RSSDI
Indian Diabetes
EDUCATOR JOURNAL

Theme of the Month

Diabetes During Fasting: Focused Care

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 month's theme, "Diabetes During Fasting: Focused Care" explores the unique challenges and considerations of managing diabetes during periods of fasting, such as religious fasts and intermittent fasting. Fasting significantly alters eating patterns, medication timing, and fluid intake, which can impact glycemic control. This edition of IDEJ delves into evidence-based strategies, cultural considerations, and the educator's role in supporting safe and meaningful fasting. We hope it offers practical guidance to help make fasting a safe and spiritually fulfilling experience for individuals 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

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Article: Intermittent Fasting in Diabetes

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Article: Pharmacotherapy Modifications During Fasting

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Article: Nutritional Management During Religious Fasting

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Article: Diabetes Educator's Toolkit: Skill of the Month: Reflection, Reassurance, and Empathy

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Article: Frequently Asked Questions on Diabetes During Fasting: Focused Care

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Fasting is a common practice followed for religious purposes, during which food and fluid intake are significantly altered. For individuals with diabetes, this change increases the risk of complications such as hypoglycemia, hyperglycemia, and dehydration. Hence, individuals with diabetes need to be managed with planning, vigilance, and under medical supervision.

Religious fasts: Ramadan, Lent, Navratri, Yom Kippur, and Jain Paryushan involve varying degrees of food and fluid restriction, which can lead to complications if glucose levels are not carefully managed. Across cultures, religious fasting varies in both duration and intensity. During Ramadan, Muslims abstain from food, drink, and medication from dawn to sunset, relying on two to three meals between Suhoor and Iftar. In Jain traditions, fasting can be more intense, involving prolonged periods without solid food or only consuming boiled water, sometimes extending over several days. Hindu fasting, practiced during festivals like Navratri, Ekadashi, or Shivratri, often includes skipping meals or eating only fruits, milk, and specific grains. While spiritually meaningful, such practices can significantly affect glucose control, especially for those on insulin or sulfonylureas, and may lead to dehydration, hypo, and hyperglycemia if not medically supervised.

Intermittent fasting: Outside religious practices, intermittent fasting has gained popularity for its metabolic benefits. Regimens like the 16:8 method (16-hour fast, 8-hour eating window) or the 5:2 plan (normal eating 5 days a week, calorie restriction for 2 days) have shown potential in improving insulin sensitivity, aiding weight loss, and reducing glycated hemoglobin (HbA1c) in type 2 diabetes mellitus (T2DM). However, such routines can cause unpredictable glucose fluctuations and are not suitable for everyone. Risk increases when fasting is attempted without medication adjustment, professional guidance, or consistent monitoring.

Early planning: To ensure safety, early planning is crucial. It is recommended that individuals consult healthcare providers 6 to 8 weeks before fasting to allow time for medication adjustment, glucose monitoring education, and meal planning. This also includes risk stratification of individuals into low, moderate, and high risk based on factors such as treatment regimen, comorbidities, and history of glycemic instability. Those in high-risk categories—such as individuals with type 1 diabetes, recent severe hypoglycemia, or advanced kidney disease—are strongly advised not to fast. Others with well-controlled diabetes may fast safely under medical supervision. Continuous glucose monitoring or regular finger-prick testing is essential. It is advised to break the fast immediately if blood glucose falls below 70 mg/dL or rises above 300 mg/dL to prevent severe complications.

Medication adjustments are often necessary to reduce the risk of hypoglycemia during fasting. For individuals on insulin, switching to long-acting formulations with dose reductions may be advised, while sulfonylureas might need to be paused or replaced with safer alternatives like dipeptidyl peptidase 4 (DPP-4) inhibitors or sodium-glucose cotransporter 2 (SGLT-2) inhibitors, with careful monitoring of hydration status. Healthcare providers may also recommend shifting the timing of doses to align with meal times during non-fasting hours. Consistent self-monitoring enables timely decision-making and empowers individuals to fast safely without compromising glycemic control.

Additionally, diet plays a vital role in maintaining stable glucose levels during fasting. Meals consumed should include complex carbohydrates, lente carbohydrates, protein, fiber, and healthy fats. Overconsumption of sugary or fried foods—common at Iftar or during celebratory religious meals—can cause postprandial spikes and should be avoided. In Jain and Hindu fasting practices, where meals may be fruit-based or dairy-focused, careful portioning and food pairing with protein and fiber are essential to prevent glycemic excursions.

Spiritual motivations often make individuals reluctant to avoid fasting, even when it's medically inadvisable. Healthcare professionals should respect these beliefs and offer safe alternatives. In Jainism, for example, acts like Maun Vrat (observing silence), charity, or shorter-duration fasts can fulfill religious goals while protecting health. A collaborative approach between patients and healthcare teams can ensure fasting is both safe and spiritually meaningful.

With thoughtful preparation, education, and medical support, many people with diabetes can fast safely. Balancing tradition with health transforms fasting from a risk into a personal, empowering experience that honors both faith and wellbeing.

Key points

- Fasting, whether religious or intermittent, poses unique risks for individuals with diabetes, including hypoglycemia, hyperglycemia, and dehydration.
- With early planning, medical supervision, medication adjustments, and careful meal choices, many can fast safely while maintaining glucose control.
- A respectful, individualized approach ensures both health and spiritual needs are met.

Resources:

1. Herz D, Haupt S, Zimmer RT, *et al.* Efficacy of Fasting in Type 1 and Type 2 Diabetes Mellitus: A Narrative Review. *Nutrients.* 2023;15(16):3525. Published 2023 Aug 10. doi:10.3390/nu15163525
2. Saboo B, Joshi SR, Shah SN, *et al.* Management of Diabetes During Fasting and Feasting in India. *J Assoc Physicians India.* 2019;67(9):70–76.
3. Deeb A, Babiker A, Sedaghat S, *et al.* ISPAD Clinical Practice Consensus Guidelines 2022: Ramadan and other religious fasting by young people with diabetes. *Pediatr Diabetes.* 2022;23(Suppl 27):132–150. doi:10.1111/pedi.13336
4. Diabetes UK. Religious fasting and diabetes. Diabetes UK. https://www.diabetes.org.uk/living-with-diabetes/eating/fasting. Accessed May 14, 2025.
5. International Diabetes Federation. *Diabetes and Ramadan: Guide to a Safe Fast.* Brussels, Belgium: International Diabetes Federation; 2024. Available at: https://idf.org/media/uploads/2024/08/DAR-guide-to-safe-fast-EN.pdf. Accessed May 14, 2025.
6. Gupta L, Arora B, Khandelwal D, *et al.* Dietary Practices During Common Religious Fasts in People with Type 2 Diabetes Mellitus Among Different Religions in North India—A Questionnaire-based Study. *US Endocrinology.* 2020;16(1):36–40.

