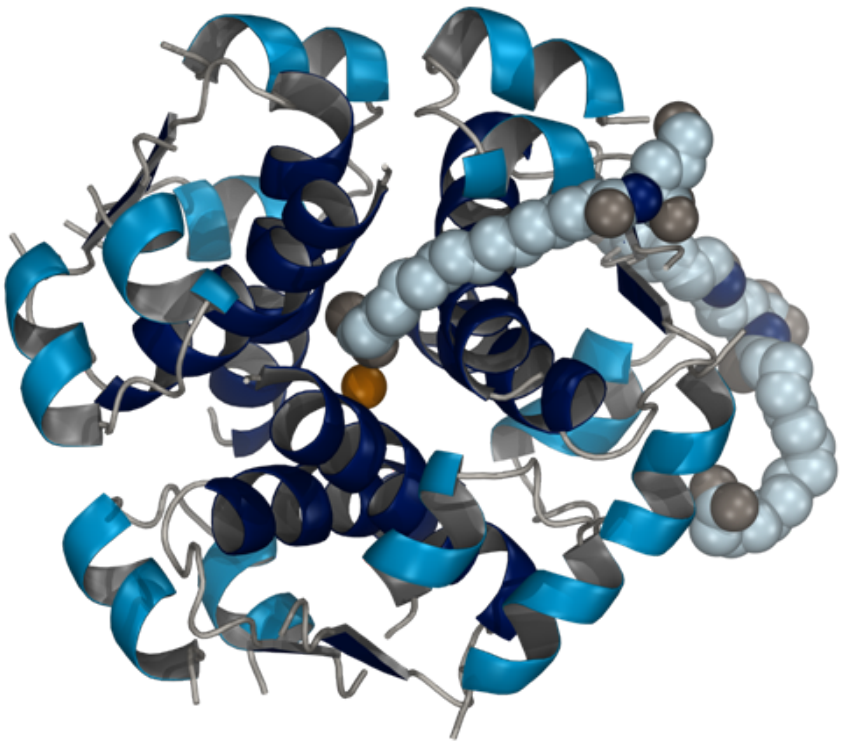
5 May 2011



Diabetes treatment tomorrow

Mads Krogsgaard Thomsen
CSO

Alan Moses
Global CMO

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Forward-looking statements

Novo Nordisk's reports filed with or furnished to the US Securities and Exchange Commission (SEC), including the company's Annual Report 2010 and Form 20-F, both expected to be filed with the SEC in February 2011 as well as this document and written information released, or oral statements made, to the public in the future by or on behalf of Novo Nordisk, may contain forward-looking statements. Words such as 'believe', 'expect', 'may', 'will', 'plan', 'strategy', 'prospect', 'foresee', 'estimate', 'project', 'anticipate', 'can', 'intend', 'target' and other words and terms of similar meaning in connection with any discussion of future operating or financial performance identify forward-looking statements. Examples of such forward-looking statements include, but are not limited to:

- statements of plans, objectives or goals for future operations, including those related to Novo Nordisk's products, product research, product development, product introductions and product approvals as well as cooperations in relation thereto,
- statements containing projections of or targets for revenues, income (or loss), earnings per share, capital expenditures, dividends, capital structure or other net financials,
- statements regarding future economic performance, future actions and outcome of contingencies such as legal proceedings, and
- statements regarding the assumptions underlying or relating to such statements.

These statements are based on current plans, estimates and projections. By their very nature, forward-looking statements involve inherent risks and uncertainties, both general and specific. Novo Nordisk cautions that a number of important factors, including those described in this document, could cause actual results to differ materially from those contemplated in any forward-looking statements.

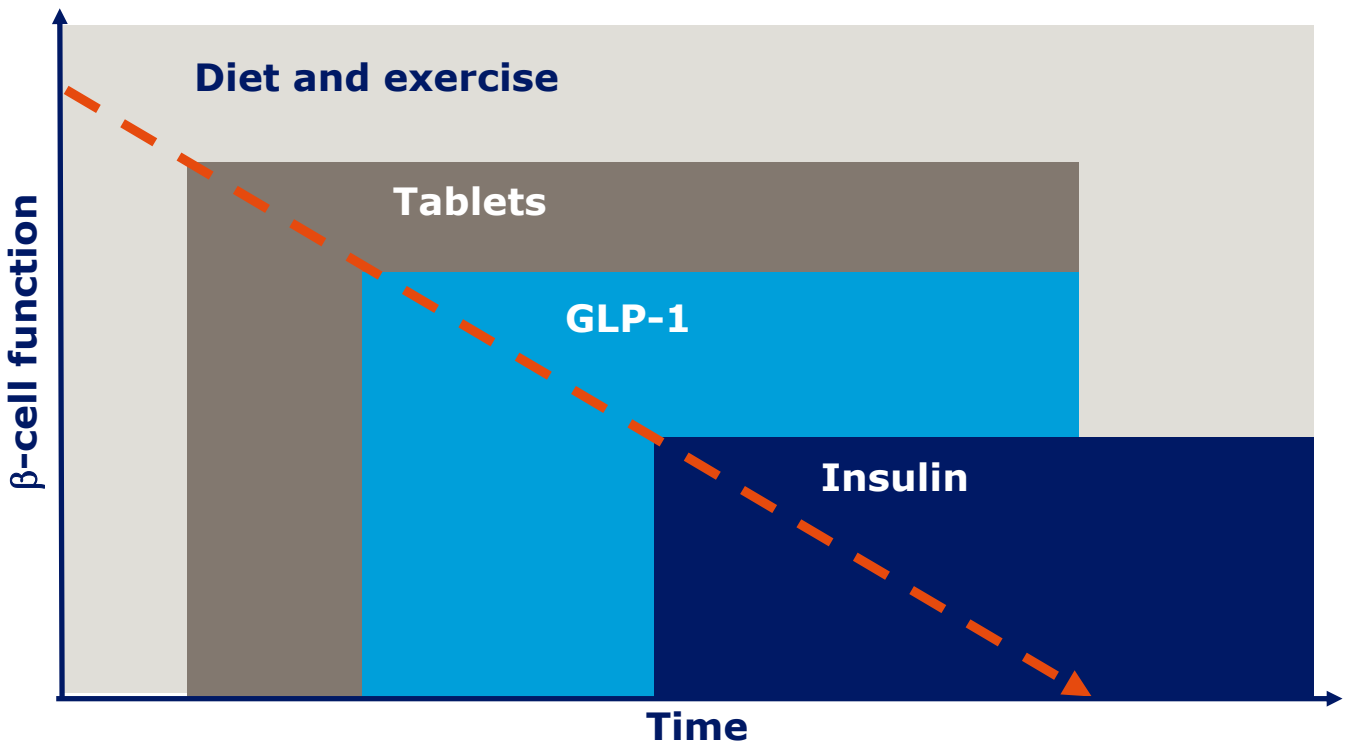
Factors that may affect future results include, but are not limited to, global as well as local political and economic conditions, including interest rate and currency exchange rate fluctuations, delay or failure of projects related to research and/or development, unplanned loss of patents, interruptions of supplies and production, product recall, unexpected contract breaches or terminations, government-mandated or market-driven price decreases for Novo Nordisk's products, introduction of competing products, reliance on information technology, Novo Nordisk's ability to successfully market current and new products, exposure to product liability and legal proceedings and investigations, changes in governmental laws and interpretation thereof, including on reimbursement, intellectual property protection and regulatory controls on testing, approval, manufacturing and marketing, perceived or actual failure to adhere to ethical marketing practices, investments in and divestitures of domestic and foreign companies, unexpected growth in costs and expenses, failure to recruit and retain the right employees and failure to maintain a culture of compliance.

Please also refer to the overview of risk factors in 'Risk management' of the Annual Report 2010 available as of 4 February 2011 on the company's website (novonordisk.com).

Unless required by law Novo Nordisk is under no duty and undertakes no obligation to update or revise any forward-looking statement after the distribution of this document, whether as a result of new information, future events or otherwise.

