Investor presentation
First three months of 2018

Shirley Adelia Stewart has type 2 diabetes
New Orleans, Louisiana, US
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 this presentation as well as the company’s statutory Annual Report 2017 and Form 20-F, which are both filed with the SEC in February 2018 in continuation of the publication of the Annual Report 2017, 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 recalls, 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.

For an overview of some, but not all, of the risks that could adversely affect our results or the accuracy of forward-looking statements in this presentation, reference is made to the overview of risk factors in ‘The Risks of Doing Business’ on pp 40-43 of the Annual Report 2017.

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
Highlights – First three months of 2018

Sales development
- Sales decreased by 5% in Danish kroner and increased by 5% in local currencies to DKK 26.9 billion
  - International Operations sales were flat in Danish kroner and grew by 8% in local currencies
    - Region Latin America sales increased by 44% in Danish kroner and increased by 73% in local currencies
    - Region AAMEO sales declined by 2% in Danish kroner and grew by 12% in local currencies
    - Region China declined by 1% in Danish kroner and grew by 6% in local currencies
  - North America Operations sales decreased by 11% in Danish kroner and increased by 3% local currencies
  - Victoza® and Tresiba® accounted for the largest share of growth and grew by 18% and 33% in local currencies, respectively

Research and Development
- Ozempic® granted marketing authorisation by the European Commission and approved in Japan
- Successful completion of the first phase 3a trial, PIONEER 1, with oral semaglutide
- Tresiba® label in the USA updated to include cardiovascular safety data and 40% reduction of severe hypoglycaemic events compared to insulin glargine U100

Financials
- Operating profit decreased by 8% in Danish kroner and increased by 6% in local currencies to DKK 12.4 billion
- Net profit increased by 6% to DKK 10.8 billion
- Diluted earnings per share increased by 8% to 4.40 DKK per share
- 2018 financial outlook:
  - Sales growth is now expected to be 3-5% measured in local currencies (now around 6% lower reported)
  - Operating profit growth is now expected to be 2-5% measured in local currencies (now around 9% lower reported)
Sales growth driven by both International Operations and North America Operations

Sales as reported – first quarter of 2018

- Region North America Operations (11%)
- Region Japan & Korea (14%)
- Region China (1%)
- Region AAMEO (2%)
- Region Europe 0%
- Region Latin America +44%

Sales of DKK 26.9 billion (5%)

Growth break down – first quarter of 2018

<table>
<thead>
<tr>
<th>Local currencies</th>
<th>Growth</th>
<th>Share of growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>North America Operations</td>
<td>3%</td>
<td>30%</td>
</tr>
<tr>
<td>Hereof USA</td>
<td>3%</td>
<td>30%</td>
</tr>
<tr>
<td>International Operations</td>
<td>8%</td>
<td>70%</td>
</tr>
<tr>
<td>Region Europe</td>
<td>1%</td>
<td>2%</td>
</tr>
<tr>
<td>Region AAMEO</td>
<td>12%</td>
<td>23%</td>
</tr>
<tr>
<td>Region China</td>
<td>6%</td>
<td>12%</td>
</tr>
<tr>
<td>Region Japan &amp; Korea</td>
<td>(6%)</td>
<td>(6%)</td>
</tr>
<tr>
<td>Region Latin America</td>
<td>73%</td>
<td>39%</td>
</tr>
<tr>
<td>Total sales</td>
<td>5%</td>
<td>100%</td>
</tr>
</tbody>
</table>

AAMEO: Africa, Asia, Middle East & Oceania
Sales growth in local currencies of 5% mainly driven by Victoza® and Saxenda®

Sales as reported – first quarter of 2018

<table>
<thead>
<tr>
<th>Category</th>
<th>Sales as % of Total Sales</th>
<th>Growth</th>
<th>Share of Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetes care</td>
<td>81%</td>
<td>5%</td>
<td>73%</td>
</tr>
<tr>
<td>Obesity</td>
<td>9%</td>
<td>43%</td>
<td>23%</td>
</tr>
<tr>
<td>Haemophilia</td>
<td>2%</td>
<td>3%</td>
<td>12%</td>
</tr>
<tr>
<td>Growth hormone</td>
<td>6%</td>
<td>10%</td>
<td>7%</td>
</tr>
<tr>
<td>Other biopharmaceuticals</td>
<td>28%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

Sales of DKK 26.9 billion (5%)

Growth break down – first quarter of 2018

<table>
<thead>
<tr>
<th>Local currencies</th>
<th>Growth</th>
<th>Share of growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long-acting insulin</td>
<td>(3%)</td>
<td>(10%)</td>
</tr>
<tr>
<td>Premix insulin</td>
<td>1%</td>
<td>2%</td>
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<tr>
<td>Fast-acting insulin</td>
<td>0%</td>
<td>0%</td>
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<tr>
<td>Human insulin</td>
<td>3%</td>
<td>4%</td>
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<tr>
<td>GLP-1</td>
<td>19%</td>
<td>73%</td>
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<tr>
<td>Other diabetes care</td>
<td>5%</td>
<td>4%</td>
</tr>
<tr>
<td>Total diabetes care</td>
<td>5%</td>
<td>73%</td>
</tr>
<tr>
<td>Obesity (Saxenda®)</td>
<td>64%</td>
<td>23%</td>
</tr>
<tr>
<td>Diabetes care and obesity total</td>
<td>6%</td>
<td>96%</td>
</tr>
<tr>
<td>Haemophilia</td>
<td>7%</td>
<td>12%</td>
</tr>
<tr>
<td>Growth disorders</td>
<td>0%</td>
<td>0%</td>
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<tr>
<td>Other biopharmaceuticals</td>
<td>(23%)</td>
<td>(8%)</td>
</tr>
<tr>
<td>Biopharmaceuticals</td>
<td>1%</td>
<td>4%</td>
</tr>
<tr>
<td>Total</td>
<td>5%</td>
<td>100%</td>
</tr>
</tbody>
</table>

1 Comprises Tresiba®, Xultophy® and Levemir®; 2 Comprises Ryzodeg® and NovoMix®; 3 Comprises Fiasp® and NovoRapid®; 4 Comprises Ozempic® and Victoza®; 5 Primarily NovoNorm® and needles; 6 Comprises NovoSeven®, NovoEight®, NovoThirteen® and Refixia®; 7 Primarily Vagifem® and Activelle®.
Novo Nordisk aims for leadership in long-acting insulin and sustained leadership for fast-acting and premix insulin

Long-acting insulin\(^1\) volume market share across regions

<table>
<thead>
<tr>
<th>Region</th>
<th>Feb 2013</th>
<th>Feb 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>North America Operations</td>
<td>80%</td>
<td>70%</td>
</tr>
<tr>
<td>Region China</td>
<td>70%</td>
<td>60%</td>
</tr>
<tr>
<td>Region Japan &amp; Korea</td>
<td>60%</td>
<td>50%</td>
</tr>
<tr>
<td>Region Latin America</td>
<td>50%</td>
<td>40%</td>
</tr>
<tr>
<td>Region AAMEO</td>
<td>40%</td>
<td>30%</td>
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<tr>
<td>Region Europe</td>
<td>30%</td>
<td>20%</td>
</tr>
<tr>
<td>Region AAMEO</td>
<td>20%</td>
<td>10%</td>
</tr>
<tr>
<td>Region AAMEO</td>
<td>10%</td>
<td>0%</td>
</tr>
</tbody>
</table>

Fast-acting insulin\(^2\) volume market share across regions

<table>
<thead>
<tr>
<th>Region</th>
<th>Feb 2013</th>
<th>Feb 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>North America Operations</td>
<td>80%</td>
<td>70%</td>
</tr>
<tr>
<td>Region China</td>
<td>70%</td>
<td>60%</td>
</tr>
<tr>
<td>Region Japan &amp; Korea</td>
<td>60%</td>
<td>50%</td>
</tr>
<tr>
<td>Region Latin America</td>
<td>50%</td>
<td>40%</td>
</tr>
<tr>
<td>Region AAMEO</td>
<td>40%</td>
<td>30%</td>
</tr>
<tr>
<td>Region Europe</td>
<td>30%</td>
<td>20%</td>
</tr>
<tr>
<td>Region AAMEO</td>
<td>20%</td>
<td>10%</td>
</tr>
<tr>
<td>Region AAMEO</td>
<td>10%</td>
<td>0%</td>
</tr>
</tbody>
</table>

Premix insulin\(^3\) volume market share across regions

<table>
<thead>
<tr>
<th>Region</th>
<th>Feb 2013</th>
<th>Feb 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>North America Operations</td>
<td>80%</td>
<td>70%</td>
</tr>
<tr>
<td>Region China</td>
<td>70%</td>
<td>60%</td>
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<tr>
<td>Region Japan &amp; Korea</td>
<td>60%</td>
<td>50%</td>
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<tr>
<td>Region Latin America</td>
<td>50%</td>
<td>40%</td>
</tr>
<tr>
<td>Region AAMEO</td>
<td>40%</td>
<td>30%</td>
</tr>
<tr>
<td>Region Europe</td>
<td>30%</td>
<td>20%</td>
</tr>
<tr>
<td>Region AAMEO</td>
<td>20%</td>
<td>10%</td>
</tr>
<tr>
<td>Region AAMEO</td>
<td>10%</td>
<td>0%</td>
</tr>
</tbody>
</table>

\(^1\) Long-acting insulin comprises: Tresiba\(^\circledR\), Levemir\(^\circledR\), Xultophy\(^\circledR\) and Insulatard\(^\circledR\) (basal human insulin). Please note that not all products are launched in all markets

\(^2\) Short-acting insulin includes: Fiasp\(^\circledR\), NovoLog\(^\circledR\) and Mixtard\(^\circledR\) 30 (premix human insulin). Please note that not all products are launched in all markets

\(^3\) Premix insulin includes: Ryzodeg\(^\circledR\), NovoMix\(^\circledR\) and Actrapid\(^\circledR\) (bolus human insulin). Please note that not all products are launched in all markets
Novo Nordisk holds ~35% volume market share of the basal market in the USA

**Weekly TRx volume market shares** in the USA

- glargine U100
- NN Total Basal
- **Levemir®**
- Tresiba®
- glargine U300
- biosimilar glargine U100

<table>
<thead>
<tr>
<th>Basal volume TRx MS</th>
<th>70%</th>
<th>60%</th>
<th>50%</th>
<th>40%</th>
<th>30%</th>
<th>20%</th>
<th>10%</th>
<th>0%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mar 2016</td>
<td></td>
<td></td>
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<tr>
<td>Mar 2018</td>
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</tr>
</tbody>
</table>

- **42.2%**
- **34.8%**
- **22.8%**
- **11.8%**
- **8.5%**
- **8.4%**

**Tresiba® launch in the USA**

- Tresiba® TRx volume market share is now **11.8%**
- Main market share driver in Q1 2018 has been the formulary change at CVS part D
- Tresiba® formulary access is now estimated to be around 80% for Commercial and Medicare Part D combined, following formulary access on United Health Care Part D
- Tresiba® label in the USA updated to include cardiovascular safety data and 40% reduction of severe hypoglycaemic events compared to insulin glargine U100. The updated Tresiba® label was launched mid-April 2018 in the USA

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Note: The graph does not show NPH, which accounts for the residual market share
Source: IQVIA weekly Xponent Plantrak, 23 March 2018

1 Excludes Medicaid that represents ~12% of retail basal market volume and basal insulin and GLP-1 combination products such as Xultophy®

TRx volume: Insulin volume in mega units (MU) associated with total number of prescriptions;

MS: Market share

Source: IQVIA weekly Xponent Plantrak, 23 March, 2018

1 CVS formulary Silverscript

2 Projected access calculated from VANTAGE FingerTip Formulary bridge February 2018, week ending 2 March 2018.
Victoza® sales growth of 20% in the USA driven by GLP-1 market volume growth of ~23%

Source: IQVIA NPA monthly, Feb 2018
First phase 3a trial with oral semaglutide, PIONEER 1, in adults with type 2 diabetes completed

Reduction in HbA$_{1c}$ with oral semaglutide, administered once daily as a tablet vs placebo

<table>
<thead>
<tr>
<th>HbA$_{1c}$ reduction (%)$^1$</th>
<th>Oral sema 3 mg</th>
<th>Oral sema 7 mg</th>
<th>Oral sema 14 mg</th>
<th>Placebo</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-0.8 %</td>
<td>-1.3 %</td>
<td>-1.5 %</td>
<td>-0.1 %</td>
</tr>
</tbody>
</table>

Reduction in body weight with oral semaglutide, administered once daily as a tablet vs placebo

<table>
<thead>
<tr>
<th>Weight loss (kg)$^1$</th>
<th>Oral sema 3 mg</th>
<th>Oral sema 7 mg</th>
<th>Oral sema 14 mg</th>
<th>Placebo</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-1.7 kg</td>
<td>-2.5 kg</td>
<td>-4.1 kg</td>
<td>-1.5 kg</td>
</tr>
</tbody>
</table>

$^1$ Results illustrated by using the secondary statistical method called hypothetical estimand: Treatment effect, if all participants followed the treatment without rescue medication (analysed by using Mixed Models for Repeated Measurements (MMRM)). The statistical method is consistent with e.g. the statistical method used for the SUSTAIN programme for subcutaneous semaglutide.

