Mapping of the Health Tech Innovation Ecosystem in Trøndelag

TRONDHEIM
TECH PORT

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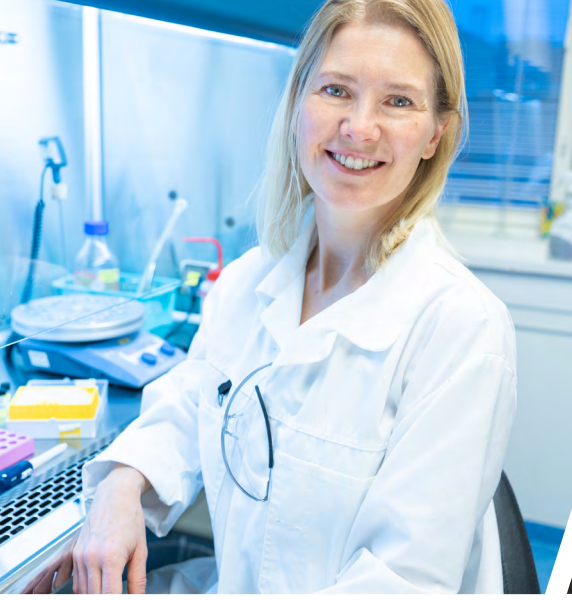


1 Summary and overview

Background
This report gives an overview of players in health technology ecosystem in Trøndelag. In this context, health tech is defined as "the application of organized knowledge and skills in the form of devices, medicines, vaccines, procedures, and systems developed to solve a health problem and improve quality of lives[1]".

The mapping includes four stakeholder groups; companies providing health tech (start-ups, scaleups and established companies), R&D actors and test infrastructure, clusters, networks and forums, as well as investors. The report will be updated on a regular basis.

Companies developing and selling health tech
We have identified 62 health tech companies in Trøndelag. 20 companies deliver medical equipment with main focus on diagnosis and treatment of illness, 11 welfare technology, 10 sports technology, 10 medicine, 9 ICT support systems and 2 distribution technology. The 62 companies had a total revenue of 1 215 bn NOK in 2021, and employ 1 288 employees as of June 2022. 54 of the identified health tech companies are located in Trondheim, the remaining 8 in municipalities close to Trondheim (Indre Fosen, Levanger, Stjørdal, Skaun, Midtre Gauldal and Oppdal).

In addition to the 62 identified health tech companies, there are many examples of tech subcontractors located in Trøndelag. These operate along the full value chain from manufacturing and assembly to service and competence provision, ASIC/IP[2] development and sales, and direct application of integrated circuits.

R&D actors and test infrastructure
We have identified five main public and private performers of R&D related to health tech in Trøndelag; three hospitals (St. Olavs hospital HF, Levanger and Namsos), two universities (NTNU and Nord Universitet) and one R&D institute (SINTEF). Furthermore, we have identified 33 health tech related R&D infrastructure entitities in Mid Norway, consisting of 3 R&D support departments, 5 R&D centres, 8 core facilities,

We have identified 62 health technology companies in Trøndelag.

9 special lab environments, 3 innovation infrastructure/laboratories and 5 health related simulation and learning infrastructure.

This R&D infrastructure is strategically anchored in a hospital, college, university or R&D institute in the region, is available for all types of users throughout the region and offers services and equipment beyond basic needs. Ordinary laboratories and teaching areas are not included. Special lab environments at NTNU and SINTEF are included as these can be used by external stakeholders.

In addition to the R&D performed by the hospitals, universities and R&D institues, the identified health tech companies also conduct own R&D projects. Of the 62 identified health tech companies, 18 companies have as of autumn 2022 175 million NOK of RCN funded R&D projects ongoing.

Clusters, networks and forums

We have identified 15 clusters, networks and forums working with issues related to health tech in Trøndelag, including 1 program, 1 project, 3 forums, 1 cluster, 2 incubators (planned), 1 lab, 5 networks and 1 association. There probably exist even more informal (and formal) networks and forums, but these are hard to identify.

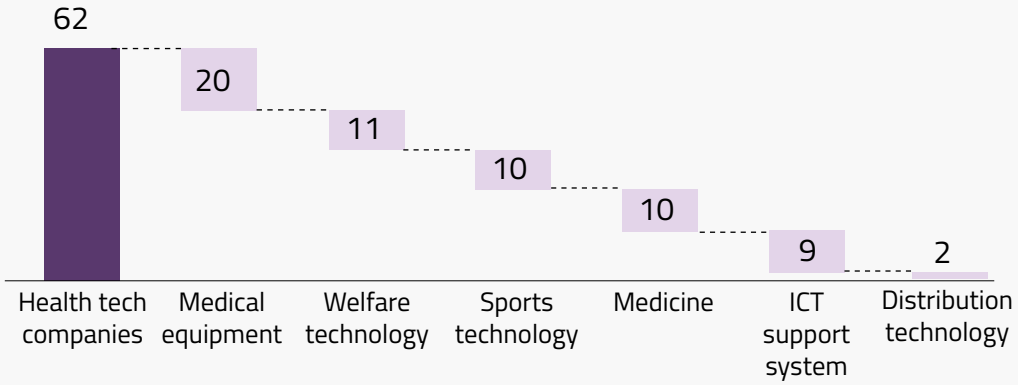
Investors

We have identified 18 existing investors in Mid-Norway, and 2 planned investment activities/funds. Of these 18 investors, 8 investors have invested in some of the 62 identified health tech companies.The remaining 12 investors have not yet invested in health tech companies. 6 of them are industry agnostic and 4 of them have other stated sector focus than health tech.

1. Definition by World Health Organization
2. Application-specific integrated circuit

Key figures of the health tech ecosystem in Trøndelag

62 health tech companies in Trøndelag (2022)



1215 **bn. NOK in revenue in health tech companies** (2021)

1288 **Employees in health tech companies** (June 2022)

27 **of 62 companies have origin from NTNU, Helse Midt Norge or SINTEF**

175 **bn. NOK of funded RCN projects on-going for the identified companies**

5 main performers of R&D related to health tech in Trøndelag
(in addition to the 62 companies)

SINTEF

NORD University

NTNU
Norwegian University of Science and Technology

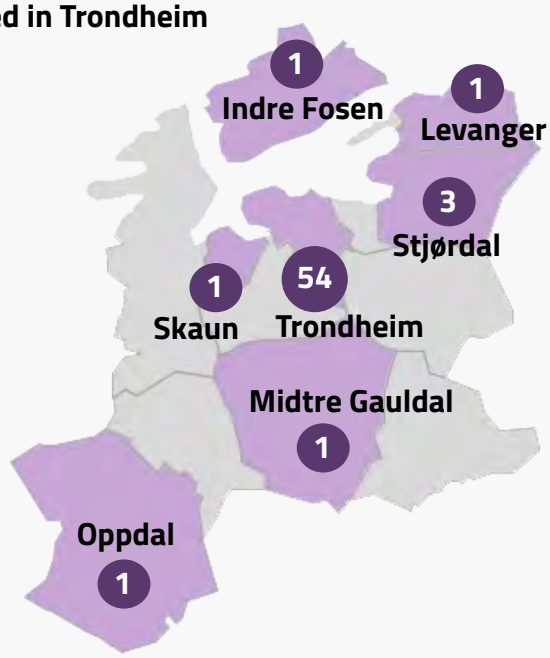
HELSE NORD-TRØNDELAG

ST. OLAVS HOSPITAL
UNIVERSITETSSYKEHUSET I TRONDHEIM

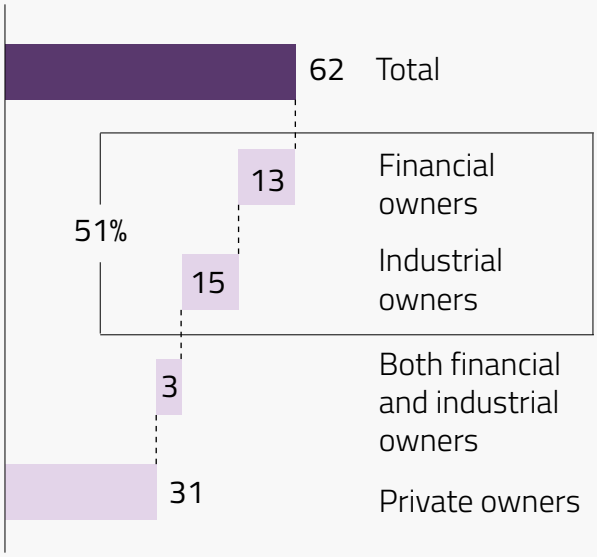
33 health tech related R&D infrastructure entities in Mid Norway

- 8 core facilities
- 9 special lab environments
- 5 simulation and learning facilities
- 5 R&D centres
- 3 R&D support
- 3 innovation infrastructure/ laboratories

54 of 62 companies located in Trondheim



50% of identified companies are owned by professional investors



Investors in Trøndelag invested in some of the 62 companies

Investinor

NTNU Technology Transfer as

Leiv Eiriksson Nyskaping

CoFounder

ProVenture

WISKI CAPITAL

6AM

Overview of players in the ecosystem of health tech in Trøndelag

Companies

Medical equipment
- Aurotech ultrasound Bulbitech
- Cardiomech
- **Cimon Medical**
- GE Vingmed ultrasound Infiniwell
- **Lybe Scientific**
- Mode sensors
- **Nisonic**
- **Nordiq products**
- Ortodent
- **Palion Medical**
- Picterus
- Sonoclear
- Superego
- Surf technology
- Vitacon
- **VitalThings**
- **Vitroscope**
- **Yatek Solutions**

Distribution tech
- **Aviant**
- Epion

Welfare technology
- Assitech
- AudioPlus
- Avia technology
- BRAILLO NORWAY
- CTM Lyng
- Elotek
- LingIt
- Mindfit
- PPM Robotics
- Quality Care
- Safenode

Sports technology
- **APIIR**
- Enry
- Exceline
- Initial Force
- Memento network
- Myworkout
- Pai Health Norway
- Sportradar
- Goalkeeper (Stready)
- ZXY Sport Tracking

Medicine
- Advanced biopolymers
- Apim therapeutics
- Biosergen
- Chiron pharmasynth
- Coegin Pharma
- Geneseque
- Nordic Pharma (Trondheim)
- Norimun
- Vectron biosolutions
- **Xphage Biosolutions**

