diabetes & Metabolic Syndrome: Clinical Research & Reviews* 2026;20(5): 103436.

[There is a critical shift in how we view the relationship between liver health and metabolic disease, especially within the Asian Indian context. The “high body fat-normal weight-low muscle mass” phenotype and early hepatic insulin resistance are central to why this population faces a disproportionate risk of type 2 diabetes (T2D), even at lower body-mass indices (BMIs) ¹. By acting as both a source of excess glucose and a reservoir for systemic inflammation, Metabolic Dysfunction-Associated Steatotic Liver Disease (MASLD) essentially primes the body for metabolic failure ²]

Precision staging of Type 2 diabetes through Hypergraph-Based multimorbidity Profiling: From hepatic disruption to cardiovascular escalation

Cao X., Li X., Yu H., et al. *Diabetes Research and Clinical Practice* 2026, 235: 113166.

[**Background:** Multimorbidity in Type 2 Diabetes Mellitus (T2DM) profoundly influences disease progression and outcomes, yet conventional analytic approaches fail to capture its higher-order complexity.]

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

General

Endoplasmic reticulum stress in diabetes mellitus: A comprehensive review of emerging insights and recent progress

Kumar H., Kumari R., Maurya V.K., et al. *Diabetes & Metabolic Syndrome: Clinical Research & Reviews* 2026;20(5): 103420.

[**Background/aim:** Endoplasmic reticulum stress (ERS), caused by excessive buildup of misfolded proteins in the ER lumen, has emerged as a major contributor to diabetes mellitus (type-1 and type-2; T1DM and T2DM), leading to β -cell dysfunction, insulin resistance, and related comorbidities. In this review, we aim to characterize the signal transduction pathways in normal versus diseased conditions and their impact on the development of insulin-dependent and insulin-independent diabetes.]

Diabetic Foot

Exploring the societal cost of major lower limb amputations in patients with type 2 diabetes – A nation-wide and matched register study using difference in difference analysis

Fredslund E.K., Londero L.S., Buhl C.S. *Journal of Diabetes and Its Complications*, 2026, 40(5), Article 109310.

[**Aim:** This study estimates the societal costs associated with major lower limb amputations related to type 2 diabetes mellitus (T2DM) in Denmark.]

Incidence of diabetes-related foot disease: results from 2 prospective cohort studies and meta-analysis

Xiang H., Tang Z., Zhang X., et al. *Diabetes Research and Clinical Practice* 2026, 235: 113218.

[We aimed to estimate the incidence for overall and individual components of diabetes-related foot disease (DFD), and explore potential heterogeneity across studies. We included patients with diabetes who were free of DFD from UK Biobank and Chongqing Diabetes Registry (CDR). We defined DFD according to the International Working Group on the Diabetic Foot 2023 criteria. We further performed meta-analyses by integrating results from the two cohorts and 64 cohorts identified from a systematic review of literature, and quantifying the extent of variation in reported incidence rates. The incidence of DFD was 12.81 (95 % confidence interval [CI]: 12.46-13.15) and 24.97 (21.38-28.99) per 1,000 person-year in UK Biobank and CDR, respectively. The pooled estimates were 19.84 (95 %CI: 16.58–23.10) for peripheral neuropathy, 7.32 (6.17-8.47) for foot ulcer, 2.56 (2.20-2.93) for lower-extremity amputation, 2.56 (1.08-4.04) for lower-extremity arterial disease, and 0.81 (0.00–1.74) for gangrene, respectively. Heterogeneity was high across studies ($I^2 > 99\%$). In conclusion, incidence for DFD exceeds 10 per 1,000 person-year among patients with diabetes, and peripheral neuropathy and foot ulcer are major contributors to incident DFD. These estimates should be interpreted as descriptive summaries of available evidence rather than a single universal incidence, and large heterogeneity underscores the context-specific nature of DFD occurrence.]

Malignant Melanoma Misdiagnosis in the Diabetic Foot. What Can We Learn From the Published Literature?

Bristow I.R., Reynolds M.L., Young M. *Journal of Foot and Ankle Research* 2026;19(2): e70162.

[**Background:** The foot is an independent risk factor for a poorer prognostic outcome in melanoma. Delayed diagnosis may arise because melanoma mimics other benign diagnoses, such as ulceration on the foot, including those with associated with diabetes. Improving outcomes for patients includes raising awareness amongst professionals involved in diabetic foot care. Evaluation of published case studies may help identify common themes to inform practice and improve recognition and referral for lesions requiring biopsy.]

Topical therapies for diabetic foot ulcers: a systematic review and network meta-analysis

Chen L., Chen J.C., Lin T., et al. *BMJ Open Diabetes Research and Care* 2026;14: e006026

[**Objective:** Diabetic foot ulcer (DFU) is a life-threatening complication associated with high amputation and mortality rates. While numerous topical therapies exist, their comparative efficacy and safety remain unclear. We aimed to compare the efficacy and safety of topical therapies for DFUs to identify optimal treatment strategies.]

Diabetes and pregnancy

Adherence to diabetes screening recommendations 4.5 years after birth in women with gestational diabetes managed with tight or less tight glycaemic targets

Douglas L.J., Gamble G.D., Harding J.E., et al. *Diabetes Research and Clinical Practice* 2026, 235: 113213.

[**Aims:** To assess adherence to recommended diabetes screening after birth in women with gestational diabetes mellitus (GDM), to compare adherence to screening between women allocated tight or less tight glycaemic targets in pregnancy, to compare cardiometabolic outcomes in women with high and low adherence to screening, and to identify predictors for low adherence.]

Could fructosamine be used in the glycemic monitoring of individuals with a history of gestational diabetes mellitus?

Chatzakis C., Mansukhani T., Mitsigiorgi R., et al. *Diabetes & Metabolic Syndrome: Clinical Research & Reviews* 2026;20(5): 103440.

[**Aims:** To evaluate the association of fructosamine with multiple glycemic control indices in individuals with previous gestational diabetes mellitus(GDM), with or without prediabetes or type 2 diabetes(T2D).]

Early prediction of insulin requirement in gestational diabetes using a parsimonious LASSO model and a point-based risk score

Greco D., Scibetta S., Giambanco L., et al. *Diabetes Research and Clinical Practice* 2026, 235: 113228.

[**Aims:** This study developed and validated a practical prediction model to forecast insulin requirements in pregnant women with gestational diabetes mellitus (GDM).]

Gestational diabetes mellitus in low- and middle-income countries: a systematic review and meta-analysis of associated factors

Sadore A.A., Agho K.E., Fentie E.A., et al. *Diabetes Research and Clinical Practice* 2026, 235: 113207.

