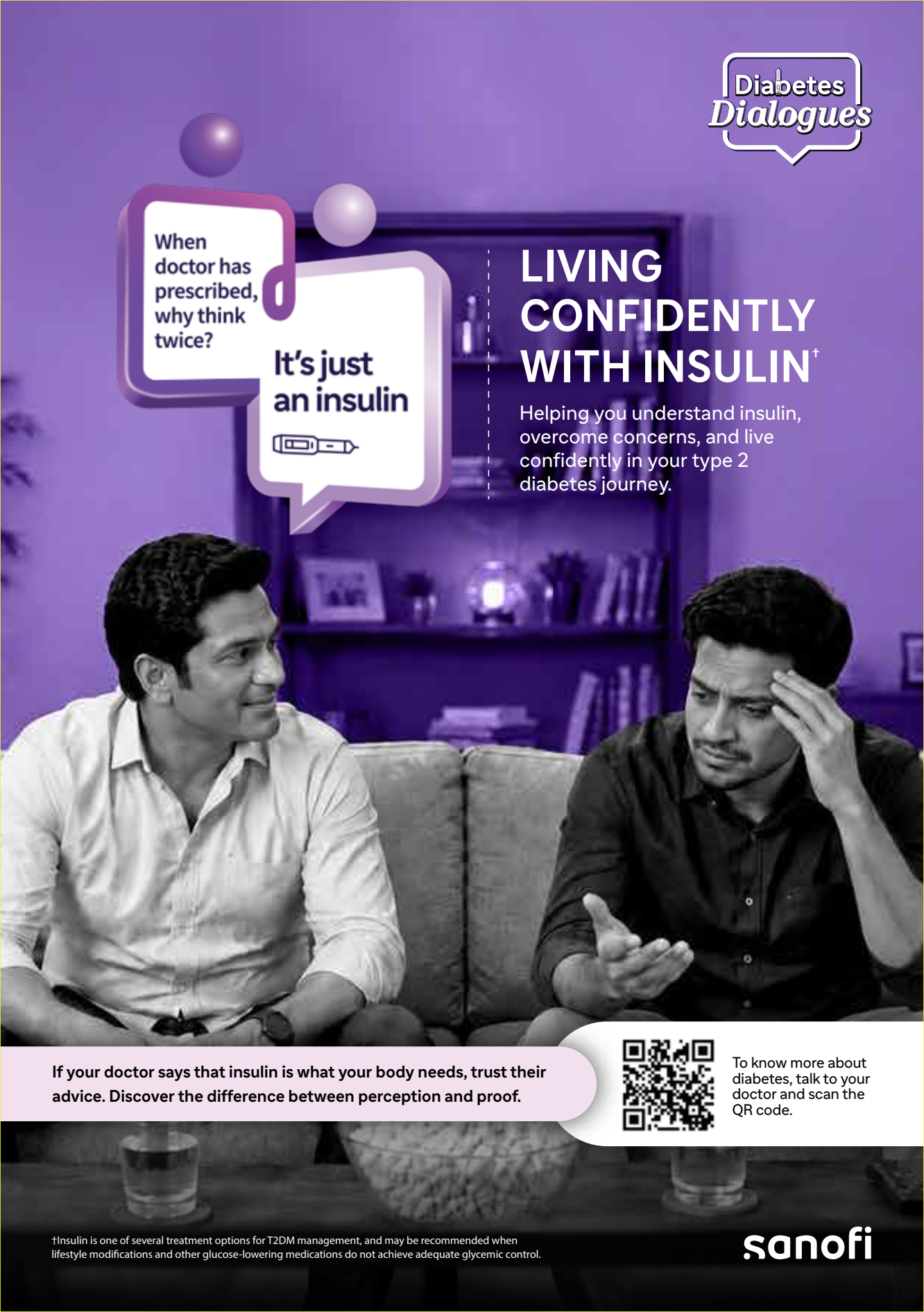

Diabetes Dialogues
When doctor has prescribed, why think twice?
It's just an insulin
LIVING CONFIDENTLY WITH INSULIN†
Helping you understand insulin, overcome concerns, and live confidently in your type 2 diabetes journey.
If your doctor says that insulin is what your body needs, trust their advice. Discover the difference between perception and proof.
To know more about diabetes, talk to your doctor and scan the QR code.
†Insulin is one of several treatment options for T2DM management, and may be recommended when lifestyle modifications and other glucose-lowering medications do not achieve adequate glycemic control.
sanofi

Understanding Insulin[1,2]



What is insulin?

