

novo nordisk – a focused healthcare company

Investor presentation Full year 2017



Agenda

Highlights and key events

Sales update

R&D update

Financials and outlook





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 2016 and Form 20-F, which are both filed with the SEC in February 2017 in continuation of the publication of the Annual Report 2016, 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 targets, 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 cooperation in relation thereto
- Statements containing projections of or targets for revenues, costs, income (or loss), earnings per share, capital expenditures, dividends, capital structure, net financials and other financial measures
- 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 presentation, 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 related 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' on pp 40-43 of the Annual Report 2016.

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 presentation, whether as a result of new information, future events or otherwise.

Important drug information

- Victoza® (liraglutide 1.2 mg & 1.8 mg) is approved for the management of type 2 diabetes only
- Saxenda® (liraglutide 3 mg) is approved in the US and EU for the treatment of obesity only





Sales development

- Sales increased by 2% in local currencies and were unchanged in Danish kroner
 - International Operations grew by 5% in local currencies
 - North America Operations sales were unchanged in local currencies
 - Tresiba® and Victoza® accounted for the largest share of growth and grew by 85% and 18% in local currencies, respectively

Research and Development

- Ozempic® approved in the US and positive CHMP opinion issued in the EU
- Cardiovascular outcomes study, SOUL, for Ozempic® to be initiated mid 2018
- Phase 3a programme STEP and cardiovascular outcomes study SELECT with semaglutide in obesity to be initiated in 2018

Financials

- Operating profit increased by 5% in local currencies and by 1% in Danish kroner
- Diluted earnings per share increased by 3% to 15.39 DKK per share
- 3% increase in total dividend to DKK 7.85 per share of DKK 0.20 proposed (including interim dividend of DKK 3.00 paid in August 2017)
- New share repurchase programme of up to DKK 14 billion to be executed during the coming 12 months
- 2018 financial outlook:
 - Sales growth is expected to be 2-5% measured in local currencies (around 7% lower reported)
 - Operating profit growth is expected to be 1-5% measured in local currencies (around 10% lower reported)





Executive management as of 15 February 2018



President & CEO
Lars Fruergaard Jørgensen

Research & Development

Mads Krogsgaard Thomsen

Product Supply



Henrik Wulff

Commercial Strategy & Corporate Affairs



Camilla Sylvest

North America Operations



Doug Langa¹

International Operations



Maziar Mike Doustdar¹

Biopharm & Legal Affairs



Jesper Brandgaard

Finance, Investor Relations & Procurement



Karsten Munk Knudsen





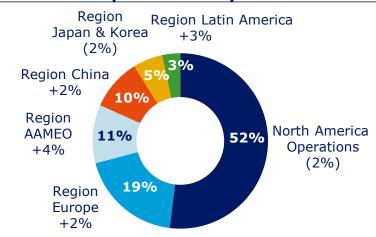
Lars Green



Slide 6

Sales growth driven by International Operations

Sales as reported – full year 2017



Sales of DKK 111.7 billion (0%)

Growth analysis - full year 2017

Local currencies	Growth	Share of growth
North America Operations	(0.2%)	(5%)
Hereof USA	(0.4%)	(10%)
International Operations	5.0%	105%
Region Europe	3.5%	29%
Region AAMEO	8.0%	36%
Region China	5.9%	24%
Region Japan & Korea	2.2%	6%
Region Latin America	7.1%	10%
Total sales	2.3%	100%

AAMEO: Africa, Asia, Middle East & Oceania

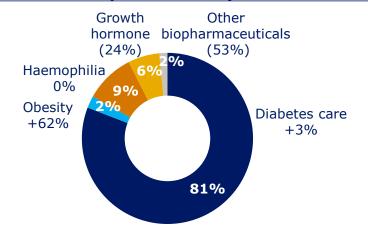




Slide 7

Sales growth derived from diabetes care and obesity, driven by Tresiba[®], Victoza[®] and Saxenda[®]

Sales as reported – full year 2017



Sales of DKK 111.7 billion (0%)

Growth analysis - full year 2017

Local currencies	Growth	Share of growth
New-generation insulin ¹	98%	173%
Modern insulin	(4%)	(76%)
Human insulin	(7%)	(29%)
Victoza®	18%	140%
Other diabetes care ²	(3%)	(5%)
Total diabetes care	6%	203%
Obesity (Saxenda®)	64%	40%
Diabetes care and obesity total	7%	243%
Haemophilia ³	2%	7%
Growth disorders	(22%)	(76%)
Other biopharmaceuticals ⁴	(52%)	(74%)
Biopharmaceuticals	(16%)	(143%)
Total	2%	100%

¹ Comprises Tresiba®, Xultophy®, Ryzodeg® and Fiasp®



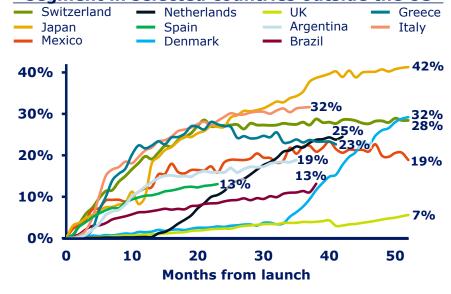
² Primarily NovoNorm® and needles

³ Comprises NovoSeven®, NovoEight® NovoThirteen® and Refixia®

⁴ Primarily Vagifem® and Activelle®

Basal insulin market penetration with Tresiba® supported by Xultophy® launches

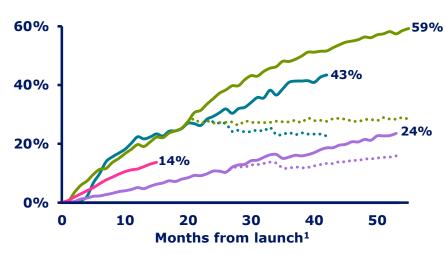
Tresiba® value market share of basal insulin segment in selected countries outside the US



Combined value market share of Tresiba® and **Xultophy®** in selected countries

Full year 2017





Note: Limited IQVIA (formerly IMS) coverage in India Source: IOVIA (formerly IMS), Monthly value figures, Nov 2017

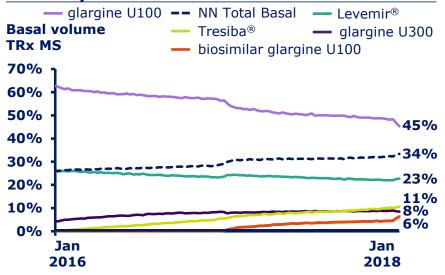
Source: IQVIA (formerly IMS), Monthly value figures, Nov 2017 ¹ Switzerland, Sweden and Greece: Months from Tresiba® launch, France: Months from Xultophy® launch (Tresiba® is not launched in France).



Investor Presentation Full year 2017

Total Novo Nordisk basal insulin volume market share has increased to 34% in the US

Weekly TRx volume market shares in the US



Tresiba® launch in the US

- The ambition to reach 10% Tresiba® TRx volume market share in 2017 achieved
- Tresiba® TRx volume market share is now 10.7%
- Tresiba® formulary access expected to remain largely unchanged at approximately 70% for commercial and Medicare Part D combined in 2018
- Opportunity for Tresiba® to grow volume market share further in early 2018 due to changes in the Part D formulary access

Note: The graph does not show NPH, which accounts for the residual market share Source: IQVIA weekly Xponent Plantrak (excludes Medicaid), 12 Jan 2018 TRX volume: Insulin volume in mega units (MU) associated with total number of prescriptions; MS: Market share

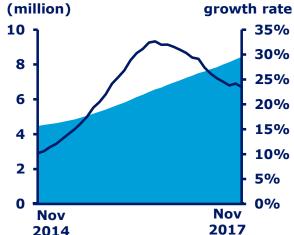
Source: IQVIA weekly Xponent Plantrak (excludes Medicaid), 12 Jan, 2018, VANTAGE FingerTip Formulary bridge, Nov 2017



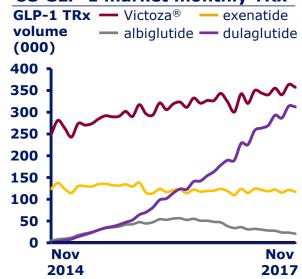
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Victoza® continues strong growth trajectory in the US driven by GLP-1 market volume growth of 23%

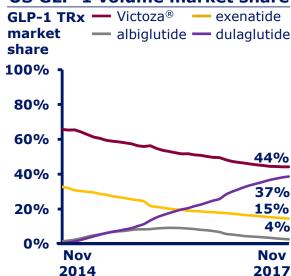
US GLP-1 market development MAT GLP-1 ■ Total TRx — Growth rate TRx volume MAT volume



US GLP-1 market monthly TRx



US GLP-1 volume market share



Source: IQVIA NPA monthly, Nov 2017





OZEMPIC approved in the USA and positive CHMP opinion issued in the EU



Ozempic® label in the USA

Efficacy

- Reduction in HbA_{1c} vs comparators¹
- Reduction in body weight vs comparators¹

Convenience

- Administered once-weekly
- To be launched in the Ozempic[®] pen

Safety

- Guidance on retinopathy similar to wording in insulin labels
- Cardiovascular safety with number of MACE events in clinical section



CHMP endorsed inclusion of CV data from SUSTAIN 6 trial in Ozempic® EU label

	Ozempic® label recommended	Victoza® label
Trial	SUSTAIN 6	LEADER
Patients	3,297	9,340
Reference to CV results in indication	Recommended	Included
MACE	HR: 0.74 ¹	HR: 0.87 ²
Kaplan-Meier	Recommended	Included





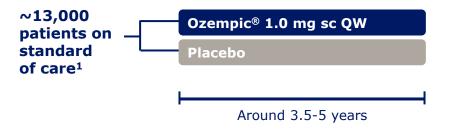
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¹ Statistically significant reduction compared to comparators: placebo, sitagliptin, exenatide extended-release and insulin glargine U100 (phase 3a SUSTAIN trial programme)

¹ 95% confidence interval [0.58;0.95]. ² 95% confidence interval [0.78;0.97] CV: Cardiovascular; MACE: Major adverse cardiovascular events; HR: Hazard ratio

Large cardiovascular outcomes study, SOUL, to be initiated mid 2018 with OZEMPIC

SOUL study design



Study purpose and end-points

- **Purpose:** To confirm that treatment with Ozempic[®] results in decreased cardiovascular risk compared to placebo
- Study design: Randomised and double-blinded
- **Primary endpoint:** Cardiovascular death, non-fatal myocardial infarction or non-fatal stroke (MACE)
- Results: SOUL study results expected in 2023

 1 Inclusion criteria: Type 2 diabetes, established cardiovascular disease or cardiovascular kidney disease, HbA $_1$ c 6.5%-10% sc: Subcutaneous: OW: Once-weekly

changing

MACE: Major adverse cardiovascular event



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Phase 3a programme STEP and CV outcomes study SELECT with semaglutide 2.4 mg in obesity to be initiated

Semaglutide in obesity phase 3a programme, STEP, expected to include ~4,500 patients¹

2018

2019

2020

STEP 1: Weight loss
1,950 patients, 68 weeks

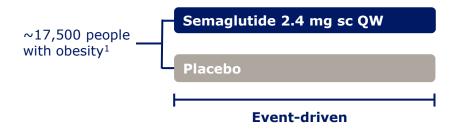
STEP 2: T2D non-insulin patients
1,200 patients, 68 weeks

STEP 3: Maximising weight loss
600 patients, 68 weeks

STEP 4: Maintained weight loss
900 patients, 68 weeks

Expected phase 3a programme completion: 2020

Cardiovascular outcomes study, SELECT, planned for semaglutide in obesity



Completion: Pre-defined number of events

 $^{^1}$ Inclusion criteria: Male or female >45 years, BMI >27 kg/m², myocardial infarction or stroke >60 days, HbA $_{\rm 1c}$ <6.5% QW: Once-weekly; sc: Subcutaneous



¹ Inclusion criteria: Male or female, age ≥18 years, BMI: ≥30 kg/m² or ≥27 kg/m² and ≥1 comorbidity Note: All treatment arms are adjunct to diet and exercise CV: Cardiovascular: T2D: Type 2 diabetes

Full year 2017

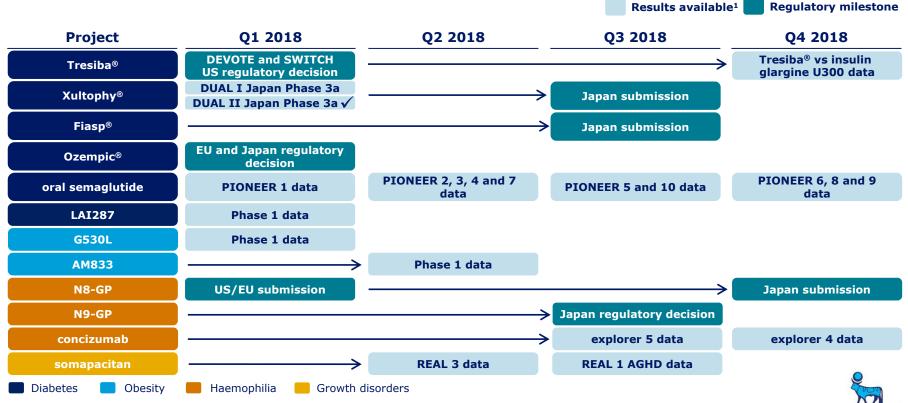
Key development milestones reached

Diabetes	 Results from onset 5 phase 3b trial with Fiasp® compared to NovoRapid® in adults with type 1 diabetes DUAL II Japan phase 3a trial with Xultophy® completed Data from the DEVOTE trial submitted for inclusion in the Tresiba® label in Japan Update to the Xultophy® label based on LEADER and DEVOTE data submitted in the EU Phase 3b trial with Victoza® 1.8 mg in Japanese people with type 2 diabetes successfully completed
Obesity	 Data from LEADER study submitted for inclusion in the Saxenda® label in the USA
Biopharm	Recruitment of people with haemophilia A for the phase 2 trial explorer 5 with concizumab completed





R&D milestones in 2018



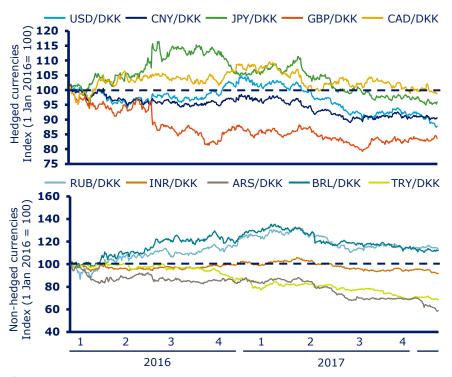
¹ Expected to be published in the given quarter or in the subsequent quarterly company announcement AGHD: Adult growth hormone deficiency

Financial results – full year 2017

DKK million	FY 2017	FY 2016	Change (reported DKK)	Change (local currency)
Sales	111,696	111,780	(0%)	2%
Gross profit	94,064	94,597	(1%)	2%
Gross margin	84.2%	84.6%		
Sales and distribution costs	28,340	28,377	(0%)	2%
Percentage of sales	25.4%	25.4%		
Research and development costs	14,014	14,563	(4%)	(3%)
Percentage of sales	12.5%	13.0%	· ·	
Administration costs	3,784	3,962	(4%)	(3%)
Percentage of sales	3.4%	3.5%	· ·	
Other operating income, net	1,041	737	41%	45%
Operating profit	48,967	48,432	1%	5%
Operating margin	43.8%	43.3%		
Financial items (net)	(287)	(634)		
Profit before income tax	48,680	47,798	2%	
Income taxes	10,550	9,873	7%	
Effective tax rate	21.7%	20.7%		
Net profit	38,130	37,925	1%	
Diluted earnings per share (DKK)	15.39	14.96	3%	



