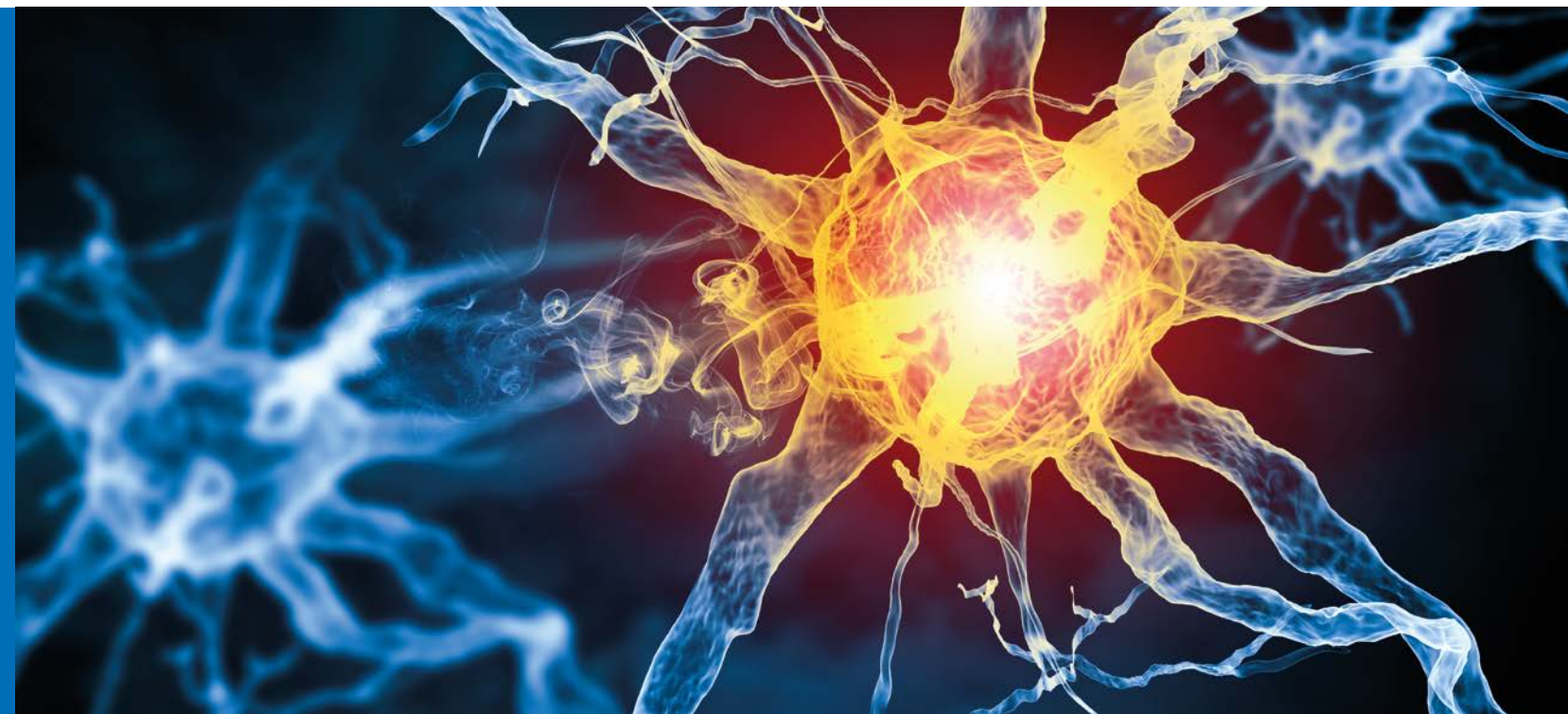




SWISS MEDICAL  
NETWORK

## SCIENTIFIC REPORT 2022

SWISS MEDICAL NETWORK



### SCIENTIFIC REPORT 2022

Swiss Medical Network  
Route du Muids 3, CH-1272 Genolier  
[www.swissmedical.net](http://www.swissmedical.net)



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## FOREWORD

### SCIENCE & INNOVATION, THE NEW SCIENTIFIC PLATFORM OF SWISS MEDICAL NETWORK

In 2022 Swiss Medical Network further developed its scientific research programs in the framework of a new platform, called "Science & Innovation". There were at least two reasons for assembling this new platform.

The first one was to put more emphasis on the ever-growing commitment of Swiss Medical Network to intertwine clinical and translational research programs. And this, not on its own but in full synergism with other scientific entities. The second one was to delineate with more precision the contours of the efforts that Swiss Medical Network is putting forth to both monitor the safety and effectiveness of the clinical interventions provided in all sites of the network and facilitate a direct access to innovative forms of diagnosis and treatment, also in the framework of total health.

Along the expansion of its scientific activities, Science & Innovation is also pursuing and intensifying its original goals, as those referring to the resolution of complex health problems by identifying and applying efficient and sustainable solutions.

While we promote three main axes of research, developing prospective clinical studies around outcome and quality measurements, personalized medicine and data analyses, at the same time, we acknowledge the persistence of various sources of weakness in biomedical research, which, as underlined in our previous reports, require special attention, such as the constraints linked to the absence of longitudinal view of healthcare journey, as was the case, for instance, for many aspects of the management of the COVID-19 pandemic.

Through the confirmed progression of our scientific research activities in a significant number of specialties, the research teams confirm their commitment to engage in innovative solutions along various axes, from the reinforcement of biomedical ecosystems to a tighter adherence to total healthcare principles, this latter pathway being one of the priorities pursued by Swiss Medical Network.

A confirmation of the robust role the Swiss Medical Network's researchers are playing is emphasized by the numerous, high-impact publications they author or co-author, very often through the collaborative research they are fostering with other national and international scientific bodies.

Finally, the Science & Innovation Newsletter, the quarterly publication launched last year by Swiss Medical Network, vows to allow an easy access to the most prominent scientific works either developed internally to the Network or in the framework of actions concerted with other national and international research entities.

**Jacques Bernier, MD**  
 Chief Science Officer  
 Swiss Medical Network



## KEY MESSAGES

### STRATEGIES

- Besides translational and clinical research, Swiss Medical Network develops outcome research programs through Science & Innovation to facilitate access to value-based medicine and integrated care;
- Science & Innovation accelerates the transfer of innovative solutions to the clinic, especially in the field of precision medicine;
- It aligns its priorities with current lines of biomedical research in other major institutions, in full collaboration with the Genolier Innovation Network, the network of our scientific partners;
- It favors collaborative work with federal and international bodies (e.g., Réseau Romand d'Oncologie, ETHZ, SAKK, EORTC, etc.).

### STRUCTURES AND ORGANISATION

- Science & Innovation develops "bench to bedside" ecosystems in order to guarantee access to clinical studies at Clinique de Genolier and in other Swiss Medical Network sites;
- It lays the foundation for concerted actions between researchers within Swiss Medical Network, also through the consolidation of databases;
- It develops partnerships with major swiss institutions involved in biomedical medical research (Biopôle in Lausanne, Start-Up Club SITEM-Insel in Bern).

### OPERATIONAL ASPECTS

- Science & Innovation develops its participation to prospective clinical trials in full compliance with quality assurance and bioethical requirements;
- It extends its scientific activities to new investigational fields such as data science, digital health, and genomics;
- It forecasts and monitors in real-time scientific requirements of researchers;
- It sets up events fully dedicated to innovation and Research & Development;
- It promotes scientific educational/training programs.





## EMPOWERING SCIENCE AS TRANSLATION: FROM QUESTIONING RESEARCH PATHS TO ASCERTAINING INNOVATIONS

In biomedicine, scientific research encompasses numerous fields of activity along the “from bench to bedside” chains. Though of distinct nature, preclinical experiments and field-based ascertainties are meant to be, in an ideal world, a continuum from fully integrated experimental concepts to significant advances in treatment outcome.