Sema: Semaglutide
All 10 PIONEER trials for oral semaglutide expected to read-out during 2018

- **2016**
  - PIONEER 1: monotherapy²
    - 26 weeks, n=704
  - PIONEER 3: vs sitagliptin²
    - 78 weeks, n=1,860

- **2017**
  - PIONEER 2: vs empagliflozin²
    - 52 weeks, n=816
  - PIONEER 4: vs liraglutide²
    - 52 weeks, n=690
  - PIONEER 5: moderate renal impairment²
    - 26 weeks, n=324
  - PIONEER 6: cardiovascular outcomes³
    - Event driven (≥122 MACE), n=3,176
  - PIONEER 7: flexible dose escalation⁴
    - 52 weeks, n=500

- **Q1 2018¹**
  - PIONEER 8: insulin add-on²
    - 26+26 weeks, n=720

- **Q2 2018¹**
  - PIONEER 9: JAPAN monotherapy²
    - 52 weeks, n=230

- **Q3 2018¹**
  - PIONEER 10: JAPAN OAD combination⁴
    - 52 weeks, n=336

- **Q4 2018¹**
  - 52 weeks extension trial

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¹ Expected to be published in the given quarter or in the subsequent quarterly company announcement. Estimated timing from first patient first visit to completion of trial

² Primary endpoint after 26 weeks of treatment by using the statistical method: Treatment policy estimand approach

³ Primary endpoint after ≥122 major adverse cardiovascular events (MACE), defined by non-fatal stroke, non-fatal myocardial infarction or CV death

⁴ Primary endpoint after 52 weeks of treatment by using the statistical method: Treatment policy estimand approach

Note: n = approximate number of randomised people; OAD: oral anti-diabetic
Tresiba® label in the USA updated based on DEVOTE trial data

Lower rates of severe hypoglycaemia demonstrated in DEVOTE trial

<table>
<thead>
<tr>
<th>Subjects with one or more severe events</th>
<th>Number of overall severe events</th>
</tr>
</thead>
<tbody>
<tr>
<td>252 glargine U100</td>
<td>472 Tresiba®</td>
</tr>
<tr>
<td>187 Tresiba®</td>
<td>280 glargine U100</td>
</tr>
</tbody>
</table>

-40%*

-27%*

FDA approved a label update for Tresiba® for people with type 2 diabetes

- Food and Drug Administration (FDA) approved updates to the US prescribing information for Tresiba® to include data from the DEVOTE trial including:

  - Cardiovascular safety based on Tresiba® demonstrated non-inferiority compared to insulin glargine U100 with regards to major adverse cardiovascular events¹ (MACE) with a hazard ratio of 0.91

  - Statistically significant 40% reduction of severe hypoglycaemic events compared to insulin glargine U100

- The supplemental applications to include the two SWITCH trials have been withdrawn following interactions with FDA

¹ MACE defined as first occurrence of cardiovascular death, non-fatal myocardial infarction or non-fatal stroke

Statistically significant
### Key development milestones

<table>
<thead>
<tr>
<th>Diabetes</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Ozempic® granted marketing authorisation by European Commission and approved in Japan</td>
<td></td>
</tr>
<tr>
<td>• Variation applications for Ozempic® submitted to the EMA for the devices and inclusion of SUSTAIN 7 data</td>
<td></td>
</tr>
<tr>
<td>• New drug application for Ryzodeg® submitted to the China FDA</td>
<td></td>
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<tr>
<td>• Xultophy® label to include LEADER and DEVOTE data submitted to the FDA and positive opinion adopted by CHMP in the EU</td>
<td></td>
</tr>
<tr>
<td>• DUAL I Japan phase 3a trial with Xultophy® completed</td>
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<tr>
<td>• LAI287 phase 1 trials completed and phase 2 initiation expected before end of 2018</td>
<td></td>
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<tr>
<td>• Development of PI406 to be discontinued following phase 1 results</td>
<td></td>
</tr>
<tr>
<td>• HypoPen 1513 initiated in phase 1</td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Obesity</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• AM833 phase 1 results completed and phase 2 initiation expected early 2019</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Biopharm</th>
<th></th>
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<tbody>
<tr>
<td>• N8-GP submitted for regulatory approval in the USA and the EU for treatment of haemophilia A</td>
<td></td>
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<tr>
<td>• Phase 1/2 multiple dose trial with subcutaneous N8-GP initiated following completion of single dose trial</td>
<td></td>
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<tr>
<td>• Worldwide license to EpiDestiny’s sickle cell disease programme (EPI01) obtained</td>
<td></td>
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<tr>
<td>• Norditropin® label in the USA updated with two additional indications</td>
<td></td>
</tr>
</tbody>
</table>
### R&D milestones in 2018

<table>
<thead>
<tr>
<th>Project</th>
<th>Q1 2018</th>
<th>Q2 2018</th>
<th>Q3 2018</th>
<th>Q4 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tresiba®</td>
<td>DEVOTE and SWITCH 2 US regulatory decision</td>
<td>DUAL I Japan Phase 3a</td>
<td>Japan submission</td>
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<tr>
<td></td>
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<td>DUAL II Japan Phase 3a</td>
<td>Japan submission</td>
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<tr>
<td>Xultophy®</td>
<td></td>
<td></td>
<td>Japan submission</td>
<td></td>
</tr>
<tr>
<td>Ozempic®</td>
<td>EU and Japan regulatory decision</td>
<td>PIONEER 1 data</td>
<td>EU variation applications</td>
<td>PIONEER 6, 8 and 9 data</td>
</tr>
<tr>
<td>Oral semaglutide</td>
<td></td>
<td>Phase 1 data</td>
<td>PIONEER 5 and 10 data</td>
<td></td>
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<tr>
<td>LAI287</td>
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<td></td>
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<td>Japan submission</td>
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<td>AM833</td>
<td>US/EU submission</td>
<td>Phase 1 data</td>
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<td>explorer 4 data</td>
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<tr>
<td>N8-GP</td>
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<tr>
<td>N9-GP</td>
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<tr>
<td>Concizumab</td>
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<td>explorer 5 data</td>
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<tr>
<td>Somapacitan</td>
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</tbody>
</table>

**Diabetes**  **Obesity**  **Haemophilia**  **Growth disorders**

1. Results available: Expected to be published in the given quarter or in the subsequent quarterly company announcement.
2. Supplemental applications to include the two SWITCH trials have been withdrawn based on interactions with FDA.

**Note:**
- G530L has been removed from the overview as the project is still being evaluated in phase 1.
- Tresiba® vs insulin glargine U300 trial has been postponed and is no longer expected to read-out in Q4 2018.
## Financial results – First three months of 2018

<table>
<thead>
<tr>
<th>DKK million</th>
<th>Q1 2018</th>
<th>Q1 2017</th>
<th>Change (reported DKK)</th>
<th>Change (local currency)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sales</strong></td>
<td>26,930</td>
<td>28,452</td>
<td>(5%)</td>
<td>5%</td>
</tr>
<tr>
<td><strong>Gross profit</strong></td>
<td>22,733</td>
<td>24,201</td>
<td>(6%)</td>
<td></td>
</tr>
<tr>
<td><strong>Gross margin</strong></td>
<td>84.4%</td>
<td>85.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sales and distribution costs</strong></td>
<td>(6,451)</td>
<td>(6,787)</td>
<td>(5%)</td>
<td>5%</td>
</tr>
<tr>
<td>Percentage of sales</td>
<td>24.0%</td>
<td>23.9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Research and development costs</strong></td>
<td>(3,321)</td>
<td>(3,289)</td>
<td>1%</td>
<td>5%</td>
</tr>
<tr>
<td>Percentage of sales</td>
<td>12.3%</td>
<td>11.6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Administration costs</strong></td>
<td>(864)</td>
<td>(913)</td>
<td>(5%)</td>
<td>0%</td>
</tr>
<tr>
<td>Percentage of sales</td>
<td>3.2%</td>
<td>3.2%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Other operating income, net</strong></td>
<td>351</td>
<td>278</td>
<td>26%</td>
<td></td>
</tr>
<tr>
<td><strong>Operating profit</strong></td>
<td>12,448</td>
<td>13,490</td>
<td>(8%)</td>
<td>6%</td>
</tr>
<tr>
<td>Operating margin</td>
<td>46.2%</td>
<td>47.4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Financial items (net)</strong></td>
<td>1,161</td>
<td>(486)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Profit before income tax</strong></td>
<td>13,609</td>
<td>13,004</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td><strong>Income taxes</strong></td>
<td>(2,858)</td>
<td>(2,848)</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Effective tax rate</td>
<td>21.0%</td>
<td>21.9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Net profit</strong></td>
<td>10,751</td>
<td>10,156</td>
<td>6%</td>
<td></td>
</tr>
<tr>
<td>Diluted earnings per share (DKK)</td>
<td>4.40</td>
<td>4.06</td>
<td>8%</td>
<td></td>
</tr>
</tbody>
</table>
Unfavourable currency impact in Q1 2018 driven by development in both hedged and unhedged currencies

### Hedged Currencies

<table>
<thead>
<tr>
<th>Currency</th>
<th>2017 Average</th>
<th>2018 Average</th>
<th>Spot Rate</th>
<th>Impact of a 5% Move</th>
<th>Hedging Months</th>
</tr>
</thead>
<tbody>
<tr>
<td>USD</td>
<td>660</td>
<td>606</td>
<td>612</td>
<td>1,900</td>
<td>12</td>
</tr>
<tr>
<td>CNY</td>
<td>98</td>
<td>96</td>
<td>97</td>
<td>330</td>
<td>6</td>
</tr>
<tr>
<td>JPY</td>
<td>5.9</td>
<td>5.6</td>
<td>5.5</td>
<td>175</td>
<td>12</td>
</tr>
<tr>
<td>GBP</td>
<td>849</td>
<td>845</td>
<td>850</td>
<td>95</td>
<td>12</td>
</tr>
<tr>
<td>CAD</td>
<td>508</td>
<td>479</td>
<td>485</td>
<td>80</td>
<td>10</td>
</tr>
</tbody>
</table>

### Non-hedged Currencies

<table>
<thead>
<tr>
<th>Currency</th>
<th>2017 Average</th>
<th>2018 Average</th>
<th>Spot Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARS</td>
<td>0.4</td>
<td>0.3</td>
<td>0.3</td>
</tr>
<tr>
<td>TRY</td>
<td>181</td>
<td>157</td>
<td>150</td>
</tr>
<tr>
<td>INR</td>
<td>10.1</td>
<td>9.4</td>
<td>9.1</td>
</tr>
<tr>
<td>RUB</td>
<td>11.3</td>
<td>10.5</td>
<td>10.6</td>
</tr>
<tr>
<td>BRL</td>
<td>207</td>
<td>185</td>
<td>175</td>
</tr>
</tbody>
</table>

1 DKK per 100; 2 As of 25 April 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

<table>
<thead>
<tr>
<th>Category</th>
<th>Expectations 2 May 2018</th>
<th>Previous expectations 1 Feb 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales growth - local currencies</td>
<td>3% to 5%</td>
<td>2% to 5%</td>
</tr>
<tr>
<td>Sales growth - reported</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating profit growth - local currencies</td>
<td>Around 6 percentage point lower</td>
<td>Around 7 percentage points lower</td>
</tr>
<tr>
<td>Operating profit growth - reported</td>
<td>2% to 5%</td>
<td>1% to 5%</td>
</tr>
<tr>
<td>Financial items (net)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Effective tax rate</td>
<td>Gain of around DKK 1.9 billion</td>
<td>Gain of around DKK 2.5 billion</td>
</tr>
<tr>
<td>Capital expenditure</td>
<td>20% to 22%</td>
<td>20% to 22%</td>
</tr>
<tr>
<td>Depreciation, amortisation and impairment losses</td>
<td>Around DKK 9.5 billion</td>
<td>Around DKK 9.5 billion</td>
</tr>
<tr>
<td>Free cash flow</td>
<td>Around DKK 3 billion</td>
<td>Around DKK 3 billion</td>
</tr>
<tr>
<td></td>
<td>Around DKK 27 to 32 billion</td>
<td>Around DKK 27 to 32 billion</td>
</tr>
</tbody>
</table>

