Indian Diabetes

EDUCATOR JOURNAL

RESEARCH SOCIETY FOR THE STUDY OF DIABETES IN INDIA

Theme of the Month

World Diabetes Day: Diabetes and Workplace

To keep Members of Diabetes Care team abreast about
DSME/DSMS - (Diabetes Self management Education/Support) Concepts

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FOREWORD

Research Society for the Study of Diabetes in India (RSSDI) founded by Prof. MMS Ahuja in the year 1972 is the biggest scientific association of healthcare professionals involved in promoting diabetes education and research in India. RSSDI is happy to collaborate with USV to support their endeavour to make India the 'Diabetes care capital of the world'. Through this collaboration, RSSDI would like to strengthen the cadre of diabetes educators by empowering them with recent updates in diabetes management helping bridge the gap between the physician and the patient. Today, the rule of 50% is prevailing in terms of awareness, detection, treatment and control in T2DM. Our aspiration is to achieve 90-90-90-90 i.e.90% of people with diabetes should be made aware, 90% should be detected, 90% of those detected should be treated, and 90% of those treated should reach their goals.

Indian Diabetes Educator Journal (IDEJ) is the first of its kind in India, and the longest running monthly diabetes educator journal since April 2015 and continues its endeavour to spread awareness, knowledge and enable healthcare teams to manage individuals with diabetes and empower them for self-care. RSSDI IDEJ will continue to keep the members of diabetes care team abreast with concepts of Diabetes Self-Management Education/Support (DSME/S) with a reach of 44000 doctors and diabetes educators digitally.

In recognition of World Diabetes Day on November 14, this edition of IDEJ focuses on the theme "Diabetes and Well-being" with this year's campaign highlighting "Diabetes and the Workplace." As work occupies a major part of adult life, the workplace becomes a crucial setting to promote health, prevent diabetes, and support those living with it. This issue explores how diabetes educators can help build supportive and health-conscious work environments. As we observe World Diabetes Day 2025, let us reaffirm our commitment to fostering well-being and creating workplaces where people with diabetes can thrive.

We sincerely thank our contributors for making this issue delightful reading for our readers. We dedicate this journal to all the healthcare professionals who are working relentlessly towards making "India–The Diabetes Care Capital of the World."

Sincere Regards,

Dr. Sanjay Agarwal
RSSDI Secretary

*DSME: Diabetes Self-Management Education, DSMS: Diabetes Self-Management Support

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Article: Understanding Diabetes Subtypes Through Patient Stories

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Article: Attaining Glycemic Goal with Lifestyle Modifications

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Cover Story: World Diabetes Day Special: Redefining Workplace Wellness

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World Diabetes Day 2025: History and theme

World Diabetes Day is one of the largest diabetes focused campaigns that reaches over 1 billion people in over 160 countries globally. The International Diabetes Federation (IDF), with support from the World Health Organization (WHO), together addressed the health concerns and economic threat posed by diabetes in the year 1991. Since then, every year, the 14th of November is celebrated as World Diabetes Day. This date also marks the birth of Sir Frederick Banting, who discovered insulin along with Charles Best in 1922. Annually, this campaign focuses on a dedicated theme that runs all year long. The theme for the year 2025 is 'Diabetes and Well-being'. The campaign focus is on 'Diabetes and the Workplace'. It stresses the importance of supportive workplace approaches that allow employees to effectively manage their condition while sustaining productivity and well-being.

Diabetes in the workplace: Challenges and impact

Studies conducted have found that decreased productivity in the workplace is a significant issue for workers, employers, and the community. In addition, complications arising from diabetes are prime factors contributing to disability, compromised quality of life, and mortality. Employees living with diabetes have to leave the workforce earlier than anticipated and face unemployment, which results in lower earnings, savings, and deterioration in self-worth. These challenges shed light on the critical role workplaces play in supporting employees living with diabetes. Apart from the personal health repercussions, diabetes can impact work productivity, job retention, and overall workplace comfort. Employers need to be empathetic towards these factors and take charge not only to protect the health of their staff but also to strengthen the performance of the organization. This underlines the importance of implementing planned strategies, resources, and accommodations that address both prevention and effective diabetes management in the workplace.

Practical strategies for workplace diabetes management

Managing diabetes extends beyond personal life to even work life. Employers can play an indispensable role by including diabetes prevention and management into wellness programs, training supervisors to acknowledge and assist employee needs, and ensuring that first aid providers are well-equipped to respond to hypoglycemia or related issues. Practical approaches may include:

- Flexible schedules
- Private spaces for glucose testing or insulin administration
- Assistive tools for those with vision or mobility challenges
- Safe sharps disposal
- Provision of space to keep food and testing supplies nearby

Such measures can create a healthier, more inclusive work environment that puts both employees and employers at an advantage. Employees can keep themselves prepared by carrying a well-equipped diabetes work kit handy. This work kit should include certain important things like a portable glucometer with test strips, spare batteries or chargers, oral diabetic medications, insulin supplies, and fast-acting glucose sources for hypoglycemia treatment.

Along with being equipped with the right tools, daily food choices also play an essential part in supporting diabetes management at work. Research has shown that the availability of healthy food options in cafeterias or vending machines, along with awareness among managers and colleagues about hypoglycemia response, reduces stigma and enables better self-management. Healthy snacking is the foundation for blood glucose stability during work hours. In contrast to processed, refined food options often found in office settings, there should be a provision of healthy food choices. Nuts, roasted chickpeas, yogurt, and fruits with nut butter are a few examples of healthy snacking. These foods help in avoiding glucose spikes and fluctuations while enhancing satiety. Organizations can support healthier choices by storing pantries and vending machines with healthy snacks, benefiting not just employees with diabetes but the entire workforce. Workplace wellness programs can play an important role in educating employees about these choices, ensuring informed and sustainable dietary habits.

Creating a diabetes friendly workplace culture

Creating a diabetes-friendly workplace culture is not just a health initiative—it's a commitment to inclusivity and employee well-being. By fostering awareness, offering flexible accommodations, and promoting healthy lifestyle choices, organizations empower individuals to thrive. Such environments reduce stigma and encourage open dialogue around chronic conditions. Ultimately, a supportive culture benefits everyone, enhancing morale, productivity, and retention. Let's build workplaces where health and humanity go hand in hand.

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Understanding Diabetes Subtypes Through Patient Stories

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Diabetes is not a one-size-fits-all diagnosis. In our clinic, we encounter diverse forms of diabetes – each with unique patient profiles, causes, and management. By walking through five real-life vignettes, we'll explore type 1, type 2, latent autoimmune diabetes in adults (LADA), maturity-onset diabetes of the young (MODY), and fibrocalculous pancreatic diabetes (FCPD). These stories illustrate how to differentiate these conditions clinically, helping junior doctors recognize key clues in the history, labs, and family background.

Case 1: The "type 2" that wasn't – unmasking LADA

Meet Ravi, a 30-year-old man who was initially diagnosed with type 2 diabetes two years ago. He's lean, with no family history of diabetes and no episodes of diabetic ketoacidosis (DKA). He responded to oral tablets for a while, but lately his blood sugars have climbed despite a good diet and medication adherence. Sensing something unusual, we checked his glutamic acid decarboxylase (GAD) antibody, which returned strongly positive. His C-peptide level was 0.8 ng/mL – lower than expected, indicating his pancreas's insulin output was poor. This combination of findings tipped us off that Ravi doesn't have typical type 2 diabetes at all. We diagnosed LADA — essentially type 1 diabetes hiding in an adult.

In the clinic, we explained that LADA is a slowly progressing autoimmune diabetes often misdiagnosed as type 2. About 10% of people labeled "type 2" actually have LADA. Unlike classic type 1, LADA patients like Ravi have some preserved beta-cell function at first and may manage on oral drugs briefly. However, the presence of autoantibodies (like GAD) is a red flag distinguishing LADA from true type 2. We also note that Ravi's low C-peptide reflects dwindling insulin production, whereas typical type 2 diabetics have normal or high C-peptide initially. We adjust his treatment plan, anticipating that he will need insulin fairly soon – studies show LADA patients usually require insulin within ~1 year of diagnosis as the autoimmune attack progresses. Recognizing LADA early matters, since certain drugs (e.g., sulfonylureas) might accelerate beta-cell burnout and are best avoided. Ravi's case teaches us to suspect LADA in an adult diabetic who isn't overweight, has other autoimmune tendencies, and whose "type 2" control worsens inexplicably.

