SWISS MEDICAL
NETWORK

SCIENTIFIC REPORT 2024
SWISS MEDICAL NETWORK

INDEX

1. FOREWORD

SCIENCE AND INNOVATION: DRIVING THE FUTURE OF SPECIALIZED HEALTHCARE RESEARCH

At Swiss Medical Network, there is an unwavering commitment to pushing the boundaries of healthcare innovation. Through the Science and Innovation platform, the research strategy continues to be reinforced with cutting-edge clinical and translational research. In 2024, continuity in research policies is ensured, alongside the launch of pioneering, highly specialized platforms that redefine excellence in the field.

In clinical research, the focus remains on multi-site and multi-domain prospective studies, with a strong emphasis on oncology, ophthalmology, orthopedics, surgery, and internal medicine. Meanwhile, translational research efforts are accelerating the development of personalized therapeutic approaches in MedTech and biomolecular applications, bridging the gap between discovery and patient care.

A landmark achievement this year is the reinforced partnership with the European Institute of Oncology in Milan, formalized in late 2023. This strategic collaboration, which includes the appointment of Professor Roberto Orecchia as Visiting Professor at Campus Genolier, fosters high-level scientific exchange and strengthens its position as a leading force in oncological research

Further elevating research capabilities, the launch of the Clinical and Translational Research Trial Unit at Campus Genolier marks a significant milestone. Under the leadership of Professor Lana E. Kandalaft, appointed as Chief on October 1st, this unit will drive phase II and III clinical trials while pioneering early-stage research in oncology and vaccinology – ensuring that groundbreaking therapies reach patients faster than ever before.

Additionally, the collaboration with the newly established Genolier Innovation Hub is set to accelerate the integration of cutting-edge biomedical advancements into clinical practice. At the same time, the Genolier Innovation Network will foster dynamic interactions between Swiss Medical Network partners, promoting co-creation and eliminating operational silos to maximize research impact.

Ultimately, 2024 is not just a year of progress – it is a year of transformation. By seamlessly integrating scientific breakthroughs into clinical practice, Swiss Medical Network is shaping the future of patient care, ensuring that medical innovation translates into real, life-changing outcomes.

Jacques Bernier, MD
Chief Science Officer
Swiss Medical Network

2. KEY MESSAGES AND FIGURES

EMPHASIS ON INNOVATION

- Swiss Medical Network aligns its priorities with ongoing biomedical research initiatives in collaboration with the Genolier Innovation Hub, Genolier Innovation Network and other scientific partners.
- Swiss Medical Network's research platform Science and Innovation plays a pivotal role in expediting the transition of innovative solutions to clinical practice, particularly in precision medicine.
- Collaboration with external entities: Science and Innovation places a strong emphasis on collaboration, working closely with federal and international organizations such as the Réseau Romand d'Oncologie, ETHZ-Zurich, EPFL-Lausanne, SAKK-Bern, EORTC-Brussels, IRCAD-Strasbourg, IEO-Milan, and more.

FOCUS ON RESEARCH PROGRAMS

- Swiss Medical Network is actively involved in translational, clinical and technology-driven research.
- It also initiates research programs through Science and Innovation to promote access to value-based medicine and integrated care.

STRUCTURE AND ORGANIZATION

- Science and Innovation creates «bench to bedside» ecosystems to ensure access to clinical studies at Clinique de Genolier and other Swiss Medical Network sites.
- It strongly and actively supports the establishment and development of the newly created Clinical and Translational Research Unit within the Campus Genolier, made up by the Clinique de Genolier, Genolier Innovation Hub and Clinique Nescens. The Campus Genolier is a multidisciplinary healthcare and innovation hub in Switzerland, integrating medical services, clinical research, and entrepreneurial initiatives to foster collaboration between healthcare professionals, researchers, and biotech companies.
- It facilitates coordinated efforts among researchers within the Swiss Medical Network, including the consolidation of databases.
- The organization forms partnerships with key Swiss institutions engaged in biomedical research, such as Biopôle in Lausanne and StartUp Club SITEM-Insel in Bern.

OPERATIONAL ASPECTS

- Science and Innovation plays an active role in prospective clinical trials, ensuring adherence to rigorous quality assurance protocols and bioethical standards.
- It expands its scientific focus to include emerging fields such as data science, digital health, and genomics.
- The organization proactively anticipates and tracks researchers' scientific needs in real time.
- It organizes events exclusively dedicated to fostering innovation.
- Additionally, Science and Innovation supports the development of knowledge and skills by promoting scientific education and training programs.

SCIENCE AND INNOVATION: KEY FIGURES

14

Clinics with active research programs

16

Research programs

5

Main research areas:

Oncology
Ophthalmology
Orthopedics
Surgery
Genomics

124

Authored/co-authored publications

87

Impact Factor (2-10)

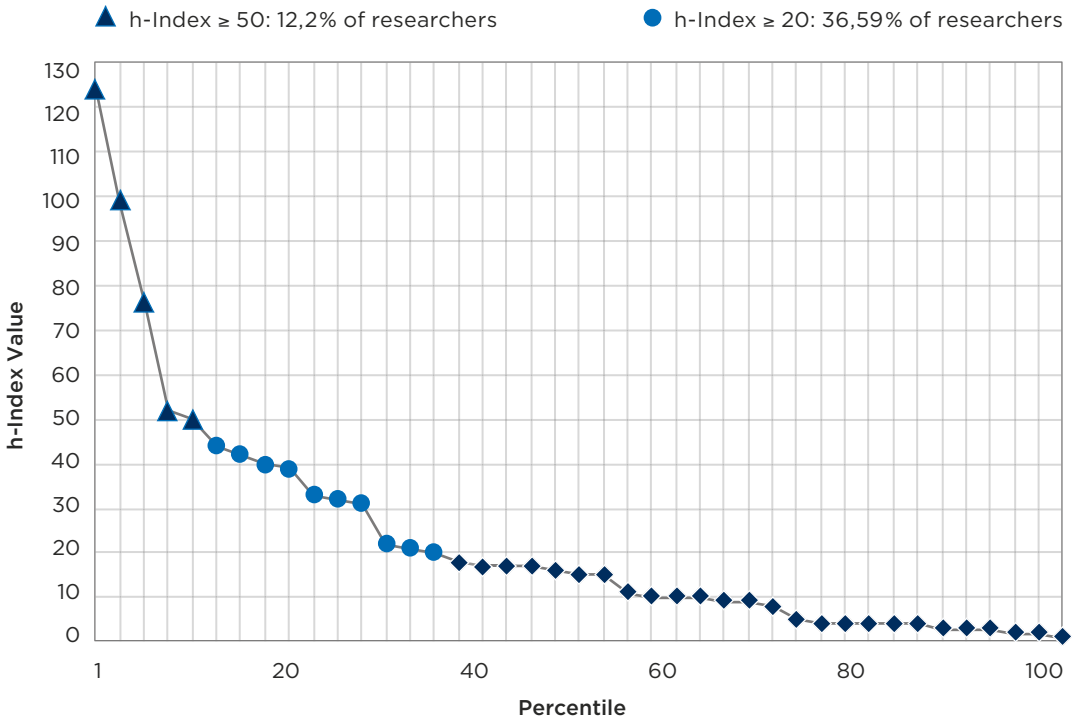
2

Impact factor >50

SCIENCE AND INNOVATION: H-INDEX

The «h-index» is an additional metric used to measure both the productivity and citation impact of a scholar's publications. It is calculated based on the number of an author's published papers and the number of citations those papers have received, as indexed in the Scopus database, which is a large abstract and citation database covering peer-reviewed literature. The following figure shows the h-index of 41 researchers within Swiss Medical Network.

Percentile Distribution of Scopus h-index of Swiss Medical Network's Active Researchers (n=41) in 2024



We can observe that 36,59% of these 41 researchers have an h-index greater than 20, a threshold that indicates a significant scientific contribution and consistent recognition in the academic community. Additionally, 12,2% of these researchers achieved an h-index exceeding 50, placing them among the most prominent contributors in their respective fields.

These numbers highlight the outstanding scientific caliber of Swiss Medical Networks' research teams. The high concentration of researchers with elevated h-indices reflects the institution's strong emphasis on impactful research, innovation, and leadership in medical science. This distribution underscores Swiss Medical Network's role as a reference pole for advancing knowledge and improving healthcare outcomes through cutting-edge studies and collaborations.

3. TOWARDS STRATEGIC INNOVATION FOR SUSTAINABLE VALUE-BASED OUTCOMES

Addressing complex clinical issues, as is the case for instance in oncology, requires a systematic and phased approach to move from pre-clinical findings to clinical applications. In biomedicine, clinical and translational research is influenced not only by healthcare needs but also by broader societal challenges, including economic pressures and reforms towards value-based healthcare strategies. These factors are especially significant for private entities such as Swiss Medical Network, as they need to not only navigate the complexities of research priorities but also the intricacies of economic and political pressures.

Value-based medicine and research, as described in the «8Ps» framework we developed last year within «Science and Innovation», emphasizes delivering healthcare that maximizes patient outcomes while optimizing the use of resources. This approach shifts the focus from volume-based care to value-driven solutions by integrating personalization, prevention, and participation. By leveraging advancements in digital health, genomics, and data science, value-based medicine ensures that each patient receives tailored care that not only addresses their immediate medical needs but also aligns with their long-term health goals and preferences. This paradigm shift also promotes efficiency by prioritizing treatments and interventions that deliver the greatest measurable benefit.

Innovation plays a pivotal role in enabling value-based medicine. The «8Ps» framework highlights how predictive analytics, precision therapies, and participatory health models empower clinicians and patients alike. Technologies such as artificial intelligence, wearable devices, and digital health platforms facilitate proactive monitoring and early intervention, minimizing complications and reducing costs. Furthermore, fostering partnerships across disciplines – between healthcare providers, researchers, and technology developers – accelerates the integration of groundbreaking innovations into clinical practice. This holistic, patient-centered approach ensures that innovation is not only technological but also transformative in improving health outcomes and enhancing the patient's experience.

Currently, there is a pressing need to prioritize biomedical research initiatives that offer clear value in terms of patient outcomes and cost-effectiveness. Innovations such as digital health tools and AI-driven diagnostics play a pivotal role in achieving these objectives and expanding access to care. Furthermore, the integration of real-world evidence and patient-reported outcomes into research methodologies is essential for meeting these goals.

At Swiss Medical Network, our priorities remain centered on:

- Bridging the gap between laboratory advancements and clinical applications, with a strong emphasis on patient-centric requirements;
- Developing robust training and educational platforms;
- Facilitating co-creation and cross fertilization among the numerous healthcare domains.

Finally, having the ability to maneuver through the intricate regulatory and ethical landscapes is crucial for any scientific endeavor. It is imperative for private entities to maintain compliance with ethical and regulatory standards while advancing cutting-edge solutions and research.

4. RESEARCH

RESEARCH STRATEGY

Science and Innovation encompasses a broad spectrum of activities, including prevention, diagnosis, treatment, and post-therapeutic monitoring. Its strategy, grounded in evidence collection, aims to evaluate the safety and efficacy of diagnostic procedures and treatment regimens, all while advancing value-based medicine.

In 2024, Swiss Medical Network's research teams specializing in diagnostic imaging achieved significant milestones, particularly in theranostics, by pioneering non-invasive imaging techniques designed to enhance early and precise disease detection. In parallel, new digital health solutions were explored to improve patient access, enable real-time monitoring, and optimize healthcare delivery through virtual platforms.

Building on these advancements, collaborative efforts continue to focus on developing innovative treatments while deepening insights into the natural history of diseases and their progression post-treatment. This holistic approach integrates translational research, 4Ps medicine (predictive, preventive, personalized, and participatory), and rigorous outcome measurement to improve patient care. Together, these initiatives demonstrate a unified commitment to advancing healthcare quality and fostering innovation in biomedical research.

Swiss Medical Network currently conducts numerous scientific programs along three primary axes: clinical research, translational research, and technology-driven research. All these initiatives are rigorously developed in compliance with applicable national and international regulations and directives, including quality assurance, audits, GCP (Good Clinical Practice), and GMP (Good Manufacturing Practice).

Research targets overview in 2024

CLINICAL	TRANSLATIONAL	TECHNOLOGY-DRIVEN
– Clinical Phase II – III studies – New Techniques: Intervention Radiology, Microsurgery	– Genomic-driven Therapies – Stem Cells Technology – Regenerative Medicine	– High-precision Radiotherapy – Theranostics – Ophthalmology (Glaucoma, Retina)

As a general policy, Science and Innovation adheres to the roadmap outlined by the Swiss Academy of Medical Sciences in their recent White Paper *Action Plan for Patient-Center Clinical Research*, by M. Tapernoux and C.L.A. Bassetti. Published in the *Bulletin des médecins suisses* in 2022 (Volume 103, Pages 179–180) this document presents a seven-objective action plan to advance patient-centered clinical research.

1 Create a national platform to coordinate publicly funded stakeholders in clinical research

2 Establish strong partnerships with society, citizens, and patients

3 Promote a healthcare system that systematically integrates clinical research: good care comes with – and from – good science

4 Invest in the development of innovative and dynamic clinical research approaches, designs, and technologies enabled by digital tools

5 Strengthen translational, multidisciplinary, and integrated clinical research teams

6 Ensure an environment that is attractive to clinical and health researchers and support them at all career levels

7 Increase the efficiency and accelerate the delivery of clinical research by reducing the complexity of regulatory and data-related processes

RESEARCH ORGANIZATION AND STRUCTURE

EXECUTIVE COMMITTEE

The Executive Committee serves as a governing body with advisory and supervisory functions, reporting directly to Swiss Medical Network's Board of Directors. Its primary role is to support and promote research activities across all sites.

SWISS MEDICAL NETWORK SCIENTIFIC COMMITTEE

The Swiss Medical Network Scientific Committee coordinates plans and policies between Swiss Medical Network and related entities, aiming to take concerted actions and foster cooperation. Its focus lies in:

- Establishing pathways for high-quality research;
- Encouraging the creation and development of specialized research units;
- Strengthening collaborations with internal and external research institutes;
- Actively supporting fundraising activities, including those of the Genolier Foundation;
- Allocating research budgets effectively;
- Advising on financial measures for submitted scientific projects.

PROJECT STEERING COMMITTEE

The Project Steering Committee comprises physicians from various specialties and sites within Swiss Medical Network. It includes experts in oncology (medical oncology, radio-oncology, and oncological surgery), orthopedic surgery, ophthalmology, and cardiology. The committee pursues three main objectives:

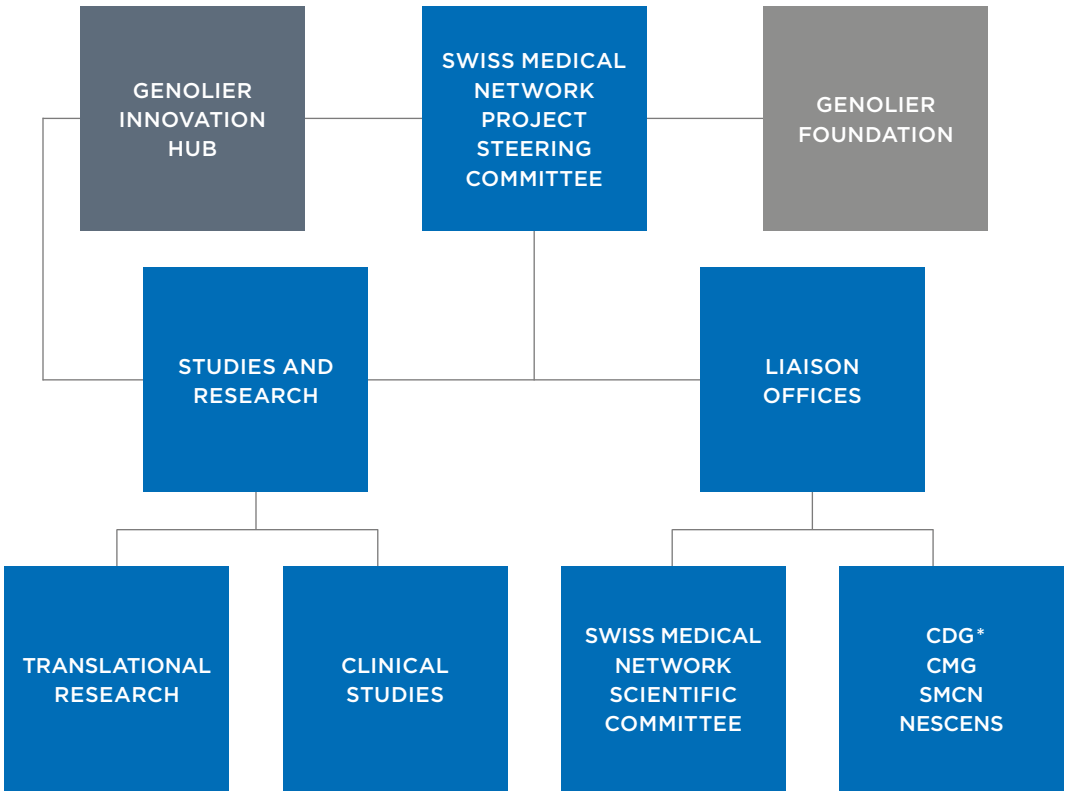
- Its multidisciplinary composition aims to strengthen Swiss Medical Network as a biomedical research network;
- Through the leadership of its members, the committee fosters innovation through participative and interactive processes within Swiss Medical Network and with national and international research bodies;
- It promotes research strategies that enhance the mutual integration of the Genolier Innovation Hub and Swiss Medical Network's scientific platforms.

Dedicated liaisons work to harmonize plans and policies across these three entities, ensuring strategic cooperation in the development of research programs within Swiss Medical Network and with related organizations.

Swiss Medical Network's research initiatives comply with the recommendations of the Swiss Academy of Medical Sciences and adhere to the guidelines of cantonal bioethical authorities.

The figure below illustrates the structures, bodies, and research axes that comprised the organizational framework of the Campus Genolier and Swiss Medical Network's global platform in 2024. This configuration is set to evolve significantly in 2025 with the integration of new research units within Swiss Medical Network and the launch of the Genolier Innovation Hub. As part of this evolution, the governance bodies of the Swiss Medical Network research platform will undergo a strategic reconfiguration to enhance coordination, decision-making, and scientific oversight. Additionally, the creation and development of a dedicated Translational and Clinical Trial Unit will reinforce the network's commitment to cutting-edge research, facilitating the bridge between laboratory discoveries and real-world clinical applications. This transformation will be further strengthened by the expansion of external partnerships, fostering collaborations with leading academic and research institutions both in Switzerland and internationally. Together, these initiatives will position Swiss Medical Network as a key player in advancing innovative, patient-centered research and accelerating the translation of scientific breakthroughs into clinical practice.

Structure, Bodies and Research Axes of Swiss Medical Network's Scientific Platform and Campus Genolier in 2024



* CDG: Clinique de Genolier
CMG: Centre Médical de Genolier
SMCN: Swiss Multidisciplinary Cancer Network

RESEARCH GOVERNANCE

EXECUTIVE COMMITTEE

(In alphabetical order)

Jacques Bernier
Chief Science Officer
Swiss Medical Network

Specialist in Radio-Oncology and Nuclear Medicine from the University of Liege in Belgium, Jacques Bernier is the Chief Science Officer of Genolier Innovation Network. From 2006 until 2019, he was Head of the Radiation Oncology Department at Clinique de Genolier and Medical Director of Centre d'Oncologie des Eaux-Vives. He is the author / co-author of more than 140 scientific publications in peer-reviewed journals and more than 200 communications in national and international meetings.

Stanley Hautdidier
Director
Clinique de Genolier

An engineer by training and holding a master's degree in management, Stanley Hautdidier began his career with the world leader in endoscopy and operative integration, Karl Storz Endoskope, as sales manager for integrated operating rooms on behalf of the Belgian, Luxembourg and Swiss subsidiaries. Subsequently, he was CEO of an orthopedic company in Switzerland, in parallel with a consultant activity in the health sector.

Antoine Hubert
Delegate of the Board
of Directors
Swiss Medical Network

Prior to acquiring a stake in Clinique de Genolier in 2002 and founding Swiss Medical Network in 2004, Antoine Hubert was mainly active in the property and real estate industry, has set up businesses and served as a director to several companies in various industries.

Dr. Michael Montemurro
Representative member
of the medical oncologists
Clinique de Genolier
(Swiss Multidisciplinary
Cancer Network)

Specialized in internal medicine, hematology and medical oncology, Dr. Michael Montemurro held the position of Deputy Physician at CHUV Lausanne from 2016 to 2020 and is the consultant medical oncologist at University College London Hospitals since 2021. He has a noteworthy academic and professional background. His expertise and research contributions, particularly in the field of gastrointestinal cancers and sarcomas, are internationally recognized.

SWISS MEDICAL NETWORK SCIENTIFIC COMMITTEE

(In alphabetical order)

Dr. Matti Aapro
Clinique de Genolier

Prof. Guido Garavaglia
Clinica Ars Medica

Dr. Jacques Bernier
Swiss Medical Network

Dr. Philippe Glasson
President of the
Swiss Medical Network
Scientific Committee

Dr. Daniel Christen
Privatklinik Bethanien

Prof. Oscar Matzinger
Clinique de Genolier

Dr. Christoph Cordier
Medisyn

PROJECT STEERING COMMITTEE

(In alphabetical order)

Coordinators

Dr. Jacques Bernier
Chief Science Officer
Swiss Medical Network

Prof. Walter Weder
Thoracic surgery
Privatklinik Bethanien

Members

Prof. Guido Garavaglia
Orthopedic surgery
Clinica Ars Medica

Prof. Oscar Matzinger
Radiation oncology
Clinique de Genolier

Dr. Volker Kirchner
Medical oncology
Clinique de Genolier

Dr. Gabor Sütsch
Cardiovascular diseases
Privatklinik Bethanien

Dr. Antoine Leimgruber
Nuclear medicine
Clinique de Genolier

Prof. Victor Valderrabano
Orthopedic Surgery
Schmerzklinik Basel

Prof. Kaweh Mansouri
Ophthalmology
Swiss Visio Network

Dr. Fabian Von Knoch
Orthopedic surgery
Privatklinik Bethanien

5. ONGOING RESEARCH DOMAINS

THE FOLLOWING SECTION COVERS THE VARIOUS ONGOING RESEARCH ACROSS MEDICAL SPECIALTIES.

INTEGRATED CARE

Alain Kenfak (Réseau de l'Arc), Esthelle Le Gallic de Kerizouët (VIVA Health Suisse)

RÉSEAU DE L'ARC: 2024 REVIEW OF CLINICAL RESEARCH PROJECTS WITHIN THE FRAMEWORK OF INTEGRATED CARE

Since early 2024, Réseau de l'Arc has launched an innovative capitation-financed integrated care initiative. This groundbreaking model aims to improve care coordination, effectively finance and organize prevention, while ensuring optimal care quality and cost control. Its implementation has required significant organizational changes within the regional healthcare system, including the creation of new units and functions, the development of tailored tools, and a profound transformation of professional practices and mindsets.

This initiative also offers a unique opportunity for research projects within our institution, including the following studies:

1. VIVA-Réseau de l'Arc Cohort Study

Beneficiaries of the VIVA-Réseau de l'Arc program receive a standardized set of interventions, including an annual health assessment, proactive care coordination, and age-appropriate preventive measures, most of which are free of charge. All participants have provided consent for the use of their data, making this a particularly valuable study cohort.

Building on these shared characteristics, we are implementing a cohort study with regular epidemiological follow-up, including assessments of comorbidities and care needs using the COMID scale. Several subgroups will be studied, including participants involved in adapted physical activity programs and those with neurocognitive disorders.

2. Study on Safety and Quality of Care within the VIVA Cohort

In collaboration with the Swiss Tropical and Public Health Institute (Swiss TPH) of the University of Basel, an in-depth study is underway to evaluate the evolution of safety and quality of care for VIVA beneficiaries. The objective is to analyze the benefits of the integrated care model for both healthcare professionals and patients, with a focus on care quality and satisfaction.

A comparative economic analysis will also assess the quality of care delivered relative to costs, with the aim of optimizing resources while ensuring high standards of care.

3. Economic Efficiency Evaluation of the VIVA Model

The Basel Center for Health Economics (BCHE) at the University of Basel is analyzing the economic and insurance-related aspects of the VIVA integrated care model. Over a

four-year period, an evaluation of service costs will compare the VIVA population with Visana policyholders who have opted for other insurance models in the region.

This analysis aims to demonstrate the economic efficiency of the model and its potential for broader implementation in other healthcare settings across Switzerland.

4. Acceptance of the Model by Insured Individuals and Healthcare Professionals

The success of the VIVA model relies on the engagement of both insured individuals and healthcare professionals. In collaboration with the University of Neuchâtel, a study is being conducted to explore the factors driving acceptance and utilization of the integrated care model by these two key stakeholder groups.

Key questions addressed include:

- How do VIVA beneficiaries in 2024 differ from the eligible population in the region?
- What motivates insured individuals to choose an integrated care model?
- What barriers and facilitators influence healthcare professionals' acceptance?

This qualitative approach will provide insights into the human and social dimensions of this transformation while guiding continuous improvement of the system and its measurement tools.

5. Home Hospitalization and Remote Monitoring of Heart Failure

To ensure optimal continuity of care, a home hospitalization unit has been established, offering tailored care for patients in acute and post-acute phases. Several clinical pathways are being developed.

In partnership with the University of Bern, a study is being conducted to evaluate the feasibility of remote monitoring using artificial intelligence algorithms and to analyze patient and healthcare professional satisfaction.

This pilot study focuses on heart failure patients admitted to emergency or medical services who, upon discharge, receive at-home follow-up with connected devices.

Conclusion

The establishment and follow-up of a cohort comprising several thousand patients, with the regular collection of health, prevention, and care data provides a unique opportunity to adopt a population-based approach under real-world conditions.

Expanding this integrated care model across Switzerland requires high levels of safety and scientific rigor in data analysis. Additionally, this initiative offers a valuable opportunity to gather high-quality data on rural populations, which are often underrepresented in academic research in Switzerland.

