EMERGING THERAPIES
Forward-looking statements

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- 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 Novo Nordisk’s results or the accuracy of forward-looking statements in this presentation, reference is made to the overview of risk factors in ‘Risk management enables better decision-making’ on pp 41-43 in the Annual Report 2018.

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Important drug information

- Victoza® is approved for the management of type 2 diabetes only
- Saxenda® is approved in the USA and the EU for the treatment of obesity only

Note: All notes, sources and abbreviations for this presentation are found in the appendix.
The future of R&D is to focus on increasing the number of clinical assets while maintaining industry-leading late-stage success.

R&D investments will expand beyond historic focus.

Increased clinical assets driving R&D investment.

Industry-leading success rate¹ from any phase to market.
The increase in pipeline assets is driven by semaglutide as well as internal and external innovation.
Collaboration with partners facilitates accelerated breakthrough science

<table>
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<tr>
<th>Novel treatments for metabolic disease</th>
<th>Oral Devices for protein and peptide drug delivery</th>
<th>Gene editing treatment for haemophilia</th>
<th>Small-molecule drug discovery and development</th>
<th>siRNA treatments</th>
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<td>MIT</td>
<td>bluebirdbio</td>
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<td>Combination treatments for NASH</td>
<td>Improving Beta Cell health</td>
<td>Glucose responsive insulin</td>
<td>Novel treatments for CVD</td>
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<td>GILEAD</td>
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<td>Selected partnerships over the past 2 years</td>
<td>Gut-Brain-Axis target discovery for metabolic disease</td>
<td>Small molecule for treatment of NASH</td>
<td>Stem cell lines</td>
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<td>KALLYOPE</td>
<td>Carbometrics</td>
<td>UBE</td>
<td>UCSF</td>
<td>BioLamina</td>
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Collaboration with partners facilitates accelerated breakthrough science

- siRNA treatments
- Combination treatments for NASH
- Novel treatments for CVD
- Stem cell lines
Novo Nordisk and Dicerna partner in the small interfering RNA drug modality space

Maintain competitive edge through new drug modality

- **Current Novo Nordisk drug platform** focus on proteins and peptides with targets on the **surface of cells**
- ~90% of molecular targets in T2D are intracellular
- siRNA allows for efficient and specific **gene silencing**
- **Previously inaccessible** drug targets, undruggable by small molecules, proteins and peptides

Dicerna’s GalXC™ RNAi technology platform

- Proprietary, **patented** RNAi technology
- **Hepatocyte-selective** targeting
- **Subcutaneous** route of delivery
- Well tolerated and long duration of action
- High **target specificity** predictable activity
- High therapeutic index **broad applicability**
NASH is a progressive disease with no existing treatment and low diagnosis rates today.

From 2020 to 2030 the number of treated patients is expected to increase from 0.2 million to 1.7 million.

**NASH**

**NASH F1**
- Inflamed/dying hepatocyte
- Collagen fibres
- Large lipid droplets

**NASH F2**
- Inflamed/dying hepatocyte
- Excessive collagen deposition

**NASH F3**
- Inflamed/dying hepatocyte
- Excessive collagen deposition

**NASH-Cirrhosis F4**
- Dead cell remnants
- Scar tissue

**Focus**

*Drive translational* focus on non-invasive diagnostics and predictive and prognostic biomarkers via partnerships.
The collaboration with Gilead aims to bring therapies to people living with NASH

<table>
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<th>Gilead possess complementary skillsets</th>
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<tr>
<td><strong>Leader in hepatology and combination therapy</strong></td>
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<tr>
<td><strong>Deep understanding of liver disease treatment</strong></td>
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<tr>
<td><strong>Has established key opinion leader relationships in hepatology</strong></td>
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<th>Semaglutide in NASH</th>
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<tbody>
<tr>
<td><strong>Clinical programme – 3 trials</strong></td>
</tr>
<tr>
<td>• Primary endpoints include:</td>
</tr>
<tr>
<td>• NASH resolution without worsening of fibrosis</td>
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<tr>
<td>• Mean change in liver stiffness measured by MRE</td>
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<tr>
<td>• ~450 patients enrolled</td>
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<td>• Phase 2 results expected in H1 2020</td>
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<th>Novo Nordisk and Gilead clinical collaboration</th>
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<td><strong>Clinical programme</strong></td>
</tr>
<tr>
<td>• Gilead’s two oral small molecule assets in loose combination with semaglutide</td>
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<tr>
<td>• Phase 2 results expected in 2020</td>
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</table>
Cardiovascular disease is associated with increased mortality

Key facts

- CVD is the number one cause of death globally
- Of these CVD deaths, 85% are due to heart attacks and strokes

~18 million people die each year from cardiovascular disease, an estimated 31% of all deaths globally

ATHEROCLEROSIS
70% of diabetes patients die from atherosclerotic CVD

HEART FAILURE
40% of patients who are hospitalised for heart failure have diabetes
Novo Nordisk is addressing the significant unmet need in CVD via internal and external innovation

Semaglutide paves the way for entering CVD

**SUSTAIN 6**
Semaglutide
26% cardiovascular risk reduction

**PIONEER 6**
Oral semaglutide
21% cardiovascular risk reduction

**SOUL**
Oral semaglutide
9,642 people with type 2 diabetes

Unique PCSK9i mimetic peptide approach

Increasing LDL receptor levels and efficiently decreasing LDL-cholesterol

Phase 1 results expected H1 2020
Includes lipid lowering measurements

Novo Nordisk and Staten exclusive option agreement

Novel anti-ApoC-III antibody for dyslipidaemia management

Phase 1 initiation expected H1 2020
The stem cell platform is expected to solve unmet needs for people with serious chronic diseases.