Unfavourable currency impact in 2017 driven by development in both hedged and unhedged currencies



Hedged Currencies	2016 average	2017 average ²	Spot rate ²	Impact of a 5% move ³	
USD ¹	673	660	601	1,900	12
CNY ¹	101	98	95	325	64
JPY ¹	6.2	5.9	5.5	170	12
GBP ¹	911	849	846	90	13
CAD ¹	508	508	487	80	11

Non-hedged Currencies	2016 average	2017 average²	Spot rate ²
ARS ¹	0.5	0.4	0.3
TRY ¹	223	181	159
INR ¹	10.0	10.1	9.5
RUB ¹	10.1	11.3	10.6
BRL ¹	195	207	190

¹ DKK per 100; ² As of 29 January 2018; ³ Impact on operating profit in the next 12 months of a 5% immediate currency move. DKK million per annum; 4 Chinese Yuan traded offshore (CNH)

Note: Operating profit impact of one of the non-hedged currencies appreciating 5% is in the range of DKK -15 to +50 million



Financial outlook for 2018

Expectations 1 February 2018

Sales growth - local currencies

Sales growth - reported

Operating profit growth - local currencies

Operating profit growth - reported

Financial items (net)

Effective tax rate

Capital expenditure

Depreciation, amortisation and impairment losses

Free cash flow

2% to 5%

Around 7 percentage points lower

1% to 5%

Around 10 percentage points lower

Gain of around DKK 2.5 billion

20-22%

Around DKK 9.5 billion

Around DKK 3 billion

Around DKK 27-32 billion

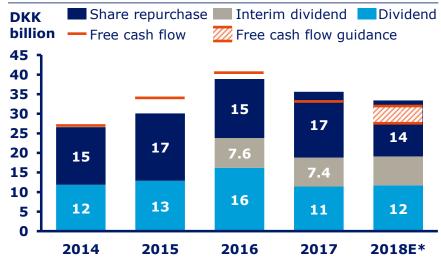
The financial outlook is based on an assumption of a continuation of the current business environment and given the current scope of business activities and has been prepared assuming that currency exchange rates remain at the level as of 29 January 2018





Cash return to shareholders in 2018

Annual cash return to shareholders



Cash return priorities

- New share repurchase programme of up to DKK 14 billion to be executed during the coming 12 months
- Total programme may be reduced in size if significant product in-licensing or bolt-on acquisition opportunities arise during 2018
- For 2017, the proposed total dividend increased to DKK 7.85 per share of DKK 0.20 (including interim dividend of DKK 3.00 paid in August 2017)
- Dividend distributed twice a year as interim dividend in August and final dividend following Annual General Meeting in March of the following year
- Share repurchase to correspond to at least the remaining free cash flow



^{*} Interim dividend for 2018 to be determined. For illustration only.

Note: For 2018 expected free cash flow is DKK 27-32 billion. Share repurchase programmes run for 12 months starting February until end January of the following year.

Closing remarks

Solid leadership positions and continued market opportunities

27%	Novo Nordisk value market share in diabetes care and solid leadership position
~4%	insulin market volume growth
45%	Novo Nordisk insulin volume market share with leadership position across all regions
>20%	GLP-1 volume market growth
51%	Novo Nordisk GLP-1 volume market share with global leadership position
37%	Saxenda® value market share with a global leadership in the anti obesity market

Promising pipeline and product launches

- The only company with a full portfolio of novel insulin and GLP-1 products
- Semaglutide portfolio offers expansion opportunity with both once-weekly Ozempic[®] and oral administration
- Xultophy® supports promising outlook for insulin and GLP-1 combination therapy
- Saxenda® and multiple clinical stage development projects hold potential within obesity
- Broad pipeline within haemophilia

Source: IQVIA (formerly IMS) MAT Nov 2017 volume and value (DKK) figures





Investor contact information

Share information

Novo Nordisk's B shares are listed on the stock exchange in Copenhagen under the symbol 'NOVO B'. Its ADRs are listed on the New York Stock Exchange under the symbol 'NVO'. For further company information, visit Novo Nordisk on the internet at: novonordisk.com

Upcoming events

22 Mar 2018	Annual General Meeting 2018
02 May 2018	Financial statement for the first three months of 2018
08 Aug 2018	Financial statement for the first six months of 2018
01 Nov 2018	Financial statement for the first nine months of 2018
01 Feb 2019	Financial statement for 2018

Investor Relations contacts

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Appendix

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Novo Nordisk at a glance

Global leader in diabetes care

- A focused pharmaceutical company with leading positions in diabetes, haemophilia and growth hormone
- Significant growth opportunities driven by the diabetes pandemic, fuelled by global presence and strong research and development pipeline
- High barriers to entry in biologics
- Operating profit growth targeting 5% yearly on average (measured in local currencies)
- Earnings conversion to cash targeting 90%
- Cash generated returned to shareholders

Global insulin market leadership

Global insulin market share: 46%



Source: IQVIA (formerly IMS) MAT Nov 2017 volume figures

AAMEO: Africa, Asia, Middle East & Oceania



Novo Nordisk strategic foundation

STRATEGIC PRIORITIES

Strengthen leadership in

Strengthen leadership in OBESITY CARE

Pursue leadership in **HAEMOPHILIA**

DIABETES CARE

Strengthen leadership in GROWTH DISORDERS

Expand into other

SERIOUS CHRONIC DISEASES

CORE CAPABILITIES

Engineering, formulating, developing and delivering protein-based treatments Deep disease understanding

Efficient large-scale production of proteins

Global commercial reach and leader in chronic disease care

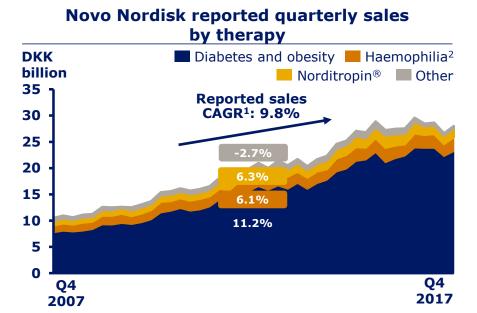
Driving change to defeat diabetes and other serious chronic conditions

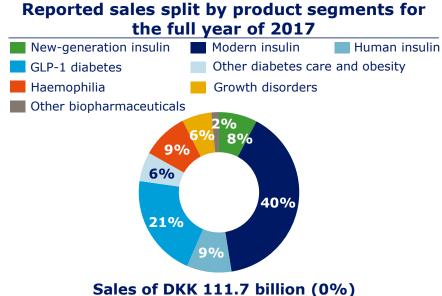
Novo Nordisk Way





Top line growth driven by the diabetes pandemic





² Haemophilia includes NovoSeven®, NovoThirteen®, NovoEight® and Refixia®





Slide 25

¹ CAGR for 10-year period

Novo Nordisk has leading positions in diabetes, haemophilia and obesity

Diabetes Market value DKK Novo Nordisk value market share billion Global market position #1 **500 50%** 400 40% 300 30% 200 CAGR¹ value: 16.2% 20% 100 10% 0% Nov Nov 2012 2017

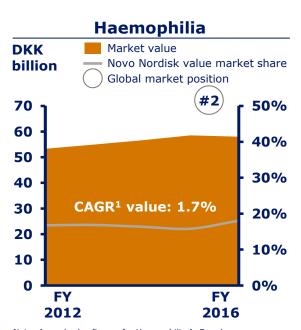
¹ CAGR for 5-year period Source: IQVIA (formerly IMS) MAT Nov, 2017 value figures





Note: Value data is based on Australia, Belgium, Brazil, Canada, Chile, Denmark, Germany, Italy, Mexico, Russia, Spain, UAE, USA ² CAGR for 2-year period

Source: IQVIA (formerly IMS) MAT Nov, 2017 value figures

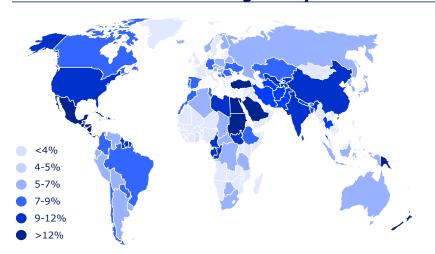


Note: Annual sales figures for Haemophilia A, B and inhibitor segment Source: Company reports

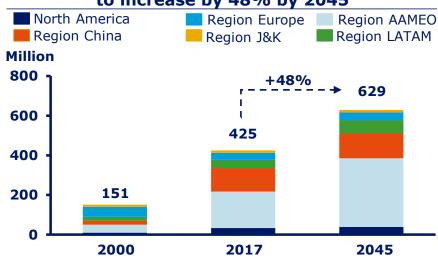


Global diabetes prevalence is increasing and 629 million people are expected to have diabetes by 2045

Around 10% of all adults globally have diabetes



The number of people with diabetes is expected to increase by 48% by 2045



Source: Adapted from International Diabetes Federation: Diabetes Atlas 8th Edition 2017



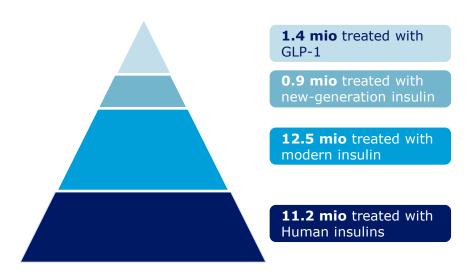
J&K: Japan & Korea; AAMEO: Africa, Asia, Middle-East and Oceania; LATAM: Latin America Source: International Diabetes Federation: Diabetes Atlas 1th Edition 2000 and Diabetes Atlas 8th Edition 2017

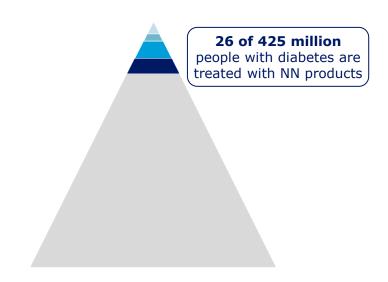


Focus on driving global insulin growth by increasing the number of people benefitting from Novo Nordisk products

Around 26 million people are currently treated with Novo Nordisk insulin and GLP-1 products

Only 6% of all people with diabetes are treated with Novo Nordisk products





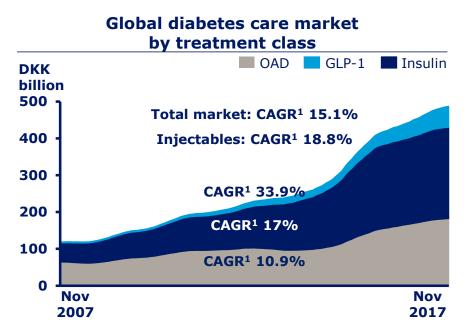
NN: Novo Nordisk

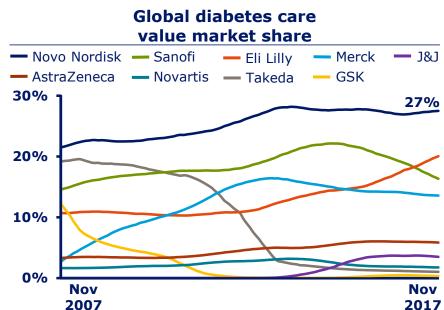
Source: International Diabetes Federation: Diabetes Atlas 8th Edition 2017





Novo Nordisk has a strong leadership position within the growing diabetes care market





¹ CAGR for 10-year period OAD: Oral Anti-diabetic

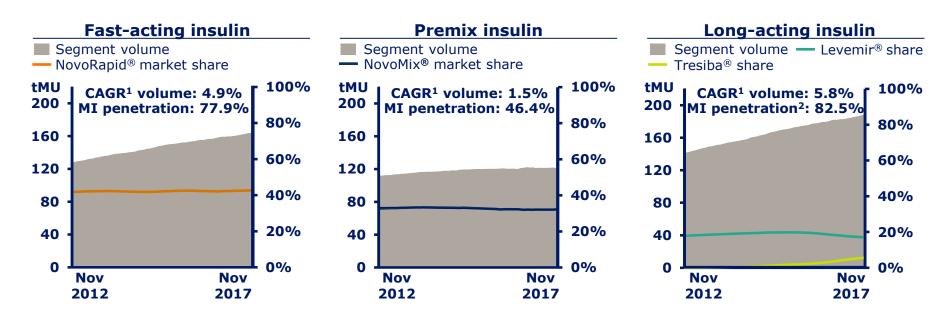
Source: IQVIA (formerly IMS) MAT Nov, 2017 value figures



Source: IQVIA (formerly IMS) MAT Nov, 2017 value figures



Investor Presentation



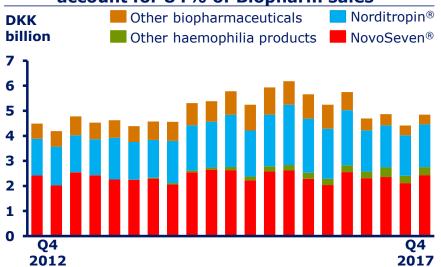
¹ CAGR for 5-year period. ² Includes new-generation Insulin. tMU: Thousand mega units Note: Modern insulin (MI) penetration is of total segment, ie including animal and human insulin; Data is sensitive to changes in IQVIA data collection and reporting methodology Source: IQVIA (formerly IMS) MAT Nov, 2017 volume figures





Biopharm constitutes 17% of Novo Nordisk sales and a strategy has been defined to return to growth





'Return to Growth' strategy builds on organic, non-organic and organisational initiatives



¹ Reported sales for the full year 2017





Novo Nordisk R&D strategy and priorities

STRATEGIC PRIORITIES

R&D PRIORITIES

Strengthen leadership in **DIABETES CARE**



Develop disruptive insulin and GLP-1 based products with distinct clinical and/or delivery advantages

Investor Presentation

 Develop novel mechanisms that reverse the course of diabetes, act as insulin sensitisers and improve hard clinical endpoints

Strengthen leadership in **OBESITY CARE**



 Develop new biologics combined with GLP-1 to achieve >15% weight loss

Pursue leadership in **HAEMOPHILIA**



 Pursue subcutaneous delivery of long-acting coagulation factors and bypassing agents

Strengthen leadership in **GROWTH DISORDERS**



Bring once-weekly growth hormone to market and expand indications

Expand into other **SERIOUS CHRONIC DISEASES**



Enter NASH, CVD and CKD by leveraging GLP-1 and other internal assets as well as licensing external opportunities