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 25 April 2018.
Closing remarks

Solid leadership positions and continued market opportunities

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>27%</td>
<td>Novo Nordisk value market share in diabetes care and solid leadership position</td>
</tr>
<tr>
<td>~5%</td>
<td>Insulin market volume growth</td>
</tr>
<tr>
<td>45%</td>
<td>Novo Nordisk insulin volume market share with leadership position across all regions</td>
</tr>
<tr>
<td>&gt;21%</td>
<td>GLP-1 volume market growth</td>
</tr>
<tr>
<td>54%</td>
<td>Novo Nordisk GLP-1 volume market share with global leadership position</td>
</tr>
<tr>
<td>38%</td>
<td>Saxenda® value market share with a global leadership in the anti obesity market</td>
</tr>
</tbody>
</table>

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 MAT Feb 2018 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**

- **24 Jun 2018**  American Diabetes Association investor presentation
- **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**

Novo Nordisk A/S  
Investor Relations  
Novo Allé, DK-2880 Bagsværd

Peter Hugreve Ankersen  +45 3075 9085  phak@novonordisk.com
Anders Mikkelsen  +45 3079 4461  armk@novonordisk.com
Christina Kjær  +45 3079 3009  cnje@novonordisk.com
## Appendix

1. **Novo Nordisk at a glance**  
2. **Insulin**  
3. **GLP-1 diabetes**  
4. **Obesity**  
5. **Biopharmaceuticals & Other serious chronic diseases**  
6. **Financials**  
7. **Sustainable business**

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Novo Nordisk at a glance</td>
<td>21</td>
</tr>
<tr>
<td>Insulin</td>
<td>34</td>
</tr>
<tr>
<td>GLP-1 diabetes</td>
<td>58</td>
</tr>
<tr>
<td>Obesity</td>
<td>76</td>
</tr>
<tr>
<td>Biopharmaceuticals &amp; Other serious chronic diseases</td>
<td>85</td>
</tr>
<tr>
<td>Financials</td>
<td>97</td>
</tr>
<tr>
<td>Sustainable business</td>
<td>109</td>
</tr>
</tbody>
</table>
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%
- Region Europe: Market share 44%
- Region China: Market share 52%
- Region Japan & Korea: Market share 50%
- Region AAMEO: Market share 56%
- Region Latin America: Market share 43%

Source: IQVIA MAT Feb 2018 volume figures
AAMEO: Africa, Asia, Middle East & Oceania

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Source: IQVIA MAT Feb 2018 volume figures
AAMEO: Africa, Asia, Middle East & Oceania
Novo Nordisk strategic foundation

**STRATEGIC PRIORITIES**

- Strengthen leadership in **DIABETES CARE**
- Strengthen leadership in **OBESITY CARE**
- Pursue leadership in **HAEMOPHILIA**
- 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**
Sales growth driven by the diabetes pandemic

Novo Nordisk reported quarterly sales by therapy

<table>
<thead>
<tr>
<th>DKK billion</th>
<th>Diabetes and obesity</th>
<th>Haemophilia</th>
<th>Norditropin®</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
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<tr>
<td>10</td>
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<td></td>
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</tr>
<tr>
<td>15</td>
<td></td>
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</tr>
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<td>20</td>
<td></td>
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</tr>
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<td>25</td>
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</tr>
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<td>30</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>35</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Reported sales CAGR\(^1\): 9.8%

Sales of DKK 26.9 billion (5%)

\(^1\) CAGR for 10-year period

\(^2\) Haemophilia comprises NovoSeven®, NovoThirteen®, NovoEight® and Refixia®

Reported sales split by product segments for first three months of 2018

- Long-acting insulin
- Premix insulin
- Fast-acting insulin
- Human insulin
- GLP-1
- Other diabetes and obesity
- Other biopharmaceuticals

18% Haemophilia
18% Other diabetes and obesity
10% Other biopharmaceuticals
5% GLP-1
9% Human insulin
7% Fast-acting insulin
1% Premix insulin
22% Long-acting insulin
Novo Nordisk has leading positions in diabetes, haemophilia and obesity

Diabetes

<table>
<thead>
<tr>
<th>DKK billion</th>
<th>Market value</th>
<th>Novo Nordisk value market share</th>
<th>Global market position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feb 2013</td>
<td>0%</td>
<td>10%</td>
<td>0%</td>
</tr>
<tr>
<td>Feb 2018</td>
<td>50%</td>
<td>50%</td>
<td>50%</td>
</tr>
</tbody>
</table>

CAGR¹ value: 15.9%

Obesity

<table>
<thead>
<tr>
<th>DKK billion</th>
<th>Market value</th>
<th>Novo Nordisk value market share</th>
<th>Global market position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dec 2015</td>
<td>0%</td>
<td>10%</td>
<td>0%</td>
</tr>
<tr>
<td>Dec 2017</td>
<td>50%</td>
<td>50%</td>
<td>50%</td>
</tr>
</tbody>
</table>

CAGR² value: 49.1%

Haemophilia

<table>
<thead>
<tr>
<th>DKK billion</th>
<th>Market value</th>
<th>Novo Nordisk value market share</th>
<th>Global market position</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY 2013</td>
<td>0%</td>
<td>10%</td>
<td>0%</td>
</tr>
<tr>
<td>FY 2017</td>
<td>50%</td>
<td>50%</td>
<td>50%</td>
</tr>
</tbody>
</table>

CAGR¹ value: 1.9%

¹ CAGR for 5-year period
Source: IQVIA MAT Feb, 2018 value figures

² CAGR for 2-year period
Source: IQVIA MAT Dec, 2017 value figures

Note: Value data is based on Australia, Belgium, Brazil, Canada, Chile, Denmark, Germany, Italy, Mexico, Russia, Spain, UAE, USA

Note: Annual sales figures for Haemophilia A, B and Bypassing agents segment. Recombinant and plasma derived products
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

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

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

<table>
<thead>
<tr>
<th>Region</th>
<th>2000</th>
<th>2017</th>
<th>2045</th>
</tr>
</thead>
<tbody>
<tr>
<td>North America</td>
<td>151</td>
<td>425</td>
<td>629</td>
</tr>
<tr>
<td>Region Europe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Region China</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Region J&amp;K</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Region AAMEO</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Region LATAM</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

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

- 11.2 mio treated with Human insulins
- 12.5 mio treated with modern insulin
- 0.9 mio treated with new-generation insulin
- 1.4 mio treated with GLP-1

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

26 of 425 million people with diabetes are treated with NN products

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

Global diabetes care market by treatment class

<table>
<thead>
<tr>
<th>Treatment Class</th>
<th>DKK billion</th>
</tr>
</thead>
<tbody>
<tr>
<td>OAD</td>
<td>500</td>
</tr>
<tr>
<td>GLP-1</td>
<td>400</td>
</tr>
<tr>
<td>Insulin</td>
<td>300</td>
</tr>
</tbody>
</table>

Total market: CAGR\(^1\) 15.1%
Injectables: CAGR\(^1\) 18.4%
OAD: CAGR\(^1\) 33.8%
GLP-1: CAGR\(^1\) 16.5%
Insulin: CAGR\(^1\) 11.1%

Global diabetes care value market share

Source: IQVIA MAT Feb, 2018 value figures

\(^1\) CAGR for 10-year period
OAD: Oral Anti-diabetic
Source: IQVIA MAT Feb, 2018 value figures
Continued single digit volume growth within the insulin segments globally

**Fast-acting insulin**
- Segment volume
- NovoRapid® market share

**Premix insulin**
- Segment volume
- NovoMix® market share

**Long-acting insulin**
- Segment volume
- Levemir® share
- NovoMix® market share
- Tresiba® share

---

1. CAGR for 5-year period.
2. Includes new-generation insulin. tMU: Thousand mega units

Note: Modern insulin (MI) penetration is of total segment, i.e., including animal and human insulin; Data is sensitive to changes in IQVIA data collection and reporting methodology.

Source: IQVIA MAT Feb, 2018 volume figures
Biopharm constitutes 16% of Novo Nordisk sales and a strategy has been defined to return to growth

NovoSeven® and Norditropin® account for 84% of Biopharm sales

<table>
<thead>
<tr>
<th>DKK billion</th>
<th>Other biopharmaceuticals</th>
<th>Norditropin®</th>
<th>Other haemophilia products</th>
<th>NovoSeven®</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1 2013</td>
<td>1.5</td>
<td>2.5</td>
<td>1.0</td>
<td>3.0</td>
</tr>
<tr>
<td>Q1 2018</td>
<td>3.0</td>
<td>4.0</td>
<td>1.5</td>
<td>5.0</td>
</tr>
</tbody>
</table>

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

- Drive in-market brands beyond current plans and ensure successful pipeline launches
- Pursue licensing or acquisition of complementary assets or companies
- Strengthen the organisation to drive the Biopharm return to growth agenda

1 Reported sales for the first three months of 2018
Novo Nordisk R&D strategy and priorities

**STRATEGIC PRIORITIES**

**Strengthen leadership in DIABETES CARE**
- Innovate to improve patient outcomes and drive growth

**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

**R&D PRIORITIES**

- Develop disruptive insulin and GLP-1 based products with distinct clinical and/or delivery advantages
- Develop novel mechanisms that reverse the course of diabetes, act as insulin sensitisers and improve hard clinical endpoints

**Investor Presentation**
First three months of 2018

CKD: Chronic kidney disease; CVD: Cardiovascular disease; NASH: Non-alcoholic steatohepatitis
**Significant growth opportunities fuelled by strong pipeline across all four strategic focus areas**

<table>
<thead>
<tr>
<th>PHASE 1</th>
<th>PHASE 2</th>
<th>PHASE 3</th>
<th>SUBMITTED</th>
<th>APPROVED</th>
</tr>
</thead>
<tbody>
<tr>
<td>NN1436 – LAI287</td>
<td>Anti-IL-21 and liraglutide</td>
<td>Oral semaglutide</td>
<td>N8-GP – Long-acting rFVIII</td>
<td>Levemir®</td>
</tr>
<tr>
<td>NN9513 – HypoPen 1513</td>
<td>Semaglutide obesity</td>
<td></td>
<td></td>
<td>NovoRapid®</td>
</tr>
<tr>
<td>NN9030 – GS30L</td>
<td>Concizumab</td>
<td></td>
<td></td>
<td>NovoMix®</td>
</tr>
<tr>
<td>NN9838 – Amylin analogue</td>
<td>Somapacitan – QW GHD1</td>
<td></td>
<td></td>
<td>Tresiba®</td>
</tr>
<tr>
<td>NN9747 – PYY analogue</td>
<td>Semaglutide NASH</td>
<td></td>
<td></td>
<td>Ryzodeg®</td>
</tr>
<tr>
<td>NN9277 – GG-co-agonist</td>
<td></td>
<td></td>
<td></td>
<td>Xultophy®</td>
</tr>
<tr>
<td>NN9499 – FGF21 obesity</td>
<td></td>
<td></td>
<td></td>
<td>Victoza®</td>
</tr>
<tr>
<td>NN9423 – Tri-agonist 1706</td>
<td></td>
<td></td>
<td></td>
<td>Fiasp®</td>
</tr>
<tr>
<td>NN7170 – Sc N8-GP</td>
<td></td>
<td></td>
<td></td>
<td>Ozempic®</td>
</tr>
</tbody>
</table>

**Diabetes**  **Obesity**  **Haemophilia**  **Growth disorders**  **Other serious chronic diseases**

1 Study conducted in growth hormone disorder 2 Study conducted in adult growth hormone disorder 3 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

**Employees in sales regions**

<table>
<thead>
<tr>
<th>Region</th>
<th>Employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>North America Operations:</td>
<td>~4,800</td>
</tr>
<tr>
<td>Region Africa, Asia, Middle-East and Oceania (AAMEO):</td>
<td>~4,700</td>
</tr>
<tr>
<td>Region China:</td>
<td>~3,200</td>
</tr>
<tr>
<td>Region Europe:</td>
<td>~2,900</td>
</tr>
<tr>
<td>Region Japan &amp; Korea:</td>
<td>~1,200</td>
</tr>
<tr>
<td>Region Latin America:</td>
<td>~940</td>
</tr>
</tbody>
</table>

