

The Right Beat for Reassuring Diabetes Control



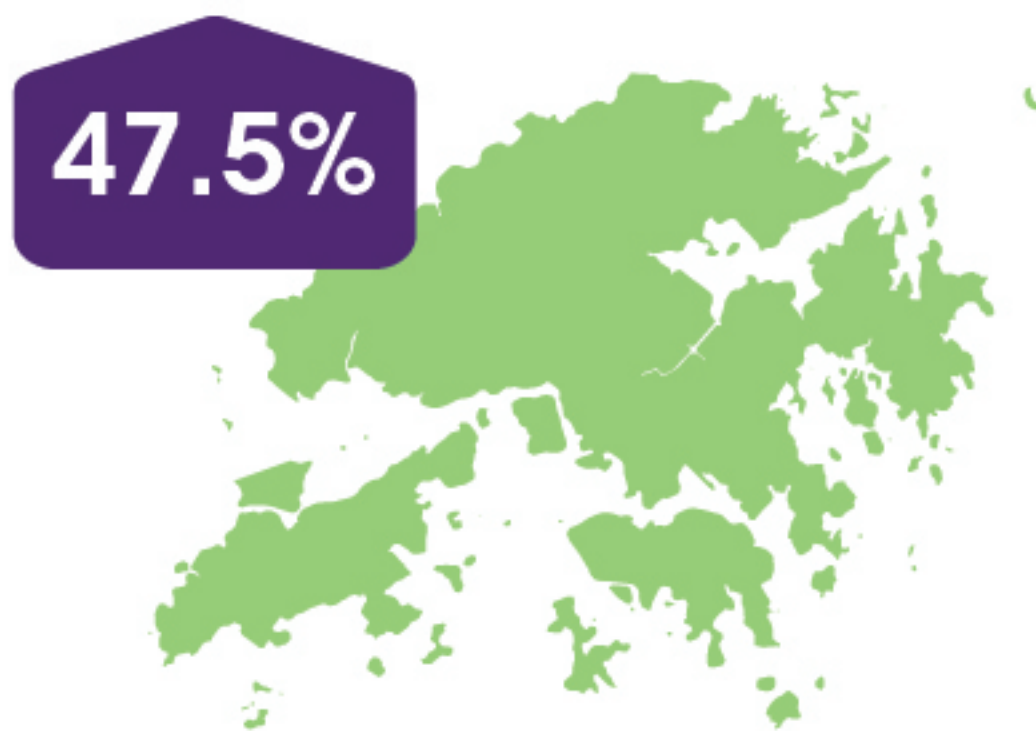
After a long journey on oral drugs, your patients
need a right start to build confidence in the long run

Give your patients power to control diabetes with
reassuring confidence

All day and all night with Toujeo[®]

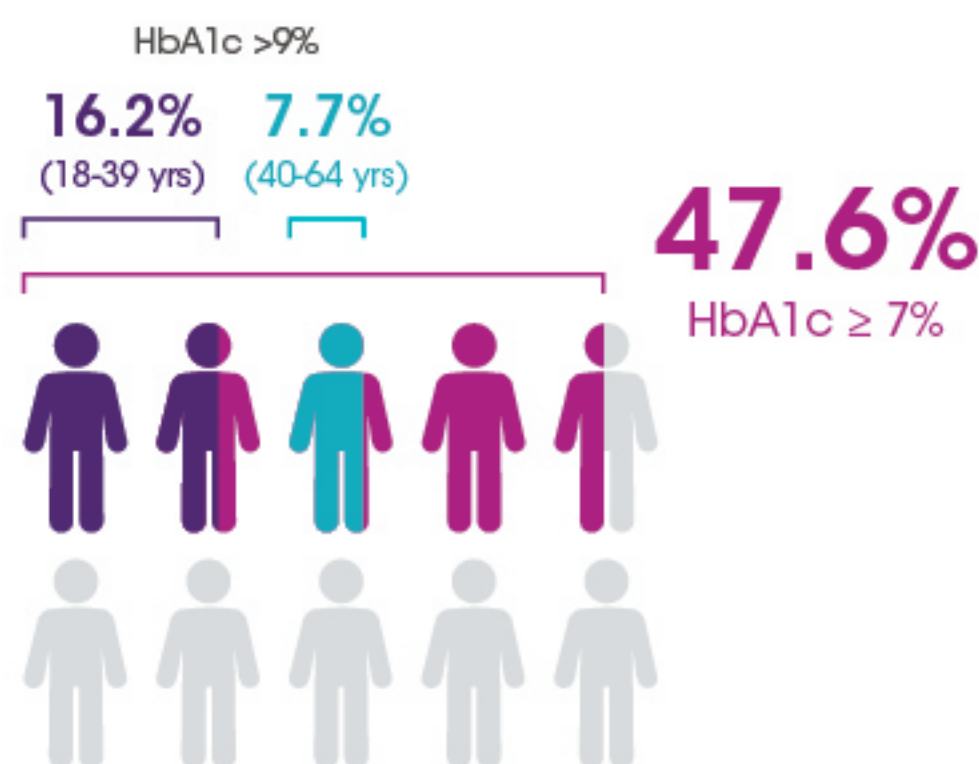
Diabetes and insulin use in Hong Kong

The number of DM patients in HA sector increases annually¹



- **490,400** patients in HA sector, with **47.5%** increase since 2011/12
- **>50%** of patients were aged **≥65 years**

Many patients are not achieving glycaemic targets¹



- **~1 in 2** patients cannot meet the HbA1c target of **<7%**
- **16.2%** of young patients aged 18-39 years and **7.7%** aged 40-64 years had HbA1c >9%
- **~1 in 8** DM patients were prescribed with insulin in 2019/2020

Insulin has the highest efficacy in reducing blood glucose level



Endorsed by

- ✓ ADA Guideline²
- ✓ HK Reference Framework for Diabetes Care for Adults 2018
Insulin therapy should be added if glycaemic target is not attained with combination of oral blood glucose lowering drug³



Benefits of insulin use



~50% of β -cells function has deteriorated at time of diagnosis, hence insulin use can allow β -cells rest and protection^{4,5}



35–76% reduction in rates of development and progression of microvascular complications (retinopathy, neuropathy, and diabetic kidney disease) with better glycaemic control⁶



5-year sustained HbA1c reduction⁷

3 Important factors when selecting a basal analogue



Effective glycaemic control

3.7x less likely to reach glycaemic target within 2 years for patients not meeting the target within 3 months⁸



Low hypoglycaemia risk

6x increase in risk of long-term hypoglycaemia if experienced within 3 months of basal insulin initiation⁸