[Gestational Diabetes Mellitus (GDM) is a major public health problem. This study aimed to conduct a systematic review and *meta-analysis* to identify the factors associated with GDM in Low- and Middle-Income Countries (LMICs). Seven electronic databases (PubMed, CINAHL, PsycINFO, Scopus, EMBASE, CABI and Google Scholar) were systematically searched for eligible observational studies published in LMICs between 2015 and August 2025. Statistical heterogeneity was evaluated using the I^2 statistic, and a random-effects model was applied to calculate pooled estimates. The protocol was pre-registered on PROSPERO (CRD420251247717). Forty-seven studies met the inclusion criteria and contributed 116 factor-specific effect estimates. The pooled analysis demonstrated that several factors were significantly associated with increased risk of GDM. These included maternal age ≥ 30 , multiparity, urban residence, pre-pregnancy obesity BMI ≥ 25 kg/m², family history of diabetes, history of gestational diabetes mellitus (GDM), pre-hypertension, preeclampsia, polycystic ovarian syndrome (PCOS) and physical inactivity. This study found that advanced maternal age, pre-pregnancy obesity, family history of diabetes, prior GDM, pre-hypertension, preeclampsia, and PCOS are key factors associated with GDM in LMICs. These findings highlight the need for prevention and screening strategies integrated within maternal pregnant health programs for many LMICs.]

Quantitative assessment of structural and functional changes in the carotid artery as vascular markers of gestational diabetes mellitus

He Y., Gan L., Peng Y., et al. *Journal of Diabetes and Its Complications*, 2026, 40(5), Article 109291.

[**Background and aims:** To explore the value of RF-data-based quantitative analysis on vessel stiffness (R-QVS) analysis combined with dynamic vector flow imaging (VFI) in evaluating carotid artery structural and functional changes in patients with gestational diabetes mellitus (GDM). This approach aims to improve the early detection of vascular dysfunction during pregnancy by providing quantitative and noninvasive assessment of arterial remodeling.]

Sleep and eating patterns in individuals with gestational diabetes: associations with daily overnight and morning glucose using continuous glucose monitoring

Montemayor M.T., Ackerer A., Lacroix A., et al. *Journal of Diabetes and Its Complications*, 2026, 40(5), Article 109293.

[**Background and aims:** The influence of diet and sleep and their combined effect on daily glucose control in individuals with gestational diabetes mellitus (GDM) remains unclear. This study investigated real-time associations between eating and sleep patterns with overnight and morning glucose using ecological momentary assessment.]

Diabetes mellitus Type 1

Bringing early detection to life: real-world operationalization of a presymptomatic type 1 diabetes screening and monitoring pilot program

Demeterco-Berggren C., Ospelt E., Wright T., et al. *BMJ Open Diabetes Research and Care* 2026;14: e005980

[**Objective:** This pilot project served as a proof of concept to assess the operational feasibility of integrating presymptomatic type 1 diabetes screening and monitoring, using islet autoantibody (AAB) testing, into routine clinical care at two pediatric T1D Exchange Quality Improvement Collaborative (T1DX-QI) centers. Additionally, it identified care team perceptions of operational challenges and surveyed healthcare teams' readiness in the T1DX-QI.]

Co-design of an animated resource to understand inequities in access to diabetes technologies among children and young people with type 1 diabetes from ethnic minority groups and/or low socioeconomic areas

Tonga E., Evans M., Oliver N., et al. *Diabetes & Metabolic Syndrome: Clinical Research & Reviews* 2026;20(5): 103432.

[**Aims:** This study aimed to explore barriers to diabetes technology access and co-create an educational animation to address them.]

Comparison of incidence patterns and risk profiles of ST-elevation and non-ST-elevation myocardial infarction in type 1 diabetes in Finland: a nationwide cohort study

Smidtslund P., Harjutsalo V., Thorn V., et al. *Lancet Diabetes & Endocrinology*, 2026, 14(5), pp.390-400.

[**Background:** The incidence and risk profiles of ST-elevation myocardial infarction (STEMI) and non-ST-elevation myocardial infarction (NSTEMI) are understudied in type 1 diabetes. We aimed to study the similarities and differences in the incidence and risk profiles of myocardial infarction subtypes in people with type 1 diabetes.]

Correction to *Lancet Diabetes Endocrinol* 2026; 14: 197–99

Lancet Diabetes & Endocrinology, 2026, 14(5), e.8.

[Quinn LM, Elliott J, Papanikolaou T, et al. *Feasibility of general population screening for type 1 diabetes in the UK: the ELSA study*. *Lancet Diabetes Endocrinol* 2026; **14**: 197–99.]

Differences in immune cell profiles around the time of islet autoimmunity seroconversion in children with and without type 1 diabetes

Hohsfield K.R., Carry P., Slack S., et al. *BMJ Open Diabetes Research and Care* 2026;14: e006015

[**Introduction:** Seroconversion (SV) marks islet autoimmunity (IA) onset and preclinical type 1 diabetes (T1D), yet the contributions beyond T and B lymphocytes remain unclear. We evaluated DNA methylation (DNAm)-derived immune cell ratios between T1D cases and controls around SV.]

Global differences in thyroid autoimmunity and hypothyroidism among children with type 1 diabetes: data from the SWEET database

Al-Abdulrazzaq D., Lazinger S., Raicevic M., et al. *Diabetes Research and Clinical Practice* 2026, 235: 113215.

[**Aims:** This study aims to report on the global differences in the prevalence of thyroid autoimmunity and hypothyroidism among children with T1D registered in the SWEET database and identifying the associated characteristics.]

HbA1c trajectories and risk of albuminuria in children and adolescents with type 1 diabetes followed into adulthood - a joint modeling approach of Danish nationwide register data

Rønn P.F., Svensson J., Wibaek R., et al. *Journal of Diabetes and Its Complications*, 2026, 40(5), Article 109317.

[**Aims:** We examined the association between HbA1c (current value and cumulative exposure) and albuminuria in individuals with childhood-onset type 1 diabetes (T1D).]

Insulin delivery modality and Ramadan fasting interruption, glycemic control, and fear of hypoglycemia in type 1 diabetes: a prospective, multicenter study from Saudi Arabia

Al-Sofiani M.E., Alharthi S.K., Alsuhaibani M., et al. *Diabetes Research and Clinical Practice* 2026, 235: 113196.

[**Introduction:** Most people with type 1 diabetes (PWT1D) typically avoid fasting during Ramadan because of dysglycemia risks. We compared efficacy, safety profiles, and fear of hypoglycemia (FOH) during Ramadan fasting in users of four insulin delivery modalities.]