ICT support systems
- Checkware
- DIPS AS
- Dynamisk helse
- Extend
- Helseplattformen
- Norsk helseinformatikk
- Safetec Nordic
- Vivit
- **WTW**

Bold means companies established from 2017 and after (startups)

Clusters, forums and networks

- Trøndelagsløftet
- Digi Trøndelag
- Rundbords-diskusjoner helse
- Fagråd helseteknologi
- Samarbeidsorganet
- Norway Health Tech. Avd. Trondheim
- Trondheim Heath and Sports Incubator
- Mid Norway Health Incubator
- DRIV NTNU helseinnovasjonsarena
- Innovasjons-rådgiver-nettverket
- TrønderNett
- HUB Digital hjemme-oppfølging
- Helseledernettverket i Trøndelag
- Helsefellesskapenes nettverk
- Trondheim Tech Port

R&D actors and infrastructure

R&D actors
- St Olavs hospital
- Helse Nord-Trøndelag
- NTNU
- Nord Universitet
- SINTEF

R&D support
- Forskningsavdelingen Helse Nord-Trøndelag
- Forskningsposten (St Olavs hospital)
- Klinisk forskingsenhet Midt-Norge

R&D centres
- HUNT Forskningssenter
- Biobank1 (Helse Midt Norge)
- Norwegian 7T MR Centre (NTNU)
- The Norwegian Brain Initiative (NTNU)
- NorTrials senter for medisinsk utstyr (St Olavs hospital)

Core facilities (NTNU and Helse Midt Norge)[1]
- Bioinformatics
- Cellular and molecular imaging
- Comparative Medicine
- Genomics
- MR
- NeXt Move
- Proteomics and Modomics Experimental
- Viral Vector

Special lab environments (NTNU)
- BSL3 Laboratorium
- Hotlab radioaktive stoffer
- Ultralydlaboratorium
- Nano- Biomechanic division
- Det biomekaniske robotlab. for ortopedi

Special lab environments (SINTEF)
- Arbeidsfysiologisk lab.
- Screeninglaboratorium
- Molekylærbiologi lab
- Lab. for medisinsk teknologi, ultralyd og bildeveiledet behandling

Innovation infrastructure
- Innovasjonsklinikken (Helse Nord Trøndelag)
- Fremtidens operasjonsrom (St Olavs hospital, NTNU)
- Regionalt senter for helsetjenesteutvikling (St Olavs hospital)

Health related simulation and learning
- Simulerings- og ferdighetsavdeling, Nord universitet (Levanger og Namsos)
- Enhet for helsefaglig simulering (NTNU)
- Medisinsk simulator-senter (St Olavs hospital)
- Senter for simulering og velferdsteknologi (NTNU Ålesund)

Investors

Invested in identified health tech companies
- 6AM
- NTNU Technology Transfer
- SINTEF Venture
- Leiv Eriksson Nyskapning
- CoFounder
- ProVenture
- Investinor
- WISKI Capital

Industry agnostic investors
- Protomore
- ÅKP
- Reitan
- PIR
- WeSeed
- Romsdal Innovasjon

Stated sector other than health tech
- Salvesen & Thams
- Tidligfasefondet
- Converto
- Viking Venture

1. The Faculty of Medicine at NTNU and Health Sciences and the Central Norway Regional Health Authority have organised several laboratories with advanced equipment and expertise are into core facilities. These research f acilities offer a necessary infrastructure connected to specialized expertise for regional, national and international researchers from research institutions and the industrial sector.

2 Background, purpose and deliminations

Background and purpose
Trondheim Tech Port's goal is to increase Norway's innovation power through closer cooperation between actors in Trøndelag. Trondheim Tech Port is a member-based interest association for technology and innovation. Trondheim Tech Port is a driving force and facilitator for innovation and technology, through projects, events and communication. Trondheim Tech Port works systematically with the strategic areas:

- **Innovation:** Create arenas and networks that connect innovation actors.
- **Identity:** Make an attractive region visible for new opportunities.
- **Infrastructure:** Strengthen infrastructure that realizes innovation.

The association focuses on the areas oceans, health, energy and digitization as enabling technology. To be able to work systematically with facilitating innovation within the health technology industry, there is a need for in-depth knowledge about the ecosystem. Today, there is limited overview of players, networks and clusters, test environments and labs and not least what cutting-edge expertise / comparative advantages the players have. This mapping will provide a good basis for proposing measures that will contribute to achieving the goal of increasing Norway's innovative power in health technology through closer cooperation between the actors in Trøndelag.

Methodology
This report gives an overview of the players in the ecosystem for health technology (health tech) in Trøndelag. In this context, health tech is defined as "the application of organized knowledge and skills in the form of devices, medicines, vaccines, procedures, and systems developed to solve a health problem and improve quality of lives[1]". The report will be updated on a regular basis.

The overview is structured along two dimensions:

- Sub-sectors within health tech. Includes health and medical devices, medicines and distribution technology. See p. 12 for definitions.
- Stakeholder groups active within these sub-sectors. Includes companies (start-tups and established companies), R&D actors, clusters, networks and forums, as well as investors.

Three information sources are used creating this report:

- Structuring existing knowledge about the ecosystem by interviewing key stakeholders in the ecosystem. Eight interviews have been conducted (see page 14 for details).
- Using Karabin Impellos existing database of technology companies in Trøndelag (Impello-analysen).
- Desk research by use of publicly available information sources such as information from company web sites, Proff Forvalt, The Research Council of Norway etc.

Deliminations and reservations
The information in this report is quality assured to an extent that has been practically feasible within a very limited time frame. Karabin Impello makes no guarantee that the content of this report is free from factual errors and/or incomplete information.

Title: Mapping of the health technology community in Trøndelag
Client: Trondheim Tech Port AS
Supplier: This report is written by Julie Dahl Benum in Karabin Impello AS.
Project period: June-September 2022
About Impello: Impello is a leading company in M&A, strategy and financial advisory with offices in Trondheim and Oslo.

Since we started in 2005, we have been involved in more than 100 M&A transactions and 700 consulting assignments for more than 300 customers. Impello has employees with high formal competence and wide experience from consulting in technology and industry with a focus on IT/software, energy, oil and gas, the maritime sector and seafood/aquaculture. The customer portfolio includes listed companies, group companies, growth companies and start-ups.

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Health tech – definitions used in this report

This report shows an overview of players in the ecosystem for health tech in Trøndelag. In this context, health tech is defined as "the application of organized knowledge and skills in the form of devices, medicines, vaccines, procedures, and systems developed to solve a health problem and improve quality of lives[1]".

The overview is structures along two dimensions:

- **Sub-sectors within health tech**
  Includes health and medical devices, medicines and distribution technology. See next page for definition of the different sub-sectors.

- **Stakeholder groups active within these sub-sectors**
  Includes companies (startups, scaleups and established companies), R&D actors, clusters, networks and forums, as well as investors.

1. Definition by World Health Organization

Context:

Type of players and their role along the health value chain in Norway

	Research	Development and production ("health industry")	Distribution	Treatment
Type of players	▪ Hospitals (including university hospitals) ▪ Universities and colleges ▪ Research institutes ▪ Corporate R&D units ▪ Other public entities performing R&D	▪ Corporate and start ups delivering products and/or services to other players within the same value chain step, or directly to providers of treatment	▪ Pharmacies ▪ Agents, wholesalers or other distributors	▪ Public hospitals ▪ Other public health treatment facilities ▪ Private treatment facilities
Role	▪ Scientific knowledge development. ▪ The majority of the activity is carried out by public actors such as universities and hospitals.	▪ Development and production of products and services to be implemented in a market by a specific actor. ▪ The development takes place in startups that commercialize their own products/ services or in established companies' product and service development.	▪ Distribution and wholesale of Norwegian and international health tech.	▪ Products and services developed, manufactured and distributed in the preceding value chain steps are used to diagnose and treat patients. ▪ The value chain step also includes health and care services aimed at prevention and rehabilitation.

Health tech broken down in sub-segments with definitions

Level 1	Level 2	Level 3	Definition
Health tech companies delivering	Health and medical devices	Medical equipment	Any instrument, apparatus, equipment, software, implant, reagent, material or other object which, according to the manufacturer, is intended to be used, alone or in combination, on humans for one or more of the following specific medical purposes[1]
		Dignostics and treatment of illness	Diagnosis, prevention, monitoring, prediction, prognosis, treatment or alleviation of disease.
		Diagnosis and treatment of injury/disability	Diagnosis, monitoring, treatment, relief or compensation for injury or disability.
		Examination or alteration of atonomy	Examination, replacement or alteration of the anatomy or of a physiological or pathological process or condition.
		In-vitro examination equipment	To generate information using in vitro examination of sample material from the human body, including organ, blood and tissue donations.
		Fertility equipment	Equipment for contraception or fertility assistance.
		Sterilization equipment	Products specially designed for cleaning, disinfecting or sterilizing equipment.
	ICT support systems		ICT products and services used to support systems and processes in the healthcare sector[2].
	Welfare technology		Technology which in one way or another improves the lives of those who need it. The technology is used to maintain or increase security, activity, participation or independence for people with a disability or the elderly[3].
	Sports technology		Technology as means to realize human interests and goals in sport. In this setting, we focus on performance-enhancing technology, machines, substances, and methods used within or outside of (i.e. training) the competitive setting[4].
	Medicines		Biological and chemical products used for prevention and treatment of illness or in vivo diagnostics. Includes active ingredients / raw materials[5].
	Distribution technology		Innovative distribution technologies/methods of any of the above categories. Does not include traditional distribution technologies/methods such as pharmacies, wholesalers etc.

1. Definition by Legemiddelverket (https://legemiddelverket.no/medisinsk-utstyr/hvordan-sette-medisinsk-utstyr-pa-markedet/klassifisering#hva-er-et-medisinsk-utstyr?)
2. and 5. Definition by Menon Economics (https://www.menon.no/wp-content/uploads/2022-57-Helsenaeringens-verdi-2022.pdf)
3. Definition by Nordic Welfare (https://nordicwelfare.org/en/welfare-policy/welfare-technology/)

We have used three information sources when conducting the mapping

- **Interviews with selected stakeholders**

Structuring existing knowledge about the ecosystem by interviewing key stakeholders in the ecosystem. Six interviews have been conducted in the period 23.06-29.06.2022.

