



DEEP
KNOWLEDGE
GROUP

Swiss Longevity Valley

Overview

August, 2021

Swiss Longevity Valley - Summary

I.

Swiss Government Engagement on National Longevity Development Plans and Initiatives

Proactive engagement with Swiss government agencies and members of the Swiss Parliament to establish a framework for a National Swiss Longevity Development Plan and Industrial Strategy to grow Switzerland's Longevity ecosystem to scale and enable extension of the national Health-Adjusted Life Expectancy.

II.

II. Cross-Sector Dialogue with All Major Longevity Industry Players

A focus on cross-sector dialogue, projects and initiatives spanning government, industry, academia and other relevant spheres of activity, Swiss Longevity Association aims to achieve a maximum level of synergy and convergence, growing every aspect of Switzerland's Longevity ecosystem to scale.



Swiss Longevity Valley

III.

Coordinated Development of AI Centres for Longevity to Enable the Shift from Treatment to Prevention

Though the intensive application of AI to advanced biomedicine, Switzerland can lead the world in Precision Health, utilizing the latest innovations in AI, Longevity, Biomarkers of Ageing and Advanced Biomedicine to become nation leading the world in preventive, personalized and precision health care for its citizens.

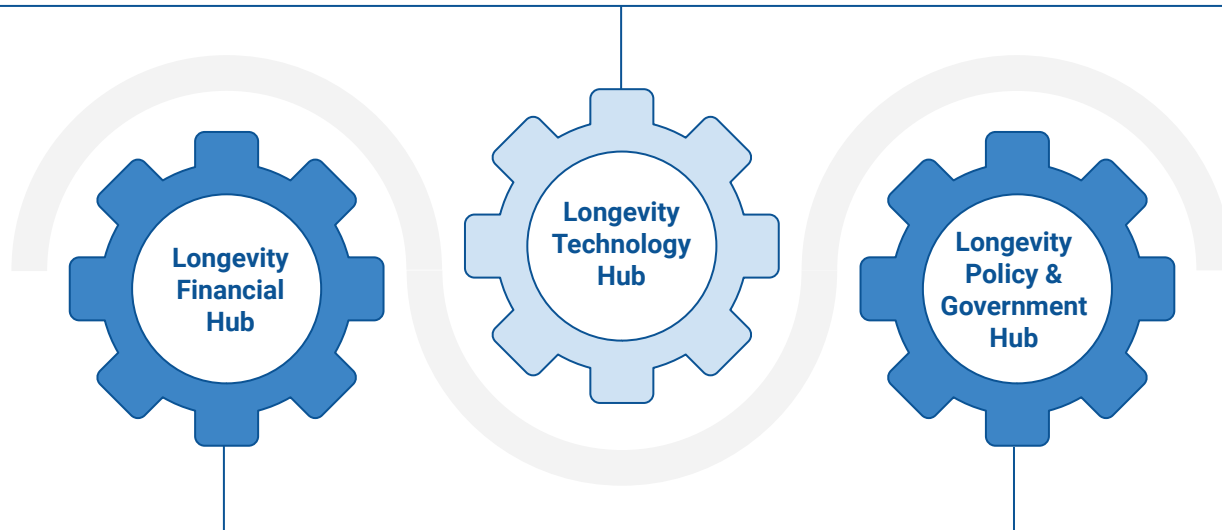
IV.

Support of Progressive Longevity Financial Reform to Neutralize Economic Burden of Ageing Population

Swiss Longevity Association will work alongside large Swiss financial institutions including pension funds, insurance companies, private wealth banks and other relevant entities to roadmap initiatives and policy proposals to turn the problem of ageing population into the economic opportunity of Healthy Longevity.

Deep Knowledge Generation and Implementation

Every industry needs an innovative out-of-border approach that can be accelerated by the intense research & development sector. Close collaboration between academic and industrial representatives of the BioTech community may create an auspicious ecosystem. In such an environment, high-tech startups rise, attracting new investments and talents, daring to find solutions to the most difficult aging-related issues of modernity.



The main objective of Longevity Financial Hub is to develop strong global connections and focus on the needs of the economy and serve as an international financial platform for particular regions and the global economy in general. Progressive asset management firms, investment banks, pension funds, and insurance companies based in Longevity Financial Hubs will develop new business models using AI to improve analytics quality.

Additional efforts are needed to further maintain and develop the industry's existing strengths, including government support for research and development, as well as other stakeholders in the Longevity Industry. Aging proliferation as a growing problem is turning into an opportunity for governments to develop progressive policies for the pension system, an ecosystem of insurance companies, and a national strategy for intensive healthcare system development.



I.

Coordinated Development of AI Centres for Financial Wellness to Enable Financial Stability over Extended Periods of Healthy Longevity for Swiss Citizens, Applying Advances in WealthTech and AgeTech

Given both its status as an international BioTech epicenter, combined with its reputation for being one of the most progressive countries in terms of its financial industry and FinTech sector, the prospects for Switzerland to lead the world in the development of its Longevity Financial Industry are solid. As a core component of its mission to develop Switzerland into a leading international Longevity Financial Industry hub, the Swiss Longevity Association also plans on road mapping the development of complimentary AI Centres for Financial Wellness.



II.

Synergetic Development Alongside AI Centers for Longevity to Cover Full Scope of Healthy Longevity

Whereas the proposed AI Centers for Longevity would focus on optimizing health into old age, this center would focus on the application of AI to the creation of methods and technologies to promote wellness in the elderly in all aspects of life besides health, such as financial wellness, continuing education, happiness, psychological well being, neuroplasticity, and active social involvement.