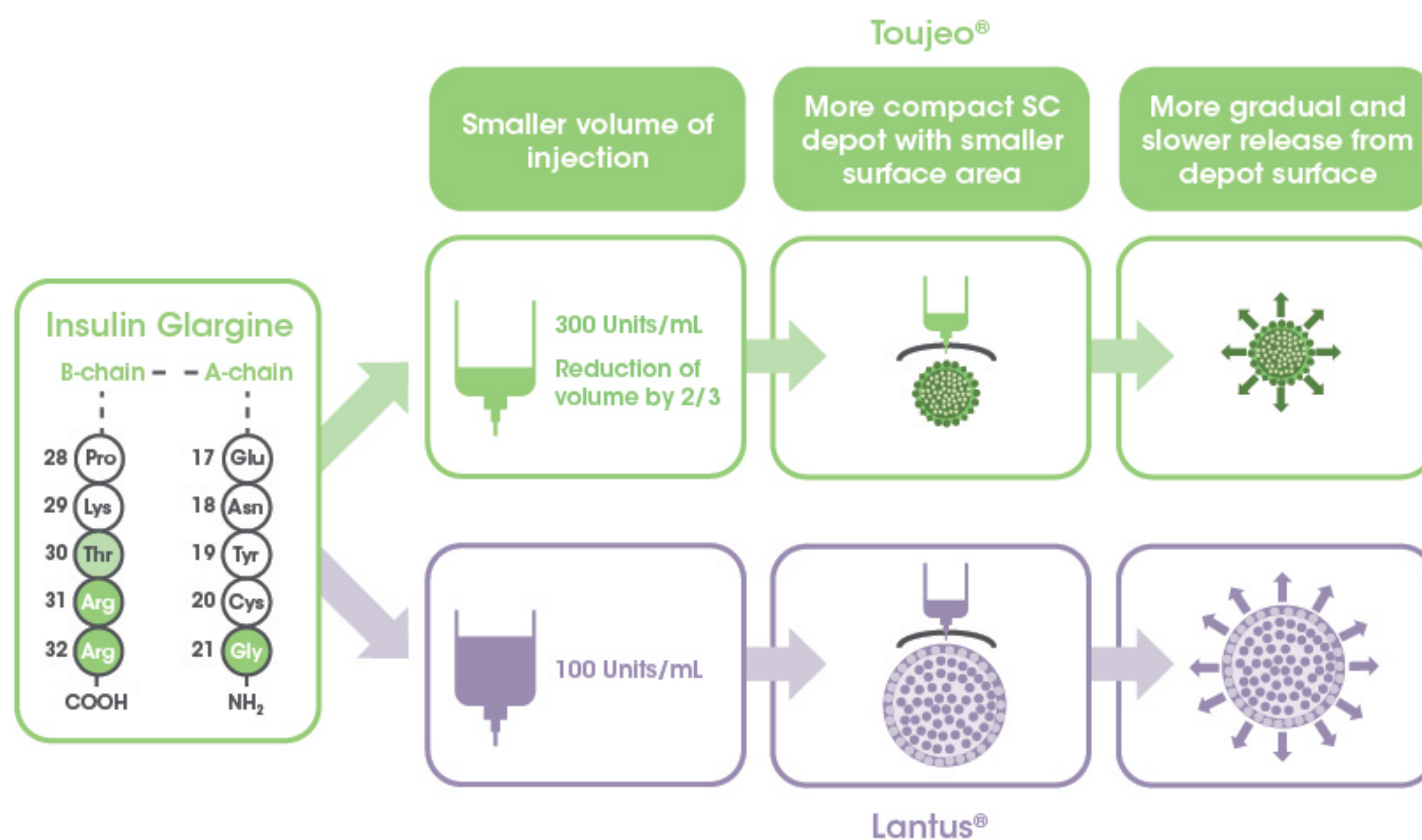


Stable glycaemic profile

36% increase in MACE for patients with high day-to-day fasting glycaemic variability⁹

What is Toujeo®?

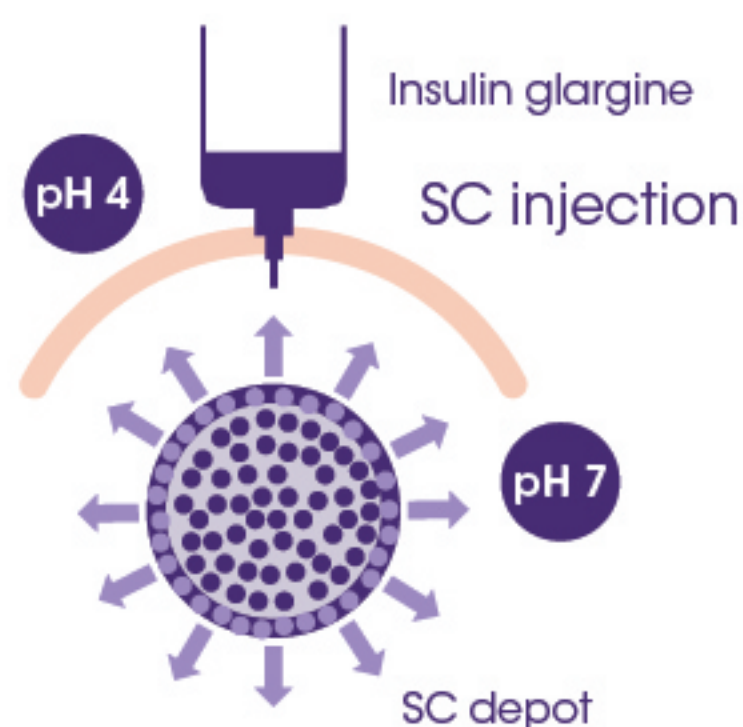
Injecting the same units of Lantus® but at 2/3 less volume



Adapted from Cheng AYY, et al. (2019)

Toujeo® delivers the same dosage of insulin as Lantus®, but in one-third of the volume. This results in reduced surface area of injection depot, ultimately resulting in a slower and more gradual release of monomers of Toujeo® as compared with Lantus®¹⁰.

Glargine adopts a pH-dependent precipitation¹¹⁻¹³



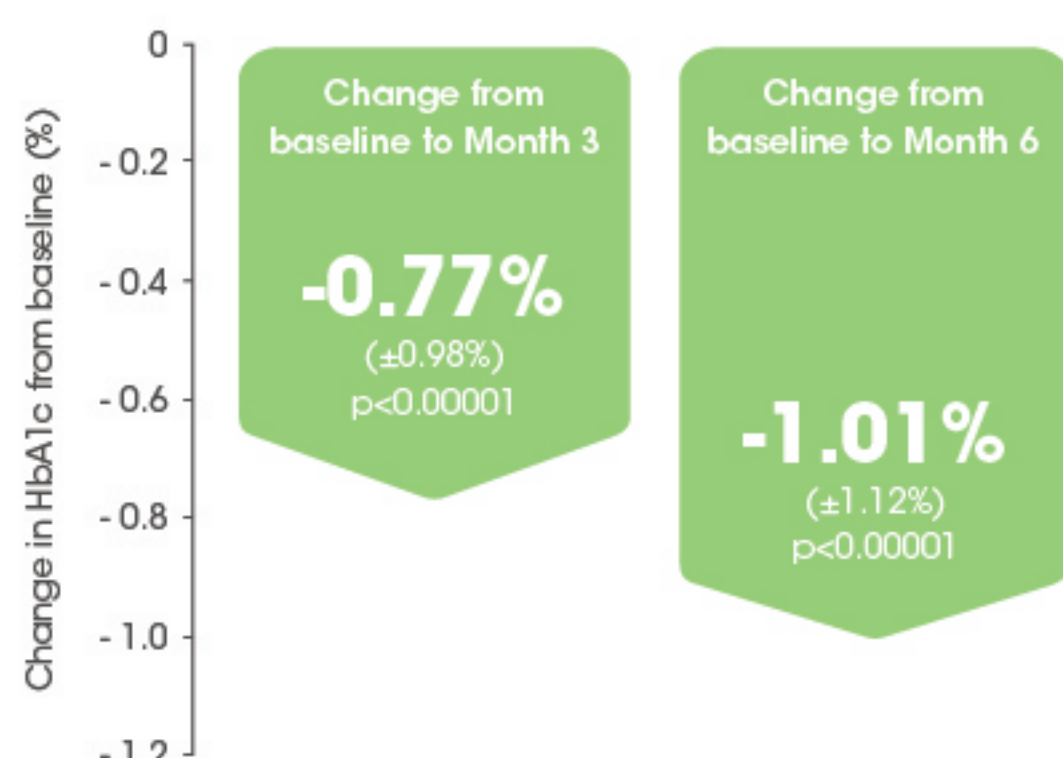
For illustrative purposes only

- Following SC injection, insulin glargine precipitates amorphously creating an SC depot at physiological pH
- Enzymatic maturation forms the active metabolite, 21A-Gly-human insulin, that is released slowly from the depot to the circulation