In the real world, various classes of circumstances and limitations often account for more complex relationships between the expectations generated by laboratory investigations and the therapeutic index of a new drug in clinical setting. These “noises” along the line of translational (or “transfer”) research are more frequent or more perceptible if this type of activity is considered in isolation, for not enough attention is paid to analyses across a broader range of scientific endeavor. Indeed these cross talks very often provide key messages on analogies and congruences from other fields and can help accelerate accurate knowledge transfers.

As pointed out by the American biologist Scott Gilbert, “almost all development may be codevelopment”. In our view this statement can be extrapolated to many scientific fields. As a matter of fact, in biomedicine, breakthroughs almost always result from concerted actions: first between biologists and chemists in the preclinical phase, and between laboratory stakeholders and physicians at the patients’ bedside. In this, the questioning and ascertaining binary model is key to make research apply to greater scales.

“Scale up” is actually one of the mottos, the Swiss Medical Network’s teams adhere to, whatever their field of research: from the implementation of innovative medtech equipment to the delivery of novel drugs and precision medicine, “scalability” is indeed one of the hallmarks we take into consideration within our Science & Innovation community as demonstrated by three examples of successful research programs pertaining to Oncology, Internal Medicine and Neurosurgery (see section “Impact of research programs on patient pathways”).

In the past, we already pointed out the limitations inherent to the development and outputs of siloes that consume large amounts of investments. They prevent doctors from accessing the most up-to-date information and even curtail highly relevant discoveries. To combat them nevertheless requires behavioral changes, and therefore time.

With this in mind, Science & Innovation’s vocation is to accompany researchers and doctors along the translational research tracks, including those to total health. In this the scientific platform of Swiss Medical Network has a critical role to play in providing a direct access to innovative solutions to its patients in the full respect of good medical practice and bioethical principles.

## RESEARCH

### RESEARCH ORGANIZATION & STRUCTURE

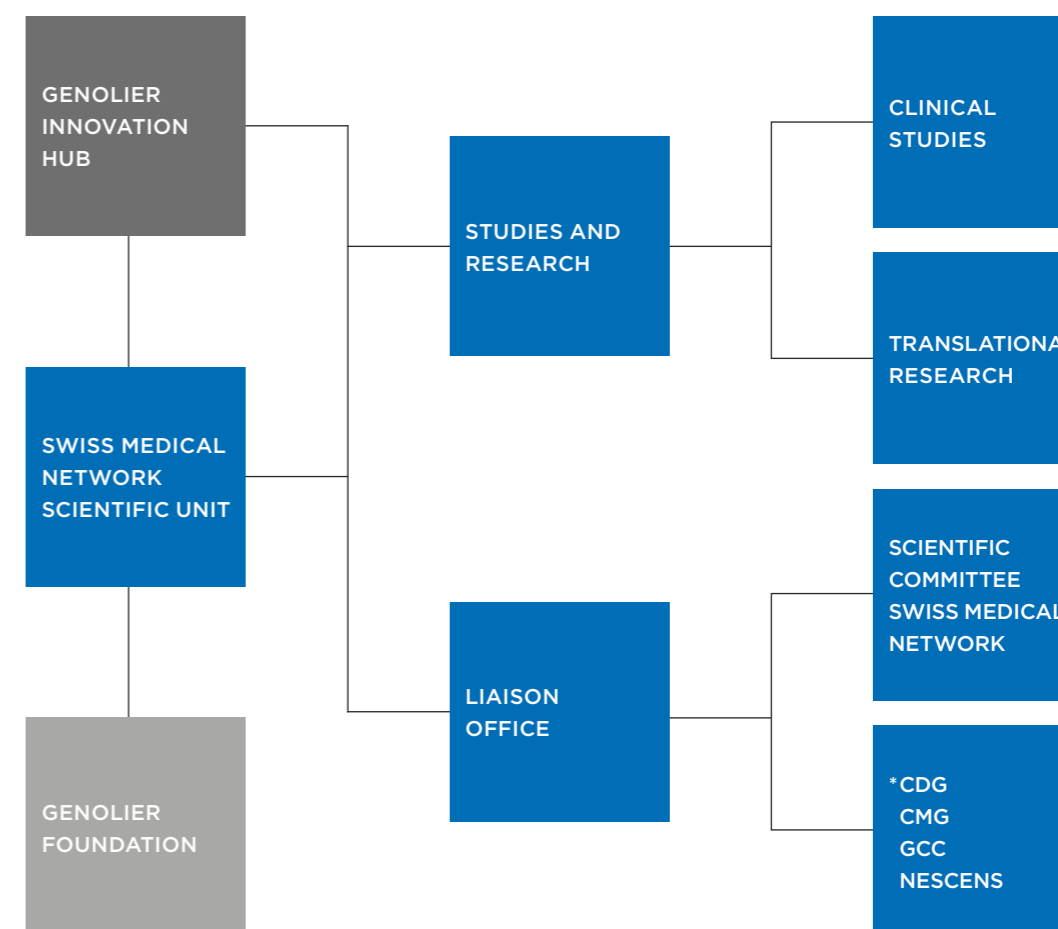
- The **Scientific Executive Committee** is a governing body with various advisory and supervisory functions, reporting directly to Swiss Medical Network’s Board of Directors. Its role is to support and promote research at all sites.
- The **Swiss Medical Network – Scientific Committee** coordinates plans and policies between the two entities, with a view to take concerted actions, foster cooperation and align strategies regarding the development of research programs conducted within Swiss Medical Network and other related organizations. Its focus lies in:
  - Paving the way for high-quality research;
  - Incentivizing the creation and development of research units in specific areas;
  - Spotlighting interactions with internal and external research institutes;
  - Actively supporting fundraising activities (Genolier Foundation);
  - Allocating research budgets;
  - Advising on financing measures for submitted scientific projects.
- The **Project Steering Committee** is composed of physicians covering different specialties and being active in various sites of Swiss Medical Network. It includes experts from research domains such as Oncology (namely Medical Oncology, Radio-Oncology, and oncological Surgery), Orthopedic Surgery, Ophthalmology, and Cardiology and pursues three main tasks:
  - Its multi-disciplinarity is aiming at strengthening Swiss Medical Network as a biomedical research network;
  - Through the leadership of its members, this committee is bound to breed grounds for innovations through participative and interactive processes, both inside Swiss Medical Network and with other national and international research bodies;
  - The Project Steering Committee promotes research strategies aiming at a mutual integration of Genolier Innovation Hub and Swiss Medical Network’s scientific platform.

Dedicated liaisons aim at facilitating the harmonization of plans and policies between these three entities – this with a view to achieving concerted actions, cooperation, and coordination of strategies along the development of research programs conducted within Swiss Medical Network and other related organizations.

Swiss Medical Network’s research actions comply with the recommendations established by the Swiss Academy of Medical Sciences and bio-ethical cantonal authorities.

### Structure, bodies and research axes Genolier Healthcare Campus

The figure provides an overview of the various structures, bodies, and research axes that compose the general organization of the Genolier Healthcare Campus and Swiss Medical Network’s global research platform.



\* CDG: Clinique de Genolier  
 CMG: Centre Médical de Genolier  
 GCC: Genolier Cancer Center

## RESEARCH GOVERNANCE

### Scientific Executive Committee (In alphabetical order)



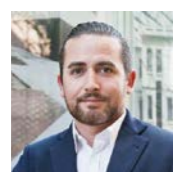
**Jacques Bernier**  
Chief Science Officer,  
Swiss Medical Network

Specialist in Radio-Oncology and Nuclear Medicine from the University of Liège 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 in Geneva. 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.