Treatment therapies for the treatment of type 2 diabetes

Progression of type 2 diabetes and treatment intensification



Medications used for the treatment of type 2 diabetes

Commonly prescribed products for the treatment of type 2 diabetes

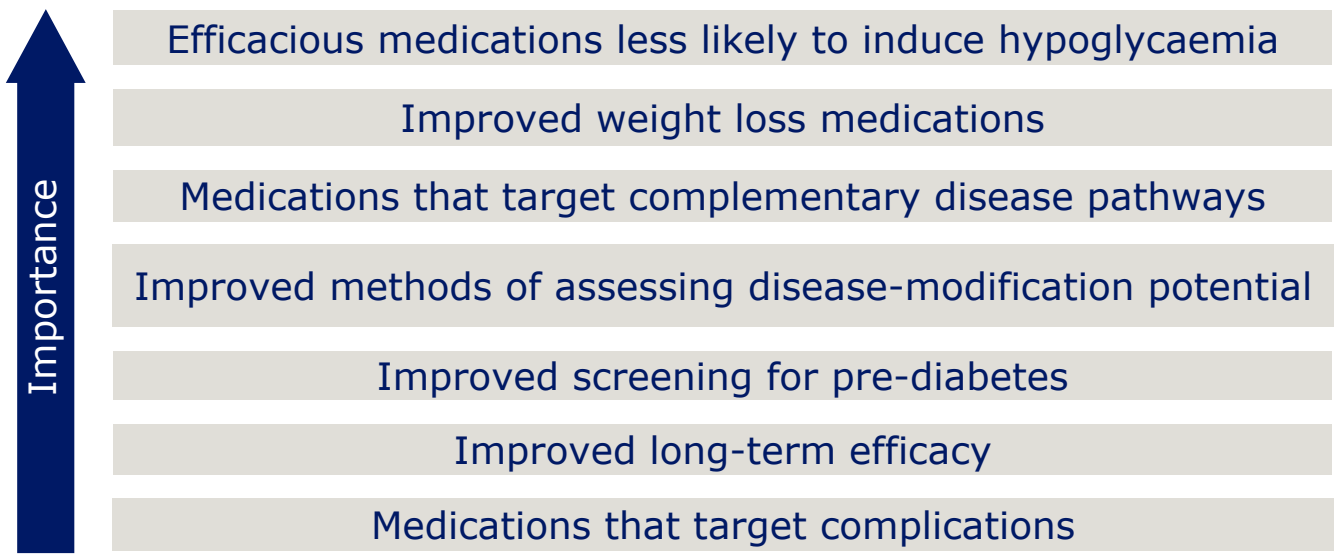
Class	HbA_{1C} change	Hypo-glycaemia	Weight change	CVD risk factors	Dosing (pr. day)	Diabetes co-morbidity/ contraindication
Metformin	1.5	No	Neutral	Minimal	2	Kidney, liver
Sulfonylureas	1.5	Yes	Gain	None	1	Essentially none
TZDs	0.5 - 1.4	No	Gain	Variable	1	CHF*, liver
DPP-IV inhibitors (sitagliptin)	0.6 - 0.8	No	Neutral	TBD	1	None
GLP-1 (liraglutide)	1.0 - 2.0	No	Loss	TBD	1	MTC*
Insulin Long-acting	1.5 - 2.5	Yes	Gain	TG and HDL*	1	None
Insulin Rapid-acting	1.5 - 2.5	Yes	Gain	TG and HDL*	1-4	None

*TG and HDL: Beneficial effect on triglycerides and HDL cholesterol. CHF: Congestive heart failure. MTC: Medullary thyroid cancer. TBD: to be defined.

Sources: Adapted from: Nathan DM, et al. Diabetes Care. 2006; 29:1963-1972; Nathan DM, et al. Diabetes Care. 2007;30:753-759; Nathan DM, et al. Diabetes Care. 2008;31:173-175. ADA. Diabetes Care. 2008;31:S12-S54. WelChol PI. 1/2008. GLP-1 (liraglutide) data is based on global phase 3 data for liraglutide plus US prescribing information.

Unmet medical need in diabetes today

Unmet needs in type 2 diabetes

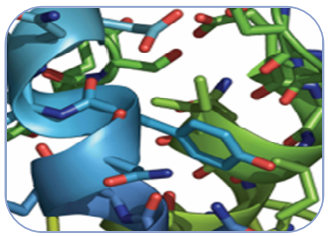


Source: Metabolic Disorders Study - Type 2 Diabetes, Decision Resources, October 2010

Key R&D capabilities in Novo Nordisk

Rational design

- Amino acid substitution
- Acylation
- Pegylation
- Modification



Formulation

- Half-life extension
- Sustained release
- Liquid
- Oral NBE

Expression

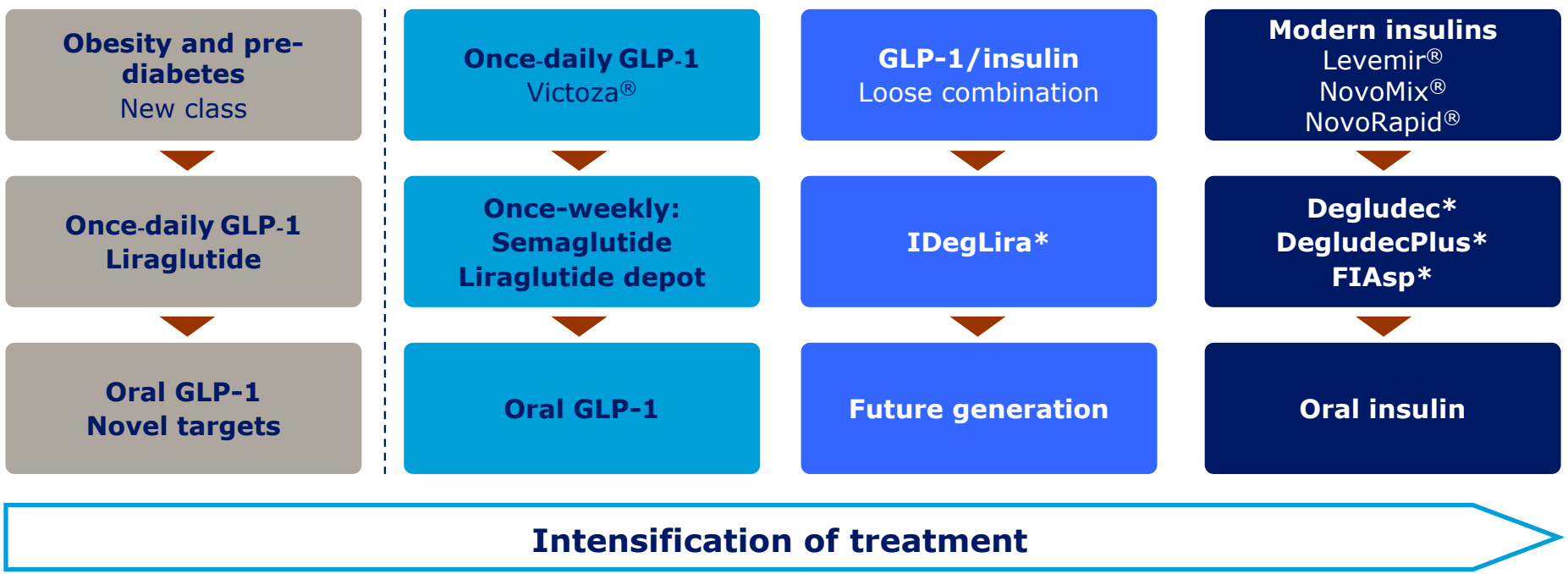
- Yeast
- E coli
- Mammalian cells

Delivery systems

- Pre-filled
- Durable

Novo Nordisk's approach to improving diabetes therapy

Novo Nordisk's diabetes care R&D strategy and key projects



*Note: Degludec is the internal designation for insulin degludec. DegludecPlus is the internal designation for insulin degludec/insulin aspart. IDegLira is the internal designation for insulin degludec/liraglutide. FIAsp is the internal designation for fast acting insulin aspart.

