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Diabetes

Current Awareness Bulletin

April 2025

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- **Bitesize searching databases for evidence: a quick guide to help you develop your literature searching skills**
  45 minutes. Learn how to transform a question into a search strategy, and how to find the best evidence in a database.
  Next sessions: 9th May @ 2pm, 9th June @ 3pm & 22nd July @ 4pm

- **Simple and painless evidence into practice (BMJ Best Practice and the LKS Hub)**
  30 minutes. Learn about quick and hassle-free ways to seamlessly incorporate evidence into your daily work.
  Next sessions: 12th May @ 12 noon, 3rd June @ 2pm & 9th July @1pm

- **Quickfire health literacy – getting your message across**
  30 minutes. Learn about the communication barriers patients may encounter, and ways to ensure they get the most from their care.
  Next sessions: 15th May @ 2pm, 13th June @ 3pm & 7th July @ 4pm

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

General

1. Barriers to care for refugees and migrants with diabetes

Authors: Jobanputra K, Fabreau G, Ansbro E

Publication Date: 2025

Journal: Lancet Diabetes & Endocrinology

[Each year, an estimated 17 million people die from non-communicable diseases (NCDs) before the age of 70 years; 86% of these deaths occur in low-income and middle-income countries (LMICs). [1] Cardiovascular diseases, hypertension, diabetes, chronic respiratory diseases, cancer, and complications of these conditions, account for most NCD-related morbidity and mortality. [2] Populations forcibly displaced by humanitarian crises, including refugees and migrants, face disproportionately high risks of developing NCDs or worsening NCD complications and mortality. Trauma, stress, loss of access to medication and livelihoods, and poor access to healthy food directly contribute to these risks. [3] Indirectly, disrupted health-care access due to targeted health facility destruction, loss of trained health personnel, and no access to essential medication and equipment amplify the risk of NCD complications. [4]]

2. **Diabetes in migrant communities: a rising healthcare priority**

Authors: Umpierrez G.E., Ali M.K.

Publication Date: 2025

Journal: BMJ Open Diabetes Research and Care

[As of 2023, an estimated 281 million people globally are international migrants—constituting approximately 3.6% of the world population, reflecting steady growth over the past years.[1] Non-communicable diseases, including diabetes, disproportionately impact migrant and ethnic minority populations due to a combination of genetic, environmental and socioeconomic factors.[2] Previous studies in the USA and Europe have shown that ethnic minority populations have two to six times higher rates of type 2 diabetes (T2D) compared with their host populations.[3 4] Migrants from South Asia had the highest rate, with the pooled OR being nearly fourfold higher, followed by those from the Middle East, North Africa and South and Central America, compared with Europeans.[4 5] Similar data have been reported from Australia.[6]]

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3. **Diabetes in the Western Pacific: Unravelling complexities, forging solutions**

Author: International Diabetes Federation

Publication Date: 2025

Journal: Diabetes Research and Clinical Practice

[The International Diabetes Federation Western Pacific (WP) region extends from East Asia to Oceania, encompassing a vast and diverse area of 38 countries and territories of island nations, coastal countries and archipelagos. Home to one-quarter of the world's population, the region holds diverse cultures, languages and ethnicities, with countries like Japan, Australia, and Pacific Island nations. Lifestyles vary greatly, from the high-tech urban living in cities like Tokyo to the more traditional, community-oriented life on smaller Pacific Island nations, where local customs, agriculture, and fishing remain integral to daily life. It is also home to some of the highest diabetes rates globally, with high rates of undiagnosed diabetes and diabetes-related deaths.]

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4. **Effects of deep ocean-derived magnesium-enhanced water on metabolic diseases with microbiome changes**

Authors: Kang H, Lee U.J., Park B.Y., et al.

Publication Date: 2025

Journal: Diabetes & Metabolic Syndrome: Clinical Research & Reviews

[**Aims**: To investigate the effects of magnesium (Mg) from deep ocean sources, we conducted a randomized clinical trial involving adults with hypertension, diabetes, or hyperlipidemia.]

5. **Incidence of metabolic and bariatric surgery among US adults with obesity by diabetes status: 2016–2020**

Authors: Cheng Y.J., Bullard K.M., Hora I, et al.

Publication Date: 2025

Journal: BMJ Open Diabetes Research and Care

[**Introduction**: Metabolic and bariatric surgery (MBS) is an effective intervention to manage diabetes and obesity. The population-based incidence of MBS is unknown.

Objective: To estimate the incidence of MBS among US adults with obesity by diabetes status and selected sociodemographic characteristics.]

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6. **Outcomes after medical treatment for primary aldosteronism: an international consensus and analysis of treatment response in an international cohort**

Authors: Yang J, Burrello J, Goi J, et al.

Publication Date: 2025

Journal: Lancet Diabetes & Endocrinology

[**Background**: Primary aldosteronism can be treated medically but there is no standardised method to evaluate treatment outcomes. We aimed to develop criteria for assessing the outcomes of targeted medical treatment of primary aldosteronism, analyse outcomes across an international cohort, and identify factors associated with a complete treatment response.]

Children with diabetes

7. Bariatric surgery in children with obesity and type 2 diabetes

Authors: Desai A.P., Vaghani M.S., Chan L.F.

Publication Date: 2025

Journal: Lancet Diabetes & Endocrinology

[Childhood obesity has increased substantially over the last 30 years, with 8% (160 million) of children worldwide living with obesity in 2022. Obesity is associated with multiple health conditions, one of which is type 2 diabetes, and this is no different in children. The SEARCH Study has shown increasing prevalence of type 2 diabetes in children between 2002 and 2017 and predicted a 700% rise by 2060. [1] Type 2 diabetes in children has a more aggressive clinical course than adult-onset type 2 diabetes as well as type 1 diabetes in children. Diabetic retinopathy, neuropathy, and kidney disease can develop early in these patients. [2]]

8. **Early increase in carotid intima-media thickness in women with childhood-onset type 1 diabetes compared with healthy peers: the Norwegian Atherosclerosis and Childhood Diabetes study**

Authors: Simeunovic A, Brunborg C, Heier M, et al.

Publication Date: 2025

Journal: BMJ Open Diabetes Research and Care

[**Introduction**: The risk of cardiovascular disease is increased in individuals with type 1 diabetes, despite good glycemic control. This study aims to evaluate early signs of atherosclerosis and predisposing factors in individuals with childhood-onset type 1 diabetes compared with healthy controls.]

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9. **Type 1 diabetes incidence curves differ by age for girls and boys between 1996 and 2022: Results from the North Rhine-Westphalia Diabetes Registry, Germany**

Authors: Stahl-Pehe A, Baechle C, Lanzinger S, et al.

Publication Date: 2025

Journal: Diabetes Research and Clinical Practice

[The type 1 diabetes incidence was analyzed in 0- to 14-year-old children in North Rhine-Westphalia, Germany, from 1996 to 2022. The data revealed an overall increasing trend, with variations by age and sex. The incidence increased in boys across age groups but peaked in girls in the 5–9-year age group.]

Cardiovascular Disease

10. **Bidirectional interplay of sleep apnea syndrome and cardio-vascular disorders in diabetes**

Authors: Valensi P, Benmohammed K, Zerguine M.

Publication Date: 2025

Journal: Diabetes Research and Clinical Practice

[Although often overlooked sleep apnea has emerged as a significant public health concern. Obstructive sleep apnea (OSA) and diabetes commonly co-exist with a vicious cycle worsening the incidence and severity of both conditions. OSA has many implications including cardiometabolic disorders and impaired cardiovascular (CV) prognosis. OSA combined with diabetes generates a cumulative effect on CV outcomes. The association of OSA with several comorbidities including CV disease and heart failure is bi-directional meaning that some of them are likely to contribute to OSA. In patients with diabetes, OSA treatment should be integrated in a holistic strategy of prevention of CV and microvascular complications. This article provides some clues to advance the understanding of the interplay between OSA and CV disorders in diabetes and to consider the role of some CV risk markers like cardiac autonomic neuropathy and artery stiffness and of novel metrics for hypoxic-related events in CV risk stratification, and offers a discussion on the effects of medical approaches including weight loss strategies, GLP1-receptor agonists and sodium–glucose cotransporter 2 inhibitors. It provides a guidance to improve screening and diagnosis of OSA, and adherence to OSA treatment in patients with diabetes.]

11. **Burden of vascular risk factors by age, sex, ethnicity and deprivation in young adults with and without newly diagnosed type 2 diabetes**

Authors: Goldney J, Barker M.M., Sargeant J.A., et al.

Publication Date: 2025

Journal: Diabetes Research and Clinical Practice

[**Aims**: Do associations between age at diagnosis of type 2 diabetes and vascular risk factors vary by ethnicity and deprivation?]

12: **Cardiovascular Events in Adults with Type 2 Diabetes and ASCVD Initiating Once-Weekly Semaglutide vs DPP-4is in the USA**

Authors: Inzucchi S.E., Tan X, Liang Y, et al.