**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.



**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 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.



**Patricia Muller-Hafner**  
Project Manager  
Genolier Foundation

### Swiss Medical Network - Scientific Committee (In alphabetical order)



**Dr Matti Aapro**  
Clinique de Genolier, Genolier



**Dr Christophe Cordier**  
Synlab Suisse, Lausanne



**Dr Barbara Ankli**  
Schmerzklinik Basel, Basel



**Pr Guido Garavaglia**  
Clinica Ars Medica, Gravesano



**Dr Jacques Bernier**  
Swiss Medical Network



**Dr Philippe Glasson**  
President,  
Swiss Medical Network



**Dr Daniel Christen**  
Privatklinik Bethanien, Zurich



**Dr Oscar Matzinger**  
Clinique de Genolier, Genolier



## Project Steering Committee

(In alphabetical order)

### COORDINATORS

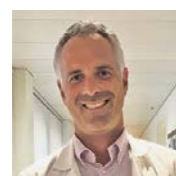


**Dr Jacques Bernier**  
Chief Science Officer,  
Swiss Medical Network



**Pr Walter Weder**  
Thoracic Surgery,  
Privatklinik Bethanien, Zurich

### MEMBERS



**Dr Guido Garavaglia**  
Orthopedic Surgery,  
Clinica Ars Medica, Gravesano



**Dr Oscar Matzinger**  
Radiation Oncology,  
Clinique de Genolier, Genolier



**Dr Volker Kirchner**  
Medical Oncology,  
Clinique de Genolier, Genolier



**Dr Gabor Sütsch**  
Cardiovascular Diseases,  
Privatklinik Bethanien, Zurich



**Dr Antoine Leimgruber**  
Nuclear Medicine,  
Clinique de Genolier, Genolier



**Pr Victor Valderrabano**  
Orthopedic Surgery,  
Schmerzlinik Basel, Basel



**Pr Kaweh Mansouri**  
Ophthalmology,  
Swiss Visio Network,  
Lausanne



**Dr Fabian Von Knoch**  
Orthopedic Surgery,  
Privatklinik Bethanien, Zurich



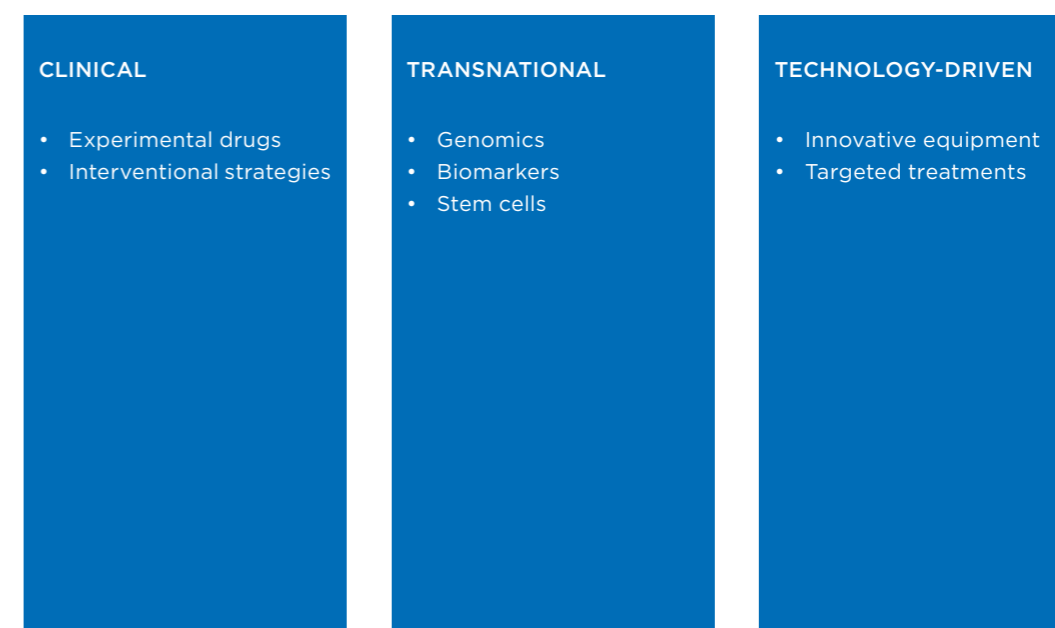
## RESEARCH STRATEGY

Science & Innovation covers various activities: among others, prevention, diagnosis, treatment, and post-therapeutic monitoring. By collecting evidence, its strategy is to determine the safety and efficacy of diagnostic procedures and treatment regimens along the paths to value-based medicine.

A domain of major interest to Science & Innovation, “precision medicine” improves the ability to early detect, diagnose and treat disease, in function of the individual genetic profile and as a result of the most recent advances in “omics” technologies (genomics, transcriptomics, proteomics, metabolomics, etc.)

A large number of scientific programs are currently conducted by the Swiss Medical Network’s research teams along 3 main axes (clinical research, translational research, and technology-driven research). All of them are developed in accordance with applicable national and international regulations and directives (Quality Assurance Systems, audits, GCP, GMP, etc.).

## Science and Innovation: main research axes



As a general policy, Science & Innovation adheres to the roadmap proposed by the Swiss Academy of Medical Sciences in their very recent “White Paper” (Tapernoux M, Bassetti CLA. Bulletin des Médecins Suisses, 2022;103(6):179-181), which sets out an action plan with seven objectives, in patient-centred clinical research:

1. Create a national platform for the coordination of public actors in clinical research;
2. Build strong partnerships with society, citizens and patients;
3. Promote a system of care that systematically integrates clinical research: Good care comes with - and from - good science;
4. Invest in the development of innovative approaches, methods and technologies in clinical research, made possible by digital technology;
5. Strengthen translational, multidisciplinary and integrated clinical research teams;
6. Ensure an attractive environment for clinical and care researchers that supports them at all career levels;
7. Reduce the complexity of regulatory and data-related processes to increase efficiency and accelerate the translation of clinical research.





## ONGOING RESEARCH DOMAINS

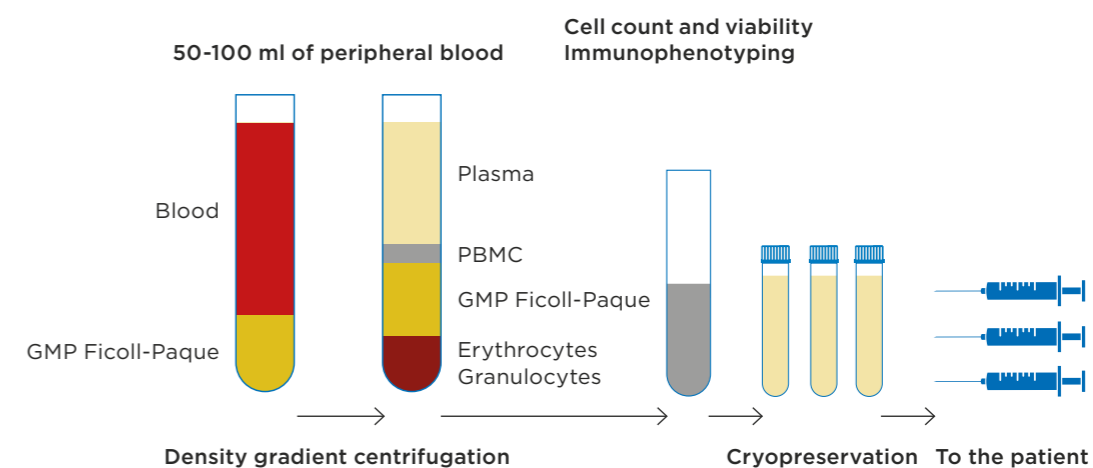
(In alphabetical order)

### CELL THERAPIES

#### Swiss Stem Cell Foundation (SSCF)

SSCF is a nonprofit foundation created in 2006 and part of Swiss Medical Network since March 2022. After a period of dormancy due to the pandemic the research activity was restarted with a small research group and is gradually increasing after activation of contacts established during the last 10 years in Switzerland and abroad. This has led SSCF to reactivate stand-by projects but also to push forward new projects. In the Table below we illustrate the on-going projects.