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First phase 3a results indicate encouraging clinical profile of liraglutide in obesity

Obesity R&D strategy

Obesity and pre-diabetes:
New class

Once-daily GLP-1
Liraglutide

Oral GLP-1
Novel targets

Phase 3a programme for liraglutide in obesity

Prevention of weight regain
N=420

Completed:
Statistically significant weight loss of 6% compared to placebo*

Weight management and delayed onset of diabetes
N=3,600

Expected to start June 2011

Weight management in type 2 Diabetes
N=800

Expected to start June 2011

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*Source: Novo Nordisk company announcement no. 25, 2011

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Two options for pursuing once-weekly GLP-1 either with semaglutide or liraglutide depot

GLP-1 R&D strategy

Once-daily GLP-1
Victoza®

Once-weekly GLP-1
Semaglutide
Liraglutide depot

Oral GLP-1

Decision on preferred approach expected mid-2012

Semaglutide

- New molecule with inherently long-action
- Solid phase 2 data
- Full phase 3 + safety + CV data package required

Liraglutide depot

- New formulation – known compound
- Approaching phase 1
- Phase 3 efficacy package required

The phase 3a for IDegLira is expected to begin enrolment in May 2011

GLP-1/insulin R&D strategy

GLP-1/insulin
Loose combination

IDegLira

Future generation

GLP-1 and insulin combination trials

Levemir® and Victoza® 12 months data

- Levemir® and Victoza® in loose combination treatment compared to Victoza®
- Statistically significant improvement in glycaemic control
- No weight gain when adding Levemir® to Victoza® (weight loss of 3-4 kg)
- No major hypoglycaemic events and a very low rate of hypoglycaemia
- Data intended for label update purposes

IDegLira fixed ratio combination

- Phase 3a to be initiated in May 2011
- Comparator arms: Victoza® and insulin degludec, each individually
- Regulatory submissions to be based on 26 week data

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Source: Novo Nordisk company announcement no. 60, 2010

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Re-inventing the entire insulin portfolio with three new insulin analogue preparations

Insulin R&D strategy

Modern insulins
Levemir®
NovoMix®
NovoRapid®

New-generation
Degludec
DegludecPlus
FIAsp

Oral insulin

Aspirations for inventing new classes of insulins

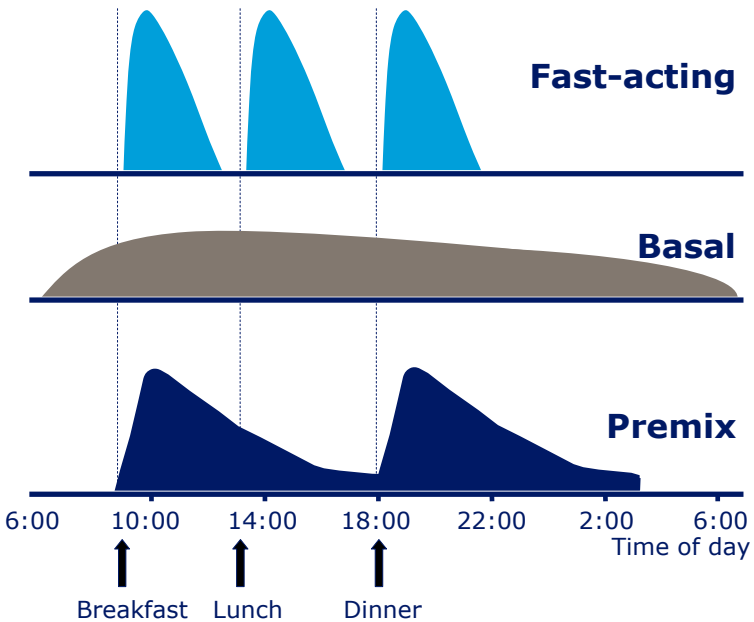
Basal insulin
To invent an ultra-long-acting basal insulin

Prandial-basal insulin
To invent a soluble insulin product of ultra-long-acting insulin and fast-acting insulin

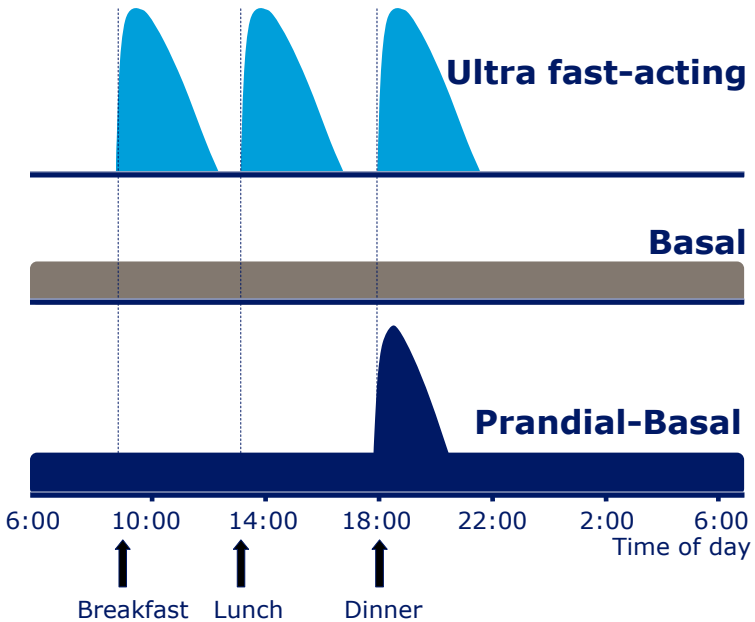
Fast-acting insulin
To invent an insulin with an ultra-fast onset of action

Target profiles for new insulin analogues

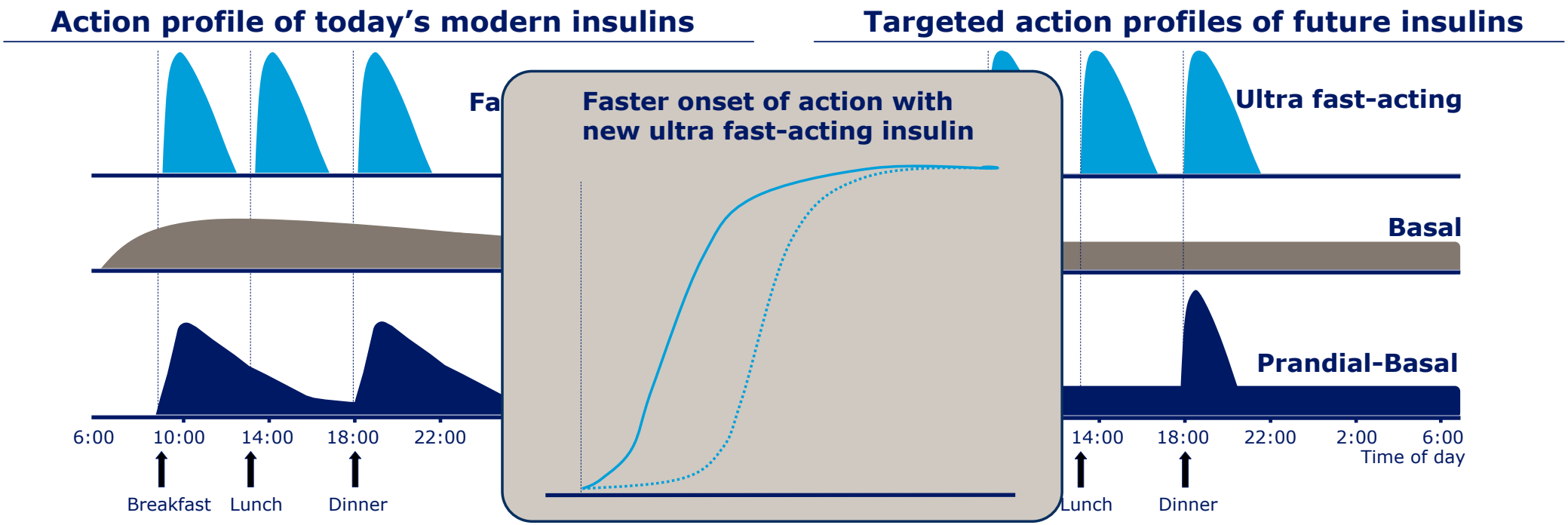
Action profile of today's modern insulins



Targeted action profiles of future insulins



Target profiles for new insulin analogues

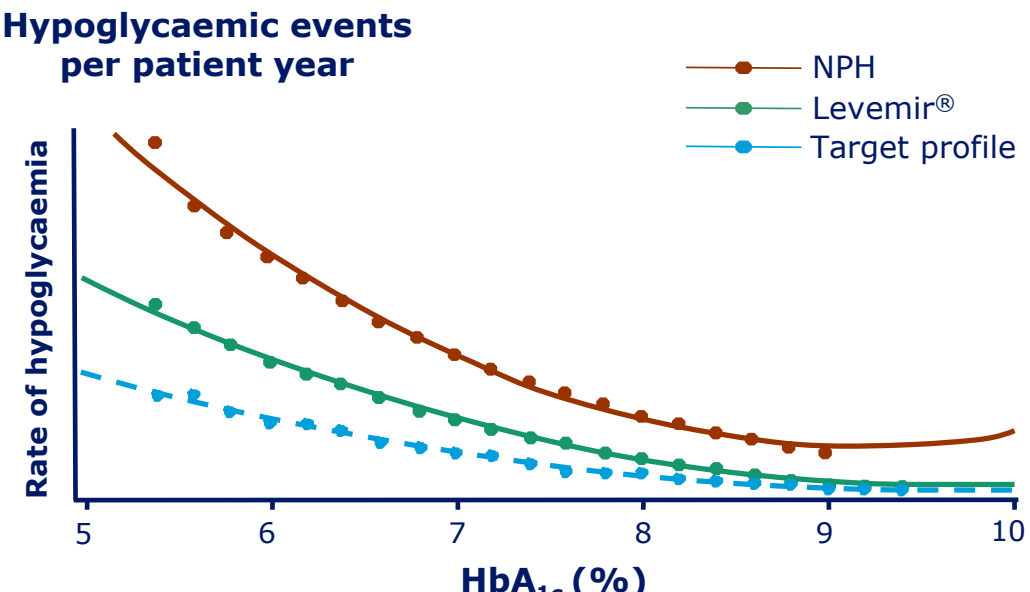


In multiple ways, hypoglycaemia is a real issue in the treatment of diabetes today