Intermittent Fasting in Diabetes

Prof. Dr. Vimlesh Patidar

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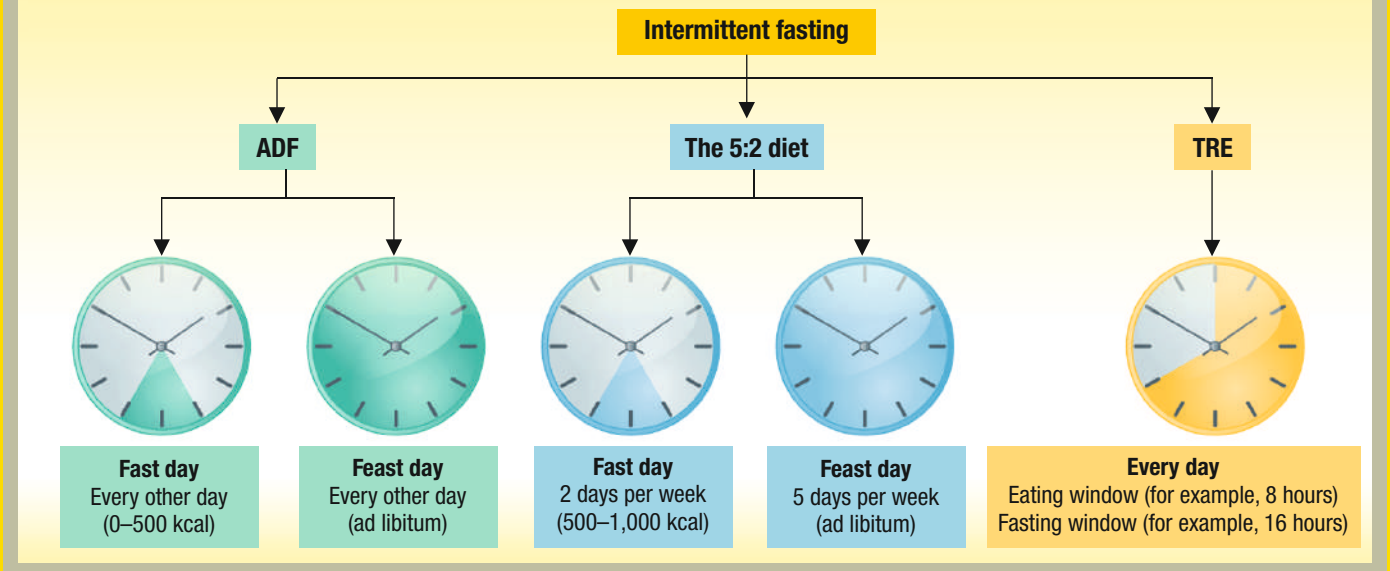
Consultant Diabetes and Heart Specialist, Echo Cardiologist, and Professor of Medicine, Medical Division, RD Gardi Medical College, Ujjain

Intermittent fasting (IF) has emerged as a popular strategy for weight loss and metabolic health. IF refers to alternate periods of eating and fasting. Common IF patterns consist of time-restricted eating (eating within an 8-hour window), alternate day fasting (ADF), and the 5:2 approach (5 days of normal eating and calorie restriction on any two non-consecutive days). Among these, time-restricted eating (TRE), which limits food intake to a defined window aligned with circadian rhythms (e.g., 8 a.m. to 4 p.m.) and the 5:2 approach, has shown favorable effects on postprandial glycemia and insulin dynamics and appears promising for people with type 2 diabetes mellitus (T2DM).



Fasting may help stabilize blood glucose fluctuations and enhance fat metabolism in T2DM. During fasting periods, hepatic glycogen stores are depleted, leading to a metabolic switch from glucose oxidation to lipolysis. This shift enhances mitochondrial efficiency, reduces hepatic glucose production, and promotes fatty acid utilization, which may contribute to improved glycemic profiles and body composition.

Clinical trials assessing IF in people with T2DM have demonstrated modest but consistent improvements in key metabolic parameters. These include reductions in fasting blood glucose, glycated hemoglobin (HbA1c), body weight, and waist circumference. Improvements in glycemic control are more pronounced in overweight or obese individuals. This is likely due to the concurrent weight loss achieved through caloric restriction and improved insulin sensitivity.

In addition to glycemic outcomes, IF may exert beneficial effects on cardiovascular risk markers, including lipid profiles and blood pressure, which are often elevated in people with T2DM. Reductions in systemic inflammation and oxidative stress have also been observed, suggesting a broader cardiometabolic benefit.

While IF shows considerable potential, it may not be suitable for everyone. Especially individuals with diabetes, who are more vulnerable to complications due to the metabolic nature of the condition. Sudden changes in food and fluid intake can increase the risk of hypoglycemia, hyperglycemia, and dehydration. Therefore, it is essential to consult a healthcare professional before beginning any fasting regimen. A personalized fasting management plan should include a discussion of potential risks, necessary medication adjustments, and regular glucose monitoring to ensure safety throughout the fasting period.

IF is generally not recommended for those with advanced diabetes complications, underweight individuals, pregnant or lactating women, and those with a history of disordered eating. In medically stable individuals with T2DM not on hypoglycemia-inducing drugs or insulin, IF, especially TRE, can complement standard therapy. Some may experience compensatory hyperphagia and make unhealthy food choices during feeding windows, offsetting potential benefits. Emphasis on nutrient-dense meals, adequate protein, hydration, and patient education ensures safety and long-term success.

IF represents a promising metabolic strategy for improving glycemic control and cardiometabolic health in individuals with T2DM. While short-term outcomes are encouraging, long-term data on safety, sustainability, and diabetes-specific endpoints remain limited. Therefore, individualized risk-benefit assessments and clinical supervision are essential for incorporating IF into diabetes care protocols.

Key points

- IF shows promise in improving glycemic control, insulin sensitivity, and cardiometabolic health in people with T2DM, especially those who are overweight or obese.
- Benefits include reductions in fasting glucose, HbA1c, weight, and inflammation.
- IF is not suitable for everyone and poses risks like hypoglycemia or dehydration, particularly in those on insulin or sulfonylureas.
- A personalized, supervised approach with a focus on nutrient-dense meals is essential.
- Long-term safety and efficacy data in T2DM populations are still limited.