Insulin is a hormone made by the pancreas that helps regulate blood glucose levels by allowing glucose to enter the body's cells for energy. People with diabetes may need insulin therapy if their body does not produce enough insulin or cannot use it effectively.

Why is it needed?

The body breaks down foods into glucose, which enters the bloodstream. Insulin acts like a key to let glucose pass from the bloodstream into cells to produce energy and helps keep blood glucose levels under control.

Benefits of insulin

People with type 2 diabetes may require insulin if their blood glucose levels are uncontrolled. They need insulin when lifestyle changes and oral medications are not enough to manage blood glucose levels.

Insulin helps to keep the blood glucose level in a healthy range, reducing prolonged exposure to high glucose levels. This helps to lower the risk of diabetes related complications such as damage to the nerves, eyes, kidney and blood vessels.

Other than helping in glucose control, insulin has other important functions in the body. These include helping the body build and repair body tissues.
It supports muscle protein building and promotes energy storage.

Common myths associated with insulin[3]

MYTHS	FACTS
If I need insulin, my diabetes has become very serious	Not necessarily. Type 2 diabetes can change over time. As the condition progresses, the body may gradually produce less insulin, and medications may no longer be enough to keep blood glucose within the desired range. In such cases, insulin may be added to help manage blood glucose.
Insulin causes kidney failure or other complications.	Insulin does not cause diabetes complications. Keeping blood glucose in the recommended range with insulin can help reduce the risk of complications. Insulin replaces the hormone your body naturally produces to help control blood glucose levels.
I don't need to take insulin if my blood glucose is normal.	A normal blood glucose value means your current insulin dosage is working properly. Do not skip or stop insulin unless your doctor tells you to.
Insulin injections are painful.	Modern insulin needles are very fine, and most people find injections manageable with the right technique.
Tablets are better than insulin.	Neither is universally "better." The right treatment for you depends on your blood glucose control, health goals, and other individual factors. People with type 2 diabetes who are unable to achieve adequate glucose control with medications alone may need to start insulin.
Insulin is addictive	No insulin is not addictive. It is not habit forming like other addictive substances. Insulin is a natural substance that is required by the body. It is given externally if the body cannot produce enough of it or cannot use it effectively. If your doctor has advised insulin, it means you need it to keep your blood glucose level in control. Whether its requirement is temporary or long term for you depends on your individual health condition and can be discussed with your doctor.
Taking insulin means I can no longer live a normal life.	Insulin is not a limitation, it is a support for the body to have good health and therefore live a better life. It does not stop you from living a normal, active and enjoyable life. With the right insulin routine, healthy diet, active lifestyle and monitoring, you can work, exercise, travel and do everything just like anyone else. Your healthcare team can help you plan your insulin, meals and activity so that you get enough flexibility to do your usual daily tasks.
Insulin causes weight gain	Insulin helps the body to use food more efficiently. So, some people who begin insulin tend to gain weight. However, once the dose of insulin is regulated based on your food intake, it will not cause excess weight gain. You can take advice of a dietitian to help you keep your weight in control.

Types of insulin[1,4]

There are different types of insulin, working at different rates and for different durations. Broadly, they are divided into two types- basal and bolus.



Basal insulin

These are also called long-acting or background insulin. They are taken once or twice a day, usually in the morning or at bedtime. They work slowly for maintaining stable blood glucose levels overnight or between meals.

Bolus insulin

They are also called as food insulin or prandial insulin. This is because they are taken before meals, and help manage the rapid rise in glucose levels after food. Rapid acting and short acting insulins are bolus insulins.

Mixed insulins

Some insulins are a mixture of these two insulins. They can be a combination of short acting/rapid acting along with intermediate acting/long acting insulin. The insulin is premixed, and its appearance is cloudy. Mixed insulins are taken before meals without basal insulin at a different time.

Insulin Injection technique[5]

Correct insulin injection technique helps ensure proper insulin absorption, effective blood glucose control, and reduces the risk of injection-site problems.

Given below are steps to ensure correct and safe use of insulin pens.



Wash and dry your hands. Check the insulin and make sure it is the correct type and has not expired.

Remove the cap of your pen and carefully attach a new needle.

Prime the pen as instructed by your healthcare provider and dial your prescribed insulin dose.