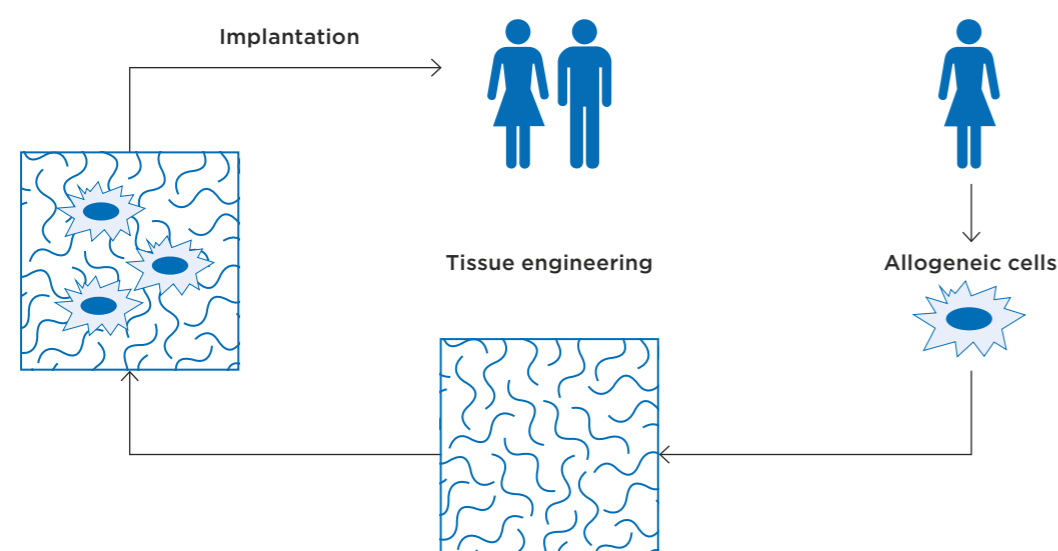
1. The monocyte project, aiming at the GMP production of hypoxic monocytes for critical limb ischemia has been upgraded in the GMP facility of SSCB, a private company with whom SSCF works for cell therapies and a publication appeared in September on International Journal of Molecular Medicine. This project is now in the clinical trial phase, where we are looking for medical partners to offer this GMP product to patients. Here below, the preparation of monocytes starting from peripheral blood.



2. We realized in 2019 that stromal vascular fraction (SVF) coming from adipose tissue extraction could contain exosomes, meaning very small extra-cellular vesicles budding from mesenchymal stem cells present in the cell suspension. This led us start a project aiming at the production of a “washing buffer” containing exosomes for skin rejuvenation. The project was started in collaboration with Nescens and Dr. Sophie Menkes, at the Clinique de Genolier. The results of this project are expected by the middle of 2023.



3. A third project of tissue engineering, aiming at the treatment of patients with expanded allogeneic cells seeded onto a synthetic scaffold, has been initiated in July 2022 in collaboration with a private company established in EPFL campus and in collaboration with Prof. Ann-Lee Applegate of CHUV. The idea here is to allow allogeneic cells from a donor to colonize a rope-like synthetic scaffold and transplant the resulting tissue engineered product in a hand of a patient. The study is expected to start in the beginning of 2023 while the preparation of documentation needed for the regulatory body is ongoing.



4. In parallel SSCF is evaluating new product based on adipose tissue, known to contain up to 30% of mesenchymal stem cells, that could be useful for patients in orthopedics applications. Following the new Swiss legislature, orthopedic applications using mechanically dissociated adipose tissue or adipose-derived stromal vascular fraction could be considered as homologous transplants in knees, opening the way to this application that has been referred in literature as beneficial for patients suffering of osteoarthritis of the knee. The following figure shows the approach to this pathology by single intra-operatory intervention and parallel banking of cells.
5. SSCF is validating a medical device that can virtually separate mesenchymal stem cells without pre-labelling of cells. The device is based on microfluidic and preliminary results show that adipose-derived mesenchymal stem cells can be effectively separated by size and morphology when submitted to microfluidic forces. Definitive results are expected by mid 2023.
6. Validation of devices is ongoing also on the mechanic dissociation of adipose tissue and SSCF is validating 5 different commercially available devices which will be useful for clinicians willing to use mechanically dissociated adipose tissue for patient's treatments, noteworthy for knee treatments mentioned above. Results are expected by mid 2023.

## DIGITAL HEALTH AND DATA SCIENCE IN HEALTHCARE

### Swiss Medical Network – Inovalon collaboration

In a report published by Tom Laughlin and Matthew Caminiti in March 2022, Inovalon, a US company collaborating with Swiss Medical Network, outlined the work performed in a proof of concept (POC) between Inovalon and Hôpital du Jura bernois/Swiss Medical Network through processes of enhanced monitoring and measurement of the care being delivered.

POC success criteria included, among others: successful ingestion, normalization & staging of Swiss Medical Networks data; measuring the population against established Quality KPIs; providing meaningful insights to SMN to help shape its strategy and health plan offering; providing insight into pricing models across SMN; assessing and providing guidance on additional program enhancements.

Data was sourced from the hospitals at St-Imier, Tavannes, and Moutier. The primary source for the data was the Electronic Medical Record (EMR) system currently in place in the emergency room, surgery, imaging centers, and inpatient departments.

A total of 94 HEDIS® (Healthcare Effectiveness Data and Information Set, one of health care's most widely used performance improvement tools) quality measures were processed in more than 60,000 patients. The findings of the HEDIS® analytics concerned, among others: Breast Cancer Screening; Comprehensive Diabetes Care; Potentially Harmful Drug-Disease Interactions in Older Adults; Use of High Risk Medications in Older Adults; Acute Hospital Utilization; Inpatient Hospital Utilization; Mental Health Utilization; Plan All-Cause Readmissions; and Hospitalization for Potentially Preventable Complications.

Following the generation of analytics, several interactive visualization reports were prepared with the following objectives: a) provide insight into the patient population the analytics results; b) provide examples of studies and programs that could sit on top of analytics solutions to improve the efficiency and quality of care; c) demonstrate the capabilities of an integrated care solution.

The summary reports for the measures and analyses performed in the framework of this proof of concept can be found in the attached document.



## GENOMICS

Dr Kathrin Aprile von Hohenstaufen Puoti (Clinique de Genolier) co-authored an article, published in Nature, which showed that whole-genome sequencing reveals host factors underlying critical COVID-19.

## INTEGRATED CARE

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### Clinical research at the Dr Alain Kenfak (Hôpital du Jura bernois)

As part of its ongoing commitment to continuous improvement and support for training activities, the Hôpital du Jura bernois continued to set up an "Epidemiology and Clinical Research Unit".

The institution has several ISFM training institutions in its network (psychiatry, internal medicine, surgery, gynecology, radiology, and general medicine) and participates in the training of various health professionals.

The initial phases focused on the constitution of a multidisciplinary group of professionals with a background in research and publications. The main activities carried out so far include the consolidation of the group and the support of research initiatives underway.

The short-term perspectives are the reinforcement of the unit with the finalization of the concept, the training of the members to the principles of clinical research including the identification of a methodologist and a statistician.

On an operational perspective, the unit will further elaborate on the implementation of studies that have been authorized, finalize the approval requests for the protocols that are currently being drafted. More extensively, the unit will support the Medical Directorate in the implementation of general consent to research and will be involved in the implementation of an institutional database (data warehouse or data lake). Coordination with the other transverse units of the hospital will ensure a link with Quality Assurance and medico-economic management.

### Dr Jacques Bernier (Clinique de Genolier)

He developed further frequent exchanges with Kaiser Permanente (KP) International activities through interactive videoconferences. In this, he participated to four e-sessions organized by this organisation. The first one covered "Clinical predictive models: artificial intelligence's promise and pitfalls at the bedside" with particular emphasis on the predictive model lifecycle in terms of prioritization, assessment, development, deployment, and evaluation. The second one concerned "Rx Insights: Big Data and Pharmacy", including enterprise data and analytics strategic framework through the presentation and recording of vast amounts of data related to medication adherence, drug formularies, COVID-19 testing and vaccines. The third one addressed the issue of "The business case for equity", encompassing the various factors and actions providing equal opportunities and outcomes. The fourth one summarized the Kaiser Permanente's telehealth capabilities and programs, in consideration of the dramatic increase in videocalls and on-line consultations during and after the COVID-19 pandemic.

## INTERNAL MEDICINE

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Dr Pierre-Olivier Lang (Clinique de Genolier) co-authored two scientific articles reporting on adverse drug events as well as on the (mis)use of drugs and inappropriate prescribing in geriatric care.