Finally, regular evaluation of the model's acceptance by collaborators and partners will allow for ongoing assessment of the transformational impact of integrated care on the healthcare system, ensuring processes are continuously optimized based on feedback and experience.

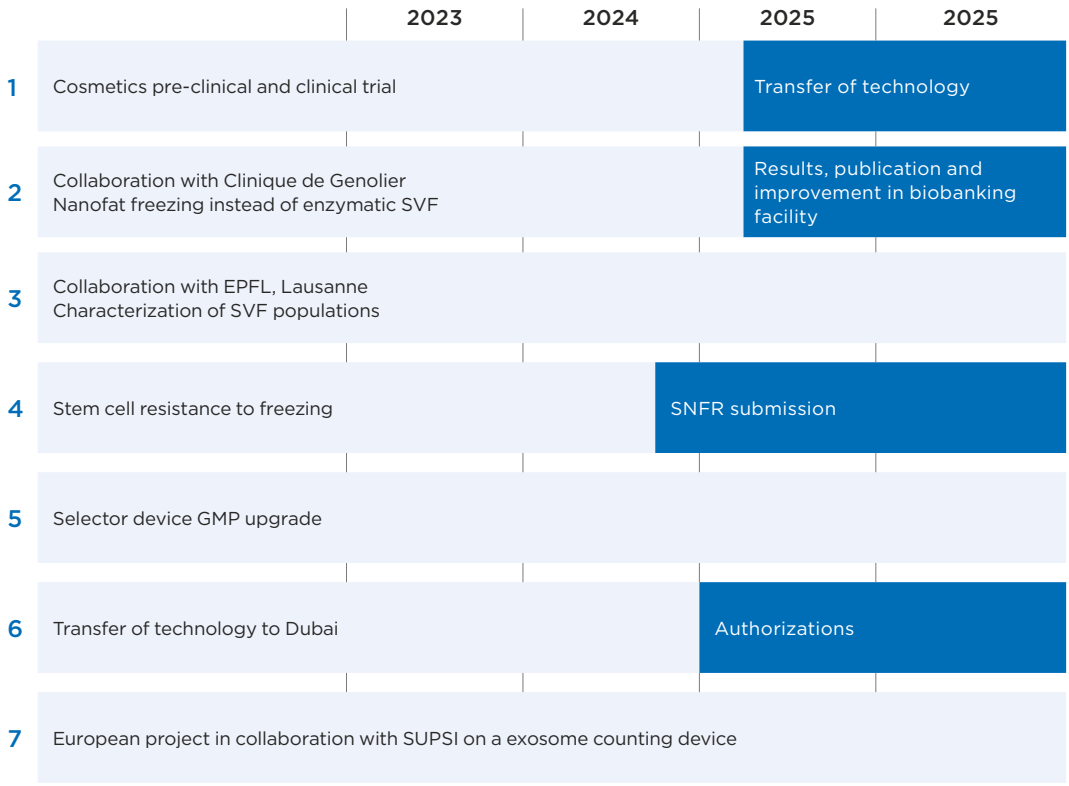
CELL THERAPIES

Gianni Soldati (Swiss Stem Cell Foundation, Lugano)

SUMMARY OF SWISS STEM CELLS FOUNDATION R&D ACTIVITIES IN 2024

Swiss Stem Cell Foundation (SSCF) is a nonprofit foundation created in 2006 dedicated to applied and clinical research and to setup new methods for better patient care. The activity of 2024 has been to restart and implement already existing and new projects. The arrival of a new full time Post Doc position has given SSCF new impulses with the writing of a SNFR project to be submitted in early 2025. The table below offers an overview of the on-going projects of SSCF.

Overview of Ongoing Research Projects of Swiss Stem Cell Foundation



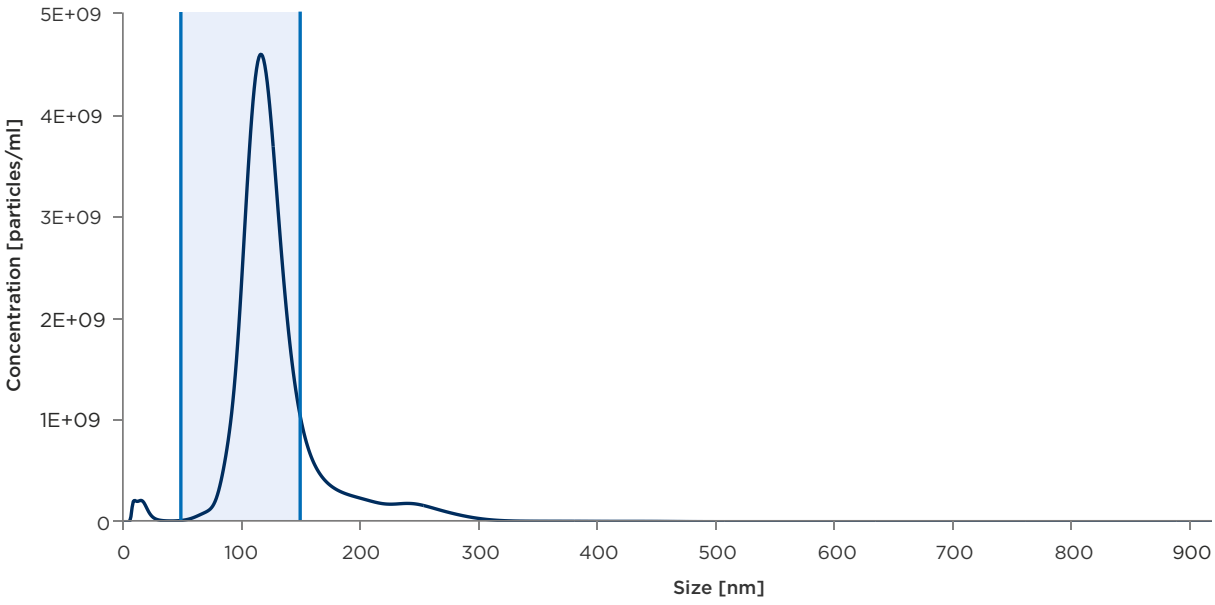
The following content summarizes project by project the research activities of Swiss Stem Cell Foundation during 2024.

1. Exosome project

The aim of this project is the production and characterization of adipose-derived mesenchymal stem cells (ASCs) exosomes with the development of a new protocol to produce a cosmetic cream. ASCs have been shown to produce many soluble factors, extracellular vesicles (EVs), and RNAs, enabling significant autocrine and paracrine activity, which could be exploited as a promising tool for cell-free therapies, in addition to various applications in cell-based therapies. It has been demonstrated that the tissue origin of ASCs and the patient health status influenced functional characteristics of ASCs in terms of differentiation potential, autocrine/paracrine activities, surface marker expression, as well as proliferation. A crucial aspect to obtain a functional secretome for regenerative purposes was underlined in the healthy origin of the entire secretome, as the behavior of the secreted bioactive molecules has been shown to depend on physiological or pathological stimuli received by the cell from the extracellular environment.

A method was developed for the production and characterization of exosomes present in the washing buffers of adipose tissues and in the supernatant of stem cell cultures. The characterization pattern of a supernatant stem cell sample is presented in the graph below.

Characterization Pattern of Supernatant Stem Cell Sample



Extracellular vesicles (EVs) are supposed to be involved in several regenerative processes. EVs are lipid bilayer-enclosed structures that carry bioactive molecules such as proteins, lipids, and nucleic acids. These vesicles act as messengers, transferring molecular cargo from ASCs to target cells, thereby influencing various biological processes. Researchers indicated that ASCs-derived could recapitulate many of the regenerative and immunomodulatory effects of their parent cells, offering a cell-free therapeutic alternative with reduced risks of immune rejection and tumorigenicity. Indeed, ASC-derived EVs have demonstrated significant anti-inflammatory effects by modulating macrophage polarization and inhibiting pro-inflammatory cytokine production. Moreover, EVs have shown to promote angiogenesis through the delivery of pro-angiogenic factors like vascular endothelial growth factor (VEGF) and microRNAs such as miR-126. Furthermore, EVs have been shown to enhance tissue repair by stimulating cell proliferation and migration, while their anti-apoptotic effects support cell survival in damaged tissues. Recent studies have underlined the potential of ASC-derived EVs in pathological conditions such as cardiovascular diseases, neurodegenerative disorders, and wound healings. The understanding of the mechanisms underlying the bioactivity of EVs will enable the optimization of their therapeutic potential.

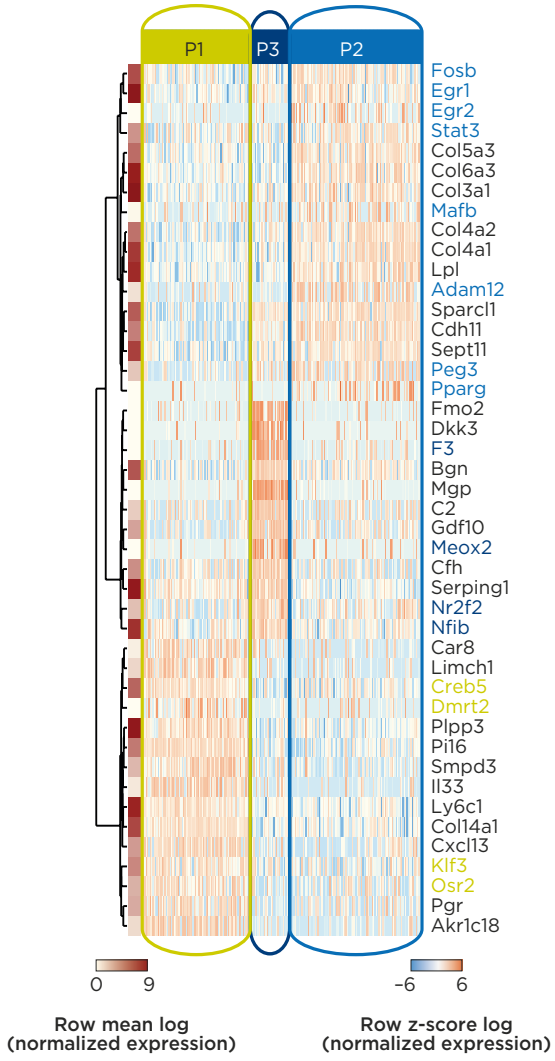
2. Nanofat freezing project

The project aims to evaluate the quality of Nanofat cryopreservation process in comparison to the cryopreservation of stromal vascular fraction (SVF). The goal is to establish a method for cryopreserving mechanically dissociated adipose tissue (Nanofat) for clinical purposes without extracting enzymatically the stromal vascular fraction. As adipose tissue-derived mesenchymal stem cells are becoming the tool of choice for many clinical applications, standardized cryopreservation protocols are necessary to deliver high quality samples. For this purpose, cryopreservation and thawing of adipose tissue under GMP conditions could represent an extremely useful and powerful tool for the direct reinfusion of the tissue. The goal of stem cell-based medicine is to use autologous as well as allogeneic stem cells to enhance or activate innate healing processes and to supplement repair deficiencies. Mesenchymal Stem Cells (MSCs) can be found in several organs and tissues of the human body, including the adipose tissue (AT), whose role and importance has been greatly reevaluated by considering it as the largest endocrine organ interacting of our body. Furthermore, many groups found that adult stem cells derived from white AT can differentiate along multiple pathways raising great hope in regenerative medicine and making MSCs a major candidate for tissue engineering applications. Adipose tissue has been also widely used in plastic and reconstructive surgical procedures where resident stem cells might offer the possibility of fulfilling the key principle of replacing «like for like». Following this principle, it becomes crucial to find the optimal strategy to freeze and store native AT that could be used later in life to repair, substitute, or even regenerate damaged tissues. To maximally preserve cell integrity, it is important to develop an optimized freezing protocol with cryoprotective substances added to protect cells during the freezing and cryopreservation processes. Cryoprotectant agents (CPA) such as dimethyl sulfoxide (DMSO) protect cellular proteins from denaturation. Nevertheless, high concentrations of CPA may induce cellular lesion, having direct toxic effects, a risk that can be limited by reducing the time of cells exposure to CPAs at room temperature.

3. Project in collaboration with the EPFL for the identification and characterization of new cell populations in adipose tissue for therapeutic purposes

The aim of this project is to identify and characterize new cell populations in adipose tissue for therapeutic purposes. Adipocyte development and formation plays an important role in the aetiology of obesity and its co-morbidities. Multiple studies have therefore investigated the adipogenic stem and precursor cells (ASPCs) that give rise to mature adipocytes. However, despite these widespread efforts, the origin and nature of ASPCs remains controversial. We use the resolving power of single-cell transcriptional profiling to molecularly characterize the mouse ASPC-enriched, subcutaneous adipose stromal vascular fraction. A sample of this analysis is shown here below.

Sample of Single-Cell Transcriptional Profiling of Mouse ASPC-Enriched Subcutaneous Adipose Stromal Vascular Fraction

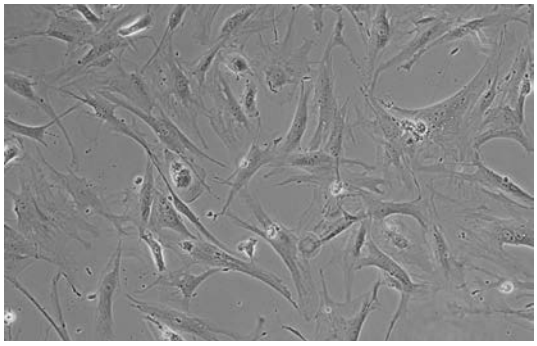


The analysis revealed three distinct subpopulations of which surprisingly one is highly refractory to adipogenesis. Moreover, depleting the initial cell pool of this small (~3%) CD142+ cell population dramatically increases ASPC fat cell differentiation, both in vitro and in vivo. Importantly, we show that these findings extrapolate to humans. Thus, the study is revealing that a hitherto uncharacterized stromal cell population resides within adipose tissue that negatively controls adipocyte differentiation, influencing adipose tissue growth and homeostasis.

4. Stem cell resistance to freezing project

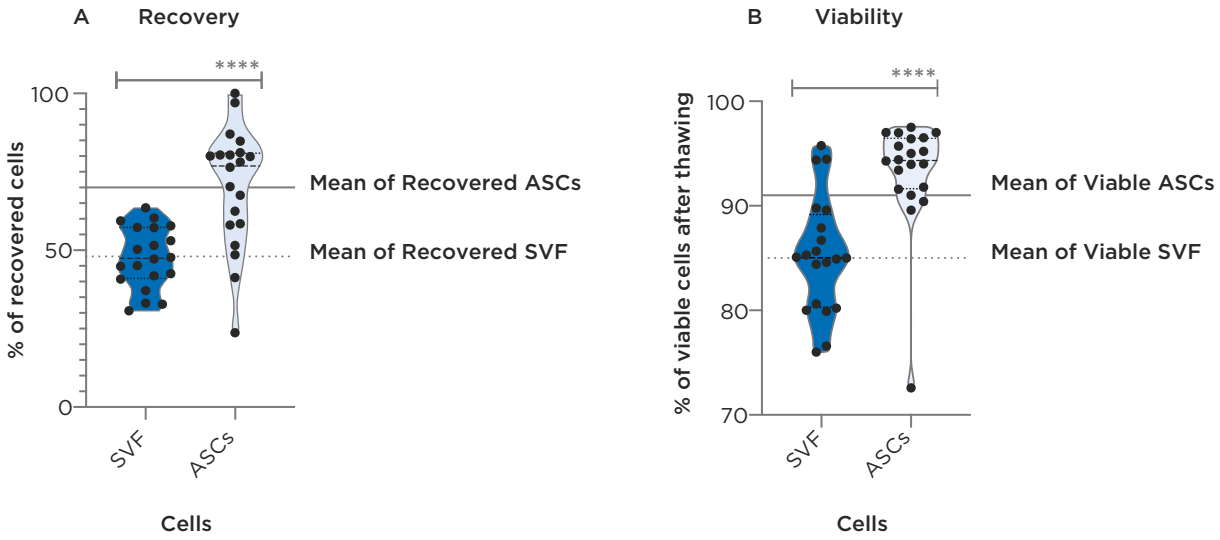
The aim of this project is to characterize the freezing process of adipose-derived mesenchymal stem cells as compared to terminally differentiated cells to understand their better resistance to freezing and thawing cycles and to develop new cryopreservation methods that are more efficient and less harmful to the patient's cells. Once purified, ASCs can undergo cryopreservation for long-term storage and future therapeutic use. The cryopreservation process involves suspending the cells in a cryoprotective agent, such as dimethyl sulfoxide (DMSO), which prevents ice crystal formation that can damage cell membranes. The cell suspension is then gradually cooled to a sub-zero temperature and stored in liquid nitrogen at -196°C. Proper cryopreservation techniques are essential to maintain the viability, proliferation capacity, and differentiation potential of ASCs upon thawing. An illustration of thawed and culture-grown stem cells can be found below.

Thawed and Culture-Grown Adipose-Derived Mesenchymal Stem Cells



Studies have shown that ASCs retain their functional properties after cryopreservation, making them a reliable source for regenerative therapies. The ability to isolate and cryopreserve ASCs efficiently has significant clinical implications. Cryopreserved ASCs can be readily available for autologous or allogeneic transplantation, reducing the time between diagnosis and treatment. Moreover, maintaining a bank of cryopreserved ASCs allows for multiple therapeutic applications from a single tissue harvest, minimizing patient discomfort and procedural risks. Ensuring the quality and functionality of ASCs through standardized isolation and cryopreservation protocols is crucial for their success in clinical applications. As shown below, the main observation has been that thawed ASCs resist better to cryopreservation in terms of viability and count.

Viability and Cell Count of Thawed ASCs post-cryopreservation

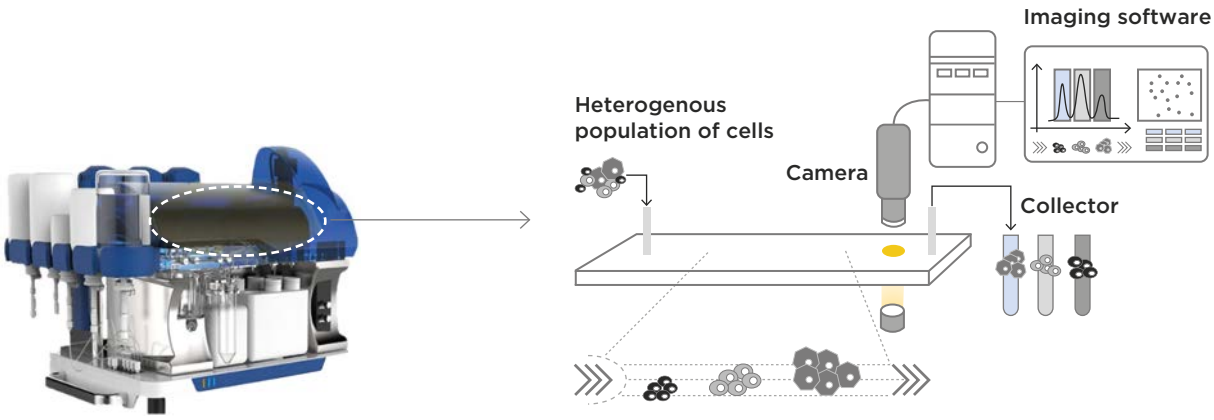


Several research groups have focused on highlighting a marker that could return the state of stemness of MSCs and ASCs, to find out a way to classify cell stemness as well as to understand molecular pathways involved in stemness grade, metabolism and homeostasis. CD38 is a transmembrane glycoprotein involved in several cellular processes, including cell signaling, calcium homeostasis, and metabolism. It functions primarily as an NAD+-dependent enzyme that catalyzes the conversion of NAD+ into ADP-ribose and nicotinamide, which are critical in regulating intracellular calcium levels and cellular stress responses. While CD38 has been demonstrated to be widely expressed in many cell types, its expression levels and functional role could vary significantly between stem cells (including adipose-derived stem cells and mesenchymal stem cells) and terminally differentiated cells. Stem cells such as ASCs and MSCs have been shown to maintain a fine balance between proliferation as well as differentiation and CD38 expression has highlighted to play a crucial role in regulating these ratios. CD38+ MSCs were demonstrated to exhibit an enhanced proliferation potential compared to CD38- MSCs, likely due to CD38 role in calcium signaling and the regulation of NAD+ metabolism. Furthermore, ADP-ribose, a product of CD38 activity, was shown to be involved in maintaining the stemness of CD38-expressing cells, potentially by influencing key signaling pathways such as Wnt, Notch, and Hedgehog, strongly prominent for stem cell maintenance and differentiation. Intracellular calcium levels have been finely regulated by CD38, which in turn modulate various stem cell functions. In stem cells, metabolism has always played a key role in determining cell fate and CD38, through the regulation of NAD+ metabolism, has been displayed to link energy metabolism with cellular stress responses, allowing stem cells to adapt to changes in their microenvironment.

5. Celector device project

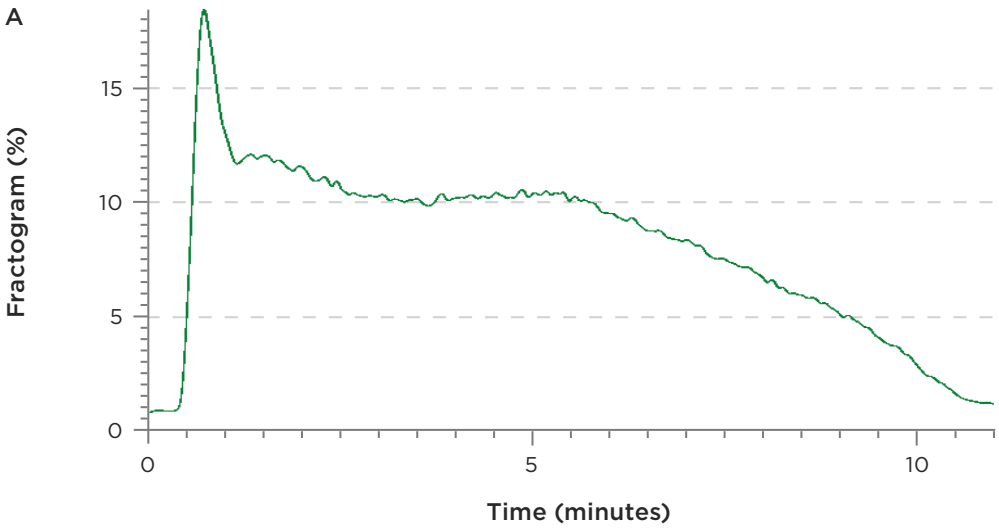
The aim of this project is the GMP upgrade of the Celector device, a device for the microfluidic selection of stem cells from adipose tissue. Celector® (by Stem Sel® S.r.l, Italy) employs a flow-assisted device for cell separation and collection of unlabeled cells where cells are separated following their physical characteristics such as dimension, shape, and density and was already validated from a biological point of view by SSCF in 2023. A scheme of the device can be seen here below.

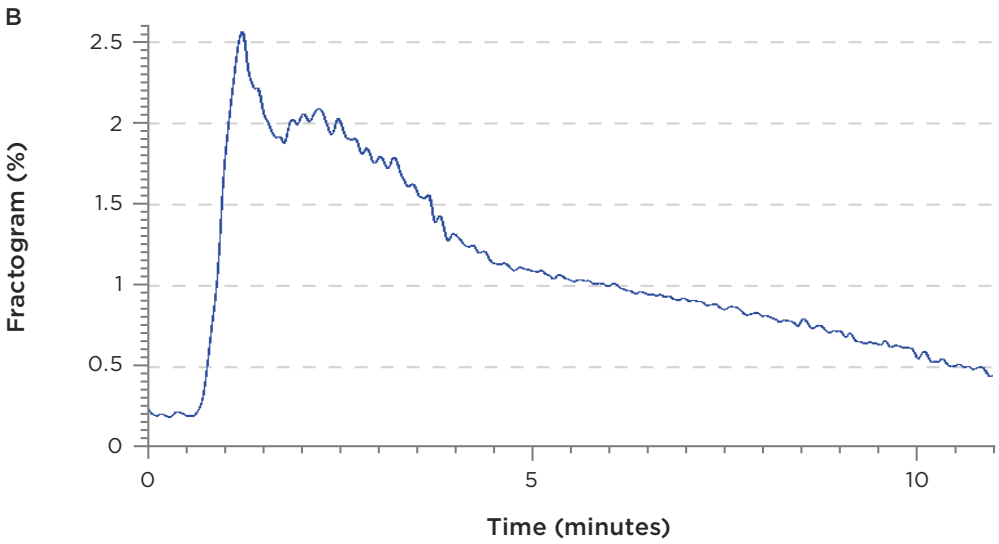
Celector® Device Scheme



In this scheme, we used the Celector® device to fractionate the SVF cells into different cell populations. Indeed, the major advantage of Celector® could be its capacity to isolate the ASCs without manipulation. An example of ASCs fractionation is shown on the next page.

Illustration of Adipose-Derived Stem Cells Fractionation





Celector® could offer a label-free separation based only on cells physical characteristics, avoiding immuno-labelling and preserving physiology and stemness potential. These features could make the Celector® preferable to other separation methods in which cells need to be modified, such as the Fluorescence Activated Cell Sorting (FACS) or the Magnetic Activated cell sorting (MACS). Celector® was used under a laminar flow in a biological safety hood. Cell suspensions were eluted through a laminar flow of mobile phase in a rectangular capillary device that is 40 cm long, 4 cm wide and 250 µm high to achieve the separation. The functioning is based on a newly developed method called Non-Equilibrium Earth Gravity Assisted Dynamic fractionation (NEEGA-DF). Adhesion and contact of cells with the device are totally avoided by the absence of stop-flow sedimentation and by using an elution flow rate able to generate hydrodynamic forces that keep cells away from the channel wall. Due to the combined effect of gravity, working perpendicularly to the flow, and lift forces depending on the morphological characteristics of the sample, the injected cells reach a defined position throughout the channel width during transportation based on their physical features. Cells are eluted at a specified time due to their different well-defined velocities. Bigger and denser cells are the first to exit, followed by the smaller ones.

