Indian Diabetes

EDUCATOR JOURNAL

RESEARCH SOCIETY FOR THE STUDY OF DIABETES IN INDIA

Theme of the Month

Winter and Diabetes

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

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

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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.

This January edition of IDEJ highlights the theme "Winter and Diabetes." The winter season brings colder temperatures and several challenges for people with diabetes, such as reduced physical activity, heightened infection risk, and fluctuations in glucose control. This issue equips diabetes educators with practical guidance to help individuals stay active, maintain balanced eating habits, and manage medications effectively during the colder months. With simple, evidence-based tips for winter wellness, the focus remains on preparation, awareness, and balance, ensuring the season is healthy, comfortable, and worry-free for every individual living with diabetes.

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

Expert Contributors
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Article: Importance of Hydration in Winter for People with Diabetes

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Article: Managing Exercise in Winter Season

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Article: Diabetes Educator's Toolkit: Skill of the Month—Behavioral Coaching

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Article: Frequently Asked Questions on Winter and Diabetes

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Cover Story: Thriving Through the Winter: Care in Diabetes

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Winter brings a distinct set of challenges for people living with diabetes. As temperatures drop, the body undergoes physiological changes, routines shift, and the risk of illness rises. For many, colder months mean higher blood glucose levels, reduced physical activity, and the need for extra vigilance with medications, monitoring devices, and self-care practices. Yet, with the right strategies, winter can be a season of resilience—and thriving.

This cover story provides an overarching view of winter care in diabetes, setting the stage for the detailed articles in this issue on winter superfoods, practical winter routines, and winter-specific diabetes management strategies.

Understanding seasonal shifts: Cold weather places a form of metabolic stress on the body. Exposure to low temperatures can trigger increases in counter-regulatory hormones such as cortisol, adrenaline, and noradrenaline, which may elevate blood glucose and reduce insulin sensitivity. At the same time, vasoconstriction reduces blood flow to extremities, affecting glucose uptake in tissues and even influencing the accuracy of blood glucose readings. Research also shows that insulin absorption can slow in colder temperatures. These physiological shifts highlight why winter requires a more proactive and adaptable approach to diabetes care.

Glucose monitoring: For many, winter leads to fluctuations in glucose levels—sometimes subtle, sometimes pronounced. Reduced outdoor activity, holiday eating patterns, and increased appetite naturally contribute to higher blood sugars. It is important to monitor frequently and take appropriate measures as needed. Winter essentials for glucose monitoring include:

- More frequent self-monitoring of blood glucose (SMBG) or continuous glucose monitoring (CGM) checks, especially during the first weeks of seasonal transition.
- Warming hands before finger-pricks to ensure accurate readings.
- Protecting glucose meters, sensors, and insulin pumps from extreme cold, as device performance may be compromised.

Maintaining individualized targets and adjusting medication/insulin doses, particularly basal rates, with support from healthcare providers can help stabilize glucose patterns through unpredictable winter swings.

Winter immunity: Winter is a season marked by an increased incidence of viral infections, including respiratory illnesses. Infection can significantly elevate blood glucose levels due to metabolic stress and inflammation. Dry skin may increase the risk of infection. Hence, regular moisturization, warm socks, and daily foot checks remain a cornerstone of winter care. Daily moisturizing with fragrance-free creams or ointments (preferably containing ceramides or urea) helps prevent skin cracking and infection. Individuals should be advised to use gentle cleansers, avoid hot water, and carefully dry skin folds to reduce irritation and infection risk.

Physical activity indoors: When outdoor activity decreases, indoor alternatives can maintain metabolic health. Home-based workouts such as walking indoors, spot marching, chair yoga, simple strength exercises, or resistance-band routines help counteract winter sluggishness and improve insulin sensitivity.

Nutrition and winter superfoods: Winter is season rich in naturally nutrient-dense foods. Winter produce, such as leafy greens, citrus fruits, berries, and root vegetables like sweet potato, supports immunity and gut health.

A season of preparedness and possibility: Winter does not have to be a difficult season for people with diabetes. With awareness, anticipation, and planning, individuals can sustain glucose stability, protect their devices, nourish their bodies, stay active, and support immune and emotional health.

Resources:

1. Li S, Zhou Y, Williams G, *et al.* Seasonality and temperature effects on fasting plasma glucose: A population-based longitudinal study in China. *Diabetes Metab.* 2016;42(4):267–275. doi:10.1016/j.diabet.2016.01.002
2. Managing Diabetes in Cold Weather, Available at: https://www.cdc.gov/diabetes/articles/managing-diabetes-cold-weather.html. Accessed on 24th November 2025.
3. Cold weather and diabetes, Available at: https://www.diabetes.org.uk/about-diabetes/looking-after-diabetes/cold-weather. Accessed on 24th November 2025.
4. Dermatologist-recommended skin care for people with diabetes, American Academy of Dermatology Association. Available at: https://www.aad.org/public/diseases/a-z/diabetes-skin-care. Accessed on 8th December 2025.

Insulin Storage in Cold Weather

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Insulin should be protected from heat and cold since it is sensitive to temperature. The potency of insulin may be directly impacted by improper storage. Insulin should be kept out of direct sunlight and not frozen. Opened insulin vials can be stored either refrigerated (2–8°C) or at room temperature less than 30°C, without losing biological activity for a period of 31 days. Unopened vials of insulin have to be stored in a controlled environment of 2–8°C in a refrigerator protected from light.

Cold-weather challenges

Preventing insulin from freezing is the biggest practical difficulty. The main issue with insulin storage in cold areas is keeping it from freezing, which reduces its efficacy. Hence, insulin should be kept cold but not frozen. Even when thawed, frozen insulin is no longer effective.