Choose an injection site and make sure to rotate sites regularly.

Insert the needle into the skin at a 90° angle and press the injection button slowly until the dose is delivered.

Wait about 10 seconds before removing the needle or as recommended for your pen.

Remove needle from the pen and safely discard the needle. It is recommended not to reuse insulin needles or share your insulin pen.

Disclaimer: Always follow your manufacturer's or healthcare provider's instructions for your specific insulin pen.

Injection sites and rotation[6]

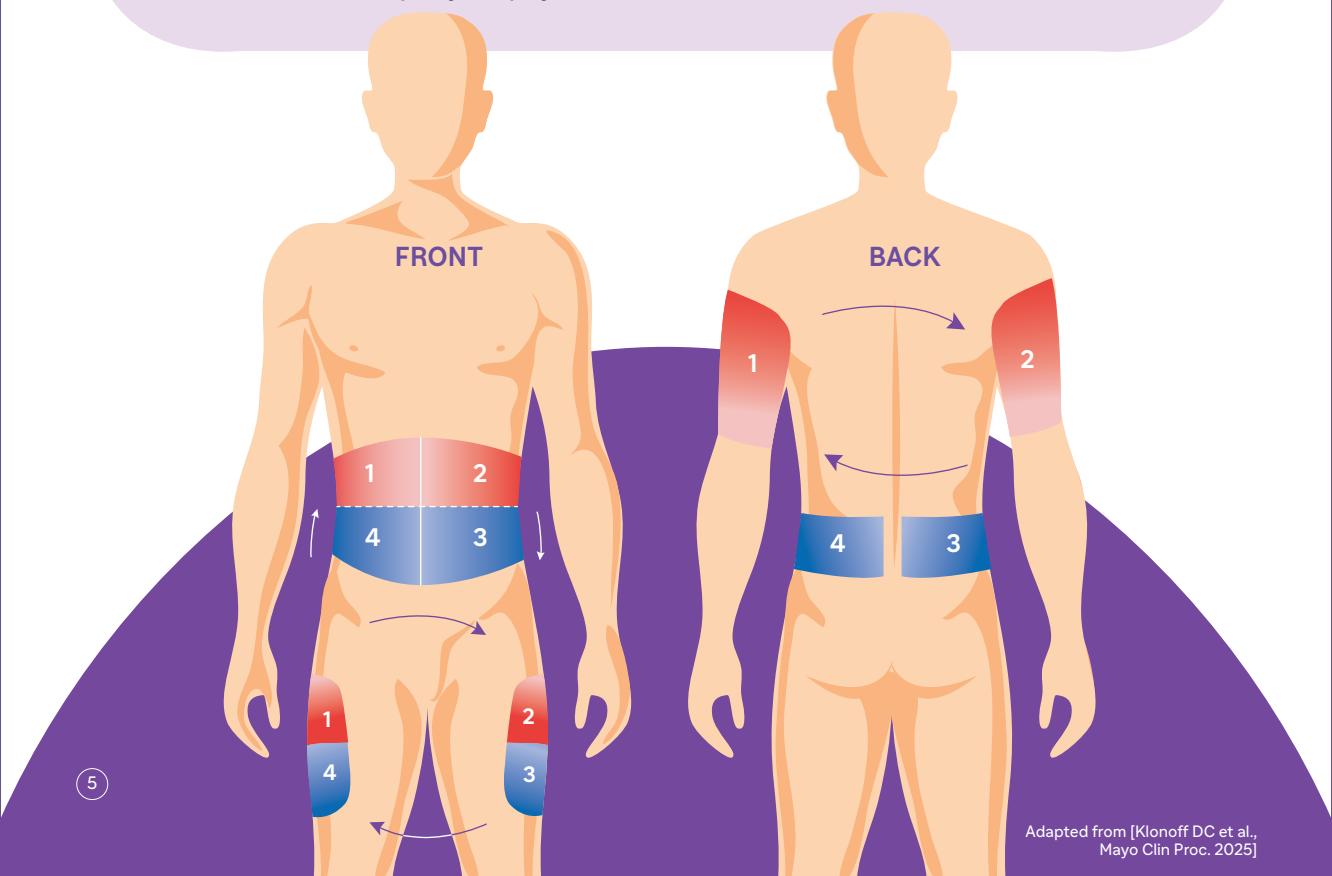
- Use the abdomen, thighs, buttocks, or upper arms for your insulin injections.
- Check your skin before each injection and avoid areas that are lumpy, thickened, swollen, red, infected, inflamed, or wounded.
- Avoid injecting on scars, stretch marks, and tattoos.