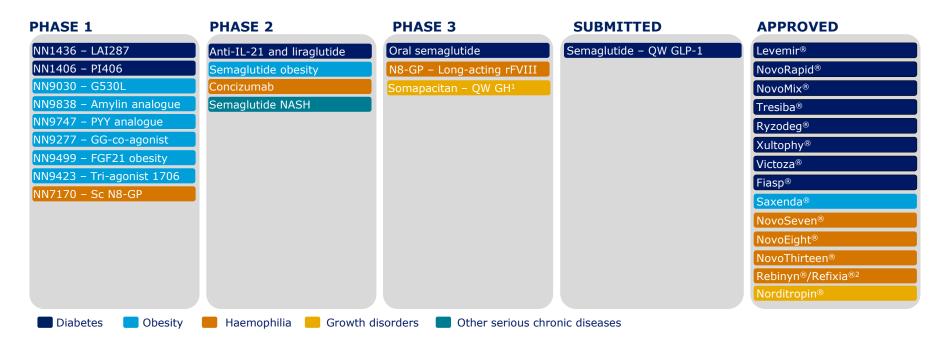
Innovate to improve patient outcomes and drive growth

CKD: Chronic kidney disease; CVD: Cardiovascular disease; NASH: Non-alcoholic steatohepatitis





Significant growth opportunities fuelled by strong pipeline across all four strategic focus areas



¹ Study conducted in adult growth hormone disorder ² Rebinyn® is the brand name in the US and Refixia® in the EU QW: Once-weekly; GG: Glucagon GLP-1; Sc: Subcutaneous; QD: Once daily; GH: Growth hormone



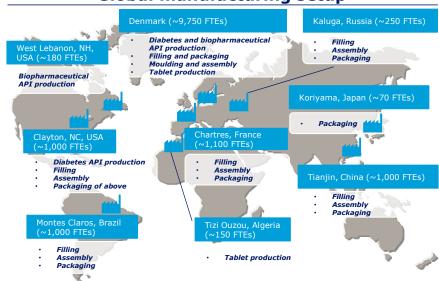


Growth opportunities supported by strong global presence in both sales and manufacturing

FTEs in sales regions¹

North America Operations:	~4,800
Region Africa, Asia, Middle-East and Oceania (AAMEO):	~4,600
Region China:	~3,000
Region Europe:	~2,800
Region Japan & Korea:	~1,200
Region Latin America:	~900
Total non-HQ/manufacturing FTEs:	~19,000¹

Global manufacturing setup



¹ FTEs represent full-time equivalents in Novo Nordisk's sales regions (excludes all other employees in headquarter, research sites and manufacturing sites) as of Dec 2017





Solid patent protection of innovative drugs

Novo Nordisk's position is protected by patents and value chain setup

	EU patent protection ¹	US patent protection ¹
OZEMPİC' semaglutide injection	2031	20322
Fiasp	2030	2030
fast-acting insulin aspart Xultophy	2029 ³	2029 ³
insulin deglude: Piraglutide (CNVA corgin) injection ************************************	2028	2029
RY 200EG 70Virundeducard 07viruninsport 1044 oranjiriecton	2028	2029
VICTOZA	20235	20235
Levemir*	2018	2019
Novo (insulin detemir) Novo (ix* (biphasic insulin aspart)	Expired ⁴	Expired ⁵
NovoRapid*	Expired ⁵	Expired ⁵
norditropin°	Expired ⁵	Expired ⁵

¹List does not include all marketed products. ²Assuming paediatric extension. ³ Protected by patents on the individual compounds insulin degludec and liraglutide as listed. ⁴ Expired in 2015. ⁵ Expired in 2017. Note: Saxenda patent identical to the Victoza® patent.

Barriers to entry for biosimilar players

Research & Development

- Need to show comparability in PK/PD trials
- · Strict regulatory requirements in EU and the US
- · Requirement for both drug and device offering

Manufacturing

- Economies of scale for incumbents.
- Up-front CAPEX requirements with slow return on investment

Commercialisation

- Large and fragmented target audience
- Cost pressure from payers
- On-going conversion to next generation drugs and slow market dynamics

PK: Pharmacokinetic, PD: Pharmacodynamic; CAPEX: Capital expenditure





Slide 35

Key assumptions supporting the long-term financial target of an average of 5% operating profit growth¹

Expected future sales drivers

Insulin

- Continued underlying 3-4% volume growth of the global insulin market
- Market share gains and value upgrades driven by the new-generation franchise

GLP-1

- Continued expansion of the GLP-1 market with underlying volume growth of >10% annually
- Solid market leadership with Victoza® and Ozempic®

Obesity

- Continued expansion of the obesity market with Saxenda® in the US
- Successful launches in new markets.

Biopharm

- Limited growth of the biopharm franchise mainly due to increased competition in the haemophilia space
- Potential for bolt-on activity to support growth

Expected future cost drivers

GM

- Expected to decline with approximately 1-3%points over the next 3-4 years
- Lower realised prices and new product launches expected to negatively impact gross margin partly offset by product mix and manufacturing efficiency

S&D

 To be streamlined leading to savings of 1-2%points over the next 3-4 years



- Expected to remain unchanged around 13%, but flexible should external opportunities arise
- Refocused research efforts free up resources for investment in other serious chronic disease areas



 Continued focus on administration costs leading to savings and an administration cost to sales ratio approaching 3%



¹ New long term financial target established in connection with the Q3 2016 report. The target of 5% operating profit growth is an average for the period of 4-5 years, with 2015 as the base year.



Diabetes



Diabetes – the inability to manage blood sugar levels appropriately

Facts about diabetes

Diabetes is a chronic disease that occurs either when the pancreas does not produce enough insulin or when the body cannot effectively use the insulin produced by the pancreas

Primary classifications:

Type 1 diabetes: Complete insulin deficiency due to

destruction of beta-cells in the pancreas

Type 2 diabetes: Characterised by some degree of insulin

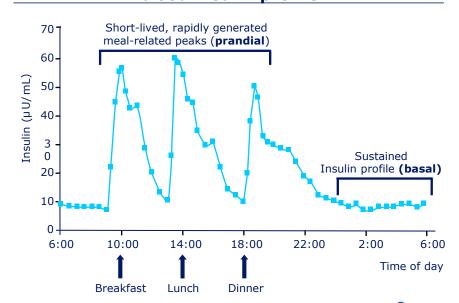
resistance and insulin deficiency

Insulin:

- Facilitates uptake of blood sugar into cells
- Inhibits glucose release from the liver



The aim of insulin therapy is to recreate normal blood insulin profile





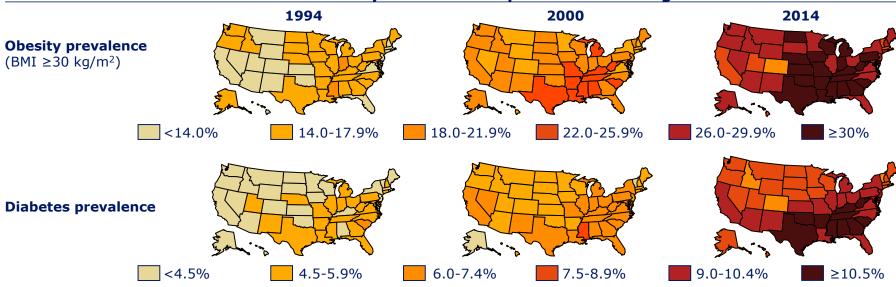
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Full year 2017

Diabetes pandemic is fuelled by growing rates of obesity





CDC: Centers for Disease Control and Prevention Source: CDC's Division of Diabetes Translation. National Diabetes Surveillance System available at http://www.cdc.gov/diabetes

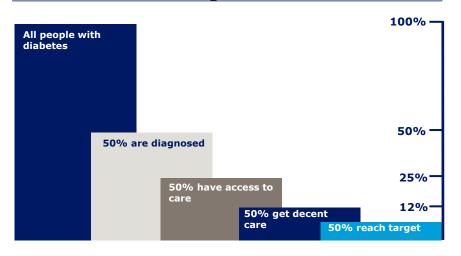




Poor diagnosis rates, lack of access to optimal treatment and poor glycaemic control remain global problems

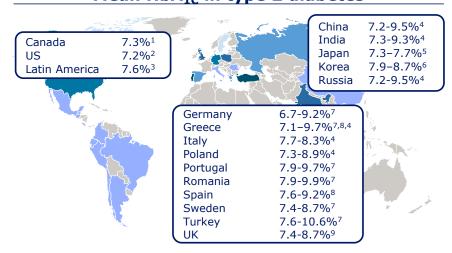
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Diagnosis and optimal treatment remains a challenge – the rule of halves



The worldwide challenge of glycaemic control:

Mean HbA_{1C} in type 2 diabetes



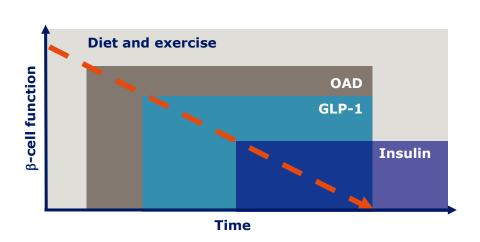
¹ Harris et al. Diabetes Res Clin Pract 2005;70:90-7; ² Hoerger et.al. Diabetes Care 2008;31:81-6; ³ Lopez Stewart et al. Rev Panam Salud Publica 2007;22:12-20; ⁴ Valensi et al. Int J Clin Pract 2009;63(3):522-31; ⁵ Arai et al. J Diabetes Investig. 2012 Aug 20;3(4):396-401; ⁶ Ko et al. Diab Med 2007;24:55-62; ⁷ Oguz et al. Curr Med Res Opin 2013;29:911-20; ⁸ Liebl et al. Diab Ther 2012;3:e1-10; ⁹ Blak et al. Diab Med 2012;29:e13-20



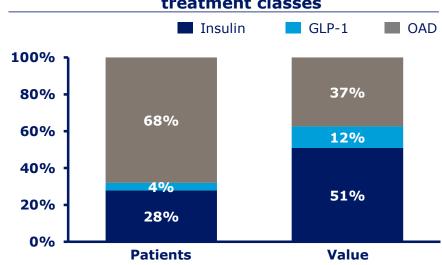


Insulin is the ultimate care for people with diabetes

Progression of type 2 diabetes and treatment intensification



Distribution of patients and value across treatment classes



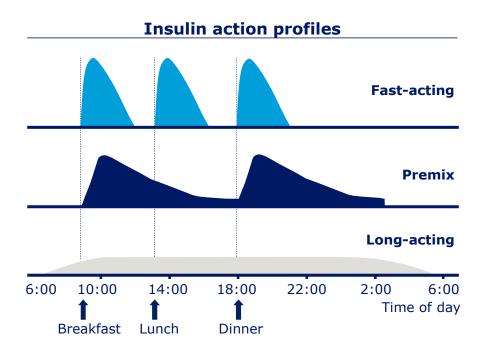
OAD: Oral anti-diabetic



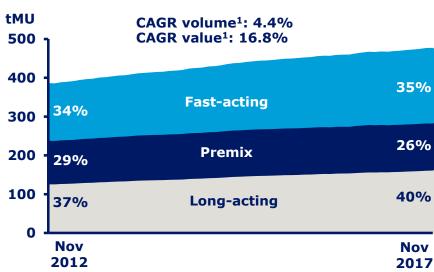
Note: Patient distribution across treatment classes is indicative and based on data for US, UK, Germany and France. Value figures based on IQVIA (formerly IMS) MAT Nov, 2017 Source: IQVIA (formerly IMS) PharMetrix claims data, IQVIA (formerly IMS) disease analyser, IQVIA (formerly IMS) MIDAS



The insulin market is comprised of three segments



Global insulin volume market by segment



 $^{\rm 1}$ CAGR for 5-year period. Value in DKK Source: IQVIA (formerly IMS) monthly MAT volume and value Nov 2017(DKK) figures





Medications used for the treatment of type 2 diabetes

Commonly prescribed product classes for the treatment of type 2 diabetes

Class	HbA _{1C} change	Hypoglycae- mia risk	Weight change	CVD risk	Dosing (pr. day)	Contraindication/ undesired effects
Metformin	1.5	No	Neutral	Minimal	2 OADs	Kidney, liver
Sulfonylurea	1.5	Yes	Gain	None	1 OAD	Essentially none
TZDs	0.5 - 1.4	No	Gain	Varies	1 OAD	CHF, liver
DPP-IV inhibitors	0.6 - 0.8	No	Neutral	TBD	1-2 OADs	None
SGLT-2 inhibitors	0.5 - 0.9	No	Loss	Varies	1 OAD	Genital infections, urinary tract infections
GLP-1	1.0 - 2.0	No	Loss	Varies	Varies	GI side effects, MTC
Long-acting insulin	1.5 - 2.5	Yes	Gain	TG and HDL	1 injection	Hypoglycaemia
Fast-acting insulin	1.5 - 2.5	Yes	Gain	TG and HDL	1-4 injections	Hypoglycaemia

Note: TG and HDL: Beneficial effect on triglycerides and high-density lipoprotein cholesterol; CHF: Congestive heart failure; GI: Gastro intestinal; MTC: Medullary thyroid cancer; TZD: thiazolidinediones; OAD: Oral anti-diabetic; 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.





Novo Nordisk current and future product portfolio covers the type 2 diabetes treatment cascade¹

Overview of current and future products in Novo Nordisk's diabetes portfolio

Investor Presentation

When basal insulin is not enough When When it's time metformin is for insulin **Once-daily** not enough Mealtime insulin control optimisation oral semaglutide Second generation **Xultophy**® OZEMPÍC' analogues fast-acting insulin aspart First generation Leve mir ° Novo(M)ix Novo Rapid[®] analogues Mixtard® 30 **Human insulin Insulatard®** Actrapid®

¹ Pending clinical development programmes and regulatory processes for oral semaglutide and semaglutide





Novo Nordisk holds a broad insulin portfolio with three generations of products covering the treatment cascade

Novo Nordisk product portfolio includes three generations of insulin products

Commercial focus depends on market maturity and market access situation

Full year 2017

	Basal insulin	Mix insulin	GLP & basal combination	Bolus insulin		Commercial focus	Volume strategy	Value strategy
New- generation insulin	Tresiba®	Ryzodeg®	Xultophy®	Fiasp®	New- generation insulin	Differentiation		•
Modern insulin	Levemir®	NovoMix®		NovoLog®	Modern insulin	Familiarity		
Human insulin	Insulatard®	Mixtard®		Actrapid®	Human insulin	Affordability		





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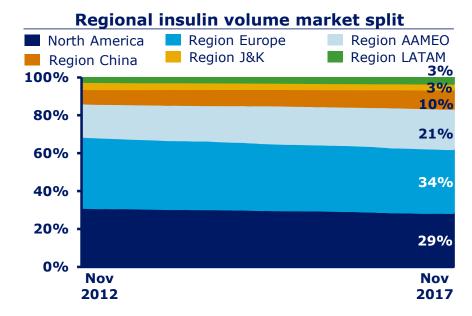
Stable global insulin volume growth

Regional insulin volume growth - North America - Region Europe - Region AAMEO - Region China - Region J&K - Region LATAM 30% 25% 20% 15% 5% 3% 0%



Nov

2017



Reg: Region; J&K: Japan & Korea; AAMEO: Africa, Asia, Middle-East and Oceania; LATAM: Latin America Note: Data is sensitive to changes in IQVIA data collection and reporting methodology Source: IQVIA (formerly IMS) monthly MAT Nov, 2017 volume figures