Resources:

1. Obermayer A, Tripolt NJ, Pferschy PN, *et al.* Efficacy and Safety of Intermittent Fasting in People With Insulin-Treated Type 2 Diabetes (INTERFAST-2)-A Randomized Controlled Trial. *Diabetes Care.* 2023;46(2):463–468. doi:10.2337/dc22-1622
2. Herz D, Haupt S, Zimmer RT, *et al.* Efficacy of Fasting in Type 1 and Type 2 Diabetes Mellitus: A Narrative Review. *Nutrients.* 2023;15(16):3525. Published 2023 Aug 10. doi:10.3390/nu15163525
3. Xiaoyu W, Yuxin X, Li L. The effects of different intermittent fasting regimens in people with type 2 diabetes: A network meta-analysis. *Front Nutr.* 2024;11:1325894. Published 2024 Jan 25. doi:10.3389/fnut.2024.1325894
4. International Diabetes Federation. Diabetes and fasting. IDF. https://idf.org/about-diabetes/diabetes-management/diabetes-and-fasting/. Accessed May 13, 2025.
5. Khalafi M, Habibi Maleki A, Symonds ME, *et al.* The effects of intermittent fasting on body composition and cardiometabolic health in adults with prediabetes or type 2 diabetes: A systematic review and meta-analysis. *Diabetes Obes Metab.* 2024;26(9):3830–3841. doi:10.1111/dom.15730

Fasting Practices Guidelines

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Fasting, a deeply rooted tradition across many faiths, serves as an expression of devotion, discipline, and reflection. However, for individuals with diabetes mellitus (DM), fasting requires thoughtful preparation to maintain well-being without compromising religious observance.

Individuals with DM are at a higher risk of hypoglycemia, hyperglycemia, and diabetic ketoacidosis (DKA). Dehydration can further complicate these issues. Careful planning, medical consultation, and regular monitoring are essential for safe fasting.

Fasting practices of different faiths

Religion	Key features	Duration and frequency	Consideration for DM
Ramadan (Islam)	Complete fast (dawn-dusk): No food, water, meals at Suhoor (pre-dawn) and Iftar (post-sunset)	1 month (annually) sunrise-sunset daily	Higher risk of hypoglycemia. Manage dosage, low-glycemic index (GI), and healthy carb-protein combinations at Suhoor and Iftar. Monitoring is essential.
Christianity	Abstinence fasting: Avoids meats, dairy, eggs	40 days of Lent, twice a week (Wednesday, Friday)	High carb content intake may require insulin/medication dose changes; focus on low-GI carbs, protein sources like dals and pulses. Monitoring is essential.
Hinduism	Variable, includes milk, fruits, and carbs (samo, sago, buckwheat)	Multiple occasions: Weekly, monthly, 9-days (Navratri), or longer (e.g., Kartik month)	Individualized meal and medication/insulin planning is key. Include a carb-protein combination to manage post-meal glucose levels. Ensure medication/insulin aligns with carb intake and fasting type.
Buddhism	Partial and time-restricted fasting from noon to dawn	Typically, monks; others may fast during festivals or special days	Timing adjustments and monitoring as per food intake.
Jainism	Strict fasting-based on timing. No eating after sunset. Only boiled food and water.	During festivals (e.g., Paryushan, Varshitap); can extend over days to months	High risk of hypoglycemia and dehydration. Strongly recommend medical evaluation before fasting. Some fasts may not be advisable for people with diabetes.

Fasting is spiritually significant but requires careful management, especially for individuals with diabetes. Prioritize health through open communication with healthcare providers, meticulous planning, blood glucose monitoring, and understanding faith-specific fasting guidelines. Informed choices enable individuals to honor their beliefs while effectively managing their diabetes.

Key points

- Fasting poses health risks for individuals with diabetes, including hypoglycemia, hyperglycemia, and DKA.
- Consultation with healthcare providers involving careful planning and blood glucose monitoring is essential for safe fasting practices.
- Fasting practices differ significantly across religions (Islam, Christianity, Hinduism, Buddhism, Jainism), with variations in restrictions, duration, and frequency.
- Effective diabetes management during fasting requires tailoring medication and dietary plans to the specific requirements of each religious practice.

Resource:

Deeb A, Babiker A, Sedaghat S, *et al.* ISPAD Clinical Practice Consensus Guidelines 2022: Ramadan and other religious fasting by young people with diabetes. *Pediatr Diabetes.* 2022;23(8):1512–1528. doi:10.1111/pedi.13447

Categorization of Health Risks in Fasting

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Fasting is deeply rooted in various religions, impacting dietary patterns and fluid intake during these periods. Individuals with diabetes are more likely to experience challenges since their diet is significantly influenced at such times. Studies suggest individualized risk stratification for ensuring safety and efficacy during fasting times.

The International Diabetes Federation and the Diabetes and Ramadan International Alliance (IDF-DAR) 2024, has formed a structured risk categorization to aid healthcare professionals in evaluating and addressing potential health risks associated with extended fasting during Ramadan. The guidelines stratify patients into four risk categories—**very high, high, moderate, and low**—based on clinical factors, existing comorbidities, glycemic control, and medication regimens. This framework is further supported by global evidence and findings from Indian studies and randomized controlled trials. Table 1 below highlights the risk stratification of individuals with diabetes during fasting as per Saboo *et al.*, 2019.

Table 1: Risk stratification of individuals with diabetes during fasting

Very high risk	High risk	Moderate risk	Low risk
Severe hypoglycemia/ ketoacidosis/ hyperosmolar hyperglycemic coma within the last 3 months prior to Ramadan	Moderate hypoglycemia (average blood glucose 150–300 mg/dL)	Well-controlled patients (glycated hemoglobin [HbA1c] <7.5%) treated with short-acting insulin secretagogues and modern sulphonylureas	Well-controlled patients (HbA1c <7%) treated with diet alone, metformin, or a thiazolidinedione who are otherwise healthy
History of recurrent hypoglycemia	Renal insufficiency	–	–
Hypoglycemia unawareness	People living alone who are treated with multiple insulin injections		
Sustained poor glycemic control	Old age with ill health	–	–
Patients on dialysis and those who perform intense physical labor	Patients with macro and microvascular complications that present additional risk factors	–	–
Acute illness	–	–	–
Gestational diabetes mellitus treated with insulin, type 1 diabetes, and pregnancy	–	–	–

The guidelines recommend individuals with the following conditions to refrain from fasting: Pregnant and lactating women, type 1 diabetes, acute peptic ulcer, cancer, severe bronchial asthma, pulmonary tuberculosis, overt cardiovascular disease (recent myocardial infarction, angina), and hepatic dysfunction.

In conclusion, for successful and safe fasting, guidelines suggest a comprehensive strategy involving individualized risk stratification, lifestyle modifications, individualized diet plans, appropriate physical activity, pre-fast counseling, and diabetes education. Furthermore, proper dose adjustments can help minimize the risk. Healthcare professionals can promote healthy fasting practices while maintaining patients' religious and cultural practices by integrating guidelines with cultural practices.