**Total non-HQ/manufacturing employees: ~18,700**

---

1 Employees represent full-time equivalents in Novo Nordisk’s sales regions (excludes all other employees in headquarter, research sites and manufacturing sites) as of March 2018.
Solid patent protection of innovative drugs

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

<table>
<thead>
<tr>
<th>EU patent protection1</th>
<th>US patent protection1</th>
</tr>
</thead>
<tbody>
<tr>
<td>2031</td>
<td>2032</td>
</tr>
<tr>
<td>2030</td>
<td>2030</td>
</tr>
<tr>
<td>20282</td>
<td>20292</td>
</tr>
<tr>
<td>2028</td>
<td>2029</td>
</tr>
<tr>
<td>2028</td>
<td>2029</td>
</tr>
<tr>
<td>20233</td>
<td>20233</td>
</tr>
<tr>
<td>2019</td>
<td>2019</td>
</tr>
<tr>
<td>Expired4</td>
<td>Expired5</td>
</tr>
<tr>
<td>Expired6</td>
<td>Expired7</td>
</tr>
<tr>
<td>Expired8</td>
<td>Expired8</td>
</tr>
</tbody>
</table>

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

---

1 List does not include all marketed products. 2 Protected by patents on the individual compounds insulin degludec and liraglutide as listed. 3Assuming 6 months paediatric extension 4Expired in 2015. 5Expired in 2014. 6Expired in 2011. 7Expired in 2014. 8Expired in 2017

Note: Saxenda patent identical to the Victoza® patent.
Insulin

1. Diabetes at a glance
2. Diabetes treatment classes
3. Insulin market segments
4. Novo Nordisk Diabetes product portfolio
5. Insulin market growth and market share
6. Tresiba®
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**

- **Short-lived, rapidly generated meal-related peaks** (prandial)
- **Sustained Insulin profile** (basal)

---

**Liver** | **Pancreas** | **Fat cell** | **Muscle**
---|---|---|---

---

Investor Presentation First three months of 2018 Slide 35
Diabetes pandemic is fuelled by growing rates of obesity

US CDC data on obesity and diabetes prevalence among adults

**Obesity prevalence**
(BMI ≥30 kg/m²)

- 1994
- 2000
- 2014

**Diabetes prevalence**

- <14.0%
- 14.0-17.9%
- 18.0-21.9%
- 22.0-25.9%
- 26.0-29.9%
- ≥30%
- <4.5%
- 4.5-5.9%
- 6.0-7.4%
- 7.5-8.9%
- 9.0-10.4%
- ≥10.5%

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

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

The worldwide challenge of glycaemic control: Mean \( HbA_{1c} \) in type 2 diabetes

- Canada: 7.3\(^{1}\)
- US: 7.2\(^{2}\)
- Latin America: 7.6\(^{3}\)
- China: 7.2-9.5\(^{4}\)
- India: 7.3-9.3\(^{4}\)
- Japan: 7.3-7.7\(^{5}\)
- Korea: 7.9-8.7\(^{6}\)
- Russia: 7.2-9.5\(^{4}\)
- Germany: 6.7-9.2\(^{7}\)
- Greece: 7.1-9.7\(^{7,8,4}\)
- Italy: 7.7-8.3\(^{4}\)
- Poland: 7.3-8.9\(^{4}\)
- Portugal: 7.6-9.7\(^{7}\)
- Romania: 7.9-9.9\(^{7}\)
- Spain: 7.6-9.2\(^{8}\)
- Sweden: 7.4-8.7\(^{7}\)
- Turkey: 7.6-10.6\(^{7}\)
- UK: 7.4-8.7\(^{8}\)

Footnotes:
1 Harris et al. Diabetes Res Clin Pract 2005;70:90–7;
2 Hoerger et al. Diabetes Care 2008;31:81–6;
8 Liebl et al. Diab Ther 2012;3:e1–10;
## Insulin is the ultimate care for people with diabetes

### Progression of type 2 diabetes and treatment intensification

<table>
<thead>
<tr>
<th>OAD: Oral anti-diabetic</th>
<th>Time (weeks)</th>
<th>β-cell function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diet and exercise</td>
<td></td>
<td>100%</td>
</tr>
<tr>
<td>OAD</td>
<td></td>
<td>80%</td>
</tr>
<tr>
<td>GLP-1</td>
<td></td>
<td>60%</td>
</tr>
<tr>
<td>Insulin</td>
<td></td>
<td>40%</td>
</tr>
</tbody>
</table>

### Distribution of patients and value across treatment classes

<table>
<thead>
<tr>
<th>Patients</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>OAD</td>
<td>68%</td>
</tr>
<tr>
<td>GLP-1</td>
<td>13%</td>
</tr>
<tr>
<td>Insulin</td>
<td>5%</td>
</tr>
<tr>
<td>OAD</td>
<td>38%</td>
</tr>
<tr>
<td>GLP-1</td>
<td>13%</td>
</tr>
<tr>
<td>Insulin</td>
<td>49%</td>
</tr>
</tbody>
</table>

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 MAT Feb, 2018

Source: IQVIA PharMetrix claims data, IQVIA disease analyser, IQVIA MIDAS
The insulin market is comprised of three segments

**Insulin action profiles**

- **Fast-acting**
  - Time of day: 6:00, 10:00, 14:00, 18:00, 22:00, 2:00, 6:00
  - Breakfast, Lunch, Dinner

- **Premix**
  - Time of day: 6:00, 10:00, 14:00, 18:00, 22:00, 2:00, 6:00

- **Long-acting**
  - Time of day: 6:00, 10:00, 14:00, 18:00, 22:00, 2:00, 6:00

**Global insulin volume market by segment**

- **Fast-acting**
  - CAGR volume: 5.0%
  - CAGR value: 16.4%
  - Feb 2013: 37%
  - Feb 2018: 34%

- **Premix**
  - Feb 2013: 29%
  - Feb 2018: 26%

- **Long-acting**
  - Feb 2013: 35%
  - Feb 2018: 40%

---

1 CAGR for 5-year period. Value in DKK.
Source: IQVIA monthly MAT volume and value Feb 2018 (DKK) figures
### Medications used for the treatment of type 2 diabetes

#### Commonly prescribed product classes for the treatment of type 2 diabetes

<table>
<thead>
<tr>
<th>Class</th>
<th>HbA₁C change</th>
<th>Hypoglycaemia risk</th>
<th>Weight change</th>
<th>CVD risk</th>
<th>Dosing (pr. day)</th>
<th>Contraindication/undesired effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metformin</td>
<td>1.5</td>
<td>No</td>
<td>Neutral</td>
<td>Minimal</td>
<td>2 OADs</td>
<td>Kidney, liver</td>
</tr>
<tr>
<td>Sulfonylurea</td>
<td>1.5</td>
<td>Yes</td>
<td>Gain</td>
<td>None</td>
<td>1 OAD</td>
<td>Essentially none</td>
</tr>
<tr>
<td>TZDs</td>
<td>0.5 - 1.4</td>
<td>No</td>
<td>Gain</td>
<td>Varies</td>
<td>1 OAD</td>
<td>CHF, liver</td>
</tr>
<tr>
<td>DPP-IV inhibitors</td>
<td>0.6 - 0.8</td>
<td>No</td>
<td>Neutral</td>
<td>TBD</td>
<td>1-2 OADs</td>
<td>None</td>
</tr>
<tr>
<td>SGLT-2 inhibitors</td>
<td>0.5 - 0.9</td>
<td>No</td>
<td>Loss</td>
<td>Varies</td>
<td>1 OAD</td>
<td>Genital infections, urinary tract infections</td>
</tr>
<tr>
<td>GLP-1</td>
<td>1.0 - 2.0</td>
<td>No</td>
<td>Loss</td>
<td>Varies</td>
<td>Varies</td>
<td>GI side effects, MTC</td>
</tr>
<tr>
<td>Long-acting insulin</td>
<td>1.5 - 2.5</td>
<td>Yes</td>
<td>Gain</td>
<td>TG and HDL</td>
<td>1 injection</td>
<td>Hypoglycaemia</td>
</tr>
<tr>
<td>Fast-acting insulin</td>
<td>1.5 - 2.5</td>
<td>Yes</td>
<td>Gain</td>
<td>TG and HDL</td>
<td>1-4 injections</td>
<td>Hypoglycaemia</td>
</tr>
</tbody>
</table>

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.

Novo Nordisk current and future product portfolio covers the type 2 diabetes treatment cascade\(^1\)

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

- **Second generation analogues**
  - Oral semaglutide (Ozempic\(^\circledR\))
- **First generation analogues**
  - Victoza\(^\circledR\)
  - Levmir\(^\circledR\)
  - Insulatard\(^\circledR\)
- **Human insulin**
  - Actrapid\(^\circledR\)
  - Mixtard\(^\circledR\) 30

**When basal insulin is not enough**
- Once-daily optimisation
  - NovoMix\(^\circledR\)
  - Fiasp
  - Ryzodeg\(^\circledR\)

**Mealtime insulin control**
- Actrapid\(^\circledR\)

---

1 Pending clinical development programmes and regulatory processes for oral 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:

- **New-generation insulin**
  - Tresiba®
  - Ryzodeg®
  - Xultophy®
  - Fiasp®

- **Modern insulin**
  - Levemir®
  - NovoMix®
  - NovoLog®

- **Human insulin**
  - Insulatard®
  - Mixtard®
  - Actrapid®

Commercial focus depends on market maturity and market access situation:

- **New-generation insulin**
  - Differentiation
  - Volume strategy: 
  - Value strategy: 

- **Modern insulin**
  - Familiarity
  - Volume strategy: 
  - Value strategy: 

- **Human insulin**
  - Affordability
  - Volume strategy: 
  - Value strategy:
Stable global insulin volume growth

Regional insulin volume growth

- North America
- Region Europe
- Region AAMEO
- Region China
- Region J&K
- Region LATAM
- World

Regional insulin volume market split

- North America
- Region Europe
- Region AAMEO
- Region China
- Region J&K
- Region LATAM

Note: Data is sensitive to changes in IQVIA data collection and reporting methodology
Source: IQVIA monthly MAT Feb, 2018 volume figures
Strong underlying insulin market growth and sustained global volume market share

Global insulin market

- **CAGR volume**: 5.0%
- **CAGR value**: 16.4%

- **Device penetration**
- **Modern insulin penetration**

Global modern and new-generation insulin volume market shares

- **Novo Nordisk**: 45%
- **Sanofi**: 33%
- **Eli Lilly**: 20%

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 monthly MAT, Feb 2018 volume figures.

---

1 CAGR for 5-year period; 2MI: Modern insulin, NGI: New-generation insulin
3 annual value of total insulin class
Note: Data is sensitive to changes in IQVIA data collection and reporting methodology. Source: IQVIA monthly MAT, Feb 2018 volume and value (DKK) 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 and new-generation insulin
- Modern Insulin penetration
- Device penetration

CAGR volume: 2.6%
CAGR value: 21.2%

Fast-acting
Premix
Long-acting

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

- Novo Nordisk
- Sanofi
- Eli Lilly

Source: IQVIA monthly MAT Feb, 2018 volume and value (DKK) figures

CAGR for 5-year period

Source: IQVIA monthly MAT Feb, 2018 volume figures
Novo Nordisk’s modern and new generation insulins maintain market share in the USA insulin market

**USA fast-acting insulin**
- CAGR volume¹: 3.3%
- MI penetration: 83.9%

**USA premix insulin**
- CAGR volume¹: (6.1%)
- MI penetration: 51.8%

**USA long-acting insulin**
- CAGR volume¹: 4.2%
- MI penetration: 74.7%

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, i.e., including human insulin.
Source: IQVIA monthly MAT Feb, 2018 volume figures
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

<table>
<thead>
<tr>
<th></th>
<th>Managed care</th>
<th>Medicare</th>
<th>Medicaid</th>
<th>Uninsured</th>
<th>US population (million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>288</td>
<td>45%</td>
<td>33%</td>
<td>8%</td>
<td>326</td>
</tr>
<tr>
<td>2020</td>
<td>288</td>
<td>44%</td>
<td>33%</td>
<td>8%</td>
<td>333</td>
</tr>
</tbody>
</table>

In 2018, PBM: Pharmacy Benefit Manager

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:
- 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.

