COVID-19 initiatives in 2020
The Novo Nordisk Foundation’s response to the coronavirus pandemic

Grants have been awarded in the areas of scientific research, education and outreach, patient care, diagnostics as well as for social and humanitarian efforts.

Establishment of TestCenter Danmark: DKK 250m

Emergency production of ethanol: DKK 8,75m

Emergency grants for COVID-19 projects in the Danish Realm: DKK 84,5m

Grants for other COVID-19 research: DKK 34,8m

Research into the long-term health consequences of COVID-19 illness: DKK 40,0m (for distribution in 2021)

Humanitarian grants: DKK 37,4m

Educational support for vulnerable children after the lockdown: DKK 4,7m

Total amount: DKK 460,15m

Read more about the Novo Nordisk Foundation’s efforts at: novonordiskfonden.dk/en/about-the-foundation/initiatives-covid-19/
An extraordinary situation calls for collaboration

With the coronavirus pandemic, Denmark was plunged into a health crisis as well as an economic crisis that required – and continues to require – an extraordinary effort from the whole of society. The crisis is not over yet, but with vaccines on the way, there is light at the end of the tunnel, and hopefully we can begin to see a return to normal life in the course of 2021.

In March 2020, the Novo Nordisk Foundation launched the first in a series of COVID-19 related initiatives, wishing to do our part in mitigating the consequences of the coronavirus pandemic. This was done in addition to our normal and already planned grant activities for 2020.

This leaflet gives an overview of the various activities we have been involved in and provides examples of projects we have supported during the year. It serves as a supplement to the Foundation's annual reporting on all our grant activities for 2020, which will be published in March 2021.

As an independent foundation with corporate interests, the Novo Nordisk Foundation has been able to provide grants for concrete projects while contributing to larger, national initiatives such as TestCenter Danmark.

Moreover, the companies which the Foundation co-owns have contributed significantly to a fruitful cooperation between public and private actors in Denmark. Especially Novo Nordisk and Novozymes have provided resources and expertise in the common fight against COVID-19.

While carrying out our normal activities, the Foundation has had to adapt to the exceptional circumstances, processing grant applications on a rolling basis and at a much faster rate than we have been used to. When awarding grants for extraordinary COVID-19 activities, we have prioritized projects that addressed an urgent need, were of a high quality and would benefit people and society in the short term. Therefore, it has been necessary for us to come up with new work procedures, while we – along with the rest of society – have had to adapt to a new reality of physical distancing, home workspaces and virtual meetings. All this has required an exceptionally dedicated effort on the part of our Board of Directors and employees. I am happy to see that many of the projects we have supported have benefited people and society. You can read more about them at the Foundation's homepage and at sciencenews.dk.

The coronavirus pandemic has more than anything else highlighted the importance of cooperation, both nationally and internationally. In Denmark, it has been positive and encouraging to see how public and private actors as well as foundations are able to join forces in a coordinated effort. We have seen numerous examples of that over the past nine months. I would like to take this opportunity to extend a big thank you to everyone that we have had the pleasure to collaborate with during 2020.

“The pandemic has more than anything else highlighted the importance of cooperation, both nationally and internationally”

Birgitte Nauntofte
CEO
Combating COVID-19 through research and collaboration

In early 2020, before Denmark was gripped by the coronavirus, the Novo Nordisk Foundation launched a grant programme with the theme: *Societal responses to and preparedness for emerging viral infections*. The purpose was to support projects that would contribute to strengthening the national preparedness and response for new viral epidemics. In conjunction with this, we awarded DKK 10 million to Statens Serum Institut (SSI) for the development of a digital solution that will make it easier to monitor, detect and respond swiftly to new infections and infectious diseases on a national level.

**Emergency grant programme for COVID-19 projects across the Danish Realm**

As the epidemic started to spread across Denmark in March, the Foundation implemented an emergency grant programme for COVID-19 projects. The initiative was launched after the Foundation had been in dialogue with the Danish Ministry of Health, among others. An ad hoc assessment committee was quickly appointed and, to begin with, the Foundation allocated DKK 50 million for emergency projects that sought to mitigate the consequences of the epidemic across the Danish Realm. The grant programme was announced on 18 March, inviting applications for up to DKK 5 million per project within three areas: scientific projects, information initiatives and social initiatives.

In the selection process, the Foundation prioritized projects that would yield swift results for use in the fight against COVID-19, while more long-term projects were referred to the Foundation’s other grant programmes. Moreover, it was decided not to have a fixed application deadline. Instead, applications were assessed on a rolling basis and the processing accelerated, so that applicants would receive a decision within 48 hours of submitting their applications.

When the programme closed for applications in early April, the Novo Nordisk Foundation had received close to 500 applications and granted a total of DKK 82.5 million for 45 COVID-19 related projects across the Danish Realm.

