



KEY FIGURES



2
Swiss companies
in the Top 5 of the
global pharmaceutical industry
(Roche + Novartis)



184
CHF million
nationwide investments in
personalized health
2017-2020



1st
Place –
Best healthcare systems
worldwide (EHCI)

Sources: Euro Health Consumer Index
2018; Start-up.ch; EY; BAG, 2019

**SWITZERLAND – A HUB FOR
PERSONALIZED HEALTH**

AT A GLANCE

Thanks to its traditional strength in the life sciences sector and international ICT hotspots, Switzerland offers the ideal environment for innovative companies that want to quickly and easily bring new innovations in personalized health to market. In Switzerland, science and industry have a uniquely close relationship that guarantees fast technology transfer in a versatile and compact ecosystem. Cutting-edge research is carried out by Swiss pharmaceutical companies such as Roche and Novartis, at world-class universities and government institutes; SMEs and startups provide important impetus for this. Switzerland is investing massively in harmonized data infrastructures, while at the same time placing great importance on data protection.

A selection of companies active in Switzerland

Personalized Health, by category

Data Analytics

- Biognosys
- Clinerion
- Genedata
- Google AI
- IBM Research
- Novartis
- RetinAl
- Sonogen
- Sophia Genetics
- 4Quant

**Disease + Health
Management Solutions**

- Advancience
- Ava
- MindMaze
- MiSanto

**Healthcare Process
Optimization**

- HCSG
- Komed Health
- Medgate
- MiSanto

**Precision Medicine +
Diagnostics**

- Abionic
- Artidis
- Bühlmann Laboratories
- Limula biotech
- Lunaphore
- ProteoMediX
- Roche
- Tecan











Sources: BaselArea.swiss; Swiss Digital Health Map, 2019

RESEARCH AND DEVELOPMENT (R&D)

- The closeness of the **relationship between science and industry** in Switzerland is unique. Established research institutes drive innovation together with companies and institutions. The **School of Life Sciences** at the University of Applied Sciences Northwestern Switzerland (FHNW) actively supports **technology transfer** in personalized health projects. **Biotechnet Switzerland** also links industrial partners directly with research competencies in the field of biotechnology.
- From 2017 to 2020, the internationally renowned **ETH domain** (Swiss Federal Institutes of Technology in Zurich and Lausanne and four research institutes) is funding projects in the strategic focus area of **Personalized Health and Related Technologies (PHRT)** to the tune of 48 million Swiss francs. Among other things, work is underway on open source software that uses blockchain technology to provide secure and decentralized access to health data. Furthermore, the interdisciplinary **research platform Nexus Personalized Health Technologies** was founded; it focuses on Theragnostics and Clinical Bioinformatics.
- With a budget of 68 million Swiss francs, the **Swiss Personalized Health Network (SPHN)** is the umbrella initiative for promoting personalized health. The SPHN works in conjunction with the Swiss Federal Office for Research and Innovation's (SBFI) "Personalized Medicine" national promotion initiative, with the aim of enabling the national and international exchange of data necessary for research. Among other things, data from all five Swiss university hospitals will be collected and harmonized.
- The **Swiss Institute of Bioinformatics (SIB)** promotes excellence in data science to support progress in biological research and healthcare. With around 70 research groups, the SIB provides the national and international life science community with a state-of-the-art bioinformatics infrastructure, which includes resources, knowledge and services relating to personalized health. The SIB is also laying the groundwork for a data exchange infrastructure as part of the Swiss Personalized Health Network (SPHN).
- The **Swiss Cancer Center Léman (SCCL)**, a transnational research center for oncology, opened in Lausanne at the end of 2018. Several hundred researchers from the fields of medicine, biology, genetics, immunology, bioinformatics and bioengineering work here.
- **Personalized Health Basel (PHB)** is a joint project organization of the university institutions of Basel in the fields of oncology, infectious diseases and immunology. The central IT platform upon which data for research is consolidated is the Clinical Data Warehouse.

- In October 2019, Basel-based **Novartis** and **Microsoft** established the **AI Innovation Lab** for developing intelligent and personalized therapies. The pharmaceutical company had already launched **Novartis Biome**, a new laboratory for digital innovation with the aim of further developing healthcare through the use of data and digital technologies. To help achieve this, it brought the former Amazon manager Bertrand Bodson on board as Chief Digital Officer.
- Headquartered in Basel, **Roche** also has longstanding experience in personalized health: At its launch in 1998, the cancer drug Herceptin was regarded as one of the first representatives of the therapy form of targeted drugs. Herceptin is tailored towards patients with a specific genetic profile.
- The **Bern Center for Precision Medicine (BCPM)** was launched in 2019 by the canton and the university institutions of Bern as a coordination platform between genomics, health economics, data protection and statistics. Clinical physicians and researchers combine their expertise with that of data analysts to provide the best diagnosis and treatment for patients.