Resources:

1. International Diabetes Federation (IDF) and Diabetes and Ramadan (DAR) International Alliance. IDF-DAR Practical Guidelines 2024: A Guide to Safe Ramadan Fasting. Published August 2024. Accessed May 14, 2025 from: https://idf.org/media/uploads/2024/08/DAR-guide-to-safe-fast-EN.pdf
2. Saboo B, Joshi S, Shah SN, *et al.* Management of diabetes during fasting and feasting in India. *J Assoc Physicians India.* 2019;67(9):73–79.
3. Obermayer A, Tripolt NJ, Pferschy PN, *et al.* Efficacy and Safety of Intermittent Fasting in People With Insulin-Treated Type 2 Diabetes (INTERFAST-2)-A Randomized Controlled Trial. *Diabetes Care.* 2023;46(2):463–468. doi:10.2337/dc22-1622

Research Highlights
Expert Insights: Interview with Prof. Dr. Sri V. Madhu

Prof. Dr. Sri V. Madhu
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Dr. Sri V. Madhu is a distinguished endocrinologist and a leading expert in diabetes and metabolic disorders in India. He currently serves as Director Professor and Head of the Department of Endocrinology, and In-Charge of the Centre for Diabetes, Endocrinology and Metabolism at UCMS and GTB Hospital, Delhi. With over four decades of dedicated work in endocrine care, research, and teaching, Dr. Madhu has been instrumental in establishing specialized services and a state-of-the-art centre for diabetes and endocrine disorders at the institution. He is the current Editor-in-Chief of the Indian Journal of Endocrinology and Metabolism (IJEM) and former editor-in-chief of the International Journal of Diabetes in Developing Countries (IJDDC). A past president of Endocrine Society of India (ESI) and Research Society for the Study of Diabetes in India (RSSDI), he has over 300 national and international publications to his credit and has received numerous awards recognizing his lifelong contribution to endocrine science and education.

Yoga and Prevention of Type 2 Diabetes: The Indian Prevention of Diabetes Study (IPDS)

1. What motivated you to explore yoga as a preventive intervention for type 2 diabetes in the Indian context?

Ans. There are an estimated 101 million people living with diabetes in the country, with another 136 million living with prediabetes, most of whom are likely to progress to diabetes without substantial lifestyle changes.

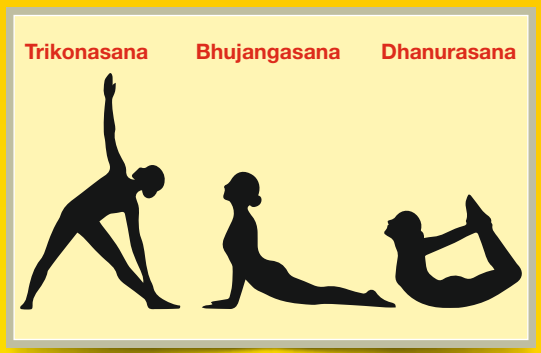
Lifestyle interventions are effective in the prevention of type 2 diabetes but are resource-intensive.

There was a need to develop a cost-effective and simple-to-implement strategy that could be scaled up at the national level.

Yoga, an ancient Indian traditional practice, has been shown to be beneficial in type 2 diabetes in small, inadequately powered studies.

Hence, we wanted to explore yoga as a long-term preventive intervention for type 2 diabetes in the Indian context that could also be sustainable.

2. What was the structure of the yoga intervention implemented in the study?

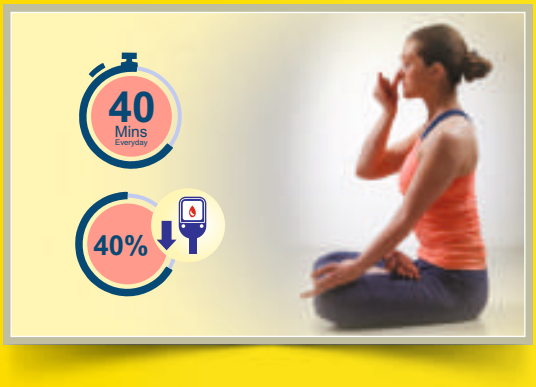


Ans. The yoga intervention consisted of selected yoga asanas that were shown earlier in small, short-term studies to have some benefit in type 2 diabetes. A 40-minute structured intervention package including yogasanas – Trikonasana, Kati Chakrasana, Ardhamatsyendrasana, Pavanamuktasana, Bhujangasana, Dhanurasana, Padachakrasana, Suryanamaskar, and Pranayama. These were performed daily along with standard lifestyle measures.

3. What were the most significant findings of the study?

Ans. A 40-minute yoga practice every day, consisting of selected yoga asanas and Pranayama, along with standard lifestyle measures, can reduce your risk of getting diabetes by nearly 40 percent, showing better results than lifestyle intervention or drugs alone.

Long-term efficacy of yoga was demonstrated over a 3-year period in nearly 1000 individuals with pre-diabetes from five centers in India.



Yoga fares better when compared to the only two available diabetes prevention trials carried out in the country. While the Indian Diabetes Prevention Programme showed a risk reduction of approximately 28% with lifestyle measures, the other study using lifestyle and stepwise addition of medication (metformin) reported a 32% reduction in the risk of diabetes. Yoga performed better than both.

The novelty of the study lies in the fact that this is the first time ever that yoga, an ancient Indian practice, has been convincingly shown to prevent diabetes in a well-designed long-term trial.

4. How do you see your findings influencing clinical guidelines or treatment paradigms in the long term?

Ans. The study findings have major implications for public health and national policy, which are far-reaching and, if implemented as a national policy for diabetes prevention, it can serve as a game changer for diabetes prevention in the country and can go a long way in controlling the rapidly rising epidemic of type 2 diabetes in our country.

In view of the clear evidence generated by us, yoga should become part of all clinical guidelines and strategies for the prevention of type 2 diabetes at all levels of healthcare in our country.

5. What advice would you give to other researchers looking to conduct similar studies?

Ans. There is a need for an integrated approach to wellness, particularly in the context of lifestyle diseases such as type 2 diabetes. Researchers also need to focus on several ancient Indigenous practices that claim benefits in this regard and evaluate these in well-designed studies to support or refute such claims. It is time to develop strong, evidence-based strategies in our efforts to control diabetes and other non-communicable diseases in our country.