**Broad collaborations**

While implementing its COVID-19 emergency grant programme, the Foundation supported various large-scale projects where private and public actors in Denmark joined forces to solve some of the challenges arising from the COVID-19 pandemic.

In April 2020, TestCenter Danmark was established to ensure free access for all Danish citizens to COVID-19 testing. The Novo Nordisk Foundation granted up to DKK 250 million for the establishment of the national test centre, which became a reality through a unique collaboration between public partners in the state, regions, response and preparedness system as well as hospitals, and private partners, which apart from the Foundation comprised the pharmaceutical companies Novo Nordisk A/S and Novozymes A/S.

With the coronavirus crisis, there has also been a willingness among foundations with corporate interests to join forces in the financing of important societal initiatives. In April 2020, the Novo Nordisk Foundation and the Carlsberg Foundation donated DKK 17.5 million for the establishment of a consortium that would ensure emergency production of ethanol for disinfectants to be used for combating virus transmission. In addition to this, the two foundations have supported the development of two new antibody tests that can reveal if persons have previously had COVID-19. Subsequently, the Novo Nordisk Foundation granted DKK 20 million for a research project where the newly developed antibody tests are being used for mapping the spread of COVID-19 during the pandemic.

**Back to school after COVID-19**

In the summer of 2020, the Foundation allocated DKK 10 million for a grant programme with the theme: *Back to school after COVID-19*. The grants were aimed at projects that could provide educational support for vulnerable school children in the wake of the lockdown of Danish schools during the spring.

**The international responsibility**

When a pandemic such as COVID-19 sweeps across the world, it will affect the most disadvantaged countries the most. Consequently, the Foundation has supported a number of humanitarian projects in countries where the capacity of the health sector is already under a lot of strain, leaving the most vulnerable citizens particularly exposed if the virus spreads.

In the spring of 2020, the Foundation supported three projects in Jordan and two in Tanzania with a total of DKK 21 million. Among
other things, the projects focus on providing better access to the healthcare system for refugees and other vulnerable groups, on improving the level of knowledge about COVID-19 and on securing the water supply to refugee camps.

As the first wave of COVID-19 began to subside in Denmark and the rest of Europe, the virus and not least its economic effects were spreading to more vulnerable parts of the world.

Therefore, in June the Foundation decided to allocate funds for humanitarian and development projects that aim to mitigate the consequences of the pandemic among disadvantaged people worldwide. The grant programme *COVID-19: Preparedness, Prevention, Response and Recovery* was set up, targeting emergency aid organizations registered in Denmark. In September, the Foundation awarded DKK 14.4 million to 15 initiatives in Uganda, Sudan, Nepal, Bangladesh, Columbia and Myanmar, among other places.

**Long-term health consequences of COVID-19 illness**

As we have gained more knowledge about the coronavirus in the course of 2020, we have become increasingly aware of some of the health consequences associated with COVID-19. There are indications that it is not just an acute respiratory disease, but that it may cause long-term illness or discomfort within the organ systems, even among patients who have only experienced milder coronavirus symptoms.

As a response to this, the Foundation opened a new grant programme in November 2020 for research into the long-term health consequences of COVID-19 illness. A total of up to DKK 40 million was allocated towards grants between DKK 3 million and DKK 10 million, for projects lasting up to four years. The grants are intended for collaborative research groups at universities, hospitals and research institutions in Denmark and will be awarded in the spring 2021.
In April 2020, TestCenter Danmark was established to ensure free access for all Danish citizens to COVID-19 testing. TestCenter Danmark is comprised of a number of regional testing stations and a national test laboratory at Statens Serum Institut (SSI), where the initiative is also anchored.

From when the decision was taken, it took less than a month before the test centre was a reality, including the white testing tents that shot up across the country, where members of the public can get tested.

Crucial to the start-up phase was a unique collaboration between public partners in the state, regions, response and preparedness system as well as hospitals, and private partners, which apart from the Foundation consisted of the pharmaceutical companies Novo Nordisk A/S and Novozymes A/S. During this emergency situation, Novo Nordisk and Novozymes contributed with equipment and laboratory expertise. TestCenter Danmark is the first of its kind, in Denmark as well as internationally.

The feedback from all the involved parties has been that the initiative has shown how much you can accomplish within a short time when public and private actors join forces, each contributing with what they are best at.

The Novo Nordisk Foundation’s grant of up to DKK 250 million has helped to procure the testing equipment needed for carrying out the thousands of test every day.
Emergency production of ethanol

During the spring of 2020, hand sanitizers were at the top of people’s shopping lists. Soon, the shops ran out of the product, which mainly consists of ethanol. And since there was no large-scale production of ethanol in Denmark, the country was facing a shortage of disinfectants.

To address this situation, a consortium consisting of the Danish state, Carlsberg, Ørsted and Ree Holding was established. Its task was to set up an emergency production of ethanol, thus ensuring general access to hand sanitizers and other disinfectants in order to curb the spread of COVID-19 in society.