III.

Artificial Intelligence and Big Data Analysis to Maximize the Economic Opportunities of Extended Health-Adjusted Life Expectancy and to Neutralize the Economic Burdens of Aging Population

Considering the vast amount of data and information about citizens being collected by financial institutions, telecom companies, etc., there are a large number of options and avenues for how AI, machine learning, big data analysis, and other predictive analytical systems could utilize that data to create personalized recommendations for how citizens 60 years and older can optimize their lifestyles and behaviors to achieve a high degree of wellness, stability, and social involvement and activity. The establishment of dedicated centers focusing on providing companies active in this space with advanced AI-driven support and solutions will help optimize products and services to improve the overall lifetime wellness of elderly individuals in all aspects of life besides health.

Swiss Longevity Association - Scope of Activities & Agenda for 2019-2022

Stage I. March 2019

Seasoned and Experienced Founding Partners with Years of Experience in Supporting the Development of Government-led Longevity Development Plans and Sophisticated Longevity Industry Analytics

Aging Analytics Agency and the Biogerontology Research Foundation were instrumental in the initial groundwork and establishment of the UK APPG for Longevity, whereas Aging Analytics Agency provided key data, analytics and informational inputs for the APPG for Longevity, and whereas the Biogerontology Research Foundation provided the initial financing that enabled implementation of its first scope of activities.

Stage II. September 2019

The Launch of Swiss Longevity Association to Support the Development of Switzerland into a World-Leading Longevity Biomedicine, Policy, Politics, Governance and Progressive Financial Industry Hub

The founders and executives of these two entities have plans to establish a similarly-purposed entity in Switzerland, given that the country's policy-related ecosystem and its scientific and financial industry-related environment are quite matured, to a similar level as in the UK, which provides excellent grounds for launching a non-profit Swiss Longevity Association to structure the initial scope of activities and accumulate the initial budget to establish a Longevity Committee within the Swiss Parliament.

Stage III. September 2022

Cross-Sector Engagement with Government, Industry, Academic, Private-Sector and Public-Sector Stakeholders to Maximize the Reach and Inclusivity of the Swiss Foundation's Projects and Activities

- Engagement with Swiss Longevity companies and financial corporations interested in the emerging markets of Longevity Medicine, AgeTech and Longevity WealthTech including private wealth banks, insurance companies, pension funds, family offices, etc
- Engagements with broader international organizations like the World Economic Forum, the World Health Organization, United Nations-related organizations, etc.
- Aggregation of around 200.000 CHF from approximately 10 sponsors, who will also provide active support in the form of strategic development, establishment of good relations with relevant Swiss counter-parties.

AGE-NT is the largest national research project dealing with the challenges and opportunities of demographic change. The aim of the project is to identify knowledge and best practice examples in selected priority areas, both nationally and internationally, and to make them visible and accessible to a broad public and decision-makers.

Fields of activities



**Technologies for
Older Adults**



**Dementia:
Prevention and Care**



**Employment
in Retirement**



Longevity



Social Inclusion

Ongoing projects



Technology and Active & Assisted Living

Long-term tests of a chest strap with innovative humidification elements to measure heart rate variability



Easierphone

Development of an Age-Appropriate Smartphone App



HEROES

Improvement of speed and cost-efficiency of nursing recruitment through an online platform



Robotics

Successful use of service robotics in the care and nursing of older adults through Human Centered Design

I.

Developing Switzerland into a Coordinated Longevity AI and Data, Finance, and International Policy and Governance Hub

Leading Geneva-based Longevity Policy Non-profits and Think Tanks can take advantage of Switzerland's national strengths and potential to turn the nation into a world-leading Longevity Hub through the coordinated development of Public Policy and Governance, the Longevity BioTech Industry, Preventive Medicine, Precision Health and the emerging Longevity Financial Industry. Furthermore, leveraging Switzerland's existing reputation as a hub for independent international policy organizations like the World Economic Forum, the United Nations, UNESCO, the World Health Organization, and Others, the Swiss Longevity Association aims to turn Switzerland into the leading international hub for cross-sector and cross-nation Longevity Development projects and initiatives.

II.

Active Involvement with Swiss Governmental Departments and Proactive Dialogue with Industry Stakeholders

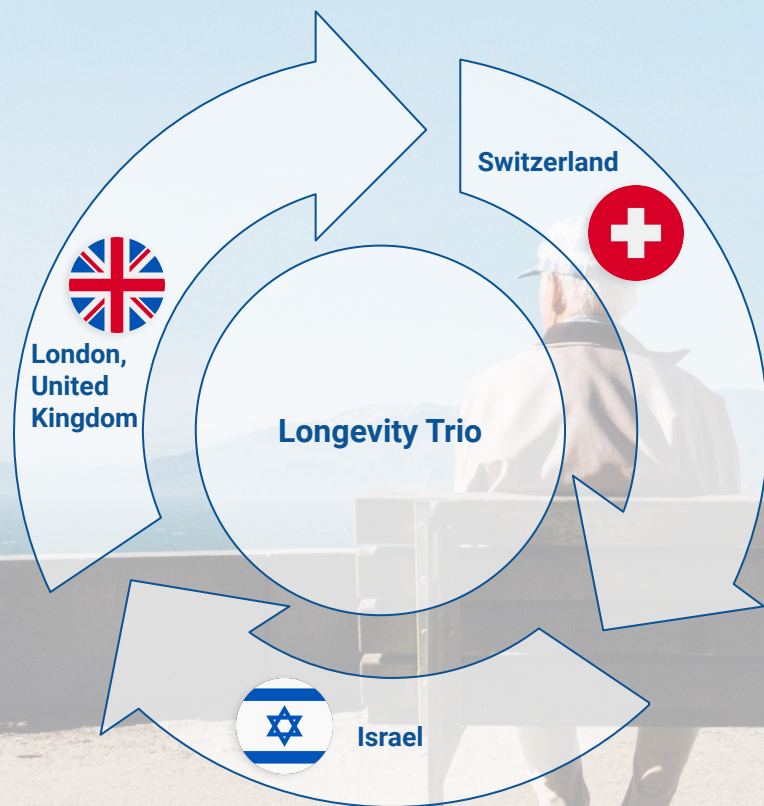
Swiss Longevity Association will work with the help of proactive corporate and institutional partners to interface with the relevant Swiss ministries, governmental organizations, and members of Swiss Parliament to establish a National Swiss Longevity Development Framework, as well as the establishment of a parliamentary body equivalent to the United Kingdom's All-Party Parliamentary Group on Longevity.