Challenges in high-altitude regions

Insulin storage becomes more difficult in remote Himalayan areas like Kinnaur in Himachal Pradesh and Lahaul–Spiti. These tribal areas, which are situated between 8,000 and 16,000 feet above sea level, have frigid winter temperatures of –30°C, frequent power failures, and three to four months of isolation, which restricts access to medical supplies and specialist diabetic care.

A regionally appropriate solution

A regionally appropriate, improvised remedy appeared from traditional winter clothing: Locals used a multi-layered abdominal woolen binder (made of sheep or yak wool). Insulin vials or pens were kept between 5 and 10°C by wrapping them in many layers of this binder, which prevented insulin from freezing and provided a low-cost, culturally acceptable way to store insulin for the winter.

Recommendations for cold-weather insulin use

1. Maintain reliable cold-chain: Health systems should ensure refrigerators or transport containers remain within the optimal 2–8°C range, with daily min-max monitoring where possible.

2. Prevent freezing during transport: When transporting insulin in cold weather, avoid direct contact with ice packs or freezing surfaces. Use insulated containers that buffer temperature changes.
3. Educate people with diabetes: Make them aware that too-cold is as harmful as too-hot. They should inspect insulin vials or pens and discard any if they suspect freezing.

Adapted from: Mokta J et.al. 2017

Resources:

1. Richter B, Bongaerts B, Metzendorf MI. Thermal stability and storage of human insulin. *Cochrane Database Syst Rev.* 2023;11(11):CD015385. Published 2023 Nov 6. doi:10.1002/14651858.CD015385.pub2
2. Khurana G, Gupta V. Effect on insulin upon storage in extreme climatic conditions (temperature and pressure) and their preventive measures. *J Soc Health Diabetes.* 2019;7(1):6–10.
3. Rajkumar V. Travel with diabetes: A comprehensive review for clinicians. *Dubai Diabetes Endocrinol J.* 2022;28(4):121–130.
4. Nyirimanzi JD, Ngenzi J, Kagisha V, Bizimana T, Kayitare E. Assessment of medicines cold chain storage conformity with the requirements of the World Health Organization in health facilities of the Eastern Province of Rwanda. *J Pharm Policy Pract.* 2023;16(1):31. doi:10.1186/s40545-023-00534-3
5. Mokta J, Kalra S, Mokta K, Gulepa R. Insulin use on the top of the world. *Journal of Diabetology.* 2017;8(2):58. doi:10.4103/jod.jod_9_17

Staying Protected in the Winter

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Winters build a unique set of challenges for individuals with diabetes and can disrupt the stability of the blood glucose levels and weaken the immune functions. Winters affect both the innate and adaptive immune systems. If immune systems are compromised, this can lead to impaired leukocyte recruitment, delayed wound healing, and deregulated inflammatory responses. This leads to reduced ability of the body to fight infections effectively.

Low-grade inflammation and oxidative stress create favorable conditions for infections and cause slow recovery. These effects are amplified by lower Vitamin D levels, increased indoor activity, and reduced air humidity, all of which can increase the likelihood of respiratory infections.

Practical steps for protection during winter

- **Blood glucose monitoring:** Practicing regular glucose monitoring and adjusting to insulin or oral medications as guided by the doctor.
- **Physical activity:** Stretching, yoga, and light indoor exercises will help improve insulin sensitivity and circulation.
- **Consuming balanced meals:** Well-balanced meals, including proteins, antioxidants, and anti-inflammatory foods, support immune function.
- **Hydration:** Staying hydrated is very important; dehydration in winter can cause hyperglycemia.

- **Stress management:** High stress levels can also increase blood glucose levels. Performing breathing exercises, relaxing activities like mindfulness, meditation, or yoga can help.
- **Adequate sleep:** Being well-rested allows the body to relax and work more efficiently.

- **Hygiene:** Germs can spread through any frequently touched surface, so maintaining regular hygiene and sanitation practices is important.
- **Vaccines:** Vaccines are especially important for people with diabetes. Discussing vaccination schedules with the doctor is important in order to stay protected in the winter.

In summary, effective management for winters in individuals with diabetes requires a proactive approach combining medical care, nutrition, and regular glucose monitoring. It will help them stay infection-free and well-protected throughout the winter.

Resources:

1. Your Immune System and Diabetes. Available at: https://www.cdc.gov/diabetes/diabetes-complications/diabetes-immune-system.html. Accessed on 24th November 2025.
2. Berbudi A, Rahmadika N, Tjahjadi A, & Ruslami R. Type 2 Diabetes and its Impact on the Immune *System. Current diabetes reviews.* 2020 16(5), 442–449. https://doi.org/10.2174/1573399815666191024085838

Winter To-Do for Diabetes Care

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As the holiday season approaches, bringing family gatherings and festive celebrations, the cold winter months may present unique challenges — particularly for individuals living with diabetes. To effectively manage these seasonal hurdles and ward off the winter blues, it is essential to first understand the effects of winter on glycemic regulation.

How winters affect diabetes control (winter physiology and diabetes challenges)

1. Hormonal and metabolic changes

- Stress hormones (cortisol and adrenaline) are released in response to cold temperatures (stress), which in turn stimulates liver glucose production and elevated blood glucose levels.
- Energy conservation: Decreases insulin sensitivity→cells are less responsive to insulin.
- Shorter days disrupt the circadian rhythm and sleep regulation, which worsens glycemic control.

2. Circulatory and neurological changes

- Cold causes constriction of blood vessels, reducing blood flow to the extremities. This has the potential for worsening neuropathy and increasing the predisposition to foot ulcers and other vascular complications.
- Sluggish blood flow: May impair insulin delivery.
- Cold weather causes dryness of skin, increasing the risks of cracks and infections.
- Cold hands: Makes blood glucose testing difficult.