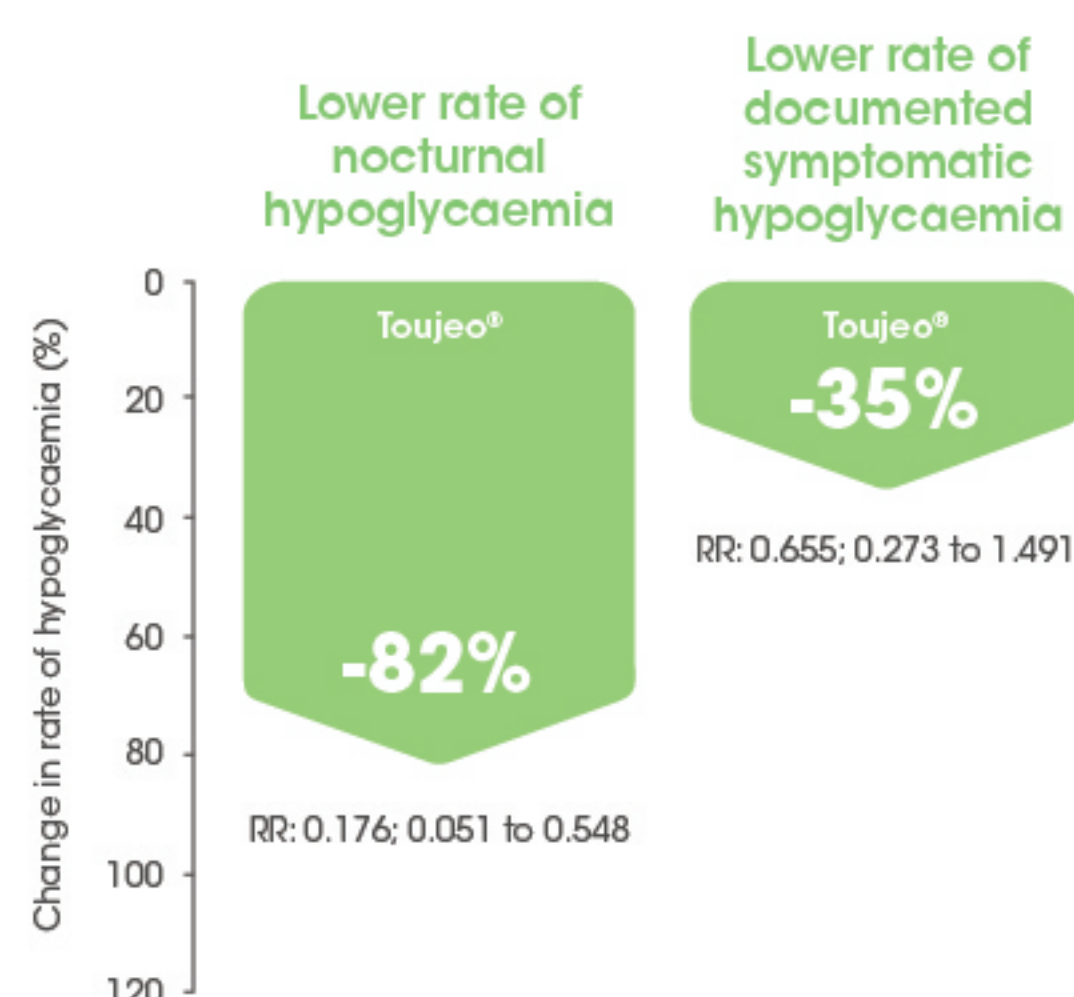
Apart from randomised controlled trials, there is abundant evidence from meta-analysis and real-world data supporting the better performance of Toujeo® over NPH.



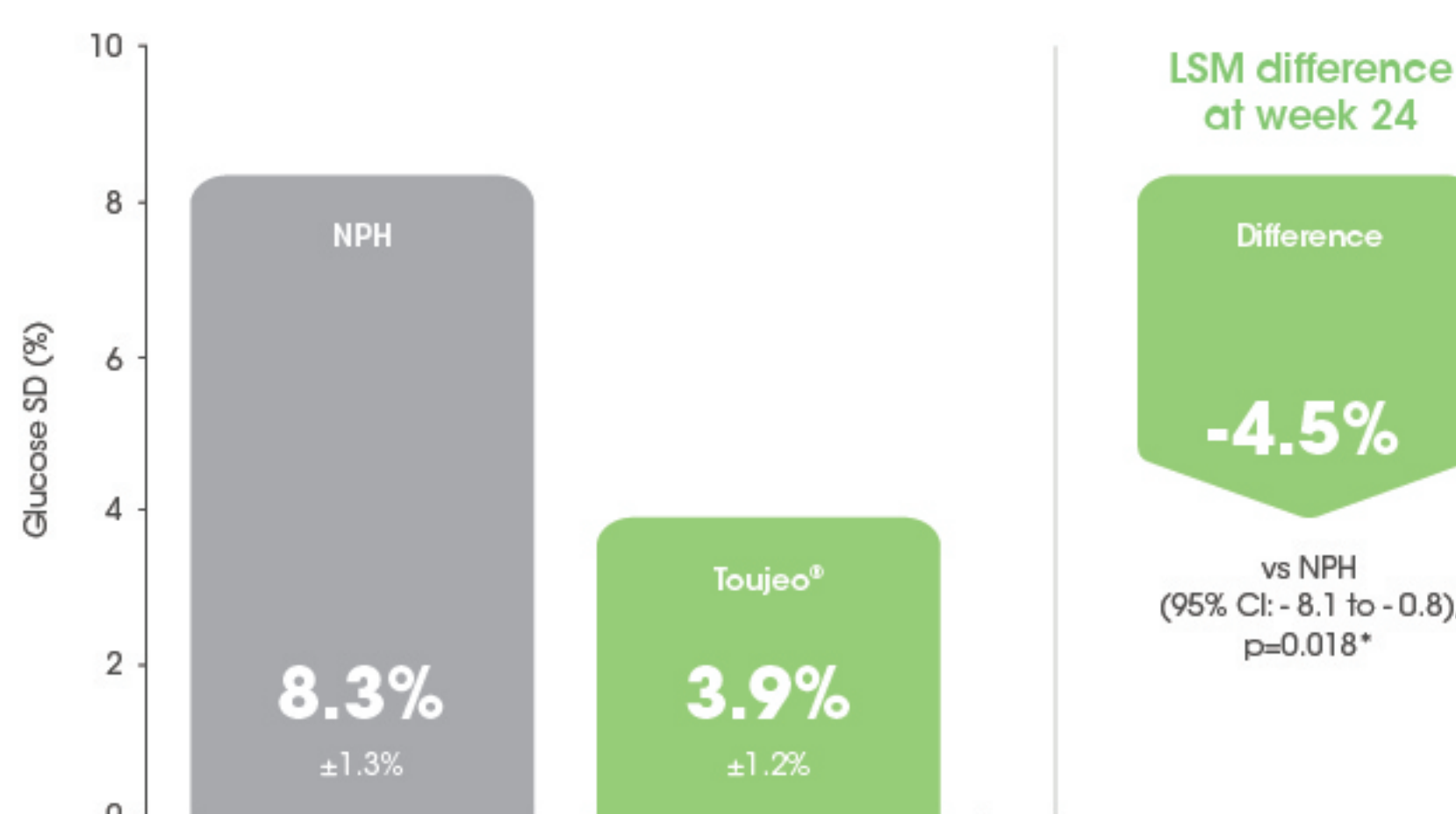
Greater HbA1c reduction^{14,*}



Significantly lower nocturnal and documented symptomatic hypoglycaemia^{15,†}



Lower change in nocturnal GV^{16,‡}



* The primary objective of this study was to evaluate the effectiveness of Toujeo®, defined as the percentage of participants with an HbA1c reduction of ≥0.5%, 6 months after switching from NPH insulin, in participants with T2DM. Secondary objectives included the safety assessment based on the percentage of patients experiencing ≥1 episodes and the number of hypoglycaemic episodes by category: severe, symptomatic, symptomatic confirmed, diurnal or nocturnal, change in body weight, and insulin dose. A total of 469 participants completed the 6-month observation period.

† The study was to compare the efficacy and safety of a concentrated formulation of insulin glargine (Toujeo®) with other basal insulin therapies in patients with type 2 diabetes mellitus (T2DM). This was a network meta-analysis (NMA) of 41 randomised clinical trials of basal insulin therapy in T2DM identified via a systematic literature review of Cochrane library databases, MEDLINE and MEDLINE In-Process, EMBASE and PsycINFO. The outcome measures are the changes in HbA1c (%) and body weight, and rates of nocturnal and documented symptomatic hypoglycaemia.