After biological validation, Stem Sel S.r.l. asked the Swiss Stem Cell Foundation to upgrade the device to GMP conditions. The upgrading program is currently being defined and will include a feasibility study, the development of a sterilization protocol, a media fill in the clean room, and ultimately an inspection by the regulatory body, Swissmedic.

6. Transfer technology to Dubai

In early 2023 Gianni Soldati was contacted by Swiss and Chinese promoters to start the Dubai project, consisting in transferring the Swiss Stem Cell Foundation and the Swiss Stem Cells Biotech technology to Dubai. The first visit to Dubai in November 2023 enabled the inspection of suitable spaces in the city and discussions with potential Middle Eastern investors. Since then, the design of the technology transfer project has progressed, leading to a new visit in November 2024 to define the necessary structures and spaces. The project aims to establish a fully operational GMP facility under Swiss supervision in Dubai, fostering scientific collaboration and research with Emirates through the SSCF. This collaboration will focus on applied research and the development of new products for implementation in the GMP facility, strengthening ties between the two centers in Lugano, Switzerland, and Dubai, Emirates. On January 21, SSCF obtained the necessary authorizations from the Dubai Department of Health and assessed multiple medical structures in Dubai for the facility's implantation. Negotiations are ongoing to finalize a GMP transfer agreement with investors and initiate the new laboratory.

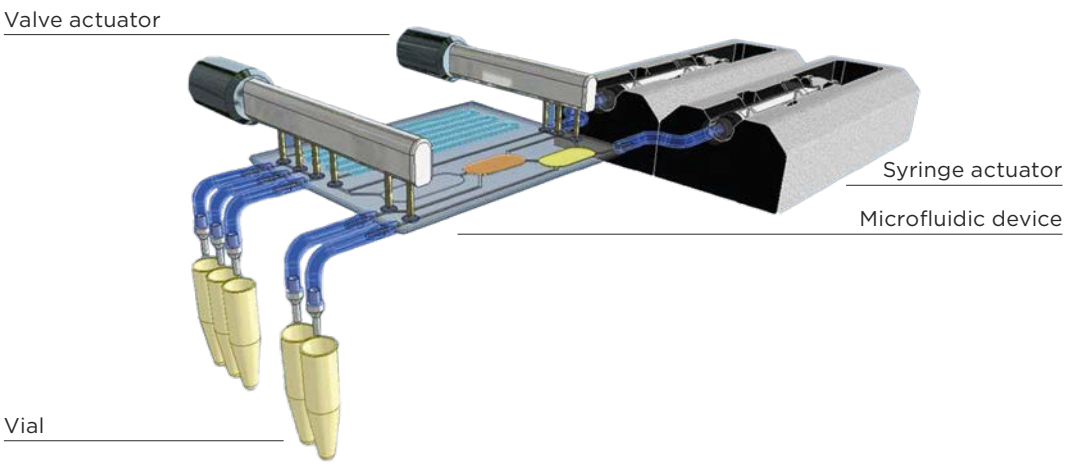
7. European project with SUPSI. Isolation of extracellular vesicles using a microfluidic approach

The aim of this project is to develop a device able to isolate and fractionate blood-derived and other tissues-derived extra-cellular vesicles (EVs) based on biophysical characteristics with a microfluidic approach. The size-based isolation of 1 mL of the biological sample of the EVs fractions could be:

- <50nm – would allow EP (exomeres, supermeres enrichment).
- 50nm-200nm – generally this is a fraction that is now mostly studied due to use of 0,2um filtration step in studies.
- 200-1000nm – larger EVs (microvesicles, oncosomes).

The device will be based on microfluidics and the microfluidic chamber will be entirely developed by the SUPSI school in Lugano, in collaboration with a Lithuanian company and Swiss Stem Cell Foundation. The following figure presents a preliminary schematic of the microfluidic chamber.

Preliminary Scheme of the Microfluidic Chamber



The project submission requires collaboration with a Swiss university and a Swiss implementation partner. Following the application to Eureka, the project must also apply for Innosuisse funding. These projects do not have a fixed submission deadline, as evaluations are conducted every eight weeks. Additionally, there is no maximum funding request, and Innosuisse can cover up to 70% of the total project costs, which are distributed between SUPSI and the implementation partner.

Publications

- Rusconi G, Cremona M, Gallazzi M, Mariotta L, Gola M, Gandolfi E, Malacco M, Soldati G. Good Manufacturing Practice-Compliant Cryopreserved and Thawed Native Adipose Tissue Ready for Fat Grafting. *J Clin Med*. 2024;13(11):3028. doi: 10.3390/jcm13113028 IF 3.0
- Cremona M, Gallazzi M, Rusconi G, Mariotta L, Gola M, Soldati G. State of the Art in the Standardization of Stromal Vascular Fraction Processing. *Biomolecules*. 2025;15(2):199. doi: 10.3390/biom15020199 IF 4.8

Luca Mariotta (Swiss Stem Cells Biotech, Zurich)

SUMMARY OF SWISS STEM CELLS BIOTECH AG R&D ACTIVITIES IN 2024

AUTHORS: TOMMASO TRAMONTE AND LUCA MARIOTTA

Founded in 2005 by visionary researchers and doctors at Cardiocentro Ticino in Lugano, Switzerland, SSCB (Swiss Stem Cells Biotech) has grown into one of Europe's leading cell biobanks. As Switzerland's first private umbilical cord blood bank and a pioneer in cell banking, SSCB offers comprehensive cryopreservation services. These services include the collection, processing, and storage of stem cells from umbilical cord blood, umbilical cord tissue, placental tissue, adipose tissue and now mononuclear cells from peripheral blood.

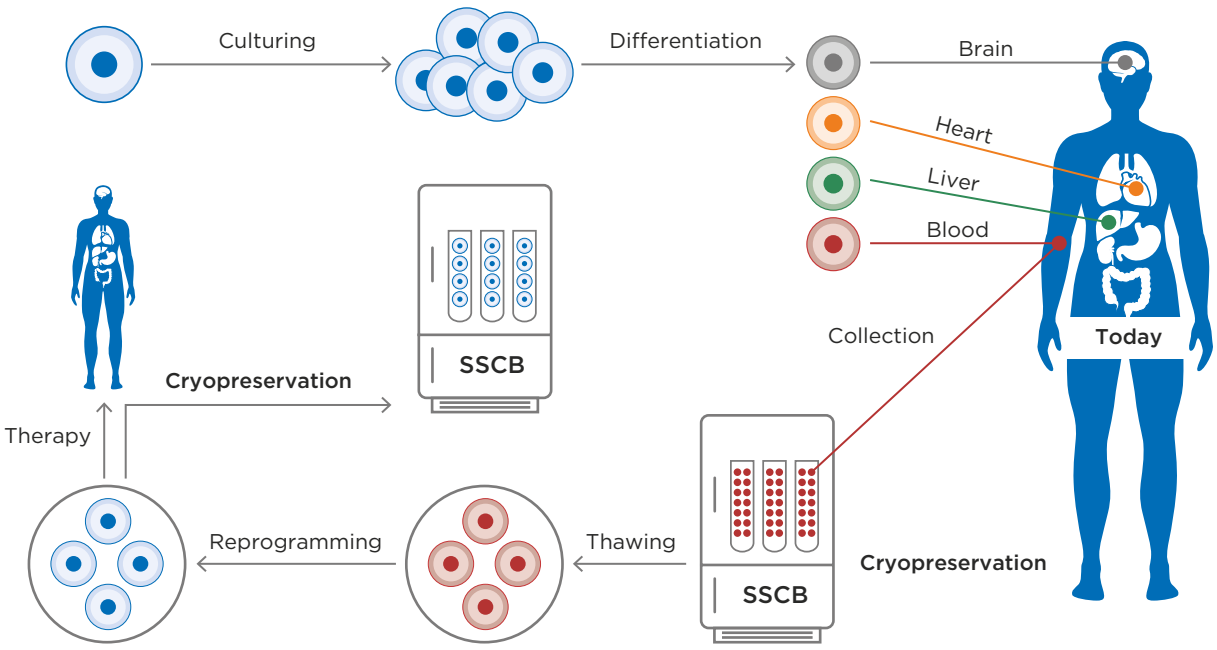
SSCB collaborated on numerous research projects with partners from Switzerland, Europe, and the Middle East. Leveraging its GMP-certified environments, isolators, clean room technologies, and FACT-NetCord accredited facility, SSCB is playing an important role in developing new services and products. These innovations include new services in stem cell cryopreservation and novel advanced therapy medicinal products (ATMPs), and medical devices. The main R&D activities conducted in 2024 are presented hereafter.

1. Adult Peripheral Blood Storage and Reprogramming Project

The project for storing adult peripheral blood and reprogramming in induced pluripotent stem cells has now entered its active phase. This initiative revolutionizes the approach to aging and cellular therapeutic applications by preserving the potential of an individual's own blood cells for future clinical use. The process begins with obtaining a sample of the individual's peripheral blood, followed by the purification of the mononucleated cells contained within. These cells are then cryopreserved at temperatures of ≤ -150°C, effectively halting the aging process. This state-of-the-art cryopreservation ensures that

the cells remain viable and available for clinical use for decades. Thanks to the efforts of recent years, SSCB now offers the possibility to store Peripheral Blood Mononuclear Cells (PBMCs) in its cryobank. The entire procedure adheres to stringent GMP-compliant manufacturing standards, ensuring the cells' suitability for a wide range of future advanced therapy clinical applications. The next steps involve reprogramming and differentiating the cells after thawing for various clinical uses, such as treating neurodegenerative diseases, with significant potential in other fields. This comprehensive service completes SSCB's regenerative medicine offerings, providing clients with cutting-edge solutions for future medical needs.

Illustration of the Adult Peripheral Blood and Reprogramming Project
Swiss Stem Cells Biotech, Zurich



2. Collaboration with HMG Biologics S.r.l.

SSCB has initiated a collaboration with HMG Biologics S.r.l., an Italian company, to develop innovative treatments for bedsores. The goal of this project is to enhance the body's natural dermal repair system using allogeneic chemotactic factors derived from allogeneic fibroblasts. SSCB has perfected the process of extracting and culturing fibroblasts from skin obtained through breast or abdominal reduction surgeries. This entire procedure is conducted within isolators in a GMP-compliant environment, ensuring the highest standards of safety and quality. The result is a hyaluronic acid-based gel that effectively delivers these chemotactic molecules to the sores, promoting healing and tissue regeneration.

3. Collaboration with ProCore Ltd

SSCB has established a collaboration with ProCore Ltd, an Israeli company known for its primary product, RegenoGel™. RegenoGel™ is a product composed of a Hyaluronic Acid-Fibrinogen conjugated gel, designed for the treatment of joint issues. The goal of this partnership is to implement the production of RegenoGel™ at SSCB's facility, aiming to accredit RegenoGel™ as a product within Switzerland. Additionally, RegenoGel™ has the potential to serve as a carrier for the Stromal Vascular Fraction (SVF), a well-established product of SSCB. This feature aims to enhance and accelerate the homing of SVF-contained cells, thereby improving the effectiveness of treatments.

As a next step, SSCB plans to implement ISO 13485:2016 standards to ensure the highest quality and regulatory compliance in the production of RegenoGel™. This collaboration not only expands SSCB's product offerings but also leverages advanced biotechnological methods to provide innovative solutions for joint treatment and regenerative medicine.

4. Public Funding Program

Another area where SSCB has become active is public funding. SSCB, along with several institutions, has participated in the InterReg – Italia Svizzera public funding program. This project, developed in collaboration with Fondazione Istituto Insubrico di Ricerca per la Vita (Italy), Ente Ospedaliero Cantonale (Switzerland), IRCCS Ospedale Galeazzi Sant'Ambrogio (Italy), Università degli Studi dell'Insubria (Italy), and Associazione Life Sciences Competence Center (Switzerland), focuses on innovative 3D printed biomaterials functionalized with antimicrobial natural products. The aim is to create a cross-border synergy for bone regeneration and combating orthopedic infections. The project will commence in January 2025, with SSCB coordinating the various partners to produce a draft of the Investigational Medicinal Product Dossier (IMPD) for potential future clinical implementation.

5. Hybrid Banking Project

In 2020, the hybrid banking project was launched with the goal of offering the option to store umbilical cord blood stem cells not only for private use but also for inclusion in national and international cord blood donation databases. This initiative aimed to bridge the gap between private and public cord blood banking, providing a dual benefit to families and the broader medical community.

Since its inception, the project has processed a total of 86 samples. Out of these, 13 samples were found to be eligible for inclusion in the public registry, significantly contributing to the availability of stem cells for those in need of transplants and other medical treatments.

In 2024, the project entered a new and exciting phase. The expansion of collection centers now includes prominent institutions such as Ente Cantonale Ospedaliero (EOC), Clinica Sant'Anna of Lugano, and Universitätsspital Basel. This expansion not only increases the accessibility of the service but also enhances the project's capacity to collect and process more samples, thereby supporting a larger number of patients.

Currently, an article titled «*Successful Implementation of a Novel Hybrid Cord Blood Banking Model within a Private-Public-Partnership*» is under peer review. This article aims to showcase the success and importance of this innovative model, highlighting how it effectively integrates private and public resources to maximize the benefits of cord blood banking. The findings and experiences shared in this article are expected to provide valuable insights and potentially influence future practices in the field of stem cell banking and regenerative medicine.

Submitted article

- Laue J, Mariotta L, Fluri M, Castelli D, Kürsteiner O, Nicoloso G, Etter A, Surbek D. Successful Implementation of a Novel Hybrid Cord Blood Banking Model within a Private-Public-Partnership.

CLINICAL AND TRANSLATIONAL RESEARCH

Lana E. Kandalaft (Chief of Clinical and Translational Research, Swiss Medical Network)

Lana E. Kandalaft, an internationally recognized expert in experimental therapies and translational medicine, was appointed Chief of Clinical and Translational Research at Swiss Medical Network in October 2024. In this role, she is establishing a clinical and translational research center at the Campus Genolier, including a phase I trial unit, focusing on innovative cancer therapies such as therapeutic and preventive vaccines. Lana E. Kandalaft co-authored a comprehensive review published in *Nature Reviews Drug Discovery* titled «*Vaccines for cancer prevention: exploring opportunities and navigating challenges*». This publication highlights the potential of cancer-preventive vaccines, emphasizing how they can harness a less-compromised immune system to target tumors at early stages, thus reducing cancer occurrence. The review covers preclinical evidence, pioneering clinical results, and critical aspects necessary for the successful design of potent prophylactic cancer vaccines. Her contribution to this high-impact publication underscores her expertise in cancer immunotherapy and translational research, aligning with her leadership role at Swiss Medical Network in advancing clinical research initiatives.

DIGITAL HEALTH AND DATA SCIENCE

Patrick Bizeau (IT Team, Swiss Medical Network)

Progress in Data Infrastructure and Digitization

In 2024, significant strides were made in modernizing the data infrastructure and digitizing critical processes at Swiss Medical Network. One key milestone was the development and successful implementation of a new data lake, built on modern cloud technology. This platform now enables efficient integration, harmonization, and analysis of data from various sources within the organization. By improving data quality and availability, the IT team has established the foundation for informed decision-making across all areas, from patient care to strategic planning. The platform currently holds approximately 900 gigabytes of (administrative) data, along with 94 dashboards, and will be continuously expanded in 2025 with new analytical capabilities.

Furthermore, digitization has advanced in the field of integrated care. For instance, a new software tool for assessing population health status was introduced in the Réseau de l'Arc, allowing for preventive interventions and personalized treatment plans for members based on their existing records. These measures enhance health management for members and patients while increasing process efficiency. This platform will continue to be deployed in new integrated care regions.

Progress in Interoperability

Beyond modernizing the data infrastructure, significant efforts were undertaken in 2024 to enhance the security and efficiency of data exchange between various stakeholders in the healthcare sector. A major step forward in this direction was the development of an interoperability platform. By adhering to strict security standards, the platform connects any data source with data recipients beyond the technical infrastructure limits of Swiss Medical Network without requiring manual intervention. In 2025, additional standard interfaces will be continuously expanded, resulting in more efficient patient care, a reduction in duplicate examinations, and improved communication between healthcare providers.

In addition, the IT department was able to contribute to renowned software manufacturers for medical practice information systems implementing corresponding standard interfaces (HL7) in their systems.

INTERNAL MEDICINE

Pierre Olivier Lang (Clinique de Genolier)

Pierre Olivier Lang demonstrated an active and impactful scientific contribution in the fields of immunology and geriatric oncology, reflecting his expertise in advancing diagnostic and therapeutic approaches for older adults. His research included a groundbreaking study published in *Immunity & Ageing*, which explored the detection of human herpes viruses (HHV-5, HHV-6a, HHV-6b, and HHV-7) in urine as a non-invasive diagnostic tool for immune profiling. This study, co-authored with an international team of experts, highlighted the potential of using urinary biomarkers to assess immune system function, offering promising implications for personalized medicine and immunological research.

In addition, Pierre Olivier Lang collaborated with a task force of the International Society of Geriatric Oncology to develop expert recommendations on corticosteroid therapy for older adults with cancer. Published in the *Journal of Geriatric Oncology*, this work addressed the complex considerations of corticosteroid use in elderly cancer patients, providing valuable guidance for clinicians managing this vulnerable population. These contributions underline Lang's commitment to advancing both diagnostic innovations and therapeutic strategies, particularly for aging populations, reinforcing his leadership in translational and clinical research.

NEUROSURGERY

Frédéric Schils (Clinique Générale-Beaulieu)

Frédéric Schils' completed the Juliet Ti Study on a novel bone fusion material, enrolling 32 patients at Clinique Générale-Beaulieu, with results under review for publication. He is also leading the Hexanium Study, a multicenter investigation involving over 240 patients and a titanium interbody device for spinal fusion, where he serves as the Principal Investigator for Switzerland. His scientific engagements included a health mission to Azerbaijan, visits to South Korean hospitals for scientific exchanges, and multiple live surgical demonstrations with international surgeons in Geneva. Frédéric Schils also presented cervical disc replacement outcomes at the Asia Spine Meeting in Taiwan and had a poster accepted for the Global Spine Congress in Brazil. His publications include a multi-center study on a 3D-printed TLIF titanium cage and a paper on enhanced recovery in spinal fusion surgery. His work continues to impact both research and global surgical collaboration.

Philippe Otten (Clinique Générale Ste-Anne)

Philippe Otten co-authored two publications. The first one focused on evaluating the «Appropriate Use Criteria» (AUC) for surgical decision-making in lumbar degenerative spondylolisthesis (LDS), published in *European Spine Journal*. The second article consisted of a case report on vertebral height restoration using a mechanical reduction device, published in *Operative Neurosurgery*.

He also delivered various oral presentations in the fields of investigations, in Switzerland, Italy, and France. He contributed to training at the Center for Spinal Surgery in collaboration with the Fribourg Hospital. Philippe Otten's contributions span impactful research publications, influential conference presentations, active participation in professional forums, and key teaching roles, emphasizing his pivotal role in advancing spinal surgery practices and decision-making frameworks.

NUCLEAR MEDICINE

Antoine Leimgruber (Director of Nuclear Medicine Development, Swiss Medical Network)

Last year marked the inauguration of the molecular imaging facility at the Genolier Innovation Hub and the General Electric Healthcare Excellence Center in Molecular Imaging. Notable highlights include the appointment of Dr. Thiago Lima, Head of Medical Physics at Luzern University and Luzerner Kantonsspital (LUKS), as Head Physicist for Research, and Antoine Leimgruber as Consultant Physician for Research at LUKS. The applied physics research team collaborates seamlessly across hospitals, fostering a shared vision of innovation. In August, the team successfully hosted its first research internship, completed by a student from EPFL. Furthermore, the Department of Nuclear Medicine has solidified research partnerships with General Electric Healthcare and RaySearch Labs, further enhancing its contributions to advancements in the field of nuclear medicine and molecular imaging.

MEDICAL ONCOLOGY

Matti Aapro (Clinique de Genolier)

Matti Aapro made significant contributions to oncology, focusing on geriatric cancer care, supportive treatments, and biosimilar integration. He co-authored pivotal works, including expert recommendations on corticosteroid therapy in older cancer patients (Journal of Geriatric Oncology) and the rationale for integrating systematic nutritional screening into oncology practices (European Journal of Cancer). Matti Aapro also contributed to updated Multinational Association of Supportive Care in Cancer (MASCC) and European Society of Medical Oncology (ESMO) guidelines on preventing chemotherapy- and

radiotherapy-induced nausea and vomiting (ESMO Open), reinforcing his leadership in supportive oncology care. Additionally, he provided critical insights into opioid metabolism and drug interactions in cancer patients (Oncologist).

Matti Aapro's research emphasized advancing biosimilar use, with publications reviewing the 15-year evidence of filgrastim biosimilars (Critical Reviews in Oncology/Hematology) and highlighting the economic and therapeutic value of biosimilars in Europe (Expert Review of Pharmacoeconomics & Outcomes Research). He also co-authored studies exploring patient-reported outcomes for HER2-directed biosimilar treatments in breast cancer (JMIR Cancer), showcasing the real-world impact of biosimilars. Further, his work in cancer focused on tailoring systemic therapies for breast cancer, reflecting his commitment to personalized oncology approaches.

In leadership and education, Matti Aapro co-developed training courses for cancer healthcare professionals through collaborations with the European School of Oncology and other organizations (Journal of Cancer Policy). He also contributed to international consensus guidelines for managing advanced breast cancer, emphasizing multidisciplinary and patient-centered care. Additionally, Matti Aapro was re-elected to the board of Union for International Cancer Control (UICC). He was also nominated as Head of the Editorial Board of Oncodaily. Matti Aapro's diverse 2024 contributions underscored his role as a global leader in improving cancer care through innovation, education and collaborative research.

Michael Montemurro (Clinique de Genolier)

Michael Montemurro has been appointed as the Head of the Medical Hemato-Oncology Consultants for the Swiss Medical Network, reinforcing his leadership role in the field. He also has joined the University College London Hospitals (UCLH) as a permanent part-time Consultant Medical Oncologist, while maintaining a full-time position at Clinique de Genolier. At the trinational Swiss Society of Medical Oncology (SSMO-DGHO-öGHO) meeting held in Basel (October 2024), Michael Montemurro presented the annual GIST Group Switzerland Award to Professor Patrick Schöffski from the University Hospital Leuven, Belgium. Additionally, he co-chaired the local meeting of the GIST Group in Lausanne alongside Valerie Favez, and they are currently organizing the 2025 GIST Group Meeting at the Genolier Innovation Hub. Montemurro co-authored the second edition of the *GastroIntestinal Oncology Standards*, in collaboration with former colleagues from the Gastrointestinal Tumor Network.

Michael Montemurro recently co-published in *Cancers (Basel)* «*High Rates of Organ Preservation in Rectal Cancer with Papillon Contact X-ray Radiotherapy: Results from a Swiss Cohort*» and alongside Cristina Picardi and Frederic Ris, has been invited to speak at the Zürich «GITZ – Meet the Experts» meeting on the topic of Organ Preservation in Rectal Cancer.

In his role in medical education, Montemurro participated in the 16th Meeting of the GIST Group Romandie, at Clinique de Montchoisi. Additionally, he gave several lectures at UCLH London. His efforts in hemato-oncology research, education, and clinical practice solidified his influential role within the Swiss Medical Network and beyond.

Alex Friedländer (Clinique Générale-Beaulieu)

Alex Friedlaender significantly advanced the fields of oncology and precision medicine through impactful research and publications. His work on oncogenic alterations in advanced non-small cell lung cancer (NSCLC), published in *Biomarkers Research*, provided a detailed analysis of molecular pathways, and underscored the importance of personalized therapeutic approaches. He also contributed to the understanding of stage III NSCLC treatment in *Exploratory Target Antitumor Therapy*, offering insights into integrating radiotherapy with systemic therapies for better patient outcomes. Additionally, his co-authored review in *Cancers (Basel)* highlighted recent advancements in personalized oncology, emphasizing tailored treatment strategies for various cancers.

Alex Friedlaender's contributions extended to innovative approaches in metastatic gastric cancer, combining targeted therapies with immunotherapy, as published in *Immunotherapy*. His translational research on mesothelin-targeted CAR T-cell therapy in *Journal of Gastrointestinal Oncology* demonstrated promising preclinical results for treating colorectal cancer liver metastases. Moreover, his editorial in *Frontiers in Endocrinology* highlighted advancements in molecular diagnostics for thyroid lesions using next-generation technologies. Collectively, his 2024 contributions emphasized precision medicine, innovation, and collaborative efforts to improve cancer care and patient outcomes.

Mathieu Chevallier (Clinique Générale-Beaulieu)

Mathieu Chevallier has made significant scientific contributions in the field of breast cancer research and care, reinforcing his role as a leader in advancing oncology practices in Geneva. One of his key accomplishments includes a collaborative publication with another leading breast center in Geneva, featured in the *Healthbook Times Oncology Hematology* platform. This publication highlights groundbreaking insights into antibody-drug conjugates, showcasing the importance of teamwork in driving innovation and improving breast cancer treatment strategies.

In addition to his contributions to scientific literature, Mathieu Chevallier has been instrumental in launching a new clinical study aimed at breast cancer patients. This study, available on the MSD clinical trials platform, represents a critical step in exploring novel therapeutic options, further demonstrating his commitment to advancing patient care through cutting-edge research.

He has also played a pivotal role in fostering collaboration and knowledge exchange within the local medical community. He has organized numerous medical meetings for general practitioners in Geneva, creating opportunities to share the latest advancements in breast cancer diagnosis and treatment.

Volker Kirchner (Clinique de Genolier)

Volker Kirchner contributed to a corrigendum published in *EBioMedicine* addressing their previous 2019 study on the role of calcium ion channels (Ca2+) and CACNA1H in mediating the targeted suppression of breast cancer brain metastases using amplitude-modulated radiofrequency electromagnetic fields (AM RF EMF). The corrigendum clarifies or corrects aspects of the original findings and methodology related to the therapeutic potential of AM RF EMF in oncology. The updated publication underscores the continued relevance of their research in exploring non-invasive treatment modalities for metastatic breast cancer.