Islet autoantibody profiles at diagnosis of childhood type 1 Diabetes: Age-Dependent heterogeneity and clinical implications

Lehavi M., Margolis M.G., Yakobovich-Gavan M., et al. *Diabetes Research and Clinical Practice* 2026, 235: 113229.

[**Aims:** Type 1 diabetes (T1D) exhibits age-dependent autoimmune heterogeneity. We examined islet autoantibody (IA) profiles at the time of childhood diagnosis and their clinical significance.]

Potential years of life lost and factors associated with different causes of death in type 1 diabetes in Finland

Keisala E., Kauppala T., Vanhamäki S., et al. *Journal of Diabetes and Its Complications*, 2026, 40(5), Article 109312.

[**Aims:** To assess the potential years of life loss (PYLL) due to different causes of death among individuals with type 1 diabetes in Finland, and to identify factors associated with the leading causes of death contributing most to PYLL.]

Prevalence of early-stage type 1 diabetes in young adults: a population-based cohort study

Standl M., Scholz M., Thiering E., et al. *Lancet Diabetes & Endocrinology*, 2026, 14(5), pp.371-373.

[Type 1 diabetes was once thought to be exclusively a childhood-onset disease, but recent epidemiological evidence shows that more than half of all clinical diagnoses of type 1 diabetes occur in adulthood. ¹ Although substantial progress has been made in identifying presymptomatic type 1 diabetes in children, ^{2,3} a 2022 systematic review involving 32 countries and regions has highlighted considerable uncertainties in prevalence data for adult-onset type 1 diabetes. ⁴ Additionally, data regarding the diagnostic value of islet autoantibodies in adults are scarce. This raises the important question of whether systematic screening for early-stage type 1 diabetes should be extended beyond childhood, to offer them the opportunity to participate in clinical trials or benefit from emerging therapies aimed at delaying disease onset.]

Quality of life and factors affecting glycemic control in adolescents with Type 1 diabetes: a cross-sectional study

Simsek A., Aydın D.B., Çubukcu E., et al. *Diabetes Research and Clinical Practice* 2026, 235: 113225.

[**Aims:** Type 1 diabetes is one of the most common chronic diseases in childhood and has a significant impact on children's quality of life. The aim of this study was to evaluate the factors affecting the quality of life and glycemic control of adolescents with type 1 diabetes.]

Revisiting the burden and patterns of myocardial infarction in type 1 diabetes

Avogaro A. and Fadini G.P. *Lancet Diabetes & Endocrinology*, 2026, 14(5), pp.365-367.

[Type 1 diabetes confers a cardiovascular burden that is often obscured by the young age of affected individuals and by the longstanding focus on microvascular rather than macrovascular complications. This misalignment has historically resulted in undertreatment of cardiovascular risk factors in people

with type 1 diabetes, with cardiovascular consequences that remain evident today. In this context, the analysis by Patrik Smidtslund and colleagues¹ offers essential insights into the natural history of myocardial infarction in type 1 diabetes and challenges persistent assumptions about how coronary disease manifests in this population.]

Diabetes mellitus Type 2

Association between type 2 diabetes mellitus and psychosocial burdens in older adults in Germany: findings from the longitudinal Gesundheit 65+ study

Friederici L., Heidemann C., Birgel V., et al. *BMJ Open Diabetes Research and Care* 2026;14: e006056

[**Introduction:** This study investigates the association between type 2 diabetes mellitus and six psychosocial burdens (depressive symptoms, loneliness, and low levels of energy, life satisfaction, satisfaction with one's activity level, and perceived social support) among older adults, using data from the population-based longitudinal study Gesundheit 65+ in Germany.]

Clinical and Metabolic Characteristics of Spontaneous Remission in Type 2 Diabetes: A Real-World Study from South India

Jebarani S., Balaji B., Baskar V., et al. *Diabetes Therapy* 2026, 17(5): 715–734.

[**Introduction:** This study aimed to evaluate clinical characteristics and outcomes of individuals with type 2 diabetes (T2D) who achieved spontaneous remission without structured intervention.]

Comparative Safety of SGLT2 Versus DPP4 Inhibitors in Patients with Type 2 Diabetes: A Meta-Analysis of Randomized Controlled Trials

Li Y., Chen J., Gao Y., et al. *Diabetes Therapy* 2026, 17(5): 685–709.

[**Introduction:** Type 2 diabetes mellitus (T2DM) necessitates long-term pharmacological management, with drug safety now a pivotal factor in therapy selection. Sodium–glucose cotransporter 2 inhibitors (SGLT2is) and dipeptidyl peptidase 4 inhibitors (DPP4is) are widely prescribed oral antidiabetic agents; however, their comparative safety profiles remain under debate.]

Correction: Comparative Safety of SGLT2 Versus DPP4 Inhibitors in Patients with Type 2 Diabetes: A Meta-Analysis of Randomized Controlled Trials

Li Y., Chen J., Gao Y., et al. *Diabetes Therapy* 2026, 17(5): 711–713.

[In the published version, there was a minor typographical labeling error in Fig. 1. Specifically, the numerical value for “Duplicate records removed” is shown as n = 593. The correct value should be n = 290, as accurately reported in the Results section of the manuscript.]

The Effectiveness of Diabetes Prevention Programs Delivered in Primary Care for Individuals With Prediabetes or at Risk of Developing Type 2 Diabetes: A Systematic Review and Meta-analysis.

Qiang J. *Diabetes Care* 2026;:dc251877.

[This systematic review and meta-analysis aimed to evaluate the effectiveness of lifestyle interventions delivered in primary care to patients at elevated risk of developing T2DM. It found no significant differences in diabetes incidence or other key indicators of T2DM, with certainty of evidence varying from moderate to low. Future studies should test integrated screening, referral, and social support strategies in routine care for high-risk groups.]

Health literacy profiles of people living with type 2 diabetes: a cluster-based approach to inform tailored interventions—the Entred 3 study

Agius R., Rigal L., Panjo H., et al. *BMJ Open Diabetes Research and Care* 2026;14: e005977

[**Introduction:** Health literacy is a multidimensional determinant of health that influences diabetes outcomes and social inequities in health (SIH). Studies often measure it unidimensionally, failing to capture people's diverse health literacy skills. We identified multidimensional health literacy profiles among adults living with type 2 diabetes (T2D) in France and described their clinical, behavioral and social characteristics with a view to informing future tailored interventions.]