Hypoglycaemia limits glycaemic control

- Impact of hypoglycaemia
  - Medical risk factors
  - Loss of productivity
- Fear of hypoglycaemia
  - Fear of physical/medical consequences
  - Fear of social embarrassment
- The fear of hypoglycaemia delays insulin therapy and limits insulin dosing
- Rigid insulin regimens contribute to non-compliance

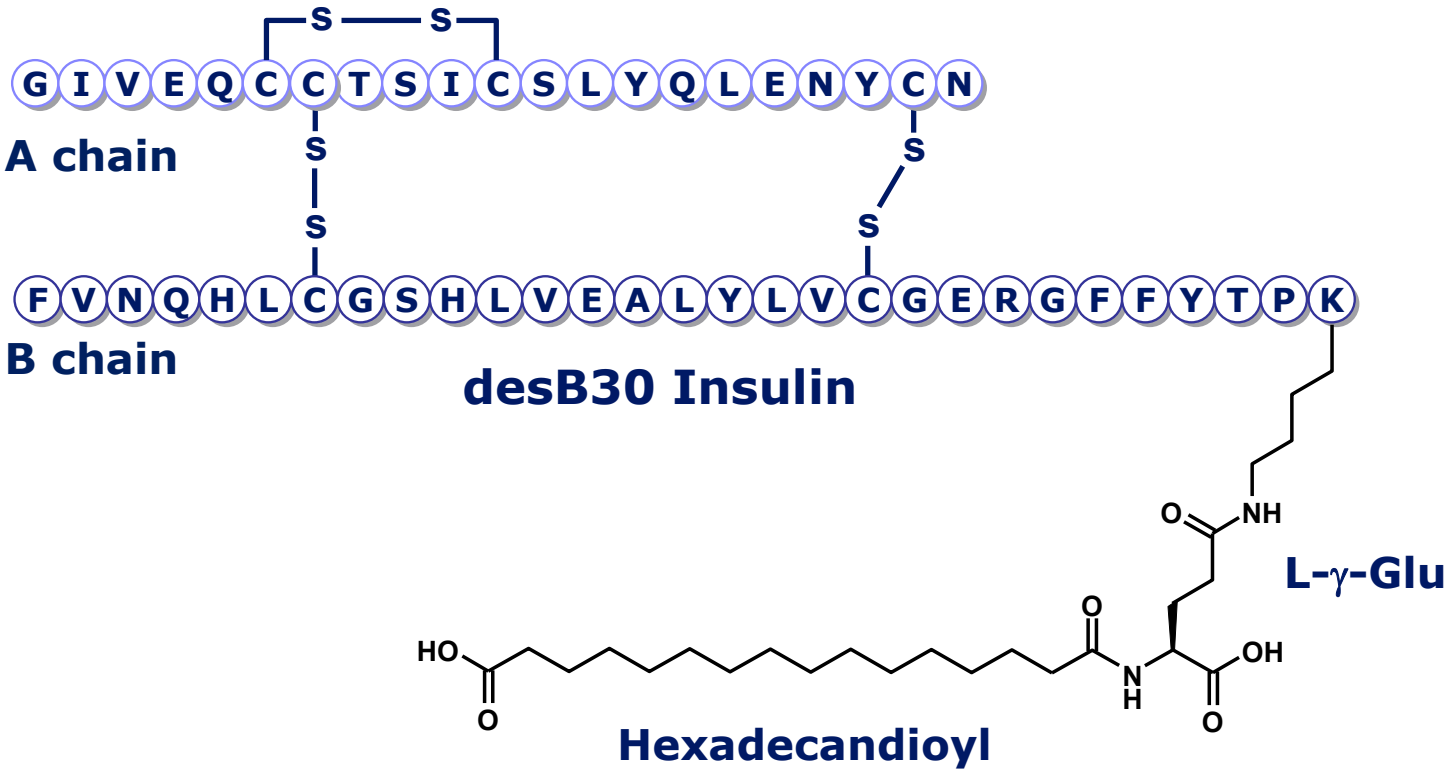
Glucose control and hypoglycaemia trade-off



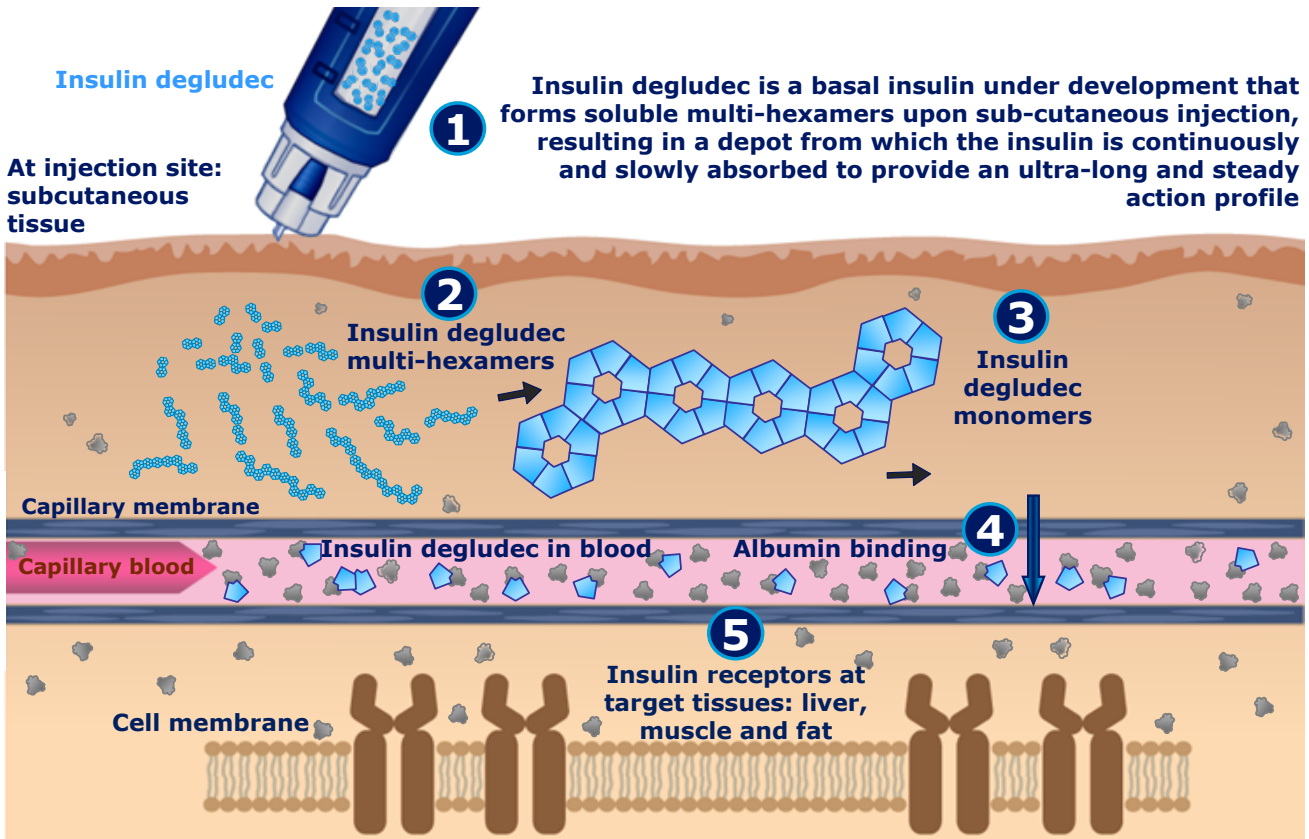
Source: K. Kolendorf et al. Diabetes 2005; 54 (Suppl 2): P489