LADA key points: LADA is a form of type 1 diabetes occurring in adulthood, sometimes called "Type 1.5." Patients often have one or more pancreatic autoantibodies despite being older and initially non-insulin-dependent. They tend to be lean and lack features of insulin resistance. Over time, oral meds fail as insulin production falls, and insulin therapy becomes necessary. Checking GAD antibodies and C-peptide in suspicious cases can confirm LADA. Early identification allows proper treatment and counseling.

Case 2: Diabetes runs in the family – spotting MODY

Meet Sarita, a 25-year-old woman who comes from a classic diabetic lineage – her mother is diabetic, as are her maternal grandfather and several of her mom's siblings. Sarita herself was found to have elevated sugars during a routine check-up. She is not obese and shows no signs of insulin resistance (no acanthosis nigricans, normal lipid profile). Given her three-generation history and young age at onset, we suspect MODY, a form of monogenic diabetes.

We explained to Sarita that MODY is an inherited, non-autoimmune diabetes caused by a single gene mutation. Unlike type 1, her beta cells aren't being attacked by antibodies – in fact, autoimmune tests (GAD, etc.) would be negative in MODY. Unlike typical type 2, she's young and not insulin resistant. MODY often runs in families across generations in an autosomal dominant pattern – and Sarita's family history is a textbook example. Often, the diabetes in MODY is relatively mild, sometimes managed with diet or oral drugs, and doesn't always require insulin therapy. We discuss genetic testing to confirm the specific gene (since at least 14 different gene mutations can cause MODY, with HNF1A, HNF4A, and GCK being the most common culprits). A confirmed MODY diagnosis would help tailor her treatment – for example, some MODY subtypes (like HNF1A/HNF4A) respond very well to low-dose sulfonylureas instead of insulin.

Sarita's story highlights that MODY should be suspected in a non-obese young adult (usually <30) with mild diabetes and a strong family history, especially if multiple generations are affected. In her case, three generations of relatively early-onset diabetes make MODY much more likely than typical type 2. Indeed, MODY is thought to account for a small fraction of diabetes cases (~1–5%), but it is often misdiagnosed. By recognizing the pattern, we can confirm it and avoid unnecessary insulin if it's not needed. We reassure Sarita that knowing the exact MODY subtype can inform her prognosis and allow screening of her relatives.

MODY key points: MODY is a monogenic form of diabetes (a single-gene mutation) that is usually passed down in families (autosomal dominant inheritance). It typically presents in late childhood, adolescence, or early adulthood (often before 25). Patients are usually not obese and lack insulin resistance signs, and they maintain some insulin production (C-peptide detectable) years after diagnosis. Unlike type 1, MODY patients have no autoantibodies. If you see young-onset diabetes with a strong family history of early diabetes, think of MODY. Correctly diagnosing MODY can impact treatment – many can be managed with oral agents (like sulfonylureas) or even diet alone in mild cases, instead of insulin.

Case 3: The classic juvenile diabetic – type 1 diabetes

Meet Aisha, a 17-year-old girl who comes to the emergency department with fatigue, excessive thirst, and rapid weight loss over 2 weeks. She had a flu-like illness a month ago, and since then, her appetite has dropped, and she feels dehydrated. On exam, she's mildly dehydrated and breathing a bit fast. A fingerstick glucose reads 597 mg/dL. We quickly check for ketones and acid-base status, concerned she may be in diabetic ketoacidosis (DKA) – a hallmark emergency of new-onset type 1 diabetes. Indeed, Aisha is diagnosed with type 1 diabetes and started on insulin immediately. Her family is shocked – no one in their family has diabetes, and she herself was perfectly healthy until recently. We counsel them that type 1 often strikes out of the blue, triggered by autoimmune destruction of insulin-producing cells in the pancreas.

Even without antibody tests (which are costly and were deferred due to financial concerns), Aisha's presentation is classic for type 1 diabetes: Young age, rapid onset of symptoms, very high blood sugar, and likely ketosis. Type 1 diabetes is an autoimmune disease where the body's immune system attacks the pancreatic beta cells, leading to absolute insulin deficiency. These patients require insulin from the start – it is life-saving and lifelong. We explain to Aisha and her parents that, unlike type 2, this isn't about lifestyle or weight; it's an immune process that we don't fully know how to prevent. Often, patients have antibodies like anti-GAD65, islet cell antibodies, or others that can be measured, but in straightforward cases, lab confirmation isn't necessary to proceed with treatment.

Over the next days, we educated Aisha on insulin injections, blood glucose monitoring, and how to recognize and treat highs and lows. It's a lot to absorb for a teenager, but she's brave and quickly learns the ropes. We also screen her for other autoimmune conditions (like thyroid issues), as type 1 can sometimes come with other autoimmune disorders.

Type 1 diabetes key points: Type 1 typically presents in childhood or adolescence (though it can occur at any age) with acute symptoms – polyuria, polydipsia, weight loss, and often DKA. It is caused by autoimmune destruction of pancreatic β-cells, resulting in little or no insulin production. Autoantibody tests (GAD, islet cell antibody [ICA], insulin autoantibodies, etc.) are usually positive and can confirm the diagnosis, but clinically, the picture is often clear. Insulin therapy is mandatory – these patients cannot survive without exogenous insulin. Unlike type 2, type 1 patients are often lean and may have no family history. They often present within weeks of onset, sometimes precipitated by an infection. The emphasis in management is on insulin replacement, blood sugar monitoring, and education – as seen with Aisha, who now must carry insulin pens and manage her glucose every day.

Case 4: The silent hyperglycemia – type 2 diabetes

Meet Prakash, a 40-year-old businessman who comes for an annual check-up and is surprised to find his glycated hemoglobin (HbA1c) is 9.5%. He feels mostly fine – maybe a bit more tired than usual, but no obvious symptoms of diabetes. He is overweight (body mass index [BMI] 32) and has noticed some skin tags and a dark velvety rash on his neck (acanthosis nigricans), which are signs of insulin resistance. Both his parents developed diabetes around age 50. Putting this together, we diagnose type 2 diabetes – the most common form of diabetes, often a silent creeper. Prakash's case is typical: Mid-life onset, overweight with clear features of insulin resistance, and a strong family history of diabetes. We explain to him that type 2 diabetes is characterized by the body's tissues becoming resistant to insulin's effects, combined with a gradual decline in insulin production over time. It's often associated with obesity, a sedentary lifestyle, and genetic predisposition. In fact, about 90–95% of all diabetes cases are type 2, and it usually develops after age 45, though we're seeing it in younger adults more now due to rising obesity. Prakash's lack of symptoms is not unusual; type 2 can smolder for years. But chronically high sugars like his (HbA1c 9.5% indicates significant hyperglycemia) are harmful even if he doesn't feel them. We emphasize lifestyle changes – weight loss, diet, exercise – which can dramatically improve insulin sensitivity. In fact, type 2 diabetes is often part of a metabolic syndrome with hypertension, dyslipidemia, etc., so addressing diet and weight helps on multiple fronts. We start him on metformin, a first-line oral medication that reduces insulin resistance and has a good safety profile. Prakash is motivated to prevent complications, so we walk him through blood sugar monitoring and targets.

Type 2 diabetes key points: Type 2 typically develops in adulthood (often >40) and is strongly linked to overweight/obesity and physical inactivity. Patients often have a family history of diabetes and signs of insulin resistance (e.g., acanthosis nigricans, central obesity). The disease mechanism involves insulin resistance – the body's cells don't respond properly to insulin – and the pancreas compensates by producing more insulin until it can't keep up. Unlike type 1, there's no autoimmune destruction, so C-peptide levels are normal or high in early disease. Over the years, beta-cell function declines (hence many type 2 patients eventually need insulin as well). Type 2 is often asymptomatic in early stages; many are diagnosed via screening or incidental labs. Treatment starts with lifestyle modifications (diet, exercise for weight loss) and oral medications (like metformin). Multiple drug classes (sulfonylureas, dipeptidyl-peptidase 4 [DPP-4] inhibitors, sodium-glucose cotransporter 2 [SGLT2] inhibitors, glucagon-like peptide-1 [GLP-1] agonists, etc.) are available, and insulin can be added if needed. The focus is also on managing cardiovascular risk factors – blood pressure, cholesterol – since type 2 diabetes carries increased risk of heart disease. Prakash's scenario underscores how common and sneaky type 2 can be, and the importance of routine screening in at-risk individuals.