The impact of COVID-19 illness on metabolic phenotypes underlying type 2 diabetes mellitus: a systematic review

Li M., Sharma K., Chon J.E., et al. *Diabetes Research and Clinical Practice* 2026, 235: 113163.

[We aimed to systematically review literature investigating the impact of COVID-19 on insulin resistance and beta-cell dysfunction in humans. Ovid MEDLINE and Embase were searched for studies published between December 2019 and May 2024. Observational studies examining adults with no history of type 2 diabetes comparing the development of insulin resistance and beta-cell dysfunction between COVID-19 exposed groups vs. controls were included. Risk of bias was assessed using adapted Newcastle-Ottawa and Joanna Briggs Institute scales. Among 6901 studies screened, 10 met the inclusion criteria. Across these studies, 37 individual measures of insulin resistance and beta-cell dysfunction were reported. Insulin resistance worsened significantly in 16 of 25 (64.0%) comparisons, whereas beta-cell dysfunction worsened significantly in 7 of 12 (58.3%) measures among COVID-19 patients when compared to controls. Five studies were considered low risk of bias. COVID-19 was associated with worsened insulin resistance and beta-cell dysfunction, suggesting infection may be a metabolic stressor that overwhelms *gluco*-regulatory mechanisms. Results, especially those for beta-cell function, should be interpreted cautiously given methodological limitations in the utilized measures. These findings highlight the pathophysiological aspects of type-2 diabetes impacted by COVID-19 infection and support the development of targeted monitoring and therapeutic strategies.]

Impact of metformin on the risk of osteoarthritis in patients with type 2 diabetes: a real-world study

Liu S., Chen J., Du J., et al. *Diabetes Research and Clinical Practice* 2026, 235: 113191.

[**Aims:** To investigate the association between metformin use and osteoarthritis (OA) risk or total knee replacement (TKR) need in type 2 diabetes (T2DM) patients, addressing limited real-world evidence on metformin's potential joint-protective effects.]

Impact of self-monitoring of blood glucose levels on quality of life in individuals with newly diagnosed T2DM: a systematic review.

Daly G., Hawk A., O'Connor R. *British Journal of General Practice* 2026;76(suppl 1):DOI: <https://doi.org/10.3399/bjgp26X745413>.

[**Background:** The effects of self-monitoring of blood glucose (SMBG) on quality of life (QoL) in adults with newly diagnosed type 2 diabetes mellitus (T2DM) are unclear. SMBG is an additional task for people with T2DM. Qualitative analysis on its effects is timely.

Aim: The aim of this study was to investigate the impact that SMBG has on QoL of individuals with newly diagnosed T2DM.]

Mapping shared genetic determinants of eGFR and albuminuria with a focus on type 2 diabetes: a large-scale European study

Naaman C., Persson F., Kümler T., et al. *BMJ Open Diabetes Research and Care* 2026;14: e005863

[**Background and hypothesis:** Chronic kidney disease (CKD) is a global health and economic burden, particularly among individuals with type 2 diabetes (T2D). According to Kidney Disease: Improving Global Outcomes guidelines, key CKD indicators include urine albumin-creatinine ratio (UACR) and estimated glomerular filtration rate (eGFR). Although independent genetic loci for these traits have been reported, their shared genetic architecture remains insufficiently understood. We hypothesized that there are shared genetic markers of kidney function (eGFR) and albuminuria generally, but also specific to the T2D population.]

Metabolic signatures of lipid dysregulation and inflammation characterize pancreatic cancer risk in type 2 diabetes mellitus and improve risk stratification: a prospective cohort study

Xiang S., Nie H., Li J., et al. *Diabetes Research and Clinical Practice* 2026, 235: 113230.

[**Background:** Type 2 diabetes mellitus (T2DM) increases pancreatic cancer (PC) risk, but specific metabolic mechanisms and effective risk stratification tools remain lacking. We aimed to identify metabolic features statistically accounting for this risk and construct a metabolic risk score (MRS).]

Nutrition Interventions Improve Glycemic Control Among People With Type 2 Diabetes in Low- and Middle-Income Countries. A Systematic Review.

Rossi A., Nasir Z., Carrión A., et al. *Journal of Human Nutrition and Dietetics* 2026;39(3): e70269.

[**Introduction:** The incidence of Type II diabetes (T2D) is increasing rapidly in low- and middle-income countries (LMICs). Dedicated nutrition interventions may be a low-cost low-burden method to improve glycemic control. A systematic review was conducted to explore dedicated nutrition interventions in LMICs for people with T2D.]

Oxidative stress biomarkers in type 2 diabetes: pathophysiological insights, clinical relevance, and implications for diabetes complications

Martinc B. *Diabetes Research and Clinical Practice* 2026, 235: 113197.

[Oxidative stress (OS) is increasingly recognised as a central mechanistic component of type 2 diabetes (T2D), linking chronic hyperglycaemia, insulin resistance, mitochondrial dysfunction, inflammation, and the development of vascular complications. Experimental and human data support a contributory role of reactive oxygen species in β -cell dysfunction, impaired insulin signalling, endothelial injury, and progressive tissue damage. This narrative review synthesises clinically relevant oxidative pathways and critically evaluates major biomarker classes, including lipid peroxidation products, protein and DNA oxidation markers, redox couples, antioxidant enzymes, and redox-sensitive regulatory networks. Particular emphasis is placed on analytical robustness, biological variability, methodological heterogeneity, and translational maturity. Despite extensive associative evidence, no oxidative stress biomarker currently demonstrates consistently replicated incremental prognostic value beyond established cardiometabolic risk models sufficient for routine clinical implementation. Most available data derive from cross-sectional or intermediate translational studies, with limited prospective outcome validation. Although glucose-lowering therapies and lifestyle interventions may reduce oxidative biomarker levels, modulation of these markers has not been established as a validated mediator of clinical benefit. At present, oxidative biomarkers remain primarily mechanistic and research tools, and meaningful clinical integration will require assay harmonisation and rigorous longitudinal demonstration of added predictive or therapeutic value.]

Prevalence of nephropathy in type 2 diabetes patients in the Eastern Mediterranean Region: A systematic review and meta-analysis

Zeighami S., Shaabani S., Moheb M., et al. *Diabetes & Metabolic Syndrome: Clinical Research & Reviews* 2026;20(5): 103438.

[**Objectives:** The high prevalence of T2D leads to increased complications like diabetic nephropathy, a leading cause of end-stage renal disease and renal replacement therapies. As studies from the Eastern Mediterranean Region report various prevalence rates for this complication, we conducted a meta-analysis to estimate the prevalence of nephropathy in T2D patients in the Eastern Mediterranean Region.]