ONCO-SURGERY

Daniel Christen (President of the Interdisciplinary Gastroenterological Surgical Team, Interdigest, Privatklinik Bethanien)

At Privatklinik Bethanien, Daniel Christen, President of the Interdisciplinary Gastro-Enterological Surgical Team (Interdigest), continued to develop a regional network of surgeons, oncologists, and gastroenterologists, working closely with pathologists, radiologists and other experts on specific issues. Their main objective is a real-time implementation of the of the most recent scientific advances in the domain of the digestive tract malignancies.

Pierre-Alain Clavien (Privatklinik Bethanien)

Pierre-Alain Clavien significantly contributed to advancing the understanding and practices in hepato-pancreatobiliary (HPB) surgery and liver transplantation through numerous high-impact publications and collaborations. He co-authored studies on critical aspects of surgical care, including liver regeneration, robotic bariatric surgery benchmarks, and innovative techniques in liver transplantation. His work on liver histology predicting outcomes in ALPPS procedures and studies on robotic surgery's impact on quality standards underscores his commitment to leveraging technology for surgical advancements. His research also emphasized the importance of precise surgical outcome reporting and the development of global guidelines for complex procedures, such as pancreatic cancer surgeries and laparoscopic liver surgeries.

Pierre-Alain Clavien's collaborative efforts extended internationally, producing groundbreaking multicenter studies on living-donor liver transplantation and outcomes in minimally invasive liver surgery. His research on hypothermic oxygenated perfusion in liver grafts and the integration of machine learning in surgical outcomes highlights his forward-thinking approach to improving surgical precision and patient care. Additionally, his studies on the longevity of transplanted livers and benchmarking complications in liver transplantation contributed to enhancing patient safety and standardizing surgical practices.

Beyond original research, Pierre-Alain Clavien contributed to thought leadership in surgery through reviews, editorials, and consensus guidelines, addressing pressing issues like sustainability in surgeon-scientist careers and redefining surgical benchmarks. His work, cited over 124'000 times with an h-index of 149, reflects his profound influence in the field. Pierre-Alain Clavien's research not only advanced scientific knowledge but also set new standards for excellence in surgical practice and patient care. Pierre-Alain Clavien also created the European School of Surgery (ESOS) at Privatklinik Bethanien.

OPHTHALMOLOGY

Aude Ambresin (Swiss Visio Retina Research Center)

SUMMARY OF SWISS VISIO RETINA RESEARCH CENTER RESEARCH ACTIVITIES IN 2024

The Swiss Visio Retina Research Center (SVRRC) continued its mission of advancing clinical research on retinal diseases to develop new treatments that improve patients' lives. In 2024, our research center received certification from the network of European Ophthalmological Clinical Research Sites (EVICR.net) and was recognized as a «Certified Clinical Site of Excellence». During that year, the center led 4 investigator-initiated studies and contributed to 7 multicentric studies, showcasing its commitment to the field. The impact of SVRRC's research was highlighted at major international conferences through 15 invited talks, 12 oral presentations, and 7 poster presentations. The team further contributed to scientific research with 4 peer-reviewed publications in esteemed journals. Moreover, Dr. Aude Ambresin, Head of SVRRC, actively shaped future ophthalmological treatments by participating in 7 advisory boards with industry partners at regional, national, and international levels. The center's ongoing collaborations with 4 public and private partners underscore its rich network, fueling innovative research initiatives. A standout milestone of 2024 was the integration of AI technologies into SVRRC's research, illustrating its commitment to harnessing emerging tools for scientific advancement. Below is a detailed summary of all research activities undertaken in 2024. Relative peer-reviwed publications, conferences as organizer, free speaker, invited speaker and poster presentation can be found in the Education section of this report.

Investigator-initiated studies

- Bartolomeo N, Ambresin A. Real-world Observational Data on the Use of Aflibercept 8 mg Intravitreal Injection in Patients Treated for Exudative Age-related Macular Degeneration and Diabetic Macular Edema. *Ongoing*.
- Barbosa M, Ambresin A. Switch From Aflibercept to Faricimab in Patients With Neovascular Age-related Macular Degeneration. *Ongoing*.
- Barbosa M, Ambresin A. Efficacy and Durability of Faricimab Intravitreal Injections in Naïve Patients With Wet Age-related Macular Degeneration. *Ongoing*.
- Owlya N, Ambresin A. Intravitreal Faricimab in Patients Treated for Refractory Diabetic Macular Edema. *Ongoing*.
- Calci C, Barbosa M, Owlya N, Ambresin A. Evolution of Acute Intraocular Pressure Elevations Following Intravitreal Anti-VEGF Injections Over One Year of Treatment. *Completed*.

Collaborations

- **Prof. Francine Behar-Cohen** – Centre de Recherche des Cordeliers, Université Paris Cité, Sorbonne Université, Paris, France.
  Ophthalmopole Cochin University Hospital, Assistance Publique-Hôpitaux de Paris, Paris, France. *Adaptive optics in Central Serous Chorioretinopathy*.
- **Hon. Prof. Hubert van den Bergh** – Photomedicine expert, Lausanne, Switzerland.
- **Prof. Hilal Lashuel** – Director of the Laboratory of Chemical Biology of Neurodegeneration, Brain Mind Institute, EPFL, Lausanne, Switzerland.
- **Timothé Laforest** – EarlySight CEO, Geneva, Switzerland.
  Eye imaging systems (AO-TFI).
- **RetinAI** (Ikerian AG) – Bern, Switzerland.
  Data management platform integrated with AI modules for research and clinical study support.
- **Moix Antoine Charlélie, Holesz Sebastian, Amro Abdrabo, Eisele Elias** – EPFL/ETHZ, Lausanne/Zurich, Switzerland.
  OpenEye project: Diagnosis of diabetic retinopathy using retinal scans.

Kaweh Mansouri (Swiss Visio Network, Clinique de Montchoisi)

Kaweh Mansouri has made significant contributions to the field of ophthalmology, with multiple high-impact publications focusing on glaucoma management and intraocular pressure (IOP) monitoring. His research includes advancements in telemetric IOP measurements, such as the *British Journal of Ophthalmology* study on the reproducibility of telemetric IOP profiles using intraocular implants. He has also investigated the long-term outcomes of intraocular pressure sensors and nonpenetrating glaucoma surgery in the *Journal of Cataract & Refractive Surgery*. Mansouri's work extends to the efficacy and safety of innovative glaucoma treatments, including the MINIject supraciliary implant and adjustable eyeWatch drainage devices. Additionally, his meta-analyses on glaucoma surgical techniques and biomarkers for IOP reduction further demonstrate his expertise

in developing safer and more effective treatment strategies for glaucoma patients. His comprehensive research output reflects a strong focus on both clinical outcomes and technological advancements in ophthalmic care.

André Mermoud (Swiss Visio Network, Clinique de Montchoisi)

André Mermoud contributed significantly to the field of glaucoma research through multiple impactful studies focusing on innovative surgical approaches and treatment outcomes. His prospective study on the eyeWatch System, published in *Journal of Glaucoma*, demonstrated the efficacy and safety of this adjustable drainage device in managing refractory glaucoma over a two-year period, highlighting its potential to improve long-term intraocular pressure control. Additionally, his research comparing nonpenetrating versus penetrating deep sclerectomy in open-angle glaucoma provided valuable insights into surgical efficacy and safety profiles, aiding in the optimization of treatment strategies. André Mermoud also co-authored a study in *Scientific Reports* investigating predictive biomarkers for intraocular pressure reduction following cataract surgery in patients with pseudo-exfoliative glaucoma, contributing to a better understanding of patient-specific treatment responses. These contributions collectively advance the field of glaucoma management by offering evidence-based insights into surgical and biomarker-driven approaches for optimizing patient care.

ORTHOPEDIC SURGERY

Victor Valderrabano (Chairman of Swiss Ortho Center, Schmerzklinik Basel)

Victor Valderrabano has made significant contributions to the field of orthopedic research and education, further strengthening the scientific reputation of Swiss Medical Network. In May 2024, he was elected President of the International Bone Research Association (IBRA), recognizing his leadership in bone research and surgery. His academic output includes multiple high-impact publications focusing on post-traumatic ankle osteoarthritis, sports activity post-total ankle arthroplasty, and nutritional deficiencies in orthopedic patients, contributing to advancements in both clinical practice and research. In addition, he co-edited the book *Forefoot Disorders: Basic Considerations and Treatment Strategie*s, a comprehensive reference on foot and ankle pathology, further establishing his expertise in this domain.

Beyond research, Victor Valderrabano has played a key role in scientific events. He served as Chairman for major orthopedic conferences, including Swiss Medical Network Ortho Day 2024, the International Bone Research Association (IBRA) Orthopedic Foot & Ankle Master Courses in Basel and Miami, and the 3rd Basel International Ankle Osteoarthritis Course, fostering discussions on cutting-edge surgical techniques. He has also actively contributed to numerous national and international conferences through

presentations, moderations, and workshops, further disseminating knowledge and best practices. His leadership and scholarly activities continue to enhance the global impact of Swiss Medical Network's research in orthopedic surgery and musculoskeletal health.

Guido Garavaglia (Clinica Ars Medica)

Guido Garavaglia contributed to orthopedic research as a co-author of a prospective cohort study published in *Acta Orthopaedica*. The study, titled «*Radiographic Signs and Hip Pain five Years After THA with a Cemented Stem Predict Future Revision for Aseptic Loosening*», explored the correlation between abnormal radiographic findings and hip pain following total hip arthroplasty (THA). The results demonstrated that specific radiographic changes and persistent pain five years post-surgery could serve as early indicators for future revisions due to aseptic loosening, providing valuable insights for long-term follow-up and improving implant performance assessment in clinical practice.

Thomas Giesen (Clinica Ars Medica)

Thomas Giesen made significant contributions to the field of reconstructive and hand surgery through both published research and conference presentations. He co-published in *Microsurgery* a case report on complex clavicle reconstruction using a novel prefabricated chimeric medial femoral condyle (MFC) cortico-periosteal flap, which combines tissue from the medial femoral condyle and a perforator flap based on the superficial circumflex iliac artery. He also presented two studies at the Italian National Congress of Surgery of the Hand (Rome, November 21): «*Challenging the Conventional Mechanism of Post Traumatic Boutonniere Deformity in the Long Fingers: A Cadaveric Study and Case Report*», which earned first prize in the «Premio Giovani Competition» and «*Extensor Triple-Flap Integrated Tenolysis: A Retrospective 17-Patient Case Series*», awarded third prize in the same competition.

OSTEOARTICULAR PATHOLOGIES

Adrien Schwitzguébel (Hôpital de La Providence)

Adrien Schwitzguébel is currently preparing the publication of two co-authored research articles, both of which are under peer review. The first is a retrospective study investigating the use of platelet-rich plasma (PRP) therapy in the treatment of osteoarthritis in large joints. In this study, the authors analyzed data from 252 patients who received PRP treatment for osteoarthritis in major joints, assessing the impact of this therapy in combination with rehabilitation, on pain reduction, functional outcomes, and potential prognostic factors.

The second study is a multicenter, randomized, triple-blind controlled trial involving 130 patients with osteoarthritis. This trial aims to evaluate the clinical efficacy of Stromal Vascular Fraction (SVF) as adjuvant to PRP therapy, specifically focusing on its effects on functionality and tissue regeneration in osteoarthritis. Recruitment and data collection for this study commenced in August 2024, with final endpoints expected to be collected by August 2027. Additionally, a randomized controlled trial on PRP therapy for tennis elbow, in which he is involved, is ongoing.

Furthermore, Adrien Schwitzguébel has successfully treated 10 patients with isolated anterior cruciate ligament (ACL) ruptures using focused shockwave therapy. A case series detailing this treatment is currently in preparation. He is also developing a novel technique for minimally invasive ultrasound-guided fasciotomy in the treatment of chronic compartment syndrome, with a case report currently in the planning stage.

OTORHINOLARYNGOLOGY (EAR NOSE THROAT) SURGERY

Albert Mudry (Clinique de Montchoisi)

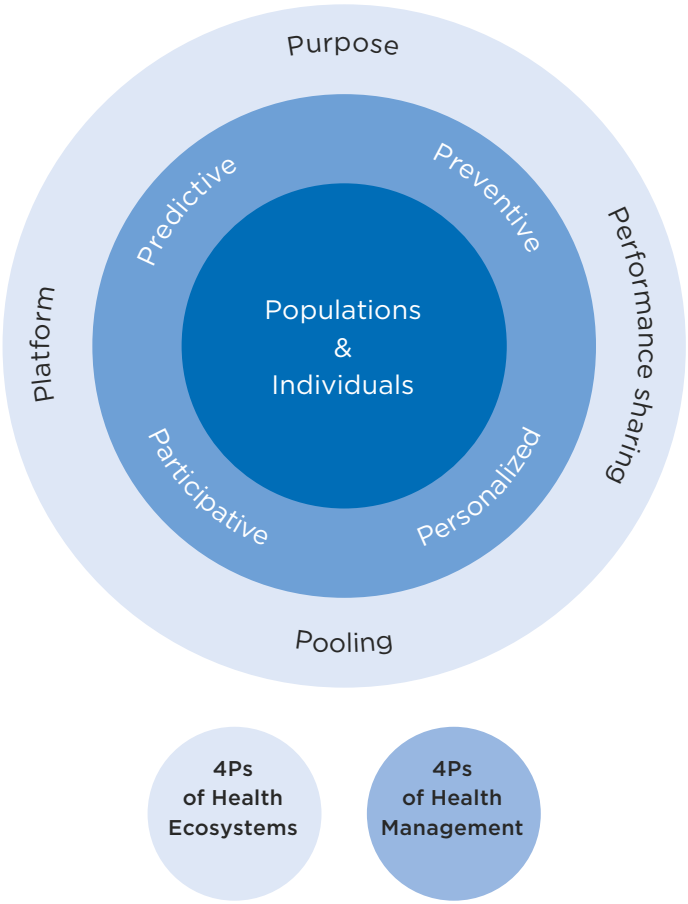
Albert Mudry made notable scientific contributions in 2024, focusing on historical and anthropological aspects of otorhinolaryngology as well as sensory experiences. His work included a collaborative article exploring the historical context of a «royal» total laryngectomy that never occurred, published in the *European Annals of Otorhinolaryngology, Head and Neck Diseases*. He also co-authored a study analyzing probable fatal mastoiditis in the 2300-year-old Egyptian mummy Djed-Hor, shedding light on ancient medical conditions. Additionally, Albert Mudry collaborated on two publications commemorating the 150th anniversary of Schwartze's mastoidectomy, detailing the historical significance of this surgical technique and its early implementation. Beyond his academic publications, he authored «*Voyage sensoriel… dans une assiette*», a book published by Favre, which explores sensory experiences through the lens of gastronomy, reflecting his multidisciplinary approach to science and culture. These contributions underline Mudry's expertise in the history of medicine and his unique ability to bridge the humanities and medical science.

OUTCOME RESEARCH – VALUE-BASED MEDICINE

Jacques Bernier (Chief Science Officer, Swiss Medical Network)

In the context of patient-centered and population-oriented health care research and frameworks, Jacques Bernier and his colleagues introduced a comprehensive framework designed to transform healthcare management through eight dimensions: Predictive, Preventive, Personalized, Participative, Purpose, Platform, Performance Sharing, and Pooling. This 8Ps framework aims to create a proactive, patient-centric health ecosystem that prioritizes quality care, cost-efficiency, and health maintenance. By integrating these principles, the framework aligns with contemporary healthcare management strategies, promoting a holistic and collaborative approach to patient care and organizational efficiency.

Illustration of the 8Ps Value Proposition in Health Care (Bernier et al., 2024)



PLASTIC AND RECONSTRUCTIVE, LYMPHATIC, MICRO AND SUPER MICROSURGERY

Mario Scaglioni (Privatklinik Bethanien)

Mario Scaglioni's contributions focus on advancements in microsurgery, particularly in complex reconstructive and lymphatic surgeries. His work on the Superficial Circumflex Iliac Artery Perforator (SCIP) flap has demonstrated significant success in head and neck reconstructions, offering a versatile and minimally invasive option for intricate defects. He has also contributed to innovations in lymphatic surgery, including the perforator-to-perforator vascularized lymph node transfer and the use of fibrin glue for stabilizing lymphovenous anastomosis, enhancing surgical precision and patient recovery. Additionally, his studies on microsurgical breast reconstruction, such as the use of internal mammary perforators, have set new standards in reducing donor site morbidity. These groundbreaking contributions reflect a commitment to refining surgical techniques and improving patient outcomes.

QUALITY ASSURANCE AND MANAGEMENT

Noëlle Moser-Van der Geest (Swiss Medical Network)

In 2024, Swiss Medical Network significantly advanced its quality management framework by developing and implementing a group-wide quality concept, establishing a standardized foundation for processes across all clinics and fostering alignment and consistency in its quality efforts. Comprehensive analyses of ANQ data from all clinics were conducted, with findings and targeted improvement measures collaboratively reviewed with executive and medical leadership, ensuring evidence-based decision-making.

To enhance collective learning, a group-wide Critical Incident Reporting Network was introduced, while risk management was integrated into the quality management system, providing a structured approach to addressing potential challenges. A transition to a new provider for Patient-Reported Outcome Measures (PROMs) was successfully piloted at one clinic, optimizing the applicability and precision of patient-centred data collection.

Infection prevention measures were further prioritized through the establishment of a dedicated Hygiene Coordination position at the group level. To promote interprofessional learning, the second Quality Management Day was organized, focusing on the interpretation of quality indicators. Additionally, a group-wide campaign during Patient Safety Week, themed «Diagnosis: A Team Effort», underscored the importance of collaborative approaches to patient care. Finally, the introduction of a unified patient satisfaction survey provided more objective assessments and improved comparability across clinics, strengthening the organization's commitment to continuous improvement in patient experience.

Looking forward, the objectives include the group-wide implementation of PROMs in orthopedic departments, the development of a comprehensive vigilance concept, and the execution of internal audits, complemented by coordinated audits of external partners. Additionally, a digital tool for real-time monitoring of hand hygiene compliance will be introduced, alongside the implementation of standardized hygiene management SOPs and the creation of a group-wide hygiene concept. These initiatives are designed to enhance the robustness and rigor of quality assurance measures, ensuring sustained and continuous improvements in clinical outcomes and patient safety.

Myriam Geissmann (Clinique de Genolier)

Placing the Patient at the Heart of Care: A Commitment to Quality and Safety

At Clinique de Genolier, patient care remains a top priority, with a continuous commitment to ensuring satisfaction and safety. Providing high-quality care that meets patients' needs, expectations, and rights is essential while maintaining a safe and responsive healthcare environment.

Thanks to strong involvement in the quality approach, in 2024, a score of 4.75/5 and a response rate of 73% were achieved, highlighting the excellence of staff hospitality, care quality, and medical visits.

Continuous Improvement Through Incident Reporting and Learning from Errors

In a pursuit of excellence, continuous improvement is based on learning from every experience, particularly in the event of incidents. Learning from errors is key in enhancing patient safety.

Clinique de Genolier actively promotes the reporting of adverse events (CIRS), a system that enables quick incident reporting, thorough analysis of root causes, and implementation of corrective and preventive measures. This proactive and collaborative approach helps prevent the recurrence or escalation of incidents, fostering a safer environment for both patients and healthcare teams.

A Robust Regulatory and Vigilance Framework with Swissmedic: Hemovigilance, Pharmacovigilance, and Materiovigilance

To ensure patient safety, Clinique de Genolier strictly adheres to vigilance requirements. Reporting to Swissmedic, the competent authority for therapeutic product surveillance, and implementing pharmacovigilance, hemovigilance, and materiovigilance systems are essential steps in monitoring and guaranteeing the safety of administered treatments and medical devices. These systems enable the early detection of anomalies, identification of potential risks, and the application of corrective measures at both internal and national levels.

- **Hemovigilance:** Monitoring incidents related to blood transfusions to ensure the safety of blood products.
- **Pharmacovigilance:** Tracking adverse drug reactions to implement corrective actions based on feedback from patients and healthcare professionals.
- **Materiovigilance:** Overseeing and monitoring medical devices to prevent failures or malfunctions that could impact patient safety.

Commitment to ANQ, Swissnoso, and the SIRIS Implant Registry for Optimal Care Quality

Clinique de Genolier actively participates in initiatives led by the National Association for Quality in Hospitals (ANQ), which aims to assess and improve the quality of hospital care through performance indicators.

A strong commitment is also maintained in the monitoring and prevention of nosocomial infections for colon, rectum, and knee surgeries. This program plays a crucial role in reducing healthcare-associated infections and ensuring optimal and safe patient care.

The SIRIS Implant Registry (Health Implant Information System) guarantees enhanced traceability and safety of surgical implants, particularly for hip, knee, and spinal interventions. This tool allows for the rapid identification of any device failure or complication, ensuring high-quality post-operative follow-up.

Starting in 2025, shoulder implants will also be included in the registry, further reinforcing Clinique de Genolier's commitment to rigorous medical device tracking and long-term patient safety.

For more information about the ANQ results and the annual report of SIRIS, please scan or click on the QR-Code.

RADIO-ONCOLOGY

Oscar Matzinger (Medical Director Radio-Oncology, Swiss Medical Network)

OVERVIEW OF THE SCIENTIFIC ACTIVITIES OF THE RADIOTHERAPY DEPARTMENTS IN 2024

Within the Swiss Medical Network, radiation oncology is organized transversally across several clinics, structured around:

- A radiation oncology department at Clinique Générale-Beaulieu (Geneva).
- A radiation oncology department at Clinique de Genolier.
- A radiation oncology unit at Privatklinik Bethanien (Zurich).

The following lines showcases the key highlights of radiotherapy within Swiss Medical Network through 2024:

1. Relocation of the Genolier Department

The relocation of the radiation oncology department from Clinique de Genolier to the Genolier Innovation Hub marked a key milestone, including:

- Upgraded infrastructures.
- Establishment of a specialized training center in collaboration with Accuray, designed to train specialists on the latest radiotherapy technologies, including Radixact® and CyberKnife® systems.
- Strengthened collaborations in training, research, and development.

2. Strategic and Technological Collaborations

- **Collaboration with RaySearch:** Development of an integrated digital system to optimize multidisciplinary coordination, patient file management, and technical specifications in radiotherapy.
- **Partnership with Vision RT:** Development of a surface scanner slated for clinical implementation in 2025.
- **Partnership with GE:** Introduction of a «dual energy» planning scanner: a major advancement for tissue characterization and treatment personalization.

3. Clinical Activity: Organ Preservation, a Clinical Priority

Swiss Medical Network has been deeply committed to implementing organ preservation strategies at Privatklinik Bethanien and Clinique Générale-Beaulieu. These efforts aim to provide cutting-edge treatments that preserve the function and integrity of organs in patients with rectal cancer.

Reference

Picardi C, Caparrotti F, Montemurro M, Christen D, Schaub NB, Fargier-Voiron M, Lestrade L, Meyer J, Meurette G, Liot E, Helbling D, Schmidt J, Gutzwiller JP, Bernardi M, Matzinger O, Ris F. High Rates of Organ Preservation in Rectal Cancer with Papillon Contact X-ray Radiotherapy: Results from a Swiss Cohort. *Cancers (Basel)*. 2024 Jun 25;16(13):2318. doi:10.3390/cancers16132318 IF: 4.5

4. Education and Training

Swiss Medical Network's radiation oncology department continues to uphold its commitment to medical and academic education through a well-established multidisciplinary framework.

Postgraduate Medical Training

Specialist training positions in radiation oncology at:

- Clinique de Genolier;
- Clinique Générale-Beaulieu.

Other Training Mandates and Academic Collaborations

- Vaudois and Geneva Universities of Applied Sciences (HES-SO): Teaching in the Medical Radiologic Technicians (TRM) programs.
- Swiss Oncology Nursing Training: Developing skills for optimal management of oncology patients, particularly lung cancer cases.
- Swiss GIST Patient Support Group: Training tailored for patients and families to manage gastrointestinal stromal tumors.
- CAS in Health Management – University of Neuchâtel: Teaching healthcare executives in health management.
- Events by the Vaudois Cancer League: Training on cancer prevention and management.
- Swiss Federal Institute of Technology Zurich (ETH): Participation in the training of students in clinical research.

5. Major Scientific Communications

- European Congress of Radiotherapy & Oncology (ESTRO):
  - *Quantification of the targeting accuracy of the Synchrony modality on Radixact® machine.*
  - *National intercomparison of radiosurgery treatment planning for multiple brain metastases.*
  - *Dosimetric intercomparison for intracranial radiosurgery in Switzerland.*
- Swiss Congress of Medical Physics (SSRPM): *Implementation of intracranial stereotactic radiotherapy in tomohelical technique: from dosimetry to treatment QA.*
- European Congress of Medical Physics (ECMP): *Contact therapy with Papillon machines: physics practice overview of European users.*
- Swiss Scientific Radiotherapy Congress (SASRO): *Patient Setup Using a Surface Repositioning System.*
- Réunion romande of radiothérapie: *Implémentation du traitement conservateur du rectum et de la peau par la technique Papillon +.*

6. Other Invited Presentations

- Academic Day of Radiation Oncology and Radiophysics Departments – Nantes, France, January 12.
  Workflow des patients: quel parcours en cas de ré-irradiation ?
- PhD Outside Academia – University of Geneva, May 27.
  Perspectives professionnelles des chercheurs en milieu académique et industriel.
- Journée des physiciens romands – June 6.
  Thérapie de contact par Papillon: projet d'intercomparaison.
- RaySearch User Meeting France – October 15–16.
  Three years of experience in robust planning for supine breast and prone treatments on Radixact®.
- French User Meeting of CyberKnife® and Tomotherapy Platforms – December 5–6.
  Développement d'un Programme d'Assurance Qualité pour la Modalité Synchrony® sur Radixact®: Adaptation des Méthodologies CyberKnife® et Évaluation des Performances

Conclusion and Outlook

In 2024, the Swiss Medical Network radiation oncology service strengthened its dynamic of innovation through enhanced infrastructures, adoption of cutting-edge technologies, and intensification of industrial, academic, and interinstitutional collaborations.