3. Lifestyle and behavioral changes

- Sedentary lifestyle: Staying indoors and engaging in less movement lowers daily energy expenditure and metabolic rate. This diminishes peripheral glucose uptake, contributing to elevated blood glucose levels, weight gain, and increased insulin resistance.
- Dietary shifts: Winter and festive seasons often lead to excessive consumption of calorie-dense, oily, and low-fiber comfort foods. These choices impair glycemic control and promote insulin resistance.
- Immune system vulnerability: Cold weather heightens susceptibility to respiratory infections such as influenza (flu), which can destabilize blood glucose levels.

- Vitamin D deficiency: Limited sunlight exposure due to shorter days and indoor confinement may reduce vitamin D levels, further aggravating insulin resistance.
- Dehydration: Lower water intake during colder months can lead to dehydration, which may contribute to hyperglycemia.
- Constipation: A combination of dehydration, slower metabolism, reduced gut motility, and lifestyle changes (e.g., physical inactivity and comfort foods) makes constipation more prevalent in winter, affecting overall digestive health.
- Mood disturbances: Seasonal affective disorder (SAD), triggered by reduced daylight, can cause fatigue, low mood, and overeating—factors that negatively impact diabetes self-management.

Protect your health: Proactive winter diabetes self-care tips (refer to the illustration below)

So, keep warm, stay safe, and don't let the cold weather dampen your holiday plans. Happy holidays!!!

Physical activity and fitness

- Stay active indoors: Yoga, resistance training, home workouts
- Walk in enclosed spaces to maintain insulin sensitivity
- Regular physical activity supports both blood glucose and mental health

Nutrition and hydration

- Eat warm, nutrient-dense, fiber-rich foods
- Limit sugary foods, sweetened beverages, and alcohol
- Stay hydrated throughout the day
- Have warm beverages

Mental and emotional well-being

- Get exposure to natural light
- Maintain social connections
- Practice relaxation techniques (deep breathing, meditation)
- Seek professional support if feeling low or stressed

Skin and foot care

- Moisturize daily to prevent dryness
- Check your feet every day for cuts, cracks, or infections
- Keep yourself warm indoors
- Use heating pads/electric blankets cautiously (avoid high temperatures)
- Dress warmly in layers to protect circulation
- Protect extremities with warm socks and gloves

Diabetes monitoring and medical care

- Monitor blood glucose regularly, especially during illness or seasonal change
- Warm your hands before checking blood glucose
- Take medications on time
- Visit your doctor for routine check-ups
- Receive annual flu jabs against flu and pneumonia

Cold weather and diabetes supplies

- Insulin and meters are sensitive to extreme cold
- Reduced effectiveness and accuracy
- Storage matters: Keep medicines and supplies in a cool, dry place
- Use insulated cases to protect from temperature extremes
- Maintain room temperature: Devices and insulin work best when stable

Resources:

1. https://www.diabetes.co.uk/diabetes-and-cold-weather.html
2. https://www.cdc.gov/diabetes/articles/managing-diabetes-cold-weather.html
3. https://www.diabetesdefa.org/collection/winter-diabetes-care
4. Images obtained from Canva

Interview of the Month: Expert Answers to Impact of Air Pollution in People with Diabetes

Dr. Saptarshi Bhattacharya

MBBS, MD Medicine, DM Endocrinology

Senior Consultant, Department of Endocrinology, Indraprastha Apollo Hospitals, New Delhi

Dr. Saptarshi Bhattacharya is a highly respected senior consultant endocrinologist known for his expertise in managing complex hormonal and metabolic disorders. With extensive clinical experience, he has built a strong reputation for delivering precise, evidence-based care across conditions such as diabetes, thyroid disorders, obesity, osteoporosis, and pituitary and adrenal diseases. Dr. Bhattacharya is an accomplished clinician, a valued faculty member, and an active contributor to national medical forums and endocrine research initiatives. He is widely appreciated for his clear communication, scientific approach, and deep commitment to improving long-term patient outcomes. Known for his compassionate, patient-focused care, he provides tailored treatment plans that integrate medical therapy with lifestyle guidance, earning the trust and confidence of patients and peers alike.

Diabetes and Air Pollution

1. How does exposure to high levels of air pollution influence blood glucose control in people living with diabetes?

Exposure to elevated levels of particulate matter, especially particulate matter with a diameter of 2.5 µm or less (PM2.5) and particulate matter with a diameter of 10 µm or less (PM10), has metabolic effects in people with diabetes. Inhaled pollutants trigger systemic inflammation, oxidative stress, and sympathetic activation. These pathways increase hepatic glucose output, impair insulin signaling, and worsen endothelial function. Individuals with type 2 diabetes, who already have chronic low-grade inflammation, may be particularly vulnerable to these effects.

2. What specific guidance should diabetes educators give patients about managing blood glucose on high-air quality index (AQI) days, especially regarding monitoring, medication timing, and physical activity?