Publication Date: 2025

Journal: Diabetes Therapy

[**Introduction**: Glucagon-like peptide 1 receptor agonists (GLP-1 RAs) have demonstrated cardiovascular benefits in trials involving high-risk patients with type 2 diabetes (T2D), while dipeptidyl peptidase 4 inhibitors (DPP-4is) have not. However, DPP-4is are still commonly prescribed in patients with T2D and atherosclerotic cardiovascular disease (ASCVD). This study compared time to occurrence of cardiovascular events, health care resource utilization (HCRU), and medical costs in patients with T2D and ASCVD who initiated once-weekly semaglutide vs a DPP-4i.]

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13. **Diabetes mellitus therapy in the light of oxidative stress and cardiovascular complications**

Authors: Osman A.A.M., Seres-Bokor A, Ducza E.

Publication Date: 2025

Journal: Journal of Diabetes and Its Complications

[Type 2 diabetes is a chronic disease requiring comprehensive pharmacological and non-pharmacological interventions to slow its progression and prevent or delay its micro- and macrovascular complications. Oxidative stress contributes to the development and progression of type 2 diabetes as well as to the development of its complications through several mechanisms. Therefore, therapeutic targeting of oxidative stress could aid in managing this disease and its complications. In our study, we have collected information on the most frequently used antidiabetic drugs (metformin, glucagon-like peptide 1 receptor agonists and sodium-glucose cotransporter 2 inhibitors) in the EU and the USA based on their antioxidant effects. Based on our results, we can conclude that the antioxidant effects of the investigated antidiabetics may contribute significantly to the management of the disease and its complications and may open new therapeutic perspectives in their prevention.]

14. **Finerenone and new-onset diabetes in heart failure: a prespecified analysis of the FINEARTS-HF trial**

Authors: Butt J.H., Jhund P.S., Henderson A.D., et al.

Publication Date: 2025

Journal: Lancet Diabetes & Endocrinology

[**Background**: Data on the effect of mineralocorticoid receptor antagonist therapy on HbA 1c levels and new-onset diabetes are conflicting. We aimed to examine the effect of oral finerenone, compared with placebo, on incident diabetes in the Finerenone Trial to Investigate Efficacy and Safety Superior to Placebo in Patients with Heart Failure (FINEARTS-HF) trial.]

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15. **Halving heart failure outcomes by finerenone-mediated type 2 diabetes prevention**

Authors: Gerstein H.C., Mohammedi K.

Publication Date: 2025

Journal: Lancet Diabetes & Endocrinology

[Type 2 diabetes is common; it affects one in ten adults internationally and one in five adults aged 65 years or older. It is commonly diagnosed when there is persistent hyperglycaemia, defined as HbA $_{1c}$ levels of 48 mmol/mol (6·5%) or higher. Glucose levels that are elevated but below this threshold (ie, HbA $_{1c}$ of 39–47 mmol/mol or 5·7–6·4%) are typically classified as prediabetes, [1] which is a strong risk factor for incident type 2 diabetes. Other risk factors for incident type 2 diabetes include older age, abdominal obesity, gestational diabetes, hypertension, family history, and ethnic ancestry. Cardiovascular diseases, including heart failure, are also risk factors for incident diabetes. Thus, up to 30% of ambulatory people with heart failure have diabetes, [2] and up to 3% of these individuals develop type 2 diabetes annually. [3]]

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16. **The impact of diabetes on Sepsis-induced cardiomyopathy**

Authors: Lai W, Liu L, Wang S, et al.

Publication Date: 2025

Journal: Diabetes Research and Clinical Practice

[**Purpose**: This study investigated the association between diabetes and Sepsis-induced cardiomyopathy (SIC), focusing on how changes in inflammatory response and cardiac function influence SIC prognosis. The aim is to provide clinicians with more accurate treatment and management strategies, ultimately enhancing patient outcomes and quality of life.]

17. **Impact of type 1 diabetes mellitus on mortality rate and outcome of hospitalized patients with myocardial infarction**

Authors: Schmitt V.H., Hobohm L, Hahad O, et al.

Publication Date: 2025

Journal: Diabetes & Metabolic Syndrome: Clinical Research & Revie*ws*

[**Introduction**: Type 1 diabetes mellitus (T1D) is associated with an increased cardiovascular risk. We aimed to investigate the influence of T1D on myocardial infarction (MI) patients' mortality.]

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18. **Incidence trends in ischaemic and non-ischaemic heart failure in people with and without type 2 diabetes, 2000–2019: An observational study in England**

Authors: Panchal K, Lawson C, Shabnam S, et al.

Publication Date: 2025

Journal: Diabetes Research and Clinical Practice

[**Aim**: To investigate trends in ischaemic and non-ischaemic heart failure (HF) in adults with type 2 diabetes and without diabetes between 1st January 2000 and 31st December 2019 in England.]

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19. **Diabetic microvascular complications are associated with left ventricular hypertrophy in patients with type 2 diabetes mellitus**

Authors: Liu S, Ke J, Feng X, et al.

Publication Date: 2025

Journal: Journal of Diabetes and Its Complications

[**Background**: Left ventricular hypertrophy (LVH) is an important and common pathologic change in the heart of patients with diabetes mellitus. Microvascular complications have been reported to be involved in the development and process of LVH. This study aimed to explore the association between diabetic microvascular complications and LVH in patients with type 2 diabetes mellitus (T2DM).]

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20. **Midline venous catheter: New insights for its use in hospitalized patients with diabetes**

Authors: Rivas M, Abad M, Carnicero E, et al.

Publication Date: 2025

Journal: Diabetes Research and Clinical Practice

[In a prospective study we found that in hospitalized patients with diabetes the use of mid line venous catheter (MVC) resulted in a significantly lower rate of vascular complications than short cannulas. However, a special attention should be paid to catheter obstruction when MCV is used.]

21. **A Podcast on Patient and Physician Perspectives in the Holistic Care of Heart-Related Challenges of Type 2 Diabetes**

Authors: Rich J.D., Ferguson-Davis H.

Publication Date: 2025

Journal: *D*iabetes Therapy

[Type 2 diabetes (T2D) frequently coexists with cardiorenal complications. Therefore, a holistic approach to patient management is required, with specialists such as primary care physicians, cardiologists, endocrinologists, and nephrologists working together to provide patient care. Although glycemic control is important in the management of T2D, patients with T2D and acceptable glycemic control are still at risk from cardiovascular (CV) events such as stroke, heart attack, and heart failure (HF). Therefore, management of other risk factors, such as high blood pressure, high cholesterol, smoking cessation, and excess bodyweight, are imperative for reducing the risk of CV disease and HF in patients with T2D. In addition to pharmacological interventions, patient self-care, including beneficial dietary changes, regular exercise, and smoking cessation are critical for improving heart health and reducing the risk of CV events and progression of HF. In this podcast, a patient with lived experience of the heart-related challenges of T2D and a cardiologist discuss the link between T2D and heart-related complications, the pharmacological interventions and lifestyle modifications that can be used to reduce the risk of CV events and prevent HF, and the complexities of engaging with the healthcare system when managing multiple comorbidities. The discussion highlights the importance of patient education and empowerment for the management of heart-related challenges of T2D, and the central role of collaborative care between physicians of multiple specialties to reduce CV risk for patients with T2D.]

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22. **The relationship between residual insulin secretion and subclinical cardiovascular risk indices in young adults with type 1 diabetes**

Authors: Barmpagianni A, Karamanakos G, Anastasiou I.A., et al.

Publication Date: 2025

Journal: Journal of Diabetes and Its Complications

[**Background**: Patients with type 1 diabetes (DM1), even in the setting of adequate glycaemic control, have an excess risk for developing cardiovascular disease. Residual insulin secretion (RIS), measured by detectable C-peptide levels in patients with DM1, might protect against diabetes-related complications. This study aimed to examine the relationship between residual insulin secretion and prognostic markers of cardiovascular complications in patients with DM1.]

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23. **Use of Cardioprotective Adjuncts in Type 1 Diabetes.**

Authors: Greenfield J.R., Frampton R, Millard K, et al.

Publication Date: 2025

Journal: Diabetes Therapy

[Type 1 diabetes is associated with excess cardiovascular risk, even after accounting for traditional cardiovascular risk factors, including glycaemia. Hence, there is an urgent need to document the metabolic abnormalities that contribute to the cardiovascular mortality gap in

type 1 diabetes, and to examine whether cardioprotective type 2 diabetes medications prevent premature morbidity and mortality in this population.]

Diabetic Neuropathy

24. **Correlation between lipoprotein-associated phospholipase A2 and diabetic peripheral neuropathy in patients with type 2 diabetes mellitus: A cross-sectional study**

Authors: He Y, Ye M, Shen Z, et al.