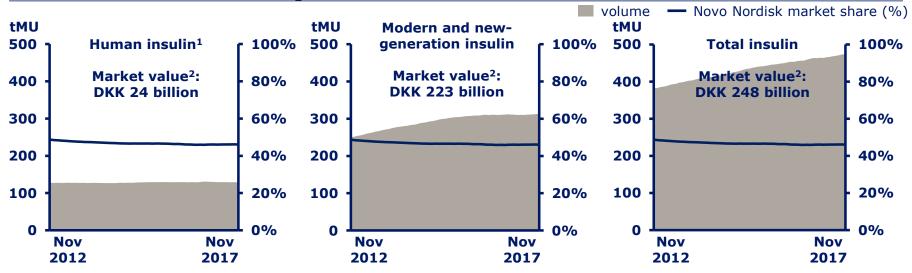
Nov

2012

Maintaining global insulin leadership by sustaining modern and new-generation insulin market share

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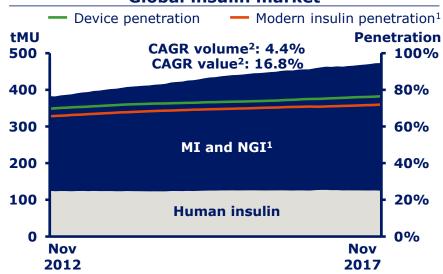
¹ Includes animal insulin. ² Annual value of total insulin class. tMU: Thousand mega units Note: Data is sensitive to changes in IQVIA data collection and reporting methodology Source: IQVIA (formerly IMS) monthly MAT Nov, 2017 value and volume figures





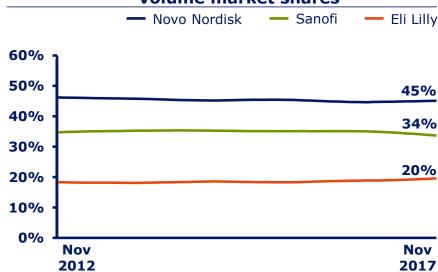
Strong underlying insulin market growth and sustained global volume market share

Global insulin market



¹ MI: Modern insulin. NGI: New-generation insulin ² CAGR for 5-year period Note: Data is sensitive to changes in IQVIA data collection and reporting methodology Source: IQVIA (formerly IMS) monthly MAT Nov, 2017 volume and value (DKK) figures

Global modern and new-generation insulin volume market shares



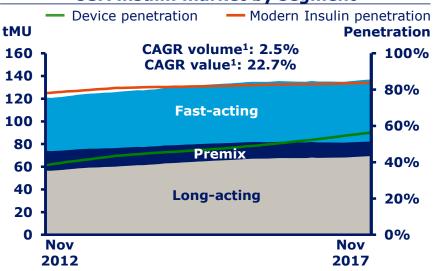
Note: Data is sensitive to changes in IQVIA data collection and reporting methodology, does not add up to 100% as only selected pharmaceutical companies are included Source: IQVIA (formerly IMS) monthly MAT Nov, 2017 volume figures





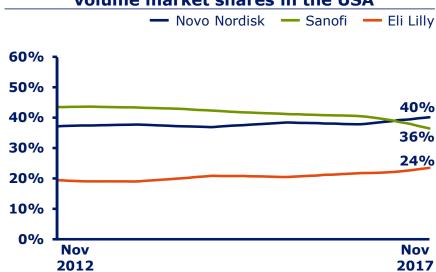
Novo Nordisk is now the market leader in the USA within the modern and new-generation insulin segment

USA insulin market by segment



Modern insulin and new-generation insulin volume market shares in the USA

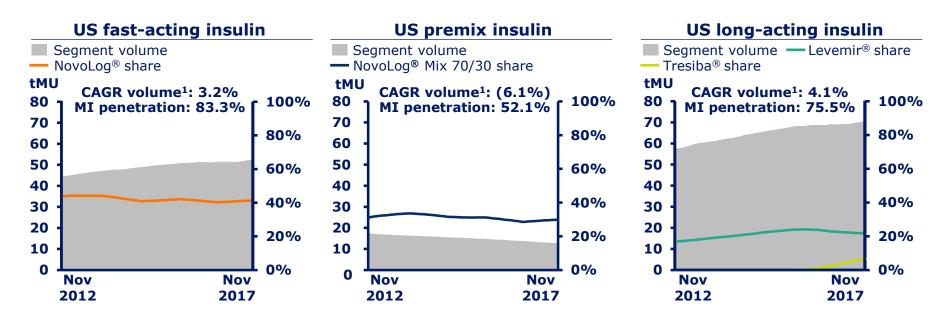
Full year 2017



¹ CAGR for 5-year period Source: IQVIA (formerly IMS) monthly MAT Nov, 2017 volume and value (DKK) figures

Source: IOVIA (formerly IMS) monthly MAT Nov, 2017 volume figures

Novo Nordisk's modern and new generation insulins maintain market share in the US insulin market



Investor Presentation

¹ CAGR for 5-year period; tMU: Thousand mega units Note: US trend data reflect changes to IQVIA data collection coverage and methodology as of January 2012. Modern insulin (MI) penetration is of total segment, ie including human insulin Source: IQVIA (formerly IMS) monthly MAT Nov, 2017 volume figures

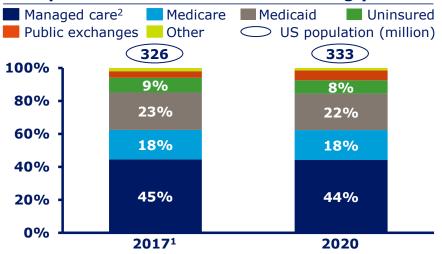




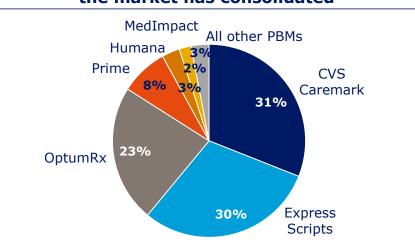
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US health insurance is dominated by few large commercial payers with slow expansion of public insurance coverage

US population by health insurance status expected to remain stable in coming years



In 2017, PBMs covered 285 million lives and the market has consolidated



Source: Census.gov; Congressional Budget Office Health Insurance Coverage 2016-2026; Medicare Enrollment Dashboard; CMS Health Insurance Enrollment Projection 2015-2025; Medicaid and CHIP Enrollment Report Oct. 2017; CMS Insurance Marketplace Factsheet 2017; CDC.gov

PBM: Pharmacy Benefit Manager

Note: Covers all main channels (Managed Care, Medicare Part D, and Medicaid); market share based on claim adjudication coverage, i.e. not on formulary/rebate decision power Sources: Cleveland Research

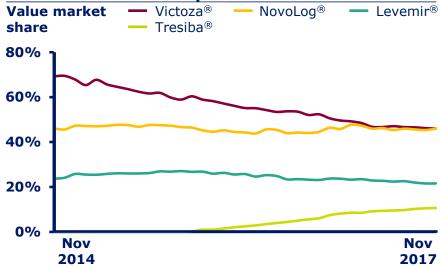


¹ 2017 data reflect historical data through October 2017

² Managed care population was slightly underestimated as only population under age 65 were captured to avoid double counting with those eligible for Medicare.

Key Novo Nordisk diabetes care products remain broadly available in the USA

Value market shares of key Novo Nordisk products in the USA

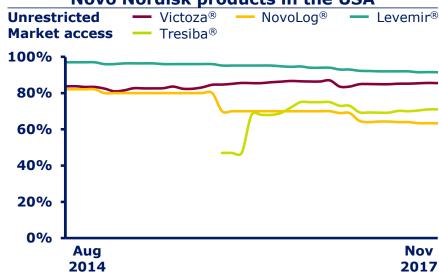


Source: IOVIA NSP Nov 2017:

Note: Market shares: NovoLog®: share of rapid acting insulin segment; Levemir®: share of basal insulin segment: Tresiba® share of basal insulin segment: Victoza®: share of GLP-1 segment

changing diabetes®

% share of unrestricted market access of key Novo Nordisk products in the USA



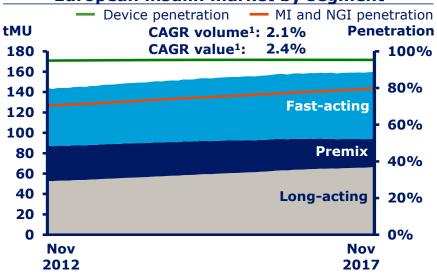
Source: FingerTip Formulary bridge, Nov 2017 Nomenclature and Xponent PlanTrak, Dec 2017; only considers bridged volume; excludes cash and mail order data; Note: Unrestricted access excludes prior authorisation, step edits and other restrictions Levemir® access based on FlexTouch® Pen; NovoLog® access based on FlexPen®; only considers bridged volume; Tresiba® launched in January 2016



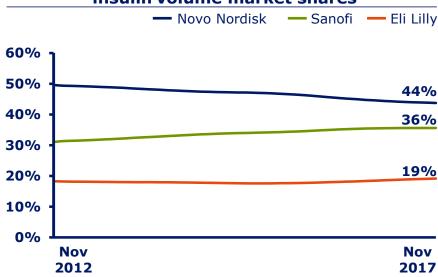
Sustained leadership position in the European modern and new-generation insulin market

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European insulin market by segment



European modern insulin and new-generation insulin volume market shares



¹ CAGR for 5-year period

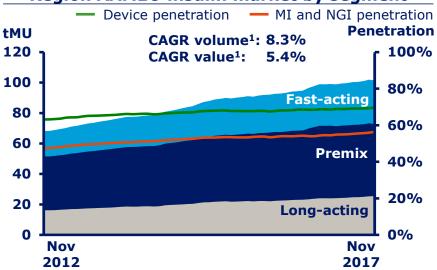
² MI: Modern insulin; NGI: New-generation insulin Source: IOVIA (formerly IMS) monthly MAT Nov. 2017 volume and value (DKK) figures

Source: IQVIA (formerly IMS) monthly MAT Nov, 2017 volume figures, numbers do not add up to 100% due to smaller insulin manufacturers

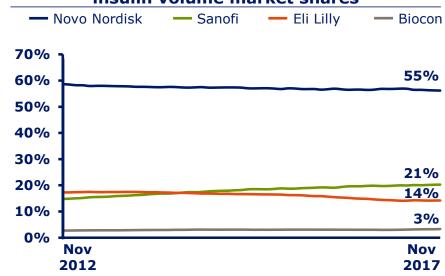
Investor Presentation Full year 2017 Slide 54

Stable insulin leadership position in Region AAMEO comprising Africa, Asia, Middle-East and Oceania

Region AAMEO insulin market by segment



Region AAMEO modern and new-generation insulin volume market shares



¹ CAGR for 5-year period.

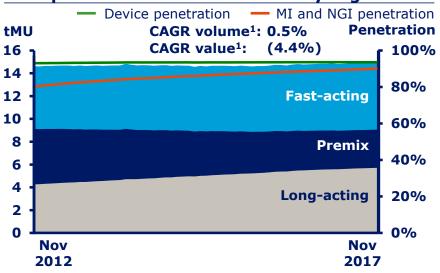
Note: IQVIA only covers the following 8 markets in AAMEO (retail data): Algeria, Egypt, India, New Zealand, Russia, Saudi Arabia, South Africa & Turkey, which together account for 82% of Novo Nordisk insulin sales in AAMEO

Source: IQVIA (formerly IMS) monthly MAT Nov, 2017 volume and value (DKK) figures MI: Modern insulin: NGI: New-generation insulin

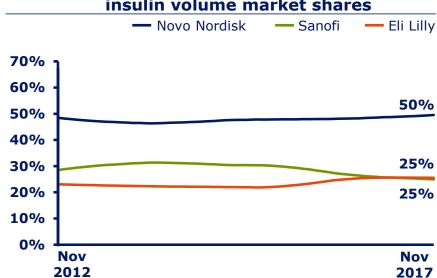
Source: IQVIA (formerly IMS) monthly MAT Nov, 2017 volume figures, numbers do not add up to 100% due to smaller insulin manufacturers

Solid insulin market leadership position in Region Japan & Korea

Japan & Korea insulin market by segment



Japan & Korea modern and new-generation insulin volume market shares



Source: IQVIA (formerly IMS) monthly MAT Nov, 2017 volume figures

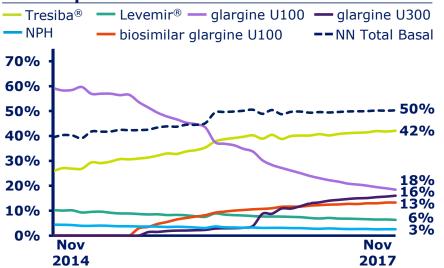
¹ CAGR for 5-year period MI: Modern insulin; NGI: New-generation insulin Source: IOVIA (formerly IMS) monthly MAT Nov, 2017 volume and value (DKK) figures





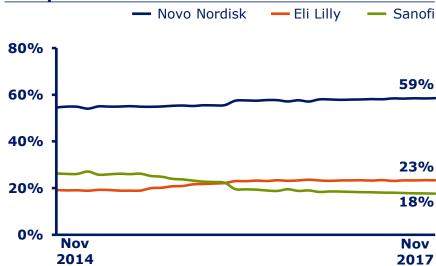
Solid Tresiba® performance strengthens basal insulin market share in Japan





Japanese total insulin value market shares

Full year 2017



Source: IOVIA (formerly IMS) monthly MAT Nov. 2017 value figures

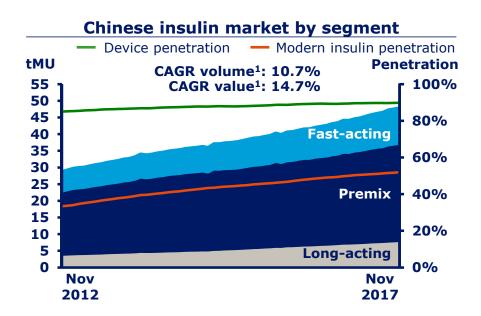
Source: IQVIA (formerly IMS) monthly MAT Nov, 2017 value figures

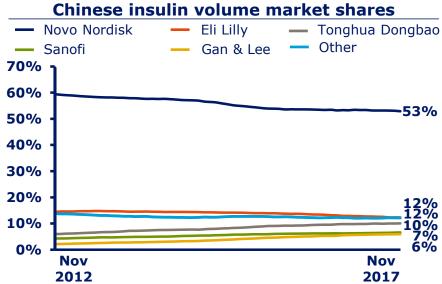




Solid volume growth in the Chinese insulin market

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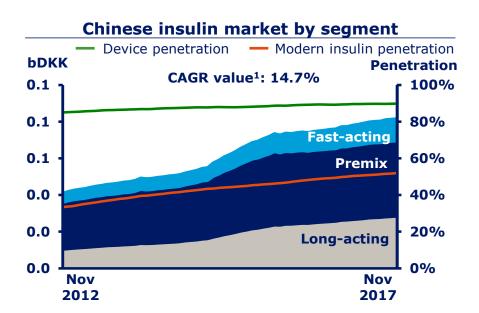