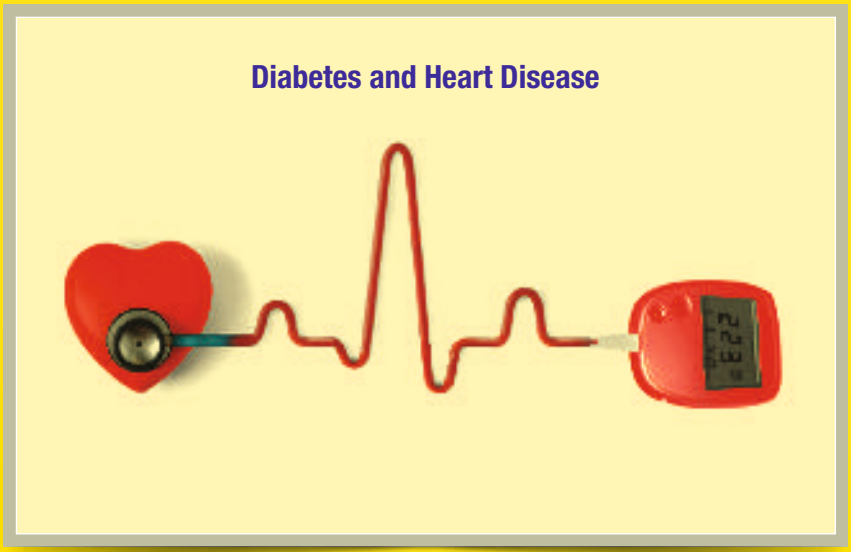
Diabetes educators play an important role in helping individuals with diabetes adjust self-management practices during pollution peaks. Encourage more frequent checks of fasting and post-meal glucose levels, as AQI-related metabolic stress may raise levels unpredictably. Individuals using continuous glucose monitoring (CGM) should review trend arrows and plan earlier corrections if needed.

Basal insulin should continue as usual. For those on prandial insulin, mild upward correction may be needed if repeated patterns of higher readings emerge during poor AQI days. For individuals on oral agents, no routine dose adjustment is required; educators should reinforce adherence and hydration.

Outdoor aerobic activity should be reduced or shifted indoors when AQI levels are very high. Educators should help people identify indoor substitutes: Walking in corridors, home-based aerobic routines, chair exercises, yoga, or resistance training. If outdoor activity is unavoidable, choose hours with lower particulate levels, though this varies by city.

3. In what ways does long-term air pollution exposure increase the risk of microvascular and cardiovascular complications in individuals with diabetes?

Chronic exposure to PM2.5 is associated with accelerated progression of microvascular and cardiovascular complications. Endothelial injury promotes arterial stiffness, raises blood pressure, and contributes to atherosclerotic plaque formation, increasing the risk of myocardial infarction and stroke. Microvascular beds, including those in the retina and kidneys, may be sensitive to the inflammatory effects of pollutants, contributing to higher rates of retinopathy progression and albuminuria.



4. How should diabetes educators balance the need for daily physical activity with the risks of exercising outdoors during severe pollution episodes?

Daily physical activity is essential for glycemic stability, weight management, and cardiovascular health. During severe pollution episodes, educators should guide patients toward safe alternatives rather than advocating for exercise avoidance. Indoor, well-ventilated spaces or community centers provide safer environments. On days when AQI is moderately elevated, combining shorter outdoor sessions with longer indoor routines preserves activity levels while reducing exposure. Dietitians and educators should emphasize hydration, symptom awareness (cough, breathlessness), and avoiding high-intensity outdoor workouts during peak pollution periods.

5. What practical, culturally relevant strategies (e.g., masks, air quality awareness, home interventions) can educators teach patients to reduce their exposure to pollution and protect their metabolic health?

Diabetes educators can offer several simple and context-appropriate approaches. Well-fitting N95 masks substantially reduce particulate inhalation and can be used during commutes or unavoidable outdoor tasks. Keeping windows closed during high-AQI hours can help. Promote portable high-efficiency particulate air (HEPA) purifiers were feasible. Patients should be encouraged to check AQI apps daily. Culturally familiar routines such as yoga, indoor walking, household physical tasks, or resistance-band exercises are acceptable alternatives when outdoor activity is unsafe. Minimizing time spent near traffic-heavy corridors, using public transport when available, and planning errands for lower-pollution hours can meaningfully reduce exposure.

The Impact of Consistent Education in Managing Diabetes and its Complications
A Doctor's Experience with the MyCare Patient Support Program

Dr. Subhodip Pramanik

MBBS, MD, MRCP, DM (Endocrinology)
Consultant Endocrinologist
Neotia Getwel Hospital, Siliguri

A 57-year-old man with type 2 diabetes and Stage 3B chronic kidney disease (CKD) was managed by Dr. Subhodip Pramanik.

Here's what Dr. Subhodip Pramanik has to say:

A 57-year-old man visited my outpatient department (OPD) in September 2025 with uncontrolled glucose despite insulin therapy. His fasting glucose was 180 mg/dL, post-prandial 200 mg/dL, glycated hemoglobin (HbA1c) 7.8%, and creatinine 3 mg/dL. He was upset that his levels were not improving even with insulin therapy.

Evaluation revealed incorrect insulin administration. I referred him to MyCare Diabetes Educator (MDE), Ms. Paru Rai, for guidance on correct insulin technique. MDE Paru noted that his daily routine was highly irregular, with frequent fasting and skipped meals, making diet planning particularly challenging. She explained the risks of inconsistent eating, especially given his kidney condition, and emphasized structured meal timing and adherence to a consistent routine.

By his second visit, glucose levels had improved (fasting blood sugar [FBS] 110 mg/dL, postprandial blood sugar [PPBS] 160 mg/dL), but hypoglycemic episodes persisted due to continued irregular meal times. His insulin dose was adjusted, and he received additional counselling on recognizing and managing low glucose levels effectively.

In the following weeks, he developed hyperkalemia, low hemoglobin levels, and creatinine rose to 4 mg/dL. His dietary habits remained poor, with frequent meal skipping due to religious practices, further complicating his condition. Medications and diet plan were revised, and with ongoing counselling and gradual adherence, his renal parameters began to stabilize. At his most recent visit, creatinine improved to 1.8 mg/dL, potassium normalised, PPBS 140 mg/dL, HbA1c reduced to 6.1%, and haemoglobin increased from 9 g/dL to 11 g/dL.