III.

Founding Members of Swiss Longevity Association Bring Years of Relevant Experience and Expertise

The Founding members and partners of the Swiss Longevity Association bring years of relevant experience and activity to the task of coordinating these national and international Longevity Development Efforts, including Dmitry Kaminskiy, founder of Deep Knowledge Ventures (a VC firm that made its first investments into the Longevity industry in 2014, at a time when most investors did not consider it a serious prospect), Head of International Cooperation for the UK All-Party Parliamentary Group for Longevity Secretariat, Founder of Aging Analytics Agency (the primary source of data and analytics for the UK APPG for Longevity) and the Biogerontology Research Foundation (leading Longevity-focused non-profit), and Stefan Hascoet, a Geneva-based financial industry professional with years of experience working for Swiss investment banks and other financial corporations and institutions).

Longevity Triangle



The United Kingdom, Israel, and Switzerland have the most developed economies and healthcare systems.

Switzerland is the initial virtual capital of Longevity Valley. It is the perfect place where advanced technologies and developed financial bases meet.

London has great potential and a vast financial base to develop a Longevity Industry. On the other hand, **Israel** has a proficient technological base and many developments in the Longevity field.

In the future, the nations developing advanced technologies rapidly and need to implement longevity governmental initiatives could become part of the **Swiss Longevity Valley**.

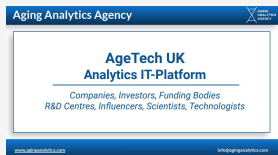
Longevity Activities in Switzerland, UK and Israel



London,
United Kingdom



All Party Parliamentary Group for Longevity



AgeTech UK
IT-Platform



Longevity Industry in
United Kingdom



Practical Applications of
Mitochondria Research
for Human Longevity and
Space Medicine



King's College
Longevity
Summits: AI,
Policy, Finance



Switzerland



Basel Area Life Sciences
Ecosystem



AI Industry in Switzerland
Landscape Overview



Longevity in
Switzerland



Precision Medicine
Clinics in Switzerland



Longevity Industry in
Switzerland 2019



Longevity InsurTech in
Switzerland



Israel



Longevity Industry in Israel 2019

Our International Cooperations



**Biogerontology
Research Foundation**
Prevent. Restore. Preserve.



**AGING
ANALYTICS
AGENCY**



RIBER
RED IBEROAMERICANA DE PROSPECTIVA



**London
Longevity
Society**



World Future Society®
Capítulo Mexicano, A.C.



**Oxford Society Of
Ageing and Longevity**



**CAMBRIDGE UNIVERSITY
LONGEVITY
SOCIETY**

hype
50+



The Millennium Project
global futures research capacity



**GERONTOLOGY
RESEARCH
GROUP**

**Kitalys
Institute**



MOIP
**MOSCOW SOCIETY
OF NATURALISTS**



**Canadian Longevity
Association**



**INTERNATIONAL
LONGEVITY
ALLIANCE**



**Longevity
Swiss
Foundation**



**AGING INTERVENTION
FOUNDATION**
Gerontology Research Group Aging Solutions Division
Bourbome Medical Research Foundation



ותק - התנועה לאיכות ואריכות חיים (ע"ר)
**Vetek (Seniority) - the Movement
for Longevity and Quality of Life**



**Sociedad
Mundial
del Futuro
Venezuela**

Proposal for Cooperation and Collaboration

Swiss Longevity Association is interested in strategic partnerships and collaborations with several relevant counterparties to succeed in its mission to make Switzerland a renowned International Longevity Hub.

I.

Cooperation with Governmental, International and Non-Governmental Organizations

Swiss Longevity Association is interested in cooperation, collaboration, and initiating dialogue with the relevant organizations actively involved in Swiss governance, ranging from government ministries, agencies, and departments, to relevant policy-focused NGOs and think-tanks, to members of Swiss Parliament to establish a framework for the coordinated development of the nation's Longevity politics and governance sphere.

II.