Global Life Sciences Startup Ecosystem Ranking 2019

	Rank
 Silicon Valley	1
 Boston	2
 San Diego	3
 New York City	4
 London	5
 Los Angeles	6
 Lausanne-Bern-Geneva	7
 Munich	14
 Amsterdam-StartupDelta	15
 Stockholm	18

Source: Startup Genome, 2019

- The **Genome Center on the Geneva Biotech Campus** was inaugurated in 2017 as a multi-institutional hub for genetic medicine. There you will find platforms for DNA sequencing, data analysis and interpretation.
- At the **Botnar Research Center for Child Health (BRCCH)** in Basel, a joint project of the University of Basel and ETH Zurich is combining science and interdisciplinary clinical research to develop new methods and digital solutions for the health of children and adolescents.

SUCCESS STORY: SOPHIA GENETICS

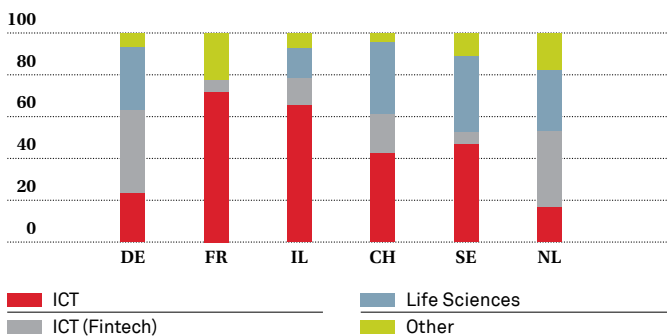
The Zurich startup Ava has created a wristband that provides women with information on their most fertile days by measuring physiological parameters. Ava was launched in the USA in July 2016 and is now available in 36 countries. In 2019, the startup became part of the Tech Tour Growth list of the 50 tech companies with the greatest growth potential in Europe.

COSTS AND FINANCING

- The topics of **software and life sciences** top the list of areas in which **Swiss startups** are most active. At 420 million Swiss francs, 34% of the venture capital invested in Switzerland in 2018 went into life science startups, including healthcare IT solutions. This is the second highest share in Europe after Sweden.

Invested capital in startups, 2018

by sector (in %)



Source: startupticker, Swiss Venture Capital Report 2018

- The Life Science Cluster for startups in the Lausanne-Bern-Geneva region is one of the best in the world. The Global Life Sciences Startup Ecosystem Ranking 2019 has the region in seventh place after Los Angeles and ahead of Shanghai, Chicago or Munich. The region is also known as **Health Valley**. The **Biomedical Technopark Biopôle** near Lausanne also operates a life science incubator and, beginning in 2019, also the Digital Health Hub.
- In **Basel**, too, the **traditionally strong life science ecosystem** and the two pharmaceutical giants Novartis and Roche have created an environment that strongly favors innovation and investment in personalized health. The **DayOne initiative**, an innovation hub for precision medicine that also offers an accelerator program, was launched in Basel in 2017.
- The **Swissbiolabs association in Olten (Solothurn)** is specifically aimed at the diagnostics sector. Among other things, it organizes a startup challenge and operates an accelerator. The FHNW's University of Life Sciences plays a major role in this.
- The **Swiss stock exchange is Europe's leading exchange for life sciences companies**. It represents around 40% of the market capitalization of the European life sciences sector on Europe's largest stock exchanges. Switzerland's well-funded investor base, solid banking system and leading industry expertise create a dynamic life sciences ecosystem that enables companies to efficiently raise capital to drive scientific discovery to market.