## INTERVENTIONAL RADIOLOGY

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In the field of interventional radiology, Dr Pierre Bize (Clinique de Genolier) continued to investigate the role of cryoablation in the management of various pathologies.

Dr Bize also participated to the elaboration of a Clinical Investigation Plan (CIP) entitled: "NICOLE: Neovessels embolization In Chronic Lateral Epicondylitis: a prospective, randomized, double blinded and controlled study".

This prospective, single-center, randomized, controlled, double-blind, interventional study, the principal investigator of which is Dr Frédéric Vauclair (CHUV), evaluates the efficacy of epicondylar vessel embolization in the management of acute epicondylitis.

Studies have indeed shown neovascularization accompanied by nerves in patients with lateral epicondylitis. It has been hypothesized that this phenomenon is the source of chronic pain in these patients. And that embolization could improve pain. The aim of the study is to evaluate the effect on pain of such a procedure as well as its impact on patients' quality of life. The protocol has just been finalized and submitted to the ethics committee for approval.

## NEUROSURGERY

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In 2022, the articles Dr Rodolfo Maduri and John Michael Duff (Clinique de Genolier) co-authored reports, among others, on transtubar image-guided surgery for spinal intradural lesions; direct cochlear nerve stimulation monitoring through evoked muscle responses during retrosigmoid vestibular schwannoma resection surgery; longitudinal neuropsychological assessment after aneurysmal subarachnoid hemorrhage; casemix, management, and mortality of patients receiving emergency neurosurgery for traumatic brain injury; and on the finding that herniation World Federation of Neurosurgical Societies Scale improves prediction of outcome in patients with poor-grade aneurysmal subarachnoid hemorrhage.

Dr Philippe Otten (Clinique Générale Ste-Anne, Fribourg) co-authored an article reporting on paraspinal intramuscular schwannoma under the form of a case presentation and literature review for this rare pathology. He also wrote a critical appraisal of the role of medicine in front of the modern societal challenges.

## ONCOLOGY

### BREAST PATHOLOGIES

The Breast Center of the Clinique de Genolier (Medical Director: Dr Magdalena Kholik) obtained the renewal of its "Q Label" certification for the third consecutive time, this time in conjunction with the Breast Center of the Clinique Générale Beaulieu. Awarded for a period of four years by the Swiss Cancer League and the Swiss Society of Senology, this label guarantees a high level of quality in terms of treatment and care. During a two-day audit, more than seventy quality criteria were evaluated. These include the management of a minimum of 125 new patients per year, the discussion of each case at the weekly multidisciplinary symposium, the tumor-board, the active participation of the patient in the development of the therapeutic plan, the integration of supportive care and involvement in clinical studies.

Swiss Medical Network breast cancers specialists and researchers were also called to analyze contents and objectives of a clinical study designed for patients presenting with a breast pathology namely a joint research protocol Swiss Medical Network (Genolier)-SYNLAB Suisse SA, entitled "Early detection of breast cancer recurrence by use of highly sensitive biomarkers and effect on outcome". Therefore, the following hypotheses were formulated: a) cell free circulating tumor DNA leads to earlier diagnosis of a relapse or de novo disease (locoregional or metastatic or de novo disease in same or contralateral breast); b) the combination of cell free circulating tumor DNA with protein tumor markers increases the specificity for relapse diagnosis of the latter; c) highly sensitive single molecule array immunoassay (SIMOA) of circulating protein breast tumor markers exhibits higher sensitivity for relapse detection in comparison to classical immunoassays.

This proposal of research protocol was regularly analysed and amended after review by oncology teams @ Genolier, so that this prospective study can be started in 2023.

### MEDICAL ONCOLOGY

In 2022, Dr Matti Aapro (Clinique de Genolier) published a large number of peer-reviewed articles in various domains of medical oncology. His numerous research programs in geriatric oncology, breast cancer management, and supportive care, bear witness to his experience in clinical research protocols and educational activity. Besides his clinical activities in Genolier and Geneva, Doctor Aapro has several international duties: in 2022 he was member of the Board of Directors of European Cancer Organisation (<https://www.europecancer.org/>), President of the not-for-profit educational organisation SPCC - Sharing Progress in Cancer Care (<https://www.spcc.net/>) which also comprises (<https://www.oncocorner.net/home/> and <https://cancerworld.net/>), and Vice-President of AllCan (<https://www.all-can.org/>), an international multi-stakeholder not-for-profit organisation working to improve the efficiency of cancer care by focusing on what matters to patients.

Dr. Alex Friedländer (Clinique Générale-Beaulieu, Geneva) participated in local and international collaborative works on prognostic and predictive biomarkers of response and immunotherapy and targeted therapies in lung cancers. In addition, he participated in studies on the impact of lung cancer on COVID risk and COVID vaccines.

As regards translational research, the collaboration between the Réseau Romand d'Oncologie and the medical oncology team of Clinique de Genolier was further developed, mainly in the field of the biomolecular approach to cancer treatment for selected patients.

Dr Jacques Bernier (Swiss Medical Network) co-authored an article reporting on an international clinical study (Europe, USA) in high-risk resected head-and-neck cancers. The differing recurrence patterns help inform design of future treatments, especially as regards chemo- and immune-therapy strategies.

### RADIO-ONCOLOGY

2022 was again a very active year for the radiation oncology department. Beside consolidation of the clinical activity of the new department of Clinique Générale-Beaulieu in Geneva, collaborations with the industrial partners Accuray and RaySearch intensified over the year. Several hardware and software early upgrades were performed in order to maintain upfront innovative radiation therapy techniques and implement most recent developments.

Research and development in Radio-oncology included the following projects:

- Evaluation of the performance of the SRS MapCheck device (SunNuclear Corporation) for quality assurance of the CyberKnife with the aim of replacing films. Results were presented at the Accuray French user meeting in Grenoble and at the SASRO 2022 conference in Baden.
- Commissioning and evaluation of the new treatment planning module of RayStation (RaySearch) for CyberKnife (RayCK). We reported our commissioning experience with a poster presentation at the ESTRO 2022 congress in Copenhagen and at the SFPM meeting in Avignon. In collaboration with RaySearch, the physics and dosimetry group also tested an alpha RayCK software version (RayStation 12B).
- In Clinique Générale-Beaulieu, the first worldwide CyberKnife treatment using a RayCK plan in combination with the RayTreat Record and Verify system of RaySearch was performed. Experience was presented as a scientific communication at the SASRO 2022 meeting.
- The group developed a framework for end-to-end testing for the five available tracking methods of the CyberKnife for the RayStation TPS, including a comparison with the results obtained with the Precision TPS from Accuray. Results were discussed at the RayStation 2022 Symposium in Dinard and at the Accuray Symposium during the Journées Auvergne-Rhône-Alpes-Bourgogne de Radiothérapie Stéréotaxique in Lyon. Setup and quality evaluation of right breast radiotherapy treatment in prone position at the Radixact for better dose sparing of patient heart and lungs compared to the supine position. Results will be shown at the 2023 ESTRO congress.



- In collaboration with EPFL, use of AI-manipulated MRI and CT planning images to improve patient positioning before prostate cancer radiotherapy treatment. Work is still ongoing.
- In partnership with VisionRT and with the main aim to perform breast radiotherapy treatment in deep inspiration breath hold (DIBH) at the Radixact, we tested a prototype of AlignRT in bore and collaborate with VisionRT to develop a dedicated software interface. Development is ongoing.
- A dosimetric study comparing DIBH versus free breathing treatment plans for tomotherapy and VMAT techniques was accomplished and presented at the 2022 SFPM and SASRO meetings.
- In collaboration with EBAMed, a treatment planning study demonstrating the feasibility of transthoracic US guidance to facilitate ventricular tachycardia ablation with protons was published in *Frontiers in Cardiovascular Medicine* (doi: 10.3389/fcvm.2022.849247). In addition, the possibility of the coupling of the US device with a clinical machine was validated.
- Results of Contact X-ray Radiotherapy (Papillion) to improve complete response and organ preservation in early rectal cancer were presented during the 2022 SOHC congress in Basel. Updated results will be presented at 2023 ESTRO congress.