Cooperation and Sponsorship with Biomedical and Financial Institutions

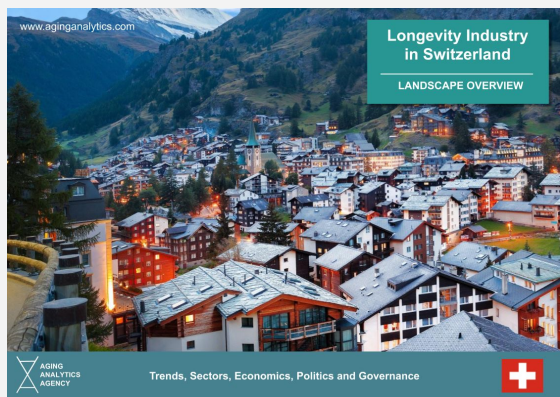
Swiss Longevity Association plans to work with several key Swiss Longevity Industry participants and stakeholders to develop a framework and blueprint for a Government-led National Longevity Development Plan to increase the national HALE of all Swiss citizens. The scope of this plan also includes financial reform to boost the Swiss GDP and reduce the economic burden of an aging population. To support this sphere of activity, the Swiss Longevity Association is keen to work alongside large Swiss financial institutions to roadmap initiatives and policy proposals capable of turning the problem of the aging population into the economic opportunity of Healthy Longevity.

III.

Donations from Individual and Institutional Sponsors

To bootstrap its activities in the realms of Longevity policy, politics, governance, and synergetic industry development, the Swiss Longevity Association is seeking donations from key institutional and individual sponsors that are keen to see the nation manifest its latent strengths and prospects and become the leading Longevity nation that it has the potential to be.

This report offers key insights and conclusions that can serve as major inputs for many of Swiss Longevity Association's major goals for its 2019 - 2020 agenda, and can serve to significantly inform the overall formulation and strategy of its initiatives to support the development of the Swiss Longevity ecosystem, and to help make Swiss an international leader in Longevity biotechnology, biomedicine, policy, politic, governance and financial reform.

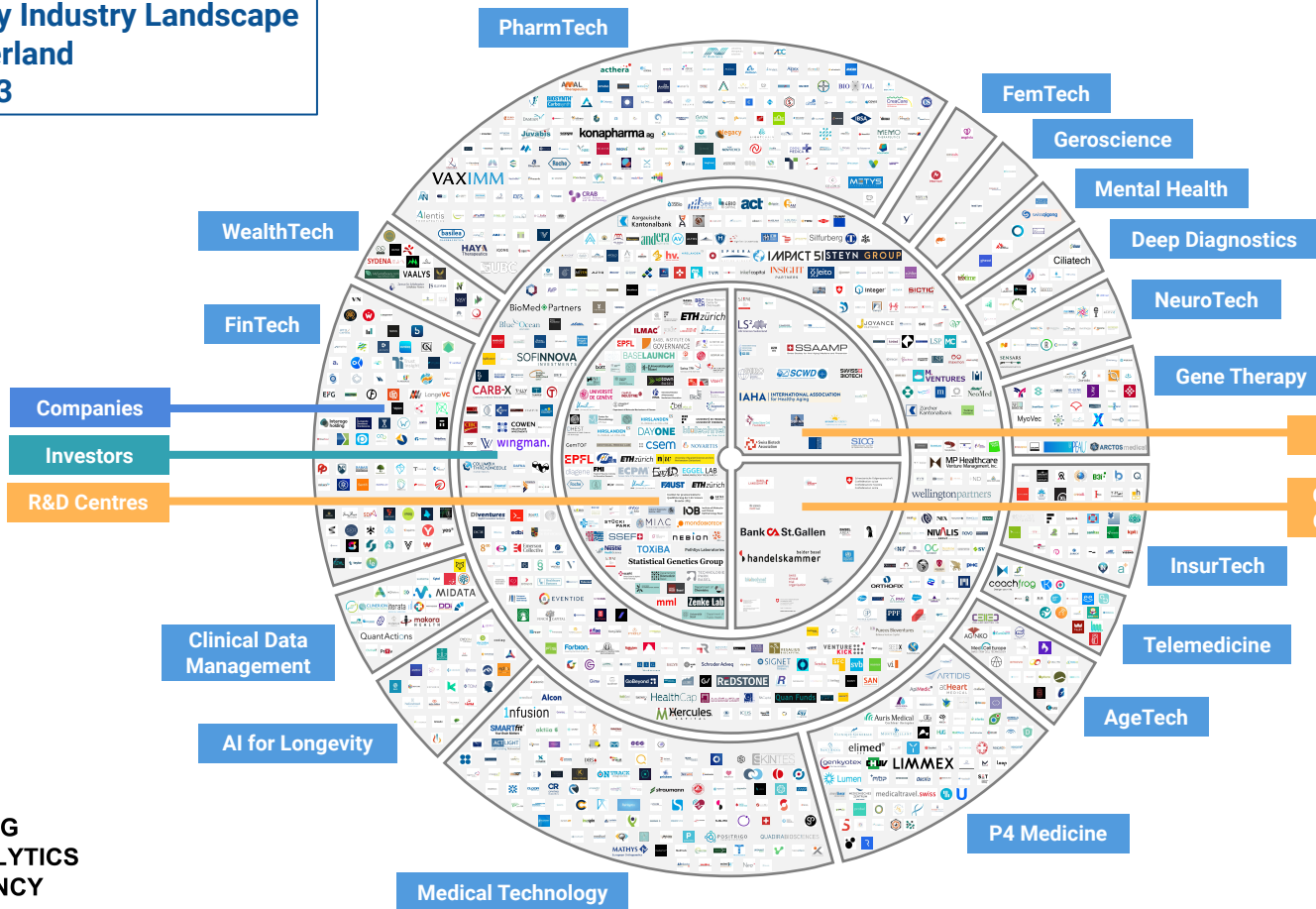


Deep Knowledge Group subsidiary Aging Analytics Agency will release a comprehensive analytical case study that delivers an end-to-end landscape overview of the Longevity Industry in Switzerland, identifying all significant players in the nation's Longevity ecosystem, ranging from companies to investors, governmental organizations, non-profits, R&D hubs and more, identifying key trends and outlining projections for the industry's near-future.