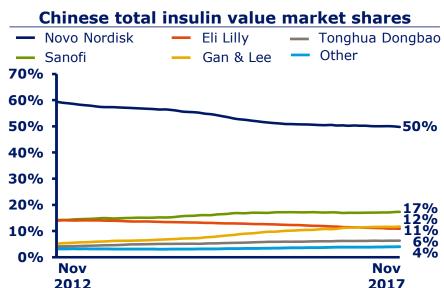
¹ CAGR for 5-year period Note: IQVIA covers around 50% of the total Chinese market (hospital data) Source: IQVIA (formerly IMS) monthly MAT Nov, 2017 volume and value (DKK) figures

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Note: Only selected competitors shown Source: IQVIA (formerly IMS) monthly MAT Nov, 2017 volume figures, numbers do not add up to 100% due to smaller insulin manufacturers not included

Continued value growth in the Chinese long-acting insulin segment



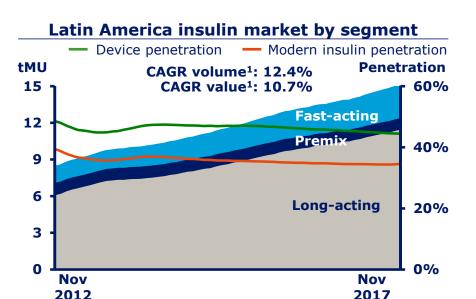


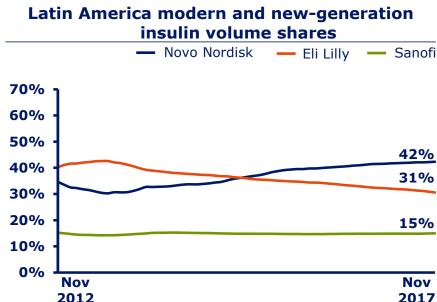
¹ CAGR for 5-year period Note: IMS covers around 50% of the total Chinese market (hospital data) Source: IQVIA (formerly IMS) Rolling MAT Nov, 2017 value (DKK) figures

changing diabetes Note: Only selected competitors

Source: IQVIA (formerly IMS) Rolling MAT Nov, 2017 value figures, numbers do not add up to 100% due to smaller insulin manufacturers not included

Strengthened insulin volume market share in Region Latin America





Note: IMS only covers the following 4 markets in Latin America (retail data): Argentina, Brazil, Colombia, Mexico Source: IQVIA (formerly IMS) monthly MAT data Nov, 2017 volume and value (DKK) figures MI: Modern insulin; NGI: New-generation insulin

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Note: Only top-3 shown

Source: IQVIA (formerly IMS) monthly MAT data Nov, 2017 volume figures, numbers do not add up to 100% due to smaller insulin manufacturers not included

MI: Modern insulin; NGI: New-generation insulin

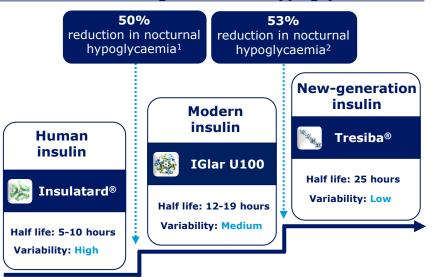


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¹ CAGR for 5-year period

Tresiba® sets a new standard for basal insulin initiation by lowering the risk of hypoglycaemia

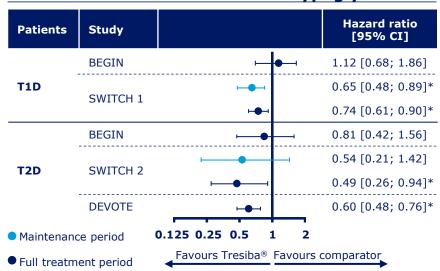
Tresiba® is a leap on the innovation ladder by further reducing nocturnal hypoglycaemia



¹P. D. Home, A. Fritsche, S. Schinzel & M. Massi-Benedetti, Diabetes, Obesity and Metabolism 12: 772–779, 2010

 2 DEVOTE, American Diabetes Association 77th Scientific Sessions, 3-CT-SY22, June 12 2017 IGlar U100: Insulin glargine U100

Tresiba® has consistently demonstrated relevant reductions in severe hypoglycaemia



^{*} Statistically significant difference

Note: Phase 3a BEGIN: Severe=third-party assistance; Phase 3b SWITCH: severe=third-party assistance and adjudicated; Phase 3b DEVOTE: severe=third-party assistance.

T1D: Type 1 diabetes; T2D: Type 2 diabetes; CI: Confidence interval

Source: Ratner et al. Diabetes Obes Metab 2013; Lane et al. Diabetologia 2016;59; Wysham et al. Diabetologia 2016; DEVOTE. American Diabetes Association 77th Scientific Sessions, 3-CT-SY22, June 12 2017

Competitive Tresiba® label across all three triad markets

Tresiba® label characteristics in triad markets

	US	Europe	Japan
Profile	 Half-life of 25 hours and duration of action of at least 42 hours Day to day variability of 20% 	 Duration of action beyond 42 hours Four times lower day-to-day variability vs insulin glargine 	 Duration of action up to 26 hours in Japanese patients Four times lower day-to-day variability vs insulin glargine
Efficacy	 Non-inferior HbA_{1c} reduction Numerically greater FPG reduction Numerically lower insulin dose¹ 	 Non-inferior HbA_{1c} reduction Numerically greater FPG reduction 	 Non-inferior HbA_{1c} reduction Numerically greater FPG reduction
Safety	Overall safety consistent with insulin Hypoglycaemia rates for Tresiba®, but not comparator	 Overall safety consistent with insulin Lower rate of overall and nocturnal hypoglycaemia 	Overall safety consistent with insulin Lower rate of nocturnal hypoglycaemia in Asian subjects
Convenience	Injection any time of dayUp to 80 and 160 units per injection	Adjusting injection time when neededUp to 80 and 160 units per injection	In case of missed dose take as soon as possible

¹ Observed in majority of the trials

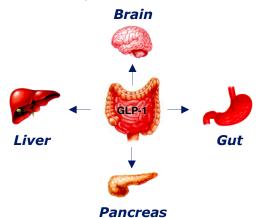




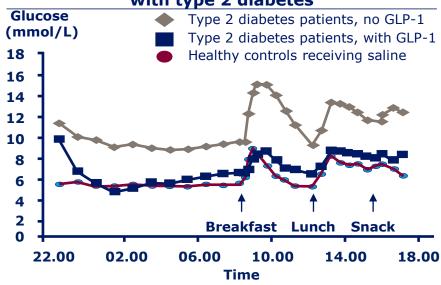
GLP-1 effect dependent on level of blood glucose

GLP-1 mechanism of action when blood sugar levels increase

- Increases insulin secretion in the pancreas
- Reduces glucagon secretion in the liver
- Slows gastric emptying in the gut
- Creates sense of satiety in the brain



GLP-1 lowers blood glucose in patients with type 2 diabetes

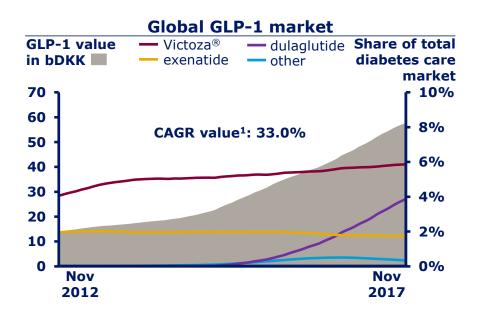


Source: Rachman et al. Diabetologia 1997;40:205-11

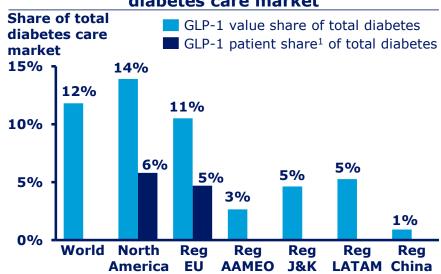




The GLP-1 segment accounts for 12% of the global diabetes care market value



GLP-1 value and patient share of the total diabetes care market



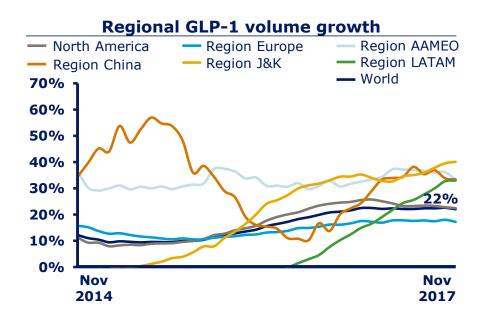
changing diabetes®

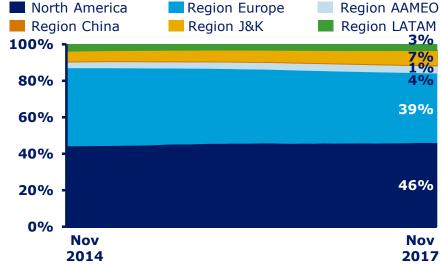
Reg: Region; AAMEO: Africa, Asia, Middle-East and Oceania; J&K: Japan & Korea; LATAM: Latin America. 1 Patient share is indicative and based on data for US, UK, Germany and France only. Source: Value data; IOVIA (formerly IMS) monthly MAT Nov, 2017. Patient data; IOVIA Disease Analyser

Source: Value data; IQVIA (formerly IMS) monthly MAT Nov, 2017. Patient data; IQVIA Disease Analyser (DE, FR, UK), QuintilesIQVIA LRx (USA), Aug 2017

¹ CAGR for 5-year period Source: IQVIA (formerly IMS) monthly MAT Nov, 2017 value figures (DKK)

Strong GLP-1 volume growth in all regions





Regional GLP-1 volume market split

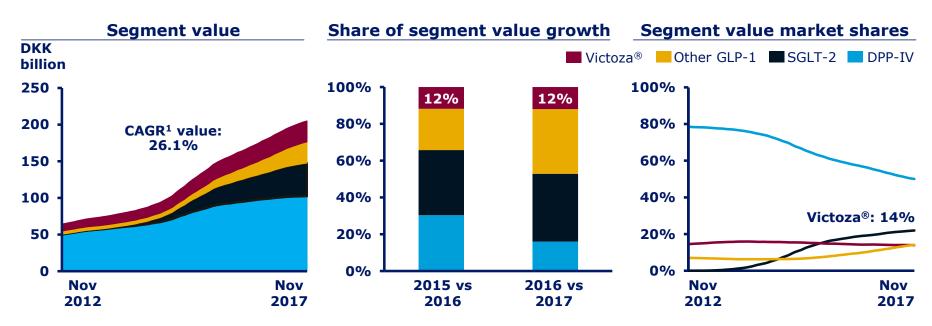
J&K: Japan & Korea; AAMEO: Africa, Asia, the Middle East and Oceania; LATAM: Latin America Note: Data is sensitive to changes in IMS data collection and reporting methodology Source: IOVIA (formerly IMS) monthly MAT Nov. 2017 volume figures

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J&K: Japan & Korea; AAMEO: Africa, Asia, the Middle East and Oceania; LATAM: Latin America Note: Data is sensitive to changes in IMS data collection and reporting methodology Source: IOVIA (formerly IMS) monthly MAT Nov, 2017 volume figures



Victoza[®] maintains a 14% value market share in the GLP-1, SGLT-2 and DPP-IV segment



¹ CAGR for 5-year period Note: Segment only includes DPP-IV, GLP-1 & SGLT-2. Other oral anti-diabetic agents and insulin excluded Source: IQVIA (formerly IMS) MAT Nov, 2017 value figures



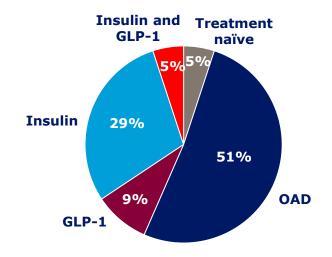


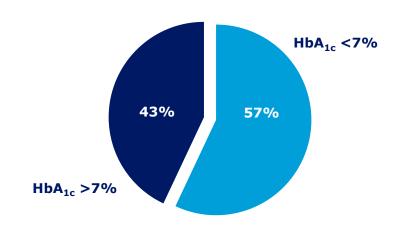
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GLP-1 patients primarily switch from OADs and untapped potential is large with many OAD patients not in control

GLP-1 source of business (new-to-brand prescription market share)

Share of patients on OADs achieving HbA_{1c} below 7% in major European countries





Note: Data based on data from France, Germany, UK and USA only OAD: Oral anti-diabetic (includes but is not limited to DPP-IV, SGLT-2, metformin and sulfonylurea) Source: IQVIA (formerly IMS) Disease Analyser (France, Germany and UK) and IQVIA (formerly IMS) LRX (USA), Sep 2017

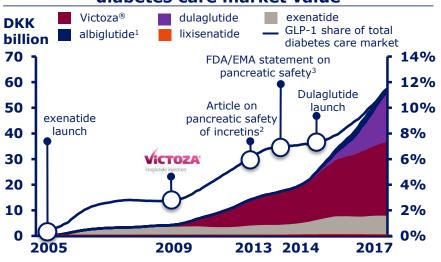
Note: Data based on data from France, Germany and UK only Source: IQVIA (formerly IMS) Disease Analyser (France, Germany and UK), Sep 2017



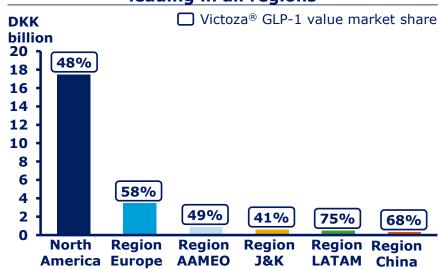
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Significant growth in GLP-1 market with leading market share for Victoza®

Global GLP-1 market value and share of total diabetes care market value



Victoza® sales and GLP-1 value market share leading in all regions



FDA: US Food and Drug Administration; EMA: European Medicines Agency

AAMEO: Africa, Asia, Middle-East and Oceania; J&K: Japan & Korea; LATAM: Latin America Source: Reported sales for FY 2017: IOVIA (formerly IMS) MIDAS, Nov 2017



¹ Manufacturing and sale of albiglutide to be discontinued by Jul 2018
² Butler et al, Marked Expansion of Exocrine and Endocrine Pancreas With Incretin Therapy in Humans With Increased Exocrine Pancreas Dysplasia and the Potential for Glucagon-Producing Neuroendocrine Tumors, Diabetes, Vol. 62, Jul 2013

³ Egan et al, Pancreatic Safety of Incretin-Based Drugs — FDA and EMA Assessment. The New England Journal of Medicine 370;9, 27 Feb 2014 Source: IQVIA (formerly IMS) MIDAS, monthly data, Nov 2017 (Note: IQVIA data does not adequately capture rebates resulting in an overstatement of market value)

Ambition for Ozempic® to become leading weekly GLP-1, with daily GLP-1 use shifting to oral semaglutide

Promotional focus to shift from Victoza® towards Ozempic® as market access emerges

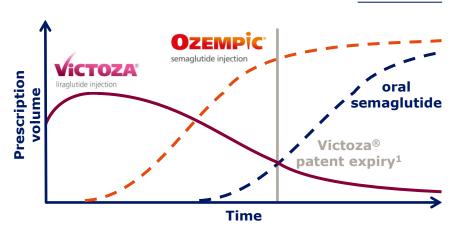
Illustrative

Aim for Ozempic® and oral semaglutide to replace Victoza® as market leaders

Illustrative



market access







¹ Victoza patent expiry expected in 2022/2023 in most markets

The GLP-1 segment accounts for 14% of total diabetes care market value in North America