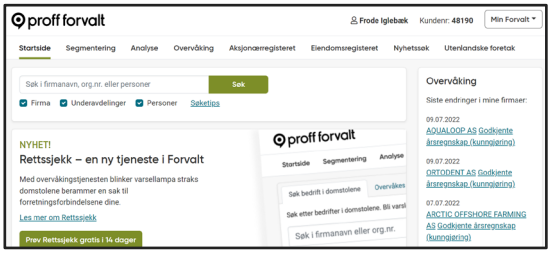
Name	Role/Company	Date
Ann Iren Jamtøy	Project leader, NTNU Helse	23.06.22
Stine Slørdal	Project leader, Trøndelagsløftet	24.06.22
Merete Rørvik	Senior business developer, SINTEF	27.06.22
Hilde Berg-Karlsen	Innovation coordinator, Helseplattformen	28.06.22
Arild Faksvaag	Senior Adviser, Helseplattformen	28.06.22
Lisbet Slettahjel	Department manager, Trondheim kommune	28.06.22
Marit Bratlie	Innovation consultant	29.06.22
Knut Løkke	CEO, MyWorkout	20.09.22
Heidi Blengsli Aabel	CEO, Checkware	19.09.22

- **Impelloanalysen database**

Using Karabin Impellos existing database of technology companies in Trøndelag (Impelloanalysen) to identify health tech companies relevant for this mapping. 56 companies were identified.

- **Desk research**

Desk research by use of publicly available information sources such as information from company web sites, Proff Forvalt, the Research Council of Norway etc.



3 Companies

Overview of all companies providing health tech in Trøndelag

Medical equipment (20)
- Aurotech ultrasound AS (Trondheim)
- Bulbitech AS
- Cardiomech AS
- **Cimon Medical AS**
- GE Vingmed ultrasound AS (Trondheim)
- Infiniwell AS
- **Lybe Scientific AS**
- Mode sensors AS
- **Nisonic AS**
- **Nordiq products AS**
- Ortodent AS
- Palion Medical AS
- Picterus AS
- Sonoclear AS
- Superego AS
- Surf technology AS
- Vitacon AS
- **VitalThings AS**
- **Vitroscope AS**
- **Yatek Solutions AS**

Welfare technology (10)
- Assitech AS
- AudioPlus AS
- Avia technology AS
- Braillo Norway AS
- CTM Lyng AS
- Elotek AS
- LingIt AS
- Mindfit AS
- PPM Robotics AS
- Quality Care AS
- Safenode AS

Medicine (10)
- Advanced biopolymers AS
- Apim therapeutics AS
- Biosergen AS
- Chiron pharmasynth AS
- Coegin Pharma AS
- Geneseque AS
- Nordic Pharma Inc AS avd Trondheim
- Norimun AS
- Vectron biosolutions AS
- **Xphage Biosolutions AS**

Sports technology (10)
- **APIIR AS**
- Enry AS
- Exceline AS
- Initial Force AS
- Memento network AS
- Myworkout AS
- Pai Health Norway AS
- Sportradar AS
- Goalkeeper AS (Stready)
- ZXY Sport Tracking AS

Distribution technology (2)
- **Aviant AS**
- Epion AS

ICT support systems (9)
- Checkware AS
- DIPS AS (Trondheim)
- Dynamisk helse AS
- Extend AS
- Helseplattformen AS
- Norsk helseinformatikk AS
- Safetec Nordic AS
- Vivit AS
- **WTW AS**

Bold means companies established from 2017 and after (startups)

Examples of technology subcontractors:

Manufacturing and assembly
- Inission Løkken
- Norbit EMS

Service and competence providers
- Bitreactive AS
- CPS AS
- Force Technology Norway AS (Trondheim)
- Kodeworks Trondheim AS
- Inventas AS
- Minoko Design AS

ASIC[1]/IP[2] development and sales
- Arm Norway AS
- Edatek AS
- Microchip Technology Norway AS
- Midcom Trondheim AS
- Nordic Semiconductor ASA
- Novelda AS avd. Trondheim
- Skaland PCB Design AS
- Verranto AS

Direct application of integrated circuits
- Norwegian Creations AS
- Scandinavian Tooling & Production AS
- STP Technology AS
- Tecnec Electronics AS
- Zolve AS

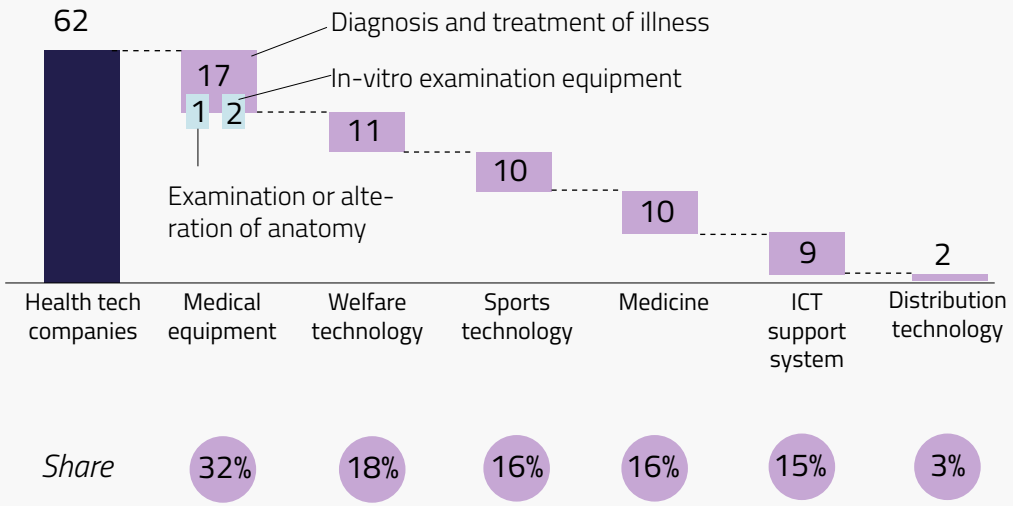
Source: Impelloanalysen 2021, Innovation Norway, Proff Forvalt

1. Application-specific integrated circuit
2. Intellectual property

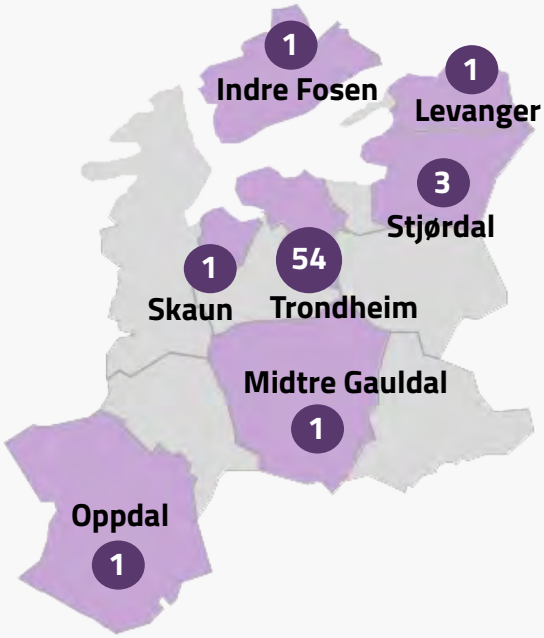
Note: The overview include companies with registered head quarter or subdivision in Trøndelag (must be registered in Brønnøysundregistrene)

62 health tech companies in Trøndelag in 2022

62 health tech companies in Trøndelag in 2022
(Number of companies in Trøndelag within each sub segment)



~90% of companies are located in Trondheim



27

of 62 companies have origin from NTNU, Helse Midt Norge or SINTEF

175

bn. NOK of funded RCN projects on-going for the identified companies

Source: Impelloanalysen 2021, Innovation Norway, Proff Forvalt
Note: Overview includes companies with registered head quarter or subdivision in Trøndelag (Brønnøysundregistrene)

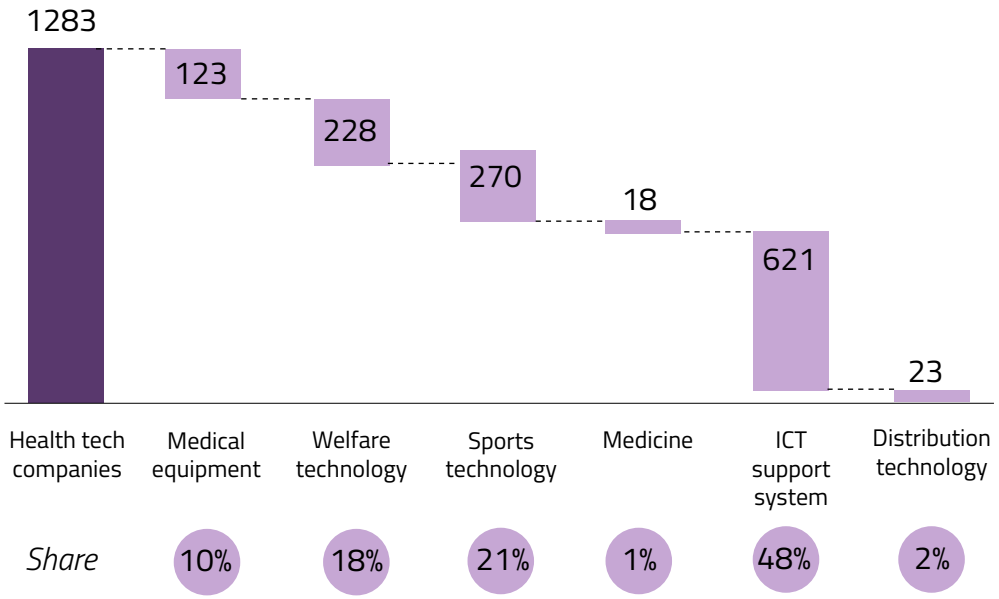
1 288 employees in the 62 identified health tech companies in Trøndelag

Top 20 employers

Company	Sector	Number of employees
Helseplattformen AS	ICT support system	328
Sportradar AS	Sports technology	183
Safetec Nordic AS	ICT support system	121
CTM Lyng AS	Welfare technology	89
Elotek AS	Welfare technologyw	82
WTW AS	ICT support system	56
Myworkout AS	Sports technology	42
Norsk helseinformatikk AS	ICT support system	36
DIPS AS (Trondheim)	ICT support system	33
Checkware AS	ICT support system	29
LingIt AS	Welfare technology	23
VitalThings AS	Medical equipment/ welfare technology	23
Aviant AS	Distribution	19
Exceline AS	ICT support system	15
Initial Force AS	Sports technology	13
Mode sensors AS	Medical equipment	12
Picterus AS	Medical equipment	12
Extend AS	ICT support system	12
Quality Care AS	ICT support system	12
Rest		148
Total		**1 288**

Providers of ICT support systems employ ~50% of total number of employees

Number of employees in June 2022[1]



Source: Impelloanalysen 2021, Proff Forvalt

1. Number of employees is obtained from Proff Forvalt. Proff Forvalt obtain numbers from SSB, and the numbers represent a snap shot of the workforce for the actual month.