Ms. Paru Rai

NDEP and T1DE Certified Diabetes Educator

Here's what MDE Paru Rai has to say

This case demonstrates how continuous education and supportive counselling can transform outcomes. By helping the individual understand the impact of routine, correct insulin technique, and timely meals on both glucose levels and kidney health, he gradually adopted healthier practices. His progress shows that with individual-centric guidance, people with diabetes can regain confidence and achieve meaningful improvements in overall health.

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*PWD: People with Diabetes

Contact for more information
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In uncontrolled T2DM with A1c >8.5%, **Choose 1st**

Rx 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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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 perineal 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:
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Updated on 20th March 2024

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

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Winter Wellness with Superfoods

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Winter poses unique challenges for individuals with diabetes, from increased infections to fluctuating glucose levels. The colder months can weaken the immune system, making the body more vulnerable to illness and stress. Incorporating nutrient-dense superfoods can help support metabolic balance, enhance immunity, and maintain stable blood glucose levels throughout the season. Top winter superfoods include:

1. **Amla (Indian gooseberry):** Amla is a vitamin C powerhouse that supports immunity and collagen repair. It can be included as amla juice, grated/sliced amla in salads, etc.

2. **Sweet potatoes:** High in fiber, beta-carotene, and antioxidants. This can be included as a snack along with a protein source to help sustain blood glucose levels.
3. **Winter greens:** *Sarson, bathua, and moringa* leaves are the seasonal anti-inflammatory shield, loaded with folate, iron, magnesium, and antioxidants. These can be added to rotis, soups, dals, and stir-fries with minimal oil.
4. **Citrus fruits, berries:** These are at their seasonal best during winter. They are rich in vitamin C, flavonoids, and soluble fiber, all of which support immunity.
5. **Spices:** Turmeric (curcumin), cinnamon, and ginger have antioxidant properties and support immunity.

Traditional winter beverages further support immunity. Fermented kanji, typically prepared from black carrots or beetroot, undergoes lactic-acid fermentation, which increases organic acids and enhances polyphenol bioavailability—compounds known for their antioxidant and immune-supportive effects. Likewise, cinnamon kadha, commonly consumed in winter for its warming properties, may provide additional metabolic support by influencing blood glucose levels. While these drinks offer cultural and nutritional value, they should be viewed as supportive elements within comprehensive diabetes management rather than substitutes for medical therapy.

Incorporating winter superfoods and traditional preparations into individualized nutrition plans can meaningfully support individuals with diabetes during colder months. It is advisable for people to introduce new foods gradually, observe their personal tolerance and glucose responses, and seek guidance from healthcare providers when adjusting dietary routines—particularly for those using insulin or glucose-lowering medications. These approaches work best when aligned with ongoing medical nutrition therapy, medication adherence, and regular monitoring.

Resources:

1. Ahuja S, Sugandha S, Kumar R, *et.al.* Seasonal variation of HbA1c levels in diabetic and non-diabetic patients. *Pract Lab Med.* 2024;40:e00396. doi:10.1016/j.plabm.2024.e00396
2. Karimzadeh L, Sohrab G, Hedayati M, *et.al.* Effects of concentrated beetroot juice consumption on glycemic control, blood pressure, and lipid profile in type 2 diabetes patients: Randomized clinical trial study. *Ir J Med Sci.* 2023;192(3):1143–1153. doi:10.1007/s11845-022-03090-y
3. Moridpour AH, Kavyani Z, Khosravi S, *et al.* The effect of cinnamon supplementation on glycemic control in patients with type 2 diabetes mellitus: An updated systematic review and dose-response meta-analysis of randomized controlled trials. *Phytother Res.* 2024;38(1):117–130. doi:10.1002/ptr.8026
4. Sharma C, Sahota PP, Kaur S. Physicochemical and microbiological evaluation of antioxidant-rich traditional black carrot beverage: *Kanji. Bull Natl Res Cent.* 2021;45(1):143. doi:10.1186/s42269-021-00594-y

Importance of Hydration in Winter for People with Diabetes

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Maintaining adequate fluid intake is crucial for everyone, including people with diabetes. Dehydration is common in individuals with uncontrolled diabetes, with excessive thirst and dry mouth often being early warning signs. Persistent hyperglycemia causes osmotic diuresis, increasing fluid loss and raising the risk of dehydration.

Individuals may initially experience mild symptoms such as dry mouth or tongue, intense thirst, headache, dry eyes, dry skin, dark yellow urine, dizziness, general weakness, and fatigue. However, dehydration can sometimes go unrecognized until it becomes severe and potentially life-threatening. Signs of severe dehydration include low blood pressure, sunken and dry eyes, a weak or thready pulse, confusion, and marked lethargy.

Maintaining adequate water intake during winter is difficult due to various factors. In winter, thirst and perspiration symptoms are less noticeable; as a result, individuals with diabetes often forget to drink enough water, leading to compromised water consumption. This can further aggravate the risk of dehydration and related metabolic fluctuations. Individuals with diabetes who have nephropathy are more susceptible to the effects of dehydration due to suppressed thirst in the winter and increased use of diuretics. During the winter season, people with diabetes tend to be indoors; indoor heating, warm clothing, and all can lead to fluid losses without any symptoms, leading to dehydration.

Tips to maintain hydration levels in winter

- Sip water regularly throughout the day, even when you don't feel thirsty.
- Water-reminder apps can help maintain consistent fluid intake.
- Begin the day with a glass of warm or room-temperature water.
- Prefer warm, sugar-free drinks, such as herbal tea or warm-infused water.
- Include hydrating winter foods like oranges, tomatoes, etc.
- Monitor urine color—pale yellow indicates adequate hydration.
- Limit excess caffeine and alcohol to avoid additional fluid loss.
- Increase fluid intake during periods of high glucose to compensate for osmotic losses.