Importance of site rotation:

- It is essential to rotate your injection sites regularly by moving to a different spot each time (as shown in the image below).
- This helps prevent lumps and thickened skin (lipohypertrophy) and allows insulin to be absorbed more consistently.
- Keep the skin clean and, if you use an alcohol swab, allow it to dry completely before injecting.
- Avoid injecting through clothing.

Optimal injection site characteristics

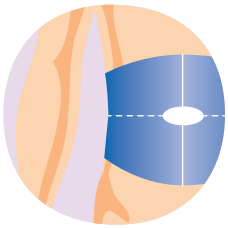
- Sufficient subcutaneous fat to reduce risk of intra muscular injection
- Clean, intact skin surface free of scars, tattoos, lesions, or sites of lipodystrophy



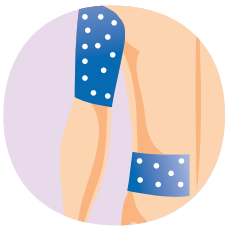
Adapted from [Klonoff DC et al., Mayo Clin Proc. 2025]

Do's and Don'ts when injecting

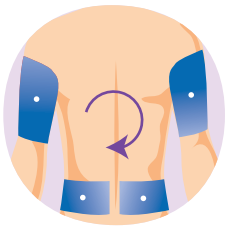
Rotate to help prevent lipodystrophy



Divide injection zones into quadrants or halves



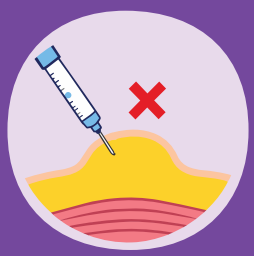
Insulin should be injected at least 1 cm from previous injections, rotating in a consistent direction



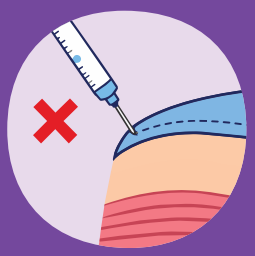
Change the zone regularly, using one zone quadrant/ half per week

Avoid

Injection into sites of lipodystrophy



Injection through clothing



Adapted from [Klonoff DC et al., Mayo Clin Proc. 2025]

Why is it important to change your insulin needle regularly?[5]

- Using a new needle each time helps make insulin injections safer and more comfortable.
- Reusing needles can make them blunt or damaged, which may cause more pain, skin damage, or bleeding.
- Repeated use can also increase the risk of infection and lipohypertrophy that will affect insulin delivery through the needle.

Use a new needle for every injection and dispose of used needles safely in a suitable sharps container.

Storage of insulin[6]

Temperature fluctuations can affect the potency of insulin, hence appropriate storage conditions are essential.

Before opening



Keep unopened insulin vials/cartridges in the refrigerator at 2-8°C (36-46°F).



Do not freeze insulin and keep it away from food or anything that could contaminate it.



If you are travelling or going outdoors in very hot or cold weather, use an insulated insulin bag or cool pouch.



Avoid placing insulin directly on ice or frozen packs. Avoid exposing it to direct sunlight or heat.

After opening



Most opened insulin vials or pens can be kept at room temperature (15–30°C / 59–86°F), away from heat and direct sunlight.



If the room temperature is above 30°C, it is recommended to be kept in the refrigerator.*



Follow your insulin manufacturer's instructions for how long it can be used after opening, often around 28 days.

*__Disclaimer:__ Insulin storage requirements can vary by product. Always follow the storage instructions provided with your specific insulin and check the manufacturer's recommendations.

Before you inject



If your insulin is normally cloudy (such as NPH insulin), gently roll to mix it.



Make sure the insulin looks as it should.



If your insulin has been refrigerated, let it reach room temperature for about 30-60 minutes before injecting. Cold insulin can be uncomfortable to inject.



Check the expiry date.



Do not shake vigorously.

Blood glucose monitoring[7]

Why is blood glucose monitoring important?

Blood glucose monitoring (BGM) is an important part of diabetes management. It helps you understand how your blood glucose levels respond to food, physical activity, medicines, and other factors. Regular monitoring can help identify high or low blood glucose levels early, allowing you and your healthcare team to take appropriate action and reduce the risk of complications.