Publication Date:

Journal: Journal of Diabetes and Its Complications

[**Background**: Lipoprotein-associated phospholipase A2 (Lp-PLA2) is an enzyme implicated in inflammation and oxidative stress, and has been associated with cardiovascular conditions and adverse outcomes, particularly in diabetes and its complications. However, no prior studies have examined the relationship between Lp-PLA2 and diabetic peripheral neuropathy (DPN) in patients with type 2 diabetes mellitus (T2DM). This research aims to explore the potential association between Lp-PLA2 and DPN.]

Eye Diseases

25. **Discovery and exploration of adaptive immune response-related drug targets in diabetic retinopathy by Mendelian randomization**

Authors: Gao N, Li J, Wei T, et al.

Publication Date: 2025

Journal: Diabetes Research and Clinical Practice

[**Background**: Persistent diabetes raises diabetic retinopathy (DR) risk, and management is challenging. Integrating transcriptomics and MR, this study provides a current reference for the clinical treatment of DR by identifying potential drug targets in adaptive immune response-associated genes (AIR-RGs).]

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26. **Innovations in diabetic retinopathy screening in the UK**

Authors: Sivaprasad S.

Publication Date: 2025

Journal: Lancet Diabetes & Endocrinology

[Diabetic retinopathy is a common complication in people with type 1 and type 2 diabetes, progressing from mild, moderate, and severe non-proliferative diabetic retinopathy to proliferative diabetic retinopathy. Patients with diabetic retinopathy can also develop diabetic macular oedema. Both proliferative diabetic retinopathy and diabetic macular oedema are vision-threatening complications but can remain asymptomatic. Therefore, people with diabetes should undergo retinal screening regularly to identify those at risk of visual impairment. The UK was one of the first countries in the world to implement systematic diabetic retinopathy screening for people with diabetes. [1] Approximately 4 million people are registered in the National Health Service (NHS) diabetic eye screening programme in England and Wales, and over 80% of them have routine retinal screening every 1–2 years using standard retinal cameras and protocols for screening and referral. The impact of this

programme over two decades has been considerable—it has facilitated early diagnosis and prompt treatment for both proliferative diabetic retinopathy and diabetic macular oedema; diabetic retinopathy is no longer the most common cause of certified visual impairment in England and Wales. [2]]

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27. **The role of melatonin and circadian rhythms in the pathogenesis of diabetic retinopathy: A systematic review**

Authors: Senthil M.P., Devlin E, Hassani A, et al.

Publication Date: 2025

Journal: Diabetes & Metabolic Syndrome: Clinical Research & Reviews

[**Aims**: This review investigates literature on systemic melatonin levels and circadian timing in diabetic retinopathy (DR), examining their associations with DR.]

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28. **Trajectories of choriocapillaris perfusion in healthy individuals and patients with diabetes mellitus: a prospective cohort study**

Authors: Zhong X, Yang S, Zhu Z, et al.

Publication Date: 2025

Journal: British Journal of Ophthalmology

[**Purpose**: To evaluate the longitudinal rate of choriocapillaris flow deficits (CFD) in healthy participants and patients with diabetes mellitus.]

Kidney Disease

29. **The association between age at diagnosis of diabetes and development of diabetic retinopathy and assessment of healthcare access as an effect modifier**

Authors: George B.L., Perez A.M., Rodriguez P, et al.

Publication Date: 2025

Journal: Journal of Diabetes and Its Complications

[**Aims**: To examine if healthcare access modifies the association between age at diagnosis of diabetes and the prevalence of retinopathy.]

30. **Association between muscle fatigability and diabetic kidney disease complications in patients with type 2 diabetes**

Authors: Hirano Y, Tsuriya D, Kono K, et al.

Publication Date: 2025

Journal: Journal of Diabetes and Its Complications

[**Aims**: Type 2 diabetes mellitus (T2DM) requires the maintenance of high physical activity levels and specific interventions tailored to the characteristics of each patient. We hypothesized that T2DM combined with diabetic kidney disease (DKD) could increase muscle fatigability, becoming a specific contributor to physical inactivity. This study aimed to determine the association between muscle fatigability and DKD complications and investigate the relationship between muscle fatigability and physical activity in patients with T2DM.]

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31. **Association of dysfunctional adiposity index with kidney impairment is accounted for by pigment epithelium-derived factor in type 2 diabetes mellitus – An 11-year follow-up of the SMART2D cohort study**

Authors: Moh M.C., Low S, Pek S.L.T., et al.

Publication Date: 2025

Journal: Journal of Diabetes and Its Complications

[**Aims**: This novel longitudinal study investigated the association of the new dysfunctional adiposity index (DAI) with kidney impairment in multi-ethnic Asians with type 2 diabetes mellitus (T2DM), and the mediation effect of pigment epithelium-derived factor (PEDF).]

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32. **Bone mineral density and the risk of kidney disease in patients with type 1 diabetes**

Authors: Hauge S.C., Hjortkjær H. Ø., Persson F, et al.

Publication Date: 2025

Journal: Journal of Diabetes and Its Complications

[**Aim**: To explore the association between bone disorder and the risk for progression of diabetic kidney disease (DKD) in persons with type 1 diabetes mellitus (T1DM).]

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33. **Clinical Profile and Treatment Adherence in Patients with Type 2 Diabetes and Chronic Kidney Disease Who Initiate an SGLT2 Inhibitor: A Multi-cohort Study.**

Authors: Johannes C.B., Ziemiecki R, Pladevall-Vila M, et al.

Publication Date: 2025

Journal: Diabetes Therapy

[**Introduction**: The clinical landscape for the treatment of patients with chronic kidney disease (CKD) and type 2 diabetes (T2D) is rapidly evolving. As part of the FOUNTAIN platform (NCT05526157; EUPAS48148), we described and compared cohorts of adult patients with CKD and T2D initiating a sodium-glucose cotransporter 2 inhibitor (SGLT2i) before the launch of finerenone in Europe, Japan, and the United States (US).]

34. **Dapagliflozin has protective effects on palmitate-induced renal tubular epithelial cells by enhancing mitochondrial function and reducing oxidative stress**

Authors: Ding T, Song M, Wang S, et al.

Publication Date: 2025

Journal: Journal of Diabetes and Its Complications

[Sodium-glucose co-transporter 2 (SGLT2) inhibitors, commonly utilized for diabetic nephropathy, have demonstrated benefits beyond glucose control, including organ protection. This study investigated the protective effects of the SGLT2 inhibitor, dapagliflozin (DAPA), on palmitate-induced renal tubular epithelial cell (HK–2) injury, particularly concentrating on mitochondrial function and oxidative stress. HK-2 cells were treated with 150 μmol/L palmitate to induce mitochondrial dysfunction and oxidative stress, and they were co-treated with 2 μmol/L DAPA for 24 h. DAPA significantly increased cell viability ($P < 0.05$), reduced reactive oxygen species (ROS) levels ($P < 0.001$), and restored mitochondrial membrane potential ($P < 0.05$). It also lowered malondialdehyde (MDA) level ($P < 0.001$) and increased superoxide dismutase (SOD) expression level ($P < 0.001$). Western blot analysis revealed that DAPA reversed palmitate-induced upregulation of apoptosis-related proteins, including Bax and Cytochrome C. DAPA also mitigated the overactivation of autophagy-related proteins, such as LC3 and Beclin-1, indicating its role in modulating autophagy under diabetic nephropathy. Electron microscopy confirmed improvements in mitochondrial morphology, accompanying by reduced swelling and restored cristae structure. These findings highlight the potential of DAPA, as an SGLT2 inhibitor, to mitigate renal injury by enhancing mitochondrial function and reducing oxidative stress, providing novel insights into its therapeutic value for diabetic nephropathy management.]

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35. **Global, regional and national burdens of chronic kidney disease due to T1DM and T2DM among adolescents and young adults aged 10–35 years from 1990–2021: A trend analysis based on the global burden of disease study 2021**

Authors: Wu B, Zhou Y, Ni Q.

Publication Date: 2025

Journal: Diabetes Research and Clinical Practice

[**Backgrounds**: Chronic kidney disease (CKD) is a major complication of diabetes, which is rising among adolescents and young adults worldwide, but data on the trends of these diseases are sparse. This study examined the burden of CKD due to type 1 diabetes (CKD-T1D) and type 2 diabetes (CKD-T2D) among those aged 10–35 from 1990 to 2021 on global, regional, and national levels.]

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36. **Kidney fat by magnetic resonance spectroscopy in type 2 diabetes with chronic kidney disease**

Authors: Heinrich N.S., Pedersen R.P., Vestergaard M.B., et al.

Publication Date: Journal of Diabetes and Its Complications

[**Background and hypothesis**: The kidneys may be susceptible to ectopic fat and its lipotoxic effects, disposing them to chronic kidney disease (CKD) in type 2 diabetes (T2D). We investigated whether the kidney parenchyma fat content and kidney sinus fat volume would be higher in persons with T2D and CKD.]