The outlook for 2025 is promising: the commissioning of a surface scanner, analysis of spectral data from the «dual energy» scanner, and closer ties with Swiss research centers and polytechnic institutions should foster continuous quality improvements in treatment.

These advancements confirm the network's commitment to ambitious translational research and increasingly personalized and effective care for the benefit of patients.

REGENERATIVE MEDICINE

Sophie Menkes (Clinique Nescens)

At Clinique Nescens, Sophie Menkes continued to contribute significantly in the field of regenerative medicine. The following highlights provide an overview of the ongoing and newly initiated scientific activities for 2024:

1. Continuation of the Study on the Efficacy of the «Topical Washing Buffer»

In collaboration with Gianni Soldati of the Swiss Stem Cell Foundation (SSCF) and Luca Mariotta of Swiss Stem Cells Biotech (SSCB), the project initiated in 2019 to develop a «washing buffer» containing exosomes remains ongoing. Preliminary investigations have revealed that the stromal vascular fraction (SVF) obtained from adipose tissue extraction contains exosomes, which demonstrate significant potential in promoting skin rejuvenation. To advance this research, ten adipose tissue samples were collected, from which nanofat was extracted. These specimens were subsequently processed by Gianni Soldati. The resultant washing buffer was incorporated into a Nescens cream base by a pharmacy, creating a novel autologous cream formulation. Preliminary testing of the formulation yielded highly positive results. A second study, focusing on the quantification of exosomes within the washing buffer, is planned prior to initiating commercialization efforts.

2. Study Comparing PRP and Exosomes Derived from Damask Rose Stem Cells

A study is underway involving 30 patients to compare PRP (Platelet-Rich Plasma) and exosomes derived from Damask Rose stem cells for the treatment of androgenetic alopecia. The initial results are very promising.

3. Collaboration on Hand Rejuvenation Protocols

Sophie Menkes is working with Dr. Vakalopoulos and Dr. Bonetti on a hand rejuvenation protocol and validating a new measurement scale.

4. Two Pending Clinical Studies

Two clinical studies have been planned, pending approval, focusing on a heterologous secretome project using exosomes derived from human stem cells and a new filler that can be injected in liquid form and cross-linked via skin heat without BBDE (Butanediol Diglycidyl Ether) additives.

5. Launch of Damascus Rose Stem Cell-Based Exosomes

Damask Rose Stem-cell derived exosomes for skin and hair rejuvenation, as well as post-laser applications, have been successfully launched. The initial findings are promising.

6. Clinical Study on Intimate Sphere Applications of Exosomes

Focused on Damask Rose stem cell-derived exosomes, this study was the first of its kind in Europe, conducted in collaboration with a Spanish center. Results are excellent, and treatments are now offered widely, especially for conditions like lichen sclerosus and vulvodynia.

7. Implementation of the Remedex Platform

Currently, Sophie Menkes at Clinique Nescens is equipped with the Remedex platform. Founded by Pr. Guy Magalon and Dr. Jérémy Magalon in 2022, this platform optimizes modern PRP injection procedures. It provides:

- A database of scientifically validated care protocols;
- Patient information documents and consent management system;
- Aseptic preparation of products and access to biologically certified single-use medical devices;
- Tools like REMEDEX Report software and a cell counter for quality control, offering patients precise care reports;
- REMEDEX Follow-Up software for clinical follow-up data collection with medical and scientific aims;
- High-quality ultrasound equipment and a medical office for practitioners.

Sophie Menkes is currently awaiting a cleanroom to develop autologous serum for ophthalmology.

8. Collaboration with L'Oréal US

A partnership has been established with L'Oréal US to initiate new clinical research projects.

9. Testing of Hybrosomes Morphiy

Tests are underway on Hybrosomes Morphiya (exosome + liposome) derived from bovine umbilical cords for skin and hair rejuvenation. Preliminary results are very promising.

10. Autologous Exosomes Derived from Platelets

These are now being offered to patients, obtained through a simple blood draw.

11. Preparation of Stromal Vascular Fraction (SVF)

Together with Prof. Magalon and Dr. Soldati, we are working on the mechanical preparation of SVF directly in the operating room.

12. Study on Exosomes Combined with Pico Plus Laser

A study conducted by Dr. Bonetti on the efficacy of Damask Rose stem cell-derived exosomes combined with Pico Plus laser yielded excellent and synergistic results. This treatment has been added to our list of offerings.

SENOLOGY

Magdalena Kholik (Centre du Sein, Clinique de Genolier)

Magdalena Kholik continued her clinical research on the therapeutic management of mammary carcinomas. The first scientific axis studies the use of neoadjuvant systemic therapy in patients with clinically node-positive breast cancer in Europe in the framework of the prospective TAXIS study (OPBC-03, SAKK23/16, IBCSG 57-18, ABCSG-53, GBG 101). The main objective of the second trial (VISION) is to determine the diagnostic accuracy of the post-NAC VAB in determining pCR compared to open surgery.

SUPPORTIVE CARE

Nurse Team of the Centre de Soins de Support (Clinique de Genolier)

The Centre de Soins de Support at the Clinique de Genolier is dedicated to supporting patients living with cancer, a journey often marked by significant physical, emotional, and social challenges. This initiative is designed to help individuals navigate the impact of their illness, alleviate treatment side effects, improve their overall quality of life, and ease a smooth transition back to everyday routines and professional life. Supportive care embodies a holistic approach, addressing the needs of both patients and their families throughout the management of serious and chronic diseases. Beyond specific anti-cancer treatments, this comprehensive approach fosters multidisciplinary collaboration and coordination among healthcare professionals.

The center aims to empower patients to take an active role in their care journey, instill confidence as they confront new challenges, guide them toward the best available resources, and equip them with the tools to overcome obstacles. By integrating medical expertise with compassionate care, the center ensures that every step of the journey is met with the support needed to thrive.

Support care is structured around the four axes of oncological rehabilitation:

1. **Psychological Support:** psycho-oncology, onco-sexology, medical hypnosis, sophrology, NLP (Neuro-Linguistic Programming), coaching for returning to employment, social worker from the Cancer League, Café Rencontre (Meetup Café), meeting for caregivers, and art therapy.
2. **Nutrition:** dietetic workshops, personalized nutritional follow-up.
3. **Well-being:** therapeutic massages, energetic care and massages, sound therapy, makeup/facial care workshops, socio-aesthetic nail care, and self-image coaching.
4. **Physical Activity:** adapted physical activity, hatha yoga, Qi Gong, fencing, physiotherapy, lymphatic drainage, occupational therapy, snowshoe hiking, nautical activities on Lake Geneva.

It is worth remembering that in 2023, the Clinique de Genolier was accredited by the European Society of Medical Center as ESMO Designated Centers of Integrated Oncology & Palliative Care. In addition, during the ESMO Congress 2023, the Centre de Soins de Support of the Clinique de Genolier was awarded by the European Oncology Nursing Society, in recognition of the research this unit fosters in the domain of innovation.

In 2024, the Centre de Soins de Support continued to excel and drive innovation, earning the third Prix de Soins en Oncologie Suisse for its project «*Centre de soins de support: de la théorie à la pratique*». Furthermore, in line with its mission to support patients and their families in navigating the challenges of cancer, the Centre de Soins de Support helps patients and their relatives navigate the difficulties of cancer. The Centre de Soins de Support also established a network of dedicated volunteers at the Clinique de Genolier, working closely with both staff and patients.

THORACIC SURGERY

Loïc Lang-Lazdunski (Clinique de Genolier, Clinique Générale-Beaulieu)

Loic Lang-Lazdunski contributed to a critical evaluation of the MARS (Mesothelioma and Radical Surgery) approach in the treatment of malignant pleural mesothelioma, published in the Journal of Thoracic and Cardiovascular Surgery. This collaborative study, involving a panel of international thoracic surgery experts, assessed the potential impact of radical surgery on patient survival outcomes, questioning whether the approach might actually shorten life expectancy rather than improve it. The findings provide valuable insights into the ongoing debate surrounding the surgical management of mesothelioma, emphasizing the need for a more tailored, evidence-based approach to optimize patient care and ensure the best possible outcomes.

UROLOGY

Charles Henry Rochat (Centre d'urologie, Clinique Générale-Beaulieu)

Charles-Henry Rochat contributed to two landmark studies published in *European Urology Oncology*, focusing on long-term outcomes of robotic-assisted radical prostatectomy (RARP). The first study, a 20-year report from the European Association of Urology Robotic Urology Section Scientific Working Group, analyzed prostate cancer-specific and all-cause mortality, providing comprehensive insights into the long-term efficacy and safety of RARP. The findings reinforced the role of robotic surgery as a viable treatment option for localized prostate cancer with favorable survival outcomes. The second study evaluated the impact of positive surgical margins on mortality following RARP, offering crucial data on their prognostic significance and potential influence on treatment decisions. Dr. Rochat's contributions to these extensive, multicenter investigations highlight his commitment to advancing evidence-based surgical oncology and optimizing prostate cancer management through robotic-assisted techniques. In addition to his academic contributions, Charles-Henry Rochat has advanced the field of robotic surgery and humanitarian medicine through hands-on work and teaching. At Hôpital Daler in Fribourg, he oversaw numerous robotic surgeries. Internationally, he participated in surgical workshops in Benin and conducted surgeries addressing obstetric fistulas and male urethral strictures in Toliara, Madagascar, further demonstrating his dedication to improving global surgical care.

Georges-Antoine de Boccard (Centre d'urologie, Clinique Générale-Beaulieu)

Georges-Antoine de Boccard participated to the 12th annual Robotic Assisted Microsurgical and Endoscopic Society (RAMSES) conference, in November, in Singapore. The title of his lecture was *Pionneers in Robotic Assisted Microsurgery.*

Stefano Regusci (Centre d'urologie, Clinique Générale-Beaulieu)

Stefano Regusci contributed to advancing the treatment of benign prostatic hyperplasia (BPH) and prostate cancer through his involvement in a Delphi consensus project on transperineal laser ablation, published in the Asian Journal of Urology. This comprehensive study, conducted in collaboration with leading experts, evaluated the efficacy and safety of this minimally invasive technique, offering a consensus on its role in clinical practice. The findings provided valuable guidance for urologists, highlighting the potential of transperineal laser ablation as an effective alternative for patients with BPH and prostate cancer, with the goal of optimizing patient outcomes and improving procedural standardization. Stefano Regusci's contribution to this study underscores his commitment to innovative approaches in urology and his role in shaping future clinical guidelines for the management of prostatic diseases.

Gregory Wirth (Centre d'urologie, Clinique Générale-Beaulieu)

As per every year, Gregory Wirth analyzes the oncologic and functional outcomes of the robot-assisted laparoscopic procedures he performs, including radical prostatectomies, partial nephrectomies, and radical cystectomies. Consistent with previous years, results align with international standards, demonstrating a positive surgical margin rate for organ confined tumors below 15%, persistent urinary incontinence below 5% and severe (Clavien <=3) postoperative complications below 1%.

In collaboration with Nicolas Fleury (Clinique Générale Ste-Anne), Gregory Wirth also analyzed and published the yearly results of the robotic surgery program initiated at Hôpital Daler (Fribourg) intitled «*Implementation of a robotic urologic surgery program within a specialized pathway in Fribourg: results at one year*». The results were presented during the Annual Conference of the Swiss Association of Urology.

Gregory Wirth further pioneered the introduction of the Stockholm3 test at the urology center of Clinique Générale-Beaulieu, integrating it into a clinical registry. This innovative test, the first of its kind available in French-speaking Switzerland, facilitates the early detection of prostate cancer. Wirth is currently assessing its impact on clinical decision-making and patient care. He has already reported preliminary results of the first 50 patients at the Prostate Cancer Conference held at Clinique Générale-Beaulieu (Geneva, November 4th).

In terms of educational activities, Wirth contributed to the robotic surgery program of the Hôpitaux Universitaire de Genève (Geneva) and continued his teaching roles at the Faculty of Pharmaceutical Sciences at the University of Geneva (UNIGE), the Haute Ecole de Santé Vaud (HESAV) in Lausanne, and the emergency department of UNIGE.

Finally, Wirth continued his activities of board examiner for the Swiss Society of Urology, this year overseeing an examination for the title of «Urologic Surgeon» of a candidate in Olten. As an expert in prostate cancer surgery of the German Cancer Society (DKG), he also participated in a two-day audit to certify the Prostate Cancer Center of Basel-Liestal at the Kantonsspital Baselland.

VISCERAL AND COLORECTAL SURGERY

Christoph Andreas Maurer (Privatklinik Obach)

Christoph A. Maurer has made significant contributions to the field of surgical oncology and gastrointestinal surgery through both peer-reviewed publications and conference presentations. His work includes the study «*Is surgical quality more important than radicality? Long-term outcomes of stage I-III colon cancer (SAKK 40/00)*», published in *Surgical Oncology*, where he explored the balance between surgical quality and radical approaches in colon cancer treatment, emphasizing long-term patient outcomes and quality metrics over excessive surgical intervention.

In another pivotal study, «*Intraoperative esophageal washout reduces free intraluminal tumor cells during resection of carcinomas of the esophagus and cardia*», published in *European Journal of Surgical Oncology*, Maurer and his team demonstrated the efficacy of intraoperative esophageal washout in reducing free intraluminal tumor cells, thereby potentially lowering recurrence rates in esophageal cancer surgery. This work highlighted innovative intraoperative techniques aimed at improving oncological safety during complex surgeries.

Maurer has also made significant contributions to scientific discourse through conference presentations. Notably, he was invited to present at the Best Paper Session of the *Diseases of the Colon & Rectum* journal during the American Society of Colorectal Surgeons' (ASCRS) annual congress (Baltimore, June 1-4) for his study «*Temporary Ileostomy 2 Versus 12 Weeks After Rectal Resection for Cancer: A Word of Caution From a Prospective, Randomized Controlled Multicenter Trial*». His ongoing contributions continue to impact colorectal and gastrointestinal surgery, emphasizing both innovative surgical techniques and rigorous clinical research.

Claudio Soravia (Clinique Générale-Beaulieu)

Claudio Soravia contributed to an important collaborative effort, emphasizing the collective expertise needed to enhance care for patients with acute diverticulitis (AD) through evidence-based guidelines tailored to the Swiss healthcare context. The article by Girardin et al. (2024) indeed establishes a Swiss consensus on the management of acute AD, addressing diagnostic approaches, outpatient care, and elective surgery. Using a Delphi methodology, it engaged experts from various Swiss hospitals to standardize practices based on national experience. Key findings include a strong agreement on the use of abdominal CT for diagnosis and the favoring of laparoscopic approaches for elective sigmoidectomy. However, no consensus was reached on specific surgical techniques for emergencies, reflecting the variability in clinical practices.

6. SCIENTIFIC PARTNERSHIPS AND COMPLEMENTARY ACTIONS

SCIENTIFIC PARTNERSHIPS

PARTNERSHIP WITH THE SWISS FOUNDATION FOR INNOVATION AND TRAINING IN SURGERY (SFITS) – GENEVA

In 2024, we collaborated with the Swiss Foundation for Innovation and Training in Surgery (SFITS) to enhance medical research, training, and technological innovation. This partnership integrates the strengths of both institutions to accelerate the development and application of new medical technologies.

Key aspects of the collaboration

Research and Development
Our objective is to serve as a central platform for translational research, focusing on MedTech, pharma, and bioscience. It facilitates the progression of experimental developments to clinical applications, fostering strategic interactions between scientists and clinicians.

SFITS, known for its state-of-the-art surgical training facilities, complements this goal by providing a hands-on environment where new surgical techniques and technologies can be tested and refined.

Training and education
SFITS specializes in the training of surgeons and operating room professionals, utilizing modern infrastructure that includes fully equipped wet labs and auditoriums. This partnership allows for the incorporation of our innovative research into SFITS's training programs, ensuring that healthcare professionals are adept in the latest medical advancements.

The collaboration also supports the development of e-learning modules, hybrid events, and live-streamed surgical procedures, enhancing the educational experience for medical professionals globally.

Innovation and technology
By leveraging SFITS's expertise in managing high-tech biomedical equipment and instructional video production, the partnership enhances the ability to develop and disseminate new medical technologies effectively.

This integrated approach ensures that innovative solutions are not only developed but also effectively taught and implemented in clinical settings. This collaboration aims to create a synergistic environment where medical research and clinical practice can advance rapidly, ultimately improving patient care and outcomes.

STRATEGIC PARTNERSHIP WITH THE WORLD HEALTH ORGANISATION (WHO)

We initiated a strategic partnership with the World Health Organization (WHO) to enhance research and innovation in healthcare. This collaboration focuses on leveraging both organizations' strengths to address global health challenges and improve public health outcomes.

Key aspects of the partnership

Research and Development
Both entities will collaborate on research programs aimed at accelerating the development and implementation of innovative medical solutions. This includes focusing on areas such as oncology, digital health, and new therapeutic technologies. Our state-of-the-art facilities, including advanced laboratories and conference rooms, provide an ideal environment for these collaborative efforts.

Health innovation
Both organizations are committed to using cutting-edge technologies to tackle global health issues. The WHO Innovation Hub focuses on sustainable innovation to solve health bottlenecks and accelerate impact, aligning well with our mission to foster strategic interactions between scientists and physicians. This includes exploring new service delivery models, telemedicine, and digital health tools.

Global Health initiatives
The collaboration aims to support WHO's broader health initiatives and Sustainable Development Goals by implementing innovative health solutions in underserved regions. This includes projects such as telehealth-enabled clinics, which have already shown success in improving healthcare accessibility and quality in various parts of the world.

This collaboration represents a significant step towards integrating advanced medical research with global health strategies, ultimately aiming to enhance healthcare delivery and outcomes on a global scale.

ONGOING CORPORATE PARTNERSHIP WITH BIOPÔLE SA – LAUSANNE

This ongoing corporate partnership outlines a collaborative framework designed to leverage Biopôle's innovation programs and Swiss Medical Network's healthcare expertise. This partnership is aimed at fostering innovation in the life sciences sector and enhancing the visibility and networking opportunities for both parties. Our scientific team regularly took part in the scientific events organized by the Biopôle in Lausanne. In addition, monthly videoconferences allowed to identify and select research programs started at Biopôle and likely to be integrated in a second phase into one of the entities of the Campus Genolier.

Key components of the agreement

Scope and contributions
Both Biopôle and Swiss Medical Network benefit from enhanced visibility on each other's marketing platforms, access to meeting rooms, and opportunities for on-site meetings and collaborations.

Coordination
An account manager to oversee and coordinate the partnership activities, ensuring regular communication and updates on developments that may affect the collaboration.

Networking and innovation support
Swiss Medical Network has the opportunity to participate in Biopôle's networking events, deal flows, and scouting activities, allowing them to connect with startups and projects in the life sciences field. Dedicated opportunities for Swiss Medical Network to collaborate with companies in Biopôle's StartLab and Digital Health Hub (DH2) for potential business and investment ventures are included.

Event Hosting and joint activities
Both parties can host events of mutual interest at each other's facilities, promoting further collaboration and engagement within the life sciences community.

The agreement facilitates the development of seminars and events on specific topics of interest to both parties, enhancing their collaborative efforts in innovation and business development. In addition, this partnership creates a synergistic relationship between Biopôle's innovation programs and Swiss Medical Network's clinical and operational expertise, driving forward the life sciences sector through joint efforts in research, development, and networking.

COLLABORATION WITH THE UNION FOR INTERNATIONAL CANCER CONTROL (UICC) – GENEVA

In 2024, Swiss Medical Network entered into a significant collaboration with the Union for International Cancer Control (UICC). This collaboration aims to advance cancer research and innovation through various initiatives and shared resources.

Key elements of the collaboration

Research and innovation
Our objectives align with UICC's mission to accelerate cancer control globally through strategic collaborations and innovative approaches.

Educational programs
Our advanced facilities that will be beneficial for disseminating knowledge and training healthcare professionals in the latest cancer treatment protocols and technologies.

Events and workshops
The regular events and workshops we organized within the Campus Genolier will provide platforms for experts to share insights and collaborate on cancer research, directly supporting UICC's goals of improving cancer care and outcomes through education and advocacy.

Infrastructure and accessibility
The collaboration with UICC has a global focus on the facilitation of international cooperation and exchange of ideas.

This collaboration is poised to significantly impact cancer research and treatment by combining the strengths of UICC's global network and expertise with our innovative capabilities and resources. This collaboration will enhance the development and implementation of cutting-edge cancer treatments and improve patient outcomes worldwide.

ONGOING PARTNERSHIP WITH ISTITUTO EUROPEO DI ONCOLOGIA (IEO) – MILANO

On November 5, Professor Roberto Orecchia, Scientific Director of The European Institute of Oncology (Istituto Europeo di Oncologia, IEO) in Milan, visited the Campus Genolier for an insightful day of discussions and brainstorming sessions. His role of «Visiting Professor» was part of the ongoing partnership between Swiss Medical Network and Istituto Europeo di Oncologia designed to strengthen synergies across various oncology disciplines.

During the visit, a wide range of priorities were identified and aligned, involving specialists in fields such as radiation oncology, theranostics, and medical oncology. These discussions were critical for advancing the collaborative efforts between the two institutions and ensuring that the latest scientific developments are seamlessly integrated into clinical practice.

A key focus of the day was the future collaboration between Istituto Europeo di Oncologia and Swiss Medical Network in the establishment of the new Clinical and Translational Research Unit at Swiss Medical Network, which will include an Early Phase I Unit. This collaboration is poised to play a vital role in the translation of cutting-edge research into innovative therapies.

In addition to the various discussions, Professor Orecchia had the opportunity to visit the Genolier Innovation Hub, gaining valuable insights into the state-of-the-art infrastructure supporting translational research, innovative cancer research and patient care.

Looking forward, both institutions are committed to deepening their collaboration. Over the coming months, there will be an intensification of contacts between the research teams at Istituto Europeo di Oncologia and Swiss Medical Network, paving the way for exciting new advancements in oncology.

COMPLEMENTARY ACTIONS

CREATION AND ACTIVATION OF THE GENOLIER INNOVATION NETWORK

In 2024, the Genolier Innovation Network (GIN) was activated as part of the Swiss Medical Network's broader initiative to foster research and innovation in the medical field. The network is designed to integrate various stakeholders, including scientists, physicians, companies, and academic institutions, to accelerate the development and implementation of advanced medical technologies and treatments.

Content and objectives of the Genolier Innovation Network

Collaborative research

- **Translational research:** The GIN focuses on bridging the gap between laboratory research and clinical application. This involves developing new medical technologies and therapies that can be quickly and effectively translated into patient care.
- **Clinical trials and studies:** The network supports clinical trials and studies to test new medical interventions and gather data on their efficacy and safety (Genolier Innovation Hub and Swiss Medical Network).

Innovation and development

- **Medtech and Pharma collaborations:** By bringing together key players in medtech, pharmaceuticals, and biosciences, the network aims to foster strategic interactions that accelerate the transfer of innovative solutions from research to bedside.
- **Digital Health initiatives:** The GIN supports the development of digital health tools and telemedicine solutions to enhance patient care and healthcare delivery.

Educational Programs

- **Training and workshops:** The network organizes workshops, seminars, and training programs to educate healthcare professionals about the latest advancements in medical technology and treatments. These events are held in state-of-the-art facilities, including a 260-seat auditorium equipped with advanced videoconferencing capabilities.
- **Knowledge Exchange:** The GIN promotes the exchange of knowledge and best practices among its members, fostering a collaborative environment that encourages continuous learning and improvement (Swiss Medical Network).

Key Goals

- **Accelerate innovation:** To speed up the development and implementation of innovative medical solutions.
- **Improve patient care:** To enhance the quality and effectiveness of patient care through advanced medical technologies and therapies.

- **Foster collaboration:** To create a collaborative ecosystem where different stakeholders can work together to solve complex health issues.
- **Educational advancement:** To provide continuous education and training to healthcare professionals, ensuring they are equipped with the latest knowledge and skills.

The Genolier Innovation Network serves as a critical platform for driving medical innovation and improving healthcare outcomes globally, aligning with Swiss Medical Network's commitment to excellence in medical research and patient care.

CLINICAL NURSING PLATFORM (SWISS MEDICAL NETWORK)

Under the leadership of Drissia El Archi, several clinical priorities were addressed in 2024 within the Swiss Medical Network's nurse clinician platform. This included preparatory brainstorming sessions aimed at emphasizing the critical importance of innovative approaches to patient safety and quality improvement, with the goal of being prepared to act in these areas in 2025.

The core focus areas will include

Patient Safety
Enhanced monitoring of infections, falls, pressure ulcers, medication safety, surgical checklists, and staff training levels.

Elderly Patient Care
A comprehensive approach covering pre, during, and post-hospitalization care, emphasizing nutrition, physiotherapy, hygiene, and surgical site monitoring. A proposal to focus specifically on nutrition as a starting point was discussed.

Digital Health Solutions
Exploration of digital tools for monitoring patient care quality, including potential applications under review.

Key Quality Themes Identified
Pressure ulcer prevention, pain management, post-operative delirium, and comprehensive care for elderly patients in surgery.

Proposed Actions

Implementation of standards for clinical audits, enhanced nursing care protocols, and specialized projects such as an «escape game» for pressure ulcer education and collaborative patient safety initiatives. The team agreed on prioritizing a global concept for elderly care in surgery, with a focus on specific areas like falls, pressure ulcers, and post-operative complications.

EPFL ENGINEERING INDUSTRY DAY – LAUSANNE, MARCH 14

This interesting event was attended by several delegates from our Group. The program addressed a number of key issues across different engineering fields such as Engineering in the AI age, Robotics & Intelligent Systems, Health and MedTech, Energy and Sustainability, and Innovation and Collaboration. Most lectures favored interactive discussions especially in the domains of personalization and precision in diagnostics and therapeutics, engineering improvements at various scales, forward-thinking power, and energy systems, as well as open innovation and collaboration strategies. More than just a meeting ground, the event represented a unique convergence of research and industry, facilitating one-on-one meetings and diverse networking opportunities.