MedImpact
Humana
Prime
CVS
Caremark
Express Scripts

31%
5%
3%
28%

326
333
Key Novo Nordisk diabetes care products remain broadly available in the USA

Value market shares of key Novo Nordisk products in the USA

<table>
<thead>
<tr>
<th>Value market share</th>
<th>Victoza®</th>
<th>NovoLog®</th>
<th>Levemir®</th>
<th>Tresiba®</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feb 2015</td>
<td></td>
<td></td>
<td>100%</td>
<td>0%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>80%</td>
<td>20%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>60%</td>
<td>40%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>40%</td>
<td>60%</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>20%</td>
<td>80%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0%</td>
<td>100%</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Market access</th>
<th>Victoza®</th>
<th>NovoLog®</th>
<th>Levemir®</th>
<th>Tresiba®</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feb 2015</td>
<td></td>
<td>0%</td>
<td>100%</td>
<td>0%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>80%</td>
<td>20%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>60%</td>
<td>40%</td>
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<tr>
<td></td>
<td></td>
<td>40%</td>
<td>60%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>20%</td>
<td>80%</td>
<td></td>
</tr>
<tr>
<td>Feb 2018</td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: IQVIA NSP Feb 2018;
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

Source: FingerTip Formulary bridge, Feb 2018 Nomenclature and Xponent PlanTrak,; 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

**European insulin market by segment**

- **CAGR volume**: 4.3%
- **CAGR value**: 4.8%

- **Device penetration**
- **MI and NGI penetration**

**Penetration**

- **Fast-acting**
- **Premix**
- **Long-acting**

**European modern insulin and new-generation insulin volume market shares**

- **Novo Nordisk**: 44%
- **Sanofi**: 36%
- **Eli Lilly**: 19%

Source: IQVIA monthly MAT Feb, 2018 volume figures, numbers do not add up to 100% due to smaller insulin manufacturers

CAGR for 5-year period

MI: Modern insulin; NGI: New-generation insulin

Source: IQVIA monthly MAT Feb, 2018 volume and value (DKK) figures
Stable insulin leadership position in Region AAMEO comprising Africa, Asia, Middle-East and Oceania

Region AAMEO insulin market by segment

- **Penetration**
  - CAGR volume\(^1\): 8.0%
  - CAGR value\(^1\): 5.1%

Region AAMEO modern and new-generation insulin volume market shares

\(\text{Source: IQVIA monthly MAT Feb, 2018 volume figures, numbers do not add up to 100% due to smaller insulin manufacturers}\)

---

\(^1\) 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 monthly MAT Feb, 2018 volume and value (DKK) figures

MI: Modern insulin; NGI: New-generation insulin
Solid insulin market leadership position in Region Japan & Korea

Japan & Korea insulin market by segment

<table>
<thead>
<tr>
<th>Segment</th>
<th>CAGR volume¹:</th>
<th>CAGR value¹:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Device penetration</td>
<td>0.5%</td>
<td>(4.4%)</td>
</tr>
<tr>
<td>MI and NGI penetration</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

- Novo Nordisk: 50%
- Sanofi: 25%
- Eli Lilly: 25%

¹ CAGR for 5-year period
MI: Modern insulin; NGI: New-generation insulin
Source: IQVIA monthly MAT Feb, 2018 volume and value (DKK) figures
Source: IQVIA monthly MAT Feb, 2018 volume figures
Solid Tresiba® performance strengthens basal insulin market share in Japan

Japanese basal value market shares

- Tresiba®
- Levemir®
- glargine U100
- glargine U300
- NPH
- biosimilar glargine U100
- NN Total Basal

Japanese total insulin value market shares

- Novo Nordisk
- Eli Lilly
- Sanofi

Source: IQVIA monthly MAT Feb, 2018 value figures
Solid volume growth in the Chinese insulin market

**Chinese insulin market by segment**

- **Device penetration**
- **Modern insulin penetration**

<table>
<thead>
<tr>
<th>Segment</th>
<th>Feb 2013</th>
<th>Feb 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fast-acting</td>
<td>10%</td>
<td>20%</td>
</tr>
<tr>
<td>Premix</td>
<td>20%</td>
<td>30%</td>
</tr>
<tr>
<td>Long-acting</td>
<td>50%</td>
<td>60%</td>
</tr>
</tbody>
</table>

**Chinese insulin volume market shares**

- **Novo Nordisk**
- **Eli Lilly**
- **Tonghua Dongbao**
- **Sanofi**
- **Gan & Lee**
- **Other**

<table>
<thead>
<tr>
<th>Company</th>
<th>Feb 2013</th>
<th>Feb 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Novo Nordisk</td>
<td>52%</td>
<td>52%</td>
</tr>
<tr>
<td>Eli Lilly</td>
<td>12%</td>
<td>12%</td>
</tr>
<tr>
<td>Tonghua Dongbao</td>
<td>10%</td>
<td>6%</td>
</tr>
<tr>
<td>Sanofi</td>
<td>7%</td>
<td>7%</td>
</tr>
<tr>
<td>Gan &amp; Lee</td>
<td>6%</td>
<td>6%</td>
</tr>
<tr>
<td>Other</td>
<td>52%</td>
<td>52%</td>
</tr>
</tbody>
</table>

**Note:**
- CAGR for 5-year period
- IQVIA covers around 50% of the total Chinese market (hospital data)
- Source: IQVIA monthly MAT Feb, 2018 volume and value (DKK) figures
- Only selected competitors shown
- IQVIA monthly MAT Feb, 2018 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

**Chinese insulin market by segment**

- **Device penetration**
- **Modern insulin penetration**

**CAGR value**: 13.8%

**Penetration**

**Chinese total insulin value market shares**

- Novo Nordisk
- Eli Lilly
- Tonghua Dongbao
- Sanofi
- Gan & Lee
- Other

Note: IMS covers around 50% of the total Chinese market (hospital data)
Source: IQVIA Rolling MAT Feb, 2018 value (DKK) figures

1 CAGR for 5-year period

Note: Only selected competitors
Source: IQVIA Rolling MAT Feb, 2018 value figures
Strengthened insulin volume market share in Region Latin America

### Latin America insulin market by segment

- **CAGR volume**: 11.7%
- **CAGR value**: 10.3%

### Latin America modern and new-generation insulin volume shares

- **Novo Nordisk**: 43%
- **Eli Lilly**: 30%
- **Sanofi**: 15%

---

1 CAGR for 5-year period

Note: IMS only covers the following 4 markets in Latin America (retail data): Argentina, Brazil, Colombia, Mexico

Source: IQVIA monthly MAT data Feb, 2018 volume and value (DKK) figures

MI: Modern insulin; NGI: New-generation insulin

---

Note: Only top-3 shown

Source: IQVIA monthly MAT data Feb, 2018 volume figures, numbers do not add up to 100% due to smaller insulin manufacturers not included

MI: Modern insulin; NGI: New-generation insulin
**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**

<table>
<thead>
<tr>
<th>Modern insulin</th>
<th>New-generation insulin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human insulin</td>
<td>Tresiba®</td>
</tr>
<tr>
<td>Insulatard®</td>
<td></td>
</tr>
</tbody>
</table>

**IGlar U100**
- Half life: 12-19 hours
- Variability: Low

**Tresiba®**
- Half life: 25 hours
- Variability: Medium

### Tresiba® has consistently demonstrated relevant reductions in severe hypoglycaemia

<table>
<thead>
<tr>
<th>Patients</th>
<th>Study</th>
<th>Hazard ratio [95% CI]</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1D</td>
<td>BEGIN</td>
<td>1.12 [0.68; 1.86]</td>
</tr>
<tr>
<td></td>
<td>SWITCH 1</td>
<td>0.65 [0.48; 0.89]*</td>
</tr>
<tr>
<td>T2D</td>
<td>BEGIN</td>
<td>0.81 [0.42; 1.56]</td>
</tr>
<tr>
<td></td>
<td>SWITCH 2</td>
<td>0.54 [0.21; 1.42]</td>
</tr>
<tr>
<td></td>
<td>DEVOTE</td>
<td>0.60 [0.48; 0.76]*</td>
</tr>
</tbody>
</table>

- * Statistically significant difference

### Key Points
- **50% reduction in nocturnal hypoglycaemia**
- **53% reduction in nocturnal hypoglycaemia**

**IGlar U100**
- 53% reduction in nocturnal hypoglycaemia

**Insulatard**
- 50% reduction in nocturnal hypoglycaemia

2. DEVOTE, American Diabetes Association 77th Scientific Sessions, 3-CT-SY22, June 12 2017

IGlar U100: Insulin glargine U100

---

**Note:**
- Phase 3a BEGIN: Severe=third-party assistance; Phase 3b DEVOTE: severe=third-party assistance and adjudicated; Phase 3b SWITCH: severe=third-party assistance and adjudicated.
- T1D: Type 1 diabetes; T2D: Type 2 diabetes; CI: Confidence interval
## Competitive Tresiba® label across the USA, Europe and Japan

Tresiba® label characteristics in the USA, Europe and Japanese markets

<table>
<thead>
<tr>
<th></th>
<th>USA</th>
<th>Europe</th>
<th>Japan</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Profile</strong></td>
<td>Half-life of 25 hours and duration of action of at least 42 hours</td>
<td>Duration of action beyond 42 hours</td>
<td>Duration of action up to 26 hours in Japanese patients</td>
</tr>
<tr>
<td></td>
<td>Day to day variability of 20%</td>
<td>Four times lower day-to-day variability vs insulin glargine</td>
<td></td>
</tr>
<tr>
<td><strong>Efficacy</strong></td>
<td>Non-inferior HbA1c reduction</td>
<td>Non-inferior HbA1c reduction</td>
<td>Non-inferior HbA1c reduction</td>
</tr>
<tr>
<td></td>
<td>Numerically greater FPG reduction</td>
<td>Numerically greater FPG reduction</td>
<td>Numerically greater FPG reduction</td>
</tr>
<tr>
<td></td>
<td>Numerically lower insulin dose¹</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Safety</strong></td>
<td>Overall safety consistent with insulin</td>
<td>Overall safety consistent with insulin</td>
<td>Overall safety consistent with insulin</td>
</tr>
<tr>
<td></td>
<td>Hypoglycaemia rates for Tresiba®, but not comparator</td>
<td>Lower rate of overall and nocturnal hypoglycaemia</td>
<td>Lower rate of nocturnal hypoglycaemia in Asian subjects</td>
</tr>
<tr>
<td><strong>Convenience</strong></td>
<td>Injection any time of day</td>
<td>Adjusting injection time when needed</td>
<td>In case of missed dose take as soon as possible</td>
</tr>
<tr>
<td></td>
<td>Up to 80 and 160 units per injection</td>
<td>Up to 80 and 160 units per injection</td>
<td></td>
</tr>
</tbody>
</table>

¹ Observed in majority of the trials

---

Investor Presentation  First three months of 2018  Slide 57
1. GLP-1 treatment
2. GLP-1 market growth and market share
3. Victoza® market share
4. GLP-1 vs OAD
5. Victoza® value growth and market share
6. GLP-1 pipeline
7. Ozempic®
8. GLP-1 market value in Regions
9. SUSTAIN
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

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

Global GLP-1 market

<table>
<thead>
<tr>
<th>GLP-1 value in bDKK</th>
<th>Share of total diabetes care market</th>
</tr>
</thead>
<tbody>
<tr>
<td>GLP-1</td>
<td>other</td>
</tr>
<tr>
<td>Victoza®</td>
<td>other</td>
</tr>
<tr>
<td>Ozempic®</td>
<td>other</td>
</tr>
<tr>
<td>exenatide</td>
<td>other</td>
</tr>
<tr>
<td>dulaglutide</td>
<td>other</td>
</tr>
</tbody>
</table>

CAGR value\(^1\): 34.0%

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

<table>
<thead>
<tr>
<th>Share of total diabetes care market</th>
</tr>
</thead>
<tbody>
<tr>
<td>GLP-1 value share of total diabetes</td>
</tr>
<tr>
<td>GLP-1 patient share(^1) of total diabetes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>World</th>
<th>North America</th>
<th>Reg EU</th>
<th>Reg AAMEO</th>
<th>Reg J&amp;K</th>
<th>Reg LATAM</th>
<th>Reg China</th>
</tr>
</thead>
<tbody>
<tr>
<td>12%</td>
<td>15%</td>
<td>5%</td>
<td>5%</td>
<td>5%</td>
<td>5%</td>
<td>1%</td>
</tr>
</tbody>
</table>

\(^1\) CAGR for 5-year period
Source: IQVIA monthly MAT Feb, 2018 value figures (DKK)

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; IQVIA monthly MAT Feb, 2018. Patient data; IQVIA Disease Analyser (DE, FR, UK), QuintilesIQVIA LRx (USA), Feb 2018
Strong GLP-1 volume growth in all regions