Case 5: When the pancreas burns out – fibrocalculous pancreatic diabetes

Meet Ramesh, a 35-year-old manual laborer from a rural area, who has been admitted twice in the past with severe pancreatitis. He doesn't drink alcohol (a common pancreatitis cause in other settings), so his pancreatitis was labeled "idiopathic" or possibly related to nutritional factors. Over the last year, Ramesh developed diabetes requiring insulin therapy. He is very lean and reports large, oily stools (steatorrhea), suggesting exocrine pancreatic insufficiency. Notably, despite needing insulin, he has never had DKA, even when he occasionally skipped doses. This constellation – recurrent chronic pancreatitis, pancreatic calcifications on an old computed tomography (CT) scan, diabetes, malnutrition – fits FCPD.

FCPD is a form of secondary diabetes seen mostly in tropical countries (like India, where Ramesh is from). Years of chronic pancreatitis with pancreatic calcification ("fibrocalculous" refers to fibrous and calcified pancreas) lead to destruction of the insulin-producing cells and the enzyme-producing cells. Essentially, his pancreas has been damaged by inflammation and calcification, often due to factors like malnutrition or genetic susceptibility. The result is diabetes that behaves a bit differently from type 1: Patients need insulin (since beta cells are lost), but they often don't develop DKA as easily because the pancreatic alpha cells (which produce glucagon) are also impaired. Plus, with little pancreatic tissue and low body fat, the liver doesn't flood the body with ketones as dramatically. Ramesh's lack of DKA history aligns with this – he has some residual insulin function and reduced glucagon activity due to pancreatic destruction.

On exam, Ramesh has signs of vitamin deficiencies and a protuberant belly (maybe due to pancreatic insufficiency-related malabsorption). We ensure he's on pancreatic enzyme supplements for digestion, in addition to insulin for his diabetes. We counsel him that FCPD is recognized as a distinct entity in the diabetes classification – essentially, diabetes due to chronic pancreatitis. It's also sometimes called type 3c diabetes (pancreatic diabetes). Managing FCPD means treating both endocrine failure (diabetes) and exocrine failure (digestive enzyme loss). We also warn him that chronic pancreatitis and FCPD carry a higher risk of pancreatic cancer down the line, so he will need regular follow-up.

FCPD key points: FCPD is a diabetes secondary to chronic pancreatitis, often seen in tropical, developing regions. Patients are usually young and underweight, often with a history of malnutrition or nutrient deficiencies in childhood. Repeated pancreatitis (usually non-alcoholic, sometimes called tropical pancreatitis) leads to a fibrosed, calcified pancreas– by the time diabetes manifests, the pancreas is severely atrophic with calcifications visible on imaging. These patients have insulin-requiring diabetes (due to loss of beta cells) plus symptoms of exocrine insufficiency (e.g., malabsorption, steatorrhea) since the whole pancreas is affected. A striking feature is the relative rarity of DKA in FCPD; even without insulin, they often avoid ketosis because both insulin and glucagon secretion are reduced, and body fat stores are low. The World Health Organization classifies pancreatogenic diabetes, like FCPD, under "Other specific types of diabetes". Treatment involves insulin (there's no autoimmune process, but the pancreas simply can't produce enough insulin) and pancreatic enzyme replacement. Identifying FCPD is important in regions where it occurs, as it alerts the clinician to manage nutritional issues and screen for pancreatic cancer risk.

Conclusion: One disease, many stories

Through these five patients, we see how diabetes mellitus is a heterogeneous group of disorders – all involving high blood sugar, but for very different reasons. Recognizing the type isn't just academic; it directly guides treatment and counseling:

- **Type 1 diabetes:** Autoimmune destruction of beta cells – think insulin from day one, and watch for DKA. Often, a younger onset and no obesity.
- **Type 2 diabetes:** Insulin resistance with relative insulin deficiency – the domain of adults with obesity, family history, and gradual onset. Treat with lifestyle changes and oral medications, adding insulin if needed.
- **LADA:** Basically, type 1 unfolding in slow motion in an adult – starts like type 2 but is antibody-positive and will require insulin sooner.
- **MODY (Monogenic diabetes)**: A genetic form often misdiagnosed – suspect it in lean young patients with strong family history across generations. Confirm with genetic tests; therapy may differ (e.g., sulfonylureas for some subtypes instead of insulin).
- **FCPD (Pancreatic diabetes):** Diabetes due to a damaged pancreas (chronic pancreatitis) – consider in undernourished patients with a pancreatitis history. Requires insulin but has unique features like exocrine insufficiency and low DKA risk.

By approaching each patient as a story – listening for key clues in history (age, family background, weight, acute vs. gradual onset, etc.) and doing targeted tests (antibodies, C-peptide, imaging when needed) – we can pinpoint the type of diabetes. This ensures patients get the right treatment and education. A one-size approach would not fit all: For instance, sulphonylurea pills could help a MODY patient but would be inappropriate (even harmful) in LADA; an insulin pump is life-saving for a type 1 teen but unnecessary for a MODY case controlled on diet. In practice, always think: "Does this patient's diabetes picture fit the usual pattern? If not, what else could it be?" Each of our five patients reminds us that diabetes is a spectrum – understanding the differences through such clinical vignettes sharpens our diagnostic intuition and ultimately improves care for our patients.

Resource:

The clinical features and management points above are supported by current medical literature and guidelines. Key sources include the American Diabetes Association (ADA) and other expert consensus on diabetes classification and diagnosis, as well as specific reviews on LADA, MODY, and fibrocalculous pancreatic diabetes, among others, which provide detailed criteria distinguishing these conditions. Each patient scenario is a composite based on real case characteristics and established diagnostic benchmarks for that diabetes subtype.

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Attaining Glycemic Goal with Lifestyle Modifications

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Diabetes is a metabolic disorder of carbohydrate metabolism characterized by insulin deficiency and insulin resistance, resulting in increased blood glucose. It is a worldwide epidemic. According to the International Diabetes Federation (IDF), the expected prevalence of diabetes in 2045 is 783 million. Type 2 diabetes mellitus (T2DM) is an underrated global epidemic. T2DM is a major risk factor for blindness, lower limb amputations, and cardiovascular disease (CVD), which affect the quality of life. Diabetes has a marked financial impact. The cost of diabetic treatment has been rising due to expensive treatment for diabetes complications and ultramodern modalities of treatment. Even though the cost of diabetes is increasing, there is a choice of no-cost lifestyle modification. This is not a new concept; through lifestyle modification, we can prevent diabetes and remission of prediabetes and diabetes.

Pharmacotherapy and lifestyle modifications are two pillars of diabetic management. Even though lifestyle modification is the most effective pillar to attain glycemic targets, it is underutilized by people with diabetes. Dietary modification and physical activity are included in the daily routine management of diabetes. It needs increased awareness among people with diabetes and health care providers to get the maximum benefit of lifestyle modification.

Dietary trends and changes

Focus on individual diet patterns in prevention and T2DM management has been increasing over the past 2 decades. Strict adherence to a dietary plan can reduce glycated hemoglobin (HbA1c) by 2% in both T2DM and type 1 diabetes mellitus (T1DM), which is a more effective management strategy than pharmacotherapy. The drastic changes in food production, processing, such as refined grains and polished rice, and distribution systems, and the availability of unhealthy foods, which lead to unhealthy dietary patterns and metabolic disease.

Dietary quality

The main blood glucose determinant is dietary carbohydrate. The low-carbohydrate diet shows a reduction in postprandial blood sugar (PPBS) and HbA1c. The low-carb ketogenic diet shows better control of fasting blood sugar (FBS) and HbA1c than low-calorie restriction. A high-protein, low-carb diet shows better results in weight reduction and glycemic control. In addition to diabetic control, CVD risk reduction, obesity management, and reduction in sleep apnea are overall health benefits of lifestyle modification.

Cereal fibers may reduce the risk of diabetes. A cohort study shows an inverse association between fiber from cereal products and T2DM risk; cereal fibers give more benefit than fruit fiber in diabetes. The good carbohydrate should be complex, take a long time to digest, easily burn calories, maintain glycemic levels, and help in weight management. Examples: Cereals, coarse grains, whole pulses. In daily caloric intake, one should take 65% carbohydrate, 15–20% of protein, 10–15% from fats, and 25–35g fiber.

