OPTOMICS - Combining optoacoustic imaging phenotypes and multi-omics to advance diabetes healthcare (Validation Study)

First published: 02/12/2024

Last updated: 05/06/2025

Study Ongoing

Administrative details

EU PAS number

EUPAS1000000392

Study ID

1000000392

DARWIN EU® study

No

Study countries

☐ Estonia

Study description

Diabetes has emerged as a global pandemic affecting more than 420 million people worldwide, a number expected to further rise in the next decades.
The disease has very heterogeneous outcomes and accurate patient staging or prediction of subsets of individuals likely to develop disease and/or progress to disease complications are currently unmet clinical challenges in need of urgent attention.
OPTOMICS aims to research methodology that can deliver a paradigm shift in type 2 diabetes healthcare, by integrating:
- molecular phenotyping,
- a new generation of phenotypic measurements in humans, representative of diabetes onset and progression, allowed by novel portable and non-invasive optoacoustic technology, and
- cutting-edge computational approaches leveraging progress in Artificial Intelligence.
This research will develop and validate a digital twin model that catalyses a step change in shortening the path to translation, enabling applications in the entire spectrum from target identification & prevention/prognosis to patient stratification for type 2 diabetes and its complications.
In addition to the research and technology goals, OPTOMICS places special attention to the ethical needs and implications of the work performed and further aims at exemplary project management, human measurements, dissemination and communication activities and updating an adept exploitation plan for the digital twin developed.

Study status

Ongoing

Research institutions and networks

Institutions

University of Tartu

Estonia

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Institution | Educational Institution

Contact details

Study institution contact

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Primary lead investigator

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Primary lead investigator

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Study timelines

Date when funding contract was signed

Actual: 01/01/2021

Study start date

Actual: 09/10/2023

Date of final study report
Planned: 31/12/2026

Sources of funding

- EU institutional research programme

More details on funding

Horizon 2020 Programme, Grant Agreement no 101017802.

Regulatory

Was the study required by a regulatory body?

No

Is the study required by a Risk Management Plan (RMP)?

Not applicable

Methodological aspects

Study type

Study type list

Study topic:

Disease /health condition

Medical device

Study type:

Clinical trial

Data collection methods:

Combined primary data collection and secondary use of data

Study Design

Clinical trial regulatory scope

Clinical trial not part of marketing authorisation application or subject to marketing authorisation approval

Population studied

Age groups

- **Adult and elderly population (≥18 years)**

Estimated number of subjects

500

Data management

ENCePP Seal

The use of the ENCePP Seal has been discontinued since February 2025. The ENCePP Seal fields are retained in the display mode for transparency but are no longer maintained.

Use of a Common Data Model (CDM)

CDM mapping

No

Data quality specifications

Check conformance

Unknown

Check completeness

Unknown

Check stability

Unknown

Check logical consistency

Unknown

Data characterisation

Data characterisation conducted

No