Engineering insulin to achieve desired PK/PD profile: insulin degludec

LysB29Nε-hexadecandioyl-γ-Glu desB30 human insulin

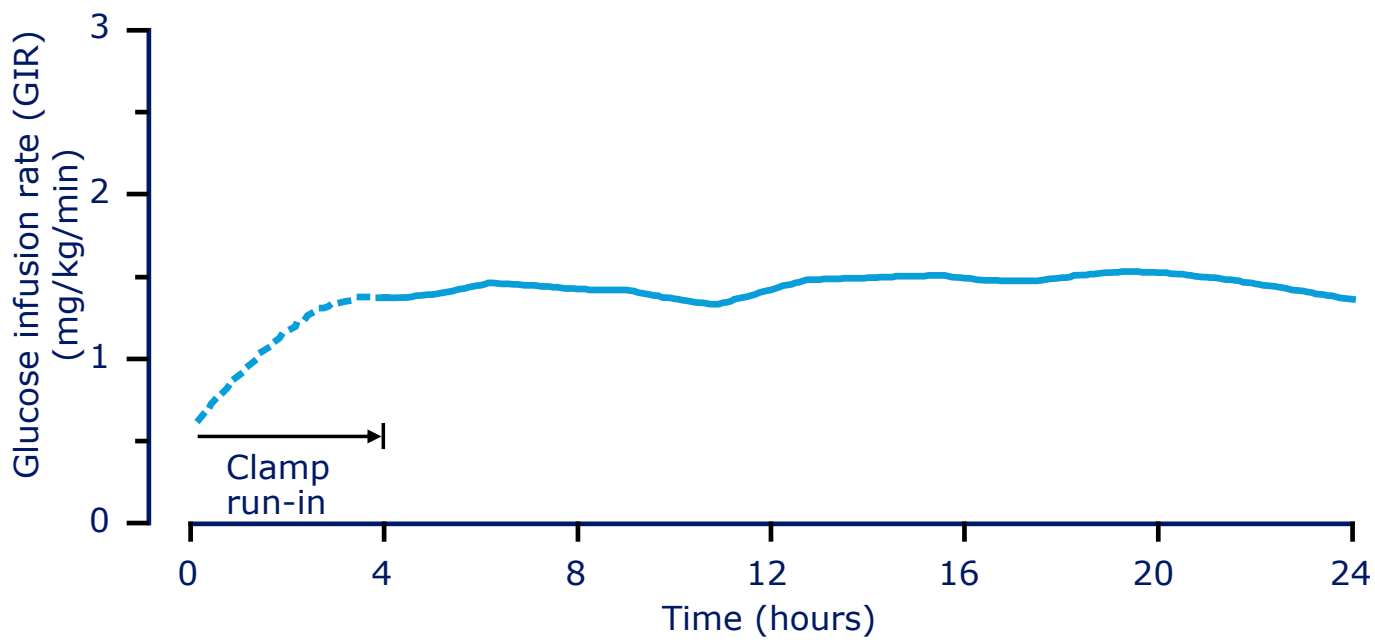


Degludec has been designed with a novel, protracted and stable absorption mechanism



The slow absorption mechanism was designed to produce an ultra-long and flat action profile in man

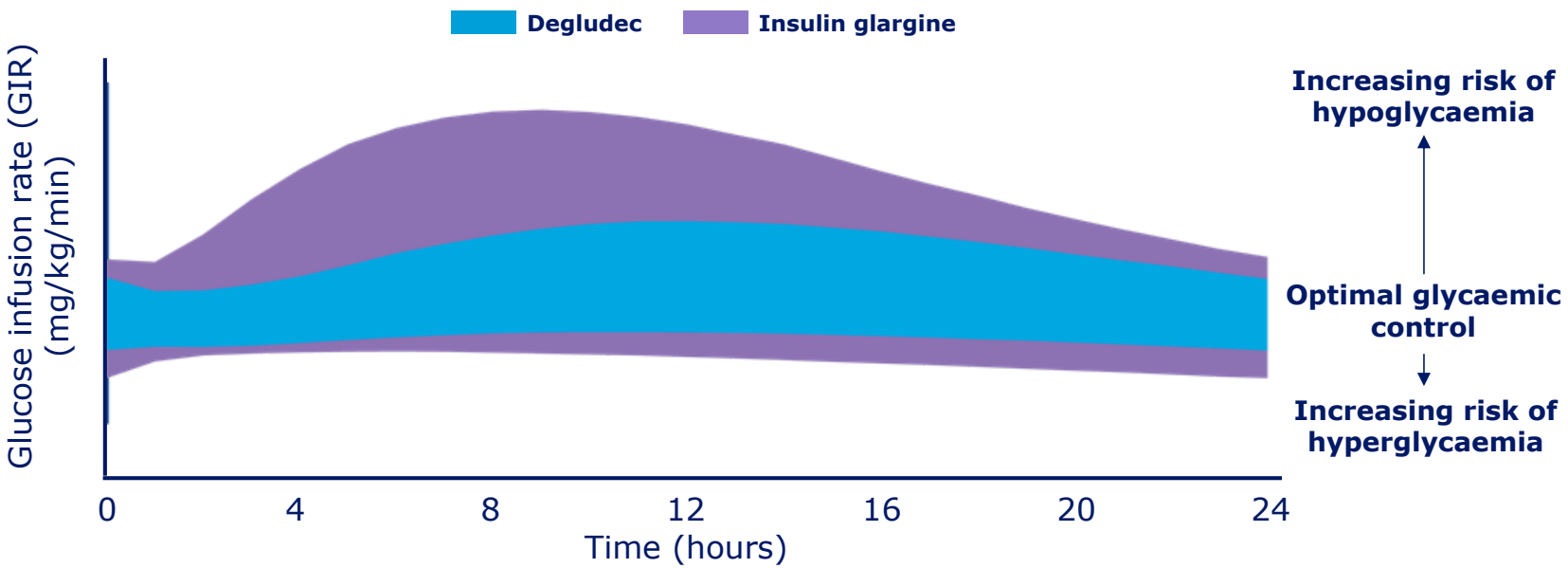
Ultra-long and steady action profile over time at steady-state



Note: People with type 1 diabetes (n=12). 0.4 U/kg once daily for 6 days (steady state). Euglycemic clamp (Day 6). Source: Jonassen *et al. Diabetes* 2010; 59 (Suppl. 1): 0039-OR.

Clinical data demonstrate very predictable profile with very limited variability

Degludec and insulin glargine: PK/PD model of hour-to-hour variability



Note: One-compartment PK model with first-order absorption and elimination, combined with an effect compartment PD model to describe GIR applied to determine within-subject variability in model parameters with subsequent simulation to illustrate day-to-day variability based on the profile of a 'typical' or 'population mean' subject, and shows the 90% prediction interval for the estimated within-subject (or day-to-day) variability at each time point. Profiles have been scaled to have the same average level (defined as the individual optimal glycaemic control), so that the variability can be compared.
Source: Trial NN1250-1991, poster 971, EASD Stockholm 2010

In phase 3a programme BEGIN™, Degludec was tested across the spectrum of insulin treatment regimens

BEGIN™

3579: 12 mth vs. IGlar, T2 - BOT, N=1030
3582: 12 mth vs. IGlar, T2 - BB, N=1006
3583 : 12 mth vs. IGlar, T1 - BB, N=629
3668: 6 mth vs. IGlar, T2, flexible dosing, N=687
3586: 6 mth vs. IGlar, T2, N=435
3672: 6 mth vs. IGlar, T2, U200, N=460
3770: 6 mth vs. IGlar, T1, flexible dosing, N=493
3839: 4 mth IGlar OD to 3TW, T2, N=143
3718: 6 mth 3TW vs. IGlar OD, T2, N=467
3724: 6 mth 3TW vs. IGlar OD, T2, N=460
3580: 6 mth vs. sitagliptin, T2, N=458
3585: 6 mth vs. IDet, T1, N=456

Phase 3a programme

- Largest clinical insulin programme ever with more than 7,000 patients
- Degludec tested across the spectrum of insulin treatment regimens to demonstrate use in type 1 and type 2 diabetes
- All trials conducted as treat-to-target trials as per regulatory requirement
- Programme designed to allow for pre-defined meta-analyses of hypoglycaemia versus insulin glargine across trials

Note: First 4 numbers indicate study ID, mth = months, IGlar = insulin glargine, IDet = insulin detemir, T1 = type 1 diabetes, T2 = type 2 diabetes, BOT = basal-only insulin regimen, BB = basal-bolus insulin regimen, 3TW = three-times weekly insulin regimen, U200 = U200 formulation of insulin degludec and N = total number of study participants. BEGIN™ is the global phase 3a programme for Degludec.