Optimizing Outcomes with Insulin, Diet and Diabetes Education
A Doctor's Experience on the MyCare Patient Support Program

Dr. Ajit Mahant

MBBS, DNB (Medicine)

Consultant Physician, Cardiologist and Diabetologist, Nagpur

A 62-year-old male with type 2 diabetes mellitus was managed by Dr. Ajit Mahant.

Here's what Dr. Ajit Mahant has to say:

A 62-year-old male with type 2 diabetes mellitus presented with uncontrolled blood glucose levels. He reported fasting blood glucose levels of 310 mg/dL, postprandial blood glucose levels of 415 mg/dL, and random blood glucose levels of 385 mg/dL. He was taking oral anti-diabetic medications. Due to persistently high blood glucose levels, he was initiated on insulin.

Recognizing the need for structured education, he was referred to MyCare Diabetes Educator (MDE), Ms. Isha Shaikh. MDE Isha provided comprehensive guidance on proper insulin injection techniques and highlighted the significance of rotating insulin injection sites to prevent lipohypertrophy and ensure consistent insulin efficacy. In addition, MDE Isha explained the correct methods of insulin storage, including maintaining insulin at recommended temperatures, avoiding exposure to extreme heat or cold, and adhering to expiry timelines, to preserve its potency.

MDE Isha also took a detailed dietary recall and, considering his food preferences, created a customized healthy meal plan with appropriate meal frequency that aligned with his insulin regimen. MDE Isha included low glycemic index carbohydrates to support glucose control. Inclusion of adequate protein and fiber sources, and functional foods in every meal was also advised to stabilize elevated blood glucose levels.

He was advised to monitor glucose levels regularly, and were reviewed periodically during follow-ups. With dietary modification, insulin therapy, and education, his glucose levels gradually improved to a fasting blood glucose level of 89 mg/dL and postprandial glucose levels of 130 mg/dL without any episode of hypoglycemia.

Ms. Isha Shaikh

NDEP and T1DE Certified Diabetes Educator

Here's what MDE Isha Shaikh has to say:

A remarkable improvement in blood glucose control was achieved through a combination of the prescribed insulin regimen, tailored dietary modifications, and diabetes education. This comprehensive approach not only stabilized his blood glucose levels but also empowered him to manage diabetes more effectively. This will also help in reducing the risk of future diabetes associated complications.

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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**

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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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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:
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Interpreting Blood Reports: Liver Profile

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Liver profile involves analyzing enzymes, proteins, and biomarkers to assess liver function and health. Here are the tests that come under liver function tests and their interpretation:

Parameter	Normal range	Associated conditions
Alanine aminotransferase (ALT)/serum glutamic pyruvic transaminase (SGPT)	4–36 IU/L	Viral hepatitis, non-alcoholic fatty liver disease (NAFLD), drug/toxin injury, elevated in autoimmune hepatitis, and sepsis
Aspartate aminotransferase (AST)/ serum glutamic oxaloacetic transaminase (SGOT)	5–30 IU/L	Alcoholic hepatitis, muscle injury, cirrhosis, elevated in autoimmune hepatitis, sepsis ALT>AST: Viral hepatitis, congestive hepatopathy
Alkaline phosphatase (ALP)	30–120 IU/L	Biliary obstruction, cholestasis, and bone disease
Gamma-glutamyl transferase (GGT)	6–50 IU/L	Alcoholic liver disease, drug-induced injury
Bilirubin (total/direct)	2–17/0–6 µmol/L	Elevated in hepatitis, cholestasis, and hemolysis
Albumin	3.5–5.0 g/L	Decreased in cirrhosis, malnutrition, and nephrotic syndrome
Total protein	6.0–8.3 g/dL	Decreased in chronic liver disease, nephrotic syndrome
Prothrombin time (PT)	10–13 sec	Acute/chronic liver failure, vitamin K deficiency
Lactate dehydrogenase (LDH)	140–280 U/L	Elevated in liver damage, hemolysis, tissue injury, typically in ischemic hepatitis

Liver function tests provide essential insights into liver health and help detect liver damage or disease early. Abnormal values should be evaluated in the clinical context for accurate diagnosis and management.

Resources:

1. Lala V, Zubair M, Minter DA. Liver Function Tests. In: StatPearls. Treasure Island (FL): StatPearls Publishing; July 30, 2023.
2. Kalas MA, Chavez L, Leon M, Taweesedt PT, Surani S. Abnormal liver enzymes: A review for clinicians. *World J Hepatol.* 2021;13(11):1688–1698. doi:10.4254/wjh.v13.i11.1688
3. Yang R, Zubair M, Moosavi L. Prothrombin Time. [Updated 2024 Jan 23]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK544269/

Pharmacotherapy Modifications During Fasting

Dr. Prem Narayanan

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Prolonged fasting can lead to hypoglycemia, hyperglycemia, ketoacidosis, dehydration, and electrolyte imbalances. Individuals are classified into low-, moderate-, or high-risk groups based on medications, current blood glucose control, health status, and comorbid conditions. All individuals should consult their doctor before fasting. This is because they may need medication dose adjustments (as shown in the table below) and blood glucose monitoring schedules depending on the type of fast.

Anti-diabetic agents	Muslim fast prolonged	Hindu fast infrequent but brief	Hindu fast infrequent but prolonged	Hindu fast frequent	Jain fast high risk	Jain fast low risk
	Ramadan	Karva Chauth	Navratri	Somvaar, Mangalvaar	Tiwihar Upavas, Upavas, Bela (Chhath), Tela	Byasana, Ekasana, Ratri Bhojan Tyag
Metformin	Once daily (OD) at Iftar Twice daily (BD) at Iftar, Suhoor Three times a day (TDS): ⅔ of the total daily dose (TDD) at Iftar and ⅓ at Suhoor	OD: Night BD: Morning and night TDS: Omit lunch dose and follow above	OD: Night BD: Morning and night TDS: ⅔ of TDD at night, ⅓ in the morning	OD: Night BD: Morning and night TDS: Omit the lunch dose and follow the above	Omit on the day of the fast	No change required
Sulfonylureas	OD at Iftar BD: ½ of the usual evening dose—Suhoor and usual morning dose—Iftar	OD: Dinner BD: Omit the morning dose in the absence of breakfast	OD: Dinner BD: Omit the morning dose	Omit therapy on the day of fasting	Avoided, or taken in half dose at night	Full dose in the morning and half dose at night
Dipeptidyl peptidase 4 (DPP-4) inhibitors	No change	No change, take at dinner	No change, take at dinner	No change	Omit therapy on the day of fasting	Taken at night
Sodium-glucose cotransporter 2 (SGLT-2) inhibitors	No change, and the dose can be taken with Iftar	No change, take at dinner	No change, take at dinner	No change	Omit therapy on the day of fasting	Avoid evening dose, or take in ½ dose
Pioglitazone	No change	No change	No change, or ⅔ at dinner	No change	No change	No change