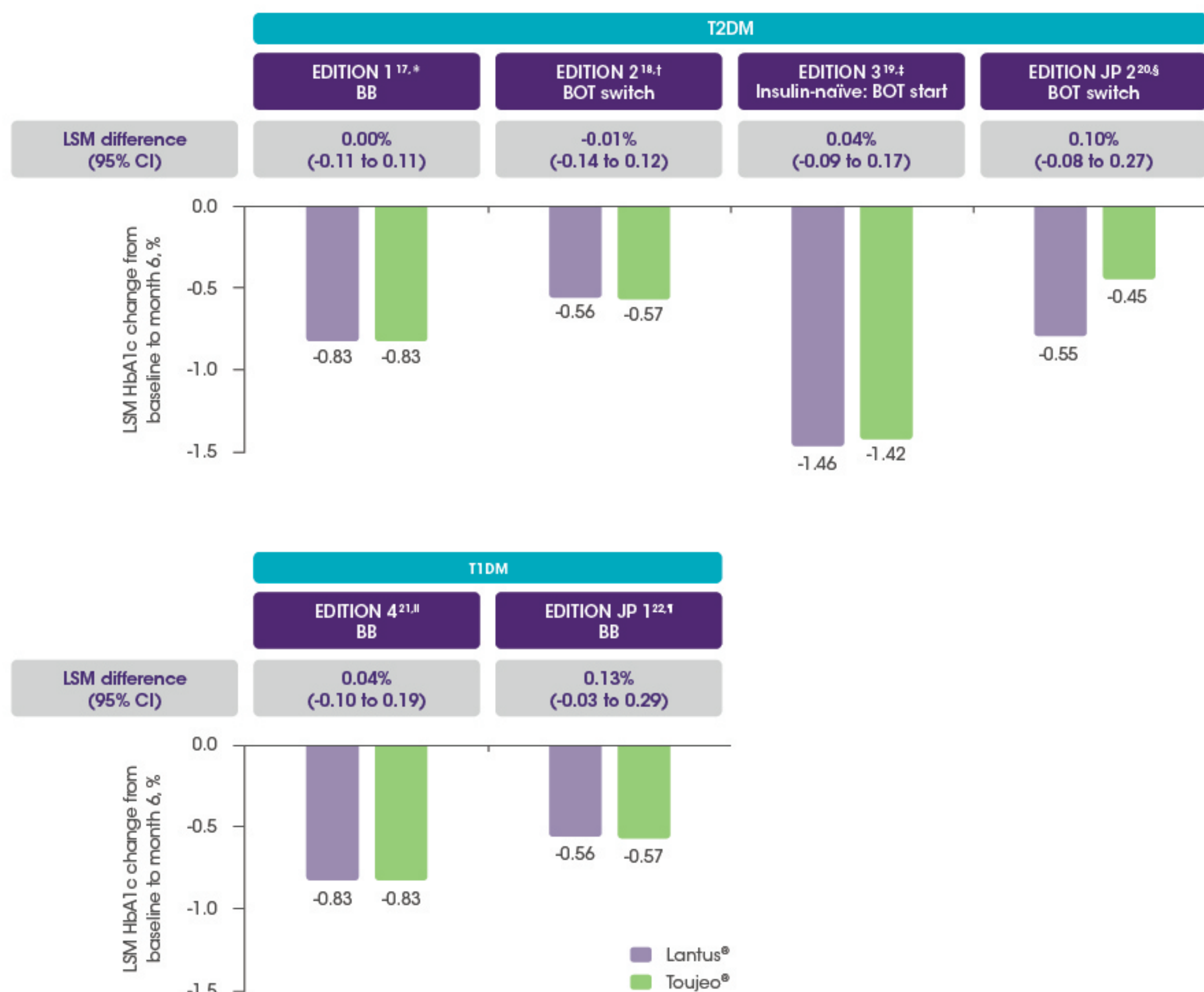
‡ This was a 24-week, open-label exploratory study with 1:1 randomisation comparing patient-adjusted titration of Toujeo® (n=23) versus NPH (n=23) at bedtime in insulin-naïve T2DM patients on maximum oral glucose-lowering drugs. The starting dose was 0.2 U/kg/day and with self-titration of one unit per week to achieve a target fasting glucose of 4.4–6 mmol/L, without hypoglycaemia. Participants had masked CGM at baseline, weeks 11 and 24. The primary outcome was between treatment differences in CGM glucose standard deviation (SD) at week 24.

CGM=continuous glucose monitors. GV=glucose variability. HbA1c=haemoglobin A1c. NPH=neutral protamine hagedorn. RR=risk ratio. T2DM=type 2 diabetes mellitus.

Comparison with Lantus®



Comparable HbA1c reduction



* EDITION 1 was a 6-month, multinational, open-label, parallel group study. Adults with glycosylated haemoglobin A1c 7.0–10.0% (53–86 mmol/mol) were randomised to Toujeo® or Lantus® once daily with dose titration seeking fasting plasma glucose 4.4–5.6 mmol/L. Primary end point was HbA1c change from baseline; main secondary end point was percentage of participants with one or more confirmed (3.9 mmol/L) or severe nocturnal hypoglycaemia from week 9 to month 6.

† EDITION 2 was a multicenter, open-label, two-arm study. Adults receiving basal insulin plus OADs were randomised to Toujeo® or Lantus® once daily for 6 months. The primary end point was change in HbA1c. The main secondary end point was percentage of participants with one or more nocturnal confirmed (3.9 mmol/L) or severe hypoglycaemic events from week 9 to month 6.

‡ EDITION 3 study was a multicentre, open-label, parallel-group study. Participants were randomised to Toujeo® or Lantus® once daily for 6 months, discontinuing sulphonylureas and glinides, with a dose titration aimed at achieving pre-breakfast plasma glucose concentrations of 4.4–5.6 mmol/L. The primary endpoint was change in glycosylated haemoglobin from baseline to month 6. The main secondary endpoint was percentage of participants with ≥1 nocturnal confirmed (3.9 mmol/L) or severe hypoglycaemia from week 9 to month 6. Other measures of glycaemia and hypoglycaemia, weight change and insulin dose were assessed.

§ EDITION JP 2 study was a 6-month, multicentre, open-label, phase 3 study. Participants (n=241, male 61%, mean diabetes duration 14 years, mean weight 67 kg, mean body mass index 25 kg/m², mean glycosylated haemoglobin 8.02 %, mean basal insulin dose 0.24 U/kg/day) were randomised to Toujeo® or Lantus®, while continuing OAD(s). Basal insulin was titrated to target fasting self-monitored plasma glucose 4.4–5.6 mmol/L. The primary efficacy endpoint was HbA1c change over 6 months. Safety endpoints included hypoglycaemia and weight change.

|| EDITION 4 study was a multicenter, randomised, four-arm, parallel-group, phase 3a study involving 549 participants with type 1 diabetes. Using a mealtime and basal insulin regimen, patients were randomised (1:1:1:1) open-label to Toujeo® or Lantus® and to morning or evening injection, continuing the mealtime analogue, and followed up for 6 months. The primary efficacy end point was the overall change in HbA1c from baseline to month 6, regardless of injection time. Secondary end points included percentage to HbA1c <7.0% at month 6, change in pre-injection SMPG, within-participant variability of pre-injection SMPG, FPG 8-point SMPG profile, and daily insulin doses.

† The EDITION JP 1 study was a 6-month, multicentre, open-label, phase 3 study. Participants (n=243) were randomised to Toujeo® or Lantus® while continuing mealtime insulin. Basal insulin was titrated with the aim of achieving a fasting self monitored plasma glucose target of 4.4–7.2 mmol/L. The primary endpoint was change in glycosylated haemoglobin over 6 months. Safety measures included hypoglycaemia and change in body weight.

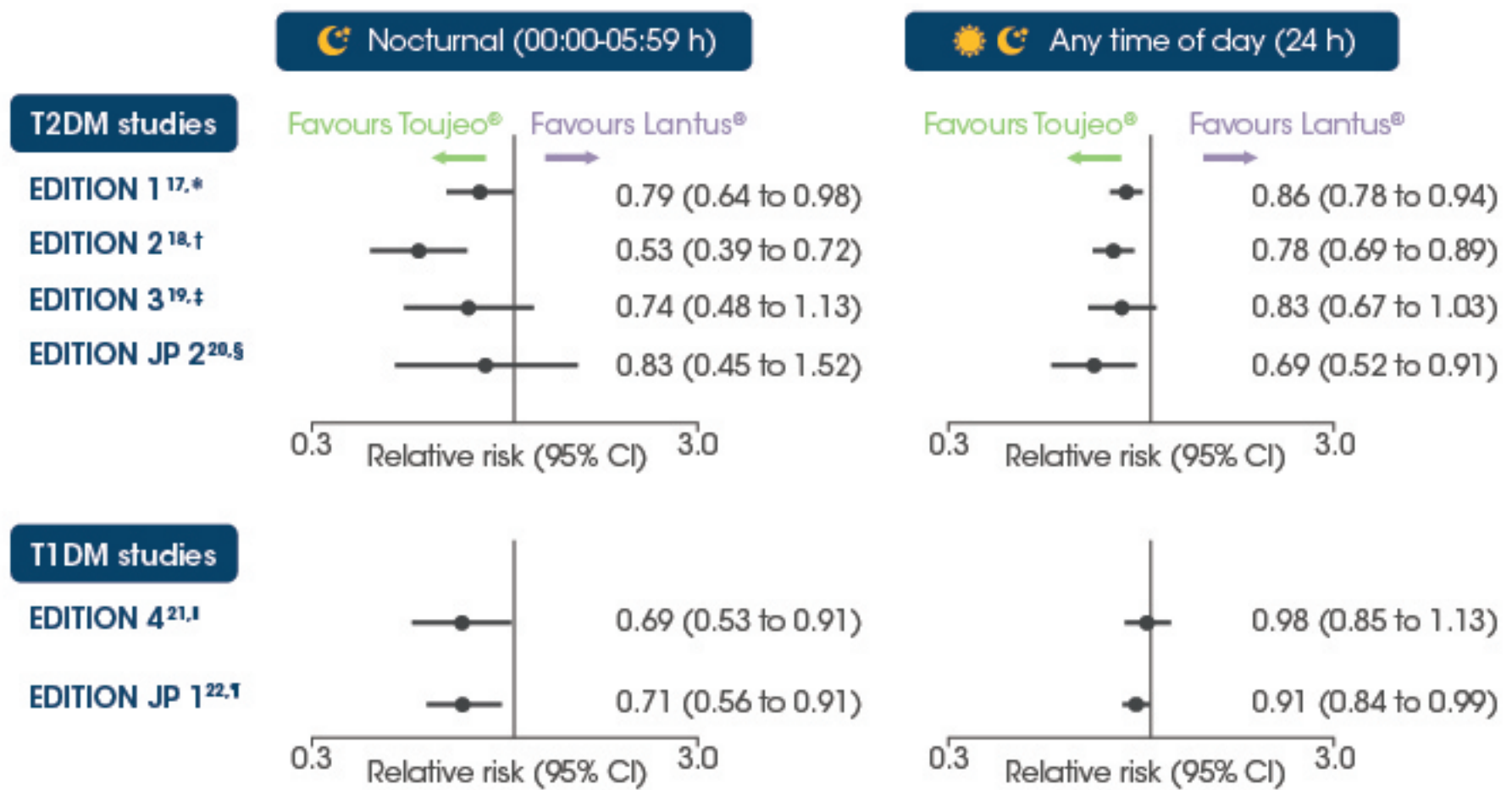
Nocturnal hypoglycaemia can cause²³:

- Impaired cognitive function
- Convulsion
- Coma
- Cardiac arrhythmias resulting in sudden death



Lower risk of anytime and nocturnal hypoglycaemia

Confirmed (≤ 3.9 mmol/L) or severe hypoglycaemia vs Lantus® from baseline to week 8

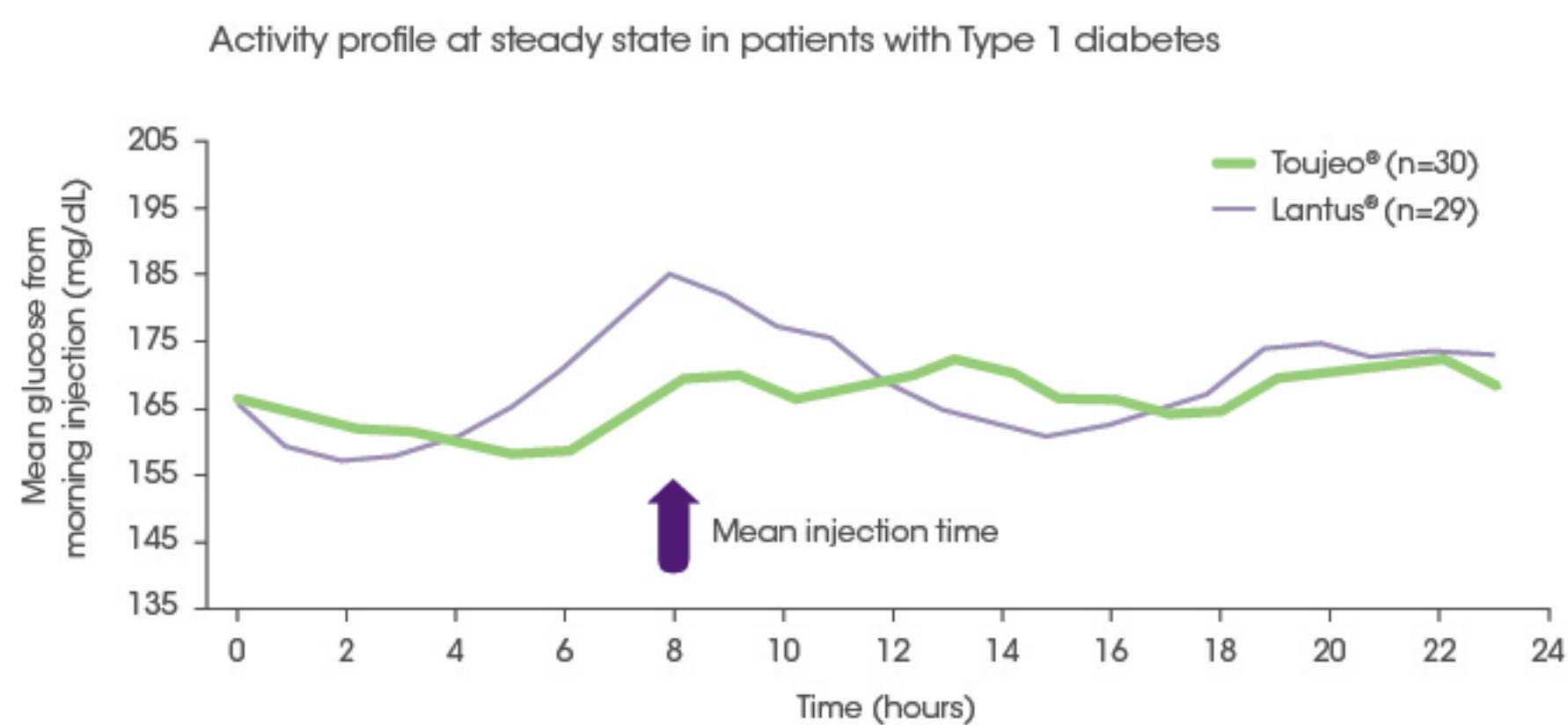


Select a basal analogue with lower risk of hypoglycaemia to avoid complications



CGM data

More stable within-day glucose profile^{24,**}



The mean 24-hour glucose profiles obtained by CGM were smoother with Toujeo® than with Lantus® irrespective of injection time²⁴

** The study was a 16-week, exploratory, open-label, parallel-group, two-period crossover study, 59 adults with type 1 diabetes were randomised (1:1:1:1) to once-daily Toujeo® or Lantus® given in the morning or evening (with crossover in the injection schedule). The primary efficacy end point was the mean percentage of time in the target glucose range (4.4-7.8 mmol/L), as measured using continuous glucose monitoring, during the last 2 weeks of each 8-week period. Additional end points included other CGM glycaemic control parameters, hypoglycaemia (per self monitored plasma glucose), and adverse events.

CGM=continuous glucose monitors. CI=confidence interval. T1DM=type 1 diabetes mellitus. T2DM=type 2 diabetes mellitus.

Comparison with degludec

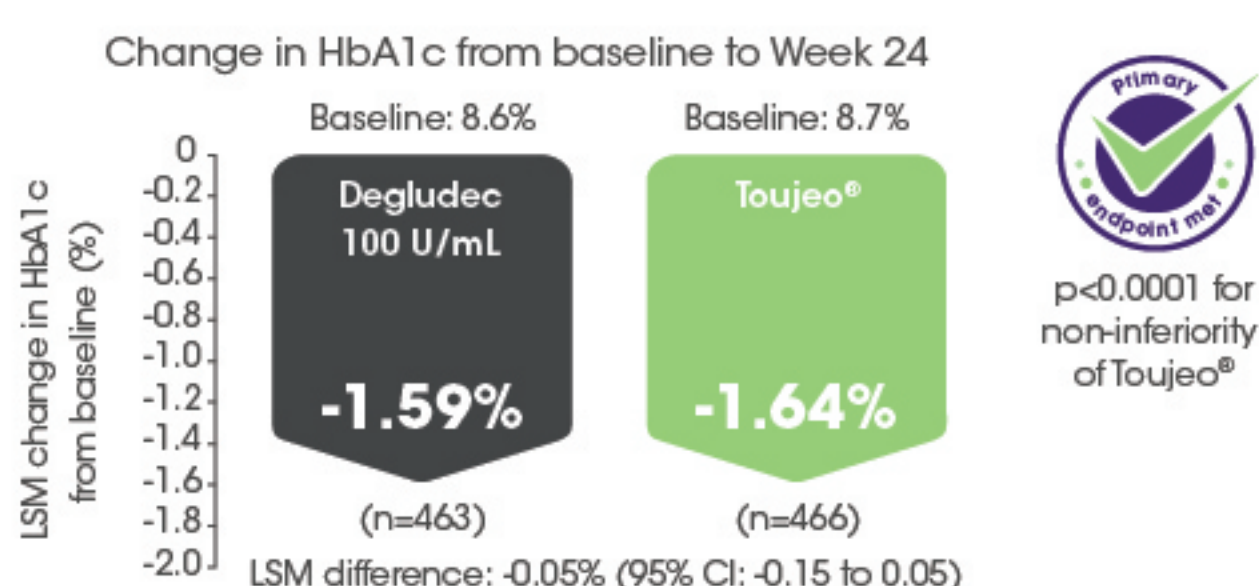
BRIGHT is the head-to-head trial comparing Toujeo® vs degludec 100 U/mL meeting the primary endpoint.



