Report on research collaborations and investments in the United Kingdom
Executive summary

- The Novo Nordisk Foundation (NNF) has awarded a total of GBP 23.2 million to 9 projects involving UK and Danish applicants.
- NNF Grant recipients collaborate with all 10 of the top 10 highest ranked UK universities.
- NNF grant recipients have co-authored 2,252 publications with researchers located in the UK. 30.6% of these are among the top 10% most cited in their field.
- Since 2014, 216 young UK researchers have been awarded a grant to attend the Copenhagen Bioscience Conferences.
- Between 2017 – 2021, NNF grant recipients collaborated with 90 UK companies. 27 are in the biotechnology sector and 38% have less than 50 employees.
- Between 2017 – 2021, Novo Holdings invested GBP 1.5 billion in 16 UK companies by follow-ons, open market purchases or other transactions.
- Novo Holdings’ current portfolio in UK includes 12 companies with an overall value of GBP 1.7 billion.
- 10% of all Life Science investments made by Novo Holdings between 2017 and 2021 are in UK companies.
Introduction

The Novo Nordisk Foundation is an independent Danish foundation with corporate interests.

The Foundation has two objectives:
- to provide a stable basis for the commercial and research activities of the companies in the Novo Group (Novo Holdings A/S, Novo Nordisk A/S and Novozymes A/S); and
- to support scientific, humanitarian and social causes.

Since 2017, the Foundation has invested GBP 3.3 billion in science and society.

This report is presented in two parts;
- Activities that Novo Nordisk Foundation (NNF) grant recipients have with institutions or organisations in the UK.
- An overview of Novo Holdings’ investments in the UK.

This report showcases NNF’s contribution to the UK academic community and industry.

Through figures and case studies, it demonstrates the different kinds of relationships and activities between NNF grant recipients and UK academic and industry partners.

Data in the presentation are based on activities between 2017 and 2021 (inclusive).
An independent Danish foundation with corporate interests

Investments

Investment result in 2021:
£ 4.21 billion
(DKK 37.0 billion)

- Principal investments
- Growth equity
- Venture investments
- Seed investments
- Financial investments

Grants

Grants awarded in 2021:
£ 1003 million
(DKK 8.8 billion)

- Biomedical and health science research and applications
- Patient-centred and research based care
- Life science research and industrial applications promoting sustainability
- Natural and technical science research and interdisciplinarity
- Innovation
- Education & outreach
- Social, Humanitarian and Development aid

*) Through Novo Holdings, the Foundation has A-shares in Novo Nordisk and Novozymes. A-shares have 10 times voting power per share
Our vision

The Novo Nordisk Foundation’s **vision** is to contribute significantly to research and development that improves the lives of people and the sustainability of society.

Our mission

› To enable Novo Nordisk A/S and Novozymes A/S to create world-class business results and contribute to growth

› To develop knowledge-based environments in which innovative and talented people can carry out research of the highest quality and translate discoveries into new treatments and solutions

› To inspire and enable children and young people to learn
Case stories

A university collaboration

A collaboration between the University of Oxford and Novo Nordisk Foundation Center for Protein Research has resulted in a research article published in Nature. The collaboration discovered a new and fundamental way in which DNA structure is protected following breakage. DNA breakage can cause mutations with severe consequences - for example during development – so these mechanisms of protection and repair are crucial to understanding a range of diseases and disorders.

A university/clinical collaboration

A collaboration between University College London Hospitals and Copenhagen University Hospital has made it possible to include enough patients for Resveratrol treatment trials for the rare diseases metabolic myopathies. It is extremely challenging, and often impossible, to recruit the number of patients needed to complete a treatment study on these diseases. By transferring patients by plane from the UK to take part in trials in Copenhagen from the UK, this collaboration was vital in allowing trials for a potential treatment to progress.

Source: Novo Nordisk Foundation (2019) based on ResearchFish® reporting
UK academic and industry collaborations involving NNF grant recipients 2017-2021
9 projects funded by NNF include Danish and UK researchers as co-applicants

The Novo Nordisk Foundation has in the last five years (2017-2021) funded 9 projects that have had 9 co-applicants from UK. Co-applicants are members of the international group applying for an NNF grant. The total funding allocated to these projects is £23.2 million.

The funded projects span research areas such as Biotechnology, Medical Science and Nat-Tech. All projects were awarded in open competition.

- **Copenhagen University Hospital** and **University of Cambridge** have received funding for a project within Non-Diabetic Endocrinology.
- **University of Copenhagen** and **University of Cambridge** have received funding for a project investigating how fungi use enzymes to degrade biomass.
- **The Royal Danish Academy** and London School of Hygiene and Tropical Medicine have received funding for a project investigating the role of urban planning in influencing the risk of transmitting disease through mosquitoes.

Since 2014, 216 young UK researchers have been awarded a grant to attend the Copenhagen Bioscience Conferences.

“An opportunity that facilitate high level training for PhD students and postdocs”

*NNF applicant, 2015*
NNF Grant recipients’ project collaborations with UK partners

Between 2017 & 2021...