### ONCOSURGERY

The scientific contribution of Professor Walter Weder (Privatklinik Bethanien, Zurich) to significant advances in thoracic surgery addressed, among others, the following issues: a retrospective multicentric analysis on the surgical resection of Masaoka stage III thymic epithelial tumours with great vessels involvement; a report on the feasibility of a national low-dose CT lung cancer screening program; and an analysis of surgical outcomes of video-assisted versus open pneumonectomy for lung cancer.

At Privatklinik Bethanien, Dr Daniel Christen, President of the Interdisciplinary Gastroenterological 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 most recent scientific advances in the domain of the digestive tract malignancies.

Dr Stéphanie Seidler (Clinique de Genolier) was co-author of several articles on surgical management of gynecological cancers.

### OPHTHALMOLOGY

The Swiss Glaucoma Research Foundation (SGRF) continues its action along two axes: supporting cutting-edge research for the development of pioneering and innovative treatments against glaucoma and training and educating health professionals to better diagnose, treat and one day cure glaucoma. Here is a summary of these actions for the year 2022.

### RESEARCH ACTIVITIES

The SGRF continues to support the development of glaucoma research and conducts several innovative research projects.

**Multicenter studies** (studies conducted in several centers, initiated by industries/start-ups, highly regulated. They need certifications and highly qualified personnel and a specialized and globally recognized responsible investigator):

- Start of 2 **MINIject**<sup>®</sup> studies in collaboration with iSTAR Medical. It is an innovative minimally invasive glaucoma surgery device for patients with open-angle glaucoma. The first study is a registry of patients implanted with a MINIject-like<sup>®</sup> device model. The purpose of the registry is to collect data in a real-world environment. This registry will help answer questions about ease of use during implantation, safety data in a large population, and the patient's quality of life after implantation over time. The second study aims to test the safety and effectiveness of the latest model of this device. This study will be conducted with a view to obtaining approval from the Food and Drug Administration (FDA), the world's leading agency for the regulation of clinical trials.
- Continuation of the study **ARGOS** is a study on the ARGOS-SC medical device. It is an implant that allows the patient to measure intraocular pressure autonomously. Once the device is validated, these measurements will provide the patient and doctor with important information about the success of eye pressure reduction and control. As this study is the first to use ARGOS-SC in humans (First in man), it aims to demonstrate the long-term tolerability and safety of the implant in patients.
- Continuation of the **Eyewatch** study in collaboration with a start-up from EPFL Lausanne. This study tests the world's first drainage device for glaucoma surgery equipped with a valve adjustable with a magnet, allowing for as-needed modular glaucoma surgery. The first long-term results will soon appear in the scientific literature.

**Monocentric studies** (studies conducted only in our research center, initiated by Prof Mansouri, they can be carried out in collaboration with industries/start-ups. Every aspect of the study from start to finish is carried out by our research group):

- Continuation of the **INTEGRAL** registry, which is a 10-year longitudinal study that will eventually gather anonymous clinical data from hundreds of patients suffering from glaucoma. The purpose of monitoring their evolution is to look for genetic and environmental risk factors related to the development and progression of glaucoma. This will ultimately make it possible to better advise patients on the risks associated with their disease or the choice of the most appropriate treatment for their case.
- Continued study on the use of **OCT** angiography to accurately visualize the deep and superficial vasculature of the retina and optic nerve in the diagnosis of glaucoma. This technology should therefore allow us to better understand the causes of glaucoma, and to diagnose certain cases more accurately.
- Continuation of the study on the effectiveness of the analysis of **PERG** or 'Pattern Electroretinogram' allowing the analysis of the functioning of the optic nerve, in the early detection of glaucoma. Eventually, this machine would have the potential to detect glaucoma earlier.

- Continuation of the **Xen** study to test the efficacy and safety of the Xen implant as a novel minimally invasive option in the treatment of glaucoma.
- Continuation of the study **Laser SLT** is an open-label longitudinal database that tracks IOP variation in patients who have received laser therapy (TLS) for the treatment of their glaucoma at term. Anonymous clinical data from hundreds of patients treated with TLS at our center will be analyzed to validate the effectiveness of this treatment option on lowering IOP and reducing the number of treatments.

Overall, with 15 scientific publications already in 2022 in peer-reviewed journals, the SGRF is the leading Swiss centre for glaucoma research.

#### EDUCATIONAL ACTIVITIES

Glaucoma on the Lake series: Didactic courses on the theme of glaucoma organized during dinners in suggestive settings in different cities and aimed at young ophthalmologists:

- Glaucoma on the Lake Geneva (04.11.2022)
- Glaucoma on the Lake Zurich (20.11.2022)
- Glaucoma on the Lake Lugano (21.11.2022)
- Glaucoma on the Lake Lausanne (01.12.2022)

6<sup>th</sup> International Montchoisi Glaucoma Symposium: A meeting of international interest with speakers from all over the world. We counted more than 100 participants in the beautiful site of the Olympic Museum in Lausanne. The feedback from participants at the event has been overwhelmingly positive.

We are already active in the organization of the 7th International Montchoisi Glaucoma Symposium. This half-day event will feature a selection of leading speakers on the theme of glaucoma around the world.

#### TRAINING ACTIVITIES

The Swiss Glaucoma Research Foundation continues to support the development of physicians' clinical and surgical skills in the treatment of glaucoma through several training programs. Thus, during the year 2022, the SGRF ensured:

- Training of 2 young doctors (research program of young doctors)
- Surgical training of 2 young ophthalmologists (surgical training program for young ophthalmologists)
- ICO (International Council of Ophthalmology) fellow: Dr. Fauziyah Hayati (Indonesia)

#### Aude Ambresin (Swiss Visio Retina Research Center, Lausanne)

The Swiss Visio Retina Research Center (SVRRC), founded by Dr PD Aude Ambresin, is active in the field of retinal diseases, such as age-related macular degeneration (AMD), diabetic retinopathies, retinal vascular anomalies, as well as cancer-related retinopathies. The SVRRC is a member of the European Vision Clinical Research network (EVICR.net) since June 2022 (clinical site n°136). Dr Ambresin was also invited as manuscript reviewer for various journals (Eye, Klimo Klinische Monatsblätter für Augenheilkunde, Springer Nature Ophthalmology and Therapy).

Programs underway in 2022 are the following:

- **XTEND study:** observational study designed to learn more about changes in visual acuity with proactive flexible treatments over time in patients suffering from wet age-related macular degeneration (wAMD) after decision to treat with Aflibercept (Eylea) was made (Bayer).
- **PULSAR study:** Phase III, randomized, double-masked, active-controlled, multi-center study of efficacy and safety of intravitreal high dose Aflibercept (8 mg) in patients with Neovascular Age-Related Macular (Bayer).
- **FALCON study:** Phase IV, 52-week, two arm, randomized, open-label, multicenter study assessing the efficacy and safety of two different brolocizumab 6 mg dosing regimens for patients with suboptimal anatomically controlled neovascular age-related macular degeneration (Novartis).
- **BAROMETER study:** Multi-country patient and clinician survey on non-adherence and non-persistence with anti-VEGF treatments in wet AMD patients.
- **OZURDEX study:** National study that evaluates real-life outcomes of adjunct intravitreal Dexamethasone Implant in patients treated with anti-VEGF drugs for Diabetic Macular Edema and Exudative Age-Related Macular Degeneration.
- A **Multicentric National study** assessing the response to Brolocizumab treatment-naïve and pre-treated eyes diagnosed with wet AMD.
- **IOP study:** study that investigates the evolution of acute intraocular pressure elevations following intravitreal anti-VEGF injections over one year of treatment and measures the potential effects of these hypertensions on structural and functional characteristics of the optic nerve.

## ORTHOPEDIC SURGERY

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Professor Guido Garavaglia, Head of Teaching and Research at Clinica Ars Medica, defined PROM's indicators for primary and revision hip and knee prostheses. The results of the clinic's data, collected since 2019, were presented to all the clinic's doctors involved in the project, during a clinical training organized by Prof. G.Garavaglia, Dr. S.Lafranchi and D. Franco.