Liver Disease

37. **Applying 1-hour postload plasma glucose diagnostic criteria reveals high Progressive Risks of potential MASLD**

Authors: Teng L, Luo L, Sun Y, et al.

Publication Date: 2025

Journal: Diabetes Research and Clinical Practice

[**Background**: Recently, a 1-h PG value of ≥ 8.6 mmol/L, a more sensitive predictor of diabetes mellitus-related long-term cardiovascular complications than routine glucose markers, has been recommended as an additional diagnostic criterion for diabetes in the International Diabetes Federation Position Statement. However, its value in MASLD remains uncertain.]

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38. **The effect of semaglutide combined with metformin on liver inflammation and pancreatic beta-cell function in patients with type 2 diabetes and non-alcoholic fatty liver disease**

Authors: Ren R, Pei Y, Kong L, et al.

Publication Date: 2025

Journal: Journal of Diabetes and Its Complications

[**Background**: Type 2 diabetes mellitus (T2DM) and non-alcoholic fatty liver disease (NAFLD) were often coexistent conditions driven by insulin resistance and systemic inflammation. Effective management strategies that address both metabolic disorders were urgently needed. This study investigates the effect of combining semaglutide, a glucagon-like peptide-1 receptor agonist, with metformin on liver inflammation and pancreatic beta-cell function in patients with T2DM and NAFLD.]

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39. **Metabolic dysfunction-associated steatotic liver disease: heterogeneous pathomechanisms and effectiveness of metabolism-based treatment**

Authors: Stefan N, Yki-Järvinen H, Neuschwander-Tetri B.A.

Publication Date: 2025

Journal*:* Lancet Diabetes & Endocrinology

[The global epidemic of metabolic dysfunction-associated steatotic liver disease (MASLD) is increasing worldwide. People with MASLD can progress to cirrhosis and hepatocellular carcinoma and are at increased risk of developing type 2 diabetes, cardiovascular disease, chronic kidney disease, and extrahepatic cancers. Most people with MASLD die from cardiac-related causes. This outcome is attributed to the shared pathogenesis of MASLD and cardiometabolic diseases, involving unhealthy dietary habits, dysfunctional adipose tissue, insulin resistance, and subclinical inflammation. In addition, the steatotic and inflamed liver affects the vasculature and heart via increased glucose production and release of procoagulant factors, dyslipidaemia, and dysregulated release of hepatokines and microRNAs. However, there is substantial heterogeneity in the contributors to the pathophysiology of MASLD, which might influence its rate of progression, its relationship with cardiometabolic diseases, and the response to therapy. The most effective non-pharmacological treatment approaches for people with MASLD include weight loss. Paradoxically, some effective

pharmacological approaches to improve liver health in people with MASLD are associated with no change in bodyweight or even with weight gain, and similar response heterogeneity has been observed for changes in cardiometabolic risk factors. In this Review, we address the heterogeneity of MASLD with respect to its pathogenesis, outcomes, and metabolism-based treatment responses. Although there is currently insufficient evidence for the implementation of precision medicine for risk prediction, prevention, and treatment of MASLD, we discuss whether knowledge about this heterogeneity might help achieving this goal in the future.]

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40. **Predictors of liver fibrosis progression in cohort of type 2 diabetes mellitus patients with MASLD**

Authors: Alfadda A.A., Alqutub A.N., Sherbeeni S.M., et al.

Publication Date: 2025

Journal: Journal of Diabetes and Its Complications

[**Aim**: To investigate predictors of liver fibrosis progression in patients with type 2 diabetes mellitus (T2DM) over a minimum follow-up duration of three years.]

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

41. **Knowledge, attitudes, and practices of elderly diabetes patients regarding home emergency management of acute complications**

Authors: Wang L, Wen R, Zhang G, et al.

Publication Date: 2025

Journal: Diabetes Research and Clinical Practice

[**Aims**: This study aims to assess the knowledge, attitudes, and practices (KAP) of elderly diabetic patients regarding the home emergency management of acute diabetic complications, which is critical for preventing severe outcomes and ensuring timely intervention in emergencies.]

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42. **Uric acid in diabetic microvascular complications: Mechanisms and therapy**

Authors: Li X, Huang B, Liu Y, et al.

Publication Date: 2025

Journal: Journal of Diabetes and Its Complications

[Uric acid (UA) is mainly synthesized in the liver, intestine, and vascular endothelium and excreted by the kidney (70 %) and intestine (30 %). Hyperuricemia (HUA) occurs when UA production exceeds excretion. Many studies have found that elevated UA is associated with diabetic microvascular complications (DMC), including diabetic retinopathy (DR), diabetic nephropathy (DN), and diabetic peripheral neuropathy (DPN). In addition, too high or too low UA levels will promote the occurrence and development of chronic diseases, but the relationship between UA and diabetic microvascular complications (DMC) is not clear. Therefore, the rational treatment of UA in patients with diabetes is essential. In this review, we

summarize and discuss the mechanism and treatment of UA and DMC and may provide potential advice for rational drug selection.]

Diabetic Foot

43. **Assessment of the diabetic foot in inpatients**

Authors: Alsararatee H.H., Langley J.C.S., Thorburn M, et al.

Publication Date: 2025

Journal: British Journal of Nursing

[Diabetic foot disease is a severe complication of diabetes, leading to significant morbidity and lower limb amputations. This review explores the pathophysiology of diabetic foot disease, highlighting the roles of peripheral neuropathy, peripheral arterial disease and immunosuppression in the development of foot ulcers and infections. Key intrinsic and extrinsic risk factors, including long-standing diabetes, poor glycaemic control, inappropriate footwear and trauma are discussed. The importance of comprehensive diabetic foot assessments using diagnostic tools such as the Ipswich Touch Test and Doppler studies is emphasised for early detection and management. Challenges such as delays in referral to specialist care, limited access to multidisciplinary foot teams, and staffing shortages are identified as critical barriers to effective care. The review builds upon extant literature by integrating the most recent evidence, including the 2023 guidelines from the International Working Group on the Diabetic Foot. It emphasises practical application, detailed referral pathways and multidisciplinary care strategies, offering updated tools and insights to improve clinical outcomes and address the often overlooked aspects within inpatient services. Future directions encompass advances in imaging, telemedicine and patient education, which may further optimise preventive and therapeutic strategies for diabetic foot disease.]

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44. **Behavioral health comorbidities in hospital outcomes post-lower extremity amputation in patients with type 1 and type 2 diabetes**

Authors: Schmittling K.A.

Publication Date: 2025

Journal: Journal of Diabetes and Its Complications

[Peripheral artery disease leading to chronic limb threatening ischemia (CLTI) represents a significant concern for up to 11.0 % of patients with diabetes, often culminating in amputation of the affected limb. This retrospective cohort study explores frequency of comorbid behavioral health conditions (CBHCs) in patients with diabetes and hospital stay characteristics related to post-lower extremity amputation (LEA). Utilizing patient data from the Healthcare Cost and Utilization Project from 2020, patients were categorized into groups including having comorbid depression only, alcohol abuse only, drug abuse only, more than one CBHC, or no CBHC. On average, patients with at least one CBHC underwent LEA over three years earlier (59.3 ±± 12.0 years versus 62.6 ±± 12.1 years, respectively). A greater proportion of patients with at least one CBHC were non-Hispanic White people, reside in a county metro area <250,000 people, and were insured by Medicaid. Despite generally low mortality rates, patients with depression only display significantly higher survival rates relative to those without a CBHC. These findings begin exploring the socioeconomic complexities and healthcare disparities faced by patients with diabetes and behavioral health diagnoses, emphasizing the

need for targeted preventive mental health screening and intervention prior to development of CLTI.]

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45. **Comparing perioperative outcomes after transmetatarsal amputation in patients with or without peripheral vascular disease**

Authors: Plantz M.A., Bergman R, Gerlach E, et al.

Publication Date: 2025

Journal: Journal of Foot and Ankle Research

[**Background**: Transmetatarsal amputation (TMA) is a commonly performed procedure for gangrene in the setting of diabetes or peripheral vascular disease. The purpose of this study is to investigate the incidence of and risk factors for reoperation and perioperative complications after TMA in patients undergoing surgery for primarily infectious/diabetic wounds versus peripheral vascular disease.]

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46. **Diabetic foot: A systematic review and meta-analysis on its prevalence and associated factors among patients with diabetes mellitus in a sub-Saharan Africa**

Authors: Haile K.E., Asgedom Y.S., Azeze G.A., et al.

