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Gene-lifestyle interactions and complex traits Involved in elevated disease risk

Submission date	Recruitment status	[ ] Prospectively registered
05/10/2017	No longer recruiting	[ ] Protocol
Registration date	**Overall study status**	[ ] Statistical analysis plan
17/11/2017	Ongoing	[ ] Results
Last Edited	**Condition category**	[ ] Individual participant data
17/11/2017	Circulatory System	[ ] Record updated in last year

Plain English summary of protocol

Background and study aims
Since 1986, all residents of the northern Swedish county of Västerbotten who turned 40, 50 and /or 60 years are invited to visit the primary care centre. The aim of this study is to use the extensive data collected as part of this ongoing health survey in order to address questions related to lifestyle and genetic risk factors in cardiometabolic disease (e.g., heart disease and type 2 diabetes).

Who can participate?
Adults aged 40, 50, and 60 from Västerbotten

What does the study involve?
Patients complete a detailed lifestyle questionnaire and provide blood samples. The blood sample is used to measure blood glucose (sugar), blood lipids (fat, cholesterol), and genetic information. The data is used to find out whether lifestyle/environmental factors affect the link between genetics and human character (e.g. body mass index, blood glucose).

What are the possible benefits and risks of participating?
Participants receive some health-related advice as part of the background study, which may be perceived as a benefit. Risks include those related to the handling of sensitive personal data. There are no significant treatment-related risks.

Where is the study run from?
Primary Care Center in Västerbotten (Sweden)

When is the study starting and how long is it expected to run for?
January 1986 to December 2025

Who is funding the study?
1. Swedish Research Council (Sweden)
2. Novo Nordisk (Denmark)
3. Swedish Heart-Lung Foundation (Sweden)
4. Swedish Diabetes Association (Sweden)

Who is the main contact?
Prof. Paul Franks

Contact information

Type(s)
Scientific

Contact name
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Additional identifiers

Protocol serial number
Dnr 2015-197-32M

Study information

Scientific Title
Gene-lifestyle interactions and complex traits involved in elevated disease risk: a prospective population-based cohort study

Acronym
GLACIER

Study objectives
The GLACIER study was designed to estimate the separate and combined effects of genetic and lifestyle factors in cardiometabolic disease.

Ethics approval required
Old ethics approval format

Ethics approval(s)
The Regional Ethics Review Board in Umeå, 21/10/2010, ref: Dnr 2015-197-32M

Study design
Prospective population-based cohort study

Primary study design
Observational

Study type(s)
Other

Health condition(s) or problem(s) studied
Cardiovascular disease and type 2 diabetes

Interventions
All participants are asked to complete a questionnaire concerning various lifestyle factors including diet and to donate a blood sample for for later research purposes. The blood samples were then measured for blood glucose, blood lipid profiles (e.g. triglyceride, HDL-cholesterol) and for genetic information. Body weight and height were measured. The study is focused on whether lifestyle/environmental factors influence the association between genetics and human character (e.g. body mass index, blood glucose).

Intervention Type
Mixed

Primary outcome(s)
Many hundreds of exposure and outcome variables including type 2 diabetes, myocardial infarction and stroke, derived from health survey data every 10 years

Key secondary outcome(s))
Secondary outcomes include quantitative cardiometabolic traits (e.g., blood pressure, glucose, and lipids, and anthropometry) usually assessed in the year of each participant’s 40, 50, 60th or 70th birthdays. Examinations occurred between 1986 and 2007

Completion date
31/12/2025

Eligibility

Key inclusion criteria
All individuals 40, 50, and 60 years of age in the county’s population are invited

Participant type(s)
Mixed

Healthy volunteers allowed
No

Age group
Adult

Sex
All

Key exclusion criteria
People who are not able to consent or not living in the county

Date of first enrolment

01/01/1986

Date of final enrolment
01/01/2020

Locations

Countries of recruitment
Sweden

Study participating centre
Primary Care Center in Västerbotten
SE-901 87

Sponsor information

Organisation
Umeå University Department of Biobank Research

ROR
https://ror.org/05kb8h459

Funder(s)

Funder type
Government

Funder Name
Vetenskapsrådet

Alternative Name(s)
Swedish Research Council, VR

Funding Body Type
Government organisation

Funding Body Subtype
National government

Location
Sweden

Funder Name
Novo Nordisk

Alternative Name(s)
Novo Nordisk Global

Funding Body Type
Private sector organisation

Funding Body Subtype
For-profit companies (industry)

Location
Denmark

Funder Name
Hjärt-Lungfonden

Alternative Name(s)
Swedish Heart-Lung Foundation

Funding Body Type
Private sector organisation

Funding Body Subtype
Trusts, charities, foundations (both public and private)

Location
Sweden

Funder Name
Diabetesförbundet

Alternative Name(s)
Swedish Diabetes Foundation, Svenska Diabetesförbundet

Funding Body Type
Private sector organisation

Funding Body Subtype
Associations and societies (private and public)

Location
Sweden

Results and Publications

Individual participant data (IPD) sharing plan

The datasets generated during and/or analysed during the current study is not expected to be made available due to consenting constraints.

IPD sharing plan summary

Not expected to be made available

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Participant information sheet	Participant information sheet	11/11/2025	11/11/2025	No	Yes