Diabetes and exercise

Exercise is an essential component in the management of metabolic disorders. Physical activity is the first strategy used in T2DM naïve patients. Exercise modalities such as aerobic, resistance, a combination of both, or high-intensity interval training (HIIT) facilitate. Better blood glucose control. Among the variable exercise modalities, HIIT shows a greater reduction of HbA1c level. Physical activity lowers the risk of developing insulin resistance and T2DM.

Exercise plays a major role in diabetic remission and reversal of pre- diabetes to normoglycemia. Exercise helps in weight reduction and obesity related metabolic disorders. Even though the exercise is the most effective strategy for metabolic disorders, the effect starts fading out within 72–96 hours. So continuous exercise is essential to managing diabetes.

Exercise modalities

Aerobic exercise

- 30 meters/day/5 days of week

In addition to diabetic glycemic control, it will reduce all-cause mortality.

Effect of aerobic exercise

- Bicycling, walking, swimming – low impact
- Climbing, jumping, and martial arts strengthen major muscles
- Running, jumping – High-impact aerobic exercise

Gradual progression of exercise intensity is a good method to enhance adherence, reduce muscle injury, and reduce sudden coronary heart diease (CHD) events.

Resistance exercise

It is a better exercise modality for T2DM patients. It gives the benefit of improved bone mineral density, lipid profile, CVD, and insulin sensitivity. It improves muscle mass, increases muscle glycogen storage, HbA1c reduction, and insulin response. Compared to aerobic or resistance exercise alone, a combination of them is the best method for glycemic control.

High-intensity interval training

Short bouts of exercise for 30 seconds with a rest of 60 seconds is one cycle of HIIT. Each cycle is repeated 4–6 times. A single session should take at least 10 minutes. HIIT is advised for 3–5days per week. Patient adherence is high with HIIT. In addition to glycemic control, reduction of body fat, diastolic blood pressure, lipids, and increased insulin sensitivity to glucose are benefits of HIIT. But it is suitable only for actively ambulant people.

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Managing Diabetes in Pregnancy
A Doctor's Experience with the MyCare Patient Support Program

Dr. Kunal Kundan

MBBS, Fellowship in Diabetology, FRSPH (UK), MRCGP

Consultant Physician and Diabetologist,
Janki Diabetes Care Center, Patna

A pregnant woman with type 2 diabetes mellitus (T2DM) was managed by Dr. Kunal Kundan.

Here's what Dr. Kunal Kundan has to say:

A pregnant woman with type 2 diabetes mellitus came to me due to rising blood glucose levels, influenced by hormonal changes. During the consultation, I observed that her lifestyle and dietary intake were not well-suited for diabetes management. I recommended starting insulin therapy, but she was initially hesitant and fearful about using insulin.

To help alleviate her concerns, I referred her to MyCare Diabetes Educator (MDE) Ms. Preeti Kumari. MDE Preeti carefully addressed her fear by explaining the insulin administration process, clarifying misconceptions, and reassuring her about its safety during pregnancy. She provided step-by-step guidance and emotional support, empowering her to start insulin confidently. MDE Preeti also emphasized the importance of tight glucose control for both maternal and fetal health and guided her on lifestyle modifications.

With Preeti's guidance, she began insulin therapy and implemented the advised lifestyle modifications. Within a month, her fasting blood glucose levels improved from 132 mg/dL to 82 mg/dL, post-prandial glucose levels decreased from 190 mg/dL to 114 mg/dL, and her glycemic hemoglobin (HbA1c) levels reduced from 7% to 6.3% over a few months. She successfully maintained optimal glucose control throughout her pregnancy and delivered a full-term healthy baby. After delivery, she transitioned back to oral medications and continues to lead a healthy life with diabetes.

Ms. Preeti

NDEP and T1DE Certified Diabetes Educator

Here's what MDE Preeti has to say:

This case reinforced for me the importance of personalized diabetes education and support, especially during pregnancy. Addressing individual's fears, providing practical guidance on insulin use, and reinforcing lifestyle modifications can empower them to achieve tight glycemic control. With consistent support, they can gain confidence in managing diabetes and achieve positive outcomes for both themselves and their babies.

MyCARE

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20 weeks personalised and hand-holding support for people with diabetes initiated with Insulin. Aims to empower PWD* with information and knowledge they need to ensure a better quality of life while managing their diabetes.

MyCARE Service available at Ahmedabad, Bangalore, Bhopal, Bhuvaneshwar, Burdwan, Chandigarh, Chennai, Cochin, Coimbatore, Delhi, Guwahati, Hubli, Hyderabad, Jaipur, Jodhpur, Kolkata, Lucknow, Ludhiana, Madurai, Meerut, Mumbai, Mysore, Nagpur, Patna, Pune, Siliguri, Surat, Thiruvananthapuram, Varanasi, Vijayawada, Visakhapatnam

*PWD: People with Diabetes

Contact for more information
Nikita Thawarkar | 7304930643 | nikita.thawarkar@usv.in

In uncontrolled T2DM with A1c >8.5%, **Choose 1st**

℞

UDAPA-Trio

Dapagliflozin 10 mg + Sitagliptin 100 mg + Metformin 500 mg XR

Abridged Prescribing Information

UDAPA-TRIO Forte, UDAPA-TRIO, Dapagliflozin, Sitagliptin & Metformin Hydrochloride Extended Release Tablets

Composition: Dapagliflozin 10 mg, Sitagliptin 100 mg & Metformin Hydrochloride Extended Release 1000 mg tablets Dapagliflozin propanediol monohydrate eq. To Dapagliflozin 10 mg Sitagliptin Phosphate Monohydrate IP Eq. Sitagliptin 100 mg Metformin Hydrochloride IP (as Extended Release) 1000 mg Dapagliflozin10 mg, Sitagliptin 100 mg & Metformin Hydrochloride Extended Release 1000 mg tablets Dapagliflozin propanediol monohydrate eq. To Dapagliflozin 10 mg Sitagliptin Phosphate Monohydrate IP Eq. Sitagliptin 100 mg Metformin Hydrochloride IP (as Extended Release) 500 mg **Indication:** It is indicated as an adjunct to diet and exercise to improve Glycemic Control adults with type 2 diabetes mellitus **Recommended Dosage:** As directed by the physician. **Method of Administration:** Oral **Adverse Reactions:** Most common adverse reactions reported are: Dapagliflozin - Female genital mycotic infections, Nasopharyngitis, Urinary tract infections. Sitagliptin - Upper respiratory tract infection, nasopharyngitis and headache. Metformin - Diarrhea, nausea/vomiting, flatulence, asthenia, indigestion, abdominal discomfort, and headache. **Warnings and Precautions:** Dapagliflozin: Volume depletion; Ketoacidosis in patients with Diabetes Mellitus; Urosepsis and Pyelonephritis; Hypoglycemia; Genital mycotic infections Sitagliptin: General: Sitagliptin should not be used in patients with type 1 diabetes or for the treatment of Diabetic Ketoacidosis. Acute pancreatitis: Hypoglycemia is used in combinations when combined with other anti-hyperglycemic medicinal product; Renal impairment: Hypersensitivity reactions including anaphylaxis, angioedema, and exfoliative skin conditions - Steven johnson syndrome; Bullous pemphigoid Metformin Hydrochloride: Lactic acidosis; In case of dehydration (severe diarrhea or vomiting, fever or reduced fluid intake), metformin should be temporarily discontinued and contact with a healthcare professional is recommended. **Contraindications:** Hypersensitivity to the active substance of Dapagliflozin, Sitagliptin & Metformin or to any of the excipients listed. Any type of acute metabolic acidosis (such as lactic acidosis, diabetic ketoacidosis). Diabetic pre-coma; Severe renal failure (eGFR < 30ml/min); Acute conditions with the potential to alter renal function such as: Dehydration, Severe infection, Shock; Acute or chronic disease which may cause tissue hypoxia such as: Cardiac or respiratory failure. Recent myocardial infarction, Shock, Renal Impairment, Acute intoxication, Alcoholism. **Use in special population:** Pregnant women: Due to lack of human data, drugs should not be used during pregnancy. Lactating women: It should not be used during breastfeeding. Pediatric patients: The safety and efficacy of drugs has not yet been established. No data is available. Geriatric Patients: In patients >65 years, it should be used with caution as age increases. For Additional Information/full prescribing information, please write to us: USV Private Limited, Arvind Vithal Gandhi Chowk, B.S.D Marg, Govandi, Mumbai - 400088 Last updated on 02/04/2024.