Sex Differences in the Associations Between Visceral Adiposity and Hepatic Insulin Clearance in Type 2 Diabetes Mellitus: A Quantitative CT Study

Yang A., Pu F., Guo Y., et al. *Diabetes Research and Clinical Practice* 2026, 235: 113221.

[**Aims:** To investigate sex-related differences in the association of body fat distribution with hepatic insulin clearance (HIC) in type 2 diabetes mellitus (T2DM), determining whether HIC associates more strongly with static hepatic steatosis or visceral adiposity.]

A systematic review on the impact of type 2 diabetes on Leydig and Sertoli cells: Molecular mechanisms and functional consequences

Oroojan A.A., Etedali H., Lapari H.S. *Diabetes & Metabolic Syndrome: Clinical Research & Reviews* 2026;20(5): 103423.

[**Background and aims:** Type 2 diabetes (T2D) disrupts male reproductive function by impairing Leydig and Sertoli cell activity, leading to hormonal imbalances and defective spermatogenesis. This systematic review explores the molecular mechanisms underlying T2D-induced dysfunction in these testicular cells, emphasizing alterations in steroidogenesis, cell signaling, and metabolic regulation.]

Diagnosis

The association between reversion of prediabetes and incident cardiometabolic disease and mortality: A systematic review and meta-analysis

Liu H., He J., Gao Y., et al. *Journal of Diabetes and Its Complications*, 2026, 40(5), Article 109272.

[**Aims:** Evidence on the relationship between reversion of prediabetes and the risk of incident cardiometabolic disease and mortality remains inconsistent. Our study aimed to investigate the association between reversion of prediabetes and the risk of incident cardiometabolic disease and mortality.]

Basal metabolic rate and risk for diabetes and its complications among 341,790 adults from the UK Biobank

Frimpong J., Browne A., Martin W., et al. *Diabetes Research and Clinical Practice* 2026, 235: 113198.

[**Aims:** Basal metabolic rate (BMR) and energy imbalance are determinants of diabetes. We assessed the BMR-associated risk for diabetes in a large cohort.]

Microvascular disease beyond diabetes: a metabolic continuum with implications for early detection and diabetes care

Xu X., Qiu S., Wu T., et al. *Diabetes Research and Clinical Practice* 2026, 235: 113210.

[Microvascular disease has traditionally been regarded as a defining complication of diabetes, responsible for major clinical outcomes including retinopathy, nephropathy, neuropathy, and limb amputation. Existing frameworks have largely attributed microvascular injury to chronic hyperglycaemia, mediated through pathways such as advanced glycation end product formation, protein kinase C activation, and oxidative stress. While these mechanisms are well established, a predominantly glucose-centric paradigm may incompletely capture the complexity of microvascular pathology. Accumulating evidence indicates that microvascular abnormalities are also prevalent in individuals without diabetes and may arise across a continuum of metabolic dysfunction. Epidemiological studies and clinical trials further suggest that intensive glucose lowering alone does not fully eliminate the risk of microvascular complications, highlighting the importance of non-glycaemic contributors, including hypertension, dyslipidaemia, insulin resistance, adiposity, and chronic inflammation. Notably, these metabolic disturbances may precede overt hyperglycaemia and provide earlier signals of vascular vulnerability. These observations have direct clinical relevance for diabetologists, as they suggest that microvascular injury may develop during prediabetes or earlier stages of metabolic dysfunction, with important implications for early screening and risk stratification in diabetes-oriented clinical practice. In this review, we propose the concept of metabolic microvascular disease (MMD), which reframes microvascular pathology as a systemic consequence of metabolic dysregulation rather than a complication confined to diabetes. We synthesise evidence of microvascular disease across populations with and without diabetes, summarise shared and distinct pathogenic mechanisms, and outline a pragmatic framework to support early clinical recognition and

research stratification. Finally, we discuss the clinical and public health implications of adopting a metabolic perspective, emphasising the need for prevention strategies that extend beyond glucose-lowering to include comprehensive metabolic risk management.]

Volatilomics insights in older adults with diabetes: from metabolic mechanisms to precision geriatric medicine

Basilicata M.G., Scisciola L., Pesapane A., et al. *Diabetes Research and Clinical Practice* 2026, 235: 113194.

[**Aims:** This review aims to evaluate the hypothesis that Volatilomics-the comprehensive analysis of volatile organic compounds (VOCs) from breath, skin, urine, and other biological matrices-can serve as a non-invasive tool to characterize metabolic alterations associated with aging and diabetes mellitus in older adults, supporting precision geriatric medicine.]

Glucose monitoring and control

Barriers to use of continuous glucose monitoring among adults with type 2 diabetes

Argueta A.S., Ng J.M., Zupa M.F. *Diabetes Research and Clinical Practice* 2026, 235: 113217.

[This retrospective study assessed barriers to CGM use among 100 adults with type 2 diabetes receiving endocrinology care. Patient preference was the most common reason for non-use (n = 47). Nearly half of patients had no CGM discussion documented (n = 42), and financial (n = 9) and phone compatibility (n = 2) barriers were less common.]

Efficacy and hypoglycemia-related safety of henagliflozin or dapagliflozin as add-on to CSII in hospitalized patients with T2DM: A retrospective matched study using continuous glucose monitoring

Tang H., Chen Z., Wang J., et al. *Journal of Diabetes and Its Complications*, 2026, 40(5), Article 109315.

[**Objective:** To compare the efficacy and hypoglycemia-related safety of add-on henagliflozin or dapagliflozin to continuous subcutaneous insulin infusion (CSII) versus CSII alone in hospitalized patients with type 2 diabetes mellitus (T2DM).]

Evaluation of new staging schema for the early diagnosis of dysglycaemia

Retnakaran R., Shen J., Bergman M., et al. *Lancet Diabetes & Endocrinology*, 2026, 14(5), pp.369-371.

[In 2024, the International Diabetes Federation published a position statement supporting the 1 h 75 g oral glucose tolerance test (OGTT) as an alternative to the conventional 2 h testing protocol and endorsed the term intermediate hyperglycaemia as an early dysglycaemic state, defined as 1 h glucose of 8.6 mmol/L or higher. ^{1,2} By considering intermediate hyperglycaemia in conjunction with HbA_{1c} and traditional 2 h OGTT dysglycaemic thresholds, it should theoretically be possible to better identify future risk of diabetes at an earlier juncture. This could then inform interventions for risk modification. ² This rationale led to the 2024 proposal by Bergman and colleagues of a new staging schema for identifying individuals at risk of prediabetes and diabetes. ³ This four-stage schema identified normal glucose tolerance (stage 0), intermediate hyperglycaemia without prediabetes (stage 1), intermediate hyperglycaemia with prediabetes (stage 2), and overt diabetes (stage 3) as distinct strata that could enhance the early identification of those at risk of dysglycaemia. ³ However, there has been little direct evaluation of this new approach to glycaemic classification. Thus, we sought to evaluate this new schema within an established prospective observational cohort designed to study early events in the natural history of dysglycaemia. ^{4,5}]

Navigating the discordance: a comprehensive review of HbA_{1c}-glycemia mismatch in clinical practice

Sureshkumar P., Kumar S.S., Anusree E., et al. *Diabetes Research and Clinical Practice* 2026, 235: 113216.