Publication Date: 2025

Journal: Diabetes Research and Clinical Practice

[**Background**: Diabetes is one of the non-communicable diseases that represents the greatest public health challenge in sub-Saharan Africa, where diabetes related needs are currently largely unmet, and the debilitating aspects of the foot are worsened by issues related to healthcare costs, self-care practices, and inadequate knowledge. To estimate the pooled prevalence and associated factors of diabetic foot ulcers among patients with Diabetes mellitus, we conducted a systematic review and *meta*-analysis. Although studies on, diabetic foot ulcer among patients with diabetes mellitus have been available, the results have been inconsistent.

Objectives: To determine the pooled prevalence and associated factors of diabetic foot ulcers among patients with diabetes mellitus in sub-Saharan Africa.]

47. **The effect of long-term glycemic burden on the incidence of diabetic foot ulcers: A retrospective study**

Authors: Zheng Z, Cao B, Ke J, et al.

Publication Date: 2025

Journal: Journal of Diabetes and Its Complications

[**Background**: This study aimed to examine the association between mean cumulative glycemic burden (MCGB) and variability cumulative glycemic burden (VCGB) with diabetic foot ulcers (DFUs).]

Sarcopenia

48. **Possible sarcopenia, sarcopenic obesity phenotypes and their association with diabetes: Evidence from LASI wave-1 (2017-18)**

Authors: Kaur I, Das S, Chandel S, et al.

Publication Date: 2025

Journal: Diabetes & Metabolic Syndrome: Clinical Research & Reviews

[**Aims**: To assess the prevalence of possible sarcopenia and sarcopenic obesity phenotypes and investigate their association with self-reported diabetes among community-dwelling individuals aged 45 or above.]

Diabetes and pregnancy

49. **Agreement and disagreement between diagnostic criteria for gestational diabetes and implications for clinical practice: A retrospective observational study**

Authors: Goyal A, Gupta R, Gupta A, et al.

Publication Date: 2025

Journal: *Diabetes & Metabolic Syndrome: Clinical Research & Reviews*

[**Aims**: To evaluate agreement/disagreement between eleven gestational diabetes (GDM) diagnostic criteria, including five used in current clinical practice globally.]

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50. **Association of gestational and childhood circulating C-peptide concentrations in the hyperglycemia and adverse pregnancy outcomes follow-up study**

Authors: Rajamoorthi A, Zheng H, Skowronski A.A., et al.

Publication Date: 2025

Journal: Diabetes Research and Clinical Practice

[**Aims**: This study examined the association of gravida C-peptide with progeny islet function and insulin sensitivity in the Hyperglycemia and Adverse Pregnancy Outcome Follow-up Study (HAPO FUS).]

51. **Letter to the Editor regarding "Global research trends and hotspots in gestational diabetes and long-term cardiovascular health: A bibliometric analysis."**

Authors: Rao H.H., Guo F, Tian J.

Publication Date: 2025

Journal: Diabetes & Metabolic Syndrome: Clinical Research & Reviews

[We recently reviewed the bibliometric study by Jia et al. on gestational diabetes and long-term cardiovascular health (Diabetes Metab Syndr. 2024 Oct 31) [1]. Although this study summarizes the forefront trends and hotspots in this field, several critical issues require further clarification to provide effective guidance for future research. Firstly, Jia et al. employed MeSH terms and wildcard "∗" in their search strategy, which is commendable. However, there are logical issues in the combination of search terms and the presentation of the search strategy.]

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52. **Relationship between preconception protein intake and gestational diabetes mellitus: The Japan Environment and Children's Study**

Authors: Omoto T, Kyozuka H, Murata T, et al.

Publication Date: 2025

Journal: Diabetes & Metabolic Syndrome: Clinical Research & Reviews

[**Aims**: To investigate the relationship between preconception protein intake and the risk of gestational diabetes mellitus (GDM).]

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53. **Response to the Letter to the Editor regarding "Global research trends and hotspots in gestational diabetes and long-term cardiovascular health: A bibliometric analysis."**

Authors: Jia Y, Hu Q, Liao H, et al.

Publication Date: 2025

Journal: Diabetes & Metabolic Syndrome: Clinical Research & Reviews

[Thank you for your attention to our article entitled "Global research trends and hotspots in gestational diabetes and long-term cardiovascular health: A bibliometric analysis" [1]

Diabetes mellitus Type 1

54. **Bone mineral density and the risk of kidney disease in patients with type 1 diabetes**

Authors: Hauge S.C., Hjortkjær H. Ø., Persson F, et al.

Publication Date: 2025

Journal: Journal of Diabetes and Its Complications

[**Aim**: To explore the association between bone disorder and the risk for progression of diabetic kidney disease (DKD) in persons with type 1 diabetes mellitus (T1DM).]

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55. **Clinical phenotyping of people living with type 1 diabetes according to their levels of diabetes-related distress: results from the SFDT1 cohort**

Authors: Canha D, Aguayo G, Cosson E, et al.

Publication Date: 2025

Journal: BMJ Open Diabetes Research and Care

[**Introduction**: Type 1 diabetes is burdensome, requiring complex daily management and making people more prone to emotional distress. To better detect diabetes-related distress (DD) and identify at-risk patients, we aimed to provide an in-depth characterization of DD in people with type 1 diabetes.]

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56. **Duration of physical activity required to Ameliorate hyperglycemia without causing hypoglycemia in type 1 diabetes: A T1DEXI adults and pediatric cohort analyses**

Authors: Pemberton J, Li Z, Gal R.L., et al.

Publication Date: 2025

Journal: Diabetes Research and Clinical Practice

[**Aims**: To estimate physical activity (activity) duration required to lower glucose from above target range (>180 mg/dL) to within target range (TIR: 70–180 mg/dL) in individuals with type 1 diabetes (T1D).]

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57. **Early increase in carotid intima-media thickness in women with childhood-onset type 1 diabetes compared with healthy peers: the Norwegian Atherosclerosis and Childhood Diabetes study**

Authors: Simeunovic A, Brunborg C, Heier M, et al.

Publication Date: 2025

Journal: BMJ Open Diabetes Research and Care

[**Introduction**: The risk of cardiovascular disease is increased in individuals with type 1 diabetes, despite good glycemic control. This study aims to evaluate early signs of atherosclerosis and predisposing factors in individuals with childhood-onset type 1 diabetes compared with healthy controls.]

58. **Hybrid closed-loop insulin therapy and risk of severe hypoglycaemia and diabetic ketoacidosis in young people (aged 2–20 years) with type 1 diabetes: a population-based study**

Authors: Karges B, Rosenbauer J, Stahl-Pehe A, et al.

Publication Date: 2025

Journal: Lancet Diabetes & Endocrinology

[**Background**: The effect of closed-loop insulin delivery on the risk of acute diabetes complications in people with type 1 diabetes is unclear. We investigated whether the rates of severe hypoglycaemia and diabetic ketoacidosis are lower with hybrid closed-loop insulin therapy compared with sensor-augmented (open-loop) pump therapy in a large cohort of young people.]

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59. **Impact of type 1 diabetes mellitus on mortality rate and outcome of hospitalized patients with myocardial infarction**

Authors: Schmitt V.H., Hobohm L, Hahad O, et al.

Publication Date: 2025

Journal: Diabetes & Metabolic Syndrome: Clinical Research & Reviews

[**Introduction**: Type 1 diabetes mellitus (T1D) is associated with an increased cardiovascular risk. We aimed to investigate the influence of T1D on myocardial infarction (MI) patients' mortality.]

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60. **Managing obesity in adults with type 1 diabetes**

Authors: Campos A, Gutierrez R.R., Galindo R.J., et al.

Publication Date: 2025

Journal: Diabetes Research and Clinical Practice

[As the prevalence of obesity has reached epidemic proportions, its prevalence has also increased among adults living with type 1 diabetes mellitus. Unlike the pathophysiologic relationship between obesity and type 2 diabetes mellitus, the relationship between obesity and type 1 diabetes mellitus, and management of obesity in the setting of type 1 diabetes mellitus, have not been well reviewed. In this article, we discuss the comprehensive management of obesity in adults with type 1 diabetes mellitus, focusing on medical nutrition therapy and adjunct therapies such as weight loss-promoting medications and metabolic/bariatric surgery.]

61. **The relationship between residual insulin secretion and subclinical cardiovascular risk indices in young adults with type 1 diabetes**

Authors: Barmpagianni A, Karamanakos G, Anastasiou I.A., et al.

Publication Date: 2025

Journal: Journal of Diabetes and Its Complications

[**Background**: Patients with type 1 diabetes (DM1), even in the setting of adequate glycaemic control, have an excess risk for developing cardiovascular disease. Residual insulin secretion (RIS), measured by detectable C-peptide levels in patients with DM1, might protect against diabetes-related complications. This study aimed to examine the relationship between residual insulin secretion and prognostic markers of cardiovascular complications in patients with DM1.]

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62. **Technology for type 1 diabetes: what impact will it have?**

Author: Craig M.E.