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Tel.: 91-22-2556 4048 Fax: 91-22-2558 4025 www.usvindia.com

In T2DM uncontrolled on monotherapies

Intensify Now

With

UDAPA-S

Dapagliflozin 10 mg + Sitagliptin 100 mg Tablets

Ref: L Ravikumar et al.Cardiology and Cardiovascular Medicine. 2023; 7: 141-144. |

Abridged Prescribing Information

Composition: Each Film Coated Tablet Contains: Dapagliflozin Propanediol Monohydrate eq. to Dapagliflozin (10 mg) + Sitagliptin Phosphate Monohydrate IP eq. to Sitagliptin (100 mg). **Indications:** For the treatment of type 2 diabetes mellitus inadequately controlled on Metformin monotherapy. Recommended Dosage: As directed by the physician. **Method of Administration:** Oral. **Adverse Reactions:** Female genital mycotic infections, nasopharyngitis, and urinary tract infections are most common adverse reactions associated with dapagliflozin. While, upper respiratory tract infection, nasopharyngitis, and headache are most common adverse reactions associated with sitagliptin. **Warnings and Precautions: Risk of Volume Depletion in Elderly** - Before initiating Dapagliflozin and Sitagliptin, assess volume status and renal function in the elderly, patients with renal impairment or low systolic blood pressure, and in patients on diuretics. Monitor for signs and symptoms during therapy. **Ketoacidosis in Patients with Diabetes Mellitus** - Assess patients who present with signs and symptoms of metabolic acidosis for ketoacidosis regardless of blood glucose level. If suspected, discontinue UDAPA®-S, evaluate and treat promptly. Before initiating UDAPA®-S, consider risk factors for ketoacidosis. Patients on UDAPA®-S may require monitoring and temporary discontinuation of therapy in clinical situations known to predispose to ketoacidosis. **Urosepsis and Pyelonephritis** - Evaluate for signs and symptoms of urinary tract infections and treat promptly, if indicated. Hypoglycemia - Consider a lower dose of insulin or the insulin secretagogue to reduce the risk of hypoglycemia when used in combination with Dapagliflozin and Sitagliptin. **Necrotizing Fasciitis of the Perineum** - Serious, life-threatening cases have occurred in patients with diabetes, both females and males. Assess patients presenting with pain or tenderness, erythema, or swelling in the genital or perianal area, along with fever or malaise. If suspected, institute prompt treatment. **Genital Mycotic Infections** - Monitor and treat if indicated. **Contraindications:** Patients with a history of hypersensitivity reaction to the active substance or to any of the excipients. In patients with varying degrees of renal impairment, adjusting the dosage is advised based on the severity of the condition. Prohibited medications include strong CYP2C8 inhibitors/ inducers, drugs increasing/decreasing hypoglycemic action, drugs known to cause QT prolongation, or other oral hypoglycemic agents other than study medications.

For Additional Information/full prescribing information, please write to us:
USV Private Limited, Arvind Vithal Gandhi Chowk, B.S.D Marg, Govandi, Mumbai - 400088
Updated on 20th March 2024

PV - In case of any adverse events, kindly contact:pv@usv.in

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Employment Challenges and Work Productivity in People with Diabetes

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Diabetes doesn't pause for meetings or deadlines. In India, diabetes is becoming a more common condition among working-age adults, with significant effects on employment, personal income, and overall productivity. According to recent national data by the Indian Council of Medical Research-India Diabetes (ICMR-INDIAB), the overall weighted prevalence is reported to be 11.4% with urban and economically active age groups accounting for the majority of cases.

Impact of diabetes on employment and work productivity: Diabetes increases presenteeism (reduced work performance) and absenteeism (sick leave), and it lowers labor-market involvement (increased unemployment rates, early workforce exits, and disability pension). Cohort study and population analysis indicate significant lifetime earnings losses for impacted individuals and measure productivity losses from both pathways. Presenteeism, absenteeism, and early workforce exit add up to a measurable productivity gap in society.

Systematic reviews have consistently linked presenteeism to neuropathic pain, hypoglycemia, and mood disorders. Important clinical factors that contribute to poor work performance include: Acute glycemic episodes (hypoglycemia, severe hyperglycemia), diabetes consequences (painful neuropathy, visual impairment), associated mental health issues (depression, anxiety), and fatigue.

Workplace barriers in India: High percentages of shift-based and informal employment, inconsistent access to occupational health services, a lack of social protection, and stigma or misconceptions surrounding chronic illness are a few of the specific challenges faced by Indian employees. Diabetes that goes undiagnosed further raises the possibility of unexpected decompensation at work.

Strategies to enhance work productivity in people with diabetes: There is limited evidence on interventions that specifically address presenteeism in people with diabetes. Based on current findings, job productivity may be enhanced by improving glycemic control, ensuring the right treatments are chosen, and supporting adherence. Presenteeism is indirectly improved by psychological support, particularly when it comes to managing stress and depression. This strategy has been demonstrated to improve adherence, self-efficacy, and glycemic results. Productivity is further supported by creating workplace adjustments and modifying therapy to reduce treatment-related issues (such as hypoglycemia or frequent urination with sodium-glucose co-transporter-2 [SGLT2] inhibitors). In order to maintain both health and work performance, certain work modifications are essential.

Incorporate physical activity: Take short breaks to stretch, walk stairs instead of the elevator, or take a walk during lunch.

Walk more: Get off public transportation and stop early or park further away to increase your steps.

Alternate standing and sitting: If possible, switch between sitting and standing while working to get in some extra movement. Get up and stretch or walk around every couple of hours.

Practice relaxation: Incorporate stress-reduction techniques like deep breathing or meditation, especially during busy work periods.

Plan for busy/stressful days: Be prepared with necessary supplies so you can face intense days with confidence.

Detect diabetes distress: Recognize that feelings of discouragement or frustration can impact self-care.

Diabetes significantly affects employment and productivity, especially in India's increasing working-age population. Significant economic and personal losses are a result of both presenteeism and absenteeism. A comprehensive strategy that incorporates the best clinical care, psychological support, and workplace adjustments is needed to address these. Maintaining productivity while protecting health requires collaboration between employers, occupational physicians, and healthcare providers.

'Productivity isn't just about effort, it's about harmony between health and ambition'

Resources:

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Ask the Expert: Interview with Dr. Unnikrishnan

Dr. A. G. Unnikrishnan
MD, DM (Endocrinology), DNB, MNAMS
CEO and Endocrinologist, Chellaram Diabetes Institute, Pune

Dr. A. G. Unnikrishnan is an eminent endocrinologist and the CEO of Chellaram Diabetes Institute, a leading diabetes institute in India and an International Diabetes Federation-certified center for education and excellence in diabetes care. He heads clinical care, research, and education, and also oversees a philanthropic rural diabetes care program run by the Institute. He also heads the newly formed Chellaram Diabetes Research Center, which is in the field of innovations in diabetes-related diagnosis and management and the Institute's e-learning academy. He has contributed immensely to diabetes education by heading the educational programs at Chellaram Diabetes Institute. He has published and edited various journals over the years and has won several awards.

Role of Glucagon-like Peptide-1 (GLP-1) Receptor Agonists in Diabetes Management

1. What are GLP-1 receptor agonists, and how do they work in managing type 2 diabetes?

GLP-1 receptor agonists belong to a class of drugs called incretin mimetics or analogs. They are hormones produced by the gut that increase insulin secretion or production. When we eat food, the food gets digested, and the digested food (which has now converted into glucose) acts on the L cells of the intestine, and the L cells release a molecule called GLP-1, which acts on the pancreas to release insulin and control the blood glucose levels. At the same time, the GLP-1 also acts on the brain to suppress appetite, and it also acts on the pancreas to reduce the production of glucagon (a hormone that increases blood glucose levels). By reducing glucagon, GLP-1 improves blood glucose levels.

2. Many GLP-1 receptor agonists are injectable. What advice do you give patients who feel anxious about starting injections?

Yes, many GLP-1 receptor agonists are injectable; however, they are only available for a weekly injection. The newer GLP-1s, weekly anti-obesity injections, are great for people with type 2 diabetes who are obese. By reducing body weight, these medications are able to control the blood glucose levels and result in what is called pharmacological remission of type 2 diabetes. In addition, these medications also protect the heart and kidneys. Therefore, these medicines are not just about reducing the blood glucose levels or improving the weight; they are also about protecting the heart and kidneys. Indeed, newer research suggests that these medicines may have benefits in improving obstructive sleep apnea as well as osteoarthritis.