The Foundation’s grant recipients have collaborated with many international project's partners on projects, including **467** collaborations between Danish and UK partners.

**161** of those partners are universities and university hospitals.

**67** UK companies co-authored at least one scientific article with grant recipients from the Novo Nordisk Foundation.
NNF Grant recipients’ collaboration with top UK universities

10 out of 10 top UK universities collaborate with NNF grant recipients

1. University of Cambridge
2. University of Oxford
3. University College London
4. Imperial College London
5. London School of Hygiene and Tropical Medicine
6. Queen Mary University of London
7. King’s College London
8. University of Exeter
9. University of Glasgow
10. London School of Economics and Political Science

Source: Novo Nordisk Foundation, CWTS Leiden Ranking 2021
Publication collaborations between NNF grant recipients and UK partners

Between 2017 and 2021, NNF grant recipients have co-authored **2,252** publications with UK-located researchers.

The highest number of UK partners come from University of Oxford (426 publications) followed by the University College London (351 publications) and University of Cambridge (327 publications).

**64.1%** of the co-authored publications are within the research areas *Medicine* and *Biochemistry, Genetics & Molecular Biology*.

**30.6%** of the co-authored publications are within the top 10% most cited publication in their research field. The national average among the top UK universities is 13.5%.

Selected links between the United Kingdom and Denmark

NNF grants contribute to research excellence

Share of co-authored publications among the top 10% most cited worldwide in the same research field and year

Source: Novo Nordisk Foundation (2021) based on The Leiden Ranking
Researchers receiving grants from the Novo Nordisk Foundation collaborate with UK companies

90 companies located in United Kingdom collaborate with NNF grant recipients either on formalised research projects (27) or by co-authoring scientific publications (67)

41 companies have less than 250 employees, while 34 have less than 50 employees.

27 companies are in the biotechnology sector.

20 are categorised as pharmaceutical companies.

21 are in the Medical Device, Consultancy, Software or Food and Beverages sector.

“A group at the University of Copenhagen has, in collaboration with industry partner Illumina United Kingdom, filed a patent, developed a new methodology for reproductive health and their clinical validation, as well as published a paper in Nature Genetics.”

Reporting in Researchfish, 2019
Novo Holdings A/S in United Kingdom

Our mission
Novo Holdings is to be a supportive owner of the Novo Group companies and to make a growing and positive impact on health, science and society by generating attractive long-term returns on the assets of the Novo Nordisk Foundation.
Novo Holdings A/S has in the period 2017-2021 invested **GBP 1.5 billion in 16 UK companies**. In 2021, the portfolio included 12 companies with an overall value of GBP 1.7 billion.

10% of the life science investments made worldwide by Novo Holdings A/S are in UK companies.

### Companies in the current portfolio

- **12** companies in total
  - 1 Seed investments
  - 4 Venture investments
  - 5 Growth equity investments
  - 2 Principal investments
Novo Holdings A/S Investments in United Kingdom

**ConvaTec Group Plc**, a UK listed global medical products and technologies company with leading market positions in advanced wound care, ostomy care, continence and critical care and infusion devices. Novo Holdings A/S acquired 19.95% of shareholding in March 2017, and at completion of the transaction, Kasim Kutay, CEO of Novo Holdings A/S, joined the Board of Directors of ConvaTec Group Plc.

**Oxford Biomedica** is a leading gene and cell therapy company focused on developing life changing treatments for serious diseases. Novo Holdings A/S has agreed to invest up to £53.5 million in new ordinary shares in Oxford Biomedica and will after the capital increase own up to 10.1% of the share capital.

**ReViral** is a UK-based biotechnology company with a portfolio of drugs to treat Respiratory Syncytial Virus (RSV) infection. RSV currently represents a major unmet medical need in children, elderly and immunocompromised. In 2018 ReViral raised US$55 million in Series B financing, led by Novo Holdings and New Leaf Venture Partners, both of whom will have representatives on the Board of Directors.

Source: Novo Holdings & Novo Nordisk Foundation (2019)
Appendix and additional slides
Methods and sources

Methods:
- Collaborations were defined as either a project collaboration or a publication collaboration funded by NNF with at least one UK collaborator/UK institute
- University ranking was based on the time period 2016-2019, across all sciences, with institutions with at least 100 publications, and based on the PP(top10%)
- Publications were defined as publications with at least one UK and one Danish author
- UK industry collaborators were defined as collaborations with companies registered in the UK
- UK research partners were defined as successful NNF grant applications with at least one UK co-applicant
- The number of UK attendees at the Copenhagen Bioscience Conference series were defined as applicants and attendees registered to a UK research institute
- Novo Holdings A/S investments in the UK were defined as investments in companies with their headquarters located in the UK

Sources:
- Researchfish (NNF grant data)
- Research publication collaborations
- Company project collaborations
- Publications
- Data Warehouse, NORMA and OMADA (NNF grant application data)
- Co-applicants
- Copenhagen Bioscience PhD programme applicants
- The Leiden Ranking 2021
  - University rankings
  - Publication impact data
- Clinicaltrials.org
  - Clinical trials data
- Novo Holdings A/S
  - Investment data