[Glycated hemoglobin (HbA1c) is a cornerstone of diabetes diagnosis and management. For most individuals, HbA1c remains reliable; however clinically significant discordance between HbA1c levels and actual blood glucose values occurs in defined subpopulations with specific confounding conditions (e.g., anemia, hemoglobinopathies, chronic kidney disease). This narrative review synthesizes current evidence on the multifactorial etiology and clinical consequences of HbA1c-glycemia mismatch. We highlight biological variability, hematological conditions, systemic diseases, and analytical factors that contribute to this discrepancy. The review emphasizes that recognizing these limitations is crucial to avoid clinical misjudgment, such as inappropriate treatment escalation or dangerous therapeutic inertia. We advocate for a systematic diagnostic approach when discordance is suspected, including evaluation for confounders and alternative biomarkers such as fructosamine, and critically, the integration of continuous glucose monitoring (CGM). When CGM is utilized, a comprehensive assessment of glycemic control should incorporate the full panel of consensus metrics- Time-in-Range (TIR), Time-Below-Range (TBR), Glycemic Variability (GV), and the Glucose Management Indicator (GMI). However, CGM systems have their own limitations, including inter-sensor variability and differences between device models, which must be considered when interpreting discordance. This review aims to equip clinicians with the knowledge to navigate HbA1c discordance, promoting personalized, safe, and equitable diabetes care.]

Quality of life and factors affecting glycemic control in adolescents with Type 1 diabetes: a cross-sectional study

Simsek A., Aydın D.B., Çubukcu E., et al. *Diabetes Research and Clinical Practice* 2026, 235: 113225.

[**Aims:** Type 1 diabetes is one of the most common chronic diseases in childhood and has a significant impact on children's quality of life. The aim of this study was to evaluate the factors affecting the quality of life and glycemic control of adolescents with type 1 diabetes.]

Sleep and eating patterns in individuals with gestational diabetes: associations with daily overnight and morning glucose using continuous glucose monitoring

Montemayor M.T., Ackerer A., Lacroix A., et al. *Journal of Diabetes and Its Complications*, 2026, 40(5), Article 109293.

[**Background and aims:** The influence of diet and sleep and their combined effect on daily glucose control in individuals with gestational diabetes mellitus (GDM) remains unclear. This study investigated real-time associations between eating and sleep patterns with overnight and morning glucose using ecological momentary assessment.]

Tirzepatide as an Add-on for Participants with Inadequate Glycemic Control Using Basal Insulin: Pooled Subgroup Analysis of SURPASS-5 and -6

Bajaj H.S., Billings L.K., Sharma P., et al. *Diabetes Therapy* 2026, 17(5): 787–797.

[**Introduction:** This study aimed to assess the efficacy and hypoglycemia safety of tirzepatide as an add-on to basal insulin in people with inadequate glycemic control, across subgroups of baseline age, type 2 diabetes (T2D) duration, HbA1c, and basal insulin dosage using pooled data from the SURPASS-5 and -6 studies.]

Hypoglycaemia

Efficacy and hypoglycemia-related safety of henagliflozin or dapagliflozin as add-on to CSII in hospitalized patients with T2DM: A retrospective matched study using continuous glucose monitoring

Tang H., Chen Z., Wang J., et al. *Journal of Diabetes and Its Complications*, 2026, 40(5), Article 109315.

[**Objective:** To compare the efficacy and hypoglycemia-related safety of add-on henagliflozin or dapagliflozin to continuous subcutaneous insulin infusion (CSII) versus CSII alone in hospitalized patients with type 2 diabetes mellitus (T2DM).]

Insulin delivery modality and Ramadan fasting interruption, glycemic control, and fear of hypoglycemia in type 1 diabetes: a prospective, multicenter study from Saudi Arabia

Al-Sofiani M.E., Alharthi S.K., Alsuhaibani M., et al. *Diabetes Research and Clinical Practice* 2026, 235: 113196.

[**Introduction:** Most people with type 1 diabetes (PWT1D) typically avoid fasting during Ramadan because of dysglycemia risks. We compared efficacy, safety profiles, and fear of hypoglycemia (FOH) during Ramadan fasting in users of four insulin delivery modalities.]

Insulin therapies

Efficacy and Safety of Insulin Efsitora Versus Degludec in Adults with Type 2 Diabetes Who Are Insulin-Naïve: Japan Subgroup Analysis of QWINT-2

Kiyosue A., Inoue M., Takita Y., et al. *Diabetes Therapy* 2026, 17(5): 771–785.

[**Introduction:** The phase 3 QWINT-2 study demonstrated that once-weekly insulin efsitora alfa (efsitora) was noninferior to once-daily insulin degludec (degludec) in reducing glycated hemoglobin (HbA1c) at week 52 when added to existing noninsulin glucose-lowering agents in adults with type 2 diabetes who were insulin-naïve. A Japan subgroup analysis of QWINT-2 using two dosing algorithms is presented here.]

Insulin delivery modality and Ramadan fasting interruption, glycemic control, and fear of hypoglycemia in type 1 diabetes: a prospective, multicenter study from Saudi Arabia

Al-Sofiani M.E., Alharthi S.K., Alsuhaibani M., et al. *Diabetes Research and Clinical Practice* 2026, 235: 113196.

[**Introduction:** Most people with type 1 diabetes (PWT1D) typically avoid fasting during Ramadan because of dysglycemia risks. We compared efficacy, safety profiles, and fear of hypoglycemia (FOH) during Ramadan fasting in users of four insulin delivery modalities.]

Optimizing Type 2 Diabetes Management in Iraq: Expert Consensus on Initiation and Intensification of Insulin-Based Treatment Options

Saab C., Mansour A.A., Rahmah A.M., et al. *Diabetes Therapy* 2026, 17(5): 671–684.