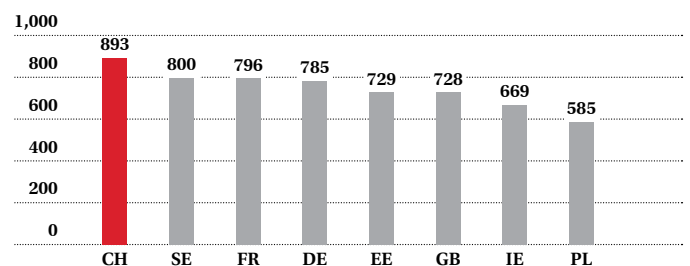
- Headquartered in Basel, the pharmaceutical giant **Roche** invests heavily in R&D in personalized health. Roche caused a sensation in 2018 when it acquired the US company **Flatiron**, which specializes in **big data** in cancer research, for 1.86 billion Swiss francs.

FRAMEWORK CONDITIONS AND MARKET ENTRY

- According to the Euro Health Consumer Index 2018, Switzerland has the best healthcare system in Europe. A comparison was made in 35 European countries of performance in 46 areas. According to Eurostat, no other European country invests more money in its healthcare system than Switzerland in relation to its gross domestic product (12.3%).
- In comparison with 19 other European countries, Switzerland is one of a group of pioneers in introducing electronic health records (EHR). It occupies sixth place ahead of Great Britain or Germany. The EHR will soon contain all medical data relevant for an individual's treatment.
- There are currently around one hundred biobanks in Switzerland – such as the Biobank in Bern or the Biobanque Institutionnelle de Lausanne. Since 2015, their activities have been coordinated by the Swiss Biobanking Platform (SBP) on the initiative of the Swiss National Science Foundation (SNF). The SBP is currently setting up a national biobank catalog.

Euro Health Consumer Index (EHCI)

Ranking of healthcare systems worldwide, 2018



Source: Health Consumer Powerhouse (Euro Health Consumer Index), 2018

TESTIMONIAL



“Clinerion was founded in Basel. The company benefited greatly from the city’s dynamic life sciences environment and has become the world’s leading provider of information technology solutions for medical data. The Real World Clinerion’s data solutions significantly improve the efficiency and effectiveness of clinical research and accelerate the drug development process, ensuring faster availability. Personalized health is the focus of our actions: Our patented technologies identify the right patients for the appropriate clinical trials. Our headquarters in Basel is the key to our successful growth. With its dense cluster of top companies in the health sector and ICT, teaching hospitals and universities, the Basel Clinerion region offers not only a large customer base, but also access to a qualified and diverse talent pool.”

IAN RENTSCH
CEO Clinerion
www.clinerion.com

CURRENT DEVELOPMENTS

- **MIDATA** is a voluntary **health database** organized as a cooperative, in which citizens can securely collect their health data and use services on a platform. As an open innovation ecosystem, it is available to startups, IT service providers and research groups. MIDATA is designed for international application.
- Since end of July 2019, the federal and cantonal competency and coordination office (**eHealth Suisse**) has been officially representing Switzerland in the **Global Digital Health Partnership (GDHP)**. The global digital coordination was founded in February 2018 with the aim of exchanging experiences in the digital transformation of health systems and jointly developing guidelines to support participants in their work. Its members consist of authorities or centers of excellence from around 25 countries.
- To ensure that health data can be recorded via mobile devices and added to an electronic health record, eHealth Suisse has defined **standards and norms for the mobile health sector**.

CONTACTS AND FURTHER INFORMATION

Authorities and regulators

Competency and Coordination
Office of the Confederation and
Cantons
www.e-health-suisse.ch

Electronic Patient Record EPR
www.patientendossier.ch

Swiss Federal Office of Public
Health FOPH
www.bag.admin.ch

Innosuisse - Swiss Innovation
Agency
www.innosuisse.ch

Swiss Federal Institute For
Intellectual Property IGE
www.ige.ch

Associations and networks

bioalps.org
www.farmaindustriaticino.ch
gensuisse.ch
www.healthtech.ch
www.icpermed.eu
www.scienceindustries.ch
www.sfa-phrt.ch
www.sphn.ch
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www.swissbiolabs.ch
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Innovation and startup promotion

www.agire.ch
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biovalley.ch
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www.technologiepark.ch
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Publications

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www.pwc.com

Swiss Venture Capital Report 2019
www.startupticker.ch

Swiss Digital Health Map
www.health-trends.ch

eHealth Suisse, 2018: Mobile health
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recommendations for the use of
technical standards and norms (in
German)
www.e-health-suisse.ch

EPFL International Risk Governance
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infoscience.epfl.ch

S-GE resources

Handbook for Investors
www.s-ge.com
[/handbookforinvestors](http://handbookforinvestors)

Further factsheets on
Switzerland as a business location
www.s-ge.com/factsheets

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