All three 52 week trials demonstrated a statistically significant improvement in nocturnal hypoglycaemia

BEGIN™

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3770: 6 mth vs. IGlar, T1, flexible dosing, N=493
3839: 4 mth IGlar OD to 3TW, T2, N=143
3718: 6 mth 3TW vs. IGlar OD, T2, N=467
3724: 6 mth 3TW vs. IGlar OD, T2, N=460
3580: 6 mth vs. sitagliptin, T2, N=458
3585: 6 mth vs. IDet, T1, N=456

Degludec versus insulin glargine

	Blood glucose		Hypoglycaemia reduction	
	Non-inf. HbA_{1c}	Lower FPG	Total	Nocturnal
Type 2, basal only treatment	Yes	Yes	~20%	~35%
Type 2, basal bolus treatment	Yes	Yes	~20%	~25%
Type 1, basal bolus treatment	Yes	Yes	Comparable	~25%

Statistically significant improvement

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Phase 3a trial demonstrated that patients using the Degludec U200 pen device can reduce injection volume

BEGIN™

- 3579: 12 mth vs. IGlar, T2 - BOT, N=1030
- 3582: 12 mth vs. IGlar, T2 - BB, N=1006
- 3583 : 12 mth vs. IGlar, T1 - BB, N=629
- 3668: 6 mth vs. IGlar, T2, flexible dosing, N=687
- 3586: 6 mth vs. IGlar, T2, N=435
- **3672: 6 mth vs. IGlar, T2, U200, N=460**
- 3770: 6 mth vs. IGlar, T1, flexible dosing, N=493
- 3839: 4 mth IGlar OD to 3TW, T2, N=143
- 3718: 6 mth 3TW vs. IGlar OD, T2, N=467
- 3724: 6 mth 3TW vs. IGlar OD, T2, N=460
- 3580: 6 mth vs. sitagliptin, T2, N=458
- 3585: 6 mth vs. IDet, T1, N=456

Degludec U200 versus insulin glargine

Injection volume reduced by 50% based on twice the insulin concentration

	Blood glucose		Hypoglycaemia reduction	
	Non-inf. HbA_{1c}	Lower FPG	Total	Nocturnal
Type 2, insulin naïve patients	Yes	Yes	~15%	~35%

Statistically significant improvement

Flexible dosing trial data indicate that Degludec can be dosed at any time on any day

BEGIN™

- 3579: 12 mth vs. IGlar, T2 - BOT, N=1030
- 3582: 12 mth vs. IGlar, T2 - BB, N=1006
- 3583 : 12 mth vs. IGlar, T1 - BB, N=629
- 3668: 6 mth vs. IGlar, T2, flexible dosing, N=687
- 3586: 6 mth vs. IGlar, T2, N=435
- 3672: 6 mth vs. IGlar, T2, U200, N=460
- 3770: 6 mth vs. IGlar, T1, flexible dosing, N=493
- 3839: 4 mth IGlar OD to 3TW, T2, N=143
- 3718: 6 mth 3TW vs. IGlar OD, T2, N=467
- 3724: 6 mth 3TW vs. IGlar OD, T2, N=460
- 3580: 6 mth vs. sitagliptin, T2, N=458
- 3585: 6 mth vs. IDet, T1, N=456

Degludec flexible dosing versus insulin glargine

Dosing intervals with Degludec vary from 8 to 40 hours

	Blood glucose		Hypoglycaemia reduction	
	Non-inf. HbA_{1c}	Lower FPG	Total	Nocturnal
Type 1	Yes	Yes	Comparable	~40%
Type 2	Yes	Yes	Comparable	~25%

Statistically significant improvement

Development in nocturnal hypoglycaemia in trial 3579; the largest phase 3a trial

BEGIN™

3579: 12 mth vs. IGlar, T2 - BOT, N=1030
3582: 12 mth vs. IGlar, T2 - BB, N=1006
3583 : 12 mth vs. IGlar, T1 - BB, N=629
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3586: 6 mth vs. IGlar, T2, N=435
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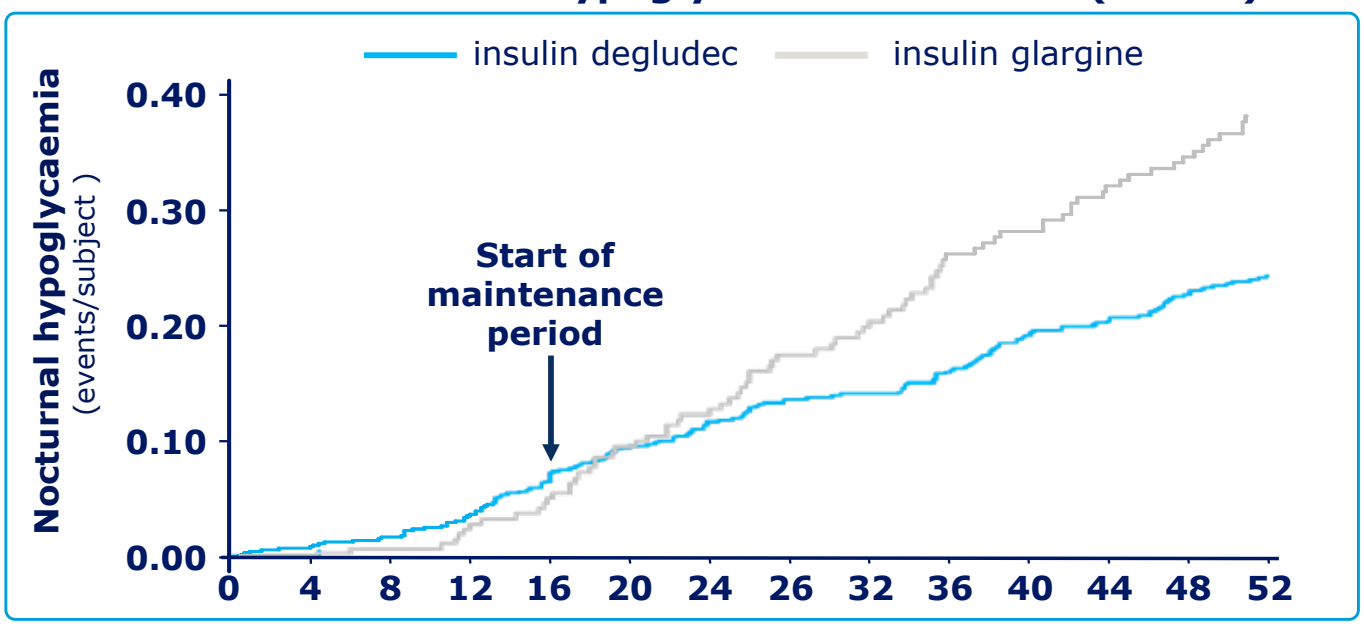
3718: 6 mth 3TW vs. IGlar OD, T2, N=467
3724: 6 mth 3TW vs. IGlar OD, T2, N=460
3580: 6 mth vs. sitagliptin, T2, N=458
3585: 6 mth vs. IDet, T1, N=456

Nocturnal confirmed hypoglycaemia over time (weeks)



Degludec phase 3a hypoglycaemia meta-analysis

BEGIN™

3579: 12 mth vs. IGlar, T2 - BOT, N=1030
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3585: 6 mth vs. IDet, T1, N=456

Objective of meta-analysis

- **Objective**:
  - To investigate rate of treatment emergent confirmed overall and nocturnal hypoglycaemia
- **Meta-analyses include among others:**
  - treatment with Degludec once-daily vs. insulin glargine once-daily
  - treatment with basal insulin only in type 2 diabetes, taken once-daily

Meta-analysis shows statistically significant reduction in overall and nocturnal hypoglycaemia vs. insulin glargine

BEGIN™

- 3579: 12 mth vs. IGlar, T2 - BOT, N=1030
- 3582: 12 mth vs. IGlar, T2 - BB, N=1006
- 3583 : 12 mth vs. IGlar, T1 - BB, N=629
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- 3585: 6 mth vs. IDet, T1, N=456

