

FinnGen study taps into a unique gene pool in search of the next breakthroughs in disease prevention, diagnosis and treatment

A unique study that combines genome information with digital health care data has been launched in Finland. The FinnGen study plans to analyse up to 500 000 unique blood samples collected by a nation-wide network of Finnish biobanks. The goal is to deepen our understanding about the origins of diseases and their treatment. The project is expected to continue for six years, with a current budget of €59M.

Located at the outskirts of Northern Europe, Finland is one of today's global hotspots for medical research. Finland tops global listings in healthcare, education, innovation, digitalization and good governance. In addition, country's 5,5 million population share a unique genetic heritage, which provides researchers with enormous opportunities to innovate.

Due to the unique heritage of the Finnish population, genomic data can be analysed faster and more effectively than in populations of more heterogenous origins – significantly improving the chances of breakthrough findings. *"This makes Finland a great testbed for genomic research"*, says **Kimmo Pitkänen**, Director of Helsinki Biobank.

The FinnGen study is an unprecedented global research project representing one of the largest studies of this type. Project aims to improve human health through genetic research, and ultimately identify new therapeutic targets and diagnostics for treating numerous diseases. The collaborative nature of the project is exceptional compared to many ongoing studies, and all the partners are working closely together to ensure appropriate transparency, data security and ownership.

The FinnGen study is coordinated by researchers from the University of Helsinki and the Helsinki University Central Hospital. In addition to biobanks and research organizations, the Finnish Funding Agency for Innovation (Tekes) and seven international pharmaceutical companies are taking part in the study: Abbvie, AstraZeneca, Biogen, Celgene, Genentech, a member of the Roche Group, Merck & Co., Inc., Kenilworth, NJ, USA and Pfizer.

Two-thirds of the project funding is expected to come from pharmaceutical companies and one-third from Tekes. *"Tekes wanted to support the project, because of its potential to promote healthcare innovation and to support the growth and internationalization of local businesses,"* says **Minna Hendolin**, who is responsible for Health and Wellbeing at Tekes.

The goals of the FinnGen study are ambitious. *"Breakthroughs that arise from the project will benefit drug discovery programs and health care systems globally. The combination of unique genetic heritage, decades of population-wide medical registry data and cutting-edge genomics position Finland as a global testbed for medical research and innovation"*, says Mark Daly, a key partner of the project from the Broad Institute and the Massachusetts General Hospital and visiting professor at the Institute for Molecular Medicine Finland (FIMM).

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Future health innovations can primarily be found by looking at large masses. The FinnGen study has the potential to benefit global healthcare systems long into the future. *"With FinnGen we can build a foundation for health innovations and personalized treatments"*, says Research Director **Aarno Palotie**, from the Institute for Molecular Medicine Finland (FIMM) at the University of Helsinki *"We hope that this study will stimulate researchers and businesses from around the world to join the journey into personalised healthcare."*

For more information:

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Appendix 1 List of partners

Appendix 1

Partners

Coordinators:

University of Helsinki, HiLIFE,
Institute for Molecular Medicine Finland FIMM
Helsinki University Central Hospital (HUCH)

Funders:

TeKes, The Finnish Funding Agency for
Innovation
Abbvie
AstraZeneca
Biogen
Celgene
Genentech, a member of the Roche Group
Merck & Co., Inc., Kenilworth, NJ, USA
Pfizer

Finnish Biobanks and their host organizations:

Auria Biobank

Hospital District of Southwest Finland
University of Turku
Satakunta Hospital District
Vaasa Hospital District

Helsinki Biobank

Hospital District of Helsinki and Uusimaa (HUS)
University of Helsinki
Kymenlaakso Social and Health Services (Carea)
South Karelia Social and Health Care District
(Eksote)

Finnish Hematology Registry and Clinical Biobank (FHRB)

Finnish Red Cross Blood Service
Finnish Association of Hematology
Institute for Molecular Medicine Finland
(FIMM), University of Helsinki

Biobank of Eastern Finland

Northern Savo Hospital District
University of Eastern Finland
South Savo Social and Health Care Authority
Joint Municipal Authority for North Karelia
Social and Health services (Siun sote)
Eastern Savo Hospital District

Central Finland Biobank

Central Finland Health Care District
University of Jyväskylä

Northern Finland Biobank Borealis

Northern Ostrobothnia Hospital District
University of Oulu
Nordlab
Central Ostrobothnia's Joint Municipal
Authority for Specialised Medical Care and
Basic Services
Kainuu Social and Health Care Joint Municipal
Authority
Lappi Hospital District
Länsi-Pohja Hospital District

Finnish Clinical Biobank Tampere

Pirkanmaa Hospital District
University of Tampere
Kanta-Häme Hospital District
South Ostrobothnia Hospital District

THL Biobank

The National Institute of Health and Welfare

Blood Service Biobank

Finnish Red Cross Blood Service