Type 1 Diabetes: Levemir Switch Case Study

Fictional case for illustrative purposes only

Example patient profile

Age	24 years
Diabetes type	Type 1
HbA1c	59 mmol/mol
Weight	61 kg (50th percentile)
Complications	None
CGM	Libre 2 Plus — 71% TIR, 4% TBR, 25% TAR
Injection sites	No problems detected
Eating pattern	3 meals per day with evening snacks
Other	Insulin pump work-up in progress

Current diabetes medication:

- Levemir 14 units morning + 15 units evening
- Fiasp: ICR 1 unit:8g carbohydrate | ISF 1 unit:2 mmol/l

Clinical review before switching

Remember: this is an opportunity to optimise the patient's full treatment regimen — not just change the insulin.

Factor	Finding	Action
CGM data	71% TIR, 4% TBR, 25% TAR	Maintain TIR >70%, TBR <4% post-switch
Injection sites	No lipohypertrophy detected	Continue current rotation; recheck at follow-up
Device suitability	No dexterity or visual issues	Standard pen appropriate
Pump transition	Work-up in progress	Ensure insulin pens remain on repeat prescription
Retinopathy	No complications noted	Confirm screening up to date
Regimen complexity	Twice-daily basal + bolus	Consider simplification to once-daily basal

Dose calculation

Switching from twice-daily Levemir to once-daily Toujeo (insulin glargine U300)

Total daily Levemir dose: 14 units morning + 15 units evening = **29 units** (u)

Using 90% of total daily dose (clinically appropriate given good TIR and no hypo concerns): 29u × 90% = 26.1u → **agreed starting dose: 26 units Toujeo once daily**

Timing: before bed, to align with previous evening dose and eating pattern.

Why 90% rather than 80%?

The HSE guidance recommends 80-90% of total daily dose when switching from Levemir. A 90% calculation may be appropriate where the clinical picture supports it — in this case, good TIR, no hypoglycaemia concerns and CGM monitoring in place. Clinical judgement should always be applied.[1]

Agreed plan

- **New insulin:** Toujeo 26 units once daily before bed
- **Device:** Toujeo SoloStar pre-filled pen
- **Monitoring:** Continue Libre 2 Plus CGM; self-adjust doses based on glucose readings
- **Titration advice:** Written instructions provided; fasting glucose target agreed
- **Bolus insulin:** Fiasp unchanged — review at follow-up
- **Pump prescription:** Insulin pens maintained on repeat prescription
- **Review:** 1–2 weeks post-switch

Targets

Measure	Target
Time in range (3.9–10.0 mmol/l)	>70%
Time below range (<3.9 mmol/l)	<4%
Time above range (>10.0 mmol/l)	<25%

Targets should be agreed individually based on clinical context and frailty status.[2]

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Toujeo overview

Toujeo is licenced for the treatment of diabetes mellitus in adults, adolescents and children from the age of 6 years.[2]

Safety information
Hypoglycaemia is a very common side effect of Toujeo. Prolonged or severe hypoglycaemia may be life-threatening. Overdose may lead to severe and sometimes long-term and life-threatening hypoglycaemia.

Common side effects include lipohypertrophy and injection site reactions, including redness, pain, itching, hives, swelling, or inflammation.[2]

Special warnings and precautions

- Supervise patients carefully when switching between insulins.
- Patients should be advised to rotate injection sites.
- Dose adjustment may be needed in case of antibodies or intercurrent illness.
- Cardiac failure if insulins are used with pioglitazone.
- Check labels carefully and record names and batch numbers.
- Toujeo is not the insulin of choice for the treatment of diabetic ketoacidosis.
- The prolonged effect of subcutaneous insulin glargine may delay recovery from hypoglycaemia.[2]

Contraindications
Hypersensitivity to the active substance or to any of the excipients listed in section 6.1.[2]

Additional information is available on request and in the Summary of Product Characteristics.

References:
1. HSE National Clinical Guideline for Safe Diabetes Management following Levemir® (Insulin Detemir) Discontinuation, 2026. Available at: https://www2.healthservice.hse.ie/files/652/ [Accessed May 2026]
2. Toujeo Summary of Product Characteristics. Sanofi

Abbreviations: CGM, continuous glucose monitoring; TIM, time-in-range; TBM, time-below-range; TAR, time-above range.

Adverse events should be reported.
Reporting forms and information can be found at: www.hpra.ie;
Email: medsafety@hpra.ie.
Suspected adverse events should also be reported to Sanofi Ireland Ltd.
Tel: 01 403 5600.
Alternatively, send via email to IEPharmacovigilance@sanofi.com .

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Please refer to the full Summary of Product Characteristics before prescribing.

Prescribing Information: Toujeo® (insulin glargine 300 units/ml)
Please refer to Summary of Product Characteristics (SmPC) before prescribing.