Note: The overview includes companies with registered head quarter or subdivision in Trøndelag (as registred in Brønnøysundregistrene).

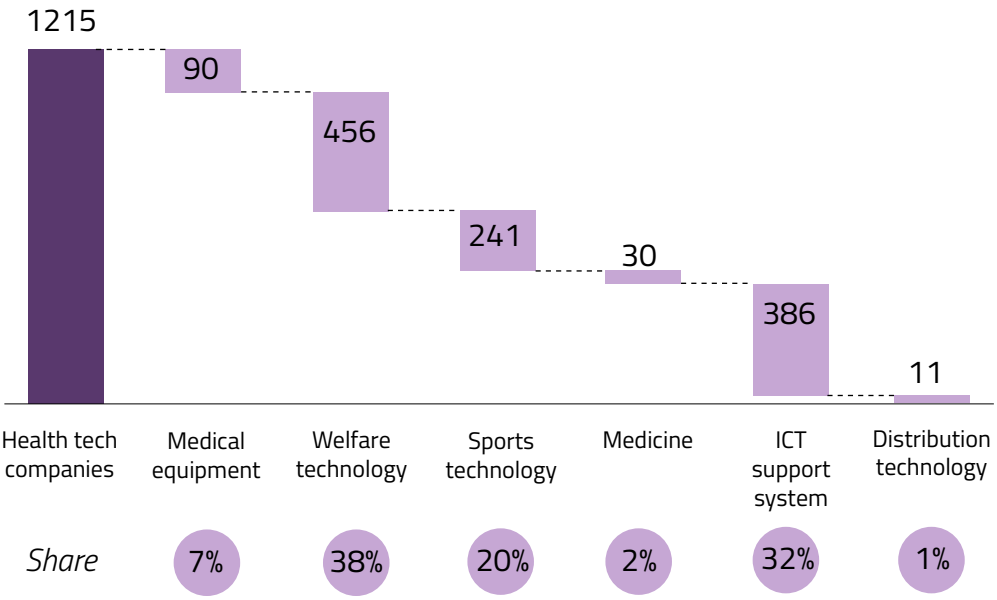
Total revenue of 1 215 bn NOK for the 62 identified health tech companies

Top 20 earners

Company	Sector	Revenue 2020 (bn NOK)
Elotek AS	Welfare technology	172
CTM Lyng AS	Welfare technology	166
Sportradar AS	Sports technology	155
Safetec Nordic AS	ICT support system	147
WTW AS	ICT support system	67
Norsk helseinformatikk AS	ICT support system	67
LingIt AS	Welfare technology	55
Checkware AS	ICT support system	40
DIPS AS (Trondheim)	ICT support system	36
Quality Care AS	ICT support system	31
Myworkout AS	Sports technology	28
Exceline AS	ICT support system	26
Vitacon AS	Medical equipment	23
Extend AS	ICT support system	20
Braillo Norway AS	Welfare technology	20
Initial Force AS	Sports technology	18
Lybe Scientific AS	Medicine	15
Epion AS	Distribution	11
Chiron pharmasynth AS	Medicine	11
Rest		96
Total (bn NOK)		**1 215**

Providers of welfare technology constitute ~40% of total revenue

Total revenue 2020 [bn NOK]



Source: Impelloanalysen 2021, Proff Forvalt.

Note: The overview includes companies with registered head quarter or subdivision in Trøndelag (as registred in Brønnøysundregistrene).

Overview of all companies

Providers of medical equipment

Company	Location	Est.	Product/service/solution	Number of employees	Revenue (2020 MNOK)
Aurotech ultrasound AS avd. Trondheim	Trondheim	2007	Digital signal-processing ultrasound technology and modules to ODM (Original Design Manufacturing) or license partners	9	10 503
Bulbitech AS	Trondheim	2005	Device that can perform multiple rapid neuro-ophthalmic eye examination tests	4	2 451
Cardiomech AS	Trondheim	2015	Catheter-based mitral valve repair technology designed to treat patients suffering from moderate to severe symptomatic DMR due to prolapse or flail	3	0
CIMON MEDICAL AS	Trondheim	2019	Doppler ultrasound technology for continuous direct monitoring of blood-flow	8	275
GE Vingmed ultrasound AS avd. Trondheim	Trondheim	2007	Cardiovascular and hand-held ultrasound technology	4	7 779
Infiniwell AS	Trondheim	2018	AI-powered diagnostic tools, technology and processes	4	2 571
LYBE SCIENTIFIC AS	Trondheim	2021	Nanoparticle-based nucleic acid extraction for life science and diagnostics	8	14 977
Mode sensors AS	Trondheim	2016	Wearable patch designed to support physicians in managing fluid in patients with fluid management problems	12	8 794
Nisonic AS	Trondheim	2017	Products for non-invasive detection of intracranial pressure (ICP) using ultrasound imaging and machine learning	1	5 482
Nordiq products AS	Stjørdal	2017	Sensor monitoring vital signs in any situation and operational environment	2	131
Ortodent AS	Trondheim	2005	Developing, manufacturing and distributing quality products in the oral care segment	0	904
Palion Medical AS	Trondheim	2019	Image guided instrument that enables navigation of non-navigable working instruments	1	185

Providers of medical equipment (continued)

Company	Location	Est.	Product/service/solution	Number of employees	Revenue (2020 MNOK)
Picterus AS	Trondheim	2015	Smartphone-based monitoring of jaundice in newborns	12	306
Sonoclear AS	Trondheim	2016	Acoustic coupling fluid that reduces image artefacts in ultrasound imaging	6	1 537
Superego AS	Trondheim	2014	Digital mental health care	6	4 275
Surf technology AS	Trondheim	2010	Ultrasound technology for medical imaging purposes	7	3 479
Vitacon AS	Trondheim	2005	Ultrasound bladder scanning technology	5	22 549
VitalThings AS	Trondheim	2017	Contactless patient monitor	23	2 806
Vitroscope AS	Trondheim	2019	Integrated microenvironment control for live cell microscopy	4	850
YATEK SOLUTIONS AS	Stjørdal	2021	Social anxiety treatment using VR exposure therapy and AR	4	10 503

Providers of welfare technology

Company	Location	Est.	Product/service/solution	Number of employees	Revenue (2020 MNOK)
Assitech AS	Trondheim	2014	Stair aid for elderly and people with disabilities	6	7 083
AudioPlus AS	Støren	2018	Services and products within hearing rehabilitation and hearing protection	7	2 588
Avia technology AS	Trondheim	2015	Security alarm for elderly	0	70
BRAILLO NORWAY AS	Stjørdal	1980	Braille printers/embrossers (impact printer that renders text as tactile braille cells)	9	20 346
CTM Lyng AS	Vanvikan	1985	Security and welfare technology for homes	89	165 506
Elotek AS	Oppdal	1992	Wireless monitoring of vital signs for welfare market	82	172 302
LingIt AS	Trondheim	2001	E-learning tool for people with dyslexia	23	55 259
Mindfit AS	Trondheim	2014	Self-help mobile application	0	48
PPM Robotics AS	Trondeim	2000	Robotics for use in hospitals and nursing homes	5	2 410
Quality Care AS	Trondheim	2005	Bicycle for people with disabilities	12	31 052
Safenode AS	Trondheim	2014	Safety application for alarming rape/violence	0	0

Providers of sports technology

Company	Location	Est.	Product/service/solution	Number of employees	Revenue (2020 MNOK)
APIIR AS	Trondheim	2020	Mobile motion analysis tool	3	0
Enry AS	Trondheim	2018	IT solutions for social training motivation	0	12
Exceline AS	Trondheim	1998	ERP and operative system for fitness centers	15	26 144
Initial Force AS	Trondheim	2006	Video analysis tool for athletes	13	18 043
Memento network AS	Skaun	2016	IT solutions for social training motivation	0	1 173
Myworkout AS	Trondheim	2013	Health/ training application	42	28 455
Pai Health Norway AS	Trondheim	2018	Application that turns heart rate data into a personal score, showing users how much activity they need to stay healthy	3	8 210
Sportradar AS	Trondheim	2001	Data and technology to analyze sports data in several applications (betting, integrity, fan engagement)	183	155 119
Stready (Goalkeeper AS)	Trondheim	2018	Technology enabling stores to encourage physical activity for their customers directly from storefront	7	1 461
ZXY Sport Tracking AS	Trondheim	2002	Automated system for tracking data which provides statistics and analysis in real-time	4	2 868

Providers of ICT support systems

Company	Location	Est.	Product/service/solution	Number of employees	Revenue (2020 MNOK)
Checkware AS	Trondheim	2006	Electronic health services that automize collection, validation and storage of data	29	39 664
Norsk helse-informatikk AS	Trondheim	1996	Digitalization of «Pasienthåndboka»	36	67 202
Vivit AS	Trondheim	2009	Clinical text processing, clinical decision support, consulting and development services for the health sector	1	217
Extend	Trondheim	1996	Quality system for the health care sector	12	20 380
Safetec Nordic AS	Trondheim	2002	Risk management system for the health care sector	121	146 814
WTW AS	Trondheim	2018	Patient software	56	67 209
Helseplatt-formen AS	Trondheim	2019	Electronic patient journal	328	7 363
DIPS AS avd. Trondheim	Trondheim	2007	Electronic patient journal	33	35 695

Source: Impelloanalysen 2021, Proff Forvalt.
Note: The overview includes companies with registered head quarter or subdivision in Trøndelag (as registred in Brønnøysundregistrene).