Full 24-week study period



Powerful and comparable HbA1c reduction^{25, *}



Titration period: first 12 weeks of treatment



Lower hypoglycaemia[†] rates during the titration period^{25, *, ‡}

Anytime (24h) confirmed hypoglycaemia (<3.0 mmol/L)

Lower rate[§]

-43%

vs degludec 100 U/mL RR (95% CI): 0.57 (0.34 to 0.97); p=0.038[†]

Reducing the risk of hypoglycaemia, especially during titration period, is crucial for an effective glycaemic control in the long term^{27, 28}. It helps:

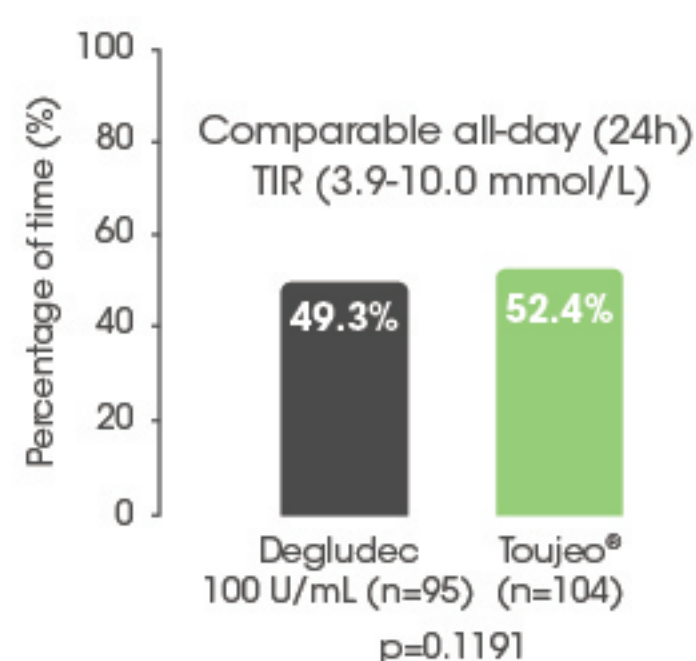
- Eliminate the fear of hypoglycaemia
- Boost confidence to properly titrate and adhere to treatment

oneCare
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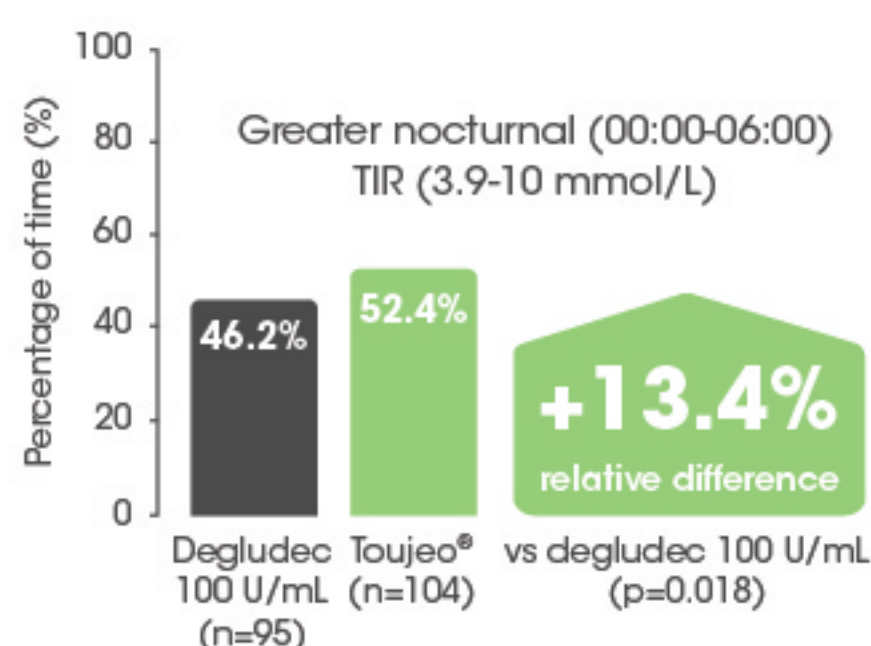
Observed with Toujeo® vs degludec 100 U/mL in a 4-week CGM study period



Comparable all-day time in range^{29, ¶, **}



More nocturnal time in range^{29, ¶, **}



Lower nocturnal glycaemic excursions^{29, ¶, **}

Smoother mean glucose curves at night (00:00-06:00) with Toujeo® vs degludec 100 U/mL (p<0.05)

Lower nocturnal glycaemic excursions

with comparable all-day glycaemic variability

* BRIGHT trial was a multicenter, open-label, active-controlled, two-arm, parallel-group, 24-week, noninferiority study in insulin-naïve patients with uncontrolled type 2 diabetes. Participants were randomised 1:1 to evening dosing with Toujeo® (n=466) or IDeg-100 (n=463), titrated to fasting self-monitored plasma glucose of 4.4-5.6 mmol/L. The primary end point was HbA1c change from baseline to week 24. Safety end points included incidence and event rates of hypoglycaemia. Overall, 202 (43.7%) and 221 (47.8%) of participants in the Toujeo® and degludec 100 U/mL treatment groups, respectively, reported adverse events during the 24-week study period. No specific safety concerns were reported.

† Anytime (24 h) confirmed hypoglycaemia (3.9 and <3.0 mmol/L) and nocturnal (00:00-05:59 h) confirmed hypoglycaemia (3.9 mmol/L).

‡ Comparable incidence and rates of hypoglycaemia in the maintenance period (13-24 weeks) and full 24-week study period, were demonstrated.

§ Events per patient year: Toujeo®, 0.49; degludec 100 U/mL, 0.86.

¶ Nominal p-value.

¶ OneCARE study is an observational, multicenter, cross-sectional study included 199 patients with T1DM (≥3 years diabetes duration, HbA1c ≥ 7.5%) who had switched from first-generation BI to Glia-300/IDeg-100 within the past 24 months according to physician discretion. Clinical and laboratory data were obtained from clinical records and during study visit, and CGM data were collected prior to the visit. The primary endpoint was the percentage of time within the predefined CGM glucose range TIR of 3.9-10.0 mmol/L [complete day, night (24:00-05:59) or day (06:00-23:59) period] during 14 consecutive days within a 4-week period with CGM data obtained from the Free-Style Libre®.

** Time-in-range was defined as the percentage of time with target blood glucose level from 3.9 to 10 mmol/L.



High-risk patients are at greater risk of hypoglycaemia

CKD patients:

2X risk of hypoglycaemia³⁰

Elderly patients:

78.2% of diabetic patients attended AED due to hypoglycaemia were the elderly³¹

An insulin treatment that decreases HbA1c without increasing the risk of hypoglycaemia is clinically important

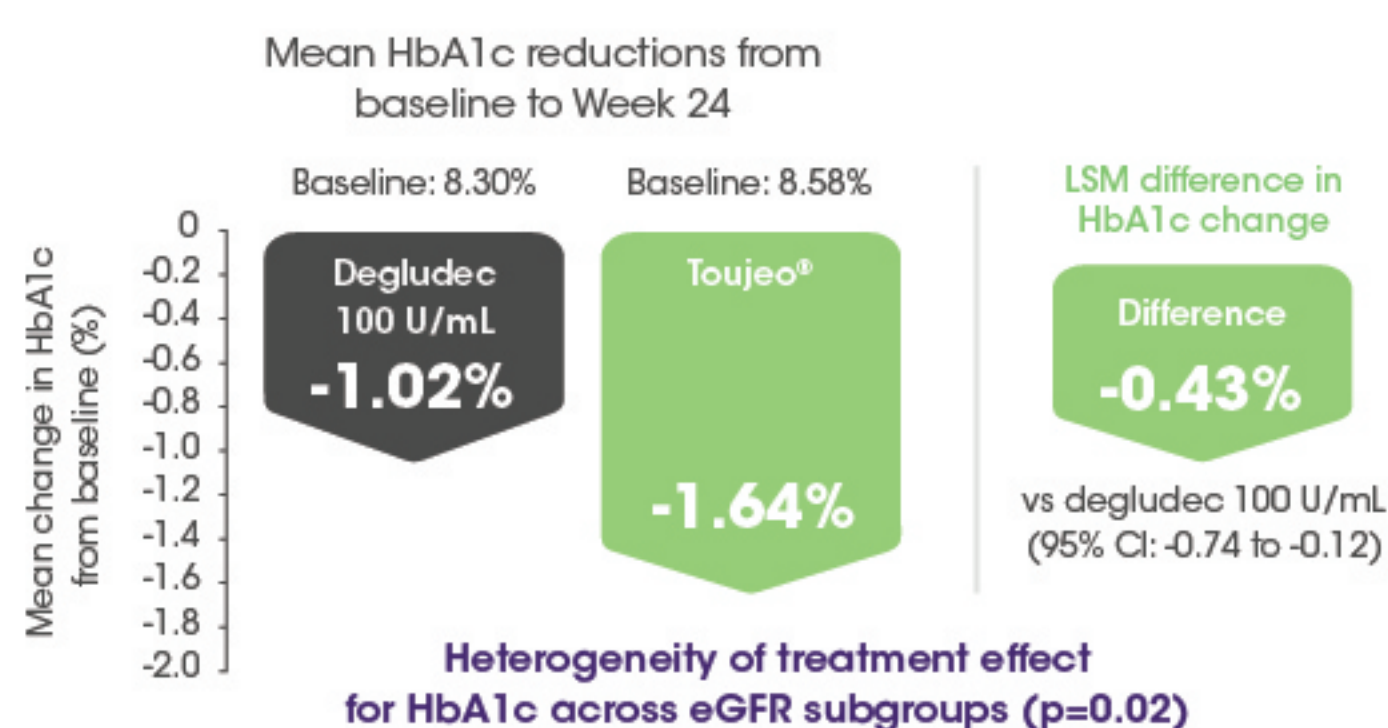
Greater HbA1c reduction with comparable hypoglycaemic risk in high-risk patients