Degludec versus insulin glargine in type 1 and type 2 diabetes

	Reduction in confirmed hypoglycaemia	
	Overall	Nocturnal
Complete treatment period	9%	26%
Maintenance period*	16%	32%

Statistically significant improvement

* (measured from study week 16 until study end)

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Note: The flexible dosing arm of trial 3668 and 3770 is excluded from the analysis

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In basal-only insulin therapy, the meta-analysis indicates a statistically significant reduction in hypoglycaemia

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- 3579: 12 mth vs. IGlar, T2 - BOT, N=1030
- 3582: 12 mth vs. IGlar, T2 - BB, N=1006
- 3583 : 12 mth vs. IGlar, T1 - BB, N=629
- 3668: 6 mth vs. IGlar, T2, flexible dosing, N=687
- 3586: 6 mth vs. IGlar, T2, N=435
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- 3580: 6 mth vs. sitagliptin, T2, N=458
- 3585: 6 mth vs. IDet, T1, N=456

Type 2 diabetes basal only therapy vs. insulin glargine

	Reduction in confirmed hypoglycaemia	
	Overall	Nocturnal
Complete treatment period	17%	36%
Maintenance period*	28%	49%

Statistically significant improvement

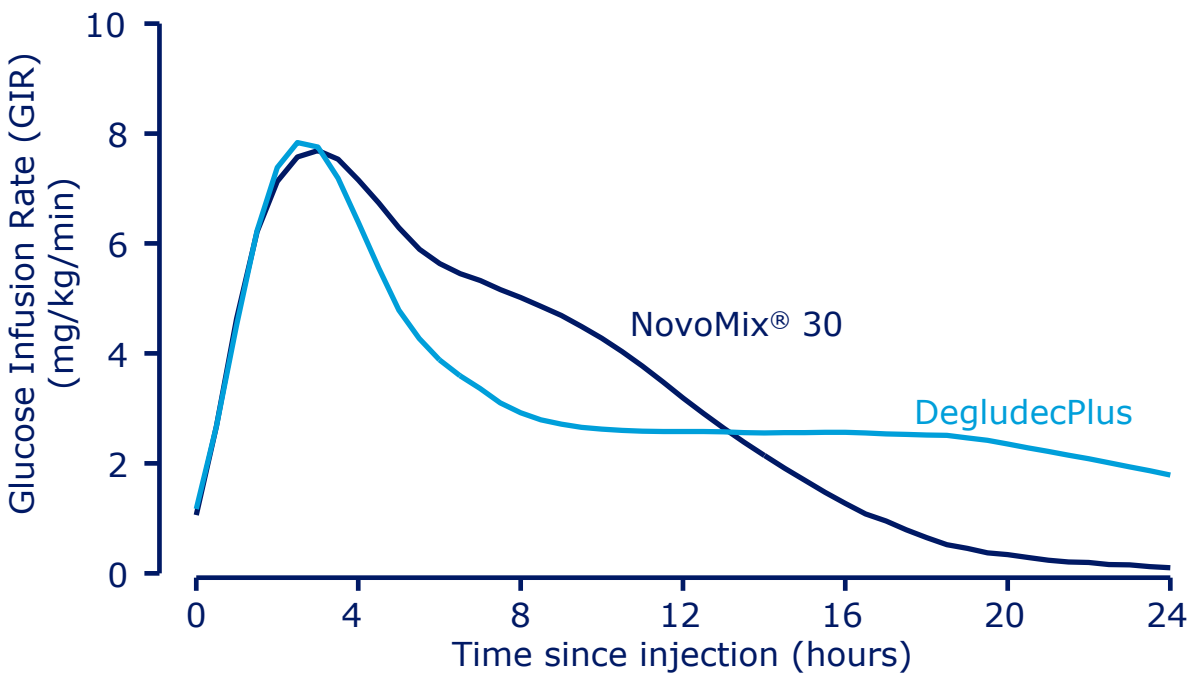
* (measured from study week 16 until study end)

Conclusion on clinical results of Degludec

- Highly effective glycaemic control
- Better fasting blood glucose control than observed with insulin glargine
- Lower rates of hypoglycaemia
  - Statistically significant in meta-analyses for both total and nocturnal hypoglycaemia in once-daily basal-bolus and basal-only regimens vs. insulin glargine
- Flexible dosing time: ”At any time on any day”
- High dose pen designed to allow for once-daily injection for nearly all
- New device to further improve convenience for patients

Action profile of the prandial-basal insulin DegludecPlus

Action profile of DegludecPlus and NovoMix®30



Note: People with type 1 diabetes (n=12), single dose, Euglycaemic clamp
Source: Jonassen *et al. Diabetes* 2010;59 (Suppl. 1):0039-OR

The phase 3a programme for DegludecPlus demonstrates clear benefits over premix insulin

BOOST™

- 3590: 6 mth vs. IGlar, OD, T2, N=529
- 3592: 6 mth vs. BIAsp, BID, T2, N=426
- 3593 : 6 mth vs. IGlar, OD, T2, N=463
- 3594: 6 mth +IAsp vs. Idet+IAsp, T1, N=548
- 3597: 6 mth vs. BIAsp, BID, T1, N=422

DegludecPlus versus NovoMix® 30 in type 2 diabetes

	Blood glucose		Hypoglycaemia reduction	
	Non-inf. HbA_{1c}	Lower FPG	Total	Nocturnal
Type 2, insulin naïve patients	Yes	Yes	~30%	~70%

Statistically significant improvement

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Note: BOOST™ is the global phase 3a programme for DegludecPlus.

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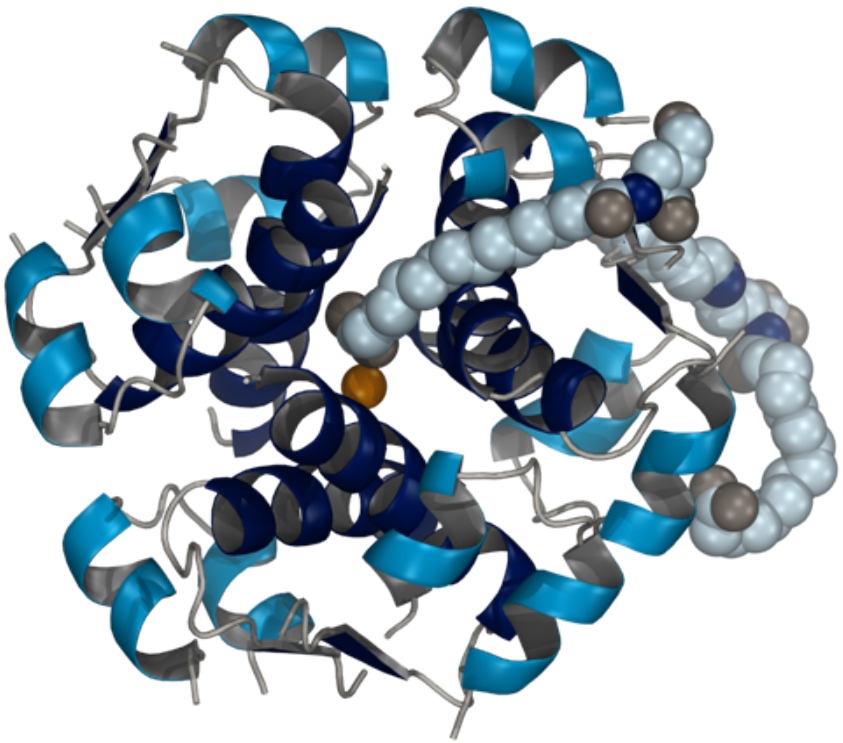
Conclusion on clinical results of DegludecPlus

- Highly effective glycaemic control
- Lower fasting blood glucose control
- Lower rates of hypoglycaemia
  - Statistically significant for both nocturnal and total vs. premix administered twice-daily
- Soluble; does not require mixing in contrast to premix insulins
- New device to further improve convenience for patients

5 May 2011



Commercial strategy for Degludec and DegludecPlus

Jakob Riis
SVP Global Marketing

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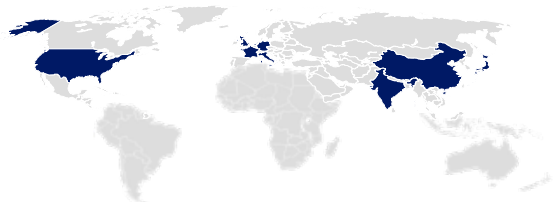
Insulin is often under-utilised resulting in poorly controlled patients



- Despite numerous insulin therapies currently being available, a large proportion of people with diabetes under treatment are still unable to reach guideline recommended HbA1c levels
- 40% of patients admit that they struggle to maintain good blood sugar levels, despite realizing how important it is
- 88% of physicians surveyed stated that there are still a significant number of patients' not reaching target HbA_{1c} levels
- Over 84% of physicians are concerned that their patients will experience a major or nocturnal hypoglycaemic event, and are dissatisfied with current insulins' ability to control blood glucose levels without increasing the risk of hypoglycaemia

Sources: Kilpatrick et al. Curr Med Res Opin 2008;24:2651–2661 and the GAPP™ survey. Novo Nordisk data on file, 2010.