3. What are some of the most common side effects, and how can patients manage them?

The commonest side effects of GLP-1 therapy affect the gastrointestinal system. Nausea, vomiting, bloating, flatulence, diarrhea, constipation, and, indeed, different gastrointestinal side effects can happen. To manage this, patients have to be instructed to take small, frequent meals, stay hydrated in small parts throughout the day, avoid spicy food, and not to eat immediately after exercise. In addition, there are some other rare side effects of GLP-1s. By controlling blood glucose levels, they can rarely cause a worsening of diabetic retinopathy. They have also been associated with certain conditions, such as worsening of depression, occurrence of acute pancreatitis, and also people with a family history of medullary thyroid carcinoma should not take these medications.

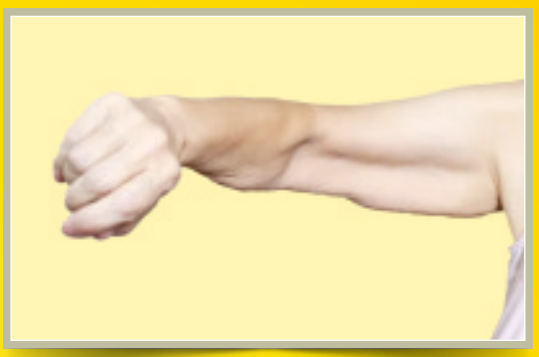
4. Where do you see GLP-1–based therapies evolving in the next 5–10 years?

In the next 5–10 years, we are going to see the advent of oral GLP-1 molecules. They are already available in the form of oral semaglutide, but the currently approved doses of semaglutide in India (up to 14 mg) are useful for glucose control and not for weight management. But studies have shown that higher doses (such as 25 or even 50 mg of semaglutide) may help lose body weight. Another drug is Orforglipron. This drug is an oral non-peptide GLP-1, which works by the GLP-1 mechanism and causes weight loss. There are newer studies that are looking at newer agents, looking at combinations of GLP-1, glucagon, and glucose-dependent insulinotropic polypeptide-1 (GIP-1) receptor agonists to yield better outcomes. These agents can help in the management of not just type 2 diabetes and obesity, but also may have an impact on the management of metabolic dysfunction associated with steatotic liver disease. Finally, newer agents will tag these GLP-1 molecules to muscle protection drugs because GLP-1 therapy is often associated with muscle loss. By tagging GLP-1 to muscle protection agents, the muscle loss or sarcopenia due to GLP-1 can be minimized.

5. How can diabetes educators play a role in helping patients adapt to and succeed with GLP-1 therapy?

Diabetes educators have a key role to play in GLP-1 therapy. They can make patients aware of the effects and side effects of GLP-1. They can also train people with obesity and type 2 diabetes in the correct injection technique once GLP-1 has been prescribed by the doctor. They can also help in advising strength training to manage the sarcopenia resulting from these agents. Most importantly, they can help in advising the correct diet in terms of protein intake and hydration to minimize the side effects.

6. How do you prevent sarcopenia and micronutrient deficiencies in patients on GLP-1s, especially concerning adequate protein intake?



While there are no randomized controlled trials of managing nutrient deficiencies and sarcopenia in people on GLP-1 therapy, a common-sense approach is to increase strength training as well as improve protein intake to minimize muscle loss. Among the two, resistance training or strength training is probably more important. Adequate protein intake, as advised by dietitians, is also a very important aspect of preventing sarcopenia. Yoga is a combination of both aerobic and resistance training and can be particularly useful for people who are on GLP-1-based therapies for obesity or obese type 2 diabetes. However, at this point, let me mention that no randomized controlled trials of yoga in this setting are available.

7. What is the optimal macronutrient distribution for patients on GLP-1 therapy, and how does the drug's mechanism influence meal timing and composition?

The optimal macronutrient distribution for people on GLP-1 therapy is more or less the same as the macronutrient distribution in people with type 2 diabetes or obesity. However, the quality of the protein intake in the diet is very important. The protein intake is generally kept at 1.2 to 1.5 g/kg body weight, and ensuring a good protein intake is key to the macronutrient-based management.

8. What specific dietary strategies prevent weight regain after discontinuing GLP-1 agonists, and how do you prepare patients for this transition?

Studies have shown that GLP-1 agonist therapy can cause substantial weight loss. But after stopping these agents, there is a rebound to weight gain. Exercise is the single most important tool to maintain weight loss after initial weight reduction has been achieved by diet or by GLP-1. Continuing to follow a good, healthy diet, reducing stress, and sleeping well can all help minimize the weight regain after stopping GLP-1 agonist. In people who have type 2 diabetes, medications like metformin and sodium glucose co-transporter 2 (SGLT2) inhibitors, which actually help in weight management, are useful add-ons or useful drugs to be continued once GLP-1 agonist therapy is discontinued.

Final thoughts

It is a multi-disciplinary approach that we are talking about here, which includes a bariatric specialist (such as an endocrinologist), dietitian, exercise therapist, behavior therapist or psychologist, and an entire team of specialists that have to come together to improve the management of these patients who are given GLP-1 therapy for obesity or type 2 diabetes.

Workday Diabetes Kit

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Maintaining glycemic control during the workday poses special difficulties for working professionals because of long working hours, stress, restricted meal options, and fluctuating levels of physical activity. A workday diabetes kit is a proactive way to maintain productivity in work settings, reduce the risk of hypoglycemia or hyperglycemia, and guarantee readiness. People with diabetes can follow self-management practices during the workday with the help of a standardized checklist. During working hours, a neatly organized kit ensures convenience and safety. Products can be divided into lifestyle, food, and medical support tools:

- Monitoring tools - A continuous glucose monitoring (CGM) with a reader/phone app and/or a glucose meter with supplies.
- Oral medications or insulin pens with a carrying case.
- Hypokit for hypoglycemia, which contains fast-acting 15–20 g carbohydrate like glucose powder, glucose tablets, or sugar
- Pre-portioned low-to-moderate glycemic index snacks (fresh fruit, whole-grain crackers, nuts).
- Food rich in protein and fiber to maintain glycemic stability and satiety.
- An extra copy of the prescription in case of need.
- Disinfectant wipes and hand sanitizer for sanitary use.

The workplace starter guide: Useful suggestions

Maintaining readily available self-care supplies, scheduling regular breaks for stress reduction and physical activity, and coordinating meals with medication and glucose monitoring are all necessary for effective workplace diabetes treatment. Safety is improved by selective disclosure to co-workers or supervisors, the use of occupational health resources, and simple peer education on hypoglycemia detection. Adherence is further supported by digital technologies for continuous glucose monitoring alerts, reminders, and diet journaling. Dietary management is maximized when fiber, lean protein, and unsaturated fats are prioritized while refined carbohydrates are minimized. When used together, these actions support occupational performance, reduce acute problems, and promote glycemic stability.

Resources:

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Workplace Considerations for Individuals with Diabetes

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Diabetes is a chronic health condition characterized by an imbalance of blood glucose levels. In the workplace, individuals may face challenges balancing medical needs with job responsibilities. Employers, health and safety officers, and co-workers play vital roles in ensuring a safe and inclusive environment.

Globally, over 10% of the adult workforce is affected by diabetes, underscoring the need for workplace awareness and proactive support.

Key workplace challenges

Workers with diabetes may experience hypoglycemia (dizziness, confusion, fainting) or hyperglycemia (fatigue, poor concentration). Regular glucose monitoring, timely access to medication or insulin, and availability of food are essential for maintaining safety and performance.

Legal and policy frameworks

In many jurisdictions, diabetes qualifies as a disability, requiring employers to provide reasonable accommodations such as flexible scheduling, safe work practices, and non-discrimination policies. Relevant laws include the Americans with Disabilities Act (American Diabetes Association [ADA], United States of America), the Equality Act (United Kingdom, 2010), and the Rights of Persons with Disabilities Act (India, 2016).

Practical accommodations

Employers can support employees with diabetes through the following measures:

- Flexible breaks for blood glucose testing, meals, or insulin administration.
- **Food and hydration:** Provision for storing and accessing snacks, glucose, and water.
- **Medical access:** Sharps disposal, restroom availability, and safe use of devices like insulin pumps or continuous glucose monitoring (CGMs).
- **Emergency readiness:** Training staff to recognize and respond to hypo/hyperglycemia.