CKD patients (eGFR < 60 mL/min/1.73m²)^{32,*}



61% greater HbA1c reduction



Comparable anytime confirmed hypoglycaemia rate

Anytime (24 h) confirmed hypoglycaemia rate (3.9 mmol/L)

Events per participant-year



RR (95% CI): 0.93 (0.56 to 1.54)

* BRIGHT trial was a multicentre, open-label, randomised, active-controlled, two-arm, parallel-group, 24-week study in insulin-naïve uncontrolled type 2 diabetes (T2D). Participants were randomised 1:1 to evening Toujeo® (n=466) or IDeg-100 (n=463) and stratified based on baseline estimated glomerular filtration rate (eGFR) for this analysis.

AED=accident and emergency department. CI=confidence interval. CKD=chronic kidney disease. eGFR=estimated glomerular filtration rate. HbA1c=haemoglobin A1c. LSM=least-squares mean. RR=rate ratio.

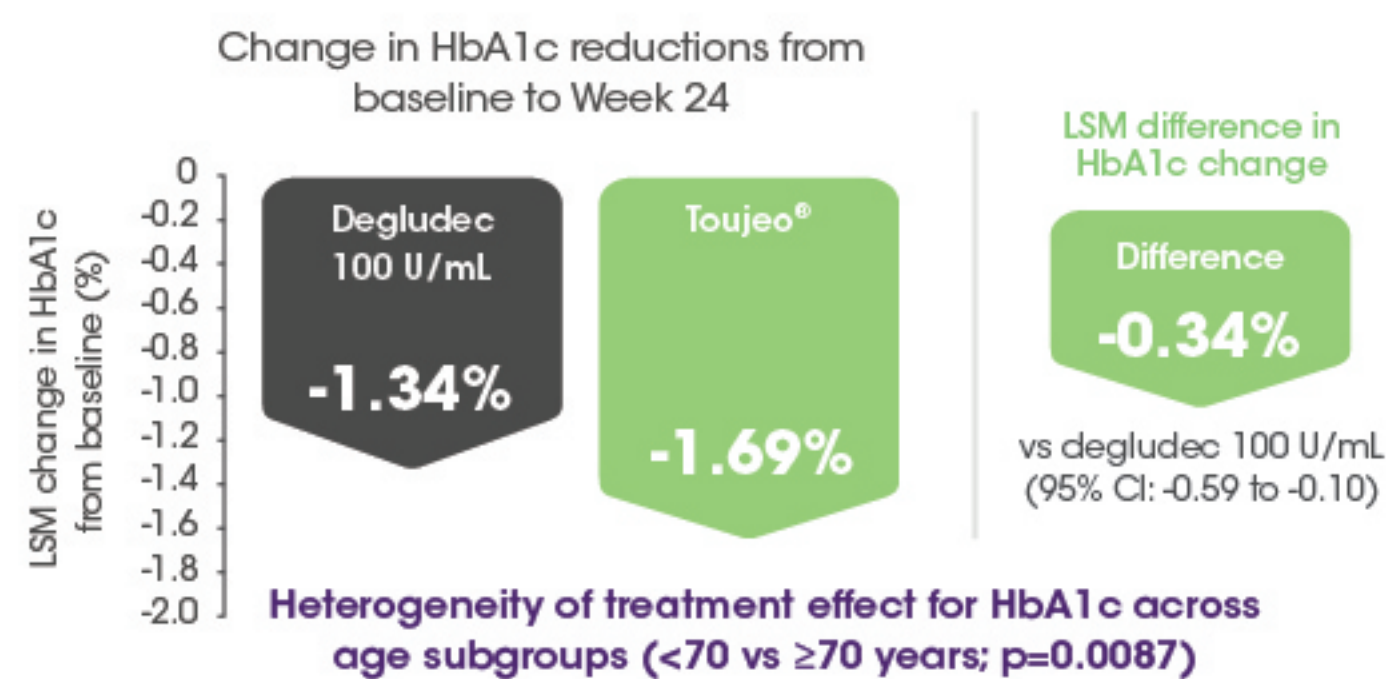
Comparison with degludec in elderly patients



Elderly patients (Aged ≥ 70 years)^{33, *}



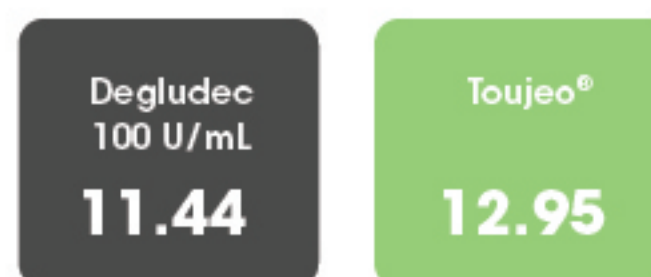
26% greater HbA1c reduction



Comparable anytime confirmed hypoglycaemia rate

Anytime (24 h) confirmed hypoglycaemia rate (3.9 mmol/L)

Events per participant-year



RR (95% CI): 1.14 (0.75 to 1.74)



* BRIGHT was the first head-to-head randomised trial comparing Toujeo® and IDeg in insulin-naïve adults with T2DM. In this subanalysis, endpoints were studied by predefined (<70 years, $n=596/333$) and post hoc (≥ 70 years, $n=768/161$) age groups.

CI=confidence interval, HbA1c=haemoglobin A1c, LSM=least squares mean, RR=rate ratio, T2DM=type 2 diabetes mellitus.

Toujeo® has a flexible time of injection, once daily in morning or evening¹¹



✓ 6-hour injection window



✓ Sustained glycaemic control with long duration of action

Flexibility to upgrade¹¹



Insulin-naïve patients
Start: 0.2 U/kg
Dose calculated based on weight

Weight range*
50 -75 kg



Dose range
10 -15 U/day



Patients on OD basal insulin
1:1 conversion
No dose recalculation required



Patients on BID basal insulin
80% of total previous daily insulin dose

Flexibility to support various titration algorithms[‡]

Once weekly¹⁶ (Hong Kong study)



- Self-titrated weekly based on average of 3 fasting SMBG readings per week, aiming for 4.4 – 6.0 mmol/L
- Dose increased by 1U per week if greater than defined target

Every 3 days² (American Diabetes Association)



- Increase 2U every 3 days to reach FPG target of ≥ 4.4 – ≤ 5.6 mmol/L

Every 3 to 4 days^{17,18,†}



- Titrated no more than every 3 to 4 days
- Dose increased by 6U every 7 days (based on previous 3 measurements) if the median SMBG is >7.8 mmol/L, and by 3U if >5.6 and <7.8 mmol/L

Once daily³⁴



- Self-titrated by 1U per day, aiming for fasting SMBG 4.4 to 5.6 mmol/L
- Dose increased by 1U per day if fasting SMBG >5.6 mmol/L

* Weight change shown is illustrative only and dose calculation is not limited to this range.