Publication Date: 2025

Journal: Lancet Diabetes & Endocrinology

[Technological advances have profoundly affected people living with type 1 diabetes, their families or carers, and health-care systems. The innovations include the development of analogue insulins, continuous glucose monitoring (CGM) devices, applications that support carbohydrate counting and insulin dosing, insulin pumps, hybrid closed-loop therapy, and telemedicine. Multiple clinical trials 1 2 3 and systematic reviews 4 5 have demonstrated clinically relevant benefits of hybrid closed-loop therapy, but it is well established that trial participants and the intense clinical care scenario in which they participate within the trial might not be generalisable to the broader population of people with type 1 diabetes.]

63**. Type 1 diabetes incidence curves differ by age for girls and boys between 1996 and 2022: Results from the North Rhine-Westphalia Diabetes Registry, Germany**

Authors: Stahl-Pehe A, Baechle C, Lanzinger S, et al.

Publication Date: 2025

Journal: Diabetes Research and Clinical Practice

[The type 1 diabetes incidence was analyzed in 0- to 14-year-old children in North Rhine-Westphalia, Germany, from 1996 to 2022. The data revealed an overall increasing trend, with variations by age and sex. The incidence increased in boys across age groups but peaked in girls in the 5–9-year age group.]

64. **Use of Cardioprotective Adjuncts in Type 1 Diabetes.**

Authors: Greenfield J.R., Frampton R, Millard K, et al.

Publication Date: 2025

Journal: Diabetes Therapy

[Type 1 diabetes is associated with excess cardiovascular risk, even after accounting for traditional cardiovascular risk factors, including glycaemia. Hence, there is an urgent need to document the metabolic abnormalities that contribute to the cardiovascular mortality gap in type 1 diabetes, and to examine whether cardioprotective type 2 diabetes medications prevent premature morbidity and mortality in this population.]

Diabetes mellitus Type 2

65. **Ahmedabad declaration: A framework to combat growing epidemic of young-onset type 2 diabetes in Asia**

Authors: Parikh R.M., Saboo B, Misra A, et al.

Publication Date: 2025

Journal: Diabetes & Metabolic Syndrome: Clinical Research & Reviews

[**Aim**: Rising prevalence of Type 2 Diabetes (T2D) among young Asians has emerged as a public health crisis that threatens the long-term health, economic stability, and productivity of nations across Asia (1). Early-onset T2D poses unique challenges, including higher rates of undiagnosed cases, more aggressive disease progression, an increased risk of chronic complications and higher mortality (2). Hyperglycemia during the reproductive age especially among the female population can potentially have transgenerational impact through epigenetic changes.]

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66. **Alterations of hepatic lipid content following COVID-19 in persons with type 2 diabetes**

Authors: Kupriyanova Y, Yurchenko I, Bobrov P, et al.

Publication Date: 2025

Journal: BMJ Open Diabetes Research and Care

[**Introduction**: The study aimed to assess the effect of COVID-19 on hepatic lipid (HL) content, fibrosis risk, and adiposity in persons with type 2 diabetes.]

67. **Dissection of type 2 diabetes: a genetic perspective**

Authors: Bonnefond A, Florez J.C., Loos R.J.F., et al.

Publication Date: 2025

Journal: Lancet Diabetes & Endocrinology

[Diabetes is a leading cause of global mortality and disability, and its economic burden is substantial. This Review focuses on type 2 diabetes, which makes up 90–95% of all diabetes cases. Type 2 diabetes involves a progressive loss of insulin secretion often alongside insulin resistance and metabolic syndrome. Although obesity and a sedentary lifestyle are considerable contributors, research over the last 25 years has shown that type 2 diabetes develops on a predisposing genetic background, with family and twin studies indicating considerable heritability (ie, 31–72%). This Review explores type 2 diabetes from a genetic perspective, highlighting insights into its pathophysiology and the implications for precision medicine. More specifically, the traditional understanding of type 2 diabetes genetics has focused on a dichotomy between monogenic and polygenic forms. However, emerging evidence suggests a continuum that includes monogenic, oligogenic, and polygenic contributions, revealing their complementary roles in type 2 diabetes pathophysiology. Recent genetic studies provide deeper insights into disease mechanisms and pave the way for precision medicine approaches that could transform type 2 diabetes management. Additionally, the effect of environmental factors on type 2 diabetes, particularly from epigenetic modifications, adds another layer of complexity to understanding and addressing this multifaceted disease.]

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68. **Empowerment in Type 2 diabetes: A patient-centred approach for lifestyle change**

Authors: Ingul C.B., Hollekim-Strand S.M., Sandbakk M.M., et al.

Publication Date: 2025

Journal: Diabetes Research and Clinical Practice

[**Aims**: To evaluate the effectiveness of personalized lifestyle intervention service for persons with Type 2 diabetes (T2D), implemented in a real-world setting at two Healthy Life Centers (HLC) in Norway.]

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69. **Incidence of early-onset type 2 diabetes and sociodemographic predictors of complications: A nationwide registry study**

Authors: Addington K.S., Kristiansen M, Hempler N.F., et al.

Publication Date: 2025

Journal: Journal of Diabetes and Its Complications

[**Aims**: Early-onset type 2 diabetes (T2DM) (18–45 years) is rising globally, yet complication incidence in this group remains unclear. We investigated the incidence of early-onset T2DM, the incidence of micro- and macrovascular complications, and how comorbidities (e.g., severe mental illness) and sociodemographic factors (e.g., education level) influence complication risk and timing in Denmark.]

70. **Role of 2-hour plasma glucose in assessing pre-diabetes risk: insights from the vitamin D and type 2 diabetes (D2d) study cohort**

Authors: Kim S.H., Aroda V.R., Chatterjee R, et al.

Publication Date: 2025

Journal: BMJ Open Diabetes Research and Care

[Historically, an elevated level of 2-hour plasma glucose (2hPG) during a 75-gram oral glucose tolerance test (OGTT) was the hallmark of pre-diabetes. This measurement served as a primary criterion in pivotal diabetes prevention clinical trials, including the Diabetes Prevention Program.[1] However, with the American Diabetes Association (ADA) expanding its diagnostic criteria for pre-diabetes in 2010 to include hemoglobin A1c (HbA1c),[2] clinical practice has shifted from measuring 2hPG to relying primarily on fasting plasma glucose (FPG) and HbA1c.[3] This transition raises questions about the current role of 2hPG in assessing pre-diabetes risk in contemporary clinical settings.]

Diabetes mellitus Type 2

71. **Digital technologies for prediabetes: A systematic review and meta-analysis**

Authors: Ng C.M., Cheong W.L., Chong C.W., et al.

Publication Date: 2025

Journal: Diabetes & Metabolic Syndrome: Clinical Research & Reviews

[**Highlights:**

• Distal technologies can assist in behaviour modification and goal setting.

• Personalised health monitoring can aid individuals to identify patterns and adjust their lifestyle as needed.

• Digital technologies can improve anthropometric measures, reducing the risk of diabetes progression.]

Glucose monitoring and control

72. **Association between sex, age, temporal trends, and glycemic control of 221,769 adults with type 2 diabetes in a multi-ethnic middle-income Asian country**

Authors: Ang S.H., Lim L.L., Mustapha F.I., et al.

Publication Date: 2025

Journal: Diabetes Research and Clinical Practice

[**Aims**: We examined the association between sex, age, temporal trends, and glycemic control among people with type 2 diabetes (T2D) in a multi-ethnic middle-income Asian country.]

73. **Association of glycemic control with Long COVID in patients with type 2 diabetes: findings from the National COVID Cohort Collaborative (N3C)**

Authors: Soff S, Yoo Y.J., Bramante C, et al.

Publication Date: 2025

Journal: BMJ Open Diabetes Research and Care

[**Introduction**: Elevated glycosylated hemoglobin (HbA1c) in individuals with type 2 diabetes is associated with increased risk of hospitalization and death after acute COVID-19, however the effect of HbA1c on Long COVID is unclear.

Objective: Evaluate the association of glycemic control with the development of Long COVID in patients with type 2 diabetes (T2D).]

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74. **Cost-Effectiveness of FreeStyle Libre for Glucose Self-Management Among People with Diabetes Mellitus: A Canadian Private Payer Perspective**

Authors: Harris S, Cimino S, Nguyen Y, et al.

Publication Date: 2025

Journal: Diabetes Therapy

[**Introduction**: For people living with diabetes, effective glucose monitoring is a key component in diabetes care, helping to reduce disease burden, complications, and healthcare utilization. Sensor-based glucose monitoring systems, which can provide more comprehensive information about glucose levels than capillary-based self-monitoring of blood glucose (SMBG), are becoming established among people living with diabetes. The objective of this study was to assess the cost-effectiveness of glucose monitoring with FreeStyle Libre systems, compared with SMBG, from the perspective of a Canadian private payer.]

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75. **The Impact of Age and Sex on Fasting Plasma Glucose and Glycated Haemoglobin (HbA1c) in the Non-diabetes Population.**

Authors: Stedman M, Heald A.H., Holland D, et al.