Longevity Industry Landscape in Switzerland 2021 / Q3

Companies – 650+
Investors – 300+
R&D Centres – 100
Non-Profits – 15
Governmental Organizations – 15



Companies

Investors

R&D Centres

Non-profits

Governmental Organizations

Swiss BioTech Clusters and Hubs

BioValley, one of the leading European Life Sciences regions in the world, bringing together three regions from France, Germany and Switzerland

Lausanne

Lake Geneva region: 48 Biotech companies

Geneva

Unofficial “world capital of health”
Home to UN, WHO and Red cross

Switzerland

Basel

Global headquarters of Novartis and Roche. 69 Biotech companies

Zurich

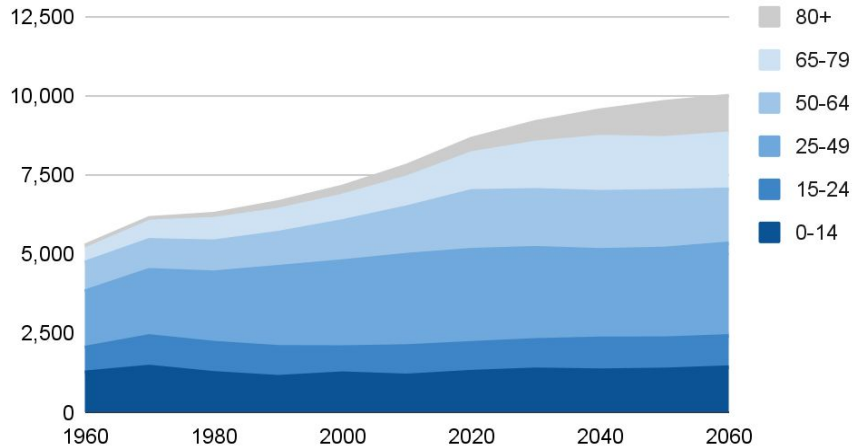
52 Biotech companies

Lugano

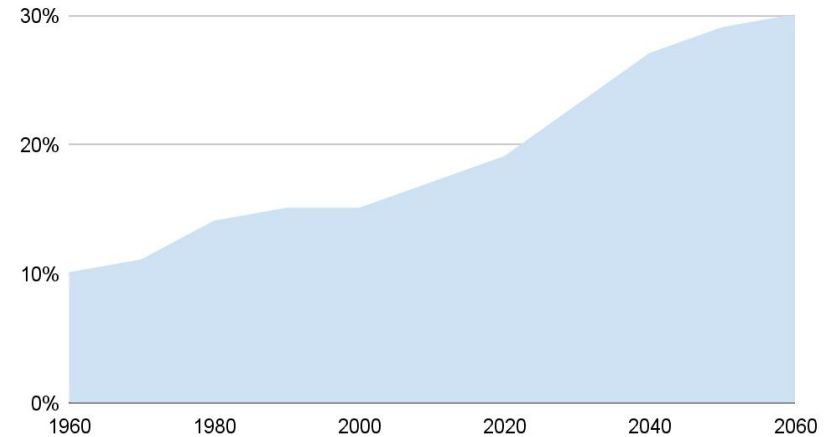
Ticino region: 26 Biotech companies

Aging in Switzerland

Swiss Population by Age Group, Thousands People



Proportion of People Over 65 Years

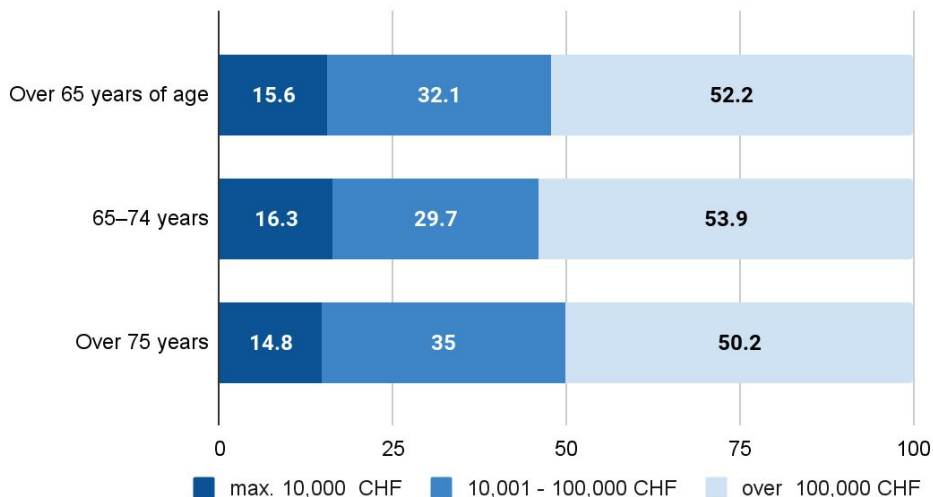


Rapid immigration boosted population growth between 1960 and 2000, while the fertility rate has significantly decreased during the same period. This is because immigrants tend to be younger. Nevertheless, Swiss society is aging, so the number of retired people is expected to rise sharply. According to UN projections, **the proportion of people over 65 years is 19% and will reach 30% by 2060**. These developments bring Switzerland a Longevity Industry range of opportunities, but they are likely to put extra pressure on the state budget to push public spending up.