[**Introduction:** Type 2 diabetes mellitus (T2DM) prevalence in Iraq is projected to rise significantly by 2045, creating urgent need for optimized use of latest insulin therapies. An expert panel of eleven diabetes specialists convened to assess the evolving landscape of insulin therapies and explore how each option fits into current strategies to optimize T2DM management in Iraq.]

Embedding the safer use of insulin.

Specialist Pharmacy Service; 2026.

<https://www.sps.nhs.uk/articles/embedding-the-safer-use-of-insulin/>

[Implementation of national safety standards, alerts and guidance can help reduce preventable harm from insulin use.]

Management of diabetes (diet, exercise, lifestyle)

Participant recruitment, baseline characteristics and burden of cardiometabolic risk markers among adults with prediabetes in Kenya: insights from the fermented foods and prediabetes study

Iseme-Ondiek R., Muia A., Shabani J.S., et al. *Diabetes Research and Clinical Practice* 2026, 235: 113214.

[**Aims:** Cardiometabolic abnormalities such as obesity, hypertension, and dyslipidemia are rising globally and straining health systems. This study assessed the burden of cardiometabolic risk factors among prediabetic adults in Kenya.]

Pharmacological management of diabetes

Analogue insulin, GLP-1, and the WHO Model Essential Medicines List

De Melo K.F.S., Barone M.T.U., Doble E., et al. *Lancet Diabetes & Endocrinology*, 2026, 14(5), p.376.

[We read with concern the Correspondence by David Beran and colleagues ¹ regarding the assertion that the benefits of short-acting insulin analogues are “somewhat tenuous” compared with regular human insulin. While we concur that WHO Model Essential Medicines List (EML) policy should prioritise affordability, this view should not neglect evidence regarding safety, adherence, and the lived experience of people with diabetes.]

Analogue insulin, GLP-1, and the WHO Model Essential Medicines List

Manne-Goehler J., Segafredo G., Luo J., et al. *Lancet Diabetes & Endocrinology*, 2026, 14(5), p.377.

[David Beran and colleagues argue that the GLP-1 receptor agonists might not have been appropriate for addition to the 2025 WHO Essential Medicines List (EML) for three reasons. ^e First, the authors state that diabetes care systems remain weak and that adding GLP-1 receptor agonists is unrealistic. Second, they argue that even in high-income countries where GLP-1 receptor agonists can be cost-effective, they remain unaffordable. Third, the authors state that the WHO EML and guideline processes for GLP-1 receptor agonists would benefit from greater alignment.]

Analogue insulin, GLP-1, and the WHO Model Essential Medicines List – Authors reply

Beran D., Adler A., Levitt N., et al. *Lancet Diabetes & Endocrinology*, 2026, 14(5), pp.377-378.

[We thank Karla Melo and colleagues and Jennifer Manne-Goehler and colleagues for their feedback regarding our Correspondence. ¹ Debate is essential in moving the agenda on access to diabetes medicines forward.]

Fixed-Dose Combination Therapy as a Strategy to Improve Antidiabetic Medication Adherence in People with Type 2 Diabetes: A Narrative Review

Highton P.J., Funnell M.P., Khunti K. *Diabetes Therapy* 2026, 17(5): 627–640.

[Type 2 diabetes mellitus (T2DM) is a metabolic condition associated with increased morbidity, mortality and healthcare costs, with poor medication adherence to antidiabetic medications being a major barrier to optimal risk-factor control. Treatment complexity, due to polypharmacy and burdensome dosing regimens, is a key contributor to medication non-adherence in people with T2DM. Fixed-dose combination (FDC) therapy, in which two or more drugs are co-formulated into a single dosage, has emerged as a key strategy to reduce treatment burden, simplify dosing and potentially improve adherence in T2DM. This narrative review evaluates the evidence for FDC therapy as a means of improving medication adherence in people with T2DM. We summarise the development of FDCs, commonly used antidiabetic regimens, patient-reported benefits and their role in clinical practice. Evidence from randomised controlled trials (RCTs) assessing medication adherence is limited, but observational studies consistently demonstrate improved adherence among patients prescribed FDCs compared with free-equivalent combination regimens. Systematic reviews and meta-analyses support these findings, showing that FDCs attenuate the decline in medication adherence observed when transitioning from monotherapy to combination therapy. Additional benefits of FDC therapy include greater treatment satisfaction, potential cost-effectiveness and safety profiles comparable to their individual components. However, challenges associated with FDC therapy remain, including limited dosing flexibility, difficulties in titration and a paucity of long-term adherence data. Further research,

particularly RCTs comparing FDCs with equivalent separate combinations and long-term follow-up data, are needed to confirm these benefits and inform clinical guidelines. Overall, FDC therapy is beneficial for simplifying diabetes treatment and improving medication adherence in T2DM.]

GLP-1 agonists and the gut microbiome: A bidirectional relationship.

Kamath S., Chan N.S.L., Joyce P. *British Journal of Clinical Pharmacology* 2026;92(5): 1309-1325. [Glucagon-like peptide-1 (GLP-1) receptor agonists have transformed the management of type 2 diabetes mellitus (T2DM) and obesity, yet their interactions with the gut microbiome remain an emerging frontier in pharmacological and metabolic research. Mounting evidence suggests that the gut microbiota modulates GLP-1 secretion via microbial metabolites, including short-chain fatty acids and bile acid derivatives, while GLP-1 agonists reciprocally reshape microbial composition, influencing metabolic outcomes beyond their classical incretin functions. This bidirectional interplay has profound implications for precision medicine, as gut microbial signatures have been associated with variability in therapeutic response, raising the possibility that microbiome features could contribute to response stratification in future studies. Advances in pharmacomicrobiomics, multiomics integration and computational modelling now enable a more refined dissection of these interactions, illuminating potential microbial targets for intervention. Study discrepancies may arise from variations in host diet, baseline microbiome composition and genetic factors influencing GLP-1 signalling. Future studies should incorporate stratified analyses accounting for these confounders to understand causative mechanisms. This review collates current evidence on the microbiome-mediated modulation of GLP-1 dynamics, evaluates the pharmacomicrobiomic impact of GLP-1 agonists and outlines future research directions at the interface of gut microbiota and incretin biology. By unravelling the complexities of this host–microbe–drug axis, the field moves closer to a paradigm of personalized metabolic medicine, where future GLP-1 therapeutic strategies may consider host metabolic and microbial context, optimizing efficacy and minimizing variability in patient response.]

Glucagon-Like Peptide-1 Receptor Agonists: Their Potential Role in Prediabetes

Panou T., Gouveri E., Popovic D.S., et al. *Diabetes Therapy* 2026, 17(5): 641–669.