A multicenter clinical study on "Biological augmentation of meniscal repair with marrow venting: a randomized clinical trial" was started in collaboration with the Department of Orthopaedics of the Ente Ospedaliero Cantonale.

The Centro Manoegomito stood out this year for its extensive scientific and educational activities. Specifically organization of the first wrist arthroscopy course in Switzerland. The course had a success, fully booked for both 2022 and 2023, with 80% of participants coming from northern Switzerland.

Professor Victor Valderrabano, Chairman, Swiss Ortho Center, Schmerzklinik Basel and Privatklinik Obach, is Professor of Orthopaedics (University of Basel), PhD Biomechanics (University of Calgary, Canada) and Doctor in Medicine (University of Zurich). Last year, he co-authored 15 scientific articles in peer-reviewed journals. Professor Valderrabano also delivered many presentations on national and international conferences and webinars.

## OSTEOARTICULAR PATHOLOGIES

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Dr A. Schwitzguébel continues to conduct a randomized trial on the use of platelet-rich plasma for epicondylitis. He also activated a pseudorandomized study on the use of orally denatured collagen for tendinopathies as well as an observational study on the usefulness of identifying antero-lateral ligament in case of anterior cruciate ligament rupture.

Of note, Dr Schwitzguébel also co-authored two articles, the first one on a randomized trial comparing aquatic therapy to standard rehabilitation after surgical rotator cuff repair: in this study, the aquatic therapy did not yield superior clinical and functional outcomes compared to standard rehabilitation when started immediately after surgery.

The second publication reports on an atypical case of calf pain: the instability of the plantaris tendon might be taken into consideration for the differential diagnosis of medial calf pain, for which needle tenotomy may be considered a valuable option.

Finally, Dr Schwitzguébel is working on two manuscripts. The first one is a randomized trial protocol concerning cellular therapy for osteoarthritis & tendinopathies. The second is a confirmatory pseudo-randomized study concerning the benefits of the app he developed, called Diaana, in order to help the general physician conduct a more accurate diagnosis for musculoskeletal conditions.

## OUTCOME RESEARCH - VALUE-BASED MEDICINE

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As regards outcome measurements, a pillar of the current and future initiatives of the Swiss Medical Network in clinical practice, Dr Jacques Bernier continued his involvement into the activities and meetings of the International Consortium for Health Outcome Measurements - ICHOM.

## PREVENTIVE MEDICINE

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At Nescens Clinique de Genolier and Laboratoire Genolier, Pr Jacques Proust developed further a research articulated around the production and development of new products from the Nescens cosmeceutics portfolio, including: a senolytic serum designed to eliminate senescent epidermal cells able to promote rejuvenation of skin structures; a "booster" serum containing high concentrations of niacinamide and dexpanthenol, compounds involved in maintenance and molecular repair activities, and promoting the expression of genes involved in tissue repair, respectively; a "booster" serum containing high concentrations of bakuchiol and ascorbyl tetraisopalmitate whose action, in addition to its anti-oxidant properties, is to stimulate the production of collagen and elastin; and serum for autologous use and containing exosomes obtained during the culture of mesenchymatous stem cells taken during lipoaspiration. These exosomes contain the main elements of intercellular communication, and their application induces the same positive effects as the injection of mesenchymatous stem cells on the renewal and rejuvenation of the epidermis. This latter research program is conducted by Pr J. Proust, in collaboration with INSERM, France, and a Chinese laboratory, in Beijing.

## QUALITY ASSURANCE

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### Quality Assurance in orthopedic surgery

As members of the ANQ (Swiss National Association for Quality Development in Hospital), the various teams of orthopedic surgery active at Swiss Medical Network enter data into the SIRIS register (Registre Suisse des Implants). To exemplify this, as in the past years since 2016, the orthopedic surgeons from the Clinique de Genolier record and report, on an annual basis, activity volumes relevant to implanted total primary hip and knee prostheses, as well as the two-year revision rates for these primary total prostheses.

As in the previous years, national risks for surgical revision were as expected (hip: infection, periprosthetic fracture and loosening femoral dislocation; knee: patella problems, femorotibial instability and infection, and fracture). At Genolier, outcome measurements therefore yielded good quality indices regarding surgery and follow-up procedures, as well as advices given to patients for rehabilitation.

[https://www.anq.ch/fr/domaines/soins-aigus/resultats-des-mesures-soins-aigus/step3/measure/20/year/2022/nr/26412/?no\\_cache=1&tx\\_anq\\_anqpublicarea\[such-Eingabe\]=genolier&cHash=c7889ac90f142753852daa72aef6c597#skalen](https://www.anq.ch/fr/domaines/soins-aigus/resultats-des-mesures-soins-aigus/step3/measure/20/year/2022/nr/26412/?no_cache=1&tx_anq_anqpublicarea[such-Eingabe]=genolier&cHash=c7889ac90f142753852daa72aef6c597#skalen)



## RADIOLOGY

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### Professor Christoph Andreas Maurer (Privatklinik Obach, Solothurn)

Professor Maurer co-authored a report on the use of pre-therapeutic MRI in selecting patients with rectal cancer for neoadjuvant therapy (OCUM trial).

## REGENERATIVE MEDICINE

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### Dr Sophie Menkes (Nescens Clinique de Genolier)

The following research programs were developed throughout 2022 in the field of regenerative medicine.

- **Topical Washing buffer:** in partnership with Dr. Gianni Soldati and Mr. Guillaume Vanthier, this program consisted in taking 10 models, and preparing the nanofat. After having technique the nanofat, the washing buffer was integrated, in masterful preparation at the pharmacy, in a base of Nescens cream produced by Mr. Vanthier. It is therefore an autologous cream. The study will end in 3 months and the first results are very promising in terms of skin rejuvenation, on all parameters. This study was presented at the IMCAS Paris congress in June 2023 (the largest international congress 14,000 people), we will publish our results before summer 2023 if all goes well.
- **Prophilo-nanofat face study:** Prophilo is the only hyaluronic acid that is known to have a targeted action on the proliferation and differentiation of AUC (adipose derived stem cell). The IBSA laboratory was asked to allocate us a budget to demonstrate the synergistic effect of prophilo injected with nanofat. We included 10 models, the study will end in 4 months. The results confirm the synergistic effect. A publication will also be made in 2023 and IBSA who will finance it.
- **Studies of microfat emulsification and micronization kits to obtain nanofat:** We proceeded to the fat sampling on 2 models and tested the kits currently on the market, in terms of yield, % of stem cells, viability of stem cells, and with Dr. Gianni Soldati, a 3<sup>rd</sup> model is scheduled for January 12, 2023. We will gather our results with those of Professor Magalon in Marseille, and then publish them also in 2023. This study will be presented at IMCAS Paris in January 2023.
- **Exocobio Exosome Study:** ExoCoBio is a world leader in the development of Adipose Stem Cells (ASC)-derived exosome-based products. The publications were made for skin and hair, Dr Menkes is in charge of the clinical study and the publication of the study on the genital mucosa.
- **Pplus Skin Care:** AUK-based medical technology company is about to obtain CE and UKCA Mark to launch an innovative topical application of platelet-rich plasma for skin rejuvenation. Needle reinjection is an obstacle to PRP treatment and there is a strong need to launch studies based on the use of topical forms, what we will start in Nescens, in 2023.

- **Implementation of Remedex:** this company is a logistics and technical platform aimed at the optimal application of modern PRP injection processes. It is the access for the practitioner to a database of care protocols validated by a scientific literature, in addition to the associated information documents and established for patients. It is the development and communication of information leaflets, as well as forms, for patients to obtain their consent to PRP injections. It is the preparation of products aseptically. This is the provision of biologically qualified single-use medical devices whose prices have been negotiated and intended for the preparation of biological products. The tools (REMEDEX Report software and cell meter) allowing systematic quality control, providing each patient with an accurate account of the care and injections performed. The REMEDIX Follow-Up software allows the collection of clinical monitoring data with the aim of their medical and scientific exploitation. It is the provision of quality ultrasound equipment, the provision of a medical office for the Practitioner and his patient. For the moment we do not have premises, moreover we must recruit at least 10 user doctors to make the platform profitable.

