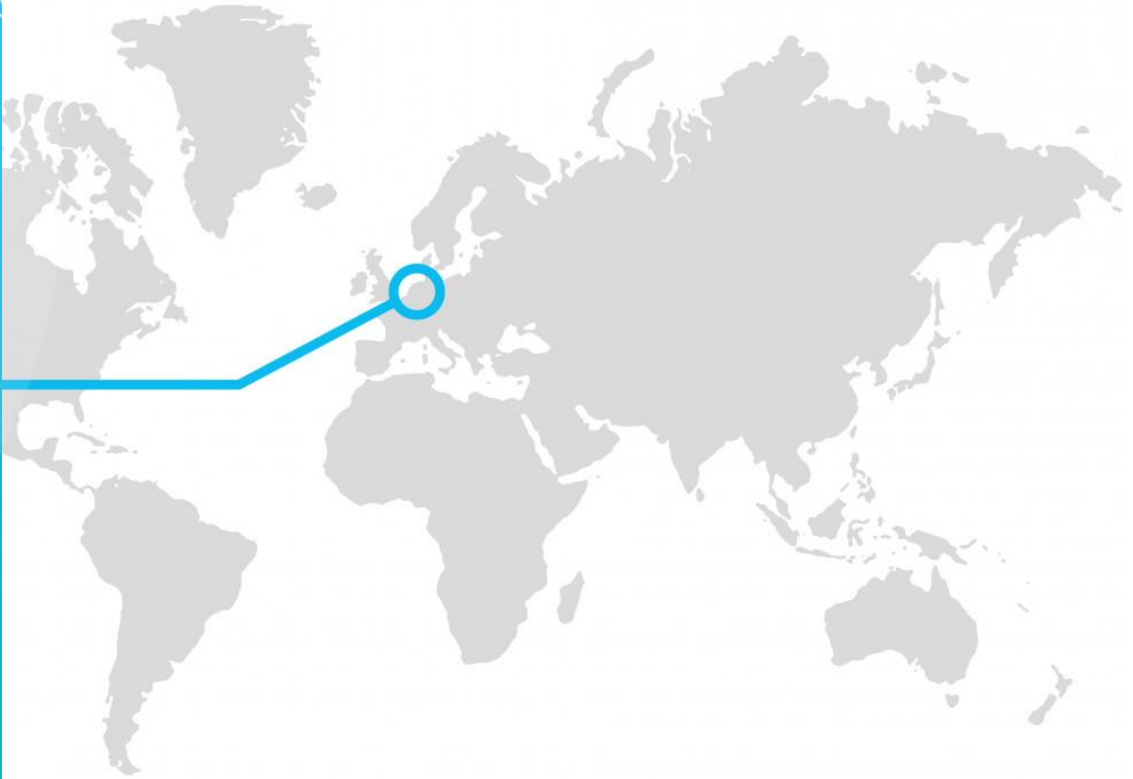




LIFE SCIENCES & HEALTH



LIFE SCIENCES & HEALTH

As a wealthy and prosperous country with an inclusive culture, it's no surprise we have high standards when it comes to taking care of our people. The Dutch **healthcare system** has become the number one in the world, built on mandatory health insurance, risk equalization and patient empowerment.

Today, insights from the life sciences & health industry have **shifted our focus from healthcare, towards healthy ageing - or sustainable health.** This means we increase our focus and efforts on **optimizing prevention, diagnostics and developing specialized health solutions.** TopDutch promotes a healthy society where we all enjoy a long life in good health. **Here, we grow young.**

1.

**Europe's
Reference Region
for Healthy
Ageing**

2.

**Bioanalysis
Capital of Europe**

3.

**Hub of Knowledge
and R&D**

4.

**Growing nuclear
cluster**

5.

**Networks and
Opportunities for
Partnerships**

6.

**World-class
Education
& Highly Skilled
Labor**



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the transition

1. EUROPE'S REFERENCE REGION FOR HEALTHY AGEING



HEALTHY AGEING

TopDutch is recognized as a **four-star reference region** for Active and Healthy Ageing by the **European Commission**.

- We host more scientific and applied research of genetic implications and lifestyle interventions to extend the human lifespan with healthy years than any other region.
- Lifelines are performing the largest and longest intergenerational healthy ageing research in the world.
- The European Research Institute for the Biology of Ageing (ERIBA) .
- The Center of Expertise Healthy Ageing.



HEALTHY AGEING

Our open and **cooperative business culture** accelerates the development and implementation of healthy ageing

- Within the **Healthy Ageing Network Northern Netherlands (HANNN)**, regional knowledge institutions, governments, society and over 170 businesses collaborate.
- The **Aletta Jacobs School of Public Health** - a joint partnership of the University of Groningen, University Medical Center Groningen, the Hanze University of Applied Sciences and NHL Stenden University of Applied Sciences
- **Hi!Noord** invests in knowledge sharing, collective infrastructure, and talent development programs.

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2. BIOANALYSIS CAPITAL OF EUROPE



BIOANALYSIS

Over **100 LC-MS/MS machines are operational** in the region, together having the largest **BioAnalytical capacity in Europe.**

- Largest biobank available from Lifelines longitudinal research cohort, making biodata available not only during, but also in the build-up to the emergence of diseases.
- Home to Biomarker Bay - a unique consortium in research, development and application of new biomarkers - which supercharges the development and admission of new individualized and tailored diagnostic methods and drugs.