[Prediabetes is a frequently occurring condition with increased risk of type 2 diabetes mellitus (T2DM) and cardiovascular disease. Glucagon-like peptide-1 receptor agonists (GLP-1RAs) are established antidiabetic agents, also used to treat obesity. There is limited, yet promising evidence on their use in prediabetes. T2DM was less frequent among subjects on liraglutide, semaglutide and tirzepatide compared with the control arm. Delayed progression to T2DM has also been observed. Furthermore, normoglycaemia was achieved for subjects on liraglutide (up to 66%), semaglutide (up to 81%) and tirzepatide (up to 93.3%). However, this effect was only partially sustained following drug withdrawal. GLP-1RAs have led to modest decreases in glycated haemoglobin (HbA1c), fasting glucose, weight and fat mass loss, as well as increased insulin sensitivity and improved β -cell glucose-insulin dynamics. Decreased risk for atherosclerotic cardiovascular disease and heart failure was also demonstrated, mostly for subjects on tirzepatide. There is experimental evidence on improvements in liver dysfunction, pointing to potential benefits for metabolic dysfunction-associated steatotic liver disease (MASLD) in prediabetes. The safety profile was acceptable with mild-to-moderate gastrointestinal adverse effects being mostly reported. Future large randomised controlled trials are needed to ascertain the exact role of GLP-1RAs in prediabetes.]

Real-World Effectiveness and Safety of Escalating Once-Weekly Semaglutide from 0.5 to 1.0 mg in Type 2 Diabetes

Sato G., Uchino H., Takuma K., et al. *Diabetes Therapy* 2026, 17(5): 753–770.

[**Introduction:** Real-world data on escalation of once-weekly semaglutide from 0.5 to 1.0 mg remain limited. Therefore, we aimed to evaluate the effectiveness and safety of this dose escalation in routine clinical practice.]

Target trial emulations for tirzepatide, semaglutide and SGLT2-inhibitors for dementia in patients with type 2 diabetes: Real world evidence from a retrospective cohort study

Younis A., Henney A.E., Riley D.R., et al. *Diabetes Research and Clinical Practice* 2026, 235: 113083.

[**Aims:** Evidence suggests sodium glucose co-transporter 2 inhibitors and glucagon-like peptide-1 receptor agonists may reduce the onset/progression of dementia. The effect of the dual GLP1/GIP receptor agonist tirzepatide on dementia outcomes remains unknown. We compared tirzepatide, semaglutide and SGLT2-i in relation to incident dementia in patients with type 2 diabetes.]

Tirzepatide versus semaglutide for the prevention of mild cognitive impairment, dementia, and Alzheimer's disease in type 2 diabetes: A real-world, retrospective cohort study

Da Silva A.M.P., Cardoso L.J.C., Batista S., et al. *Journal of Diabetes and Its Complications*, 2026, 40(5), Article 109306.

[**Background:** Glucagon-like peptide-1 (GLP-1) receptor agonists have shown promise in managing type 2 diabetes mellitus (T2DM) and provide metabolic and cardiovascular benefits. Their associations with neurocognitive outcomes in clinical populations remain uncertain.]

Viral medicine: social media and new expectations of obesity treatment

Tejera-Pérez C. *Lancet Diabetes & Endocrinology*, 2026, 14(5), p.374.

[The therapeutic landscape of obesity has changed more in recent years than in the previous several decades. ¹ The development of incretin-based medications has expanded the options for medical weight management. In randomised clinical trials, semaglutide and tirzepatide have achieved an average weight loss of 15–20%. ^{2,3} These advances represent a major milestone in the treatment of a chronic disease affecting more than 1 billion people worldwide.]

Prevention of diabetes (diet, exercise, lifestyle)

Association of the visceral adiposity index with prediabetes remission to normoglycemia in middle-aged and older Chinese adults: a prospective cohort study

Wu F., Wang L., Peng Q., et al. *Diabetes Research and Clinical Practice* 2026, 235: 113227.

[**Background:** Prediabetes is a critical window for T2DM prevention, yet the Visceral Adiposity Index's (VAI) role in prediabetes remission is unclear. **Methods:** This longitudinal study analyzed 2,859 middle-aged and older prediabetic participants from the CHARLS database. Prediabetes remission was defined as returning to normoglycemia at a single five-year follow-up assessment. Multivariable logistic regression and restricted cubic spline (RCS) models were employed to examine the association between VAI and prediabetes remission. **Results:** At the five-year follow-up point, 56.28% of participants were in remission. After adjusting for confounders, VAI was significantly negatively associated with remission ($OR = 0.960$, $P = 0.017$). RCS analyses demonstrated an “L-shaped” nonlinear relationship (P for nonlinearity < 0.001) with an inflection-point threshold of 2.157. Below this threshold, lower VAI was associated with markedly higher odds of remission at follow-up, whereas above it, the association was no longer statistically significant. Subgroup analyses indicated that VAI had stronger predictive performance among individuals aged 60–70 years. **Conclusions:** VAI is a key metabolic indicator associated with prediabetes remission, with lower visceral adiposity levels being linked to a higher probability of remission. The threshold of 2.157 identified in this study serves as a potential reference value for risk stratification, warranting further validation in future prospective clinical trials.]

Long-term remission of impaired glucose tolerance in the finnish diabetes prevention study

Uusitupa M., Valtanen M., Lindström J., et al. *Diabetes Research and Clinical Practice* 2026, 235: 113222.

[**Aims:** Lifestyle interventions induce remission in people with type 2 diabetes (T2D) and those with impaired glucose tolerance (IGT). We examined the long-term remission of IGT in the participants of the Finnish Diabetes Prevention Study and evaluated factors predicting remission during extended follow-up.]

Teenagers with diabetes

HbA1c trajectories and risk of albuminuria in children and adolescents with type 1 diabetes followed into adulthood - a joint modeling approach of Danish nationwide register data

Rønn P.F., Svensson J., Wibaek R., et al. *Journal of Diabetes and Its Complications*, 2026, 40(5), Article 109317.

[**Aims:** We examined the association between HbA1c (current value and cumulative exposure) and albuminuria in individuals with childhood-onset type 1 diabetes (T1D).]

Quality of life and factors affecting glycemic control in adolescents with Type 1 diabetes: a cross-sectional study

Simsek A., Aydın D.B., Çubukcu E., et al. *Diabetes Research and Clinical Practice* 2026, 235: 113225.

[**Aims:** Type 1 diabetes is one of the most common chronic diseases in childhood and has a significant impact on children's quality of life. The aim of this study was to evaluate the factors affecting the quality of life and glycemic control of adolescents with type 1 diabetes.]