Adequate hydration is an essential component of diabetes care, especially during winter, when dehydration may go unnoticed. Maintaining adequate fluid intake protects the kidneys, helps with glucose metabolism, and is generally good for overall well-being.

Resources:

1. Mohan V, Kalra S, Zargar AH, *et al.* Diabetes mellitus and fluid imbalance: The need for adequate hydration. *J Assoc Physicians India.* 2024;72(6):16–24.
2. American Heart Association News. Are you drinking enough water during winter months? *American Heart Association.* Published December 19, 2019. Accessed [insert access date]. https://www.heart.org/en/news/2019/12/19/are-you-drinking-enough-water-during-winter-months
3. Johnson EC, Bardis CN, Jansen LT, Adams JD, Kirkland TW, Kavouras SA. Reduced water intake deteriorates glucose regulation in patients with type 2 diabetes. *Nutr Res.* 2017;43:25–32. doi:10.1016/j.nutres.2017.05.004
4. Yamada M, Suzuki K, Tanaka R, *et al.* Seasonal fluctuation of total water intake and hydration status among young men and women: A prospective cohort study. *Front Nutr.* 2024;11:1463501. doi:10.3389/fnut.2024.1463501
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Managing Exercise in Winter Season

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When winter arrives, the cold weather and shorter days can make it harder to stay active. For people with diabetes, regular exercise is important for managing blood glucose levels, improving insulin sensitivity, and supporting overall health. But winter doesn't have to mean a break from movement. With a few adjustments, it's possible to keep exercising safely and comfortably even indoors.

Why exercise matters in winter?

During winter, people often spend more time indoors and may feel less motivated to move. This can lead to higher blood glucose levels, weight gain, and increased insulin resistance. For people with diabetes, physical activity helps manage blood glucose levels, reduce HbA1c, and improve metabolic control.

Indoor exercises that work - When it's too cold or unsafe to go outside, indoor exercises can be a great alternative. These activities don't require fancy equipment and can be done in small spaces:

- **Walking in place or around the house:** Set a timer for 10–15 minutes and walk briskly. Marching in place while watching TV also works.

- **Chair exercises:** Perfect for older adults or those with joint pain. Try seated leg lifts, arm circles, or gentle stretches.
- **Bodyweight workouts:** Squats and lunges help build strength and improve balance.
- **Dance or aerobics:** Put on music and dance for 15–30 minutes.
- **Yoga or stretching:** Helps with flexibility, stress relief, and blood flow. Many free videos are available online.
- **Resistance band training:** Lightweight and easy to use, resistance bands can help strengthen muscles without heavy weights.

- **Stair climbing:** Going up and down on stairs a few times can be a great cardio workout.
- **Wall push-ups:** Stand a few feet from a wall and push against it. This strengthens the upper body without straining joints.

These activities can be done in short bursts, 10 to 15 minutes at a time, and two to three times a day.

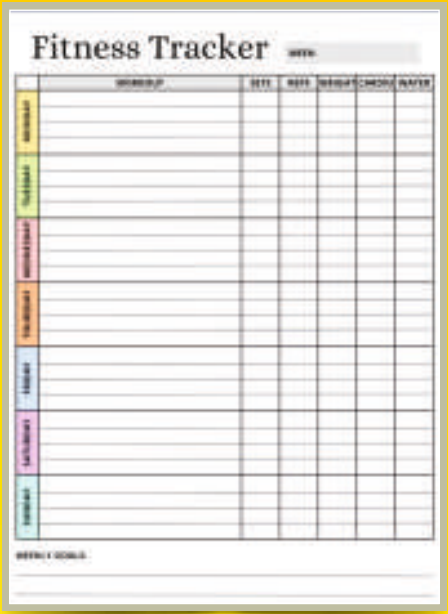
Tips for safe winter workouts

- **Warm up first:** Start with gentle movements to prepare the body.
- **Stay hydrated:** Even in cold weather, the body needs fluids.
- **Dress in layers:** If going outside, wear warm, breathable clothing.
- **Check blood glucose:** Monitor glucose levels before and after exercise,especially if taking insulin or medications.
- **Protect feet:** Wear proper footwear and check for any signs of injury or numbness.

Staying motivated - It's easy to lose motivation when it's dark and cold. Here are a few ways to stay on track:

- **Set small goals:** Even 10 minutes of movement counts.
- **Make a routine:** Schedule workouts like appointments.
- **Use reminders:** Set alarms or sticky notes to prompt activity.
- **Get others involved:** Exercise with a friend or family member.
- **Track progress:** Use a journal or app to stay motivated.

Winter may bring chilly winds and cozy blankets, but it doesn't have to freeze fitness goals. Staying active indoors is not only possible, but it's also powerful. For people with diabetes, regular movement is a key part of managing health, no matter the season. With a little creativity and commitment, winter can be a time of strength, not setbacks.



Resources:

1. Kanaley JA, Colberg SR, Corcoran MH, *et al.* Exercise/Physical Activity in Individuals with Type 2 Diabetes: A Consensus Statement from the American College of Sports Medicine. *Med Sci Sports Exerc.* 2022;54(2):353–368. doi:10.1249/MSS.0000000000002800
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Diabetes Educator's Toolkit:
Skill of the Month—Behavioral Coaching

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Behavioral coaching is increasingly recognized as an essential skill for diabetes educators, enabling them to move beyond information delivery towards facilitating meaningful behavior change. By applying structured coaching techniques, educators can better support individuals with diabetes in adopting sustainable self-management practices.

Behavioral coaching emphasizes that knowledge alone is insufficient to bring about change in diabetes management; effective management depends on enabling and motivating people with diabetes through structured psychological and educational support. Behavioral coaching is the core component of diabetes care, involving evidence-based psychological interventions such as cognitive behavioral therapy (CBT), diabetes self-management education and support (DSMES), and structured problem-solving approaches to improve diabetes outcomes.