The Novo Nordisk Foundation and the Carlsberg Foundation have jointly granted DKK 17.5 million for the establishment of this consortium. The parties in the consortium will not make any profit from the production of ethanol.

HRH Crown Prince Frederik at Re Energy in Kalundborg, which has converted its production to ethanol.

Photo: Keld Navntoft
New antibody tests for monitoring the spread of COVID-19

When people with COVID-19 symptoms are tested using diagnostic tests, it is to see if they are currently infected with the coronavirus. By testing for antibodies, it is possible to see if a person has had the coronavirus at an earlier stage.

However, the antibody tests available on the market in the spring 2020 were not sufficiently sensitive to determine whether an individual has COVID-19 antibodies or not. Consequently, researchers from Rigshospitalet and the University of Copenhagen have collaborated with Novo Nordisk A/S in developing two new antibody tests with higher sensitivity. The first test measures the presence of antibodies in the blood, while the researchers can use the other test to map the types of antibodies found in persons who have tested positive. The tests may become an important tool in monitoring the spread of the COVID-19 pandemic and the development of antibody levels, both in individuals and in society.

The tests have been developed with support from the Carlsberg Foundation and the Novo Nordisk Foundation, which has granted DKK 4.8 million for the project.

New antibody tests used in a major trial
The new antibody tests have been put to use in a large-scale research project examining the transmission of COVID-19 among people in the labour market in Denmark.

All Danish-based employees of Novo Nordisk A/S, Novozymes A/S, Novo Holdings A/S and the Novo Nordisk Foundation as well as their partners and adult children have been invited to participate in the study, where three blood samples are taken from each participant in the course of a year. The purpose of the study is partly to map the prevalence of antibodies and thereby of people who have previously been infected with COVID-19, and partly to trace how the presence of antibodies develops over time in the body.

The project is a collaboration between researchers at Rigshospitalet, Herlev Hospital and the University of Copenhagen, Aarhus University, Statens Serum Institut and Novo Nordisk A/S. The Novo Nordisk Foundation has awarded a grant of DKK 20 million for the project.
A research project will investigate if anti-inflammatory treatment with adrenocorticotropic hormone can help COVID-19 patients. The Novo Nordisk Foundation has awarded a grant of DKK 5 million for the trial, which will be carried out at Rigshospitalet, Copenhagen.
**Wireless monitoring of patients**

Researchers have developed a system for intelligent wireless 24/7 monitoring of high-risk patients with COVID-19. The system is called COVID-19 WARD and is intended to ensure early identification of changes in the patients’ condition. At the same time, it reduces patient contact, the risk of transmission as well as the need for personal protective equipment and human resources. The Novo Nordisk Foundation has awarded DKK 3.9 million for the project, which is a collaboration between Rigshospitalet, Bispebjerg Hospital and the Department of Health Technology at the Technical University of Denmark.

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**Educational support for vulnerable children**

During the lockdown in the spring, Danish schools had to resort to remote schooling. For vulnerable families in particular, it could be a challenge to benefit from the online learning that was provided. Therefore, in the summer of 2020 the Foundation allocated additional funds to support projects that aimed to help children and young people who had missed out on their schooling during the lockdown.

In August, a total of DKK 4.7 million was awarded in grants to five different projects that – each in their way – seek to give vulnerable children and young people additional educational support during a difficult time.
Emergency accommodation for socially disadvantaged citizens

In the spring, several municipalities and organizations established emergency overnight accommodation to mitigate the health effects of the COVID-19 pandemic among socially disadvantaged people. The aim was partly to provide self-isolation facilities and care for homeless people with COVID-19, and partly to support individuals who have been affected by restrictions imposed at shelters and social drop-in centres. The Novo Nordisk Foundation has awarded a total of DKK 7 million to four projects that target socially disadvantaged citizens in Odense, Slagelse, Copenhagen and Aarhus.

Informational COVID-19 insert in two Greenlandic papers

The media company Sermitsiaq.AG has published a bilingual informational insert on COVID-19. The insert appeared in Greenland’s two national newspapers Sermitsiaq and AG and will also be available online. Thus, the information will be accessible to everyone in both the rural and urban areas of Greenland. The Novo Nordisk Foundation has awarded a grant of DKK 242,000 for the project, which has been carried out in collaboration with Greenland’s Ministry of Health.
Coronavirus-safe childbirth in Myanmar

In Myanmar, COVID-19 presents major challenges to the health sector, e.g. causing changes in the priority-setting for healthcare personnel and the closing of outpatient services, including maternity clinics. The Maternity Foundation will disseminate knowledge and facilitate access to COVID-19 recommendations in connection with pregnancy and childbirth through digital health solutions. The project also offers training to midwives and skilled birth attendants on how to prevent COVID-19 among pregnant women. The Novo Nordisk Foundation has supported the project, which is expected to directly benefit more than 15,000 pregnant women and children, with a grant of DKK 966,877.