Source: [United Nations \(2019\), World Population Prospects: The 2019 Revision, Online Edition](#); [OECD Economics Department Long-term Model](#)

Financial Well-Being of Swiss Retirees

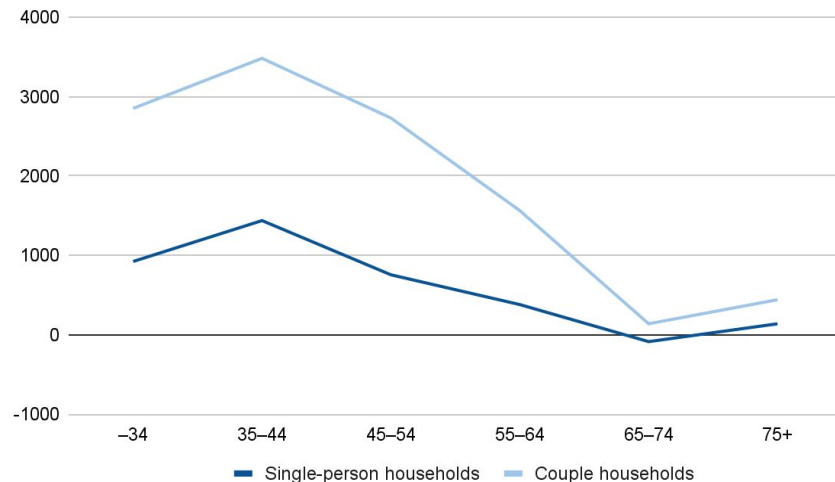
Proportion of People Aged 65 and Over with Liquid Assets, in Percent



Balances on bank and post office accounts and total value of shares, bonds and investment funds of all household members (gross liquid household assets).

Source: [Poverty in old age, update 2020 by Federal Statistical Office \(FSO\)](#)

Average Savings by Age Group, in CHF per Month

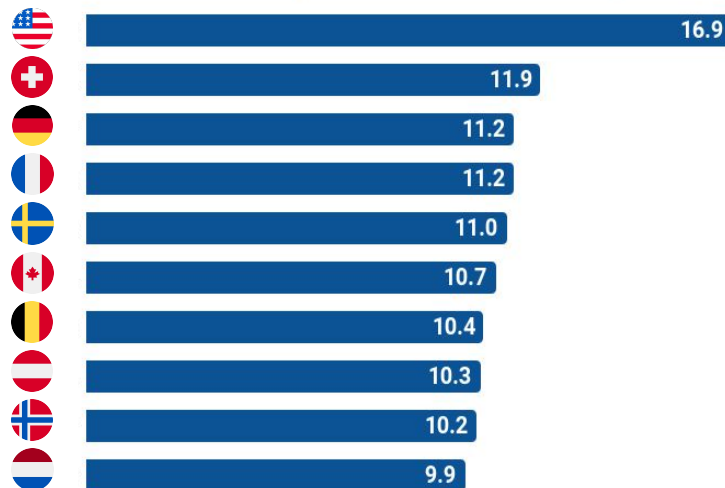


Savings = income - all expenditure from a household's gross household

Financial prospects for elderly Swiss are pretty lucrative. According to FSO data, **more than half of people aged 65 have savings over 100k CHF**. Furthermore, the income of the average aged Swiss household exceeds its expenditures that allow people do not to spend their savings even after retirement.