North America GLP-1 market — dulaglutide Share of total GIP-1 value ─ Victoza[®] diabetes care in bDKK exenatide - other market 14% 60 12% **50** CAGR value¹: 38.8% 10% 40 8% 30 6% 20 4% 10 2% 0% 0 Nov Nov 2012 2017

Key observations for Victoza® in the US market

- Victoza® value market share within the GLP-1 segment is 48%
- Around 80% of commercial and around 90% of Medicare Part D lives are covered without restrictions
- Around 93% of new patients who start on Victoza® have not used GLP-1 before
- Around 70% of prescriptions are for the higher dose 1.8 mg

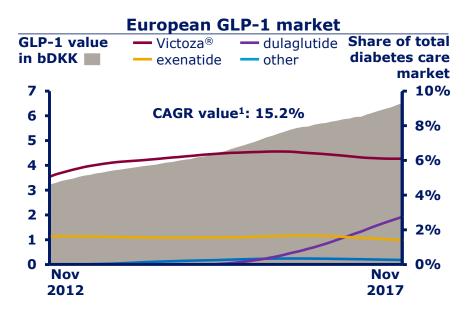
 1 CAGR for 5-year period Source: IQVIA (formerly IMS) monthly MAT Nov, 2017 value figures (DKK)

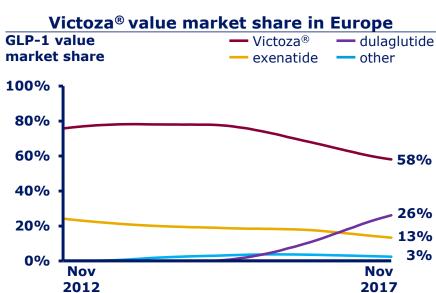


Source: QIMS monthly, MAT Nov 2017



The GLP-1 segment accounts for around 11% of total diabetes care market value in Europe



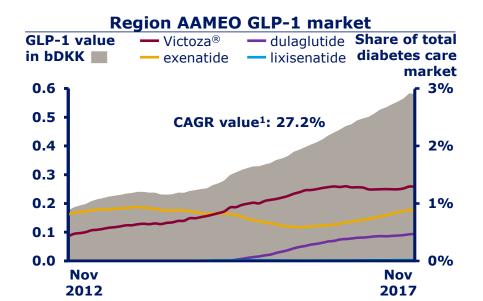


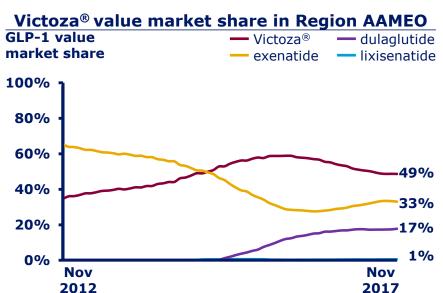


Source: IQVIA (formerly IMS) monthly MAT Nov, 2017 value figures (DKK)

 $^{^{1}}$ CAGR for 5-year period Source: IQVIA (formerly IMS) monthly MAT Nov, 2017 value figures (DKK)

The GLP-1 segment accounts for 3% of total diabetes care market value in Region AAMEO





¹ CAGR for 5-year period AAMEO: Africa, Asia, the Middle East and Oceania

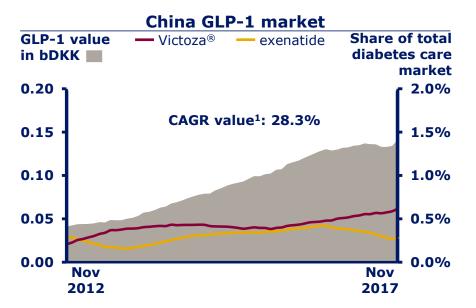
Source: IQVIA (formerly IMS) monthly MAT Nov, 2017 value figures (DKK)

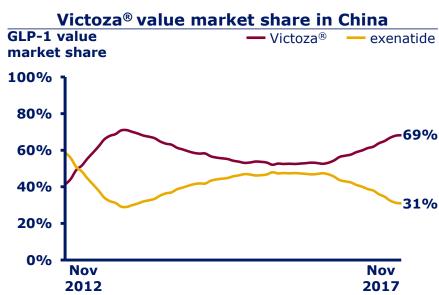
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Source: IQVIA (formerly IMS) monthly MAT Nov, 2017 value figures (DKK)



The GLP-1 segment accounts for around 1% of the total diabetes care market value in Region China

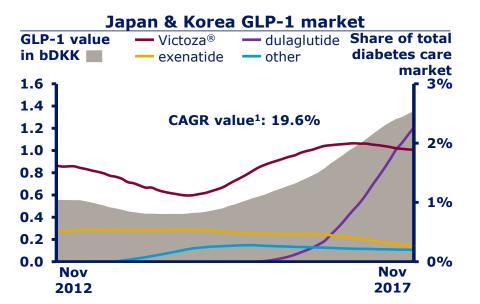


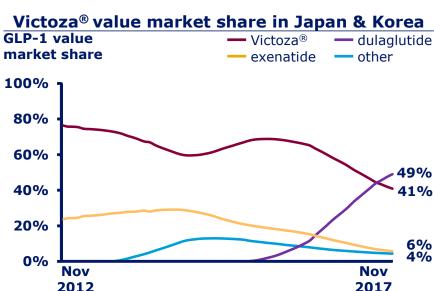


¹ CAGR for 5-year period Source: IQVIA (formerly IMS) monthly MAT Nov, 2017 value figures (DKK)

Source: IOVIA (formerly IMS) monthly MAT Nov. 2017 value figures (DKK)

The GLP-1 segment accounts for around 5% of the total diabetes care market in Region Japan & Korea



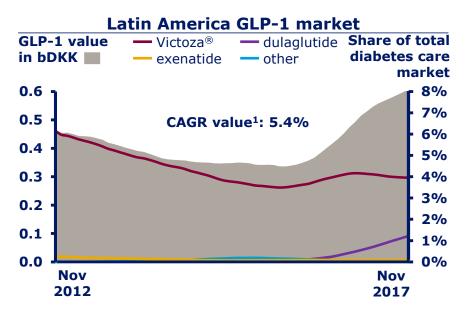


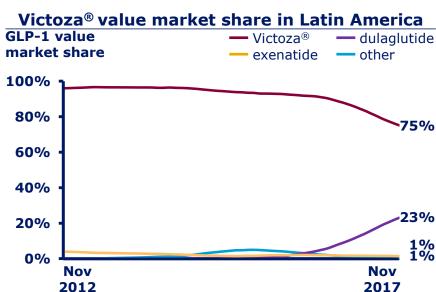
 $^1\,\text{CAGR}$ for 5-year period Source: IQVIA (formerly IMS) monthly MAT Nov, 2017 value figures (DKK)



Source: IQVIA (formerly IMS) monthly MAT Nov, 2017 value figures (DKK)

Strong Victoza® market leadership in Region Latin America





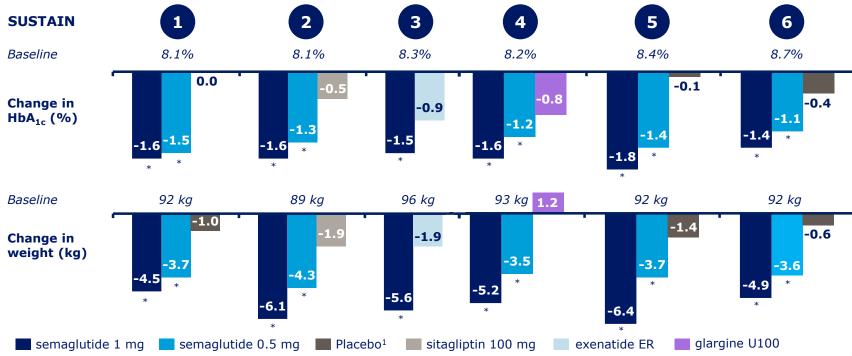
 $^1\,\text{CAGR}$ for 5-year period Source: IQVIA (formerly IMS) monthly MAT Nov, 2017 value figures (DKK)

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Source: IQVIA (formerly IMS) monthly MAT Nov, 2017 value figures (DKK)

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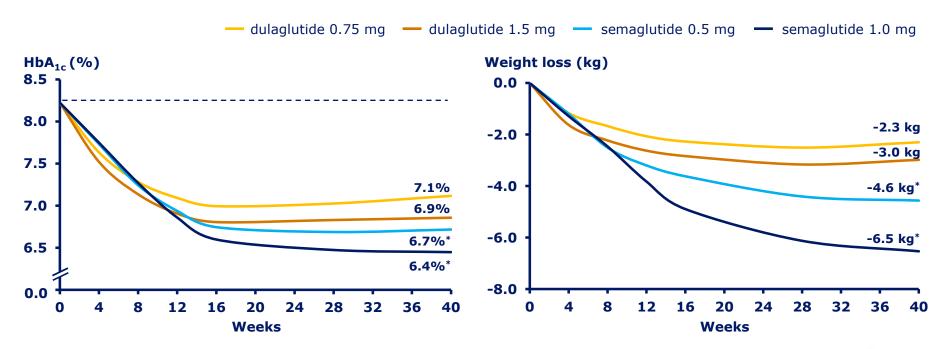
SUSTAIN phase 3a trials with semaglutide successfully completed



^{*} Statistically significant; ¹ SUSTAIN 1: Once-weekly semaglutide versus placebo in drug-naïve subjects with type 2 diabetes; SUSTAIN 5: Once-weekly semaglutide versus placebo in subjects with type 2 diabetes added to insulin; SUSTAIN 6: Once-weekly semaglutide versus placebo, added to standard-of-care ER: Extended-release



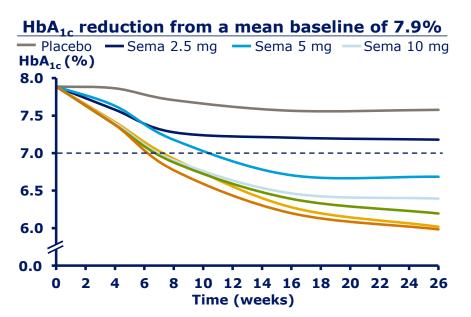
Semaglutide demonstrated superiority on both glucose control and weight loss vs dulaglutide in SUSTAIN 7 trial

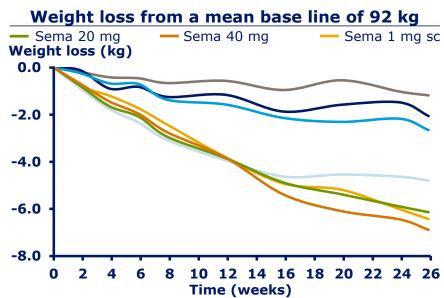


^{*} p-value < 0.0001 Note: Inclusion criteria: Male or female, age \geq 18 years, stable treatment with metformin, HbA $_{1c}$ 7.0-10.5%; from a mean baseline of 8.2% HbA $_{1c}$ changing



Oral semaglutide reduced HbA_{1c} and body weight in a 26-week phase 2 trial in type 2 diabetes





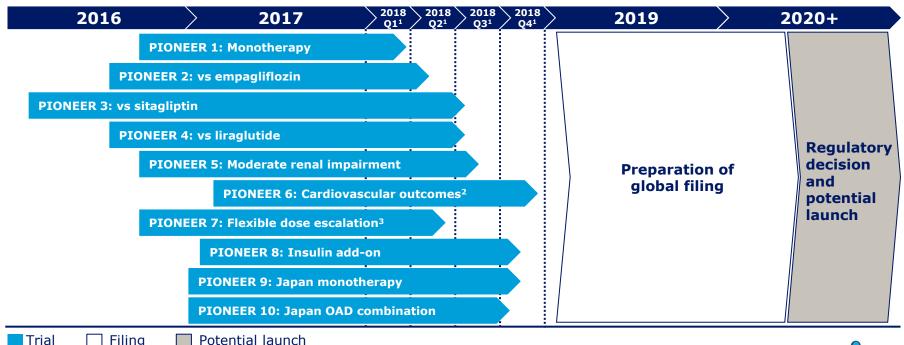
Inclusion criteria: Type 2 diabetes; $7.0\% \le HbA_{1c} \le 9.5\%$; treatment with diet and exercise with or without metformin; sc: subcutaneous; sema: semaglutide





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Preparation of global filing of oral semaglutide expected during 2019 pending successful completion of phase 3 trials



¹ Expected to be published in the given quarter or in the subsequent quarterly company announcement; ² Trial to rule out cardiovascular risk; ³ To be followed by 52-week extension trial Note: Estimated timing of trials from first patient first visit to last patient last visit and subsequent completion of trial OAD: Oral anti-diabetic



Competitive USA label for Ozempic®

Ozempic® approved in the USA

Profile

- Ozempic[®] is indicated as an adjunct to diet and exercise to improve glycaemic control in adults with type 2 diabetes
- Ozempic® is approved for use in two therapeutic dosages, 0.5 mg and 1 mg

Efficacy

- Statistically significant reduction in HbA_{1c} compared with placebo, sitagliptin, exenatide extended-release and insulin glargine U100
- Statistically significant **reduction in body weight** confirmed in all trials against all comparators

Safety

- Ozempic® demonstrated a **safe and well-tolerated profile** across the SUSTAIN programme
- In SUSTAIN 6, there were 108 MACE events with Ozempic® compared to 146 events with placebo, equivalent to an event rate of **6.6% with Ozempic® and 8.9% with placebo**

Convenience

- To be launched in the **Ozempic® Pen**, the latest generation of Novo Nordisk prefilled devices
- Once-weekly subcutaneous injections

MACE: Major adverse cardiovascular event





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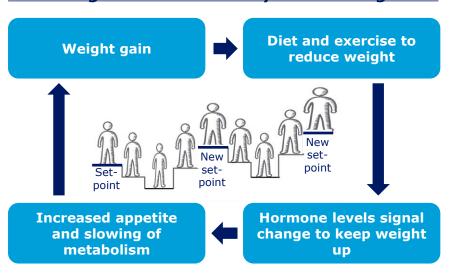


Obesity



Obesity is a chronic disease that requires treatment

The set-point theory portrays how metabolic changes affect the ability to lose weight



The body fights weight loss for people with obesity

- The body "remembers" its highest body weight and defends this body weight as the "new normal weight"
- During weight loss, changes occur in appetite-regulating hormones, which increase hunger
- If people with obesity do not eat enough, the hormones trigger the body to conserve energy
- Changes in hormones persist for at least 5-10 years following weight loss





Treatment rate is low and an increase requires a change of mindset and physician engagement

Only 2% of the 650 million people with obesity are treated with prescription medication



Key barriers to effective obesity management

Mindset

• Belief that obesity is self-inflicted

 Focus on acute weight loss rather than chronic weight management

Few prescribers engaged

 Physicians not equipped to engage in and treat obesity

Limited patient access

 Funding and reimbursement a hurdle for physicians and patients

Note: The figure illustrates some of the intervention points to treat obesity with prescription medication ¹ Attempt to manage weight through lifestyle modification or surgery