SWISS MEDICAL NETWORK MEDICAL DAYS – INTERLAKEN, APRIL 26-27

The Swiss Medical Network Medical Days 2024 held in Interlaken focused on the transformative impact of artificial intelligence (AI) in healthcare. This two-day event gathered medical professionals, researchers, and industry experts to explore the latest advancements in AI and discuss their practical applications in improving patient care and optimizing medical processes.

Key highlights

Theme and focus
The main theme was the integration of AI into healthcare, covering a wide range of topics from diagnostic methods to therapeutic solutions. The event aimed to stimulate in-depth discussions on how AI can enhance medical practices and patient outcomes.

Expert discussions
The event featured keynote speeches and panel discussions by leading experts in the field. These sessions provided insights into the latest AI technologies, their potential benefits, and the challenges of implementing them in a clinical setting.

Innovative technologies
Demonstrations and presentations showcased cutting-edge AI tools and applications. Participants had the opportunity to see firsthand how these technologies are being used to improve diagnostics, treatment planning, and patient monitoring.

Networking and collaboration
Medical Days 2024 facilitated networking opportunities, allowing attendees to connect with peers, share knowledge, and establish collaborations. This aspect of the event was crucial for fostering a community of innovations within the healthcare sector.

Educational sessions
Workshops and training sessions were conducted to help medical professionals understand the practical aspects of using AI in their daily practice. These sessions aimed at equipping attendees with the skills needed to leverage AI technologies effectively.

Overall, these two days emphasized the crucial role of AI in the future of healthcare, highlighting both its current applications and future potential. The event successfully brought together a diverse group of stakeholders to discuss, learn, and collaborate on advancing medical technology.

SWISS MEDICAL NETWORK ORTHO DAY – INTERLAKEN, APRIL 26

The program for the Swiss Medical Network Ortho Day 2024 is designed to provide a comprehensive overview of the latest advancements and practices in orthopedic care. The event is structured to facilitate knowledge exchange, skill enhancement, and networking among orthopedic professionals.

Over a hundred specialists gathered to explore advancements in orthopedic care, especially for the elderly. Discussions were held throughout the day covering topics such as total joint arthroplasty, rehabilitation strategies, and innovative surgical approaches designed to improve quality of life for seniors. This inspiring medical conference highlighted the essential role of orthopedics in promoting the well-being of our aging population.

The main objectives of the Ortho Day are three-fold

Knowledge dissemination
To share cutting-edge research and clinical practices in orthopedics, enhancing the knowledge base of participants.

Collaboration and networking
To foster connections among orthopedic professionals, promoting collaboration and the exchange of ideas.

Innovation promotion
To highlight and discuss the latest technological advancements and their applications in orthopedic care.

This program aimed to equip orthopedic professionals with the latest knowledge and skills, driving forward the quality and effectiveness of orthopedic care within the Swiss Medical Network and beyond.

SWISS MEDICAL NETWORK SUSTAINABILITY DAY – NEUCHÂTEL, JUNE 6

To mark World Environment Day, Swiss Medical Network took concrete steps to promote sustainability. During this day at Hôpital de La Providence, the sustainability leaders of our clinics, the general management, our partners and Dominique Sartori, Chief Sustainability Officer, discussed the three pillars of our sustainability strategy: ecological, social, and economic aspects. Swiss Medical Network already achieved remarkable success in the field of biodiversity with the installation of beehives in its clinics thanks to the *Bee Sustainable* project and the launch of a pilot waste sorting and reduction project at the Clinique Générale-Beaulieu, soon to be extended to other clinics. The partners also presented innovative solutions: GJOSA shower heads to save water, hand hygiene dispensers from SMIXIN, and the recycling of medical waste by Mediwaste. Finally, three doctors from Swiss Medical Network tackled the fascinating subject of «the ecology of a sterile operating theatre», discussing recycling and the sustainability of medical practices. The day provided many opportunities to work together to improve our responsibility towards sustainability.

THIRD SYMPOSIUM ON SUSTAINABLE HEALTHCARE – LOCARNO, AUGUST 10

Swiss Medical Network hosted the third Locarno Symposium on Sustainable Healthcare at the Palacinema in Locarno. The event brought together over a hundred representatives from various sectors to discuss future healthcare challenges, focusing on integrated care and medical education. Key presentations highlighted sustainable healthcare practices, the role of integrated care models, and the importance of interdisciplinary education in shaping the future of the healthcare system.

The Rector of the University of Italian Switzerland (USI), Luisa Lambertini, introduced the theme of sustainability in healthcare; Jérôme Cosandey, Director of Avenir Romandie, presented the current challenges of the Swiss healthcare system, while Sanjay Singh of CSS, Head of Services, Products & Health Services, outlined the strategy for integrated care and the EHC Morges care model. The theme of care was also the central topic of the roundtable discussion, where Cosandey and Singh were joined by Pius Zängerle, President of Curafutura, and Alexandre Omont, Director of Réseau de l'Arc, our Group's integrated care organisation in collaboration with Visana and the Canton of Bern.

After the respective presentation of the Genolier Foundation and Genolier Innovation Hub by Patricia Muller-Hafner and Anna Gräbner, CEO of Genolier Innovation Hub, the second part of the Symposium was dedicated to education. Among the key speakers were Dr. Philippe Eggimann, Vice President of FMH, who provided a detailed overview of the challenges that need to be addressed in medical education, particularly in the context of rising costs and the shortage of doctors, along with their working conditions. Sophie Ley, President of the Swiss Nurses Association, discussed the topic of education in relation to nurses and nursing care, emphasizing their central role in the healthcare system.

Dr. Francesco Volonté, Medical Director of the Clinica Sant'Anna presented the USI Medical Master Bedside Teaching Project, acknowledging the strengths of the Clinica Sant'Anna in Sorengo and Clinica Ars Medica in Gravesano, which are supported by an integrated approach and broader involvement in education.

SWISS MEDICAL NETWORK ANESTH DAY – ZURICH, AUGUST 31

More than eighty anesthesiologists, anesthesia nurses and other interested parties came together for the Anesth Day at the Privatklinik Bethanien in Zurich. Various aspects of contemporary, multimodal pain therapy were highlighted. In addition, the symposium dealt with the perioperative handling of patients with chronic pain and the current trends in addiction medicine – with a focus on theopioid crisis.

Among the invited speakers were Oliver Bandschapp, José A. Aguirre, Felix Laube, Thierry Nicolet, Monika Jaquenod, and Thilo Beck. The issues addressed included: *Contemporary therapy for perioperative pain* (O. Bandschapp, University Hospital Basel); *Perioperative neuraxial techniques* (J. Salimi, Privatklinik Bethanien); *Anesthesia and analgesia in outpatient surgery* (J.A. Aguirre, Stadtspital Zürich Triemli); *New concept of pain at Privatklinik Siloah* (F. Laube, Privatklinik Siloah); *Peripheral nerve blocks at the Clinique Générale Ste-Anne* (T. Nicolet, Clinique Générale Ste-Anne); *Perioperative pain therapy in patients suffering from chronic pain: warning signs of opioid dependence* (M. Jaquenod-Linder, Klinik Hirslanden Zürich); *Clinical focus: anesthesia for knee replacement outpatient surgery* (M. Jaquenod-Linder, Klinik Hirslanden Zürich); *Beyond the hospital setting: current trends regarding drug addiction and the opioid crisis in Zurich* (T. Beck, Arud Zentrum für Suchtmedizin).

MEDICINE @ETH DAY – ZURICH, SEPTEMBER 4

On the first day that ETH brought together all its research groups active in healthcare, as well as their clinical partners, the objective of the Swiss Medical Network's demonstration was to create discussions around the «stands» of the different partners. In addition to a wide range of networking opportunities, the event also offered participants the opportunity to find out about relevant networks and services at various information booths. The participation of Swiss Medical Network at one of the information booths was highly appreciated, as there is clearly a great relevance between our field of activity and medical research at ETH. Two posters were presented on this occasion: the first one by J. Bernier and O. Matzinger entitled *Swiss Medical Network, Integrated Care (VIVA), Genolier Innovation Hub* illustrated the main features and achievements of each of these three entities and platforms; the second one by J. Bernier, O. Matzinger, and M. Montemurro entitled «*Science and Innovation, the forward-thinking research platform of Swiss Medical Network*», described both the research strategies and targets of Swiss Medical Network, exemplified by the outcome of three clinical research programs in super microsurgery, oncology and ophthalmology.

SWISS MEDICAL NETWORK NURSE DAYS – BERN, SEPTEMBER 23-24

During the first day, the program covered a range of topics addressing healthcare quality, innovation, and patient care within Swiss Medical Network. Sophia Scherschel discussed rapid recovery in orthopedics, while Magdalena Ludwinek and Elssi Ramos addressed multi-resistant bacteria (BMR) and hygiene innovations in healthcare services. Lucie Grosset and Claudine Sallin Barras presented strategies for managing material and pharmaceutical stocks in care services. MotionLab's physiotherapists, Hervé Jaccard and Sébastien Oria, introduced their work, followed by Noémie Koller and Aurore Maggiotto, who explored synergies in quality and safety between home hospitalization and integrated care. Chiara Cattaneo focused on laboratory safety in the pre-analytical phase, and Dominique Truchot-Cardot discussed the role of artificial intelligence in healthcare services.

The second day was dedicated to essential themes such as drug safety, multidisciplinary management in oncology, and the central role of healthcare professionals in global health issues. A round table was held where the caregivers exchanged directly with Dino Cauzza, CEO of Swiss Medical Network, Truchot-Cardot Dominique, Full Professor, Head of the Source Innovation Lab, as well as Gyuriga Perez Teresa, Cantonal Nurse of the State of Vaud. Discussions focused on the future of nurses in the health care system of tomorrow, their training (academic and practical), their place in integrated care as well as new specialties that are booming, through the vision of the public and private sectors.

SWISS MEDICAL NETWORK SPORT DAY – BERN, OCTOBER 3

The third edition of Swiss Medical Network's Sport Day held at Bellevue Palace brought together several sports medicine specialists to discuss essential topics related to health and sports performance. More specifically, the event presented practical approaches to injury prevention and sport-specific risk management, while highlighting the importance of stress management in performance enhancement.

Highlights of the day

Injury prevention
Presentation of approaches based on biomechanical studies, nutritional advice and warm-up and recovery protocols.

Sport specific risk management
Presentation of sport specific measures to reduce travel- and competition-related injuries (e.g., swimming, soccer, etc.).

Sport psychology
Link between stress management and performance enhancement, with a focus on athletes' mental health.

A large number of issues were addressed including: *Health and safety in sports – priority on prevention* (E. Coppens, Clinique Générale-Beaulieu); *2023 Consensus Statement of the International Olympic Committee (IOC) on Relative Energy Deficiency in Sport (RED)* (N. Constantini, Shaare Zedek Medical Center); *Nutritional considerations for preventing sports injuries and discussion on the unique needs of athletes* (M. Yacoub, Hôpital de La Tour); *Psychological well-being of athletes: the challenges they face and strategies to promote mental health, confidence, and resilience* (M. Piffaretti, Vidymed; Swiss Olympic Medical Center); *Cardiovascular screening in young and elite athletes – guidelines for cardiovascular assessments* (V. Gabus, Hôpital Riviera-Chablais; CHUV); *Prevention of muscle injuries in sports* (M. Bizzini, Schulthess Klinik); *Biomechanical analysis of sports to identify injury risks* (F. Della Villa, Isokinetic Medical Group); *Injury and pathology prevention in swimming* (E. Cameron, Privatklinik Obach); *Implementation of health interventions in football teams – injury prevention, travel management, and pressure-related injuries* (M. Marano, Ars Medica); *The ideal protocol for warm-up, cool-down, and recovery* (D. Santini, Ars Medica).

SWISS BRIDGE FOUNDATION – ZURICH, OCTOBER 22

As Board member of the Swiss Bridge Foundation (Zurich), Jacques Bernier continued to participate in the activities of this Foundation, which aim is to support cancer research. Since 2000, the Swiss Bridge Award has been granted to support high-quality cancer research projects across Europe and has become one of the continent's most important cancer research awards.

In 2024, applicants were young researchers with projects focusing on early phase clinical trials. The thirty-six applications were reviewed, and the two scientific contributions awarded by the Foundation's Scientific Committee were *New therapies for glioblastomas* (T. Weiss, Universitätsspital Zürich, Switzerland) and *Bispecific Antibody* (J. Walz, Eberhard Karl University of Tübingen, Germany). The Assembly recognized the promising contributions of both projects to the field of oncology and the potential to improve patient outcomes through novel therapeutic strategies.

SWISS MEDICAL NETWORK QUALITY DAY – FRIBOURG, NOVEMBER 1

On this second edition, the quality management officers of the network met at Clinique Générale Ste-Anne to discuss new ideas for patient care improvement. The day featured practical, engaging lectures, including a compelling presentation by statistician Christian Brand on SIRIS data, which introduced valuable strategies for enhancing quality in our clinics. To further explore optimized patient care, initiatives in Value-Based Healthcare – such as PREMs, PROMs, and CROMs – were also shown. A practical workshop on risk management enabled participants to develop specific strategies for improving patient safety. This inspiring Quality Day provided numerous ideas for further developing our quality approaches and initiatives.

SWISS MEDICAL NETWORK ONCO DAY – GENOLIER, NOVEMBER 23

The third edition of Swiss Medical Network's Onco Day took place at the Genolier Innovation Hub and focused on thoracic cancers. Several internationally renowned experts were brought together to discuss and share the latest advances in the screening, diagnosis, treatment and management of lung and thoracic cancers.

Four sessions were organized

Screening for Lung Cancer, Diagnosis and Staging, Surgical Options
Specific issues addressed: *Lung cancer screening, rationale, criteria, evaluation of nodules* (X. Montet, Clinique Générale-Beaulieu); *Diagnostic pathways and staging of lung cancer* (S. Chucri, Clinique Générale-Beaulieu); *Early-stage lung cancer, VATS versus RATS and ERAS* (W. Karenovics, HUG; G. Kocher, St Claraspital).

Treating Advanced-Stage Lung Cancer
Specific issues addressed: *Advanced-stage lung cancer, multimodality therapy* (W. Weder, Privatklinik Bethanien); *Stage IV lung cancer, new concepts, and new therapies* (A. Friedländer, Clinique Générale-Beaulieu); *What is new in radiation oncology for lung cancer?* (A. Durham, HUG).

Pleural Mesothelioma
Specific issues addressed: *Standard of care, new drugs and protocols* (S. Rothschild, Kantonsspital Baden); *Pleural mesothelioma – is there still a role for surgery?* (L. Lang-Lazdunski, Clinique de Genolier); *Pleural mesothelioma – surgical options: SMART and SMARTER* (M. de Perrot, Toronto General Hospital).

Lung Metastases, Thymic Tumors and Sarcomas
Specific issues addressed: *Lung metastases – should we resect or ablate them? When? in whom?* (M. Alifano, Hôpital Cochin AP-HP); *Surgery of thymic tumors* (T. Roth, Clinique de Genolier); *Thoracic soft tissue and bone sarcomas – What's new?* (M. Montemurro, Clinique de Genolier).

7. MAIN SCIENTIFIC PROGRAMS AND RESEARCH SITES

(In alphabetical order)

1. **CELL THERAPIES**
   Swiss Stem Cell Foundation
   Swiss Stem Cells Biotech

2. **CLINICAL AND TRANSLATIONAL RESEARCH**
   Clinique de Genolier
   Clinique Générale-Beaulieu

3. **DIGITAL HEALTH/DATA SCIENCE**
   Swiss Medical Network

4. **INTEGRATED CARE**
   Réseau de l'Arc

5. **HEAD AND NECK PATHOLOGIES**
   Clinique de Montchoisi

6. **IMMUNOLOGY INFECTIOUS DISEASES**
   Clinique de Genolier

7. **INTERNAL MEDICINE**
   Clinique de Genolier
   Réseau de l'Arc

8. **INTERVENTIONAL RADIOLOGY**
   Clinique de Genolier

9. **NEUROSURGERY**
   Clinique de Genolier
   Clinique Générale-Beaulieu
   Clinique Générale Ste-Anne

10. **ONCOLOGY**
    Clinica Sant'Anna
    Clinique de Genolier
    Clinique Générale-Beaulieu
    Clinique Générale Ste-Anne
    Privatklinik Bethanien

11. OPHTHALMOLOGY
Clinique de Montchoisi
Swiss Visio Network

12. ORTHOPEDIC SURGERY
Clinica Ars Medica
Clinique de Genolier
Clinique Générale Ste-Anne
Privatklinik Bethanien
Privatklinik Obach
Schmerzklinik Basel

13. OSTEOARTICULAR PATHOLOGY
Hôpital de La Providence

14. OUTCOME RESEARCH VALUE-BASED MEDICINE
Clinique de Genolier

15. PREVENTIVE AND DIAGNOSTIC MEDICINE
Clinique Nescens

16. REGENERATIVE MEDICINE
Clinique Nescens

17. QUALITY ASSURANCE
Clinique de Genolier
Swiss Medical Network

18. SUPPORTIVE CARE
Clinique de Genolier
Swiss Medical Network

19. SURGERY:
PLASTIC SURGERY
LYMPHATIC SURGERY
MICROSURGERY
Privatklinik Bethanien

20. UROLOGY
Clinique Générale-Beaulieu

SWISS MEDICAL NETWORK SITES WITH ONGOING RESEARCH PROJECTS

BASEL
Schmerzklinik Basel

FRIBOURG
Clinique Générale Ste-Anne

GENEVA
Clinique Générale-Beaulieu

GENOLIER
Clinique de Genolier
Clinique Nescens

LAUSANNE
Clinique de Montchoisi
Swiss Visio Network

NEUCHÂTEL
Hôpital de La Providence

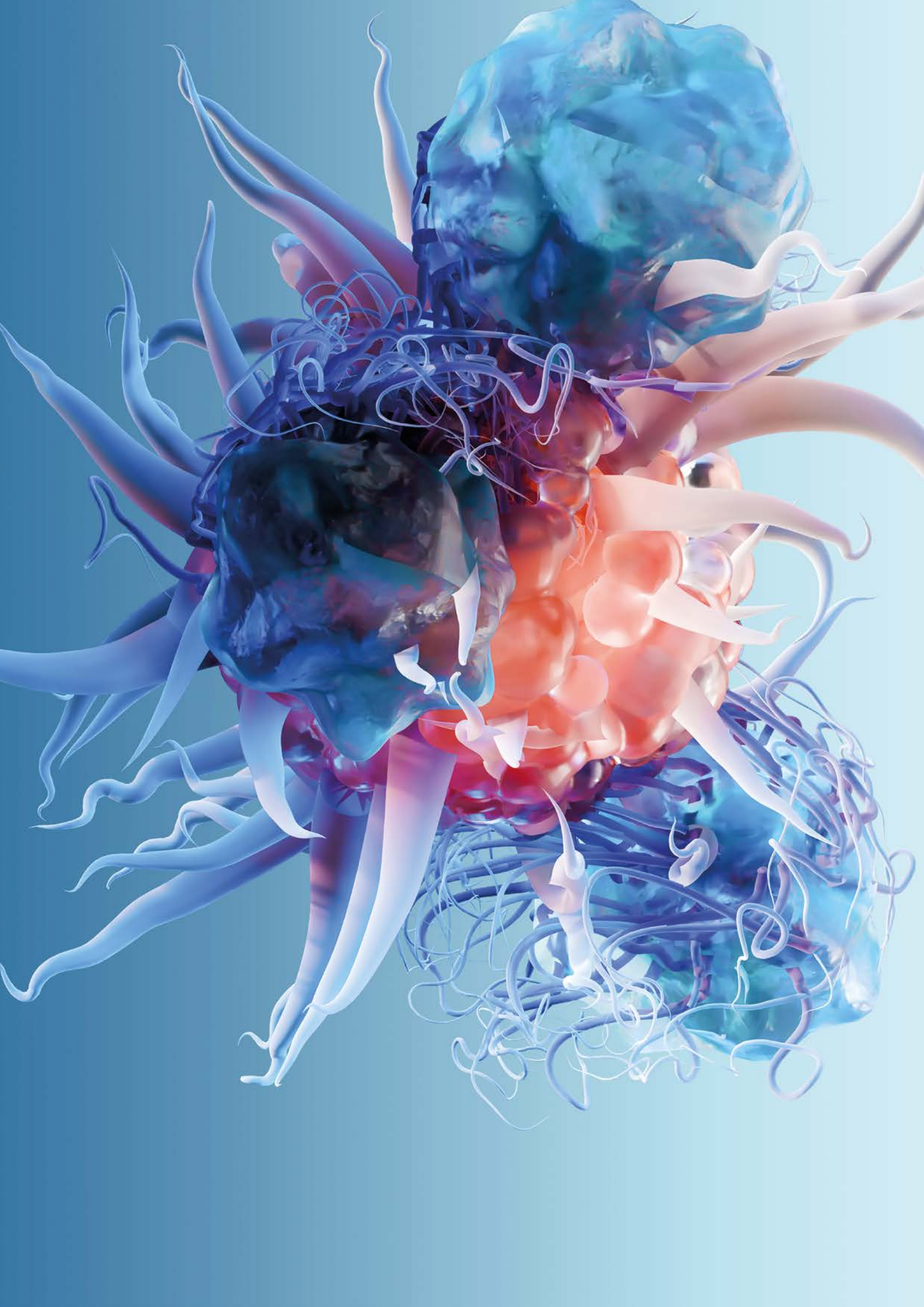
SOLOTHURN
Privatklinik Obach

RÉSEAU DE L'ARC
Hôpital de Moutier
Hôpital de Saint-Imier

TICINO
Clinica Ars Medica, Gravesano
Clinica Sant'Anna, Sorengo
Swiss Stem Cell Foundation, Lugano

ZURICH
Privatklinik Bethanien
Swiss Stem Cells Biotech

○ Other Swiss Medical Network sites.



8. ONGOING CLINICAL RESEARCH: STUDY PROTOCOLS

DESTINY BREAST RESPOND HER2-LOW EUROPE: TRIAL OVERVIEW

BREAST CANCER

- Patients entered into this trial are those presenting with unresectable or metastatic HER2-low breast cancer who have received prior chemotherapy in the metastatic setting or developed disease recurrence during or within 6 months of completing adjuvant chemotherapy.
- About half of all breast cancer patients show low levels of HER2 hence this protein is currently under investigation as a promising new target for antibody-drug conjugates.
- In a previous trial, trastuzumab deruxtecan (T-DXd) was shown to significantly benefit progression-free survival and overall survival compared to standard-of-care treatment. However, there is no real-world clinical data on effectiveness, safety, and tolerability of T-DXd in patients in the respective HER2-low unresectable and/or metastatic breast cancer setting.
- The main objective of this study is therefore to assess the effectiveness, safety, and tolerability of T-DXd.

Trial title
DESTINY Breast Respond HER2-low Europe.
A prospective, non-interventional study (NIS) with trastuzumab deruxtecan for patients with HER2-low expressing unresectable and/or metastatic breast cancer accompanied by a disease registry of patients treated with conventional chemotherapy.

Clinical type
Multi-center, multi-country, observational, prospective, non-interventional study.

Sponsor
Daiichi Sankyo Europe GmBH

Coordinating investigator
Dr Petra Laeis,
Daiichi Sankyo Europe GmBH

Patient population
Adult patients (age ≥ 18 years) with unresectable or metastatic HER2-low breast cancer who have received prior chemotherapy in the metastatic setting or developed disease recurrence during or within 6 months of completing adjuvant chemotherapy.

Background and Rationale
About half of all breast cancer patients show a low-level expression of HER2 (HER2-low) hence the HER2-low expression is a promising new target for antibody–drug conjugates such as trastuzumab deruxtecan (T-DXd). A recent clinical trial showed that compared to the physician's choice of chemotherapy, patients who received T-DXd showed a statistically significant and clinically meaningful benefit in progression-free survival and overall survival. However, there is no real-world data on effectiveness, safety and tolerability of T-DXd in patients in the respective HER2-low unresectable and/or metastatic breast cancer setting. This trial will therefore aim at describing the effectiveness of T-DXd on real world Time to Next Treatment (rwTTNT1), describing treatment patterns and patient's demographic and clinical characteristics, assess T-DXd safety and tolerability through the collection of physician-reported Safety Events of Interest (SEIs), characterize the management of physician-reported SEIs, evaluate real-world time to permanent treatment discontinuation (rwTTD1) and patient-reported tolerability.

Objective(s)
The primary objective is to describe the effectiveness of T-DXd based on real world Time to Next Treatment in patients with HER2-low expressing unresectable and/or metastatic breast cancer.

SAKK 23/16 (TAXIS): TRIAL OVERVIEW

BREAST CANCER

- Patients entered into this trial are those presenting with breast cancer, with positive axillary nodes.
- This clinical study investigates the role of a new surgical approach, called tailored axillary surgery (TAS), an innovative technique that aims at selectively removing the positive lymph nodes.
- The study compares this new surgical approach, which is likely to reduce the surgery side effects, to conventional axillary dissection.
- Should TAS be as efficacious as conventional surgery in terms of disease control, the use of this innovative approach would then improve the quality of life of a significant number of breast cancer patients with positive nodes in the axilla.

Trial title
OPBC-03/SAKK 23/16/IBCSG 57- 18/ABCSG-53/CBG-101. Tailored AXIllary Surgery with or without axillary lymph node dissection followed by radiotherapy in patients with clinically node-positive breast cancer (TAXIS).

Clinical type
Clinical trial phase III.

Sponsor
University Hospital Basel

Coordinating investigator
W.P. Weber, Basel

Patient population
The TAXIS trial will evaluate the optimal treatment for breast cancer patients with confirmed nodal disease at first diagnosis in terms of surgery and radiotherapy.

Background and Rationale
The removal of all lymph nodes in the armpit through conventional axillary dissection has been standard care for all patients with breast cancer for almost a century. In the nineties, the sentinel lymph node (SLN) procedure, which involves the selective removal of the first few lymph nodes in the lymphatic drainage system, was introduced in clinical practice. Today, conventional axillary dissection is still performed on many women with breast cancer that has spread to the nodes. It is the cause for relevant morbidity in the form of lymphedema, impairment of shoulder mobility, sensation disorders and chronic pain in as much as one third of all women undergoing the procedure. The TAXIS trial will evaluate the optimal treatment for breast cancer patients with confirmed nodal disease at first diagnosis in terms of surgery and radiotherapy.