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: IQVIA monthly MAT Feb, 2018 volume figures

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: IQVIA monthly MAT Feb, 2018 volume figures
**Victoza® maintains a 14% value market share in the GLP-1, SGLT-2 and DPP-IV segment**

Segment value

<table>
<thead>
<tr>
<th>DKK billion</th>
<th>Segment value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feb 2013</td>
<td></td>
</tr>
<tr>
<td>Feb 2018</td>
<td></td>
</tr>
</tbody>
</table>

CAGR\(^2\) value: 26.4%  

Share of segment value growth

- **2016 vs 2017**
  - **Victoza®**: 12%
  - Other GLP-1: 12%

- **2017 vs 2018**
  - **Victoza®**: 12%

Segment value market shares

- **Victoza®**
- **Other GLP-1**
- **SGLT-2**
- **DPP-IV**

\(^2\) 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 MAT Feb, 2018 value figures
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)

- Insulin: 29%
- GLP-1: 9%
- Insulin and GLP-1: 5%
- Treatment naive: 51%
- OAD: 9%

Share of patients on OADs achieving HbA$_1c$ below 7% in major European countries

- HbA$_1c$ <7%: 43%
- HbA$_1c$ >7%: 57%

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

Novo Nordisk GLP-1 value market share leading in all regions except Japan & Korea

<table>
<thead>
<tr>
<th>DKK billion</th>
<th>Victoza®</th>
<th>albiglutide¹</th>
<th>dulaglutide</th>
<th>lixisenatide</th>
<th>exenatide</th>
<th>GLP-1 share of total diabetes care market</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>0%</td>
<td></td>
<td></td>
<td></td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td>0%</td>
<td></td>
<td></td>
<td></td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>0%</td>
<td></td>
<td></td>
<td></td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>0%</td>
<td></td>
<td></td>
<td></td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>2018</td>
<td>0%</td>
<td></td>
<td></td>
<td></td>
<td>0%</td>
<td></td>
</tr>
</tbody>
</table>

FDA/EMA statement on pancreatic safety²

Article on pancreatic safety of incretins²

Dulaglutide launch

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 MIDAS, monthly data, Feb 2018 (Note: IQVIA data does not adequately capture rebates resulting in an overstatement of market value)

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

Source: Reported sales until Feb 2018; IQVIA MIDAS, Feb 2018

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

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

Illustrative

1 Victoza patent expiry expected in 2022/2023 in most markets
**Ozempic® label in the USA**

- **Profile**
  - Adjunct to diet and exercise to improve glycaemic control
  - Two therapeutic dosages, 0.5 mg and 1 mg

- **Efficacy**
  - Reduction in HbA1c vs comparators\(^1\)
  - Reduction in body weight vs comparators\(^1\)

- **Convenience**
  - Administered once-weekly
  - To be launched in the Ozempic® pen

- **Safety**
  - Retinopathy wording similar to insulin labels
  - Cardiovascular safety with number of MACE events in clinical section\(^2\)

---

**CV data from SUSTAIN 6 trial in Ozempic® EU label**

<table>
<thead>
<tr>
<th></th>
<th>Ozempic® label</th>
<th>Victoza® label</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Trial</strong></td>
<td>SUSTAIN 6</td>
<td>LEADER</td>
</tr>
<tr>
<td><strong>Patients</strong></td>
<td>3,297</td>
<td>9,340</td>
</tr>
<tr>
<td><strong>Reference to CV results in indication</strong></td>
<td>Included</td>
<td>Included</td>
</tr>
<tr>
<td><strong>MACE</strong></td>
<td>HR: 0.74(^1)</td>
<td>HR: 0.87(^2)</td>
</tr>
<tr>
<td><strong>Kaplan-Meier</strong></td>
<td>Included</td>
<td>Included</td>
</tr>
</tbody>
</table>

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

\(^2\) 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

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
The GLP-1 segment accounts for 15% of total diabetes care market value in North America

**North America GLP-1 market**

<table>
<thead>
<tr>
<th>GLP-1 value in bDKK</th>
<th>Victoza®</th>
<th>Ozempic®</th>
<th>dulaglutide</th>
<th>other</th>
<th>exenatide</th>
</tr>
</thead>
<tbody>
<tr>
<td>Share of total diabetes care market</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**CAGR value**¹: 38.0%

**Key observations for Victoza® in the US market**

- Victoza® value market share within the GLP-1 segment is 54%¹
- Around 80% of Commercial and around 90% of Medicare Part D GLP-1 market volume is covered without restrictions²
- Around 93% of new patients who start on Victoza® transition from outside of GLP-1 segment³
- Around 71% of prescriptions are for the higher dose 1.8 mg⁴

¹ CAGR for 5-year period
Source: IQVIA monthly MAT Feb, 2018 value figures (DKK)

² FingerTip Formulary bridge/ February 2018 Nomenclature and Xponent PlanTrak using week-ending 2 March 2018; only considers bridged volume; excludes cash and mail order data;
³ IQVIA SOB, week ending 23 March 2018
⁴ IQVIA weekly NPA, week ending 30 March 2018
The GLP-1 segment accounts for around 11% of total diabetes care market value in Europe

European GLP-1 market

- GLP-1 value in bDKK
- Share of total diabetes care market

Victoza® value market share in Europe

- GLP-1 value market share

1 CAGR for 5-year period
Source: IQVIA monthly MAT Feb, 2018 value figures (DKK)

Source: IQVIA monthly MAT Feb, 2018 value figures (DKK), market share does not add up to 100% due to rounding
The GLP-1 segment accounts for 3% of total diabetes care market value in Region AAMEO

**Region AAMEO GLP-1 market**

<table>
<thead>
<tr>
<th>GLP-1 value in bDKK</th>
<th>Share of total diabetes care market</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Victoza®</td>
</tr>
</tbody>
</table>

**CAGR value**: 25.5%

**Victoza® value market share in Region AAMEO**

<table>
<thead>
<tr>
<th>GLP-1 value market share</th>
<th>Feb 2013</th>
<th>Feb 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Victoza®</td>
<td>47%</td>
<td></td>
</tr>
<tr>
<td>dulaglutide</td>
<td>34%</td>
<td></td>
</tr>
<tr>
<td>exenatide</td>
<td>19%</td>
<td></td>
</tr>
<tr>
<td>lixisenatide</td>
<td>1%</td>
<td></td>
</tr>
</tbody>
</table>

Source: IQVIA monthly MAT Feb, 2018 value figures (DKK), market share does not add up to 100% due to rounding

---

1 CAGR for 5-year period
AAMEO: Africa, Asia, the Middle East and Oceania
Source: IQVIA monthly MAT Feb, 2018 value figures (DKK)
The GLP-1 segment accounts for around 1% of the total diabetes care market value in Region China

**China GLP-1 market**

- GLP-1 value in bDKK
- **CAGR value**: 28.9%

**Vicloza® value market share in China**

- GLP-1 value market share
- 72% in 2018
- 27% in 2013

---

1 CAGR for 5-year period

Source: IQVIA monthly MAT Feb, 2018 value figures (DKK)

Source: IQVIA monthly MAT Feb, 2018 value figures (DKK), market share does not add up to 100% due to rounding
The GLP-1 segment accounts for around 5% of the total diabetes care market in Region Japan & Korea

**Japan & Korea GLP-1 market**

- **GLP-1 value** in bDKK
- **Victoza®**
- dulaglutide
- exenatide
- other
- **Share of total diabetes care market**

CAGR value\(^1\): 21.0%

**Source:** IQVIA monthly MAT Feb, 2018 value figures (DKK)

---

**Victoza® value market share in Japan & Korea**

- **GLP-1 value market share**
- **Victoza®**
- dulaglutide
- exenatide
- other
- **Share of total diabetes care market**

Source: IQVIA monthly MAT Feb, 2018 value figures (DKK)

---

\(^1\) CAGR for 5-year period

Source: IQVIA monthly MAT Feb, 2018 value figures (DKK)
Strong Victoza® market leadership in Region Latin America

![Graphs showing market leadership and GLP-1 value share in Latin America.](image)

### Latin America GLP-1 market
- **GLP-1 value in bDKK**
- Share of total diabetes care market

- **CAGR value**: 6.7%

### Victoza® value market share in Latin America
- **GLP-1 value market share**

- **Source**: IQVIA monthly MAT Feb, 2018 value figures (DKK)

---

1. CAGR for 5-year period

Source: IQVIA monthly MAT Feb, 2018 value figures (DKK)
SUSTAIN phase 3a trials with semaglutide successfully completed

**SUSTAIN**

<table>
<thead>
<tr>
<th></th>
<th>Baseline</th>
<th>Change in HbA₁c (%)</th>
<th>Baseline</th>
<th>Change in weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>8.1%</td>
<td>-1.6* -1.5*</td>
<td>92 kg</td>
<td>-1.0*</td>
</tr>
<tr>
<td>2</td>
<td>8.1%</td>
<td>-1.6 -1.3*</td>
<td>89 kg</td>
<td>-1.9*</td>
</tr>
<tr>
<td>3</td>
<td>8.3%</td>
<td>-1.5*</td>
<td>96 kg</td>
<td>-1.9*</td>
</tr>
<tr>
<td>4</td>
<td>8.2%</td>
<td>-1.6*</td>
<td>93 kg</td>
<td>1.2*</td>
</tr>
<tr>
<td>5</td>
<td>8.4%</td>
<td>-1.8*</td>
<td>92 kg</td>
<td>-1.4*</td>
</tr>
<tr>
<td>6</td>
<td>8.7%</td>
<td>-1.4*</td>
<td>92 kg</td>
<td>-0.6*</td>
</tr>
</tbody>
</table>

* Statistically significant; 1 SUSTAIN 1: Once-weekly semaglutide versus placebo in drug-naive 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

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 ≥18 years, stable treatment with metformin, HbA1c 7.0-10.5%; from a mean baseline of 8.2% HbA1c.
Oral semaglutide reduced HbA$_{1c}$ and body weight in a 26-week phase 2 trial in type 2 diabetes

HbA$_{1c}$ reduction from a mean baseline of 7.9%

- Placebo
- Sema 2.5 mg
- Sema 5 mg
- Sema 10 mg

Weight loss from a mean base line of 92 kg

- Sema 20 mg
- Sema 40 mg
- Sema 1 mg sc

Inclusion criteria: Type 2 diabetes; 7.0% ≤ HbA$_{1c}$ ≤ 9.5%; treatment with diet and exercise with or without metformin; sc: subcutaneous; sema: semaglutide
Obesity

1. Obesity as a chronic disease
2. Obesity treatment
3. Saxenda®
4. Obesity pipeline
5. STEP and SELECT
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

- Belief that obesity is self-inflicted
- Focus on acute weight loss rather than chronic weight management
- Physicians not equipped to engage in and treat obesity
- 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 MIDAS 2017
The healthcare cost associated with obesity expected to increase

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

<table>
<thead>
<tr>
<th>Year</th>
<th>Cost (USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>~0.8 trillion</td>
</tr>
<tr>
<td>2020</td>
<td>~1.0 trillion</td>
</tr>
<tr>
<td>2025</td>
<td>~1.2 trillion</td>
</tr>
</tbody>
</table>

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: WHO, October 2017; World Obesity Federation, 2017
Saxenda® now launched in 25 countries

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

- Mexico
- Australia
- USA
- Canada
- Germany
- Italy
- Brazil
- Denmark
- UAE
- Spain

**Countries with highest Saxenda® sales in 2017**

- **USA**: DKK 2,400 million
- **Brazil**: DKK 400 million
- **Canada**: DKK 1,000 million
- **Australia**: DKK 500 million
- **UAE**: DKK 100 million

**Saxenda® value market share**

- USA: 48%
- Brazil: 26%
- Canada: 83%
- Australia: 75%
- UAE: 12%

**Saxenda® volume market share**

- USA: 3%
- Brazil: 4%
- Canada: 69%
- Australia: 38%
- UAE: 5%

Source: IQVIA Dec 2017

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

---

1 Reported sales for the full year 2017

Source: IQVIA MIDAS, Dec 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 ~740 million

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

AOM: Anti-obesity medication; TRx: Total prescriptions
Source: IQVIA NPA and NSP moving annual total through February 2018
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
- Weight reduction by increasing energy expenditure
- Appetite reduction
- Impact on metabolic changes to increase lipid and glucose metabolism