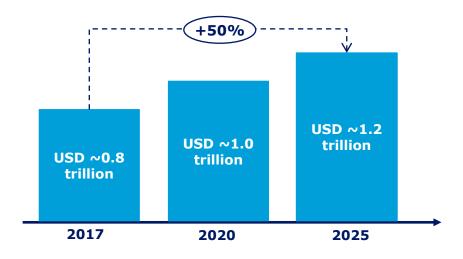
 $^{^2}$ 2% of people with obesity are estimated to be treated with anti-obesity medication Source: IQVIA (formerly IMS) MIDAS 2017





The healthcare cost associated with obesity expected to increase

Global healthcare costs related to obesity expected to increase by 50% by 2025



Increase in healthcare costs primarily driven by obesity-related comorbidities

- Today, 650 million people have obesity globally
- By 2025, ~1 billion people are expected to have obesity
- If left untreated, by 2025, the costs of treating complications of obesity is expected to reach USD ~550 billion in the US and USD ~1.2 trillion globally
- The increased healthcare costs are primarily driven by obesity-related comorbidities such as type 2 diabetes and cardiovascular disease

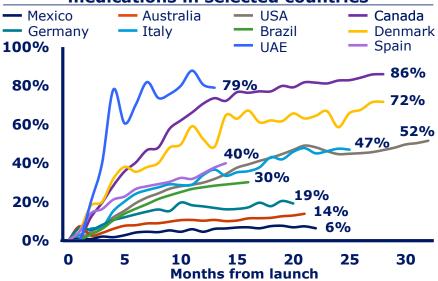
Source: World Obesity Federation, 2017

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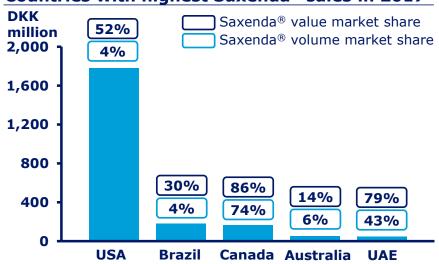


Saxenda® now launched in 25 countries

Saxenda® value share of anti-obesity medications in selected countries



Countries with highest Saxenda® sales in 2017¹



Source: IQVIA (formerly IMS) Nov 2017

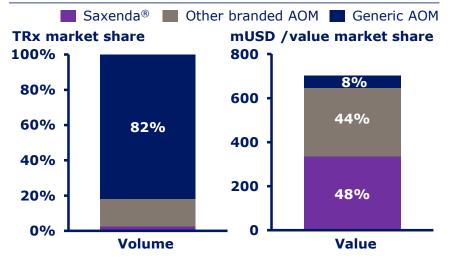
Note: The market for anti-obesity medication varies significantly in size between countries

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¹ Reported sales for the full year 2017 Source: IQVIA (formerly IMS) MIDAS, Nov 2017

Saxenda® has rapidly grown value market share, but market development efforts are required to expand the market

Despite strong Saxenda® growth, US obesity care market remains small at USD ~700 million



Novo Nordisk is investing in overcoming the barriers preventing effective obesity care

Current state Key initiatives Acute weight loss focus Advocate for chronic Mindset with Saxenda® stavtreatment through time ~5 months partnerships Less than 3,000 **Few** physicians write ≥10 Launch obesity prescribers AOM prescriptions per educator programme engaged month Obtain Medicare Only 2 in 5 of ~95 Limited coverage million adults with patient through support of obesity have access to access "Treat and Reduce reimbursed medication Obesity Act"

AOM: Anti-obesity medication: TRx: Total prescriptions Source: IOVIA (formerly IMS) NPA and NSP moving annual total through Nov 2017





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The obesity pipeline consists of projects addressing both appetite reduction and energy expenditure

How to address obesity from a medical perspective

Weight reduction by

reducing food intake

Appetite reduction

Impact on metabolic

Impact on metabolic changes to increase lipid and glucose metabolism

Novo Nordisk obesity products and pipeline

Projects:	Status:	2018 expected:	
Saxenda®	Launched		
semaglutide – QW GLP-1	Phase 2 \longrightarrow	Phase 3	
G530L – glucagon analogue ¹	Phase 1b \longrightarrow	Phase 2	
AM833 – amylin analogue	Phase 1b \longrightarrow	Phase 2 ready	
PYY1562 – PYY analogue	Phase 1b \longrightarrow	Phase 1b ²	
NN9499 – FGF21 obesity ³	Phase 1a \longrightarrow	Phase 1b	
NN9277 – GG-co-agonist	Phase 1a \longrightarrow	Phase 1b	
NN9423 – Tri-agonist 1706	Phase 1a \longrightarrow	Phase 1b	
Appetite reduction Energy expenditure Appetite reduction and energy expenditure			

¹ Phase 1 in combination with liraglutide and phase 2 planned in combination with semaglutide

Phase 1a: Single-dose trials; Phase 1b: Multiple-dose trials QW: Once-weekly

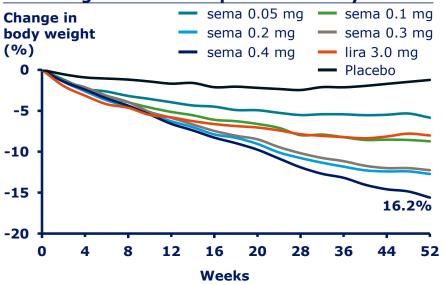


² Phase 1b completed with monotherapy, phase 1b in combination with semaglutide planned for 2018

³ FGF21 potentially also targets appetite reduction

Semaglutide demonstrated unprecedented weight loss in phase 2 obesity trial

16.2% weight reduction with the highest semaglutide dose in phase 2 obesity trial



Key results and next steps

- Participants in the highest dose arms continued to lose weight over the duration of the trial as the response curve did not plateau in the highest dose arm
- Nearly two out of three patients experienced a weight loss of 10% or more with the highest dose of semaglutide
- 80% of patients completed the trial
- Once-daily semaglutide had a well-tolerated safety profile, with the most common adverse events being gastrointestinal
- **Next steps:** Phase 3 programme STEP and cardiovascular outcomes study SELECT to be initiated in 2018

Note: All treatment arms are adjunct to diet and exercise QD: Once-daily; sema: Semaglutide; lira: Liraglutide







Biopharm



Biopharm R&D efforts reflect Novo Nordisk's commitment to satisfy unmet patient needs

Aim to develop subcutaneous haemophilia products and long-acting growth hormone

Pursue leadership in **HAEMOPHILIA**



Pursue subcutaneous delivery of long-acting coagulation factors and bypassing agents

Strengthen leadership in **GROWTH DISORDERS**



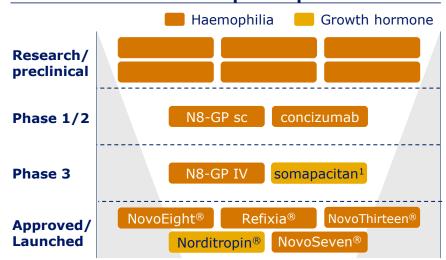
Bring long-acting growth hormone somapacitan to market and expand indications

Pursue **bolt-on opportunities**



Identify bolt-on acquisition or in-licensing opportunities in adjacent disease area

Novo Nordisk Biopharm portfolio



 $^{^{\,1}}$ Somapacitan is currently in phase 3 for adult growth hormone deficiency and phase 2 for growth hormone deficiency in children

Note: NovoThirteen® and Refixia® are the brand names in the majority of countries, whereas these products are marketed as TRETTEN® and Rebinyn® respectively in the US sc: Subcutaneous; IV: Intravenous



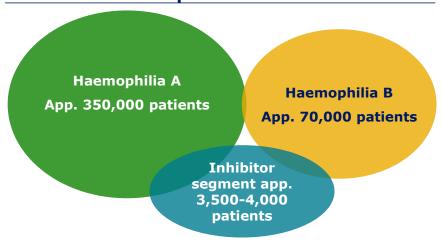


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Haemophilia is a rare disease with severe unmet medical needs

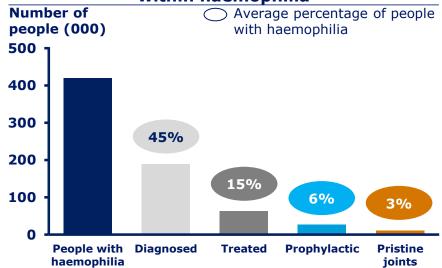
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Number of people with haemophilia A and B and haemophilia with inhibitors



within haemophilia with haemophilia

Low diagnosis and treatment rates



Source: World Federation of Haemophilia - Annual Global Survey 2016

Note: The inhibitor segment represents people with haemophilia and high titre inhibitors to their normal replacement treatment

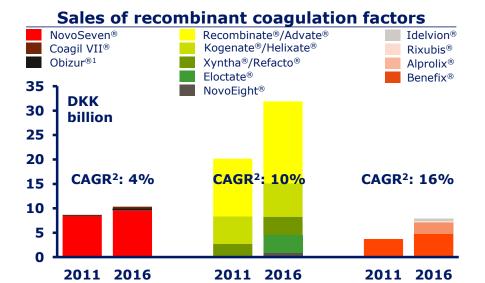
Source: Estimates based on prevalence data in literature (Stonebraker JS et al. Haemophilia. 2010; 16: 20-32), World Federation of Haemophilia - Annual Global Survey 2012, UDC database in the US





Global haemophilia market is growing by high-single digit

rFIX



rFVIII

Strategic positioning of Novo Nordisk's haemophilia portfolio

Novo Nordisk compound	Status	Strategic position	
NovoSeven®	Launched	Maintain market leadership	
NovoEight®	Launched	Establish presence in a competitive market place	
N8-GP	Phase 3 ³	Contribute to market conversion	
Refixia®/ REBINYN®	Approved ⁴	Contribute to new treatment paradigm	
NovoThirteen®	Launched	Launch first recombinant product	

rFVIIa

² CAGR for 5-year period



 $^{^4\,\}text{Refixia}^{\$}$ is the brand name for N9-GP in the EU, and REBINYN $^{\$}$ is the brand name in the US



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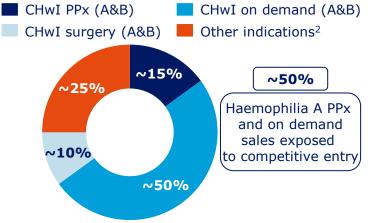
 $^{^{\}rm 1}\,\mbox{Obizur}^{\rm @}$ only indicated for acquired haemophilia

³ Submission of N8-GP expected Q1 2018 in the US and the EU

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~50% of historic NovoSeven® sales exposed to competition, but opportunities remain in other indications

Estimated NovoSeven® sales by indication¹



NovoSeven® sales of DKK 9.2 billion3

CHwI: Congenital haemophilia with inhibitors; PPx: Prophylaxis; A&B: Haemophilia A and B

Opportunities and challenges for NovoSeven® franchise

Challenge

 Roche's Emicizumab launched recently, leading to intensified competition in the segment for haemophilia A with inhibitors

Opportunities

- Maintain position as preferred agent for all bleeds including breakthrough bleeds for patients on prophylactic treatment
- Improving diagnosis and treatment of select indications outside of haemophilia A with inhibitors with special focus on acquired haemophilia
- Drive development of NovoSeven® franchise in underdeveloped Chinese market following inclusion on National Drug Reimbursement List



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¹ Based on internal Novo Nordisk estimate

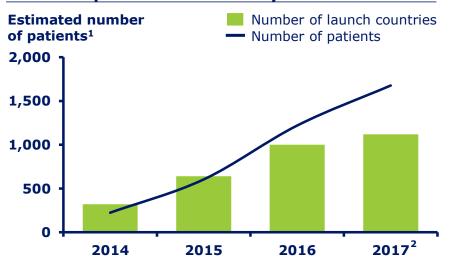
² Other indications include areas like acquired haemophilia, Glanzmann's thrombastenia and congenital FVII deficiency

³ Reported sales for full year 2017

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NovoEight® volumes continue to grow despite increasing penetration of long-acting FVIII products

NovoEight® roll-out continues and the number of patients has steadily increased



NovoEight® has potential to increase volume share in select segments and markets

Competitive positioning for NovoEight®

- Temperature stabilty at high room temperature and best-inclass portability
- Uptake driven by Novo Nordisk's strong customer focus and company recognition within the haemophilia community
- Continued volume growth especially in less mature markets with tender opportunities, despite increasing penetration of long-acting FVIII products

Next generation

 Global roll-out of NovoEight® and N8-GP to pave the way for subcutaneous N8-GP



Novo Nordisk estimated accumulated patient number

Novo Nordisk estimated accumulated patient number as of October 2017 FVIII: Coagulation factor VIII

Strong growth among long-acting haemophilia B products as Refixia[®]/Rebinyn[®] is set for launch in the EU and the USA

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Reported recombinant FIX sales Sales (USD million) 1,200 1,000 800 400 200 2011 Reported recombinant FIX sales Alprolix® Idelvion® Idelvion® 2016

Refixia®/Rebinyn® launched in first countries

- Launched in the first EU countries in 2017, US launch expected in the first quarter of 2018
- Refixia®/Rebinyn® offers a unique clinical profile that brings factor levels into the non-haemophilia range for adults and adolescents
- Dialogue ongoing with the FDA and EMA to establish path forward to obtain routine prophylaxis indication in the USA and complete paediatric indication in Europe to include children younger than 12 years old

FIX: Coagulation factor IX Source: Company reports (Does not include Rixubis $^{\otimes}$ as sales are not reported separately)

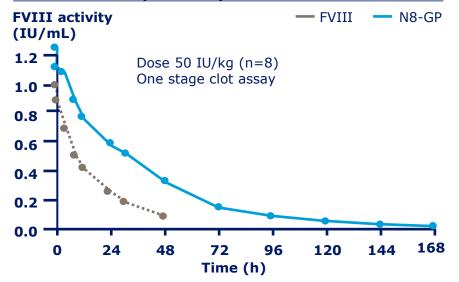


FDA: US Food and Drug Administration; EMA: European Medicines Agency rFIX: Recombinant coagulation factor IX



N8-GP administered every fourth day reduces median bleeding rate to 1.3 episode per year in phase 3 trial

N8-GP phase 1 pharmacokinetics



Source: Tiede et al. J Thromb Haemot. 2013;11:670-675

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Pathfinder 2 headline results (phase 3)

- PK documented single dose half-life of 18.4 hours and mean trough level before next dose of 3%
- Patients on every fourth day prophylaxis (50 IU/kg) had a median ABR of 1.3
- 95% of mild to moderate bleeds managed with 1-2 doses
- N8-GP appeared to have a safe and well tolerated profile
- One patient developed inhibitors, as expected in a population of previously treated haemophilia A patients

Pathfinder 2 extension trial results

- 55 patients with ≤2 bleeds during 6 months in the main phase were randomised 2:1 to either once-weekly (75 IU/kg) or every fourth day (50 IU/kg) treatment for 180 days¹
- Patients in both treatment arms had a median ABR of 0