How do you monitor blood glucose levels:

There are different ways of monitoring blood glucose levels. This will depend on your treatment, needs, and your healthcare professional's advice. These include-

Self-monitoring of blood glucose (SMBG):

A small drop of blood from your fingertip, is tested on a strip on a blood glucose meter. It provides a glucose reading at that particular time.





Venous blood glucose testing:

A blood sample is collected from a vein, usually at a laboratory or healthcare facility. This may be used for diagnosis and for assessing blood glucose levels periodically as recommended by your healthcare professional.

Continuous glucose monitoring (CGM):

A small sensor worn on the skin has a tiny flexible filament that goes just under the skin and measures glucose levels. It gives regular readings throughout the day and night and helps you see how your glucose levels change over time.



Your healthcare professional can help you decide which method is most appropriate for you and how often you should monitor your blood glucose.

Hypoglycemia[8]

What is hypoglycemia?

Hypoglycemia, means your blood glucose levels are low, and are below 70 mg/dL. It is can happen when you have taken too much insulin, eaten less or exercised more than usual.



Signs of hypoglycemia


Sweating


Hunger


Blurry Vision


Headache


Irritability


Shakiness


Dizziness


Fast Heartbeat


Weakness
Fatigue


Anxiety

Management of hypoglycemia[8]

It is advisable to check your blood glucose level using a glucometer if you experience any symptoms of low blood glucose, to confirm it and treat it promptly. If your blood glucose level is below 70 mg/dL, treat it immediately with 15 g of fast-acting carbohydrate.

- 15 grams of fast-acting carbohydrate = 3 teaspoon glucose powder or table sugar/3 teaspoon honey/~150ml fruit juice to raise the blood glucose levels. (For fruit juice: Please check the label for the carbohydrate content and take an amount of juice that provides 15 g of carbohydrates.)
- Check the blood glucose after 15 minutes.
- If the blood glucose is below 70 mg/dl, consume 15 g of fast-carbohydrates again.
- Repeat these steps until the blood glucose levels are >70 mg/dl.
  For young children, lesser amount of fast-acting carbohydrates may be needed.
- Kindly check with your doctor.
- Once the blood glucose is back to normal (>70 mg/dl), eat a meal or a snack to ensure it does not go low again.

Examples (any one)

1 portion fruit (tennis ball size) with handful of nuts.

1 roti/1 slice bread with unsweetened peanut butter/egg/paneer

If the person is unconscious or unable to swallow, do not give food or drink by mouth. Give glucagon injection, if available, and seek emergency medical help immediately.

Important

Avoid treating low blood glucose with chocolate, sweets, or mithai, as their high fat content can slow down the absorption of glucose and delay the rise in blood glucose.

Sick day management[9,10]

During a fever, infection, or any illness, your blood glucose levels may rise because your body releases stress hormones in response to the illness, at the same time, illness can also cause low blood glucose if you are eating less or experiencing vomiting, or diarrhoea.

Here are few key points to remember during sick days

Check your blood glucoses levels frequently (at least 3-4 hourly, more frequently if needed)

Do not stop insulin or your medications on your own. Insulin dose may need to be increased or decreased, based on blood glucose levels and food intake, check with your doctor.

- Try to maintain your usual diet intake. If unable to eat much, carbohydrate containing soft foods like khichdi or fluids can be taken.
- Make sure you are drinking enough fluids and are well hydrated.
- If blood glucose level is high, drink sugar free drinks like water, clear soups, salted lemon water, buttermilk, etc.
- If blood glucose level is low, drink carbohydrate-containing drinks like fruit juice in moderation.

- Check for ketones. Monitoring for ketones is very important to prevent DKA.
- Check for urine or blood ketones every 4 hrs if blood glucose levels are consistently high (>250 mg/dL), and there is vomiting, stomach pain or signs like quick breathing.
- Drink enough of fluids to flush out the ketones and immediately contact your doctor if ketones are positive.



DKA: Diabetic Ketoacidosis

Insulin management during travel[5,11,12]

Insulin is subject to temperature fluctuations while travelling. Hence, appropriate measures need to be taken to maintain efficacy.

Keep insulin cool and away from direct sunlight, especially in hot weather.

Use an insulated/cool pouch or a thermoflask with ice if the ambient temperature is expected to be above 30°C.