Providers of medicines

Company	Location	Est.	Product/service/solution	Number of employees	Revenue (2020 MNOK)
Advanced biopolymers AS	Trondheim	2001	Production of high quality chitosan with a broad range of degrees of acetylation (DA), with focus on chitosan with DA between 0.25 and 0.60	0	0
Apim therapeutics AS	Trondheim	2009	Development of pipeline of peptide drugs that target PCNA-dependent stress responses in cancer cells	2	0
Biosergen AS	Trondheim	2004	Development of new antifungal drugs for the treatment of severe invasive fungal infections	0	4 988
Chiron pharma-synth AS	Trondheim	2001	Manufacturer of chemical products for research and analysis	1	11 031
Coegin Pharma AS	Trondheim	2005	Development of biotechnology for treatment of several diseases	3	481
Geneseque AS	Trondheim	2008	Development of technology for DNA sequencing	0	905
Nordic Pharma Inc AS avd Trondheim	Trondheim	2011	Production of omega oils	1	7 227
Norimun AS	Trondheim	2014	Development of immunoglobulin (IgY) for the pharmaceutical and feed marked	1	1 052
Vectron bio-solutions AS	Trondheim	2008	Development of tailor-made expression vectors for proteins	10	4 148
XPHAGE BIO-SOLUTIONS AS	Trondheim	2020	Development of bacteriophages that solve unwanted microbial growth for industry and medicine	0	0

Providers of distribution technology

Company	Location	Est.	Product/service/solution	Number of employees	Revenue (2020 MNOK)
Aviant AS	Trondheim	2020	Full-stack drone services that enables auto-nomous and on-demand transport of cargo, such as blood samples	19	180
Epion AS	Levanger	2014	Specialized supplier of equipment to the primary health care system. Developed by doctors	4	11 298

4 R&D Community

Hospitals, universities and institutes with R&D activity related to health tech

NTNU

NTNU has in total 55 research departments with a vast majority of research groups, many related to health tech. Also, health is one of NTNU's strategic research areas in the period 2014– 2023 (NTNU Health). The aim is to create innovative solutions to complex health challenges. NTNU has several different research centres associated with different affiliation. The largest and most relevant centres for health tech hosted at NTNU are:

- Center of Excellence Centre for Molecular Inflammation Research (SFF[1])
- Centre for Neural Computation (SFF)
- Centre for Innovative Ultrasound Solutions (SFI2)
- Centre for AI innovations (SFI)
- Centre for Global Health Inequalities Research
- HUNT forskningssenter
- K.G. Jebsen-sentre
- Senter for helsefremmende forskning
- Nasjonalt kompetansesenter for psykisk helsearbeid (NAPHA)

NORD University

Health, welfare and eductaion is one of Nord University's four core strategic priority areas, and Nursing and Health Sciences is one of five faculties. NORD University has organized its R&D work at three levels at the facultiy of Nursing and Helath Sciences:

- Research groups: In total 14 groups related to topics as mental health, drug use and handling, clinical nursing, patient safety, and public health. Arena for researchers to discuss specific R&D topics and stimulate new R&D projects and applications.
- Topic groups: Facilitate research activities within faculty. Three topic groups; nursing, mental health work and pharmacy.
- Specific R&D projects: Three large, ongoing projects realted to health and technology; CoreDIST (personalized physotherapy treatment for MS patients), Innovatedignity (training leaders to deliver innovations in dignified care systems for older people), Rescuedoppler (ultrasound patch to monitor vital signs).

SINTEF

SINTEF is a research organization with 2000 employees and HQ in Trondheim. Health and well-being is one of SINTEFs nine strategic priorities. SINTEF carries out research activities within a wide range of the health domain, including biotechnology, nanomedicine development, microsystems and sensor technologies, health care services, global health and medical technology.

SINTEF has had a long-term strategic collaboration with St. Olav's Hospital through the national competence service on Ultrasound and Image-Guided Treatment (USIGT 1996-2022). SINTEF is the largest Norwegian actor when it comes to EU research project volumes and project contract volumes for the Norwegian health industry, and hosts several health tech R&D centres, including:

- Industrial Biotechnology (SFI[2])
- Gemini Center Health and Climate
- Health Services Research
- Medical Imaging Research and AI
- Smart, safe and sustianable health care
- Sepsis research

St. Olavs hospital HF

Research is one of the four main tasks of St. Olav's hospital. The overall goal of the university hospital is good and safe patient care. The research must be based on clinically relevant issues. Furthermore, sufficient competence must be ensured in all parts of the university hospital. This takes place through collaboration with NTNU and other relevant institutions.

The research department (Fagavdelingen) has a strategic and coordinating responsibility for the areas of research, innovation and education within St. Olav's hospital. Fagavdelingen has extensive collaboration with hospital clinics and external actors such as NTNU. Underlying units and infrastructure includes (see page 28-34 for more information):

- Biobank1
- Forskningsposten
- Nortrails, senter for medisinsk utstyr
- FoU-enhet for helse og arbeid i Midt-Norge
- Fremtidens operasjonsrom (FOR)
- Klinisk forskningsenhet Midt-Norge
- St. Olavs hospital FOR-Oppdragsforskning
- Helsefag og utdanning

Regionalt senter for helsetjenesteutvikling (RSHU) lies under Fagavdelingen.

Helse Nord-Trøndelag HF

Helse Nord-Trøndelag HF consists of the two local hospitals Levanger and Namsos. Helse Nord-Trøndelag HF has its own Research Department which guides, advises and supports research. The department has strategic and coordinating responsibility for the areas of research, innovation and education. The department has extensive collaboration with Levanger and Namsos hospital's clinics and external actors such as NTNU.

The research department has a strategy plan for the period 2019-2024 emphasizing four priority areas:

- Research infrastructure and research management
- Implementation of research results in clinical practice
- Research dissemination
- Strategic research areas

Source: Actors websites.
1. Norwegian Centres of Excellence (Senter for fremragende forskning).
2. Centres for Researched-based Innovation (SFI)

Overview of all health tech related R&D infrastructure in Mid Norway

R&D support
- Forskningsavdelingen Helse Nord-Trøndelag (HNT)
- Forskningsposten (St Olavs hospital)
- Klinisk forskingsenhet Midt-Norge (KLINFORSK)

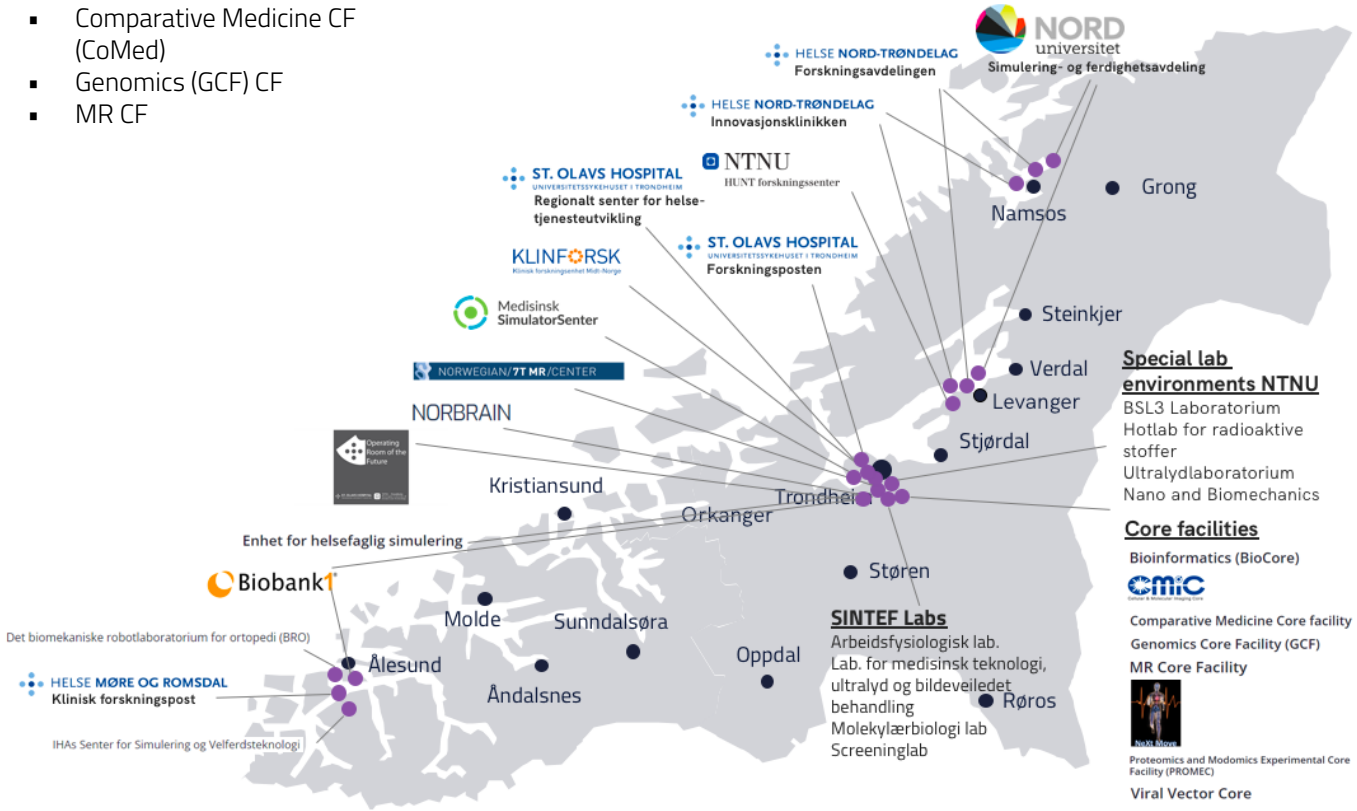
R&D centres
- HUNT Forskningssenter
- Biobank1 (Helse Midt Norge)
- Norwegian 7T MR Centre (NTNU)
- The Norwegian Brain Initiative (NTNU)
- Nortrial, senter for medisinsk utstyr (St Olavs hospital)

Core facilities[1]
- Bioinformatics CF (BioCore)
- Cellular and molecular imaging CF (CMIC)
- Comparative Medicine CF (CoMed)
- Genomics (GCF) CF
- MR CF
- NeXt Move CF
- Proteomics and Modomics Experimental CF
- Viral Vector CF

Special lab environments
- BSL3 Laboratorium (NTNU)
- Hotlab for radioaktive stoffer (NTNU)
- Ultralydlaboratorium (NTNU)
- Nano and Biomechanics (NTNU)
- Arbeidsfysiologisk laboratorium (SINTEF)
- Laboratorium for medisinsk teknologi - ultralyd og bilde-veiledet behandling (SINTEF)
- Molekylærbiologi lab (SINTEF)
- Screeninglaboratorium (SINTEF)
- Det biomekaniske robot-laboratorium for ortopedi (BRO)

Innovation infrastructure/ laboratories
- Innovasjonsklinikken (HNT)
- Fremtidens operasjonsrom (NTNU, St Olavs hospital)
- Regionalt senter for helse-tjenesteutvikling (St Olavs hospital)

Health related simulation and learning
- Simulerings- og ferdighets-avdeling, Nord universitet, campus Levanger og Namsos
- Enhet for helsefaglig simulering (NTNU)
- Medisinsk simulator-senter (St Olavs hospital)
- IHAs Senter for simulering og velferds-teknologi (NTNU)



Criteria used to identify relevant R&D infrastructure: The infrastructure must 1. be available for all types of users throughout the region 2. have a website with information for potential users 3. offer services or equipment beyond basic needs 4. be strategically anchored in a hospital, college, university or R&D institute in the region. Ordinary laboratories and teaching areas are not included. Special lab environments at NTNU and SINTEF are included as these can be used by external stakeholders.