Novo Nordisk obesity products and pipeline

<table>
<thead>
<tr>
<th>Projects:</th>
<th>Status:</th>
<th>2018 expected:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saxenda®</td>
<td>Launched</td>
<td></td>
</tr>
<tr>
<td>semaglutide – QW GLP-1</td>
<td>Phase 2</td>
<td>Phase 3</td>
</tr>
<tr>
<td>G530L – glucagon analogue</td>
<td>Phase 1b</td>
<td>Phase 1b</td>
</tr>
<tr>
<td>AM833 – amylin analogue</td>
<td>Phase 1b</td>
<td>Phase 2 ready</td>
</tr>
<tr>
<td>PYY1562 – PYY analogue</td>
<td>Phase 1b</td>
<td>Phase 1b²</td>
</tr>
<tr>
<td>NN9499 – FGF21 obesity²</td>
<td>Phase 1a</td>
<td>Phase 1b</td>
</tr>
<tr>
<td>NN9277 – GG-co-agonist</td>
<td>Phase 1a</td>
<td>Phase 1b</td>
</tr>
<tr>
<td>NN9423 – Tri-agonist 1706</td>
<td>Phase 1a</td>
<td>Phase 1b</td>
</tr>
</tbody>
</table>

1 Phase 1 in combination with liraglutide and phase 2 planned in combination with semaglutide
2 Phase 1b completed with monotherapy, phase 1b in combination with semaglutide planned for 2018
3 FGF21 potentially also targets appetite reduction

Phase 1a: Single-dose trials; Phase 1b: Multiple-dose trials

QW: Once-weekly

Weight reduction by increasing energy expenditure

Appetite reduction and energy expenditure

Impact on metabolic changes to increase lipid and glucose metabolism
Semaglutide demonstrated unprecedented weight loss in phase 2 obesity trial

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

<table>
<thead>
<tr>
<th>Change in body weight (%)</th>
<th>sema 0.05 mg</th>
<th>sema 0.1 mg</th>
<th>sema 0.2 mg</th>
<th>sema 0.3 mg</th>
<th>sema 0.4 mg</th>
<th>lira 3.0 mg</th>
<th>Placebo</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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
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 patients

<table>
<thead>
<tr>
<th>Year</th>
<th>STEP 1: Weight loss</th>
<th>STEP 2: T2D non-insulin patients</th>
<th>STEP 3: Maximising weight loss</th>
<th>STEP 4: Maintained weight loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>1,950 patients, 68 weeks</td>
<td>1,200 patients, 68 weeks</td>
<td>600 patients, 68 weeks</td>
<td>900 patients, 68 weeks</td>
</tr>
</tbody>
</table>

Expected phase 3a programme completion: 2020

Cardiovascular outcomes study, SELECT, planned for semaglutide in obesity

- Semaglutide 2.4 mg sc QW
- Placebo
- ~17,500 people with obesity
- Event-driven completion: Pre-defined number of events

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

1 Inclusion criteria: Male or female >45 years, BMI >27 kg/m², myocardial infarction or stroke >60 days, HbA1c <6.5%
QW: Once-weekly; sc: Subcutaneous
Biopharm and other chronic areas

1. Biopharm at a glance
2. Haemophilia – a rare disease
3. Haemophilia market
4. NovoSeven®
5. NovoEight®
6. Refixia®/Rebinyn®
7. N8-GP
8. Growth Hormone market
9. Other chronic disease
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

<table>
<thead>
<tr>
<th>Research/ preclinical</th>
<th>Phase 1/2</th>
<th>Phase 3</th>
<th>Approved/ Launched</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N8-GP sc</td>
<td>concizumab</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>somapacitan¹</td>
</tr>
<tr>
<td>Approved/ Launched</td>
<td></td>
<td></td>
<td>NovoEight®, Refixia®, NovoThirteen®, Norditropin®, NovoSeven®</td>
</tr>
</tbody>
</table>

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
Haemophilia is a rare disease with severe unmet medical needs

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

<table>
<thead>
<tr>
<th>Disease</th>
<th>Number of Patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haemophilia A</td>
<td>App. 350,000</td>
</tr>
<tr>
<td>Haemophilia B</td>
<td>App. 70,000</td>
</tr>
<tr>
<td>Inhibitor segment</td>
<td>App. 3,500-4,000</td>
</tr>
</tbody>
</table>

Low diagnosis and treatment rates within haemophilia

- **Diagnosed**
  - People with haemophilia: 45%
- **Treated**
  - Diagnosed: 15%
- **Prophylactic**
  - Treated: 6%
- **Pristine joints**
  - Prophylactic: 3%


Note: The inhibitor segment represents people with haemophilia and high titre inhibitors to their normal replacement treatment.
Global haemophilia market is growing by high-single digit

Sales of recombinant coagulation factors

- NovoSeven®
- Coagil VII®
- Obizur®
- Feiba®
- Recombinate®/Advate®
- Kogenate®/Helixate®
- Xyntha®/Refacto®
- Elocate®
- NovoEight®
- Idelvion®
- Rixibus®
- Alprolix®
- Benefix®

Strategic positioning of Novo Nordisk’s haemophilia portfolio

<table>
<thead>
<tr>
<th>Novo Nordisk compound</th>
<th>Status</th>
<th>Strategic position</th>
</tr>
</thead>
<tbody>
<tr>
<td>NovoSeven®</td>
<td>Launched</td>
<td>Maintain market leadership</td>
</tr>
<tr>
<td>NovoEight®</td>
<td>Launched</td>
<td>Establish presence in a competitive market place</td>
</tr>
<tr>
<td>N8-GP</td>
<td>Submitted³</td>
<td>Contribute to market conversion</td>
</tr>
<tr>
<td>Refixia®/Rebinyn®</td>
<td>Approved⁴</td>
<td>Contribute to new treatment paradigm</td>
</tr>
<tr>
<td>NovoThirteen®</td>
<td>Launched</td>
<td>Launch first recombinant product</td>
</tr>
</tbody>
</table>

¹ Obizur® only indicated for acquired haemophilia
² CAGR for 5-year period
³ Submitted in the USA and the EU in Q1 2018
⁴ Refixia® is the brand name for N9-GP in the EU, and Rebinyn® is the brand name in the US
~50% of historic NovoSeven® sales exposed to competition, but opportunities remain in other indications

**Estimated NovoSeven® sales by indication**

- CHwI PPx (A&B)
- CHwI on demand (A&B)
- CHwI surgery (A&B)
- Other indications

**NovoSeven® sales of DKK 9.2 billion**

1. Based on internal Novo Nordisk estimate
2. Other indications include areas like acquired haemophilia, Glanzmann’s thrombasthenia and congenital FVII deficiency
3. Reported sales for full year 2017

**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
**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**

<table>
<thead>
<tr>
<th>Estimated number of patients</th>
<th>Number of launch countries</th>
<th>Number of patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>200</td>
<td>500</td>
</tr>
<tr>
<td>2015</td>
<td>1,200</td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>1,800</td>
<td>1,200</td>
</tr>
<tr>
<td>2017</td>
<td>2,000</td>
<td>1,500</td>
</tr>
</tbody>
</table>

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

**Competitive positioning for NovoEight®**
- Temperature stability at high room temperature and best-in-class 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

---

1 Novo Nordisk estimated accumulated patient number
2 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

**Reported recombinant FIX sales**

<table>
<thead>
<tr>
<th>Sales (USD million)</th>
<th>Benefix®</th>
<th>Alprolix®</th>
<th>Idelvion®</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

CAGR: 10.1%\(^1\)

**Refixia®/Rebinyn® launched in first countries**

- Launched in the first EU countries in 2017
- Launched in the USA in February 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

\(^1\) CAGR for 6-year period

CAGR: Coagulation factor IX

Source: Company reports (Does not include Rixubis® 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

<table>
<thead>
<tr>
<th>FVIII activity (IU/mL)</th>
<th>FVIII</th>
<th>N8-GP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dose 50 IU/kg (n=8)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

One stage clot assay

### 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 days
- 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 disorder

**Development in global growth disorder market**

- CAGR volume\(^1\): 14.3%
- CAGR value DKK\(^1\): 18.8%

**Growth disorder volume market share**

- Novo Nordisk: 27%
- Pfizer
- Eli Lilly
- Merck Kgaa
- Sandoz

---

\(^1\) CAGR for 5-year period

Source: IQVIA monthly MAT Feb, 2018 volume figures and value (DKK) figures

Source: IQVIA monthly MAT Feb, 2018 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

REAL 1: Phase 3a, naïve AGHD
Objective: Efficacy (truncal fat %)/safety

REAL 3: Phase 2, GHD
Objective: Dose finding (height velocity)/safety

REAL 4: Phase 3, GHD
Objective: Efficacy (height velocity)/safety

REAL 5: Phase 3, SGA
Objective: Efficacy (height velocity)/safety

Note: Filing for first indication (AGHD) expected in 2018

GHD: Growth hormone deficiency; SGA: Small for gestational age

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

Serious chronic diseases are often associated with diabetes and obesity

- 70% of people with diabetes die from atherosclerotic CVD
- 40% of people hospitalised for heart failure have diabetes
- 80% of people with NASH are obese and 35% have diabetes
- 40% of people with diabetes have diabetic nephropathy and 50% are obese

New therapeutic areas represent patient populations with high unmet medical needs

<table>
<thead>
<tr>
<th></th>
<th>Estimated patients</th>
<th>Number of related deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVD</td>
<td>~420 million</td>
<td>~20 million annually</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Estimated patients</th>
<th>Diagnosis rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>NASH</td>
<td>~15-40 million¹</td>
<td>~20%²</td>
</tr>
<tr>
<td>CKD</td>
<td>~200 million</td>
<td>~20%</td>
</tr>
</tbody>
</table>

¹ Internal forecast comprising US, Europe and Japan
² Diagnosis rate is considered a major uncertainty to the forecast

Source:

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

Source: Diabetes Care 2005 Jan; 28(1): 164-176
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

- Obesity
- NASH
- CVD
- CKD

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

372 patients\(^1\)

- Semaglutide 0.4 mg sc QD
- Semaglutide 0.2 mg sc QD
- Semaglutide 0.1 mg sc QD
- Placebo 0.1, 0.2 or 0.4 mg

Liver biopsy (recent or new) 72 weeks Liver biopsy

Next steps:
- Phase 2 trial expected to complete 2020

---

\(^1\) Inclusion criteria: Histological confirmation of NASH, BMI 25–45 kg/m\(^2\), 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

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

1. Sales growth
2. Operating Profit growth
3. Cost distribution
4. COGS & CAPEX as percent of sales
5. Cash return to shareholders
6. Currency impact
7. Ownership structure
Solid sales growth driven by diabetes care

**Reported annual sales 2013-2017**

<table>
<thead>
<tr>
<th>Year</th>
<th>Diabetes</th>
<th>Biopharmaceuticals</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>78%</td>
<td>22%</td>
</tr>
<tr>
<td>2014</td>
<td>79%</td>
<td>21%</td>
</tr>
<tr>
<td>2015</td>
<td>79%</td>
<td>21%</td>
</tr>
<tr>
<td>2016</td>
<td>80%</td>
<td>20%</td>
</tr>
<tr>
<td>2017</td>
<td>83%</td>
<td>17%</td>
</tr>
</tbody>
</table>

CAGR\(^1\) 7.5%

\(^1\) CAGR for 5-year period

**Reported annual sales split by region**

<table>
<thead>
<tr>
<th>Region</th>
<th>2013</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>North America</td>
<td>47%</td>
<td>52%</td>
</tr>
<tr>
<td>Region China</td>
<td>24%</td>
<td>19%</td>
</tr>
<tr>
<td>Region Europe</td>
<td>6%</td>
<td>11%</td>
</tr>
<tr>
<td>Region J&amp;K</td>
<td>9%</td>
<td>10%</td>
</tr>
<tr>
<td>Region AAMEO</td>
<td>3%</td>
<td>5%</td>
</tr>
<tr>
<td>Region LATAM</td>
<td>3%</td>
<td>11%</td>
</tr>
</tbody>
</table>

AAMEO: Africa, Asia, Middle-East and Oceania; J&K: Japan and Korea; LATAM: Latin America
Victoza® accounts for 22% of total sales in first three months of 2018