BIOANALYSIS

An expanding network of **high quality CRO's**, emerging from knowledge institutions, research consortia, bio- and databanks, the **University Medical Center Groningen**, innovation labs and business networks Life Cooperative and Bio Cooperative.

- Expertise in both pharmaceuticals (including ICON, Thermo Fisher, Symeres) and MedTech devices (including XVivo, BD Kiestra).
- Recent emerging and broadening activities performed by our CROs include genomics-based clinical trials and the integration of advanced data capabilities.



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3. HUB OF KNOWLEDGE AND R&D



KNOWLEDGE AND R&D

We offer access to a **complete R&D chain:**
From fundamental research to product development .

- **Fundamental research** at the University of Groningen (RUG)
- **Applied research** at the Hanze University and NHL Stenden University of Applied Sciences.
- **Product development** within our extensive business network of start-ups, SMEs and testing labs.
- **Product validation** via our cohesive infrastructure of testing facilities and clinical trials for complete validation trajectories.



INNOVATION PROGRAMS

We support knowledge to **market-ready products** with a mix of research programs, shared innovation infrastructure, and access to capital.

- Open Diagnostics Ecosystem
- PharmaNL is a public-private consortium with partners including Campus Groningen and LIFE Cooperative
- Campus Community Fund

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4. GROWING NUCLEAR CLUSTER



NUCLEAR CLUSTER

The **University Medical Center Groningen** is an established Nuclear Medicine institutes in the world. Their research focuses on the development and validation of new **molecular imaging applications**.

- The Particle Therapy Research Center (PARTEC)
- Companies active in Nuclear Medicine in the TopDutch region include medical isotope innovators Shine Technologies, and nuclear and optical molecular imaging CRO TRACER.

A photograph of two surgeons in an operating room. They are wearing blue scrubs, blue bouffant caps, and surgical masks. They are looking down at a patient on the operating table. A large surgical light fixture is visible above them. The background is a light blue wall.

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5. NETWORKS AND OPPORTUNITIES FOR PARTNERSHIPS



NETWORK & PARTNERSHIPS

Our tight-knit **business networks support knowledge-sharing**, cooperation, and development in pharma, MedTech and e-health.

- SpringBoard association
- HANNN, the Healthy Ageing Network Northern Netherlands
- Life Cooperative unites Life Science and MedTech
- Opportunities for M&A.



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6. WORLD-CLASS EDUCATION & HIGHLY SKILLED LABOR



KNOWLEDGE & LABOUR

The TopDutch region is home **to >75,000** students, of **which >25,000 are research** university students **and >50,000 are university** of applied science students.

- The University Medical Center Groningen (UMCG) from the University of Groningen consistently ranks within the top-100
- Healthy Ageing Campus offers research and business facilities to spin-offs and start-ups.
- Wenckebach Skills Center keeps our healthcare professionals at the forefront of their disciplines.



Cross-linking clusters: **Green chemistry (medical and polymer solutions)**

- **With ZIAM (Zernike Institute for Advanced Materials) and the Biomaterials Development Center** as linking pins between fundamental research and business, we are able to develop all types of specialty polymers advanced biomedical and pharmaceutical appliances.
- Polymer solutions spun-off or connected to UG/UMCG include: Biodegradable polymeric injectable drug delivery systems (**Innocore**); custom speciality polymer manufacturing (**Polyvation**); bioresorbable medical technologies (**Regenity**) and hot start-ups such as **Implican**.

Cross-linking clusters: Digital innovation

A laptop and a tablet are shown on a desk, displaying data visualizations. The laptop screen shows a dark interface with some text, and the tablet shows a network diagram or map. The background is a solid purple color.

- Thanks to our large-scale studies for data collection (including the largest biobank Lifelines) and an industry focus on personalized health and diagnostics (with players like UMCG, Certe, Philips, KPN), we have developed advanced data capabilities.
- **The 'DASH' Data Science Center in Health** is a knowledge hub, community, and facilitator in the field of health data science, hosted in the University Medical Center Groningen. Its AI Think Tank and Machine Learning Lab supports the advancement of AI in research and clinical settings.



Cross-linking clusters:

HTSM

- We host particularly strong **catheter technologies and lens technologies** clusters, with exciting new devices coming from our large multinationals such as Johnson & Johnson Vision as well as our in-demand start-ups such as antimicrobial device coating firm Bioprex.
- Revolutionary devices from TopDutch on the market now include an inhaler device developed by PureIMS and perfusion technology for organ transplantations by Organ Assist.



Enjoy life in the TopDutch region

- Our landscape is a great mix of **dynamic cities** and **tranquil countryside**. Our residents can enjoy all the benefits of city life, while still being surrounded by beautiful nature.
- We're also less crowded than the western part of the Netherlands, but we are only 90 minutes away from Amsterdam. Here we have **less traffic, cleaner air, lower costs of living and less stress**.
- Explore our cultural and music festivals, such as *Oero* and *Noorderzon*, check out our exciting sports events at *TT Circuit Assen*, get away for the weekend in our iconic nature to the *Wadden Islands* or the *Frisian waters*, eat your favorite foods at the best places and enjoy the fun social activities planned every week with your friends and family.
- We're a seriously **great place to live** - proven by the fact that the city of Groningen is ranked as the 5th happiest place on earth by the World Happiness Report!



Are you interested in **exploring what your business possibilities** could be?

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Life Science & Health expert

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JOIN TOPDUTCH

Want to find out more **how the TopDutch region is naturally leading the transition?**

Head over to our website: www.topdutch.com

TOPDUTCH.COM

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