- **Work design:** Minimizing shift disruptions and assessing safety in physically demanding or high-risk roles (e.g., driving).
- Remote work or hybrid options where feasible to enhance flexibility.
- **Confidentiality:** Protecting medical privacy and avoiding stigma.

Psychosocial and mental health considerations

Living with diabetes can sometimes lead to anxiety, fear of hypoglycemia, or workplace stigma. Employers should foster an open and supportive culture that encourages disclosure without fear of discrimination. Peer support programs and mental health resources can enhance well-being and job satisfaction.

Benefits to employers and employees

Supportive workplaces improve productivity, safety, and job satisfaction, while reducing absenteeism and liability. Inclusive practices contribute to higher employee retention and overall organizational health.

Conclusion

Diabetes management at work requires collaboration between the employer, employee, and healthcare professionals. Awareness, accommodations, and inclusive policies enable employees with diabetes to remain safe, productive, and supported. Creating diabetes-inclusive workplaces is not just a legal obligation but an investment in workforce health and performance.

Key points

- Practical accommodations—such as flexible breaks, food access, and emergency readiness—are essential to ensure safety and performance.
- Supportive workplace policies and collaboration between staff and employers improve productivity, safety, and quality of life.
- Awareness training and non-discriminatory practices foster inclusion and reduce stigma.

Resources:

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2. Diabetes Victoria. Workplace considerations for employees with diabetes. Available at: https://www.diabetesvic.org.au/wp-content/uploads/2024/07/a1f900000071gHsAAI.pdf.
3. American Diabetes Association/Cornell University. Employment Considerations for People Who Have Diabetes. Available at: https://diabetes.org/sites/default/files/2023-10/Employment%20Considerations%20for%20People%20Who%20Have%20Diabetes% 20Cornell%20University%20Paper.pdf.

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Coping with Stress at Work

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The workplace can be exciting and rewarding, but it often brings deadlines, long hours, and constant pressure. For individuals living with diabetes, stress at work is more than just an emotional burden; it can directly impact blood glucose control, sleep quality, and overall health. Stress hormones such as cortisol are known to raise glucose levels, making day-to-day management more challenging. With the right coping strategies, however, employees with diabetes can reduce stress, protect their health, and maintain productivity at work.

Here are some tips for managing stress at work

- **Track stressors:** Keeping a brief journal of stressful situations, thoughts, and reactions can help identify patterns and triggers.
- **Choose healthy responses:** Physical activity, hobbies, and good sleep habits are better stress-busters than fast food or alcohol.
- **Warm bath before bed:** A review of 13 studies in Sleep Medicine Reviews found that a 10-minute warm bath or shower an hour or two before bedtime helps individuals fall asleep faster. It also promotes relaxation and helps disconnect from daily stress.
- **Set boundaries:** Clear work-life limits like avoiding emails after hours can reduce conflict and stress.
- **Recharge regularly:** Taking breaks, using vacation days, or disconnecting from work helps prevent burnout.
- **Practice relaxation:** Techniques such as deep breathing, mindfulness, or meditation improve focus and calm.
- **Engage with supervisors:** Open discussions with managers can lead to realistic solutions, resources, or adjustments at work.
- **Seek support:** Support from family, friends, employee wellness programs, or professional counseling can make stress easier to manage.

5-minute desk-friendly stress relief guide: Even a few minutes can help employees reduce stress, support blood glucose control, and improve focus at work.

1. **Deep breathing (1 minute):** Sitting comfortably, employees can inhale slowly for 4 counts and exhale for 6, repeating 5–6 times to calm the nervous system.
2. **Desk stretch (1 minute):** Shoulder rolls, neck stretches, or reaching arms overhead can help release tension.
3. **Mini mindfulness (1 minute):** Focusing on the breath, a sip of water, or physical sensations allows thoughts to pass without judgment.
4. **Quick walk (1 minute):** Standing up and walking briefly around the desk or office can reset the mind.
5. **Positive cue (1 minute):** Listening to calming music, repeating a soothing phrase, or visualizing a relaxing place helps regulate emotions.

Note: Performing this routine once or twice a day can support focus, reduce stress-related blood glucose fluctuations, and enhance overall well-being.

Resources:

1. Coping with stress at work, American Psychological Association. Available at: https://www.apa.org/topics/healthy-workplaces/work-stress. Accessed on 4th Oct 2025.
2. 10 tips to ease diabetes stress, American Diabetes Association. Available at: https://diabetes.org/health-wellness/mental-health/ease-diabetes-care-stress. Accessed on 4th Oct 2025.

Diabetes Educator's Toolkit:
Skill of the Month: Cultural Competency

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Diabetes care is greatly affected by cultural and social influences. It is important for healthcare providers to understand that individual cultural beliefs, language spoken, dietary preferences, and family background are all responsible for and affect the diabetes self-care regimen. As a result, cultural competence—and more lately, the concept of cultural humility—has become essential to diabetes education.

Need for cultural competency: Diabetes educators must find out about personal goals of individuals with diabetes, what behaviors they have adopted from mainstream culture, understand how family ties may affect diabetes care, and being aware of patients' educational level when implementing any educational activity are some specific strategies which will help address multiple factors in the day-to-day management of individuals with diabetes, who come from culturally diverse populations.

Cultural humility: Competence should be accompanied by cultural humility, which is characterized by ongoing introspection and receptivity to patient perspectives.

Culturally tailored interventions: Programs for individuals with diabetes that are sensitive to food customs, religious beliefs, and family structures result in better diet adherence as a result of better glucose control and higher patient satisfaction. Hence, culturally tailored interventions play a vital role in counseling individuals with diabetes.

Conclusion

Cultural competence in diabetes care is not only an adjunct skill but a core element of professional practice. For diabetes educators, integrating cultural humility, conducting structured cultural assessments, and adapting education to patients' lived contexts represent practical strategies to improve clinical outcomes. Future work should focus on scalable models of training and implementation that embed cultural competence as a standard of care.

Resources:

1. Caballero AE. Cultural competence in diabetes mellitus care: An urgent need. *Insulin*. 2007;2(2):80-91. doi:10.1016/S1557-0843(07)80019-4
2. Dragomanovich HM, Shubrook JH. Improving cultural humility and competency in diabetes care for primary care providers. *Clin Diabetes*. 2021;39(2):220–224. doi:10.2337/cd20-0063
3. Haque MZ, Ahmed F, Khan SL, *et al*. Diabetes management and culturally sensitive care: An approach to care for Bangladeshi patients. *Clin Med Insights Endocrinol Diabetes*. 2023; 16:11795514231210139. Published 2023 Nov 3. doi:10.1177/11795514231210139

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Frequently Asked Questions on Diabetes and the Workplace

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1. My 9-year-old son was recently diagnosed with type 1 diabetes mellitus and is about to start school. What precautions should we take, and how can we help him adjust to this new routine safely and confidently?

Ans. Supporting a child with type 1 diabetes mellitus as they begin school involves thoughtful planning, open communication, and a team-based approach. Here's how you can support your child:

- **Meet the school team:** Talk to the class teacher, principal, physical education teacher, and school nurse (if available). Share a clear care plan from your doctor.
- **Train key staff:** Ensure at least two adults know how to check blood glucose levels, give insulin, and respond to highs/lows.
- **Pack smart:** Send meals/snacks with carbohydrate counts and timing instructions. Include a kit with a glucometer, insulin, sugar/glucose powder, water, and emergency contacts.
- **Plan for activity:** Let staff know that exercise affects blood glucose levels. Provide quick-acting carbohydrate for physical education days.
- **Support emotionally:** Teach your child to recognize symptoms and speak up. Help them explain diabetes to classmates if they wish. Watch for stress or anxiety.
- **Know your rights:** Request that the school accommodate medical needs. Ask for snack breaks, restroom access, or flexible test timings.

With preparation, empathy, and open communication, your child can feel safe, confident, and included at school.

2. I am a 28-year-old executive recently diagnosed with diabetes. Do I really need to tell my manager or colleagues about my condition, or can I keep it private?

Ans. You are absolutely right to wonder whether you should share your diabetes diagnosis at work. Remember, disclosing your condition is entirely your personal choice; you are not obliged to tell anyone if you don't feel comfortable. However, being open with at least your manager and one trusted colleague can actually work in your favor. Diabetes can sometimes cause hypoglycemia, leaving you weak or shaky. Having someone at work who knows can make a big difference. You may also need quick insulin shots, short meal breaks, or checking of blood glucose levels often; therefore, disclosure makes these routines understandable and not disruptive.