Presentation: Toujeo SoloStar and DoubleStar pre-filled pens. Each ml contains 300 units of insulin glargine. SoloStar pen contains 1.5ml (450 units) of solution for injection. DoubleStar pen contains 3ml (900 units) of solution for injection.
Indication: Treatment of diabetes mellitus in adults, adolescents and children from the age of 6 years**.**
Dosage and Administration: Toujeo is administered subcutaneously, by injection into the abdominal wall, the deltoid or the thigh, once daily, at any time of the day, preferably at the same time every day. Injection sites must be rotated within a given injection area from one injection to the next in order to reduce the risk of lipodystrophy and cutaneous amyloidosis. The dose regimen (dose and timing) should be adjusted according to individual response. Do not administer intravenously. In type 1 diabetes mellitus, Toujeo must be combined with short-/rapid-acting insulin to cover mealtime insulin requirements. In patients with type 2 diabetes mellitus, recommended daily starting dose is 0.2 units/kg followed by individual dose adjustments. Toujeo can also be given together with other anti-hyperglycaemic medicinal products. *Switch between insulin glargine 100 units/ml and Toujeo:* Insulin glargine 100 units/ml and Toujeo are not bioequivalent and are not directly interchangeable. When switching from insulin glargine 100 units/ml to Toujeo, this can be done on a unit-to-unit basis, but a higher Toujeo dose (approximately 10-18%) may be needed to achieve target ranges for plasma glucose levels. When switching from Toujeo to insulin glargine 100 units/ml, the dose should be reduced (approximately by 20%). *Switching from other basal insulins to Toujeo:* A change of dose and/or timing of the basal insulin and concomitant anti-hyperglycaemic treatment may be required. Dose adjustments may also be required if the patient's weight or lifestyle changes, the timing of insulin dose is changed, or other circumstances arise that increase susceptibility to hypo- or hyperglycaemia. Toujeo must not be mixed or diluted with any other insulin or other medicinal products. Close metabolic monitoring is recommended during a switch and in the initial weeks thereafter. SoloStar 1-80 units per single injection in steps of 1 unit and DoubleStar 2-160 units in steps of 2 units. When changing from Toujeo SoloStar to Toujeo DoubleStar, if the patient's previous dose was an odd number, then the dose must be increased or decreased by 1 unit. Toujeo DoubleStar prefilled pen is recommended for patients requiring at least 20 units per day.
Special Populations: Insulin requirements may be diminished in the elderly or patients with renal or hepatic impairment. *Paediatric:* When switching basal insulin to Toujeo, dose reduction of basal and bolus insulin needs to be considered on an individual basis, in order to minimise the risk of hypoglycaemia. The safety and efficacy of Toujeo in children and adolescents below 6 years of age have not been established.
Contraindications: Hypersensitivity to insulin glargine or any excipients.
Precautions and Warnings: *Traceability:* In order to improve the traceability of biological medicinal products, the name and the batch number of the administered product should be clearly recorded. Toujeo is not the insulin of choice for treatment of diabetic ketoacidosis. Patients must be instructed to perform continuous rotation of the injection site to reduce the risk of developing lipodystrophy and cutaneous amyloidosis. There is a potential risk of delayed insulin absorption and worsened glycaemic control following insulin injections at sites with these reactions. A sudden change in the injection site to an unaffected area has been reported to result in hypoglycaemia. Blood glucose monitoring is recommended after the change in the injection site, and dose adjustment of antidiabetic medications may be considered. *Hypoglycaemia:* In case of insufficient glucose control or a tendency to hyper/hypoglycaemic episodes, the patient's adherence to the prescribed treatment regimen, injection sites and proper injection technique and all other relevant factors must be reviewed before dose adjustment is considered. Particular caution should be exercised, and intensified blood glucose monitoring is advisable for patients in whom hypoglycaemic episodes might be of clinical relevance and in those where dose adjustments may be required. Warning signs of hypoglycaemia may be changed, less pronounced or absent in certain risk groups, potentially resulting in severe hypoglycaemia and loss of consciousness. Risk groups include patients in whom glycaemic control is markedly improved, hypoglycaemia develops gradually, an autonomic neuropathy is present, or who are elderly. The prolonged effect of subcutaneous insulin glargine may delay recovery from hypoglycaemia. *Intercurrent illness:* Requires intensified metabolic monitoring and often it is necessary to adjust the insulin dose. *Insulin antibodies:* administration may cause insulin antibodies to form. *Use with pioglitazone:* Cases of cardiac failure have been reported when pioglitazone was used in combination with insulin, especially in patients with risk factors for development of cardiac heart failure. If the combination is used, patients should be observed for signs and symptoms of heart failure, weight gain and oedema. Pioglitazone should be discontinued if any deterioration in cardiac symptoms occurs. *Medication errors:* Insulin labels must always be checked before each injection to avoid errors between Toujeo and other insulins. Patients must be instructed to never use a syringe to remove Toujeo from the SoloStar or DoubleStar pre-filled pen, A new sterile needle must be attached before each injection. Needles must not be re-used. *Pregnancy and lactation:* There are no data from exposed pregnancies in controlled clinical trials. However, there is a large amount of data on use of insulin glargine 100 units/ml in pregnant women indicating no specific adverse effects on pregnancy and no specific malformative nor feto/neonatal toxicity. The use of Toujeo may be considered during pregnancy, if clinically needed. Careful monitoring of glucose control is essential. It is unknown if insulin glargine is excreted in breast milk. ***Interactions:*** Substances that affect glucose metabolism may require adjustment of insulin glargine.
Adverse Reactions: *Very common:* Hypoglycaemia. Prolonged or severe hypoglycaemia may be life-threatening. *Common:* Lipohypertrophy, injection site reactions, including redness, pain, itching, hives, swelling, or inflammation. *Prescribers should consult the SmPC in relation to other adverse reactions.*
Legal Category: POM.
Marketing Authorisation Number: SoloStar 5 pen pack: EU/1/00/133/035; DoubleStar 5 pen pack: EU/1/00/133/038.
Marketing Authorisation Holder: Sanofi Aventis Deutschland GmbH, D-65926 Frankfurt am Main, Germany.
Further information is available from: Medical Information, Sanofi, 18 Riverwalk, Citywest Business Campus, Dublin 24 or contact IEmedinfo@sanofi.com.
Date of preparation: June 2026.

Adverse events should be reported. Reporting forms and information can be found at www.hpra.ie; email: medsafety@hpra.ie
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