<table>
<thead>
<tr>
<th>Reported currencies</th>
<th>Sales Q1 2018 (mDKK)</th>
<th>Sales split</th>
<th>Sales full year 2017 (mDKK)</th>
<th>Sales split</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tresiba®</td>
<td>1,755</td>
<td>7%</td>
<td>7,327</td>
<td>7%</td>
</tr>
<tr>
<td>Levemir®</td>
<td>2,780</td>
<td>10%</td>
<td>14,118</td>
<td>13%</td>
</tr>
<tr>
<td>NovoRapid®</td>
<td>4,695</td>
<td>17%</td>
<td>20,025</td>
<td>18%</td>
</tr>
<tr>
<td>NovoMix®</td>
<td>2,501</td>
<td>9%</td>
<td>10,257</td>
<td>9%</td>
</tr>
<tr>
<td>Victoza®</td>
<td>5,989</td>
<td>22%</td>
<td>23,173</td>
<td>21%</td>
</tr>
<tr>
<td>Saxenda®</td>
<td>770</td>
<td>3%</td>
<td>2,562</td>
<td>2%</td>
</tr>
<tr>
<td><strong>Diabetes care and Obesity</strong>¹</td>
<td><strong>22,608</strong></td>
<td><strong>84%</strong></td>
<td><strong>92,877</strong></td>
<td><strong>83%</strong></td>
</tr>
<tr>
<td>NovoSeven®</td>
<td>2,154</td>
<td>8%</td>
<td>9,206</td>
<td>8%</td>
</tr>
<tr>
<td>Norditropin®</td>
<td>1,481</td>
<td>5%</td>
<td>6,655</td>
<td>6%</td>
</tr>
<tr>
<td><strong>Biopharmaceuticals</strong>¹</td>
<td><strong>4,322</strong></td>
<td><strong>16%</strong></td>
<td><strong>18,819</strong></td>
<td><strong>17%</strong></td>
</tr>
<tr>
<td><strong>Total</strong>¹</td>
<td><strong>26,930</strong></td>
<td><strong>100%</strong></td>
<td><strong>111,696</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

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

**Operating profit**

- Operating profit as % of sales
- Reported operating profit growth
- Operating profit growth in local currencies

**Operating profit therapy split**

- Diabetes
- Biopharm

* 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

Diabetes & Obesity P&L – full year 2017

<table>
<thead>
<tr>
<th>DKK billion</th>
<th>Sales</th>
<th>COGS</th>
<th>S&amp;D</th>
<th>R&amp;D</th>
<th>Admin</th>
<th>OOI</th>
<th>OP</th>
</tr>
</thead>
<tbody>
<tr>
<td>-16%</td>
<td>-12%</td>
<td>-27%</td>
<td></td>
<td>-3%</td>
<td>1%</td>
<td></td>
<td>41%</td>
</tr>
</tbody>
</table>

Biopharmaceuticals P&L – full year 2017

<table>
<thead>
<tr>
<th>DKK billion</th>
<th>Sales</th>
<th>COGS</th>
<th>S&amp;D</th>
<th>R&amp;D</th>
<th>Admin</th>
<th>OOI</th>
<th>OP</th>
</tr>
</thead>
<tbody>
<tr>
<td>-14%</td>
<td>-15%</td>
<td>-14%</td>
<td>-3%</td>
<td>3%</td>
<td>56%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

**Cost of Goods Sold (COGS)**

- DKK billion
- 2013: 16
- 2014: 17
- 2015: 18
- 2016: 19
- 2017: 20

**Capital Expenditure (CAPEX)**

- DKK billion
- 2014: 2
- 2015: 4
- 2016: 6
- 2017: 8
- 2018E: 10
- 2019E: 12
- 2020E: 14

COGS as % of sales and CAPEX as % of sales
Long-term financial targets support focus on profitable growth, capital allocation and cash conversion

Operating profit growth in local currencies

- Current long-term financial target\(^1\)
- Previous long-term financial targets

Operating profit after tax to net operating assets

- Current long-term financial target\(^1\)

Cash to earnings (three-year average)

- Current long-term financial target\(^1\)

---

\(^1\) Long-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
Cash return to shareholders in 2018

### Annual cash return to shareholders

<table>
<thead>
<tr>
<th>DKK billion</th>
<th>Share repurchase</th>
<th>Interim dividend</th>
<th>Dividend</th>
<th>Free cash flow</th>
<th>Free cash flow guidance</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>15</td>
<td></td>
<td></td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>17</td>
<td></td>
<td></td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td></td>
<td>7.6</td>
<td></td>
<td>11</td>
<td>16</td>
</tr>
<tr>
<td>2017</td>
<td></td>
<td></td>
<td>7.4</td>
<td></td>
<td>17</td>
</tr>
<tr>
<td>2018</td>
<td></td>
<td></td>
<td></td>
<td>12</td>
<td>14</td>
</tr>
</tbody>
</table>

### Cash return priorities

- 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 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

* 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.
Currency impact on Novo Nordisk’s P/L

**Operational currency impact**

- All movements in currencies will directly impact the individual reported functional lines of the Novo Nordisk’s profit and loss statement.
- The currency effect on e.g. operating profit growth is the difference between the reported and the local operating profit growth.
- Key currencies account for around 75-85% of the total currency exposure.
- No hedging effects are included in the operating profit.

**Financial currency impact**

- All gain/losses from hedging contracts are included in the financial income/expenses.
- All key currencies are hedged:
  - USD 12 months
  - CNY 6 months
  - JPY 12 months
  - GBP 12 months
  - CAD 10 months
- Hedging is primarily performed with the use of forward contracts.
- Net financials includes hedging gain/loss including the cost of hedging (interest differential) and the effect from currency gain/losses of balances in non-hedged currencies.
Currency impact on operating profit

Operational currency impact

Operational currency impact in 2017

- The operational currency impact is the difference between e.g. operating profit growth in reported currency (Danish kroner) and operating profit growth in local currencies
- In 2017 the operating profit was:
  - In Danish kroner: 48,967 million
  - In local currencies: 50,737 million
  - Currency impact: -1,770 million

Estimation of operational currency impact from key currencies

- Novo Nordisk guides on currency sensitivity of key currencies in quarterly announcements
- Sensitivity table gives an indication of gain/loss of a 5% immediate change in exchange rates compared to exchange rates on announcement day
- Key currencies account for around 75-85% of the currency exposure

Estimation of operational currency impact from other currencies

- Significant changes in other currencies will additionally impact the operational currency in exposure
- In 2017, the depreciation of the ARS and TRY had an additional negative impact on the operational currency exposure

<table>
<thead>
<tr>
<th>Key currencies</th>
<th>Avg FX rate 2016</th>
<th>Avg FX rate 2017</th>
<th>% change</th>
<th>Yearly Impact of 5% change (mDKK)</th>
<th>Estimated impact from key currencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>USD</td>
<td>6.733</td>
<td>6.602</td>
<td>-1.9%</td>
<td>2,100</td>
<td>-816</td>
</tr>
<tr>
<td>CNY</td>
<td>1.013</td>
<td>0.976</td>
<td>-3.7%</td>
<td>320</td>
<td>-235</td>
</tr>
<tr>
<td>JPY</td>
<td>6.200</td>
<td>5.884</td>
<td>-5.1%</td>
<td>200</td>
<td>-204</td>
</tr>
<tr>
<td>GBP</td>
<td>9.121</td>
<td>8.496</td>
<td>-6.9%</td>
<td>90</td>
<td>-123</td>
</tr>
<tr>
<td>CAD</td>
<td>5.081</td>
<td>5.084</td>
<td>0.0%</td>
<td>80</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total estimated currency impact from key currencies in 2017</strong></td>
<td><strong>-1,378</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Key currencies</th>
<th>Avg FX rate 2016</th>
<th>Avg FX rate 2017</th>
<th>% change</th>
<th>Yearly Impact of 5% change (mDKK)</th>
<th>Estimated impact from key currencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARS</td>
<td>0.5</td>
<td>0.4</td>
<td>-20.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRY</td>
<td>223</td>
<td>181</td>
<td>-18.8%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>INR</td>
<td>10.0</td>
<td>10.1</td>
<td>1.0%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RUB</td>
<td>10.1</td>
<td>11.3</td>
<td>11.9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BRL</td>
<td>195</td>
<td>207</td>
<td>6.2%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total currency impact from other currencies in 2017 (residual)</strong></td>
<td><strong>-392</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total currency impact in 2017**

-1,770
# Key currency development 2017 vs 2018

<table>
<thead>
<tr>
<th>Currency Pair</th>
<th>Q1 2017</th>
<th>Q1 2018</th>
<th>Q1 Change</th>
<th>Q2 2017</th>
<th>Q2 2018</th>
<th>Q2 Change</th>
<th>Q3 2017</th>
<th>Q3 2018</th>
<th>Q3 Change</th>
<th>Q4 2017</th>
<th>Q4 2018</th>
<th>Q4 Change</th>
<th>FY 2017</th>
<th>FY 2018</th>
<th>FY Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>USD/DKK</td>
<td>698</td>
<td>606</td>
<td>-13%</td>
<td>676</td>
<td>610</td>
<td>-10%</td>
<td>633</td>
<td>612</td>
<td>-3%</td>
<td>632</td>
<td>612</td>
<td>-3%</td>
<td>660</td>
<td>610</td>
<td>-8%</td>
</tr>
<tr>
<td>JPY/DKK</td>
<td>6.1</td>
<td>5.6</td>
<td>-8%</td>
<td>6.1</td>
<td>5.6</td>
<td>-8%</td>
<td>5.7</td>
<td>5.6</td>
<td>-2%</td>
<td>5.6</td>
<td>5.6</td>
<td>0%</td>
<td>5.9</td>
<td>5.60</td>
<td>-5%</td>
</tr>
<tr>
<td>GBP/DKK</td>
<td>865</td>
<td>843</td>
<td>-3%</td>
<td>864</td>
<td>853</td>
<td>-1%</td>
<td>829</td>
<td>853</td>
<td>3%</td>
<td>839</td>
<td>853</td>
<td>2%</td>
<td>849</td>
<td>850</td>
<td>0%</td>
</tr>
<tr>
<td>CNY/DKK</td>
<td>101</td>
<td>95</td>
<td>-6%</td>
<td>98</td>
<td>97</td>
<td>-2%</td>
<td>95</td>
<td>97</td>
<td>2%</td>
<td>96</td>
<td>97</td>
<td>1%</td>
<td>98</td>
<td>96</td>
<td>-1%</td>
</tr>
<tr>
<td>CAD/DKK</td>
<td>527</td>
<td>480</td>
<td>-9%</td>
<td>502</td>
<td>475</td>
<td>-5%</td>
<td>505</td>
<td>474</td>
<td>-6%</td>
<td>498</td>
<td>474</td>
<td>-5%</td>
<td>508</td>
<td>476</td>
<td>-6%</td>
</tr>
</tbody>
</table>

**Note:** Spot rates as per 25 April 2018
- DKK per 100
- Q2 average is calculated as realised exchange rates from 1 April 2018 to 25 April 2018 + current spot rate applied from 25 April 2018 to 30 June 2018
- FY 2018 average is calculated as realised exchange rates from 1 January 2018 to 25 April 2018 + spot rate applied from 25 April 2018 to 30 June 2018
Stable ownership structure
- secured through A and B-share structure

### Share structure

<table>
<thead>
<tr>
<th>Novo Nordisk Foundation</th>
<th>Institutional and private investors</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Novo Holdings A/S</strong></td>
<td></td>
</tr>
<tr>
<td>76.2% of votes</td>
<td>23.8% of votes</td>
</tr>
<tr>
<td>28.5% of capital</td>
<td>71.5% of capital</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Novo Nordisk A/S</th>
<th>A shares</th>
<th>B shares</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>537m</td>
<td>1,913m</td>
</tr>
</tbody>
</table>

### 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: As of 24 April 2018. Treasury shares are included in the capital but have no voting rights.
Sustainability

1. Novo Nordisk Way and Triple Bottom line  110
2. Employee Heath and Safety  111
3. Business Environment  112
4. Novo Nordisk on Natural Resources  113
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

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

- ~42,700 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

<table>
<thead>
<tr>
<th></th>
<th>All managers</th>
<th>Management appointments¹</th>
<th>Sr. Managers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2013</td>
<td>2017</td>
<td>2013</td>
</tr>
<tr>
<td>Men</td>
<td>61%</td>
<td>60%</td>
<td>59%</td>
</tr>
<tr>
<td>Women</td>
<td>39%</td>
<td>40%</td>
<td>41%</td>
</tr>
</tbody>
</table>

¹ All appointments to management positions, incl. internal promotions and external hires, ex. NNIT

Note: Full social statements to be found in Novo Nordisk Annual Report 2017
Shaping and adapting to conditions in the business environment

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

5 million people with diabetes treated at cost below USD 0.16 per day

6 product recalls
0 failed inspections

103 million DKK donations to World Diabetes Foundation and Novo Nordisk Haemophilia Foundation

27.7 million patients reached with diabetes care products

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

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

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