1. The Faculty of Medicine and Health Sciences and the Central Norway Regional Health Authority have organised several laboratories with advanced equipment and expertise into core facilities. These research facilities offer a necessary infrastructure connected to specialized expertise for regional, national and international researchers from research institutions and the industrial sector.
Sources: Veikart for forsknings- innovasjons og utdanningsinfrastruktur i Midt-Norge (Regionalt infrastrukturutvalg, juni 2022); Impello analysis; SINTEF

Overview of all R&D infrastructure

R&D support

Infrastructure	Location	Description	Website
Forsknings-avdelingen Helse Nord-Trøndelag	Levanger and Namsos	Helse Nord-Trøndelag's infrastructure for research support. Guides, gives advice and supports research and development work to employees and partners. All research projects to be carried out in Helse Nord-Trøndelag must be approved by the Data Access Committee (DAC) before start-up.	Link
Forsknings-posten St Olavs hospital	Trondheim	Offers research support in the implementation phase of clinical studies. Assist studies on both children and adults, and on healthy as well as sick subjects. The offer applies to hospitals in the region and NTNU. Also conduct contract research on behalf of industry, both testing of drugs and technology.	Link
Klinisk forsknings-enhet Midt-Norge (KLIN-FORSK)	Trondheim	Offers research support for all phases of clinical studies for researchers at NTNU and the hospitals in Mid Norway. Main services are R&D support, data collection, monitoring, statistics, NORCRIN and ECRIN.	Link

R&D centres

Infrastructure	Location	Description	Website
HUNT Forsknings-senter	Levanger and Trondheim	Research project that includes health information and biological material from the inhabitants of the northern part of Trøndelag. HUNT is also a research center that manages and conducts research on the HUNT material, with a biobank and data bank that offers services for researchers in the storage, processing and delivery of research material.	Link
BioBank1 Helse Midt-Norge	Trondheim	Central Norway's clinical research biobank. Biobank1 has the responsibility of collecting, storing and using biological material from patients in the health region when the purpose is research. Biobank1's services are consulting, sample/data management, storage facilities, research, innovation and education.	Link
Norwegian 7T MR Centre, NTNU	Trondheim	National infrastructure for neuroscience research. The purpose is to provide researchers with tools for mapping the structure-function relationship in the brain.	Link
The Norwegian Brain Initiative NTNU,	Trondheim	Enables research that can map neural mechanisms for behavior and provide insight into the neural codes in the brain.	Link
Nortrials, senter for medisinsk teknologi	Trondheim	NorTrials is a partnership between the regional health authorities and the organizations for the pharmaceutical (LMI) and medical equipment (Melanor) industries, established on assignment from the Ministry of Health and Care Services. The purpose is to make Norway a preferred country for clinical trials on drugs and medical equipment and thus give Norwegian patients increased access to new treatment methods through participation in clinical trials. At St. Olavs hospital the focus will be medical technology.	Link

Core facilities

Infrastructure	Location	Description	Website
Bioinformatics (BioCore)	Trondheim	Offers support for bioinformatics analyses (collecting or generating large amounts of complex biological data, and then analyzing them with advanced methods).	Link
Cellular and molecular imaging (CMIC)	Trondheim	Offers instruments and expertise to capture images of biological processes at the tissue level (histology) down to the cellular and ultrastructural level (single proteins).	Link
Comparative Medicine (CoMed)	Trondheim	Experimental animal department, consisting of 5 sub-departments: breeding department, SPF department, quarantine department, I3 department and large animal department.	Link
Genomics (GCF)	Trondheim	Offers competence and technology for use in genome analyses. “Next generation sequencing" (NGS) is the most relevant technology.	Link
MR	Trondheim	Offers expertise and access to various instrumentation (mainly MRI) for structural, functional and molecular imaging in humans and animals as well as metabolomics analyzes of tissue samples, cell cultures and biological fluids.	Link
NeXt Move	Trondheim	Offers equipment and expertise for carrying out research analysis tools within neurophysiology, exercise physiology, movement and elite sports research.	Link
Proteomics and Modomics Experimental	Trondheim	Offers services within protein analysis (proteomics) and analysis of nucleic acid modifications (DNA/RNA modomics).	Link
Viral Vector	Trondheim	Offers expertise to produce tailor-made viruses for research purposes. The viruses are primarily used in brain research but are also relevant for other biological and medical fields.	Link

Health related simulation and learning

Infrastructure	Location	Description	Website
Simulerings- og ferdighets-avdeling Helse Nord Trøndelag	Levanger	Department with 24 beds that is fully equipped. Two of the beds are reserved for medical simulation. The department is designed for learning in higher education, and the teaching methods are learning through handling realistic clinical situations in the form of simulation and skills training.	Link
Simulerings- og ferdighetsavdeling Helse Nord Trøndelag	Namsos	Department with 20 beds that is fully equipped. The department is designed for learning in higher education, and the teaching methods are learning through handling realistic clinical situations in the form of simulation and skills training.	Link
Enhet for helse-faglig simulering, NTNU	Trondheim	Facilitates learning in higher education through student and participant-active forms of learning. The learning forms consist of full-scale simulation exercises, skills and procedure training, RQI (Resuscitation Quality Improvement) and VR (Virtual reality).	Link
Medisinsk simulator-senter, St. Olavs hospital	Trondheim	Norway’s first full-scale simulation centre. The center is run through a collaboration between St. Olav's hospital, the Faculty of Medicine and Health Sciences NTNU and Helse Midt-Norge.	Link
IHAs Senter for simulering og velferds-teknologi, NTNU	Ålesund	The Department of Health Sciences in Ålesund has two practice departments with four simulator rooms for full-scale simulations, and a number of advanced patient simulators for the entire life course. There are also facilities for the systematic collection of sound and image data.	Link

Innovation infrastructure

Infrastructure	Location	Description	Website
Innovasjons-klinikken Helse Nord Trøndelag	Levanger and Namsos	Helse Nord Trøndelag's infrastructure for innovation and development work. Network of expertise and resources that initiate, coordinate or assist when innovation and development work must take place in collaboration with users, employees, industry players and municipalities in the health organisation's catchment area.	Link
Fremtidens operasjonsrom, St. Olavs Hospital, NTNU	Trondheim	Facilitates research and development in the surgical fields with a focus on minimally invasive image-guided patient treatment and medical technology. Collaboration between St. Olav's hospital and NTNU.	Link
Regionalt senter for helsetjeneste-utvikling, St. Olavs Hospital	Trondheim	Part of the specialist department (Fagavdelingen) at St Olavs hospital and works with service innovation, logistics, resource utilization and health economic analyses.	Link

Special lab environments

Infrastructure	Location	Description	Website
BSL3 Laboratorium	Trondheim	Two BSL3 laboratories (second highest safety class for biological material) at NTNU.	
Hotlab for radio-aktive stoffer	Trondheim	Hotlab for radioactive substances at NTNU.	
Ultralyd-laboratorium	Trondheim	Laboratory with high-end clinically approved ultrasound machines at ISB, NTNU.	Link
Nano and Bio-mechanics division	Trondheim	NTNU laboratory for simulation and development of technologies for non-invasive diagnosis and surgical procedures, and for mechanical characterization and modeling of biological materials and tissues at all scales.	Link
Arbeidsfysiologisk laboratorium	Trondheim	SINTEF Laboratory with main task to contribute to new research results for the benefit of industry, business and the health sector. The laboratory offers opportunities for testing people in extreme environments (heat, cold, wind).	Link
Laboratorium for medisinsk teknologi - ultralyd og bildeveiledet behandling	Trondheim	SINTEF med tech laboratory with main task to contribute to new research results for the benefit of the health sector, public health services, authorities, industry and business.	Link
Molekylærbiologi lab	Trondheim	SINTEF laboratory with equipment for molecular biology activity.	Link
Screening-laboratorium	Trondheim	SINTEF laboratory for laboratory automation and screening of biological samples.	Link
Det biomekaniske robotlaboratori-um for ortopedi (BRO)	Ålesund	Collaboration between Ålesund Hospital and NTNU, Campus Ålesund. The infrastructure is the only one in Scandinavia, and one of two in Europe. Orthopedic doctors from the hospital and engineers from NTNU work interdisciplinary to develop the unit.	

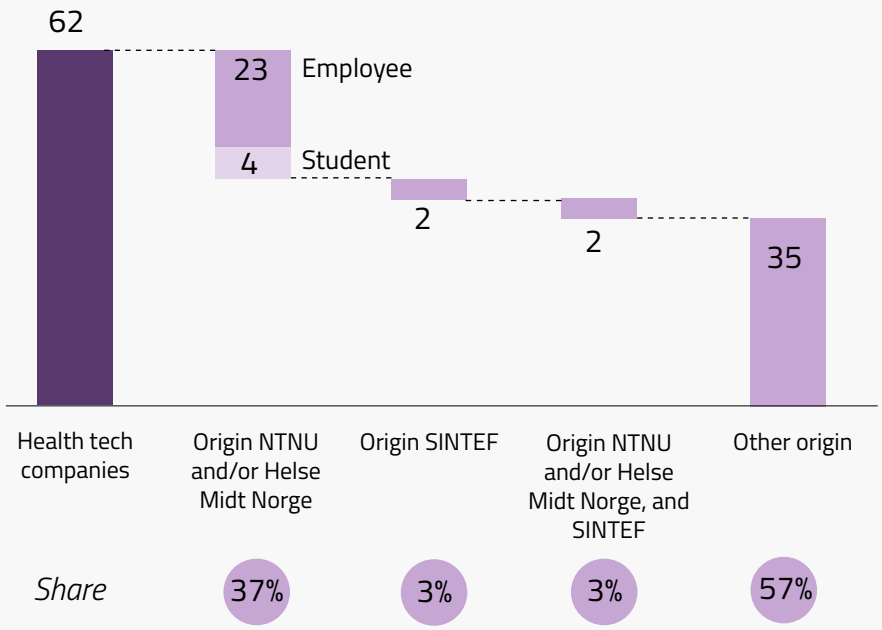
Criteria used to identify relevant R&D infrastructure: The infrastructure must 1. be available for all types of users throughout the region 2. have a website with information for potential users 3. offer services or equipment beyond basic needs 4. be strategically anchored in a hospital, college, university or R&D institute in the region. Ordinary laboratories and teaching areas are not included. Special lab environments at NTNU and SINTEF are included as these can be used by external stakeholders.