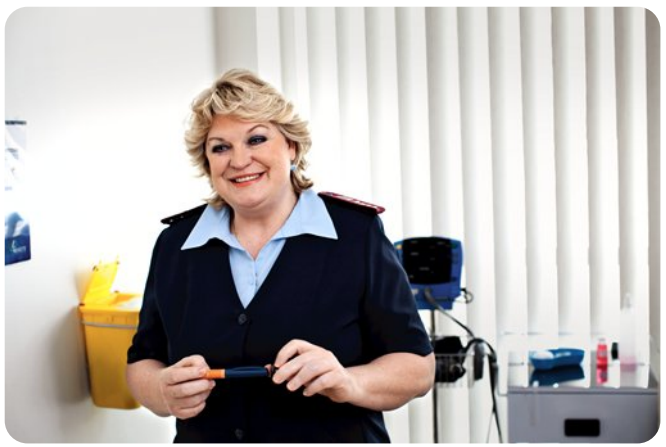
Degludec and DegludecPlus have been designed to challenge established treatment standards

Degludec	**Ultra long acting basal**	**Designed to challenge standards of basal insulin treatment by providing an ultra-long basal insulin**
DegludecPlus	**Soluble prandial-basal insulin**	**Designed to challenge standards of insulin treatment with the first ever combination of an ultra-long action basal and most prescribed fast-acting insulin**

Degludec has the potential to support easier insulin initiation by dealing with important unmet needs

Degludec has been designed to provide:

- physicians with a treatment that offers efficacious glycaemic control with a very low risk of hypoglycaemia
- physicians with a treatment option with a 'broad dosing window' implying less worry about their patients having to take insulin at exactly the same time every day
- people with diabetes with an insulin that adapts better to a dynamic lifestyle
- doses up to 160 units in a single injection with half the volume



The cost and burden of "minor" hypoglycemia

Reduced well being

"You actually wake up and you just feel like you've been hit by a brick because you feel that ill. And sometimes I can't go to work the next day because I feel that ill."

- Increased anxiety
- Fear of repeated events compromising glycaemic control
- Lower quality of life and need for lifestyle changes (e.g. reduced driving)

Reduced productivity

- Average productivity loss is ~$2,300/person/year
- Following a nocturnal hypo:
- 23% arrive late/miss work
- 32% miss a meeting/do not finish a task on time
- 15 hours of work is lost

Increased treatment cost

- BG testing goes up: 5.6 extra tests within 7 days after hypoglycaemia (~$1/strip)
- Risk of suboptimal insulin dose* (25% of pts reduce dose)
- 25% contact an HCP after an episode

Note: *which could impact glycaemic control and thereby affect long-term outcome.
Source: Brod M, Christensen T, Thomsen TL, Bushnell DM. The Impact of Non-Severe Hypoglycemic Events on Work Productivity and Diabetes Management. Value In Health, 2011.

Hypoglycemia associated with acute CV events

Epidemiology/Health Services Research

ORIGINAL ARTICLE

Diabetes Care Publish Ahead of Print, published online March 18, 2011

Evidence Linking Hypoglycemic Events to an Increased Risk of Acute Cardiovascular Events in Patients With Type 2 Diabetes

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OBJECTIVE—This retrospective study examined the association between ICD-9-CM–coded outpatient hypoglycemic events (HEs) and acute cardiovascular events (ACVEs), i.e., acute myocardial infarction, coronary artery bypass grafting, revascularization, percutaneous coronary intervention, and incident unstable angina, in patients with type 2 diabetes.

RESEARCH DESIGN AND METHODS—Data were derived from healthcare claims for individuals with employer-sponsored primary or Medicare supplemental insurance. A baseline period (30 September 2006 to 30 September 2007) was used to identify eligible patients and collect information on their clinical and demographic characteristics. An evaluation period (1 October 2007 to 30 September 2008) was used to identify HEs and ACVEs. Patients aged ≥18 years with type 2 diabetes were selected for analysis by a modified Healthcare Effectiveness Data and Information Set algorithm. Data were analyzed with multiple logistic regression and backward stepwise selection (maximum $P = 0.01$) with adjustment for important confounding variables, including age, sex, geography, insurance type, comorbidity scores, cardiovascular risk factors, diabetes complications, total baseline medical expenditures, and prior ACVEs.

RESULTS—Of the 860,845 patients in the analysis set, 27,065 (3.1%) had ICD-9-CM–coded HEs during the evaluation period. The main model retained 17 significant independent variables. Patients with HEs had 79% higher regression-adjusted odds (HE odds ratio [OR] 1.79, 95% CI 1.69–1.89) of ACVEs than patients without HEs; results in patients aged ≥65 years were similar to those for the entire population (HE OR 1.78, 95% CI 1.69–1.92).

CONCLUSIONS—ICD-9-CM–coded HEs were independently associated with an increased risk of ACVEs. Further studies of the relationship between hypoglycemia and the risk of ACVEs are warranted.

The long-term complications that result from poor glycemic control contribute substantially to the morbidity, mortality, and economic burden of diabetes. Over time, the hyperglycemia seen in patients with diabetes can increase the risk of both microvascular complications and result in a two- to fourfold increase in the risk of macrovascular complications (1–3). The relationship between macrovascular complications and glycated hemoglobin is not understood precisely; however, atherosclerosis and vascular occlusion from hypercoagulability and increased adhesion of platelets are thought to occur through various metabolic mechanisms, placing individuals with diabetes at an increased risk for cardiovascular disease (4).

Although near normoglycemic control has been demonstrated to reduce the incidence of microvascular complications such as nephropathy, nephropathy, and neuropathy, the independent effect of HbA_{1c} lowering on the risk of cardiovascular events in patients with type 2 diabetes is less clear (5–7). Although observational studies have described the natural history association between hyperglycemia and increased cardiovascular risk in type 2 diabetes, the results of interventional randomized controlled trials in establishing the cardiovascular benefit of pharmacotherapeutic management of hyperglycemia, including intensive therapy, have been inconsistent. The U.K. Prospective Diabetes Study of patients with type 2 diabetes reported a substantial but statistically nonsignificant ($P = 0.052$) 16% reduction in cardiovascular complications (combined fatal or nonfatal myocardial infarction [MI] and sudden death) between patients randomized to intensive management and patients randomized to conventional management over 10 years. However, data from an additional 10-year follow-up study of this same cohort of patients did show a quantitatively similar but statistically significant long-term cardiovascular benefit of intensive control (sulfonylurea–insulin group: relative risk reduction for MI 15%, $P < 0.01$; metformin group: relative risk reduction for MI 33%, $P = 0.005$), even after an intensive strategy was abandoned (1,8).

Because the clinical trial evidence regarding the macrovascular benefit of A1C lowering to traditional A1C targets had been inconsistent, the Action to Control Cardiovascular Risk in Diabetes (ACCORD), Action in Diabetes and Vascular Disease: Preterax and Diamicron Modified Release Controlled Evaluation (ADVANCE), and Veterans Affairs Diabetes Trial (VADT) sought to explore whether treatment to more intensive A1C targets (≤6.5 or <6%) might more consistently establish the macrovascular benefit that has been so elusive in studies evaluating less intensive glycemic targeting (5–7). Unfortunately, these trials did not, in general, demonstrate the macrovascular benefit of intensive glycemic control. Furthermore, the finding of increased all-cause mortality in the intensively managed cohort of the

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Patients with hypoglycaemic events had a 79% higher risk of acute cardiovascular events

Source: Stephen S. Johnson et al. Evidence Linking Hypoglycemic Events to an Increased Risk of Acute Cardiovascular Events in Patients With Type 2 Diabetes. Diabetes Care Publish Ahead of Print. Published online March 18, 2011.

Preparing for world class launches

- Following a successful launch of Victoza®, Novo Nordisk is well prepared for yet another world class launch
- Once approved, the Degludec launch will build on Victoza® learnings with a clear ambition of further raising the bar