Core principles involve

- **Person-centered care:** Interventions tailored to meet individual needs, preferences, and social context.
- **Self-efficacy and empowerment:** Empower individuals to manage diabetes with confidence through guided experiences.
- **Constant feedback and reinforcement:** Scheduling regular follow-ups, taking feedback, and celebrating success.
- **Social support:** Involvement of family and community for better outcomes.

Adherence is hampered by stress, depression, and a lack of perceived control. Addressing emotional and mental well-being enhances the likelihood of behavior change. Access to healthy foods, safe places for physical activity, and financial resources also influences behavior change. Effective communication with individuals with diabetes—tailored to their individual barriers and constraints—must involve empathy, non-judgment, and active listening.

By integrating behavioral coaching into routine practice, diabetes educators can strengthen individual engagement and foster long-term self-management. When individuals feel supported, heard, and empowered, behavior change becomes both achievable and sustainable. Ultimately, behavioral coaching transforms diabetes care from simply giving advice to truly guiding change.

Resources:

1. American Diabetes Association. Facilitating behavior change and well-being to improve health outcomes: Standards of Medical Care in Diabetes—2021. *Diabetes Care.* 2021;44(Suppl 1):S53–S72. doi:10.2337/dc21-S005
2. Almulhim AN, Hartley H, Norman P, Caton SJ, Doğru OC, Goyder E. Behavioural change techniques in health coaching–based interventions for type 2 diabetes: A systematic review and meta-analysis. *BMC Public Health.* 2023;23(1):95. doi:10.1186/s12889-022-14874-3
3. Vallis M. Behaviour change to promote diabetes outcomes: Getting more from what we have through dissemination and scalability. *Can J Diabetes.* 2023;47(1):85–89. doi:10.1016/j.jcjd.2022.07.006
4. Upsher R, Onabajo D, Stahl D, Ismail K, Winkley K. The effectiveness of behavior change techniques underpinning psychological interventions to improve glycemic levels for adults with type 2 diabetes: A meta-analysis. *Front Clin Diabetes Healthc.* 2021;2:699038. doi:10.3389/fcdhc.2021.699038

Frequently Asked Questions on Winter and Diabetes

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1. I'm a 22-year-old on an insulin pump, and I'll be traveling to Canada to visit my cousins. Since it will be cold there, how should I manage my diabetes and take care of my insulin pump during the cold weather?

Ans. Since you'll be visiting your cousins in Canada during the cold winter months, it's important to take extra care of your insulin pump to ensure it works properly. Cold temperatures can affect both the pump and the insulin, so a few practical steps will help you stay safe.

1. Keep the insulin pump close to the body, under clothing, or cover it with warm clothing or a pump pouch to protect it from cold temperatures.
2. Use a protective cover or case to shield the pump from cold air and moisture, reducing the risk of damage.
3. Avoid leaving the pump in freezing environments, such as a parked car, as extreme cold can interfere with pump performance and reduce insulin effectiveness.
4. Store unused insulin cartridges/reservoirs in the refrigerator at 2–8°C. Do not freeze insulin. Frozen insulin loses potency and can lead to poor blood glucose control.
5. If engaging in outdoor activities like skiing or snowboarding, consider using a waterproof case to protect the pump from snow and moisture.
6. Check with your insulin pump manufacturer for pump-specific guidelines and precautions to follow during winter.

By following these precautions, you'll be able to manage your diabetes effectively and enjoy your time with family, even in Canada's winter climate.

2. I am a 42-year-old from Punjab with type 2 diabetes mellitus, currently on basal insulin. Even though my eating pattern and exercise routine have stayed the same, I've recently noticed that my blood glucose levels are not under control. What could be the reasons for this change, and how should I manage it?

Ans. You've noticed your blood glucose levels are not under control despite keeping the same eating and exercise routine, and one possible factor could be insulin storage. Insulin is highly sensitive to temperature. In Punjab, winters can be quite cold, and if insulin is exposed to freezing conditions, it can lose its potency. Even if frozen insulin is thawed, it should never be used, because its effectiveness is permanently reduced. This can lead to poor blood glucose control, which may explain the changes you're experiencing.

To avoid this, store unopened insulin in the refrigerator between 2°C and 8°C, but never in the freezer. Once opened, insulin can be kept at room temperature (below 25°C) for up to 28 days, but it should be protected from direct sunlight and cold drafts. During Punjab's winter, be careful not to leave insulin vials, pens, or your basal insulin cartridges in cars, near windows, or outside, as temperatures can drop low enough to freeze them. Always keep insulin in its original packaging to shield it from light and carry it close to your body when outdoors to maintain a stable temperature.

By ensuring proper storage, especially during Punjab's cold months, you can maintain insulin effectiveness and improve blood glucose control. If you suspect your insulin has frozen or looks abnormal (clumping, discoloration, or crystals), discard it and replace it with a fresh supply.

3. My 12-year-old daughter has type 1 diabetes mellitus (T1DM). During the winter, whenever she gets a cold or cough, her blood glucose goes high. Why does this happen, and how should we manage it?

Ans. During the winter months, children with T1DM are more vulnerable to infections such as colds and coughs. When immunity is low, the chances of catching seasonal infections increase, and these illnesses can cause blood glucose levels to rise even if food and insulin routines remain the same.

When the body fights an infection, stress hormones like cortisol and adrenaline are released. These hormones make it harder for insulin to work properly, leading to higher glucose levels. It's important to monitor her blood glucose levels more frequently when she is sick and never skip insulin doses. Extra insulin may sometimes be needed during infection periods to bring glucose levels under control.

You should also watch for warning signs of diabetic ketoacidosis (DKA), such as nausea, vomiting, or rapid breathing, since high glucose levels during illness can increase this risk. Keeping her hydrated, check ketones if glucose levels stay high (>250) for more than 3–4 hours.