Objective(s)
TAXIS will investigate the value of tailored axillary surgery (TAS), a new technique that aims at selectively removing the positive lymph nodes. TAS is a promising procedure that may significantly decrease morbidity in breast cancer patients by avoiding surgical overtreatment.
The main objective of the trial is to show that tailored axillary surgery (TAS) and axillary radiotherapy (RT) is non-inferior to axillary lymph node dissection (ALND) in terms of disease-free survival of breast cancer patients with positive nodes.

MK-2870: TRIAL OVERVIEW

BREAST CANCER

- Patients entered into this trial are those presenting with an unresectable locally advanced or metastatic centrally confirmed HR+/HER-2 breast cancer.
- The purpose of this study is to compare sacituzumab tirumotecan (MK-2870) as a single agent, and in combination with pembrolizumab (MK-3475), versus Treatment of Physician's Choice (TPC).
- The primary hypotheses are that MK-2870 as a single agent, and in combination with pembrolizumab (MK-3475) are superior to TPC with respect to progression-free survival (PFS) per Response Evaluation Criteria in Solid Tumors version 1.1 (RECIST 1.1) by blind independent central review (BICR) in all participants.

Trial title
An Open-label, Randomized Phase III Study of MK-2870 as a Single Agent and in Combination with Pembrolizumab Versus Treatment of Physician's Choice in Participants with HR+/HER2- Unresectable Locally Advanced or Metastatic Breast Cancer.

Clinical type and phase
Interventional, open-label, multi-center, phase III.

Sponsor
Merck Sharp & Dohme LLC

Coordinating investigator
M. Chevallier, MD,
Clinique Générale-Beaulieu, Geneva

Patient population
The study will enroll 1'200 adult patients (age ≥ 18 years) presenting an unresectable locally advanced or metastatic centrally confirmed HR+/HER-2 breast cancer.

Background and Rationale
The rationale for this investigation derives from the unmet clinical need for effective therapeutic strategies in HR+/HER2- breast cancer, particularly for patients with disease progression after standard treatments. MK-2870 is an antibody-drug conjugate engineered to deliver a cytotoxic payload selectively to tumor cells via the Trop-2 receptor, which is frequently overexpressed in breast cancers. MK-3475 augments T-cell-mediated immune responses by blocking the PD-1/PD-L1 axis, thus potentially overcoming tumor-induced immune suppression. Combining these mechanisms offers a dual modality: direct tumor cytotoxicity and immune activation.

Objective(s)
The primary objective is to measure and compare the Progression-Free Survival (PFS) of patients under MK-2870 versus TPC; and under MK-2870 in combination with MK-3475 versus TPC.

RIB-ELLE: TRIAL OVERVIEW

BREAST CANCER

- The patients entered into this study are post-menopausal female patients (age ≥ 18 years), with a diagnosis of HR+/HER2-negative advanced breast cancer.
- Endocrine (hormonal) therapy has been the backbone of HR+/HER2- negative advanced breast cancer treatment, nevertheless its efficacy is limited.
- The primary objective is to analyze the potential advantages of the addition of ribociclib – a CDK4/6 inhibitor – to an aromatase inhibitor in these patients in comparison with the endocrine therapy alone.

Study title
RIB-ELLE: A Non-Interventional Study to Assess the Safety And Efficacy of Ribociclib in Combination with an Aromatase Inhibitor (Letrozole, Anastrozole, Exemestane) in the Swiss Advanced Breast Cancer Population.

Clinical type
Clinical non-interventional study.

Sponsor - Investigator
Dr. Nadine Pasche,
Novartis Pharma Schweiz AG

Patient population
The study will enroll 200 adult post-menopausal female patients (age ≥ 18 years old), with a diagnosis of HR+/HER2-negative advanced breast cancer that will be treated with ribociclib and an aromatase inhibitor.

Background and Rationale
Endocrine (hormonal) therapy has been the backbone of HR+/HER2- negative advanced breast cancer treatment, nevertheless
its efficacy is limited.
Nonetheless, a recent clinical study showed that, in postmenopausal women with HR+/HER2-negative advanced breast cancer who had received ribociclib, a CDK4/6 inhibitor, plus letrozole versus placebo plus letrozole, showed that a 44% relative risk reduction was evident in the hazard rate of progression/death in favor of ribociclib plus letrozole.

Objective(s)
The primary objective is to analyze time to treatment failure (TTF) for the initial endocrine based treatment with ribociclib plus an aromatase inhibitor in patients with HR+ / HER2-negative advanced breast cancer in a real-world patient population (Switzerland).

SAKK 23/18 (VISION I): TRIAL OVERVIEW

GASTRIC AND ESOPHAGEAL CANCER

- Patients entered into this trial are those presenting with luminal B, ER<10%, cT1c-cT2c breast cancer, with (near) complete radiological response after neo-adjuvant chemotherapy (NAC).
- As NAC induces different response patterns, radiologic imaging is not sufficiently accurate in predicting residual disease. This clinical study investigates the sensitivity of vacuum-assisted biopsy (VAB) through the possibility of obtaining tissue of the former tumor center that could contribute more reliably to detect any residual tumor or respectively, rule out residual disease.
- The main objective of the trial is to determine the diagnostic accuracy of the post-NAC VAB in determining pCR, compared to open surgery.
- Should vacuum-assisted biopsy be more sensitive than open surgery to detect pCR after neo-adjuvant chemotherapy, this former technique should be considered as standard approach in the patient population mentioned above.

Trial title
Vacuum assisted Biopsy Immediately before Surgery as an Intra- or Pre-Operative Surrogate for Patient Response to Neoadjuvant Chemotherapy for Breast Cancer (VISION I).

Clinical type
A multicenter prospective feasibility trial. Clinical trial with other health interventions.

Sponsor
Swiss Group for Clinical Cancer Research (SAKK)

Coordinating investigator
C. Tausch, Zurich

Patient population
Patients with unifocal, histologically confirmed invasive breast cancer with immunohistochemistry luminal B type (with or without overexpression or amplification of the HER2 receptor) and all ER negative (ER < 10%) breast cancers. Initial tumor size larger than 1 and less than 5 cm (cT1c to cT2), any N, M0. Following neoadjuvant chemotherapy resulting in a radiological complete response or near complete response on radiologic imaging.

Background and Rationale
Neoadjuvant chemotherapy (NAC) has lately become common practice in the primary treatment of breast cancer. The use of modern NAC regimens lead to a complete pathologic remission (pCR) of the tumor in more than 50% in aggressive tumor types. In general, it is difficult to predict pCR in the absence of invasive-surgical techniques, as they depend on several factors such as biological subtype, the used chemotherapy regimen and anatomic stage. As NAC induces different response patterns, radiologic imaging is not sufficiently accurate in predicting residual disease. Because of this uncertainty, surgery (and the standardized assessment of resected tissue) is so far the only valid option to either ascertain complete response or to remove the complete residual disease.
Vacuum-assisted biopsy (VAB) with the possibility of obtaining tissue of the former tumor center could contribute more reliably to detect any residual tumor or respectively, rule out residual disease. Ultrasound (US) or mammographically (MG) guided VAB will be used in this trial to detect residual tumor lesions in patients with radiological complete response (rCR) after NAC.

Objective(s)
The main objective of the trial is to determine the diagnostic accuracy of the post-NAC VAB in determining pCR compared to open surgery.

9. IMPACT OF RESEARCH PROGRAMS ON PATIENT PATHWAYS

THIS SECTION PROVIDES EXAMPLES OF SUCCESSFUL COOPERATIVE AND INTERNAL CLINICAL STUDIES INVOLVING SWISS MEDICAL NETWORK TEAMS OR INDIVIDUALS.

CANCER AND VACCINES

Study: Vaccines for cancer prevention: exploring opportunities and navigating challenges

Advances in cancer immunology have highlighted the potential of cancer-preventive vaccines as a transformative strategy to reduce cancer incidence and improve patient outcomes. By inducing a targeted immune response against tumors at their earliest stages, these vaccines offer a unique opportunity to intervene before malignancies fully develop, significantly lowering disease burden. A key advantage of this approach is its ability to leverage a fully functional immune system before it becomes compromised by tumor progression or aggressive treatments like chemotherapy, thereby enhancing immune efficacy. The success of immunoprevention in virally induced cancers, such as those caused by hepatitis B and human papillomavirus, has already led to a substantial decline in infection-related malignancies, underscoring the life-saving potential of this strategy. Expanding this paradigm to other cancer types presents immense promise but also critical challenges. This review explores the preclinical evidence and pioneering clinical trials demonstrating the feasibility of prophylactic cancer vaccines while addressing key hurdles in their development. Ultimately, the widespread adoption of cancer-preventive vaccines could revolutionize cancer care, reducing morbidity, improving survival rates, and significantly enhancing quality of life for patients worldwide.

Reference

Graciotti M, Kandalaft LE. *Vaccines* for cancer prevention: exploring opportunities and navigating challenges. *Nat Rev Drug Discov*. 2024 Dec 2. doi: 10.1038/s41573-024-01081-5 IF: 122.7.

RADIO-ONCOLOGY

Study: A phase III randomised trial on the addition of a contact X-ray brachytherapy boost to standard neoadjuvant chemo-radiotherapy for organ preservation in early rectal cancer.

The OPERA trial has provided compelling evidence that contact X-ray brachytherapy (CXB) boost, in combination with neoadjuvant chemoradiotherapy (NCRT), significantly enhances organ preservation (OP) rates in patients with early-stage low-mid rectal adenocarcinoma (ADK). This multicenter, phase III randomized trial included operable patients with cT2-cT3b rectal tumors (<5 cm, cN0 or cN1 <8 mm), all receiving external beam

radiotherapy (EBRT) with concurrent capecitabine. Patients were randomized to receive either an EBRT boost (Group A, 9 Gy/5 fractions) or a CXB boost (Group B, 90 Gy/3 fractions).

After 5 years, CXB demonstrated a significantly higher OP rate, particularly for tumors smaller than 3 cm (93% in Group B vs. 54% in Group A, P < 0.001). The overall 5-year OP rate remained superior in Group B (79%) compared to Group A (56%, P = 0.004), reinforcing the long-term efficacy of CXB. Although local regrowth rates were higher in Group A (39%) than in Group B (17%), the difference did not reach statistical significance (P = 0.1). Notably, rectal bleeding (grade 1-2), the most frequent toxicity, resolved over time, and CXB did not adversely impact bowel function.

These results confirm that CXB dose escalation offers a durable OP advantage, particularly for small early-stage tumors, while maintaining good functional outcomes. However, the possibility of late local regrowth necessitates close monitoring beyond three years, emphasizing the importance of long-term surveillance strategies in organ-preserving rectal cancer management.

Reference

Baron D, Pace Loscos T, Schiappa R, Barbet N, Dost E, Ben Dhia S, Soltani S, Mineur L, Martel I, Horn S, Picardi C, Stewart A, Cotte E, Coquard R, Baudin G, Evesque L, Dhadda A, Sun Myint A, Gérard JP, Doyen J; ICONE group. A phase III randomised trial on the addition of a contact X-ray brachytherapy boost to standard neoadjuvant chemo-radiotherapy for organ preservation in early rectal adenocarcinoma: 5-year results of the OPERA trial. *Ann Oncol.* 2024 Nov 10. doi: 10.1016/j.annonc.2024.10.827 IF: 56.7

ONCO-SURGERY

Study: Precision reporting of risk and outcomes in liver transplantation

Liver transplantation remains a complex surgical intervention with a high risk of post-operative complications, influenced by factors such as recipient disease severity and variable graft quality. Despite continuous improvements in survival rates, the focus in transplantation has expanded to encompass patient quality of life, post-transplant complications, and healthcare costs. Even donor-recipient combinations classified as low risk under recently established benchmarking criteria can experience a broad spectrum of post-surgical events. Standardized tools like the Clavien-Dindo classification and the Comprehensive Complication Index (CCI) have been widely adopted to quantify post-operative morbidity, aiding in risk stratification and evaluation of emerging technologies such as machine perfusion. However, inter-observer variability and inconsistent definitions in these scoring systems pose significant challenges, leading to discrepancies in outcome interpretation. The introduction of benchmarking in liver transplantation aims to provide

standardized comparisons of donor-recipient risk and post-transplant outcomes within the first year. However, global variations in complication management and rating scales create inconsistencies in clinical assessments, affecting the interpretation of research findings and the evaluation of novel preservation techniques. This review critically examines the complexities of risk assessment and outcome reporting in liver transplantation, emphasizing the need for greater standardization to enhance clinical decision-making, improve patient care, and optimize long-term transplantation success.

Reference

de Goeij FHC, Wehrle CJ, Abassi F, Satish S, Zhang M, Panconesi R, Hashimoto K, Miller CM, Polak WG, **Clavien P-A**, de Jonge J, Schlegel A. Mastering the Narrative: Precision Reporting of Risk and Outcomes in Liver Transplantation. *J Hepatol*. 2024 Nov 16. doi: 10.1016/j.jhep.2024.11.013 IF: 26.8

10. EDUCATION

IN 2024, A NUMBER OF MEDICAL AND SCIENTIFIC EVENTS WERE ORGANIZED EITHER IN PRESENTIAL OR HYBRID MODE IN THE VARIOUS ESTABLISHMENTS OF SWISS MEDICAL NETWORK

(In alphabetical order)

CLINICA ARS MEDICA

Quadriceps arthrogenic inhibition training
Medical Training 11.04

Frozen shoulder training
Symposium 17.10

CLINIQUE DE GENOLIER

Formation entorse de cheville et ses séquelles
Medical Training 13.06

Le genou à Genolier: explorations diagnostiques et thérapeutiques
Symposium 08.11

Du diagnostic au traitement: soutenir et accompagner les patients
Public Conference 21.11

CLINIQUE DE MONTCHOISI

Reconstruction autologue après cancer du sein (DIEP et autres)
Medical Conference 04.07

Nutrition et cancer
Public Conference 14.11

CLINIQUE GÉNÉRALE-BEAULIEU

Colloque Mars bleu – Prise en charge du cancer colorectal
Medical Conference 11.03

Troisième Journée Obstétrique
Medical Conference 16.05

Troisième Journée de Cancérologie
Medical Conference 30.05

Colloque – Cancer de l'estomac et GIST
Medical Conference 29.08

Colloque – Médecine intégrative: vers une application holistique de la santé
Medical Conference 26.09

Colloque – Octobre Rose
Medical Conference 07.10

Cancer colorectal
Medical Conference 02.12

Colloque Movembre
Medical Conference 04.11

CLINICA SANT'ANNA

Wound care management
Medical Training 20.03

REA simulation
Medical Training 09-20.04

Delivery room emergency simulation
Medical Training 12.10-09.11

Lipedema and Lymphedema
Medical Conference 07.11

Movembre
Public Conference 26.11

HÔPITAL DE LA PROVIDENCE

La chirurgie du genou arthroscopique et mini invasive: chirurgie ligamentaire et suture méniscale
Public Lecture
Vincent Villa 02.05

Arthrex MobileLab
Medical Training
Vincent Villa 03.05

PRIVATKLINIK BELAIR

Urogynäkologie: Was ist neu in der Diagnostik und Therapie der Beckenbodenschwäche?
Medical Practice Assistant Event
Tobias Felix 07.05

Erkrankungen der Gallenblase
Public Lecture
Adrienne Imhof, Iwona Urbanowska-Staudinger 07.05

Eigenblutbehandlung – die neue Wunderwaffe bei Tennisellbogen und Achillessehnenbeschwerden?
Public Lecture
Viviane Centmaier-Molnar, Alexa Schmied-Steinbach 24.09

Moderne Anästhesie – was ist wichtig zu wissen?
Medical Practice Assistant Event
István Póvik 02.12

PRIVATKLINIK BETHANIEN

Evolution der Endometriumkarzinomtherapie
Specialized Lecture
Gian Piero Ghisu 28.02

Herz und Gefässe im Fokus
Public Lecture
Christian Templin, Erik Holy 13.03

Endoskopische Wirbelsäulenchirurgie – leave no trace
Lunch Lecture
Michel Schneider 21.03

Ultraschallkurs: 10 Jahre Pränatal Zürich
Specialized Lecture
Boris Tutschek 06.04

Interdigest: Es blutet!
Specialized Lecture
Interdigest 11.04

Kopf-Hals-Tumor
Specialized Lecture
Martina Broglie Däppen 15.05

Moderne Anästhesie – Immer noch gefährlich?
Public Lecture
Christoph Schubert 05.06

Swiss CVC Sommer-Symposium
Specialized Lecture
Christian Templin, Erik Holy 11.07

Gelenkersatz in der Handchirurgie
Specialized Lecture
Maurizio Calcagni 19.09

Gelenkschmerzen an den Händen – das muss nicht sein!
Public Lecture
Boris Czermak 02.10

Innovationen in der Gelenkprothetik
Public Lecture
Stefan Rahm, Philipp Neidenbach, Fabian von Knoch 03.10

IHAMZ-zmed-Fortbildung
Specialized Lecture
Vavken 31.10

Behandlung von Gelenkproblemen
Public Lecture
Stephan Plaschy, Philipp Frey, Matthias Hendrik Schmied 28.11

Interdigest: Krebs als Herausforderung im Alltag
Specialized Lecture
Interdigest 28.11

PRIVATKLINIK LINDBERG

First Aid Refresher
Medical Practice Assistant Event 08.07

Neuste Techniken des Kniegelenksersatzes
Public Lecture
Martin Bühler 10.09

Divertikulitis – Neues und Bewährtes
Medical Practice Assistant Even
Nicolas Obrist, Emanuel Gmür 18.11

Gelenkschmerzen aus orthopädischer Sicht: Was hilft?
Public Lecture
Taras Rudyy 03.12

PRIVATKLINIK SILOAH

Schneller aktiv mit Knieprothese - Velys™ Knee-Roboter
Public Lecture
André Schuster, Sophia Scherschel, Stephanie Schär 25.01

Informationsveranstaltung Senioren-Uni Velys™ Knee-Roboter
Specialized Lecture
André Schuster, Heiko Graichen 28.05

Informationsveranstaltung Senioren-Uni Velys™ Knee-Roboter
Specialized Lecture
André Schuster, Heiko Graichen 04.06

Knie-Robotik und Physiotherapie – eine wertvolle Symbiose
Medical Training
André Schuster, Heiko Graichen, Jan Hustinx 31.10

PRIVATKLINIK VILLA IM PARK

Schulter-Dilemma: Zwischen Skalpell und Selbstheilung
Public Lecture
Mohy Taha 22.02

Nahtkurs
Medical Practice Assistant Event
Eric Reiss, Sebastian Schuhmacher 14.03

Achsvermessung bei der Knieprothese: Präzision für aktive Lebensfreude
Public Lecture
Sebastian Schuhmacher 19.03

Die Prostata im Fokus: Früherkennung von Prostatakrebs und minimalinvasive Lösungen bei Prostatavergrösserung
Public Lecture
Julian Cornelius 11.06

Nahtkurs 2.0
Medical Practice Assistant Event
Sebastian Schuhmacher, Steffen Schmeichel 24.10

Künstliches Knie- und Hüftgelenk, alles wie neu?
Public Lecture
Pascal Schenk 07.11

Vom schiefen Zeh bis zur Sprunggelenkarthrose – Möglichkeiten der modernen Fusschirurgie
Public Lecture
Steffen Schmeichel 12.12

SCHMERZKLINIK BASEL

Cases ausgewählter orthopädisch-chirug. Fälle
Lunch Lecture
Victor Valderrabano 09.01

Neuraltherapie – Quaddeln und vor allem mehr... ein Überblick
Lunch Lecture
Sadiq Rahmany 13.02

Osteoporose Update, Stellenwert TBS
Lunch Lecture
Diana Frey 12.03

Impingement-Syndrome der Hüfte
Lunch Lecture
Csaba Forster-Horváth 09.04

Spondylodese ja/nein? Fälle
Lunch Lecture
Nicole Frank 14.05

Interventionen
Lunch Lecture
Christian Wölfel 11.06

Fybromyalgie – Update
Lunch Lecture
Thomas Hügle 09.07

Rheumatoide Arthritis und Differentialdiagnosen
Lunch Lecture
Diego Kyburz 13.08

Depression und chronische Schmerzstörung – Unterschiede und Übereinstimmungen
Lunch Lecture
Stefan Zechner 10.09

Psoriasis Arthritis – Ein Update
Lunch Lecture
Gerald Stapfer 08.10

Eine metabolische Schmerzerkrankung Morbus Fabry
Lunch Lecture
Albina Nowak 12.11

Psychosomatik
Lunch Lecture
Alexander Kiss 10.12

SWISS MEDICAL NETWORK

Ortho Day
Medical Conference
Philippe Glasson, Victor Valderrabano, Ivan Tami, Alec Cikes — 26.04

Medical Days
Medical Conference — 26-27.04

Third Sustainable Healthcare Symposium
Symposium — 10.08

Anesth Day
Medical Conference
Philippe Glasson, Salome Meyer — 31.08

Nurse Days
Medical Conference — 23-24.09

Sport Day
Medical Conference
Philippe Glasson, Elia Coppens — 03.10

Onco Day – Focus on thoracic cancers
Medical Conference
Philippe Glasson, Oscar Matzinger — 23.11

SWISS VISIO NETWORK

SFO Highlights
Medical Conference — 30.05

Jeudi de la Vaudoise
Doctor Training — 12.09

J'ai un diabète, je vois très bien.
Alors pourquoi faire contrôler mes yeux ? — 26.09
Public Conference

Chirurgie réfractive, y voir enfin clair
Public Conference — 28.09

Le monde de l'ophtalmologie
Public Conference — 29.09

UNOG Health Day
Free Screenings — 17.10


14
HOSPITALS WITH ACTIVE RESEARCH PROGRAMMES
16
RESEARCH PROGRAMMES
5*
MAIN RESEARCH AREAS
ONCOLOGY
OPHTHALMOLOGY
ORTHOPEDICS
SURGERY
GENOMICS
134
CO-AUTHORED PUBLICATIONS
27
IMPACT FACTOR > 10; AND 6 > 50

11. CONCLUSION

SHAPING THE FUTURE OF PATIENT-CENTERED HEALTHCARE

The year 2024 marked a turning point for Swiss Medical Network, driven by a profound commitment to transforming biomedical research into tangible benefits for patients. By advancing value-based medicine, the network launched groundbreaking research initiatives in clinical, translational, and technology-driven domains – all with a singular goal: to improve patient outcomes and enhance quality of life.

A major milestone was the establishment of the Clinical and Translational Research Unit at Campus Genolier, a unit designed not only to propel ongoing phase II and III clinical trials but also to pioneer early-phase research in oncology and vaccinology. These efforts are accelerating the development of cutting-edge therapies, ensuring that patients gain faster access to safer, more effective treatments tailored to their needs.

Collaboration has been at the heart of this transformation. Strengthened ties with leading institutions like the European Institute of Oncology and the launch of the Genolier Innovation Hub have fueled the creation of next-generation medical technologies and treatments. Innovations in digital health and theranostics have led to major breakthroughs in non-invasive diagnostics and highly personalized therapies, reducing treatment burdens and improving precision in patient care. Meanwhile, the Genolier Innovation Network has fostered a culture of cross-disciplinary collaboration, breaking down operational silos to accelerate the transition from research to real-world medical solutions.

Looking forward, Swiss Medical Network remains steadfast in its mission to redefine the future of healthcare through innovation, excellence, and patient-centered care. By embracing the principles of 4Ps medicine – predictive, preventive, personalized, and participatory – the network is shifting healthcare from a reactive model to a truly anticipatory one. Every discovery, every collaboration, and every technological advancement is ultimately geared toward delivering faster diagnoses, more targeted therapies, and better long-term health outcomes.

12. SCIENTIFIC PUBLICATIONS

This bibliography is a compilation of scientific publications authored or co-authored by physicians from Swiss Medical Network in 2024. These works, organized according to the alphabetical order of biomedical specialties, stem from in-house research programs and/or collaborative efforts.

CELL THERAPIES

- Rusconi G, Cremona M, Gallazzi M, **Mariotta L**, Gola M, Gandolfi E, Malacco M, **Soldati G**. Good Manufacturing Practice-Compliant Cryopreserved and Thawed Native Adipose Tissue Ready for Fat Grafting.*J Clin Med.* 2024;13(11):3028. doi: 10.3390/jcm13113028 IF: 3.3.
- Cremona M, Gallazzi M, Rusconi G, **Mariotta L**, Mauro Gola, **Soldati G**. State of the Art in the Standardization of Stromal Vascular Fraction Processing. *Biomolecules.* 2025; 15(2):199. doi: 10.3390/biom15020199 IF: 4.8.

EXPERIMENTAL THERAPIES

- Graciotti M, **Kandalaft LE**. Vaccines for cancer prevention: exploring opportunities and navigating challenges. *Nat Rev Drug Discov.* 2024 Dec 2. doi: 10.1038/s41573-024-01081-5 IF: 122.7.