- Parkinson’s disease: Collaboration with Lund University and partnership with Biolamina
- Chronic kidney disease: Partnership with Mayo Clinic
- Chronic heart failure: Partnership with Biolamina
- Type 1 diabetes: Encapsulation device in collaboration with universities
- Dry age-related macular degeneration: Partnership with Biolamina
20+ years of stem cell research experience facilitates entry into regenerative medicine

Realised with Novo Nordisk’s comprehensive stem cell capabilities

- GMP-grade production capability in US facility utilising Novo Nordisk’s core CMC capabilities
- Academic collaborations with stem cell technology experts
- IP positions on differentiation protocols
- Multiple programs and growing pipeline
- Ethical stem cell practices
<table>
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<tr>
<th>Phase 3 results</th>
<th>Phase 2 results</th>
<th>Phase 1 results</th>
<th>China submission</th>
<th>US/EU submission</th>
<th>US/EU decision</th>
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<td>Somapacitan GHD</td>
<td>Semaglutide</td>
<td>Concizumab</td>
<td>AM833</td>
<td>EPI01</td>
<td>Mim8</td>
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<tr>
<td>Esperoct®</td>
<td>AM833-Sema 2.4</td>
<td>LA-GDF15</td>
<td>PYY1562/1875</td>
<td>Tri-agonist 1706</td>
<td>GG-co-agonist</td>
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<tr>
<td>Sema+OW GIP</td>
<td>Semaglutide</td>
<td>LAI287</td>
<td>LAISema</td>
<td>Insulin965</td>
<td>Ozempic®</td>
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<tr>
<td>Sema FORTE - Phase 3 results</td>
<td>Phase 1 results</td>
<td>Phase 1 results</td>
<td>Phase 1 results</td>
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<td>Diabetes</td>
<td>Obesity</td>
<td>Biopharm</td>
<td>Other Serious Chronic Diseases</td>
<td>Stem Cells</td>
<td>PCSK9i</td>
</tr>
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1 Expected to be published in the given quarter or in the subsequent quarterly company announcement.
Further raise the innovation bar for diabetes treatment

Develop a leading portfolio of superior treatment solutions for obesity

Strengthen and progress the Biopharm pipeline

Establish presence in other serious chronic disease focusing on NASH, CVD and CKD
Sources, Notes and Abbreviations – Emerging Therapies

- **Slide 3**: Probabilities of success to market were calculated using substances entering phase between 2008 and 2014 and year of assessment 2017, source: CMR International, 2017; NASH: Non-alcoholic steatohepatitis; CVD: Cardiovascular disease; CKD: Chronic kidney disease
- **Slide 6**: siRNA: silencing RNA; RNA: Ribonucleic acid
- **Slide 7**: NASH prevalence numbers are based on internal literature review
- **Slide 8**: ACC: Acetyl-CoA carboxylase; FXR: Farnesoid X receptor; GLP-1: Glucagon-like peptide-1
- **Slide 9**: Source: WHO, 2016; World heart foundation.
- **Slide 10**: Not statistically significant; LDL: Low density lipoprotein, PCSK9i: Proprotein convertase subtilisin/kexin type 9 inhibitor
- **Slide 12**: GMP: Good manufacturing practice; IP: Intellectual property
- **Slide 13**: Expected to be published in the given quarter or in the subsequent quarterly company announcement; HBwI: Haemophilia B with inhibitors; GHD: Growth hormone deficiency; AGHD: Adult growth hormone deficiency; CV: Cardiovascular; PoC: Proof of Concept; NASH: Non-alcoholic steatohepatitis
Pipeline supports significant growth opportunities across all four strategic focus areas

**PHASE 1**
- N1535 – LAIsema
- N1965 – FSI965
- N9747 – PYY 1562 analogue
- N9775 – PYY 1875 analogue
- N9423 – Tri-agonist 1706
- N9277 – GG-co-agonist
- N9215 – LA-GDF15
- N9838 – AM833 and Sema
- N7533 – Eclipse
- N9500 – FGF-21 NASH
- N6434 – PCSK9i
- N6177 – GG-co-agonist

**PHASE 2**
- N1436 – LAI287
- N9828 - Anti-IL-21 and lira
- N9838 – Amylin AM833
- EX20020 – Maciren, GHD
- N9931 - Semaglutide NASH

**PHASE 3**
- Semaglutide obesity
- Somapacitan – QW GHD
- NN7417 - Concizumab

**SUBMITTED**
- Somapacitan – QW AGHD

**APPROVED**
- Tresiba®
- Xultophy®
- Levemir®
- Ryzodeg®
- NovoMix®
- Fiasp®
- NovoRapid®
- Victoza®
- Ozempic®
- Rybelsus®
- Saxenda®
- NovoSeven®
- NovoEight®
- NovoThirteen®
- Refixia®
- Esperoct® (N8-GP)
- Norditropin®

1 Study conducted in adult growth hormone disorder; 2 Study conducted in growth hormone disorders; 3 Approved in the USA; submitted in the EU, Japan, and Canada; 4 Study conducted in NASH

LAIsema: Long-acting insulin combined with semaglutide; FSI965: A once daily insulin; PYY: Peptide YY; QW: Once-weekly; GG: Glucagon GLP-1; GDF15: Growth differentiation factor 15; QD: Once-daily; Sema: Semaglutide; PoC: Proof of Concept; FGF-21: Fibroblast growth factor 21; LAI: Long-acting insulin; AGHD: Adult growth hormone disease; GHD: Growth hormone disorder; lira: Liraglutide