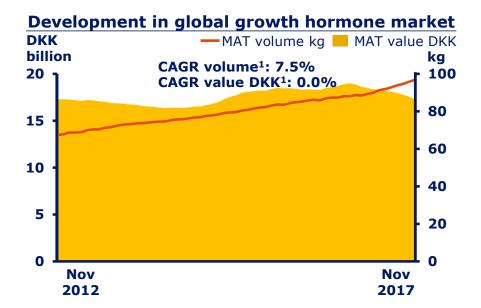
Next steps

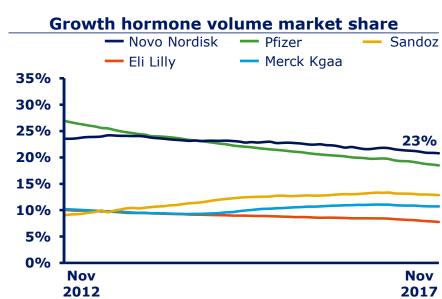
 Expansion of production capacity; US/EU submission Q1 2018

PK: Pharmacokinetic; ABR: Annualised bleeding rate; IU: International unit 1 Prophylaxis 75 IU/kg every 7 days (n=38) or prophylaxis 50 IU/kg every 4 days (n=17)



Novo Nordisk maintains leadership within growth hormone market





Full year 2017

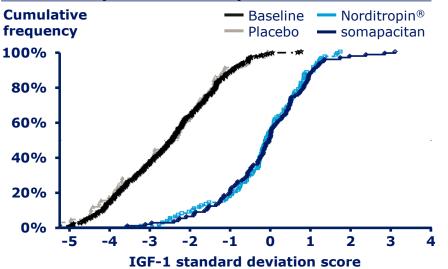
¹ CAGR for 5-year period Source: IQVIA (formerly IMS) monthly MAT Nov, 2017 volume figures and value (DKK) figures

Source: IQVIA (formerly IMS) monthly MAT Nov, 2017 volume figures

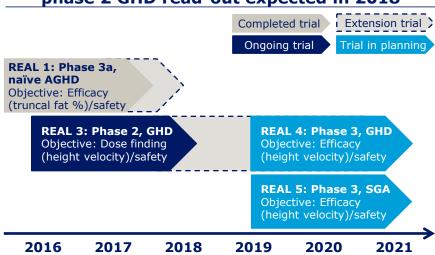


Phase 3 extension trial in adults and phase 2 trial in children for once-weekly somapacitan to conclude in 2018

Somapacitan IGF-1 levels similar to daily Norditropin® in REAL 1 phase 3 AGHD trial



Phase 3a AGHD trial successfully completed, phase 2 GHD read-out expected in 2018



IGF-1: Insulin-like growth factor 1; AGHD: Adult growth hormone deficiency Source: Novo Nordisk data on file; REAL 1, NN8640-4054

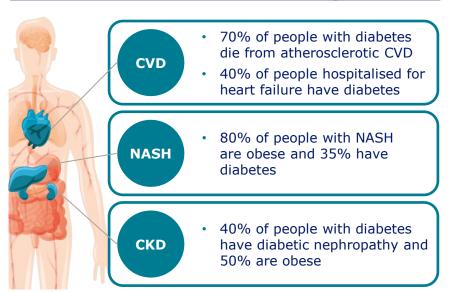




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Other serious chronic diseases

Serious chronic diseases are often associated with diabetes and obesity



CVD: Cardiovascular disease; NASH: Non-alcoholic Steatohepatitis; CKD: Chronic kidney disease Source: Diabetes Care 2005 Jan: 28(1): 164-176



New therapeutic areas represent patient populations with high unmet medical needs

	Estimated patients	Number of related deaths
CVD	~420 million	~20 million annually

	Estimated patients	Diagnosis rate
NASH	~15-40 million ¹	~20%²
CKD	~200 million	~20%

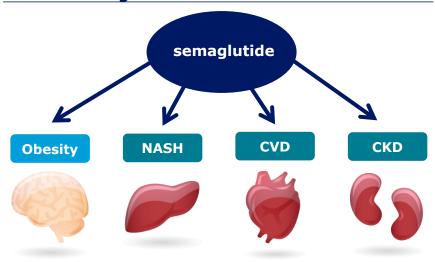
Source: Abera SF et al. Global, Regional, and National Burden of Cardiovascular Diseases for 10 Causes, 1990 to 2015, 2017; Heart Disease and Stroke Statistics, American Heart Association, 2017; Williams CD et al. Prevalence of nonalcoholic fatty liver disease and nonalcoholic steatohepatitis among a largely middle-aged population utilizing ultrasound and liver biopsy, 2011; Addressing the global burden of chronic kidney disease through clinical and translational research, 2014

¹ Internal forecast comprising US, Europe and Japan

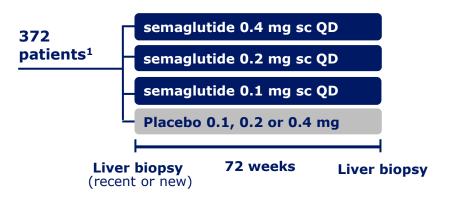
² Diagnosis rate is considered a major uncertainty to the forecast

Trials in obesity and other serious chronic disease areas building on the semaglutide molecule

Planned or ongoing trials with semaglutide addressing other serious chronic diseases



Ongoing phase 2 trial with daily semaglutide vs placebo in patients with NASH



Next steps:

Phase 2 trial expected to complete 2020

CVD: Cardiovascular disease; NASH: Non-alcoholic steatohepatitis; CKD: Chronic kidney disease



¹ Inclusion criteria: Histological confirmation of NASH, BMI 25–45 kg/m², NASH fibrosis stage 2 or 3, Histological NAFLD Activity Score ≥ 4 mg: Milligram; sc: Subcutaneous; QD: Once-daily; MR: Magnetic resonance; NAFLD: Non-alcoholic fatty liver disease

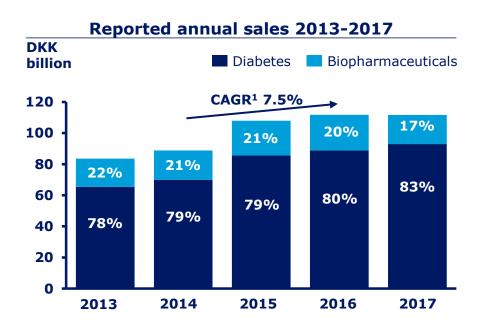




Financials



Solid sales growth driven by the US





¹ CAGR for 5-year period

AAMEO: Africa, Asia, Middle-East and Oceania; J&K: Japan and Korea; LATAM: Latin America

Victoza® accounts for 21% of total sales in 2017

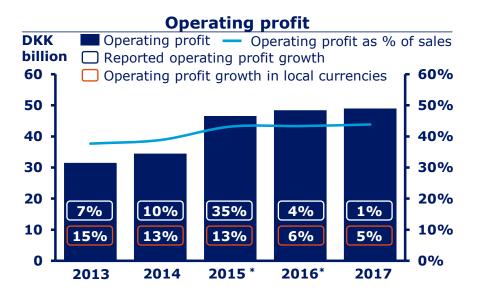
Reported currencies	Sales full year 2017 (mDKK)	Sales split	Sales Q4 2017 (mDKK)	Sales split
Tresiba®	7,327	7%	1,880	7%
Levemir [®]	14,118	13%	3,346	12%
NovoRapid®	20,025	18%	4,568	16%
NovoMix®	10,257	9%	2,457	9%
Victoza®	23,173	21%	6,305	23%
Saxenda [®]	2,562	2%	697	2%
Diabetes care and Obesity ¹	92,877	83%	23,143	83%
NovoSeven®	9,206	8%	2,431	9%
Norditropin [®]	6,655	6%	1,709	6%
Biopharmaceuticals ¹	18,819	17%	4,849	17%
Total ¹	111,696	100%	27,992	100%

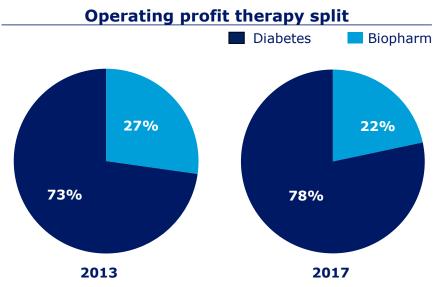
 $^{^{1}}$ Values are higher than the sum of the total elements listed due to residual values from products not listed





Solid operating profit growth driven by diabetes





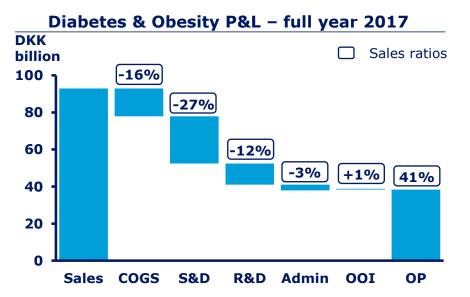
Investor Presentation

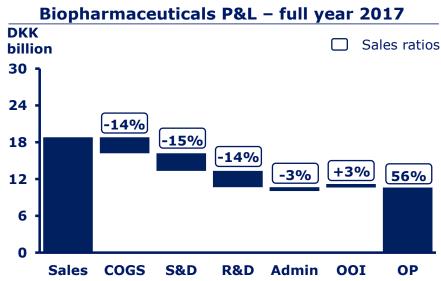
 $^{^{\}ast}$ Adjusted for the partial divestment of NNIT A/S and inflammatory out-licensing in 2015





Higher profitability in the biopharmaceuticals segment driven by lower COGS and S&D costs



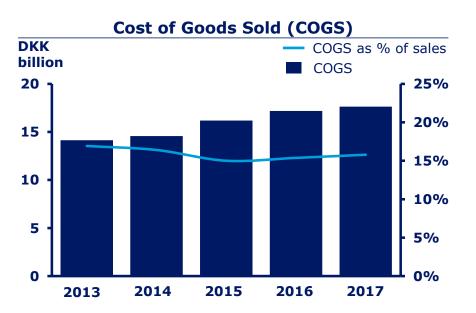


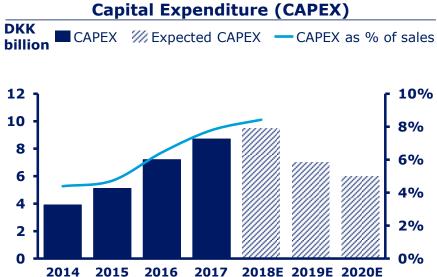
P&L: Profit and Loss; COGS: Cost of goods sold; OOI: Other operating income; OP: Operating profit S&D: Sales and distribution cost: R&D: research and development cost: Admin: administrative cost





Stable COGS level as % of sales and increasing CAPEX level





Full year 2017





Long-term financial targets support focus on profitable growth, capital allocation and cash conversion

Operating profit growth in local currencies

Current long-term financial target¹

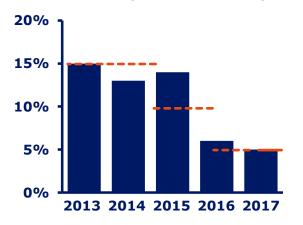
Previous long-term financial targets

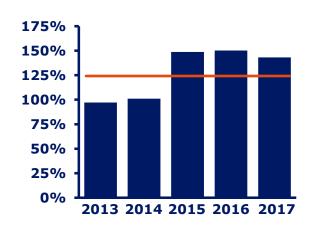
Operating profit after tax to net operating assets

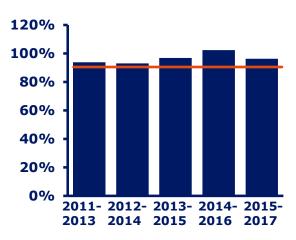
Current long-term financial target¹

Cash to earnings (three-year average)

Current long-term financial target¹







¹Long-term target established in connection with the Q3 2016 report. The target of an average operating profit growth of 5% is an average for the period of 4-5 years, with 2015 as the base year. Operating profit after tax to net operating assets target unchanged at 125% and Cash to earnings (three year average) target unchanged at 90%

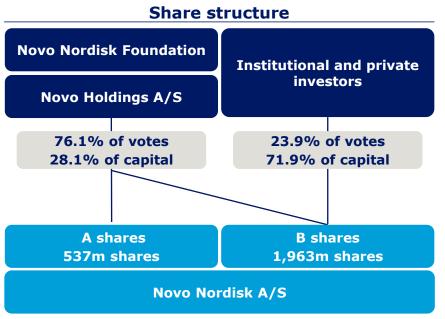
Note: The long-term financial targets are based on an assumption of a continuation of the current business environment; 2015 and 2016 figures are adjusted for the partial divestment of NNIT A/S and inflammatory out-licensing in 2015





Stable ownership structure

- secured through A and B-share structure



The Novo Nordisk Foundation

- The Novo Nordisk Foundation is a self-governing institution that:
 - provides a stable basis for Novo Nordisk
 - supports scientific, humanitarian and social purposes
- All strategic and operational matters are governed by the board and management of Novo Nordisk
- Overlapping board memberships ensure that the Novo Nordisk Foundation and Novo Nordisk share vision and strategy

Note: Treasury shares are included in the capital but have no voting rights





Sustainable business

The Novo Nordisk Way



We build on the purpose set by our founders and live by their values: The **Novo Nordisk Way** sets the direction and unites us around a common purpose in the pursuit of our aspirations: *Driving change to defeat diabetes and other serious chronic diseases*

The Triple Bottom Line Business Principle

Investor Presentation



The **Triple Bottom Line Principle**, anchored in the **Articles of Association**, guides how we do business responsibly and how we make decisions that consider the interests of stakeholders and the long-term interests of our shareholders





Novo Nordisk offers a healthy, engaging and inclusive workplace with development opportunities for employees

Employee health and safety and engagement are key focus areas for management



~42,100 FTE employees



90% sustainable engagement score



11.0% employee turnover



2.7 accidents with absence per million working hours

Novo Nordisk is committed to building a diverse and inclusive organisation



Note: Full social statements to be found in Novo Nordisk Annual Report 2017

 $^{\rm 1}$ All appointments to management positions, incl. internal promotions and external hires, ex. NNIT





Shaping and adapting to conditions in the business environment

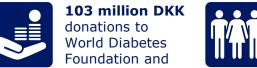
Enhancing access to affordable, high quality insulin is a key priority



per day



6 product recalls 0 failed inspections



Haemophilia Foundation



27.7 million patients reached with diabetes care products

Note: Full social statements to be found in Novo Nordisk Annual Report 2017

Cities Changing Diabetes works to bend the curve on urban diabetes









- Map the challenge in cities across the world with 11 cities enrolled
- Share learnings and best practices on how to bend the diabetes curve, by preventing rise in obesity
- Drive action plans with local partners and experts to act as a catalyst for meaningful action
- Initiate new cross-sector partnerships, eg on climate and health





Novo Nordisk prioritises minimisation in use of non-depletable or scarce natural resources

Least possible use of resources, lower emissions and less waste are priorities



Slight decrease in water and energy consumption for production since 2016



93% of water consumption is in areas not subject to water stress



2% decrease in CO₂ emissions from production since 2016

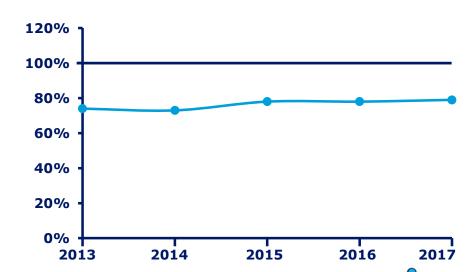


96% of total waste is recycled, used for biogas or recovered as energy for heat and power production

On track to have all production sites run 100% on renewable power by 2020

Target

Realised



Note: Full social statements to be found in Novo Nordisk Annual Report 2017