Anti-diabetic agents	Muslim fast prolonged	Hindu fast infrequent but brief	Hindu fast infrequent but prolonged	Hindu fast frequent	Jain fast high risk	Jain fast low risk
Alpha-glucosidase inhibitors (AGIs)	No change	No change	No change	No change	Omit therapy on the day of fasting	No change
Glucagon-like peptide-1 (GLP-1) analogs	The dose should be titrated 6 weeks prior to Ramadan, and no dose adjustment is required	Reduce the dose to ½ and take at dinner	The dose should be titrated prior to Navratri	No change or reduce the dose to ½	Once weekly dose: No change (postpone till completion of fasting)	No change
Long-acting insulin	OD: Reduce dose by 15–30% at Iftar BD: Take the usual morning dose at Iftar and reduce the evening dose by 50% at Suhoor	No change or reduce the dose to ⅔	No change or reduce the dose to ⅔	Reduce the dose to ⅔	25% reduction in dose	10–20% reduction in dose
Short-acting insulin	Iftar—normal dose, lunch dose, at dinner, reduce Suhoor dose by 50%	Reduce the dose to ½	Reduce the dose to ½	Reduce the dose to ½	1 bolus	2 bolus

Emphasis on adequate fluid intake is crucial to prevent dehydration. Individuals should be educated to break the fast immediately if blood glucose levels are < 70 mg/dL or > 300 mg/dL, or if there are symptoms of dehydration, light-headedness, or feeling sick.

Resource:

Mohan V, Kalra S, Kesavadev J, *et al.* Management of diabetes during fasting and feasting in India. *J Assoc Physicians India*. 2019;67(10):25–31. Accessed July 13, 2025. https://www.profmvdrc.com/research/Management_of_diabetes_during%20%20Fasting%20JAPI%202019.pdf

Nutritional Management During Religious Fasting

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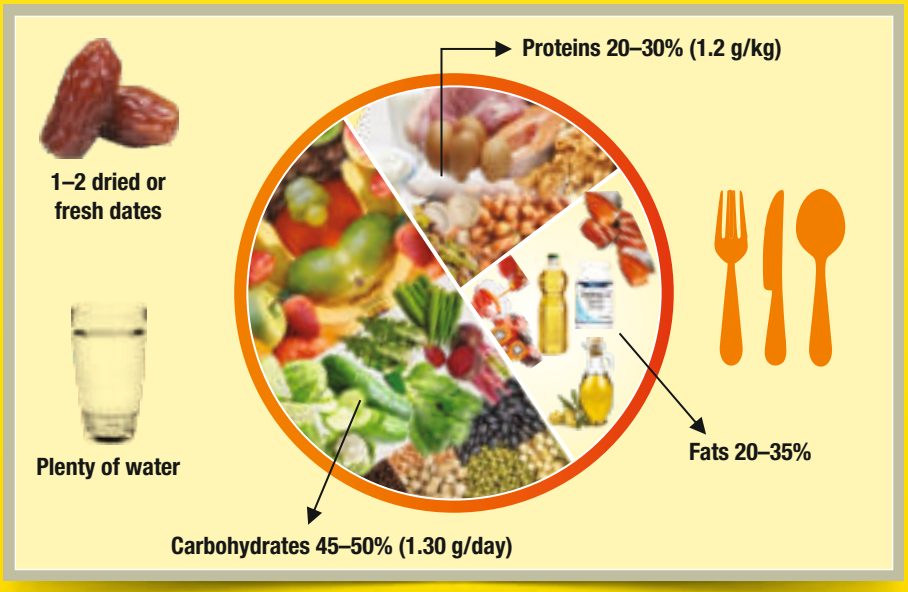
Religious fasting presents unique challenges for individuals with diabetes, as it involves prolonged periods without food or drink, which can disrupt glycemic control. Effective nutritional management during these periods is essential to prevent complications like hypoglycemia, hyperglycemia, and dehydration while respecting cultural and spiritual practices.

Structuring the plate: Portion-based model

- The food plate model helps ensure balanced nutrition and stable glucose levels during fasting via portion control and balanced nutrient distribution.
- ½ plate: Non-starchy vegetables (e.g., tomato, green leafy, cucumbers, cabbage, cauliflower, etc.) are high in fiber and micronutrients with minimal impact on blood glucose levels.
- ¼ plate: Whole grains like oats, brown rice, broken wheat, and millets (barnyard millet, jowar, bajra, etc.) are complex carbohydrates that digest slowly, thereby offering improved glucose control and long-lasting energy.
- ¼ plate: Protein (e.g., lentils, pulses, soy, dairy foods, eggs, lean meat). Proteins support muscle growth and maintenance and provide satiety.
- Include a serving of healthy fat, such as a handful of nuts or one tablespoon of seeds.
- Stay hydrated with water or unsweetened drinks (like lemon water, buttermilk, or herbal tea) during non-fasting hours to prevent dehydration.



Recommended foods during fasting

Ramadan: Breaking the fast with high-glycemic foods like sweets and sweetened beverages can lead to rapid glucose spikes. Instead, choose dates, whole fruits, and beverages like buttermilk and lemon water. Avoid deep-fried foods and instead choose baked, sautéed, or pan-fried foods such as chana chaat, dahi chaat, moong tikki, soya tikki, chicken, or fish cutlets, etc.

Barnyard millet (samo/varai/samak/sanwa)

Navratri: Commonly consumed foods like amaranth, sabudana, and potatoes have a high glycemic index (GI). Opt for samak rice (barnyard millet) or sweet potatoes and pair them with dairy (paneer, curd, buttermilk) to help support glucose control.

Jain (Paryushan): The exclusion of fruits and vegetables can reduce fiber intake. To compensate, include whole grains, millets, whole pulses, and seeds such as methi seeds, flaxseeds, chia seeds, etc., to improve fiber intake and support glucose control. Dairy foods like curd, paneer, and yogurt can also help support glucose control.

Healthy food swaps: Practical suggestions

Avoid	Include
Fried snacks (e.g., potato chips, potato cutlet)	Baked or air-fried versions (e.g., chips, sweet potato fries)
Sugar-rich desserts (e.g., kheer)	Fresh fruits parfait, oats, and chia pudding
Soft drinks, sweetened beverages	Water, lemon water, buttermilk, coconut water, fruit-infused water
Rich, creamy curries	Tomato-based or vegetable-based curries with limited oil

Fasting can be safe and meaningful for individuals with diabetes when done right. Balanced meals, portion control, adequate fluid intake, and frequent monitoring lay the foundation of safe fasting. Using the plate model and making informed food choices allows individuals to participate in religious observances while maintaining good glucose control.