Publication Date: 2025

Journal: Diabetes Therapy

[**Introduction**: We previously reported sex differences in the distribution of glycated haemoglobin (HbA1c) for men/women aged < 50 years vs older individuals, with implications for delayed diabetes diagnosis. Here, we explored whether this pattern was also seen in matched fasting plasma glucose (FPG) levels.]

76. **Quantification of the relation between continuous glucose monitoring observation period and the estimation error in assessing long-term glucose regulation**

Authors: Zoet S, Urgert T, Veldhuis A, et al.

Publication Date: 2025

Journal: BMJ Open Diabetes Research and Care

[**Introduction**: The integration of continuous glucose monitoring (CGM) into clinical practice has rapidly emerged in the last decade, changing the evaluation of long-term glucose regulation in patients with diabetes. When using CGM-derived metrics to evaluate long-term glucose regulation, it is essential to determine the minimal observation period necessary for a reliable estimate. The approach of this study was to calculate mean absolute errors (MAEs) for varying window lengths, with the goal of demonstrating how the CGM observation period influences the accuracy of the estimation of 90-day glycemic control.]

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77. **Use of continuous glucose monitoring and point-of-care glucose testing in hospitalized patients with diabetes mellitus in non-intensive care unit settings: A systematic review and meta -analysis of randomized controlled trials**

Authors: Chagas G.C.L., Teixeira L, Clemente M.R.C., et al.

Publication Date: 2025

Journal: Diabetes Research and Clinical Practice

[The benefits of using continuous glucose monitoring (CGM) in hospitalized patients with diabetes remain uncertain. Point-of-care (POC) glucose testing is the standard of care in this setting. We compared the effect of adding CGM to POC testing versus POC testing alone on glycemic outcomes in this population. We have searched the Cochrane Library, Embase, and MEDLINE databases and relevant conferences up to May 2024. We have included six randomized controlled trials (n = 979 patients) comparing CGM plus POC testing to POC testing alone in non-pregnant, non-critically ill hospitalized adults with diabetes. The addition of CGM improved time in range (mean difference [MD] + 7.24 %; 95 % confidence interval [CI]: +5.06, +9.42; P < 0.00001; I^2 = 35 %), reduced time below range < 70 mg/dL (MD: −1.23 %; 95 %CI: −2.27, −0.18; P = 0.02; I^2 = 64 %) and < 54 mg/dL (MD: −0.95 %; 95 %CI: −1.19, −0.70; P < 0.00001; I^2 = 0 %), and time above range > 250 mg/dL (MD: −3.70 %; 95 %CI: −6.10, −1.29; P = 0.003; I^2 = 39 %) compared to POC testing alone. We observed no statistically significant differences in glycemic variability or insulin doses. In non-critically ill, hospitalized adults with diabetes, the addition of CGM to POC testing for insulin dosing resulted in superior glycemic control and reduction of hypoglycemia compared to POC testing alone.]

Hyperglycaemia

78. **Association of gestational and childhood circulating C-peptide concentrations in the hyperglycemia and adverse pregnancy outcomes follow-up study**

Authors: Rajamoorthi A, Zheng H, Skowronski A.A., et al.

Publication Date: 2025

Journal: Diabetes Research and Clinical Practice

[**Aims**: This study examined the association of gravida C-peptide with progeny islet function and insulin sensitivity in the Hyperglycemia and Adverse Pregnancy Outcome Follow-up Study (HAPO FUS).]

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79. **Duration of physical activity required to Ameliorate hyperglycemia without causing hypoglycemia in type 1 diabetes: A T1DEXI adults and pediatric cohort analyses**

Authors: Pemberton J, Li Z, Gal R.L., et al.

Publication Date: 2025

Journal: Diabetes Research and Clinical Practice

[**Aims**: To estimate physical activity (activity) duration required to lower glucose from above target range (>180 mg/dL) to within target range (TIR: 70–180 mg/dL) in individuals with type 1 diabetes (T1D).]

Hypoglycaemia

80. **Hybrid closed-loop insulin therapy and risk of severe hypoglycaemia and diabetic ketoacidosis in young people (aged 2–20 years) with type 1 diabetes: a population-based study**

Authors: Karges B, Rosenbauer J, Stahl-Pehe A, et al.

Publication Date: 2025

Journal: Lancet Diabetes & Endocrinology

[**Background**: The effect of closed-loop insulin delivery on the risk of acute diabetes complications in people with type 1 diabetes is unclear. We investigated whether the rates of severe hypoglycaemia and diabetic ketoacidosis are lower with hybrid closed-loop insulin therapy compared with sensor-augmented (open-loop) pump therapy in a large cohort of young people.]

Insulin therapies

81. **AUGMENTed Real-World Data Enhances Comparative Efficacy Between Once-Weekly Insulin Icodec with Dosing Guide App Versus Once-Daily Insulin Glargine U300 in Insulin-Naive Type 2 Diabetes.**

Authors: Billings L.K., Asong M, Bøg M, et al.

Publication Date: 2025

Journal: Diabetes Therapy

[**Introduction**: ONWARDS 5 evaluated the effectiveness and safety of insulin icodec (icodec) titrated with a dosing guide app (icodec with app) versus once-daily insulin analogs in insulin-naive adults with type 2 diabetes. The insulin glargine U300 (glargine U300) stratum was too small to enable a robust post hoc efficacy comparison. Augmentation methodology was applied to increase the glargine U300 group size using real-world data (RWD), to facilitate efficacy comparisons of icodec with app versus glargine U300, and to demonstrate the potential of the augmentation methodology to strengthen underpowered treatment comparisons (AUGMENT study).]

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82. **Effects of silymarin on insulin resistance and sensitivity: A systematic review and meta-analysis of randomized controlled trials**

Authors: Yin S, Zhu F, Liu Y, et al.

Publication Date: 2025

Journal: Diabetes Research and Clinical Practice

[**Objective**: This study aims to evaluate the effect of silymarin on insulin resistance and insulin sensitivity through a systematic review and meta-analysis of randomized controlled trials (RCTs).]

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83. **Experience of People with Diabetes Treated with Insulin Delivery Systems in France: A Comparative Analysis of Multiple Daily Injections, Tubeless Pumps, Tubed Pumps, and Hybrid Closed Loops.**

Authors: Beltrand J, Benhamou P.Y., Choleau C, et al.

Publication Date: 2025

Journal: Diabetes Therapy

[**Introduction**: While people with diabetes (PWD)'s experiences with their insulin delivery systems (IDS) are frequently reported in clinical trials, few real-world data exist on the subject. This study aimed to assess the real-world experience and satisfaction with IDS in PWD.]

84. **Insulin resistance may hold the key to Alzheimer's disease**

Author: Winter G.

Publication Date: 2025

Journal: British Journal of Nursing

[According to Alzheimer's Research UK (Jones, 2024), in 2024 the number of people living with dementia in the UK was estimated to be almost 1 million (982 000), and by 2040 this could rise to 1.4 million; in 2022, the leading cause of death in the UK was dementia, claiming over 74 000 lives; and in 2024 the economic impact of dementia in the UK was an estimated £42.5 billion.]

Management of diabetes (diet, exercise, lifestyle)

85. **Artificial sweeteners and Type 2 Diabetes Mellitus: A review of current developments and future research directions**

Authors: Okoro F.O., Markus V.

Publication Date: 2025

Journal: Journal of Diabetes and Its Complications

[While artificial sweeteners are Generally Regarded as Safe (GRAS), the scientific community remains divided on their safety status. The previous assumption that artificial sweeteners are inert within the body is no longer valid. Artificial sweeteners, known for their high intense sweetness and low or zero calories, are extensively used today in food and beverage products as sugar substitutes and are sometimes recommended for weight management and Type 2 Diabetes Mellitus (T2DM) patients. The general omission of information about the concentration of artificial sweeteners on market product labels makes it challenging to determine the amounts of artificial sweeteners consumed by people. Despite regulatory authorization for their usage, such as from the United States Food and Drug Administration (FDA), concerns remain about their potential association with metabolic diseases, such as T2DM, which the artificial sweeteners were supposed to reduce. This review discusses the relationship between artificial sweetener consumption and the risk of developing T2DM. With the increasing number of recent scientific studies adding to the debate on this subject matter, we assessed recent literature and up-to-date evidence. Importantly, we highlight future research directions toward furthering knowledge in this field of study.]

86. **Correction to Lancet Diabetes Endocrinol 2024; 12: 619–30**

Publication Date: 2025

Journal*:* *Lancet Diabetes & Endocrinology*

[*Li C, Bishop TRP, Imamura F, et al. Meat consumption and incident type 2 diabetes: an individual-participant federated meta-analysis of 1·97 million adults with 100 000 incident cases from 31 cohorts in 20 countries.* Lancet Diabetes Endocrinol *2024;* 12: *619–30*.]