1. The Faculty of Medicine and Health Sciences and the Central Norway Regional Health Authority have organised several laboratories with advanced equipment and expertise into core facilities. These research facilities offer a necessary infrastructure connected to specialized expertise for regional, national and international researchers from research institutions and the industrial sector.
Sources: Veikart for forsknings- innovasjons og utdanningsinfrastruktur i Midt-Norge (Regionalt infrastrukturutvalg, juni 2022); Impello analysis; SINTEF

43% of the identified companies have origin from the research institutions NTNU, Helse Midt Norge or SINTEF

37% have origin from NTNU and/or Helse Midt Norge,3% from SINTEF and 3% from both

Number of companies in Trøndelag with origin from NTNU, Helse Midt Norge and SINTEF



Origin from NTNU and/or Helse Midt Norge, or SINTEF means that the entrepreneur(s) of the company was an employee or student at NTNU and/or Helse Midt Norge, or SINTEF at the company founding date, and submitted a Disclosure of Innovation (DOFI) to NTNU Technology Transfer or SINTEF TTO[1]

Origin from NTNU and/or Helse Midt Norge

APIM Therapeutics, Advanced BIOPOLYMERS AS, Apiir, ASSITECH, Aviant, Biosergen, CARDIOMECH, CheckWare, CIMON MEDICAL, GE Vingmed Ultrasound, geneseque, INITIAL FORCE, Lybe SCIENTIFIC, mode, myworkout, NHI.NO Norsk Helseinformatikk, pai, Palion MEDICAL, picterus, sportradar, SURF TECHNOLOGY, Vitroscope WE BRING VIVO IN VITRO, VIVIT AS, Phage, VECTRON BIOSOLUTIONS

Origin from SINTEF

Biosergen, NHI.NO Norsk Helseinformatikk, Njsonic, SONO CLEAR

Source: Impelloanalysen 2021; Proff Forvalt

1. The reason why we can't split between NTNU and Helse Midt Norge is that NTNU Technology Transfer has the commercialization mandate for both these institutions. Also, most of the entrepreneurs have relations both to NTNU and Helse Midt Norge, for instance through shared positions.

Of the 62 identified health tech companies, 18 companies have on-going RCN funded R&D projects of 175 MNOK

Company	Project title	NFR program	Period	Amount (MNOK)
Apiir AS	Professional motion analyses in a condensed and scalable mobile plattform	FORNY2020	2021-2022	1.0
Aviant AS	Drone transport between hospitals	FORNY2020	2021-2022	1.0
Biosergen AS	Nanoformulated anti-fungals	NANO2021	2020-2023	9.3
Bulbitech	A suite for automated eye examination tests to rapidly screen for neuro-opthalmic disorders	PES-Horisont EU	2021-2022	0.8
	BulbiEYE – One device, a suite of ophthalmological and neurological tests	BIA	2021-2023	14.2
Chiron Pharmasynth AS	Developing a rapid reference material production and scale-up platform for global cannabinoid drug detection service	PES-Horisont EU	2022-2022	0.1
	Development of scale-up and proactive platform for forensic toxicology in the NPS market	EUROSTARS	2019-2022	4.8
Cimon Medical AS	RescueDoppler – a disruptive ultrasound solution for improved outcome after cardiac arrest	BIA	2022-2025	16.0
Coegin Pharma AS	A novel, targeted, therapeutic intervention approach in cancer patients selectively overexpressing the cPLA2a enzyme	Næringsphd	2020-2023	2.3
Lybe Scientific AS	Market validation of new sample preparation solutions for clinical diagnostic purposes	FORNY2020	2021-2022	5.0
	Nanoparticle-based diagnostic solutions	NANO2021	2021-2024	14.6
Mode Sensors AS	Utvikle og verifisere en sikkerhetsarkitektur for tilkoblet medisinsk utstyr for kontinuerlig hyderingsmonitorering	IKT-pluss	2022	0.2
	Fluid monitoring for heart failure patients	BIA	2020-2023	14.2
MyWorkout AS	Myworkout GO som Medical Device. Digital treningsstøtte som medisin for personer med Multippel sklerose og Parkinson sykdom	Innovasjonspro-sjekt i næringslivet	2023-?	16.0
	Trening med høy intensitet: Videreutvikling av trening som medisin og forebygging av livsstilssykdommer	Nærinhsphd	2021-2024	2.1
	Trening som medisin: Effektiv styrke og utholdenhetstrening som behandling for personer med inflammatorisk revmatisk sykdom	Næringsphd	2019-2022	2.0
	Digital trening som medisin	BIA	2019-2022	12.0
Nordiq Products AS	Robust and ultra-portable vital signs multi-monitor Life Saver [LiSa]	Innovasjons-pro-sjekt i næringslivet	2023-?	11.2
	PES for Nordiq Products' LiSa Accelerator	PES-Horisont EU	2021-2022	0.8
PPM Robotics AS	Mobiliseringsstøtte til å initiere FoU-samarbeid med Japan og Korea innen robotisering av eldreomsorg	Global bærekraft	2022-2023	0.06
	Multipurpose Service Robot for Nursing Homes	PES-Horisont EU	2022	0.05
	ZaSuYo	Design Pilot	2021-2022	0.5
SonoClear	UltraGel – Acoustic Coupling Gel for Ultrasound Imaging in Cardiac Surgery	BIA	2021-2023	10.1
Surf Technology AS	MUNIN – Ultrasound detection, characterization, and treatment of (prostate) cancer	BIA	2020-2023	15.9
Vectron Biosolutions AS	Mikrobiell produksjon av terapautiske antistoffragmenter	BIA	2019-2023	3.0
VitalThings AS	Sensor-based notification and alert system installed in each patient room enabling safe monitoring of psychiatric patients during night	Innovasjons-pro-sjekt i næringslivet	2023-?	16.0
Vitroscope AS	PES Accelerator Vitroscope	PES-Horistont EU	2021-2022	0.8
Yatek Solutions AS	Yatek Multidirectional Treadmill for VR/AR Navigation	FORNY2020	2021-2022	1.0
Total				**175**

Source: Impelloanalysen 2021; NFRs «Prosjektbanken»

5 Clusters, networks and forums

Overview of most relevant clusters, networks and forums working with issues related to health tech

Name	Type	Description
Trøndelags-løftet	Project	Project that shall assist all municipalities in Trøndelag to implement welfare technology services as an ordinary health and care service. Financed by Statsforvalteren.
Digi Trøndelag	Program	Program that works as a bridge between municipalities and towards national joint projects regarding digital transformation. Runs and supports several projects within welfare and health technology.
Rundbordsdis-kusjoner helse	Forum	Trondheim Kommune has during 2022 arranged several discussion meetings with selected health tech companies and other stakeholders in the ecosystem with the goal of more cooperation.
Fagråd Helse-teknologi	Forum	Forum for health tech companies and other stakeholders in the eco system under establishment by Trondheim kommune and Nærings-foreningen.

Name	Type	Description
Samarbeids-organet	Forum	An advisory body for matters within education, research and innovation related to health issues. Collaboration between Helse Midt-Norge RHF and universities and colleges in the region.
Norway Health Technology Cluster avd. Trondheim	Cluster	Non-for-profit member organization with close to 270 members representing the full value chain of healthcare. Vision of making Norway the world's best arena for health innovation. Has a local representative for Trøndelag.
Trondheim Health and Sports Tech Incubator	Incubator	Company under foundation. The company is funded for a two year period, based on public and private capital. The project that leads to the establishment of the incubator, has a steering committee with representatives from NTNU, Norwegian Sport Tech, Trondheim kommune and Vital Things. Located with VitalThings in Dybdahlsgården.
Mid-Norway Health Incuba-tor	Incubator	Under establishment / development of an independent health incubator by NTNU Health and will be placed at Øya.
DRIV NTNU helseinnova-sjonsarena	Lab	Faculty of Medicine and Health Sciences has established a student-run health innovation arena. Goal of bringing students, researchers, employees of and users of the health service, in addition to health tech developers closer together.
Innovasjons-rådgiver-nettverket	Network	Network consisting of innovation advisors located at the different hospitals, as well as representatives from Helseplattformen, Hemit and NTNU.
TrønderNett	Network	R&D network for municipalities in Trøndelag, KS leads the network.
HUB digital hjemme-oppfølging	Network	Hub for digital monitoring at home. All innovation managers in all hospitals in Mid-Norway participate.
Helseleder-nettverket i Trøndelag	Network	The health leader network in Trøndelag Sørvest consists of the health leaders in eight municipalities, the municipalities' representatives in the professional councils in the health community, St Olavs, as well as the municipal chief physicians.
Helse-fellesskapenes nettverk	Network	Three levels: ▪ Partnerskapsmøtet: Political and administrative top management in municipalities and hospitals ▪ Strategisk samarbeidsutvalg: Administrativ and professional management in municipalities and hospitals ▪ Faglig samarbeidsutvalg: Health professionals and users
Trondheim Tech Port	Associa-tion	Member-based interest association for stakeholders in Trøndelag. Facilitator for innovation and technology, through projects, events and communication. Health is one of three specific sector focus areas.