Do not place insulin directly on ice or against a frozen pack, as freezing can damage insulin. If using ice, wrap the insulin in a clean bubble wrap or plastic bag and place it inside the thermoflask, ensuring it does not come into direct contact with the ice.



If you are travelling by air, always carry insulin in your cabin/carry-on baggage. Do not put it in checked-in luggage.

Carry enough insulin and supplies for the entire trip, plus some extra.





Living Well with Insulin

Insulin is a supporting tool in diabetes care, not a barrier to living a fulfilling life. Taking insulin as prescribed by the doctor, monitoring your blood glucose regularly, eating a well-balanced diet and staying active can help you manage diabetes effectively and safely.

Each person's treatment is individualised to their health condition so it is important to follow-up with your doctor regularly to review your glucose levels, adjust insulin doses and check your overall health.

Remember

Diabetes may be a part of your life, but it does not define you.
With the right treatment and care from your health care team, family and your own self-care, you can continue to live a normal healthy life.

REFERENCE:

1. Insulin, International Diabetes Federation. Available at: https://idf.org/managing-diabetes/insulin/. Last Modified: 17 Aug 2026. Accessed on 29 Aug 2026.
2. Thota S, Akbar A. Insulin. [Updated 2023 Jul 10]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2026 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK560688/.
3. Insulin Myths and Facts. Clin Diabetes 1 January 2007; 25 (1): 39–40. Insulin Myths and Facts | Clinical Diabetes | American Diabetes Association [cited 2026 Oct 19]
4. Donnor T, Sarkar S. Insulin- Pharmacology, Therapeutic Regimens and Principles of Intensive Insulin Therapy. [Updated 2023 Feb 15]. In: Feingold KR, Adler RA, Ahmed SF, et al., editors. Endotext [Internet]. South Dartmouth (MA): MDText.com, Inc.; 2000-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK278938/. Accessed on 29 Aug 2026
5. Tandon N, Kalra S, Balhara YPS, et al. Forum for Injection Technique and Therapy Expert Recommendations, India: The Indian Recommendations for Best Practice in Insulin Injection Technique, 2017. Indian J Endocrinol Metab. 2017;21(4):600-617. doi:10.4103/ijem.IJEM_97_17.
6. Klonoff DC, Berard L, Franco DR, et al. Advance insulin injection technique and education with FITTER Forward expert recommendations. Mayo Clin Proc. 2025;100(4):682-699.
7. Mathew TK, Zubair M. Blood Glucose Monitoring. [Updated 2026 Apr 12]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2026 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK555976/. Accessed on 2nd Sept 2026.
8. Treatment of Low Blood Sugar (Hypoglycemia), Centre for Disease Control and Prevention. Available at: https://www.cdc.gov/diabetes/treatment/treatment-low-blood-sugar-hypoglycemia.html. Updated May 15, 2024. Accessed on 3rd Sept 2026.
9. Managing Sick Days, Centre for Disease Control & Prevention. Available at: https://www.cdc.gov/diabetes/living-with/managing-sick-days.html. Updated 15 May 2024. Accessed on 31 Aug 2026.
10. Planning for Sick Days, Life with Diabetes, American Diabetes Association. Available at: https://diabetes.org/living-with-diabetes/sick-days. Accessed on 31 Aug 2026.
11. Chowdhury S, Chakraborty PP. Errors of insulin therapy: Real-life experiences from developing world. J Family Med Prim Care. 2017;6(4):724-729. doi:10.4103/jfmpc.jfmpc_418_16.
12. Tips for Traveling With Diabetes | Diabetes | CDC - https://www.cdc.gov/diabetes/about/tips-for-traveling-with-diabetes.html

To know more about diabetes, talk to your doctor and scan the QR code.

Disclaimer:

This patient education material has been prepared by Sanofi (India), as part of its public awareness initiative to promote understanding of diabetes and its management. The information provided is for educational purposes only and is not a substitute for medical advice, diagnosis, or treatment. Always consult your doctor or healthcare professional regarding any medical condition or treatment decision.

The images, illustrations, and graphics in this material are for representational and educational purposes only and does not depict actual patients, healthcare professionals, or clinical situations.

© Sanofi. All rights reserved. This material may not be reproduced, distributed, modified, or used in whole or in part without prior written permission from Sanofi.

MAT-IN-2600969-V1.0-08/2026

sanofi

Sanofi India Limited
Sanofi House, CTS No. 117-B, L&T Business Park,
Saki Vihar Road, Powai, Mumbai - 400072, India.