[†] Titration algorithm for people with type 2 diabetes is based on EDITION studies 1, 2 and 3. Insulin dose is to be increased by 6 units every 7 days and not more than every 3-4 days (based on the preceding 3 measurements) if the median SMPG is ≥ 7.8 mmol/L, and by 3 units if >5.6 and <7.8 mmol/L, decreased by -3 units or at investigator's discretion if <3.3 mmol/L or occurrence of ≥ 2 symptomatic or 1 severe hypoglycaemia episode(s) in the preceding week. Median fasting SMPG from the last 3 days. Toujeo® was always given in the evening.

[‡] For illustrative purpose only; based on the titration algorithm used in EDITION 1, 2 and 3 clinical studies. If hypoglycaemia occurs, dose reduction at physician's discretion.

BID=twice daily, FPG=fasting plasma glucose, OD=once daily, SMBG=self-monitoring of blood glucose.

Toujeo® offers optimal diabetic management to your patients

Key benefits of Toujeo®



Powerful HbA1c reduction^{17-22,25,32,33,*}



Lower incidence of hypoglycaemia^{15-22,25,32,33,†}

vs Lantus®¹⁷

Up to
31%

LOWER incidence

vs degludec²⁵

Up to
43%

LOWER rates



Better glucose stability¹¹

vs Lantus®²⁴

50%

LOWER within-day
fluctuation

vs degludec³⁵

20%

LOWER within-day
fluctuation



Elderly



Renal impairments

Cater for individual needs, especially for high risk populations^{32,33}



Up to
36
hours

Once daily with 36-hour duration of action¹¹

*Toujeo® has a significant HbA1c reduction in patients switching from NPH and comparable HbA1c reduction with degludec and Lantus®.

†Toujeo® has lower incidence of hypoglycaemia than Lantus®, detemir, degludec and NPH insulin.

HbA1c=haemoglobin A1c. NPH=neutral protamine hagedorn.

References: 1. Hospital Authority. Quality Assurance Sub-committee of Central Committee on Diabetic Service. Hospital Authority Diabetic Mellitus Care Report 2019/20. 2. American Diabetes Association. Diabetes Care 2021;44 (Supplement 1): S111-S124. 3. Food and Health Bureau. Hong Kong Reference Framework for Diabetes Care for Adults in Primary Care Settings. Available at: https://www.fhb.gov.hk/pho/rfs/english/reference_framework/diabetes_care.html. Accessed: 11 July 2021. 4. Wysham C, Shubrook J. Postgrad Med. 2020;132:676-686. 5. Boughton CK, Munro N, Whyte M. Br J Diabetes. 2017;17:134-144. 6. Nathan DM, et al. N Engl J Med. 1993;329:977-986. 7. The ORIGIN Trial Investigators. N Engl J Med. 2012;367:319-28. 8. Mauricio D, et al. Diabetes Obes Metab. 2017;19:1155-64. 9. Zinman B, et al. Diabetologia. 2018;61:48-57. 10. Cheng AYY, et al. Adv Ther. 2019;36:1018-1030. 11. Toujeo® Hong Kong prescribing information 2020 ver 1. 12. McKeage K et al. Drugs. 2001;61:1599-1624. 13. Kramer W. Exp Clin Endocrinol Diabetes 1999;107:S52-S61. 14. Wolnik B, et al. J Diabetes Res. 2020;2020:8751348. 15. Freemantle N, et al. BMJ Open. 2016;6:e009421. 16. Ling J, et al. Diabetes Ther. 2021;12:1399-1413. 17. Riddle MC, et al. Diabetes Care. 2014;37:2755-2762. 18. Yki-Järvinen H, et al. Diabetes Care. 2014;37:3235-3243. 19. Bolli GB, et al. Diabetes Obes Metab. 2015;17:386-394. 20. Terauchi Y, et al. Diabetes Obes Metab. 2016;18:366-374. 21. Home PD, et al. Diabetes Care. 2015;38:2217-2225. 22. Matsuhisa M, et al. Diabetes Obes Metab. 2016;18:375-383. 23. Allen KV, Frier BM. Endocr Pract. 2003;9:530-43. 24. Bergenstal RM, et al. Diabetes Care. 2017;40:554-560. 25. Rosenstock J, et al. Diabetes Care. 2018;41:2147-2154. 26. Sanofi. Efficacy and Safety of Toujeo® versus insulin degludec in insulin-naïve Patients with Type 2 Diabetes Mellitus Inadequately Controlled with Oral Antihyperglycemic Drug(s) ± GLP-1 Receptor Agonist (BRIGHT). Available at: <https://clinicaltrials.gov/ct2/show/NCT02738151>. Accessed: 06 July 2021. 27. Polonsky WH, Henry RR. Patient Prefer Adherence. 2016;10:1299-1307. 28. Leiter LA, et al. Can J Diabetes. 2005;29:00-00. 29. Conger I, et al. Diabetes Ther (2021). <https://doi.org/10.1007/s13300-021-01153-4>. 30. Moen MF, et al. Clin J Am Soc Nephrol. 2009;4:1121-1127. 31. Wong CW, et al. Hong Kong Med J. 2017;23:524-33. 32. Halzalk M, et al. Diabetes Obes Metab. 2020;22:1369-1377. 33. Bolli GB, et al. Diabetes Obes Metab. 2021;1-6. 34. Bae JH, et al. Diabetes Metab J. 2021;dmj.2020.0274. Online ahead of print. 35. Bailey TS, et al. Diabetes Metab. 2018;44:15-21.

Abbreviated prescribing information: **Presentation:** Insulin glargine 300 IU/ml solution for injection. **Indications:** Treatment of diabetes mellitus in adults, adolescents and children from the age of 6 years. **Dosage:** Once daily (preferably at the same time every day up to 3 hours before or after the usual time of administration), with adjusted individual dosage. Please refer to the full prescribing information for guidelines on switching between other insulin preparations. **Administration:** Subcutaneous injection. Toujeo is NOT INTENDED FOR INTRAVENOUS USE since it could result in severe hypoglycaemia. Toujeo must not be drawn from the cartridge of the SoloStar pre-filled pen into a syringe or severe overdose can result. **Contraindications:** Hypersensitivity to insulin glargine or to any of the excipients. **Precautions:** Toujeo has not been studied in children below 6 years of age. **Elderly:** Progressive deterioration of renal function may lead to a steady decrease in insulin requirements. **Renal impairment:** Insulin requirements may be diminished due to reduced insulin metabolism. **Hepatic impairment:** Insulin requirement may be diminished due to reduced capacity for gluconeogenesis and reduced insulin metabolism. Perform continuous rotation of injection site to reduce risk of lipodystrophy and cutaneous amyloidosis. Blood glucose monitoring is recommended after change in injection site. Hypoglycaemia. Intercurrent illness. Combination of Toujeo with pioglitazone. Medication errors prevention. **Interactions:** Effects enhanced by oral antidiabetics, ACEi, disopyramide, fibrates, fluoxetine, MAOIs, pentoxifylline, propoxyphene, salicylates, sulfonamide antibiotics. Effects reduced by corticosteroids, danazol, diazoxide, diuretics, glucagons, isoniazid, oestrogens and progestogens, phenothiazine derivatives, somatropin, sympathomimetics, or thyroid hormones, atypical antipsychotics and protease inhibitors. Beta-blockers, clonidine, lithium or alcohol may either potentiate or weaken the effects of insulin. Pentamidine may cause hypoglycaemia, followed by hyperglycaemia. The signs of adrenergic counter-regulation may be reduced or absent under the influence of sympatholytic medicinal products such as Beta-blockers, clonidine, guanethidine and reserpine. **Fertility, pregnancy and lactation:** Animal studies do not indicate direct harmful effects with respect to fertility and reproductive toxicity. The use of Toujeo may be considered during pregnancy if clinical needed. It is unknown whether insulin glargine is excreted in human milk. **Overdose:** Insulin overdose may lead to severe and sometimes long-term and life-threatening hypoglycaemia. Mild episodes of hypoglycaemia can usually be treated with oral carbohydrates. More severe episodes with coma, seizure or neurologic impairment may be treated with glucagon (intramuscular or subcutaneous) or concentrated glucose solution (intravenous). **Undesirable effects:** Hypoglycaemia, lipohypertrophy, injection site reactions. For common, uncommon, rare and very rare undesirable effects, please refer to the full prescribing information. **Storage:** Before first use: Store in a refrigerator (2°C - 8°C). Do not freeze. Protect from light. After first use: Store below 30°C. Use within 42 days. Do not freeze. **Preparation:** Toujeo 5 x 1.5ml (450IU) pre-filled pens. **Legal Classification:** Part 1 Poison **Full prescribing information is available upon request.**

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sanofi

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Toujeo®
insulin glargine 300U/mL