Superfood: Bajra

Pearl millet *(Pennisetum glaucum)* is also known as *Bajra*, *Bajri, or Sajje.* It is a widely consumed gluten-free millet grown in many parts of the world, namely Africa and the Indian subcontinent. It has ovoid grains about 3–4 millimeters in length with color varying from white, pale yellow, brown, or gray. It consists of the largest kernels among all the varieties of millets, excluding jowar. The table mentioned below provides an array of health benefits associated with Bajra.

Health benefits	Function
Diabetes	Low glycemic index, high fiber, and polyphenols slow carbohydrate digestion and help reduce post-prandial blood glucose spikes.
Cardiac health	Phytonutrients and lignin exhibit hypocholesterolemic activity, preventing heart-related diseases by reducing cholesterol levels.
Cancer	Flavonoids, carotenoids, and phenolic compounds reduce cancer risk.
Digestive health	Dietary fiber prevents constipation and supports a healthy gut microbiome.
Celiac disease	Gluten-free, beneficial for people with celiac disease and gluten sensitivity.
Weight loss	Dietary fiber promotes satiety and supports weight management.
Gall stones	Insoluble fiber decreases excess bile production, thereby lowering the risk of gallstones.

Nutritional value

100 g gives 340 kcal, 61.7 g carbs, 11 g protein, and 5.4 g fat.

How to consume

Can make bajra roti or use bajra instead of rice to make khichdi, porridge, and even multigrain mixes for dosa and pancakes.

Resources:

1. Pei J, Umapathy VR, Vengadassalapathy S, *et al.* A Review of the Potential Consequences of Pearl Millet (Pennisetum glaucum) for Diabetes Mellitus and Other Biomedical Applications. *Nutrients.* 2022;14(14):2932.
2. Jacob J, Krishnan V, Antony C, *et al.* The nutrition and therapeutic potential of millets: An updated narrative review. *Front Nutr.* 2024;11:1346869.

Role Play

Mr. ABC, a 52-year-old man with type 2 diabetes, is facing difficulty managing his sugars due to less physical activity in winter. His blood glucose levels have been elevated (fasting: 140 mg/dL, post-prandial: 250 mg/dL). He needs guidance on how to keep blood glucose readings in control and suitable home workouts/exercises that can be included in his routine.

Mr. ABC: Hello. Due to cold weather, I've not been able to go for regular walks and observe fluctuations in my fasting and post-meal readings. I am concerned. How can I manage this?

Diabetes Educator (DE): It's completely understandable to feel worried. In winter, reduced physical activity increases insulin resistance (reduced insulin response), directly affecting the blood glucose levels. However, we can focus on certain strategies that can get your readings in range. Do you have regular meals, and what do you usually consume?

Mr. ABC: I've been eating mostly on time and usually have a simple meal comprising roti, vegetables, and pulses. Why do I still observe a higher post meal glucose reading? I forgot to add. I am hungrier these days, so sometimes I eat suji halwa (without sugar) with lunch.

DE: A spike in blood glucose levels post-meals is usually due to the higher intake of carbohydrates. Even though suji halwa does not have any sugar, suji by itself is a cereal, and adding this to lunch will increase the total carbohydrate load (content) of the meal. This can increase post-meal glucose levels. Make sure to follow the correct food order of having fiber (salad) and a portion of protein (like curd) first, then carbohydrates, to help manage post-meal glucose excursions.

Mr. ABC: What else can be taken post-meal if still hungry?

DE: You must add salad at lunch; this will provide satiety and also help support post-meal blood glucose levels. You have chia seeds with water/a handful of nuts/a bowl of clear soup/thin buttermilk/plain yogurt with nuts if you are hungry.

Mr. ABC: What about exercises or workouts that I can do indoors during winter?

DE: You can incorporate the following home-based workouts in your routine, which are just as effective.

- 10–15 minutes of walking indoors, especially after each meal, can help reduce sugar spikes.
- Spot jogging or marching.
- A beginner chair yoga routine can enhance strength, balance, and flexibility. Seated stretches, simple leg or arm movements, and breathing exercises can be included.
- Wall push-ups (mild and short duration), seated leg lifts, arm circles, side leg lifts, etc., can also be done.

Mr. ABC: Any other aspects I need to pay heed to while managing my glucose levels?

DE: Keep monitoring your glucose levels regularly. Restrict eating winter comfort foods, be it sweets/snacks. Have a light and early dinner. Hydrate yourself well, as thirst cues are often reduced during winter. Begin with a short-duration activity (e.g., 10–15 min) initially and then slightly increase based on comfort.

Mr. ABC: Thank you for the detailed insight. I feel confident and clear on how to control my diabetes effectively this winter.

DE: You're welcome.

NOTES

NOTES

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Glycomet®-GP 0.5 FORTE
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Glycomet®-GP 1
Metformin Hydrochloride 500 mg SR + Glimepiride 1 mg

Glycomet®-GP 1 FORTE
Metformin Hydrochloride 1000 mg SR + Glimepiride 1 mg

Glycomet®-GP 2
Metformin Hydrochloride 500 mg SR + Glimepiride 2 mg

Glycomet®-GP 2 FORTE
Metformin Hydrochloride 1000 mg SR + Glimepiride 2 mg

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Metformin Hydrochloride 850 mg SR + Glimepiride 2 mg

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Glycomet®-GP 3 FORTE
Metformin Hydrochloride 1000 mg SR + Glimepiride 3 mg

Glycomet®-GP 4 FORTE
Metformin Hydrochloride 1000 mg SR + Glimepiride 4 mg

Abridged Prescribing Information

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.

Last updated: March 13, 2023

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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