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87. **Physical activity guidelines for adults with type 2 Diabetes: Systematic review**

Authors: Tonga E, Worboys H, Evans R.A., et al.

Publication Date: 2025

Journal: Diabetes Research and Clinical Practice

[**Aims**: The aim of this study was to systematically review recommendations on physical activity for adults with type 2 diabetes (T2D).]

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88. **Predicting diabetes self-management education engagement: machine learning algorithms and models**

Authors: Jiang X, Lv G, Li M, et al.

Publication Date: 2025

Journal: BMJ Open Diabetes Research and Care

[**Introduction**: Diabetes self-management education (DSME) is endorsed by the American Diabetes Association (ADA) as an essential component of diabetes management. However, the utilization of DSME remains limited in the USA. This study aimed to investigate current DSME participation among the older population and to identify comprehensive factors of DSME engagement through employing various machine learning (ML) models based on a US nationally representative survey linked to claims data.]

Mental health and diabetes

89. **Clinical phenotyping of people living with type 1 diabetes according to their levels of diabetes-related distress: results from the SFDT1 cohort**

Authors: Canha D, Aguayo G, Cosson E, et al.

Publication Date: 2025

Journal: BMJ Open Diabetes Research and Care

[**Introduction**: Type 1 diabetes is burdensome, requiring complex daily management and making people more prone to emotional distress. To better detect diabetes-related distress (DD) and identify at-risk patients, we aimed to provide an in-depth characterization of DD in people with type 1 diabetes.]

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90. **Three-protein signature is associated with baseline and persistently elevated or recurrent depressive symptoms in individuals with recent-onset diabetes**

Authors: Spagnuolo M.C., Gottmann P, Sommer J, et al.

Publication Date: 2025

Journal: BMJ Open Diabetes Research and Care

[Depression is associated with diabetes, but the underlying causes remain unclear. To better understand depression in diabetes, this study investigated associations between 135 inflammatory and neurological protein biomarkers and depressive symptoms in individuals with diabetes. This cross-sectional study included 430 adults with a known diabetes duration <1 year from the German Diabetes Study (GDS), in whom biomarkers were measured in serum and depressive symptoms were evaluated at baseline and annually over 5 years using the Center for Epidemiological Studies Depression Scale (CES-D). Based on the information on depressive symptoms from the baseline and follow-up visits (n=305, ≥3 time points), we subdivided the sample into individuals with persistent or recurrent and transient or never depressive symptoms. We assessed the associations of each biomarker with baseline CES-D score (continuous) and persistent/recurrent depressive symptoms using multiple linear and logistic regression models, respectively. After adjustment for covariates, we identified a three-protein signature associated with baseline CES-D score and persistent/recurrent depressive symptoms. CUB domain-containing protein 1 (CDCP1) and NAD-dependent protein deacetylase sirtuin-2 (SIRT2) were positively associated with baseline (β 1.24 (95% CI 0.19 to 2.29); β 0.89 (95% CI 0.06 to 1.72)), respectively) and persistent/recurrent depressive symptoms (OR 1.58 (95% CI 1.08 to 2.31); OR 1.32 (95% CI 1.03 to 1.71), respectively), whereas leptin receptor (LEPR) was inversely associated with baseline (β −0.99 (95% CI −1.87 to −0.11)) and persistent/recurrent depressive symptoms (OR 0.70 (95% CI 0.49 to 0.99)). However, results were not significant after adjustment for multiple testing. In conclusion, the three-protein signature identified may provide insights into mechanisms underlying depressive symptoms in diabetes and might open new therapeutic avenues.]

Pharmacological management of diabetes

91. **Association of Polypharmacy and Burden of Comorbidities on COVID-19 Adverse Outcomes in People with Type 1 or Type 2 Diabetes.**

Authors: Gupta J.K., Ravindrarajah R, Tilston G, et al.

Publication Date: 2025

Journal: Diabetes Therapy

[**Introduction**: It is widely accepted that the higher the number of medications prescribed and taken by an individual, the higher the risk of poor health outcomes. We have investigated whether polypharmacy and comorbidities conveyed more risk of adverse health outcomes following COVID-19 infection (as a paradigm of serious viral infections in general) in people with type 1 diabetes (T1DM) or type 2 diabetes (T2DM).]

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92. **A Bioequivalence Study of Two Formulations of Oral Semaglutide in Healthy Participants**

Authors: Nielsen M.S., Brøndsted L, Kankam M, et al.

Publication Date: 2025

Journal: Diabetes Therapy

[**Introduction**: The glucagon-like peptide-1 (GLP-1) analogue semaglutide is approved as an oral formulation for the treatment of type 2 diabetes. This study aimed to confirm bioequivalence between a new, second-generation (2G) oral semaglutide formulation (1.5, 4 and 9 mg) and the initially approved first-generation (1G) formulation (3, 7 and 14 mg).]

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93. **Characteristics and Dosing Patterns of Tirzepatide Users with Type 2 Diabetes in the United States.**

Authors: Mody R, Desai K, Teng C.C., et al.

Publication Date: 2025

Journal: Diabetes Therapy

[**Introduction**: The study objective was to describe characteristics and utilization patterns of tirzepatide users with type 2 diabetes (T2D) using the Healthcare Integrated Research Database in the USA.]

94. **Comprehensive treatment with dapagliflozin in elderly chronic kidney disease patients: Clinical efficacy and impact on body composition**

Authors: Nomura K, Takata T, Muramae N, et al.

Publication Date: 2025

Journal: Journal of Diabetes and Its Complications

[**Background**: Dapagliflozin, a sodium-glucose cotransporter 2 (SGLT2) inhibitor, is widely used for treating heart failure and chronic kidney disease (CKD). While its renoprotective effects are well established, concerns remain regarding its impact on muscle mass and function, especially in elderly patients.

Objective: To assess the effects of dapagliflozin on renal function, body composition, and muscle strength in elderly CKD patients.]

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95. **Identifying predictors of sodium-glucose cotransporter 2 inhibitor and glucagon-like peptide 1 receptor agonist use in hospital among adults with diabetes**

Authors: Raudanskis A, Sarma S, Biering-Sørensen T, et al.

Publication Date: 2025

Journal: Journal of Diabetes and Its Complications

[**Aims**: To identify factors associated with use of novel diabetes medications among patients hospitalized under general internal medicine.

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96. **Integrating Polygenic Risk Scores (PRS) for Personalized Diabetes Care: Advancing Clinical Practice with Tailored Pharmacological Approaches**

Authors: Singh O, Verma M, Dahiya N, et al.

Publication Date: 2025

Journal: Diabetes Therapy

[The rising global prevalence of diabetes poses a serious threat to public health, national economies, and the healthcare system. Despite a high degree of disease heterogeneity and advancing techniques, there is still an unclear diagnosis of patients with diabetes compounded by the array of long-term microvascular and macrovascular complications associated with the disease. In addition to environmental variables, diabetes susceptibility is significantly influenced by genetic components. The risk stratification of genetically predisposed individuals may play an important role in disease diagnosis and management. Precision medicine methods are crucial to reducing this global burden by delivering a more personalised and patient-centric approach. Compared to the European population, genetic susceptibility variants of type 2 diabetes mellitus (T2DM) are still not fully understood in other major populations, including South Asians, Latinos, and people of African descent. Polygenic risk scores (PRS) can be used to identify individuals who are more susceptible to complex diseases such as diabetes. PRS is selective and effective in developing novel diagnostic interventions. This comprehensive predictive approach facilitates the understanding of distinct response profiles, resulting in the development of more effective management strategies. The targeted implementation of PRS is especially advantageous for people who fall into a higher-risk category for diabetes. Through early risk assessment and the creation of individualised diabetes treatment plans, the integration of PRS in clinical practice shows potential for

reducing the prevalence of diabetes and its complications. Diabetes self-management depends significantly on patient empowerment, with behavioural monitoring emerging as a vital facilitator. The main aim of this review article is to formulate a more structured intervention strategy by advocating for increased awareness of the clinical utility of PRS and counseling among healthcare practitioners, patients, and individuals at risk of diabetes.]

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97. **Nicotinamide n -methyltransferase inhibitor synergizes with sodium-glucose cotransporter 2 inhibitor to protect renal tubular epithelium in experimental models of type 2 diabetes mellitus**

Authors: Yang Y, Li F, Li Y, et al.

Publication Date: 2025

Journal: Journal of Diabetes and Its Complications

[**Aims**: We aim to explore the potential of nicotinamide *n*-methyltransferase (NNMT) as a sensitive marker of renal tubular injury and the possibility of an NNMT inhibitor to combine with sodium-glucose cotransporter 2 (SGLT2) inhibitor to protect proximal tubular epithelium in vivo and in vitro model of Type 2 diabetes mellitus (T2DM), respectively.]

Sources Used:

A number of different databases and websites are used in the creation of this bulletin