Think of sharing your diagnosis as empowering, not limiting. It ensures safety, peace of mind, and a supportive environment. Keep healthy snacks like nuts, roasted chana, fruits, or protein bars at your desk and avoid high-carb or sugary beverages to stay steady and focused. By taking these small steps, you manage diabetes confidently while showing that it doesn't limit your performance.

3. My 52-year-old father has type 2 diabetes, and I've noticed his office canteen mostly offers fried snacks and sweets. How can he manage his diet at work and make healthier choices despite these limited options?

Ans. It's great that you're looking out for your father's health. Even if the office canteen mainly offers fried snacks and sweets, he can manage diabetes effectively with a few simple strategies.

Encourage him to carry healthy snacks like nuts, roasted chana, fruits, or yogurt to keep blood glucose levels steady. At the canteen, he can choose smaller portions, focus on vegetables or protein, and avoid fried or sugary items. Spacing meals and snacks and staying hydrated also helps prevent sudden hunger and unhealthy choices.

Remember, managing diabetes is about balance. With planning and mindfulness, he can enjoy meals at work, stay healthy, and feel confident in managing his condition.

Recipe of the Month: Healthy Oats Chivda

Serves: 2

Ingredients	Household measurements
Rolled oats (roasted)	½ cup
Makhana (roasted)	½ cup
Red rice poha (roasted)	⅓ cup
Roasted chana	2 tsp
Pumpkin seeds	1 tsp
Sesame seeds	1 tsp
Almonds	5–6 no
Cumin seeds	½ tsp
Mustard seeds	½ tsp
Curry leaves	3–4 pieces
Salt	As per taste
All dry masalas	As per taste
Kasuri methi	1 tsp
Oil	2 tsp

*1 cup = 200 mL *1 tbsp = 15 mL *1 tsp = 5mL

Method

- In a deep cooking pan (kadai), dry roast the rolled oats, poha, and makhana until crispy and set them aside.
- Dry roast almonds, pumpkin seeds, sesame seeds, and roasted chana for 1–2 minutes and let them cool.
- Now add oil to the pan. Once warm, add cumin, mustard seeds, and curry leaves. Let them crackle, add the dry masalas (cumin powder, turmeric, amchoor or chaat masala) along with salt to it.
- Add the dry roasted oats, poha, makhana, seeds, and nuts to the pan.
- Mix it well and add crushed kasuri meethi to the chivda.
- Store it in an air-tight container to keep it crispy.

Role Play

A 45-year-old man has recently transitioned to an afternoon shift in his new job. He seeks guidance from a diabetes educator on what lifestyle and self-management adjustments are needed to accommodate this change.

Diabetes educator (DE): Good morning, Mr. XYZ. How are you doing?

Mr. XYZ: Good morning. I am a bit stressed about my work timings. My morning shift has been changed to an afternoon shift, from 1 pm to 9 pm. Since my entire routine is going to get altered, I am worried about how this might have an effect on my blood glucose levels.

DE: Surely changes in shift timings can sound stressful and impact meal timings, physical activity, sleeping schedule, and even blood glucose patterns. But we can work together to adapt to your new routine. Tell me how your schedule has changed?

Mr. XYZ: Earlier, I used to wake up at 6:45 am, have my breakfast, and leave for the office. I usually have my lunch by 1:30 pm. Some evening snacks and tea at 5 pm, and dinner by 9 pm. I also visited the gym from 7 pm–8 pm. But now that the timings have changed, I do not know how to manage.

DE: I see. A sudden shift can be tough, but still manageable. The important thing you need to remember is that you will be fine. It might take some time, but eventually you will get adjusted to it.

Mr. XYZ: Okay, I am looking forward to your guidance on this.

DE: Since your shifts are in the afternoon, you might start with a balanced breakfast before heading to work, carry your lunch, and have dinner after your shift at home. Timing for medications may need slight adjustments depending on your glucose levels, and this should be discussed with your doctor. Avoid long gaps between meals. Keep fixed timings for your meals and medications. If healthy snacking options are not available in your office, carry them with you from home, like roasted chana with peanuts, roasted makhana, a small fruit with nuts, or a trail mix of seeds.

Mr. XYZ: Okay. What about my exercise? After coming back from the office, I will be exhausted. How can I indulge in physical activity?

DE: You can wake up an hour early and complete your workout before going to work. Also, you can try including short activities like a 10–15 minute walk after lunch and dinner. During phone calls, if possible, try to walk around and talk. Such small inclusions can help you stay active throughout the day.

Mr. XYZ: This seems doable.

DE: That's great! Remember, sleep also plays a major role. Try and clock in 6–7 hours of sound sleep. Indulge in activities like meditation that can help you deal with stress. Keep monitoring your blood glucose levels at different times. This will help us see how your body is adjusting to the new routine.

Mr. XYZ: Yes, I will remember all these pointers and try to implement them as much as possible. Thank you for your valuable guidance and support.

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Active Ingredients: Metformin hydrochloride (as sustained release) and glimepiride tablets **Indication:** For the management of patients with type 2 diabetes mellitus when diet, exercise and single agent (glimepiride or metformin alone) do not result in adequate glycaemic control. **Dosage and Administration:** The recommended dose is one tablet daily during breakfast or the first main meal. Each tablet contains a fixed dose of glimepiride and Metformin Hydrochloride. The highest recommended dose per day should be 8 mg of glimepiride and 2000mg of metformin. Due to prolonged release formulation, the tablet must be swallowed whole and not crushed or chewed. **Adverse Reactions:** For Glimepiride: hypoglycaemia may occur, which may sometimes be prolonged. Occasionally, gastrointestinal (GI) symptoms such as nausea, vomiting, sensations of pressure or fullness in the epigastrium, abdominal pain and diarrhea may occur. Hepatitis, elevation of liver enzymes, cholestasis and jaundice may occur; allergic reactions or pseudo allergic reactions may occur occasionally. For Metformin: GI symptoms such as nausea, vomiting, diarrhea, abdominal pain, and loss of appetite are common during initiation of therapy and may resolve spontaneously in most cases. Metallic taste, mild erythema, decrease in Vit B12 absorption, very rarely lactic acidosis, Hemolytic anemia, Reduction of thyrotropin level in patients with hypothyroidism, Hypomagnesemia in the context of diarrhea, Encephalopathy, Photosensitivity, hepatobiliary disorders. **Warnings and Precautions::** For Glimepiride: Patient should be advised to report promptly exceptional stress situations (e.g., trauma, surgery, febrile infections), blood glucose regulation may deteriorate, and a temporary change to insulin may be necessary to maintain good metabolic control. Metformin Hydrochloride may lead to Lactic acidosis; in such cases metformin should be temporarily discontinued and contact with a healthcare professional is recommended. Sulfonylureas have an increased risk of hypoglycaemia. Long-term treatment with metformin may lead to peripheral neuropathy because of decrease in vitamin B12 serum levels. Monitoring of the vitamin B12 level is recommended. Overweight patients should continue their energy-restricted diet, usual laboratory tests for diabetes monitoring should be performed regularly. **Contraindications:** Hypersensitivity to the active substance of glimepiride & Metformin or to any of the excipients listed. Any type of acute metabolic acidosis (such as lactic acidosis, diabetic ketoacidosis, diabetic pre-coma). Severe renal failure (GFR<30ml/min). In pregnant women. In lactating women.Acute conditions with the potential to alter renal function (dehydration, severe infection, shock, intravascular administration of iodinated contrast agents); acute or chronic disease which may cause tissue hypoxia (cardiac or respiratory failure, recent myocardial infarction, shock); hepatic insufficiency; acute alcohol intoxication; alcoholism. **Use in a special population:** Pregnant Women: Due to a lack of human data, drugs should not be used during pregnancy. Lactating Women: It should not be used during breastfeeding. Pediatric Patients: The safety and efficacy of drugs has not yet been established. Renal impairment: A GFR should be assessed before initiation of treatment with metformin containing products and at least annually thereafter. In patients at increased risk of further progression of renal impairment and in the elderly, renal function should be assessed more frequently, e.g. every 3-6 months.

Additional information is available on request.

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In case of any adverse events, kindly contact: pv@usv.in For the use of registered medical practitioner, hospital or laboratory.

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