Source: Interviews

6 Investors

Overview of all investors in Mid-Norway 2022 (not only health tech investors)

Project based funding
- NTNU Discovery
- Helse Midt Norge Innovasjonsmidler
- SINTEF Discovery (new)

Pre seed / seed
- NTNU TTO
- 6AM Acceleator
- ÅKP
- CoFounder
- T:Lab
- Tidligfasefondet
- Romsdal Innovasjon
- WeSeed (under establishment)

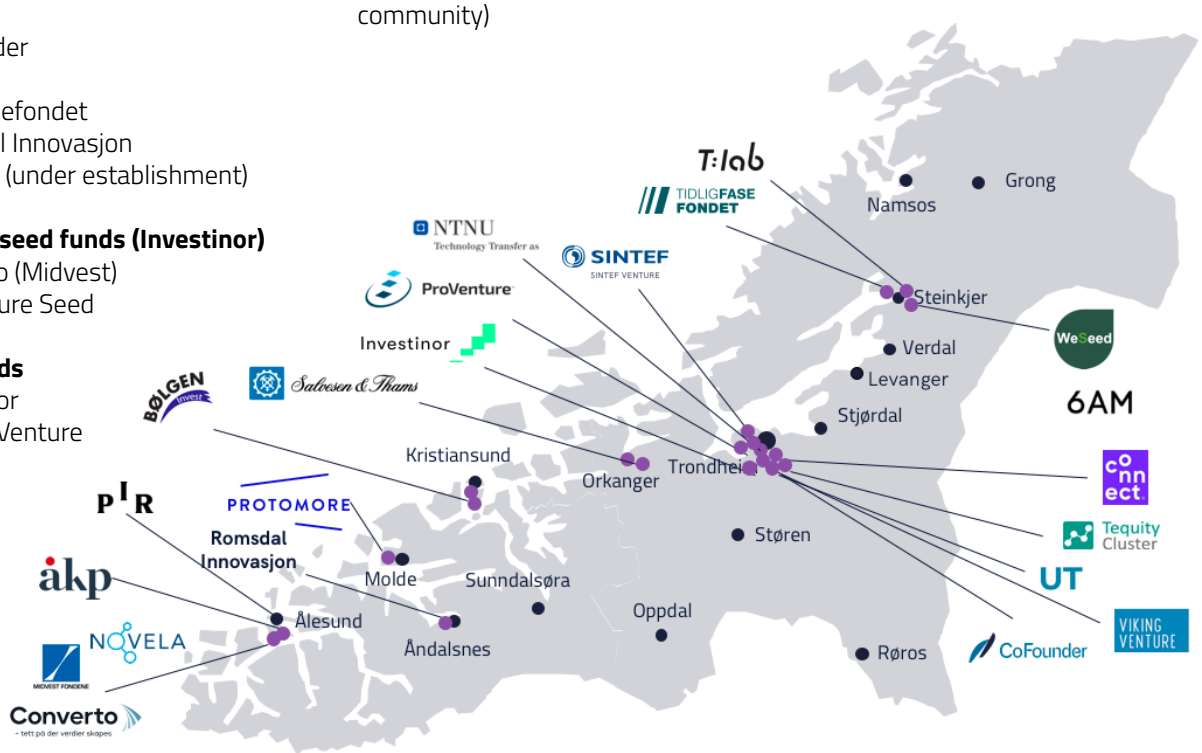
Nationwide seed funds (Investinor)
- Converto (Midvest)
- ProVenture Seed

Venture funds
- Investinor
- SINTEF Venture

Investment companies- and communities
- Viking Venture
- Salvesen & Thams
- PIR Invest
- Novela
- Reitan Kapital
- Bølgen Invest (under liquidation)
- Connect Midt-Norge (investment community)

Plans / ambitions for investment activity / funds
- Tequity Cluster (fund)
- Startup Lab (expansion to Trondheim)

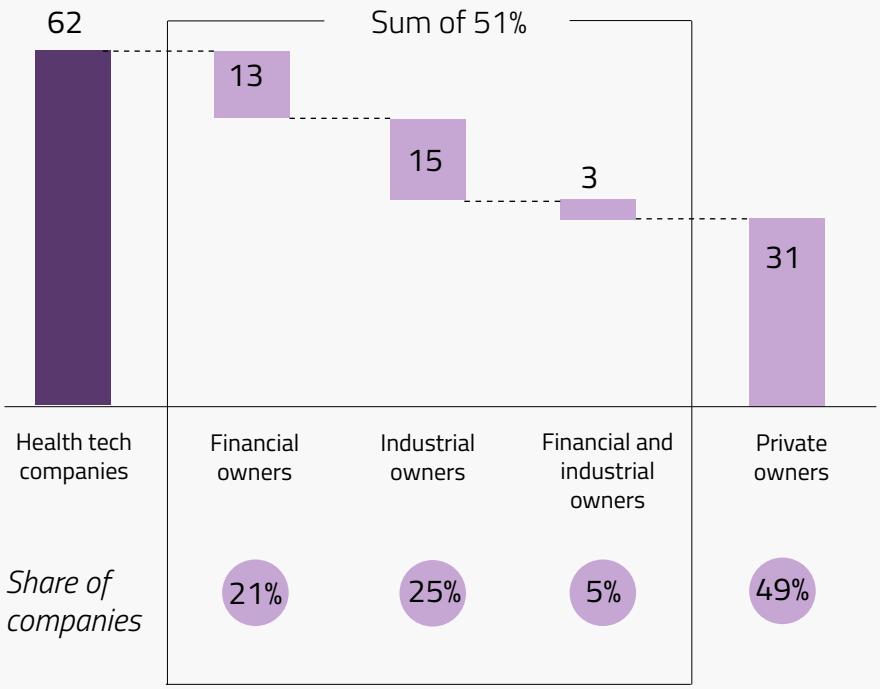
Note: Not only health tech investors
Source: Impello analysis



50% of health tech companies located in Trøndelag has so-called «professional owners»

50% of health tech companies located in Trøndelag has professional owners

Number of companies in Trøndelag with financial, industrial or private ownership



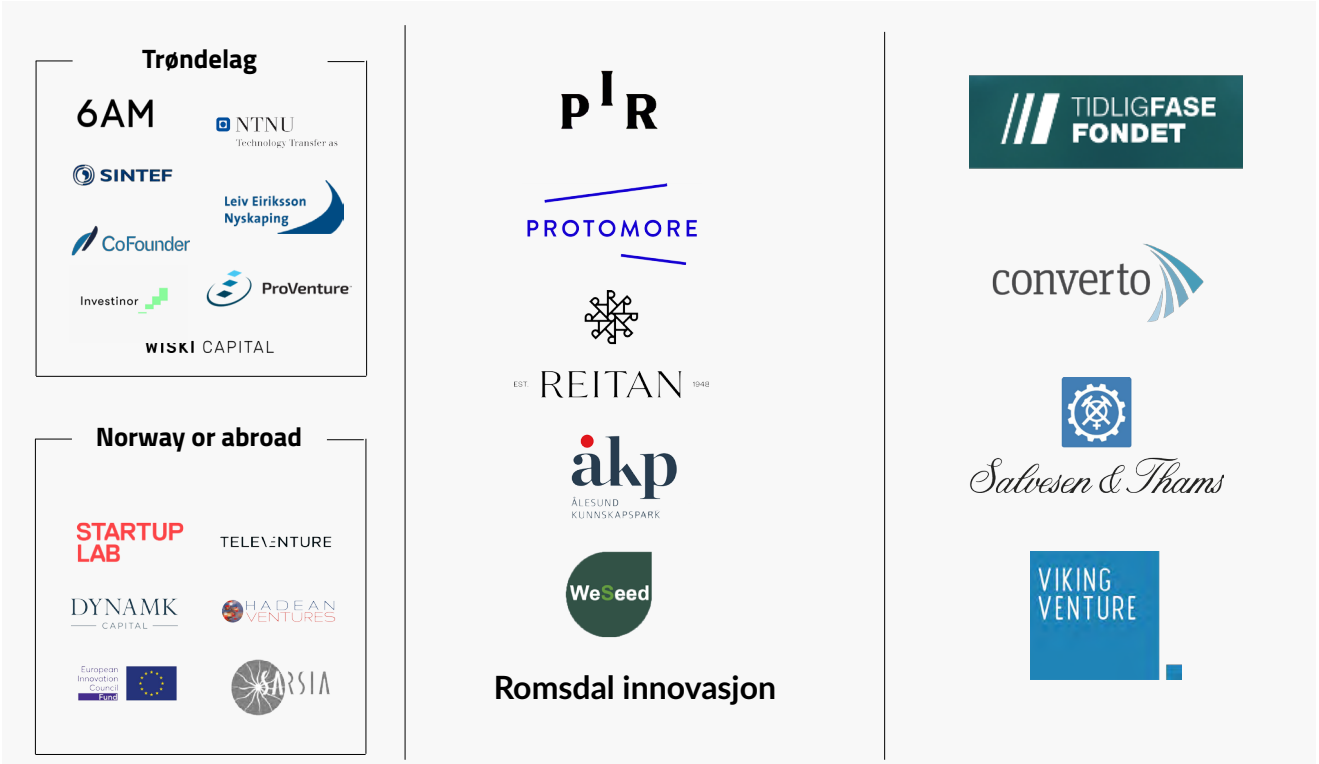
"Professional owners" means industrial or financial owners who invest in companies with equity and competence to develop the companies through the seed and growth phases. Business angels are excluded from the analysis due to the high number of actors, as well as the difficulty of keeping track of different actors.

Financial owners in identified companies (as of december 2021)

Financial owners in identified companies (as of december 2021)

Source: Proff Forvalt; Impello analysis

Overview of financial investors in Trøndelag – categorized by sector focus



Column A
Illustrates financial investors invested in the 62 identified companies on page 15.

A large proportion of the 62 identified companies are wholly or partly owned by employees, entrepreneurs, "friends and family". These private investors are not included in the overview above.

The financial investors in column A are located in Trøndelag, Norway or abroad.

Of the professional, financial investors who have invested in the companies, many are focused on early phase (pre seed and seed).

Column B
Ilustrates financial investors in Trøndelag that are so-called «industry agnostic».

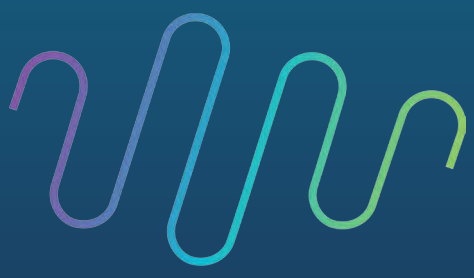
Column C
Illustrates financial investors in Trøndelag with stated sector focus other than health tech.

Source: Proff Forvalt; Impello analysis

This report will be updated on a regular basis.

If you have input or comments,
please send them to **hei@trondheimtechport.no**

Thank you!



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