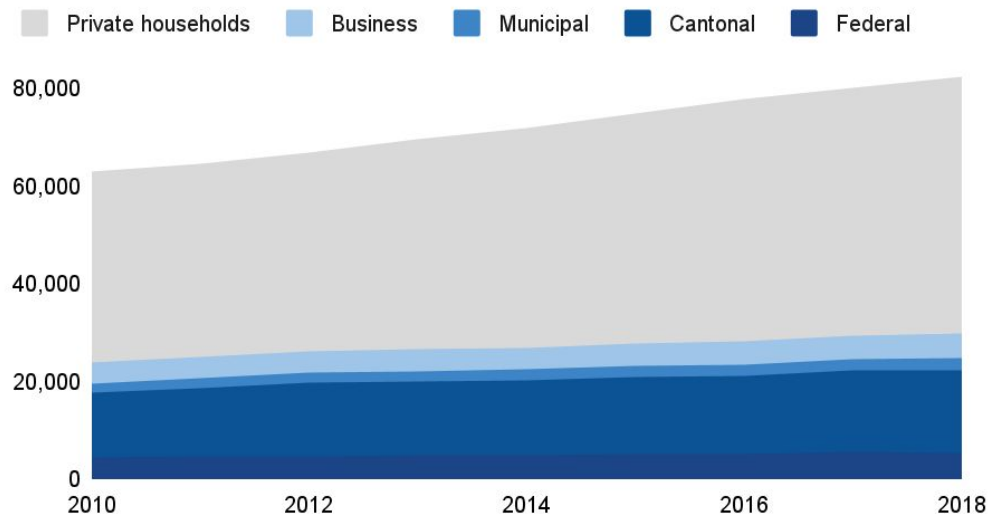
Healthcare Spending in Switzerland

Healthcare Expenditures as % of GDP, 2018



Source: [FSQ](#), 2018

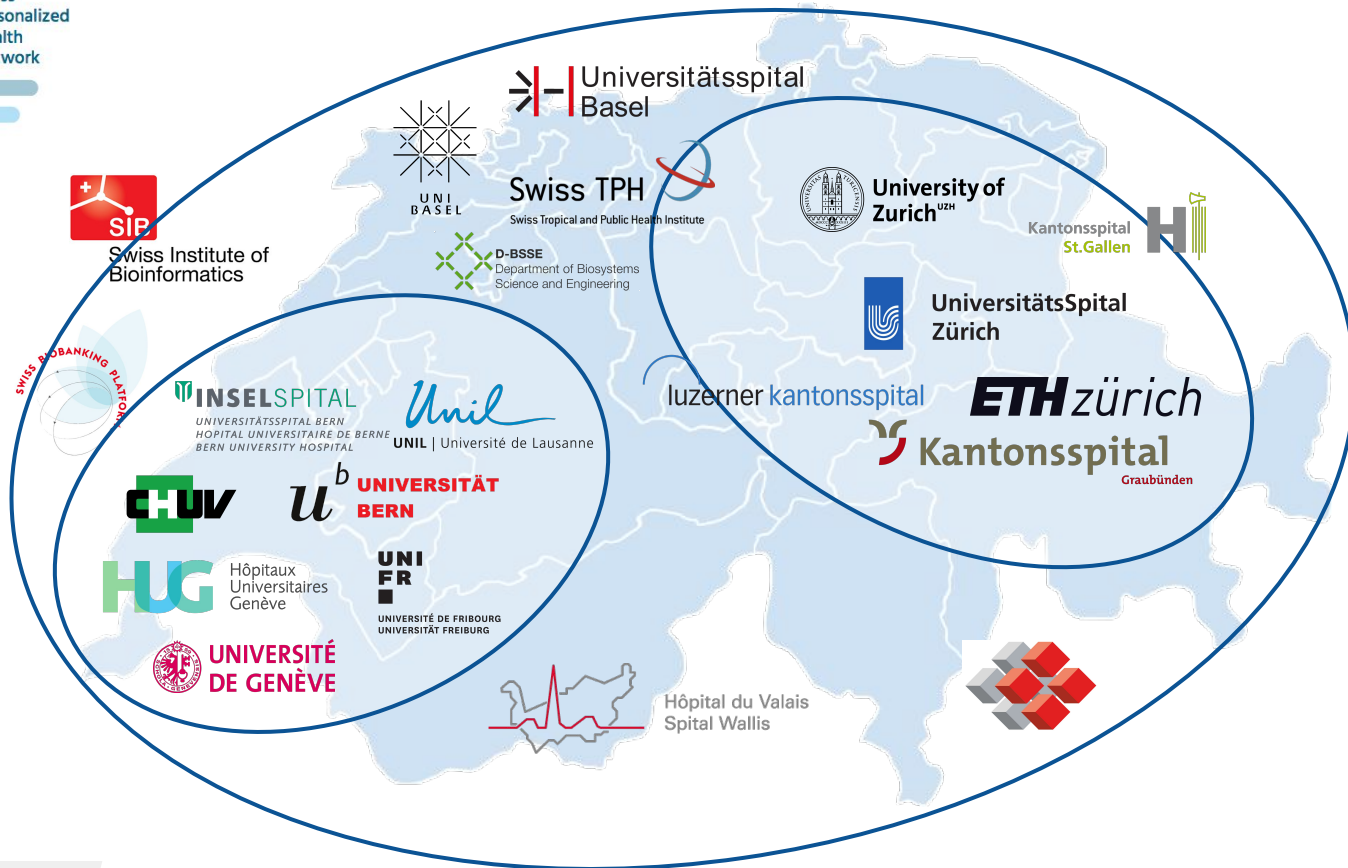
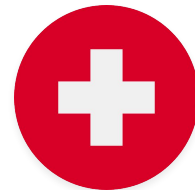
Healthcare Spending and Financing in Millions CHF