INTERNAL MEDICINE

- Bartsch R, Aletaha D, Fuereder T, Aapro M, Jornayvaz FR, **Lang PO**, Migliorini D, Csajka C, Aretin MB, Dougoud-Chauvin V. Corticosteroid therapy in older adults with cancer: Expert recommendations from a task force of the International Society of Geriatric Oncology. *J Geriatr Oncol.* 2024 Oct 17:102077. doi: 10.1016/j.jgo.2024.102077 IF: 3.0
- Govind S, **Lang PO**, Bürkle A, et al. Detection of HHV-5 HHV-6a HHV-6b and HHV-7 in the urine: potential use as a non-invasive diagnostic tool for immune profiling. *Immun Ageing.* 2024 Nov 29;21(1):84. doi: 10.1186/s12979-024-00490-9 IF: 5.2
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MEDICAL ONCOLOGY

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ARGOS

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MINIject

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OSTEOARTICULAR PATHOLOGIES

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OUTCOME RESEARCH – VALUE-BASED MEDICINE

- **Bernier J**, Magnin I, le Gallic de Kerizouët E, Boschung J, Rebhan M. Revolutionizing Health Care Management: The 8Ps Value Proposition. Article posted online March 20, 2024. URL: https://shorturl.at/02BLL

PLASTIC AND RECONSTRUCTIVE, LYMPHATIC, MICRO AND SUPER MICROSURGERY

- Martini F, Meroni M, **Scaglioni MF**. Management of a Complex, Recurrent Case of Medial Thigh Sarcoma With Pedicled Deep Inferior Epigastric Artery Perforator (DIEP) Lymphatic Flow-Through (LyFT) Flap and Secondary Anterolateral Thigh (ALT) Free Flap With Innervated Vastus Lateralis Anastomosed to Synthetic Artery Graft: A Case Report. *Microsurgery*. 2024 Sep;44(6):e31224. doi: 10.1002/micr.31224 IF: 1.5

- **Scaglioni MF**, Meroni M. The use of SCIP-based vascularized lymphnode and lymphatic vessels transfer in perforator-to-perforator fashion: A standard approach to potentially reduce morbidity and increase efficacy in lymphedema surgery. *J Plast Reconstr Aesthet Surg*. 2024 Dec;99:85-87. doi: 10.1016/j.bjps.2024.09.063 IF: 2.0
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- Meroni M, **Scaglioni MF**. Propeller flap's assisted recipient site closure after free SCIP flap coverage of medial ankle defect: A case report. *Microsurgery*. 2024 Sep;44(6):e31215. doi: 10.1002/micr.31215 IF: 1.5
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- **Scaglioni MF**, Meroni M, Meschino A, Rajan GP. The Superficial Circumflex Iliac Artery Perforator Flap for Head and Neck Reconstruction. *Oral Maxillofac Surg Clin North Am*. 2024 Nov;36(4):489-495. doi: 10.1016/j.coms.2024.07.008 IF: 1.3
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THORACIC SURGERY

- Ripley RT, Adusumilli PS, Bograd AJ, Bölükbas S, Bueno R, Cameron RB, de Perrot M, Flores RM, Groth SG, **Lang-Lazdunski L**, Harpole DH, Pass HI, Patel M, Schmitt-Opitz I, Ugalde Figueroa PA, Wolf AS. Going to MARS may shorten our patient's survival. *J Thorac Cardiovasc Surg*. 2024 Dec 13:S0022-5223(24)01135-8. doi: 10.1016/j.jtcvs.2024.12.006 IF: 4.9

UROLOGY

- Falagario UG, Knipper S, Pellegrino F, Martini A, Akre O, Egevad L, Grönberg H, Moschovas MC, Bravi CA, Tran J, Heiniger Y, von Kempis A, Schaffar R, Carrieri G, **Rochat CH**, Mottrie A, Ahlering TE, John H, Patel V, Graefen M, Wiklund P; ERUS Scientific Working Group on Prostate Cancer of the European Association of Urology. Prostate Cancer-specific and All-cause Mortality After Robot-assisted Radical Prostatectomy: 20 Years' Report from the European Association of Urology Robotic Urology Section Scientific Working Group. *Eur Urol Oncol.* 2024 Aug;7(4):705-712. doi: 10.1016/j.euo.2023.08.005 IF: 8.3

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- Fouelefack A-GT, Ayaovi GAR, Guy K, Moube AM, Martin RJ, de Montaguere OI, Owegniti MM, Peabody J, **Rochat CH**, Hodonou F, Magloire YD, Avakoudjo JGD. Urethroplasty at St. Jean de Dieu Hospital in Tanguiéta: About 17 Cases. *J Med Res.* 2024;10(2):61-63. doi: 10.31254/jmr.2024.10204 IF: ⌀

VISCERAL AND COLORECTAL SURGERY

- Girardin T, Martin D, Lázaro-Fontanet E, Clerc D, Hübner M, Brügger L, Turina M, Brunner W, Christoforidis D, Ris F, Adamina M, von Strauss M, Hahnloser D, Swiss Colorectal Working Group. Swiss consensus on the management of acute diverticulitis. *BJS Open*. 2024 Feb;8(1):zrad165. doi: 10.1093/bjsopen/zrad165 IF: 3.5

13. SCIENTIFIC COMMUNICATIONS AND ACTIVITIES

CELL THERAPIES

ORAL PRESENTATIONS AND COMMUNICATIONS

- Gallazzi M, Rusconi G, Cremona M, **Mariotta L**, Gola M, **Soldati G**. Purified mesenchymal stem cells resist better to cryopreservation than whole stromal vascular cells (2024). Poster presented at the ISSCR annual meeting – Hambourg, Germany, July 10-13.

MEDICAL ONCOLOGY

EDUCATION AND CHAIRMAN ACTIVITIES

- **Montemurro M** co-chaired the 16th meeting GIST group at Clinique de Montchoisi – Lausanne, Switzerland, October 5.
- **Montemurro M** presented Gastrointestinal Stromal Tumors A – Z at University College London Hospital – London, UK, August 14.
- **Montemurro M** presented Desmoid Tumors at University College London Hospital – London, UK, August 21.
- **Montemurro M** presented Pulmonary metastasis – What to consider? at University College London Hospital – London, UK, Decembre 18.

NEUROSURGERY

EDUCATIONAL, VISITING AND TEACHING ACTIVITIES

- **Otten P** teached at the Formation Center for spinal surgery within the Institut Suisse pour la Formation Médicale Postgraduée et Continue (IFSM), in collaboration with Hôpital Fribourgeois (HFR).
- **Schils F** performed three live surgeries in Clinique Générale-Beaulieu with Dr. Andrew Oakley, orthopedic surgeon from New Zealand – Geneva, Switzerland, December 2024.
- **Schils F** performed two live surgeries in Clinique Générale-Beaulieu with Dr. Nicholas Finnis, neurosurgeon from New Zealand – Geneva, Switzerland, November 2024.
- **Schils F** participated in a three-day health mission in Baku, Azerbaijan, where he visited two hospitals to explore potential collaborations, met with the Swiss ambassador, and presented at the Global Association of Business People in Azerbaijan Network (GABA) – Baku, Azerbaijan, October 2024.
- **Schils F** visited two hospitals in South Korea, the Baek Hospital and the Wooridul Spine Hospital – Seoul, South Korea, July 2024.
- **Schils F** performed three live surgeries in Clinique Générale-Beaulieu with Dr. Stefan Mindea, neurosurgeon from Romania – Geneva, Switzerland, June 2024.
- **Schils F** performed two live surgeries in Clinique Générale-Beaulieu with two event managers from Spineart Company – Geneva, Switzerland, May 2024.
- **Schils F** performed two live surgeries for product managers and research associates from Spineart Company – Geneva, Switzerland, April 2024.

FORUM DISCUSSIONS

- **Otten P** participated in the Round table co-organized by the Union Patronale du Canto de Fribourg (UPCF) and The Fédération Patronal et Economique (FPE). Travail et Incapacités : regards croisés at Forum Fribourg – Fribourg, Switzerland, March 26.

ORAL PRESENTATIONS AND COMMUNICATIONS

- **Otten P**. Case presentation and discussion with panel at Swiss Young Neurosurgeons Society (SYNS) – Fribourg, Switzerland, May 2024.
- **Otten P** and colleagues presented «Evaluation of "appropriate use criteria" for surgical decision making in lumbar degenerative spondylolisthesis. A controlled, multicentre, prospective observational study» at The International Society for the Study of the Lumbar Spine (ISSLS) – Milan, Italy, May 2024.
- **Otten P**. Mon collègue suspecte une pseudarthrose, comment l'aider ? Spine Summit Francophone – Lyon, France, October 2024.
- **Otten P**. Le privé en suisse : Fiction ou réalité. Spine Summit Francophone – Lyon, France, October 2024.
- **Schils F**. Are we able to protect adjacent levels after total cervical disc replacement? 10 years follow up with Baguera C at the Asia Spine Meeting – Taichung, Taiwan, July 2024.
- **Schils F** and his colleagues successfully submitted an abstract for a poster presentation «Clinical and radiological results up to 2 years follow up with a novel 3D printed TLIF Titanium Cage: an ambispective, multi center international study about 187 patients» at the Global Spine Congress in Rio de Janeiro, Brazil, planned for 2025 – December 2024.

ONCO-SURGERY

CONFERENCE AS INVITED SPEAKER

- Among other conferences talks, **Maurer CA** was invited to the American Society of Colorectal Surgeons (ASCRS) annual congress for the best paper session for the *Diseases of the Colon & Rectum* journal.
- Elsner AT, Brosi P, Walensi M, Uhlmann M, Egger B, Glaser C, **Maurer CA**. Closure of Temporary Ileostomy 2 Versus 12 Weeks After Rectal Resection for Cancer: A Word of Caution From a Prospective, Randomized Controlled Multicenter Trial. *Dis Colon Rectum*. 2021 Nov;64(11):1398-1406. doi: 10.1097/DCR.0000000000002182 – Baltimore, USA, June 1-4.

OPHTHALMOLOGY

CONFERENCES AS ORGANIZER AND AS INVITED SPEAKER

- **Ambresin A**, Mantel I. Organisers of: Atelier pratique en imagerie oculaire in collaboration with Retina Vision and Swiss Visio Network – Lausanne, Switzerland, November 7.
- **Ambresin A**. Theoretical sessions: Imaging of progression biomarkers in geographic atrophy (Ateliers pratiques: Biomarqueurs de l'atrophie géographique en imagerie : quels indicateurs de progression ?). VuExplorer Institute, Ophthalmic Imaging: from Theory to Current Practice – Paris, France, October 4.

- **Ambresin A**. Theoretical sessions: Imaging of progression biomarkers in geographic atrophy (Ateliers pratiques: Biomarqueurs de l'atrophie géographique en imagerie: quels indicateurs de progression ?). VuExplorer Institute, Ophthalmic Imaging: from Theory to Current Practice – Paris, France, October 4.
- **Ambresin A**. Chair for: Rapid Fire | Poster Flash Session. SOG/SSO Swiss Society of Ophthalmology 117th Annual Congress – Saint Gallen, Switzerland, August 29.
- Maloca P, Blaser F, **Ambresin A**. Chairs and speakers for: Plenary Symposium: Interactive Cases. SOG/SSO Swiss Society of Ophthalmology 117th Annual Congress – Saint Gallen, Switzerland, August 29.
- **Ambresin A**, Cohen S, Borruat F-X, Malclès A, Valmaggia C, Schalenbourg A, Grimaldi G. Presenters for: Angiography cases to describe MCQ. In: Workshop: Angiography. SOG/SSO Swiss Society of Ophthalmology 117th Annual Congress – Saint Gallen, Switzerland, August 28.
- **Ambresin A**. Presenter for: Retinophotography, filters and autofluorescence: what is in it for us? In: Workshop: Angiography. SOG/SSO Swiss Society of Ophthalmology 117th Annual Congress – Saint Gallen, Switzerland, August 28.
- **Ambresin A**. Chair for: Workshop: Angiography. SOG/SSO Swiss Society of Ophthalmology 117th Annual Congress – Saint Gallen, Switzerland, August 28.
- Patel PJ, **Ambresin A**, Koh AH, Singer MA, Hill L, Kotecha A, Margaron P. Extended Interval Treatment Outcomes and Potential Q20W Dosing for Treatment of nAMD With Faricimab: a Post Hoc Analysis of the TENAYA/LUCERNE Trials. Invited speaker at: American Society of Retina Specia-lists (ASRS) Annual Meeting – Stockholm, Sweden, July 17-20.
- **Ambresin A**, Khanani AM, Lai TYY, Lim JI, London N, Kotecha A, Margaron P, Patel S, Souverain A, Willis J, Yang M. Pigment Epithelial Detachment Outcomes With Faricimab vs Aflibercept in Patients With nAMD: Results From TENAYA/LUCERNE. Invited speaker at: American Society of Retina Special-ists (ASRS) Annual Meeting – Stockholm, Sweden, July 17.
- **Ambresin A**. Photobiomodulation – New Player on the Ground or Great Business Concept? Augenklinik 17. Augenärztliches Symposium – Zurich, Switzerland, June 27.
- **Ambresin A**, Souied E. Moderators for: Pour nos patients, adoptons dès maintenant les pratiques de demain. 130e Congrès International de la Société Francaise d'Ophtalmologie (SFO) – Paris, France, May 6.
- **Ambresin A**, Mantel I, Vaclavik V. Experience Exchange, Presentation of Real Cases with Vabysmo. Invited speakers at: Angiopoietin-2 (Ang-2) in Medical Retina Diseases. Swiss Visio Montchoisi – Lausanne, Switzerland, February 1.
- **Ambresin A**. Traitement de l'atrophie géographique: résultats des études pivotales Oaks and Derby à 2 ans et premières expériences cliniques en suisse romande. Ophtalmologie: innovations thérapeutiques en rétine médicale et chirurgicale – Geneva, Switzerland, February 15.
- **Ambresin A**. Retinal Vein Occlusion In Young Patients: Is Special Treatment Required? 8th Congress of the Swiss Academy of Ophthalmology (SAoO) – Lucern, Switzerland, April 10-12.
- **Ambresin A**. Loosing Vision In Diabetic Maculopathy Without Edema: Does That Make Any Sense? 8th Congress of the Swiss Academy of Ophthalmology (SAoO) – Lucern, Switzerland, April 10-12.
- Prünte C, **Ambresin A**. Moderation for: Retina Case Club. 8th Congress of the Swiss Academy of Oph-thalmology (SAoO) – Lucern, Switzerland, April 10-12.

CONFERENCES AS FREE PAPER SPEAKER

- Bartolomeo N et al. OCT Biomarker Quantification as Short-Term Outcome Predictors of Intravitreal Faricimab Injections in Naïve Patients with Neovascular Age-Related Macular Degeneration. Free paper presented at: FLORetina 12th International Congress on OCT and OCT angiography (ICOOR) – Florence, Italy, December 5-8.
- **Ambresin A**, Barbosa M, Pannatier Schuetz Y, Gallo Castro D, Nascimbeni AC, Pathé MB, Bartolomeo N, Pigment Epithelial Detachment as Long-term Predictors of Functional and Anatomical Outcomes of Intravitreal Faricimab Injections in Naïve Patients With Neovascular Age-related Macular Degeneration. Free paper presented at: FLORetina 12th International Congress on OCT and OCT angiography (ICOOR) – Florence, Italy, December 5-8.
- Lanzetta P, Khanani AM, **Ambresin A**, Avery R, Chaikitmongkol V, Eter N, Gomi F, Lai TYY, Lim JI, London N, Harrell E, Margaron P, Patel S, Souverain A, Yang M. Reduction in Pigment Epithelial De-tachments with Faricimab vs Aflibercept in Patients with Treatment-Naïve nAMD: A TENAYA/LUCERNE Post Hoc Analysis. Free paper presented at: FLORetina 12th International Congress on OCT and OCT angiography (ICOOR) – Florence, Italy, December 5-8.
- **Ambresin A**, Gibson K, Sim D, Hill L. Predictors of Extended Treatment Intervals in Patients with DME Treated With Faricimab in the Phase 3 YOSEMITE/RHINE Trials. Free paper presented at: 24th Con-gress of European Society of Retina Specialists (EURETINA) – Barcelona, Spain, September 19-22.
- Koh AHC, **Ambresin A**, Patel PJ, Singer M, Dagincourt N, Hill L, Kotecha A, Maragron P. Analysis of Extended Interval Treatment Outcomes, Potential for Q20W Dosing and Predictors of Treatment Dura-bility in nAMD With Faricimab From the TENAYA/LUCERNE Trials. Free paper presented at: 24th Con-gress of European Society of Retina Specialists (EURETINA) – Barcelona, Spain, September 19-22.
- **Ambresin A**, Pannatier-Schuetz Y, Nascimbeni AC, Gallo Castro D, Barbosa M. 12-month Outcomes of Intravitreal Injections in Naive Neovascular Age-related Macular Degeneration: Durability and Retinal Fluids Analysis Using Artifical Intelligence. Audio-narrated free paper presented at: 24th Congress of European Society of Retina Specialists (EURETINA) – Barcelona, Spain, September 19-22.
- Barbosa M, Owlya N, Pannatier-Schuetz Y, Nascimbeni AC, Gallo Castro D, **Ambresin A**. One-year Outcomes of Switching from Aflibercept to Faricimab in Resistant nAMD: Durability and Retinal Fluids Analysis Using Artificial Intelligence. Audio-narrated free paper presented at: 24th Congress of European Society of Retina Specialists (EURETINA) – Barcelona, Spain, September 19-22.
- Bartolomeo N, Barbosa M, Chitoroaga M, Owlya N, Nascimbeni AC, Pannatier-Schuetz Y, Gallo Castro D, **Ambresin A**. Short-term Outcomes of Pigment Epithelial Detachment in Neovascular AMD Patients Switched from Aflibercept to Faricimab. Audio-narrated free paper presented at: 24th Congress of Euro-pean Society of Retina Specialists (EURETINA) – Barcelona, Spain, September 19-22.
- Chitoroaga M, Owlya N, Barbosa M, Nascimbeni AC, Pannatier-Schuetz Y, Gallo Castro D, **Ambresin A**. Adaptive Optics Transscleral Flood Illumination (AO-TFI) Imaging of Retinal Pigment Epithelium (Rpe): Unveiling Alterations in Dry Amd Retina Using a Novel Segmentation Method. Audio-narrated free paper presented at: 24th Congress of European Society of Retina Specialists (EURETINA) – Barcelona, Spain, September 19-22.

- Khanani AM, **Ambresin A**, Avery R, Chaikitmongkol V, Eter N, Gomi F, Lai TYY, Lim JI, London N, Harrell E, Margaron P, Patel S, Souverain A, Yang M. Reduction in Pigment Epithelial Detachment (PED) With Faricimab vs Aflibercept: A Subgroup Analysis of Patients with Large and Serous PEDs From the Pooled Phase 3 TENAYA and LUCERNE Trials. Audio-narrated free paper presented at: 24th Congress of Eu-ropean Society of Retina Specialists (EURETINA) – Barcelona, Spain, September 19-22.
- Ferrone P, **Ambresin A**, Avery R, Chaikitmongkol V, Gomi F, Khanani A, Timothy YYL, Lim JI, London N, Harrell E, Maragron P, Patel S, Singer M, Souverain A, Yang M. Response of Large and Serous Pigment Epithelial Detachment to Faricimab Versus Aflibercept in Patients With nAMD: A Subgroup Analysis from TENAYA and LUCERNE. Free paper presented at: Retina Society 57th Annual Scientific Meeting – Lisbon, Portugal, September 11-15.
- Barbosa M, Owlya N, Pannatier-Schuetz Y, Nascimbeni AC, Gallo Castro D, **Ambresin A**. One Switching from Aflibercept to Faricimab in Resistant nAMD: Durability and Fluids Analysis Using Artificial Intelli-gence. Free paper presented at: 47th Macula Society Annual Meeting – Palm Springs, USA, February 7-10.

CONFERENCES AS POSTER PRESENTER

- Somfai GM, Turgut F, Tappeiner C, Hatz K, Mantel I, **Ambresin A**, Donati G, Vivien G, Nagyová D, Pfister I, Schild C, Garweg J. A Swiss Cohort Study on Intravitreal Dexamethasone Implant in Eyes with Diabetic Macular Edema Pretreated by Anti-VEGF Drugs. ePoster presented at: 24th Congress of European So-ciety of Retina Specialists (EURETINA) – Barcelon, Spain, September 19-22.
- Chitoroaga M, Pannatier-Schuetz Y, Gallo Castro D, Nascimbeni AC, **Ambresin A**. Long-term follow-up of outer retina microdefects (ORMD) in pachychoroid-associated epitheliopathy: a report of two cases. ePoster presented at: SOG/SSO Swiss Society of Ophthalmology 117th Annual Congress – Online, August 28-30.
- Chitoroaga M, Pannatier-Schuetz Y, Gallo Castro D, Nascimbeni AC, **Ambresin A**. Spectral Domain Op-tical Coherence Tomography (SD-OCT) features in a de novo TFAP2A mutation in a child with branchio-oculo-facial (BOF) syndrome. ePoster presented at: SOG/SSO Swiss Society of Ophthalmology 117th Annual Congress – Online, August 28-30.
- Ferrini W, Schorderet DF, Nicopoulos K, **Ambresin A**. A novel heterozygous compound mutation in ABCA4 gene linked to late-onset Stargardt disease revealed in the differential diagnosis of early AMD. ePoster presented at: SOG/SSO Swiss Society of Ophthalmology 117th Annual Congress – Online, August 28-30.
- N Bartolomeo N, Déglise A, Pannatier-Schuetz Y, Nascimbeni AC, Gallo Castro D, **Ambresin A**. Retinal Toxicities of Anticancer Drugs: A Case Series. Poster presented at: SOG/SSO Swiss Society of Ophthalmology 117th Annual Congress – Saint Gallen, Switzerland, August 29.
- Chitoroaga M, Perez Y, Owlya N, Barbosa M, Nascimbeni AC, Pannatier-Schuetz Y, Gallo Castro D, **Ambresin A**. Adaptive Optics-enhanced Dual Retinal Layer Imaging and Region Reflectivity-based Seg-mentation: Unveiling Variances in Healthy and Diseased Retina. Poster presented at: Association for Research in Vision and Ophthalmology (ARVO) Annual Meeting – Seattle, USA, May 5-9.

- Chitoroaga M, Perez Y, Pannatier-Schuetz Y, Gallo Castro D, Nascimbeni AC, **Ambresin A**. Spectral Domain Optical Coherence Tomography (SD-OCT) Features in a De Novo TFAP2A Mutation in a Child With Branchio-oculo-facial (BOF) Syndrome. Poster presented at: Association for Research in Vision and Ophthalmology (ARVO) Annual Meeting – Seattle, USA, May 5-9.

UROLOGY

EDUCATIONAL, VISITING AND TEACHING ACTIVITIES

- **Wirth G** contributed to the robotic surgery program at the Hôpitaux Universitaire de Genève (HUG).
- **Wirth G** continued his teaching activities at the Faculty for Pharmaceutical Sciences in Geneva (UNIGE), the Haute Ecole de Santé Vaud (HESAV) in Lausanne and the Emergency Department of UNIGE.
- **Rochat C-H** supervised multiple surgeries at Hôpital Daler Fribourg (robotic surgery, intuitive proctoring).
- **Rochat C-H** participated in surgical workshops, humanitarian medicine – Tanguiéta, Benin, February 28-March 11.
- **Rochat C-H** performed surgeries on obstetric fistulas and male urethral strictures, humanitarian medicine – Tuléar, Madagascar, November 9-26.

ORAL PRESENTATIONS, COMMUNICATIONS AND MODERATIONS

- **Wirth G** was a moderator during a session on prostatic carcinomas at the Annual Conference of the Swiss Association of Care in Urology (ASSU) – Lugano, Switzerland, September 11-13.
- **Wirth G** participated in a prostate cancer conference at Clinique Générale-Beaulieu – Geneva, Switzerland, November 4.
- **Wirth G** was a moderator at the Swiss International Prostate Center (SIPC) conference at Campus Biotech – Geneva, Switzerland, November 5.
- **Rochat C-H**. African Collaboration on Obstetrics Fistulas: 30 Years of Experience. Senegalese Urological Association of Dakar – Dakar, Senegal, May 16-18.
- **Rochat C-H**. Evolution of Indications and Outcomes for Robot-Assisted Prostatectomy. Senegalese Urological Association of Dakar – Dakar, Senegal, May 16-18.
- **Rochat C-H**. Minimally Invasive Surgery for Iatrogenic Vesicovaginal Fistulas with Robotics. Senegalese Urological Association of Dakar – Dakar, Senegal, May 16-18.
- **Rochat C-H** and Nicolas Cleuet released a book intitled «Reborn» at the International Obstetric Fistula Day – May 23.

POSTERS

- Fleury N, Martins-Favre M, Lesec G, Hugonnet C, **Wirth G**. Implementation of a robotic urologic surgery program within a specialized pathway in Fribourg: results at one year. Poster presented at the Annual Conference of the Swiss Association of Care in Urology (ASSU) – Lugano, Switzerland, September 11-13.

SCIENTIFIC AUDITS AND BOARD EXAMINATION

- **Wirth G** certified the Prostate Cancer center of Basel-Liestal, Kantonsspital Baselland) during a two-day audit – Basel, Switzerland, 2024.
- **Wirth G** continued his activities of board-examiners for the Swiss Society of Urology.

ORTHOPEDIC SURGERY

ORAL PRESENTATIONS AND CHAIRMAN ACTIVITIES

- Ferrazzini L, **Giesen T** earned the first price in the «Premio Giovani Competition» during the Italian National Congress of Surgery of the Hand with their presentation of «Challenging the Conventional Mechanism of Post Traumatic Boutonniere Deformity in the Long Fingers: A Cadaveric Study and Case Report»– Rome, Italy, November 21.
- Costa L, **Giesen T** earned the third price in the «Premio Giovani Competition» during the Italian National Congress of Surgery of the Hand for their presentation of «Extensor Triple-Flap Integrated Tenolysis; a retrospective 17 patients case series» – Rome, Italy, November 21.
- **Valderrabano V** was a chairman of the Ortho Day Conference of Swiss Medical Network – Interlaken, Switzerland, April 26.
- **Valderrabano V** was a chairman at the Orthopedic Foot & Ankle Master Course conference of the International Bone Research Association (IBRA), Anatomy Department, University of Basel – Basel, Switzerland, November 8-9.
- **Valderrabano V** was a chairman at the 3rd Basel International Ankle Osteoarthritis Course, IBRA Orthopedics Foot & Ankle Master Course, International Bone Research Association IBRA, Anatomy Department, University of Basel – Basel, Switzerland, June 7-8.
- **Valderrabano V** was a chairman at the International Bone Research Association (IBRA) 2024 course and presented *Managing Complex Collapsing and Valgus Deformities of the Foot and Ankle* (Chairpersons: Dr Cesar de Cesar Netto C, Durham NC, Valderrabano V) – Miami, Florida, USA, March 22-23.

SCIENTIFIC REPORT 2024

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