Key points

- **Follow a balanced plate:** Use the plate model—½ non-starchy vegetables, ¼ whole grains/millets, ¼ protein, plus healthy fats—for steady glucose control.
- **Culturally sensitive choices:** Adapt fasting meals for different traditions—e.g., break the Ramadan fast with whole fruits and protein-rich snacks, choose low-GI options during Navratri, and increase fiber through pulses and seeds during Jain Paryushan.
- **Smart food swaps:** Replace fried, sugary, and processed foods with healthier alternatives like baked snacks, fruit-based desserts, and hydrating beverages like buttermilk or lemon water.
- **Glucose management:** Safe fasting requires portion control, adequate hydration during non-fasting hours, and regular glucose monitoring to prevent hypo- or hyperglycemia.

Resources:

1. Deeb A, Babiker A, Sedaghat S, *et al.* ISPAD Clinical Practice Consensus Guidelines 2022: Ramadan and other religious fasting by young people with diabetes. *Pediatr Diabetes.* 2022;23(Suppl 27):132–150. doi:10.1111/pedi.13336
2. Saboo B, Joshi SR, Shah SN, *et al.* Management of Diabetes During Fasting and Feasting in India. *J Assoc Physicians India.* 2019;67(9):70–76.
3. Gupta L, Khandelwal D, Singla R, *et al.* Pragmatic dietary advice for diabetes during Navratris. *Indian J Endocrinol Metab.* 2017;21(1):231–237.
4. Communities in Action. *Ramadan: A Guide to Healthy Fasting.* UK Department of Health; 2007.
5. Diabetes UK. Fasting. https://www.diabetes.org.uk/living-with-diabetes/eating/fasting. Accessed May 10, 2025.
6. Visioli F, Mucignat-Caretta C, Anile F, Panaite SA. Traditional and Medical Applications of Fasting. *Nutrients.* 2022;14(3):433. Published 2022 Jan 19. doi:10.3390/nu14030433

Diabetes Educator's Toolkit:
Skill of the Month: Reflection, Reassurance, and Empathy

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Incorporating reflection, reassurance, and empathy in counseling helps create a holistic environment that supports the psychological well-being of the individual.

Reflection: Involves listening to the person with diabetes and rephrasing their statement to understand them better.

Example: Person with diabetes: "No matter how much I try, my blood glucose levels are always high."

- **Diabetes educator (DE):** "You feel frustrated that despite all your efforts, your blood glucose levels are still not in range."

  Reflection makes sure that the individual's feelings are heard and their experiences are validated.

Reassurance: Helps build confidence and trust. It enables the person with diabetes to believe in themselves, empowering them to solve their problems and feel more confident and hopeful. Reassurance is especially important when the person is feeling doubtful or anxious.

Example: Person with diabetes: "The diet is very strict. I don't think I can follow it."

- **Incorrect reassurance by the DE:** "Of course you can stick to this diet."
- **Correct reassurance by the DE:** "You showed great self-control the last time you followed this diet, and you stayed positive too. I believe you can do it again this time."

Empathy is the ability to understand the feelings of a person with diabetes with compassion, expressed through non-judgmental communication.

Example: Person with diabetes: "It is overwhelming and frustrating, trying so hard to manage my sugars and meals. It feels like I am failing."

- **DE:** "It's completely normal to feel stressed and overwhelmed while managing your health. I can see how hard you're trying, and I really appreciate all the effort you're putting in."

Understanding and addressing concerns with empathy and without judgment helps reduce depressive feelings and emotional distress.

Together, reflection, reassurance, and empathy create a supportive and trusting counseling environment that promotes both effective diabetes management and emotional well-being.

Resources:

1. Howe CJ, Walker D, Watts J. Use of Recommended Communication Techniques by Diabetes Educators. *Health Lit Res Pract.* 2017;1(4):e145–e152. Published 2017 Oct 10. doi:10.3928/24748307-20170810-01
2. Paiva D, Abreu L, Azevedo A, Silva S. Patient-centered communication in type 2 diabetes: The facilitating and constraining factors in clinical encounters. *Health Serv Res.* 2019;54(3):623–635. doi:10.1111/1475-6773.13126
3. Fearon-Lynch JA, Sethares KA, Asselin ME, Batty K, Stover CM. Effects of Guided Reflection on Diabetes Self-Care: A Randomized Controlled Trial. *Diabetes Educ.* 2019;45(1):66–79. doi:10.1177/0145721718816632
4. Howe CJ, Walker D, Watts J. Use of Recommended Communication Techniques by Diabetes Educators. *Health Lit Res Pract.* 2017;1(4):e145–e152. Published 2017 Oct 10. doi:10.3928/24748307-20170810-01
5. Dellasega C, Añel-Tiangco RM, Gabbay RA. How patients with type 2 diabetes mellitus respond to motivational interviewing. *Diabetes Res Clin Pract.* 2012;95(1):37–41. doi:10.1016/j.diabres.2011.08.011

Frequently Asked Questions on Diabetes During Fasting: Focused Care

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1. I was recently diagnosed with type 2 diabetes mellitus and need to fast for Navratri next month. We usually eat potatoes, sago, fruits, and milk, but these may spike my blood glucose levels. How can I manage my blood glucose levels during this period of fasting?

Ans. It's understandable to be concerned about managing your blood glucose during fasting, especially with type 2 diabetes and the available food choices. Potatoes, sago, and fruits have high carbohydrate content and hence require careful consideration.

- Focus on combining foods to slow down glucose absorption. Pair a portion of whole fruit with a handful of nuts like almonds, walnuts, or pistachios. The fiber in fruits and the healthy fats in nuts help stabilize blood glucose levels.
- Similarly, if you choose potato or sweet potato, opt for a small cooked and cooled portion and combine it with a protein source like curd/buttermilk or paneer, which provides protein and fat and will also help support glucose control.
- Similarly, pair carbohydrate-rich foods like sago with protein like curd/yogurt/paneer or buttermilk, and can add nut powder (peanuts or any nuts) or have chia seeds/flaxseeds alongside as a source of fat that can help prevent spikes in glucose levels.
- Try to substitute a high-carb diet with a high-protein and calorie-dense diet, such as nuts, avocados, makhana, chickpeas, etc. Try to take small meals but at regular intervals instead of a large, bulky meal at once.
- It's crucial to monitor your blood glucose levels regularly during the fasting period to understand how your body responds to these food combinations. Consulting your doctor or a registered dietitian for personalized guidance based on your specific health status and medication is highly recommended before undertaking the fast.