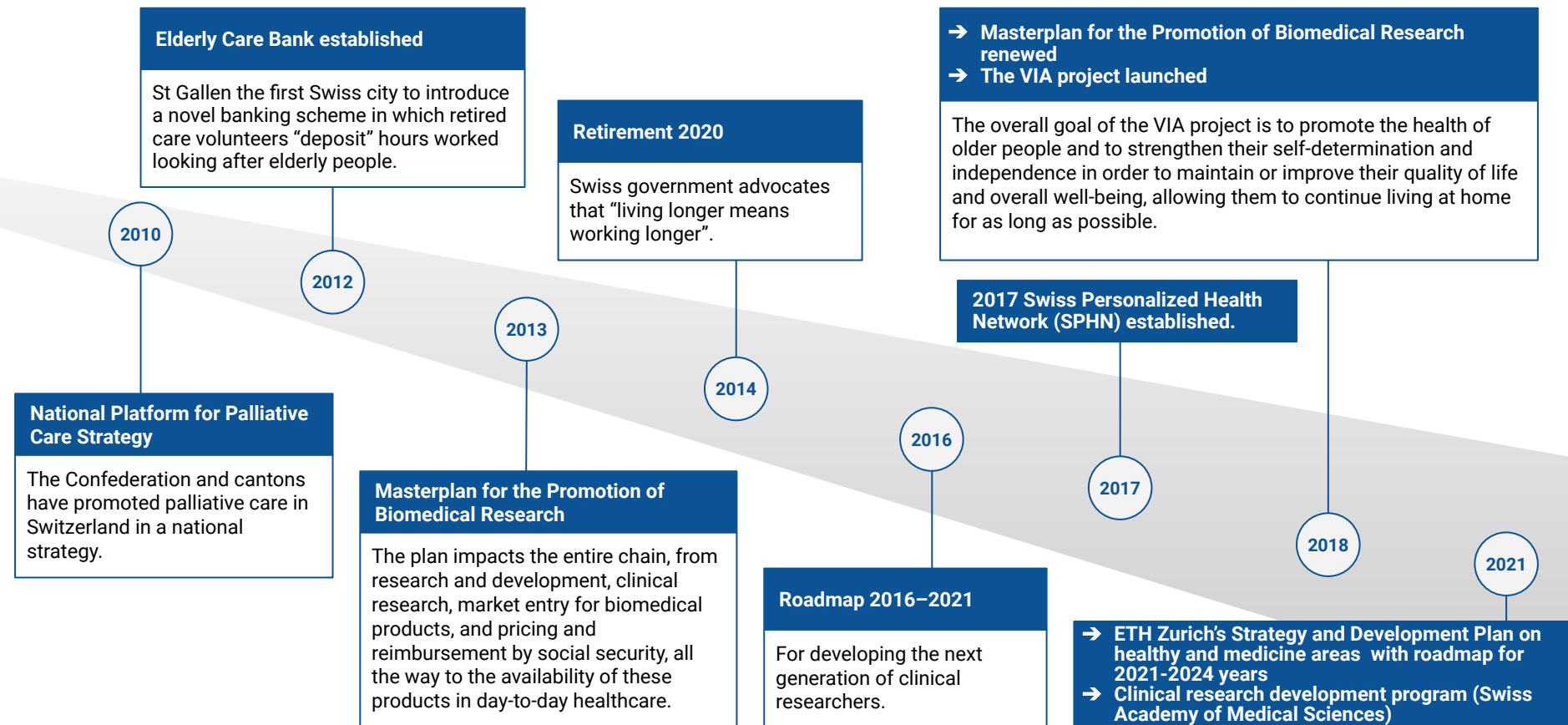
Source: [FSQ](#), 2018

Switzerland is second among OECD member countries in terms of healthcare spending as % of GDP. The latest figures show that the total costs of the Swiss healthcare system are comparatively high and that they are rising every year. In 2018, **total expenditure raised by 2.8% to 81.9 billion CHF**. The most notable contributor to financing the Swiss healthcare system is private households that account for 64% of the total spending. Among state financing, which is constituted by federal, cantonal, and municipal budgets, the most significant contributor is Swiss cantons.

Swiss Personalized Health Network (SPHN)



Timeline of Swiss Government Involvement in Longevity



15 Swiss Government Organizations Focusing on Aging and Longevity



swiss
clinical
trial
organisation

Swiss Clinical Trial
Organisation



Swiss Personalized
Health Network



biotechnet
switzerland

Biotechnet



SystemsX.ch



life sciences
cluster basel

Life Science
Cluster Basel



**BASEL
AREA**
MORE TO DISCOVER

BaselArea.swiss



BASEL
LANDSCHAFT

Administration of the
Canton of
Basel-Landschaft



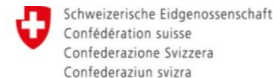
Bank  St. Gallen

St. Gallen Elderly
Care Bank



Federal Department of Economic Affairs,
Education and Research EAER
Agroscope

Federal Department of
Economic Affairs,
Education and Research



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Federal
Statistical Office FSO




 **handelskammer**
beider basel

Basel Chamber of
Commerce



Swiss Biobanking
Platform



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Confederation
Commission for Technology and Innovation CTI

Swiss Federal Commission
for Innovation and
Technology



WHO



Canton
of Basel-Stadt

15 Swiss Non-Profit Organizations Focusing on Ageing and Longevity



**UZH
IREM**

Institute for
Regenerative Medicine



LS²
Life Sciences Switzerland

Life Sciences
Switzerland



**SWISS
BIOTECH**

Swiss Coordination
Committee for Biotechnology



**health2030
genome center**

Health 2030 Genome
Center



GERO
Gerontological
Economic
Research
Organization

Gerontological Economic
Research Organization



BIOVALLEY

BioVaalley



FNSNF
SWISS NATIONAL SCIENCE FOUNDATION

Swiss National
Science Foundation



**Swiss Stem Cell
Foundation**

Swiss Stem Cell
Foundation



Schweizerische Gesellschaft für Gerontologie
Société Suisse de Gériatologie
Società Svizzera di Gerontologia
SGG SSG

Swiss Society of
Gerontology



Swiss Society for Aging Research

Swiss Society for
Aging Research



**THE GENEVA
FOUNDATION**
The future of military medicine. Today.

The Geneva Foundation for
Medical Education and
Research



SIRM
Swiss
Institute for
Regenerative
Medicine

Swiss Institute for
Regenerative Medicine



**VELUX
STIFTUNG**

Velux Stiftung



**Swiss Biotech
Association**

The Swiss Biotech
Association



**VONTOBEL
-STIFTUNG**

Vontobel Foundation

10 Swiss Journals Focusing on Ageing and Longevity



Cells



Frontiers in Aging Neuroscience



Frontiers in Genetics



Frontiers in Neurology



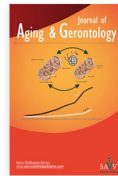
Journal of Personalized Medicine



In Vivo



International Journal of Molecular Science



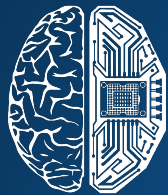
Journal of Aging & Gerontology



Public Health Genomics



Tissue Engineering and Regenerative Medicine Journal



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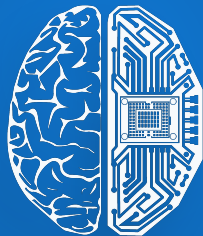
www.dka.global
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AGING
ANALYTICS
AGENCY

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