2. I have type 2 diabetes mellitus and obesity, and I am considering intermittent fasting (IF) to manage my weight. Will IF likely have a significant impact on my blood glucose levels, and is it a safe approach for someone with my health conditions?

Ans. IF can affect your blood glucose levels, and its safety for individuals with type 2 diabetes and obesity requires careful consideration. Some research suggests that IF can improve insulin sensitivity, which may lead to lower blood glucose readings over time. It can also contribute to weight loss, which further has a positive impact on blood glucose control.

However, IF can also pose risks. The most significant concern is hypoglycemia (low blood glucose). The fasting periods could lead to your blood glucose dropping too low if your medication doses or injectable insulin doses are not adjusted appropriately. Conversely, during the eating windows, poor food choices could still lead to blood glucose spikes. It is advisable to stick to a regular diet plan with multiple options and have a proper consultation with your nutritionist according to your needs.

While some studies have shown promising results for IF in individuals with type 2 diabetes and obesity, it's not a one-size-fits-all approach. The impact on your blood glucose will depend on the specific IF protocol you choose, your individual metabolic response, your dietary choices during eating windows, and your current medication regimen.

Close monitoring of your blood glucose levels is crucial if you decide to pursue IF. It's essential to discuss with your doctor and dietitian before starting IF. They can assess your risks, adjust your medications if needed, and provide guidance on a safe and effective IF strategy tailored to your specific health situation. Self-management without professional guidance can be dangerous.

3. I'm fasting for religious reasons and have type 2 diabetes. Can I still exercise during the fast? Is it generally safe for me to exercise while I'm in a fasting period, or are there specific precautions I should take?

Ans. Generally, light exercise during a fasting period may be okay for some. However, it also carries potential risks, primarily hypoglycemia (low blood glucose). When you exercise, your body uses glucose for energy, and if you haven't eaten recently, your blood glucose could drop too low, especially if you're on medications like insulin or sulfonylureas.

- **The best time to exercise is 1–2 hours after your first meal** (when blood glucose is more stable). You can also have homemade energy drinks before exercise, such as smoothies, milk with nuts, fruit salad, or toast, especially if your pre-exercise glucose level is below 120 mg/dL and the activity is expected to last a long time.
- **Choose low- to moderate-intensity activities** like walking, yoga, stretching, or light strength training.
- **Avoid vigorous workouts** during prolonged fasting or extreme heat, especially if you're not consuming fluids during the day (e.g., during Ramadan).
- **Hydrate well** during non-fasting hours and include some **electrolytes** if needed.
- **Monitor blood glucose** before and after exercise. If you feel dizzy or weak, stop and check your glucose levels. Keep fast-acting carbs such as glucose powder, glucose gels or tablets, sugar, or honey handy to correct low glucose levels.

Superfood: Samo Upma

Serves: 1

Ingredients	Amount
Samo/Varai (Barnyard millet)	½ cup
Finely chopped carrot	¼th cup
Finely chopped beans	¼th cup
Green peas	2 tablespoons
Finely chopped green chilies	2 nos.
Cumin seeds	½ teaspoon
Mustard seeds	½ teaspoon
Curry leaves	A few
Grated ginger	½ teaspoon
Finely chopped coriander leaves	For garnishing
Salt	To taste
Oil	2 teaspoons

1 cup: 250 mL; 1 tablespoon: 15 mL; 1 teaspoon: 5 mL

Method

1. Dry roast the samo for about 5 minutes and rinse thoroughly with water.
2. In a kadhai, heat oil, add mustard seeds, and wait till they splutter. Add cumin seeds and stir-fry for a few seconds.
3. Add the finely chopped green chilies, grated ginger, and curry leaves. Stir-fry for a few seconds.
4. Add carrots, beans, and peas. Stir-fry for two minutes.
5. Add 3 cups of water and salt. Over medium heat, cook the added vegetables till done.
6. Then, add the roasted samo. Mix well.
7. Cover and cook till all the water is absorbed and the samo is cooked.
8. Garnish with chopped coriander leaves and serve hot.

Role Play

Scenario – Mr. XYZ, a 58-year-old man, has been experiencing frequent episodes of low blood glucose (hypoglycemia) and is unsure about the cause. With the upcoming Ramadan, he wishes to fast but is concerned about managing his diabetes during this period. He needs guidance on how to fast safely during Ramadan while preventing episodes of hypoglycemia.

Mr. XYZ: Good morning. I'm here because I want to fast during Ramadan this year. It's very important to me spiritually, but I've had a few recurring episodes of low blood glucose levels recently. I'm not sure if it's safe.

Diabetes educator (DE): Good morning, Mr. XYZ. I'm glad you came in to talk about this. Fasting during Ramadan can be possible for some people with diabetes, but in your case, with recurrent hypoglycemia, we need to be extra cautious.

Mr. XYZ: I understand. But I really don't want to miss the fast. Is there any way I can manage it safely?

DE: I appreciate your commitment. The first step is to assess your risk. Since you've had multiple low blood glucose level episodes, you're considered high-risk for fasting. According to clinical guidelines, if your blood glucose drops below 70 mg/dL, you must break your fast immediately to prevent serious consequences.

Mr. XYZ: Okay, so, how do I prepare myself if I still choose to fast?

DE: You may need to reduce or modify your diabetes medications—especially insulin or certain medications like sulfonylureas—as they can increase the risk of low blood glucose during fasting. Speak to your doctor about this well in advance. It is recommended to schedule an appointment before Ramadan to adjust your medication regimen and help prevent hypoglycemia episodes. You will also need to monitor your blood glucose levels multiple times a day, such as before Suhoor, midday, and before Iftar.

Mr. XYZ: Okay, will do that. What about food? Any special suggestions?

DE: Yes, your Suhoor meal (pre-dawn) should include complex carbs, healthy fats, and protein. For example, oats porridge with nuts and a boiled egg. At Iftar, you can break your fast with a small date and a small portion of fruit, followed by healthy carbohydrate and protein combination foods such as chana chaat, dal vada (pan-fried or baked), chicken cutlets, etc. Avoid high-sugar foods, sherbets, fruit juices, etc. Make sure to hydrate yourself well with water, lemon water, buttermilk, etc.

Mr. XYZ: I see, and if I feel dizzy or weak?

DE: That could be a sign of low blood glucose levels. Check your glucose levels and break your fast if it is <70 mg/dL.

Mr. XYZ: Thank you. I feel more informed now. I'll do as you suggest and keep monitoring my levels closely.

DE: All the best!

NOTES

NOTES

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Glycomet®-GP 2/850
Metformin Hydrochloride 850 mg SR + Glimepiride 2 mg

Glycomet®-GP 3/850
Metformin Hydrochloride 850 mg SR + Glimepiride 3 mg

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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