## RHEUMATOLOGY

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### Dr Barbara Ankli (Schmerzlinik Basel)

At Schmerzlinik Basel, Dr Barbara Ankli continued her research on synovial inflammation in crystal arthritis, with a manuscript to be submitted to a peer-reviewed journal, under the title: "Crystal Arthritis Severity and Ageing – Synovial Study".

She also finalized a clinical study entitled: "BONUS Intervention Study Gout: A Nurse Led Patient Management Programme to Improve Outcomes in Gout", and prepared a manuscript reporting on "Update Gicht Therapeutische Umschau".

## SUPPORTIVE CARE

The past year was characterized by further advances in developmental programs within the Breast Center (CDS) and the Support Care Center (CSS). The activity of the Referring Nurses of the Breast Center was extended to the follow-up of patients throughout their clinical journey with the addition of initial consultations before the start of radiotherapy. New opportunities offered to the nurses included the possibility to expand their patients' base with patients from regional hospitals, provide them with support, give them additional explanations about their treatments and enhance the teams' capacities in terms of supportive care.

2022 was also marked by certification by the QLabel, certification acquired with the congratulations of the experts. The CDS had indeed fulfilled the quality criteria by obtaining a 100% compliance rate to the dashboard's requirements (70/70 items), with a special mention for the support care aspects of the management, as a real added-value to oncology patients. Over the past year, 214 and 67 consultations were covered by the Support Care Center, among medical oncology units and in the radio-oncology department, respectively. Finally, the CSS allowed, through individual sessions or collective workshops, to head for efficient rehabilitation along four main axes, namely psychological support, well-being, diet, and physical activity.

## UROLOGY

In 2022, the activity of the Centre d'Urologie Générale-Beaulieu (CUGB) <https://www.swissmedical.net/fr/hopitaux/generale-beaulieu/specialites/urologie> in collaboration with the Swiss International Prostate Center (SIPC) <https://sipc-urology.ch/> continued in its various areas of expertise primarily for the treatment of prostate cancer as well as other areas of general urology. These two centers also have an involvement in humanitarian medicine in connection with the Genolier Foundation. Dr. G. De Boccard, M. Martins-Favre, S. Regusci, C-H Rochat and G. Wirth regularly intervene as experts in international committees.

The prostate centre at the Clinique Générale-Beaulieu has been strengthened since the opening of the radiotherapy centre and the oncology centre. Tumor boards are now organized weekly. Various articles are in preparation thanks to a solid database started in 2005. The robot-assisted laparoscopy center (da Vinci) will celebrate its 20<sup>th</sup> anniversary in 2023.

## COMPLEMENTARY ACTIONS

### CLINICAL CARE AND MANAGEMENT

**Drissia El Archi (Care Projects Director, Swiss Medical Network)**

#### Analysing the prerequisites for P4 medicine application

A preparatory phase of clinical application of P4 principles (to make medicine more preventive, predictive, personalized and participatory) took place at Clinique de Genolier. The objective was to find digital solutions that would allow patients to receive all the necessary information before their hospitalization and have the opportunity to address all questions before (written or audios such as WhatsApp) and during the postoperative hospitalization. Upon returning home, this approach should be meant at favouring privileged contact with a member of the healthcare team, including eye contact (call in video, send photos, audio message or written message according to the request) in order to obtain quick and personalized answers, allowing to reduce stress or the feeling of insecurity after the discharge.

#### Testing and improving COVID-linked workflows

This program consisted of testing and improving the implementation of daily reporting for all Swiss Medical Network clinics during the first COVID wave. This program aimed at centralizing the information of the different clinics in a same and unique file accessible to every member of the care chain. During the first COVID wave, the tested workflow model made it possible to see the activity of the clinics, the requisitioned sites, the RHT rate, the number of COVID+ patients or collaborators, as well as the requests for reinforcement whenever necessary, especially for the clinics that had opened COVID+ Units. Improving the tested model also allowed users and hospital managements to visualize where the stocks of equipment were located (e.g., gloves, over-gowns, sterile materials, etc.) and therefore to resupply internally those of the clinic units with stock shortages.

#### Nurses Days (October 4-5, 2022, Interlaken)

The primary objective of the Nurses Days (<https://www.swissmedical.net/fr/actualites-evenements/nurse-days-2022>) was to acknowledge the critical role of the caregivers all along their daily commitment (especially after the harsh crisis of Covid pandemic). This initiative was also meant to provide them the possibility to meet outside the clinics in order to share their projects, and therefore boost the dynamic of concerted actions. More than 200 care employees (nurses, icus, sterilisation block staff, physiotherapists, etc.) took part to the 2-day get together and were offered the opportunity not only to meet with colleagues from other clinics but also interact with members of the Direction Générale of Swiss Medical Network, with respect to their needs and their concerns regarding their professional development.

Key-note Lectures were given by Mrs Séverine Vuilleumier, Professor HES ordinaire, PhD at the HES school in Lausanne on "Sustainability, what roles do health professionals have", and Mrs Maya Zumstein-Shaha, Deputy head of the Master of Science in Nursing Program (University of Bern), on "The APN (Advance Practice Nurse) nursing function".

The numerous interactions the Nurses Days allowed to develop with colleagues, external experts and Board members were determinant to pave the way for concerted actions in terms of research and development in the field of clinical care and management, also in the perspective of the production of scientific contributions in referenced journals.

#### HEAD AND NECK PATHOLOGIES

At Clinique de Montchoisi, research activities of Pr Albert Mudry, (assistant professor, head of research in history at ENT Stanford University and professor in history of medicine University of Paris Cité) cover the history of ENT, more particularly otology, with a particular focus on methodology, the first ideas behind progress and innovation.

#### IMMUNOLOGY: INFECTIOUS DISEASES

Throughout the whole year 2022, Jacques Bernier (Clinique de Genolier) continued to edit the electronic version of the scientific Daily Bulletin of the SMN COVID-19 Scientific Reporting. The vocation of this daily bulletin is to offer access to prominent scientific publications on the natural history and management of the SARS-CoV-2 pandemic.

#### IMMUNO-ONCOLOGY: "INNOVATION DAY"

A joint organization between the Genolier Innovation Hub, the Swiss Medical Network and the Johnson & Johnson Innovation Company, the "Innovation Day" held at Nescens Clinique de Genolier, on 10 November 2022, aimed at proposing a critical appraisal of various Research and Development programs presented by five swiss start-ups, in the field of immuno-oncology. This evaluation and interactive discussions between researchers, SMN and Johnson & Johnson representatives, and academic experts allowed to identify what were the main strengths and major limitations of each of the five research programs. The success encountered by this joint organization justifies to set up, in 2023, similar scientific meetings benefiting from this very same format of "Innovation Day".

#### DATA DRIVEN DISEASE BURDEN ANALYSIS AND QUALITY MONITORING

On September 6, 2022, in Lausanne, the Département épidémiologie et systèmes de santé (DESS) organized a colloque on "Driven disease burden analysis and quality of care monitoring for an integrated health system: the case of SMN-HJBE". Jacques Boschung, Swiss Medical Network's Board Member, Dr Alain Fenfak, Medical Director, Hôpital du Jura bernois were the invited speakers.

This colloque allowed interactive presentations and discussions on the partnership between the US Company Inovalon and Hôpital du Jura Bernois/Swiss Medical Network, which has integrated, structured, and normalized various Swiss data sources into an analytics platform designed for the U.S. market. Leveraging custom, proprietary analytics – developed using 20+ years of industry experience in the North American managed care system – Inovalon helped our Swiss-based medical organization quantify patient disease burden, identify and measure quality of care Key Performance Indicators (KPIs), gain insights into provider utilization patterns, and create custom reports and dashboards to gain additional insights into patients and providers.

#### TERA FOUNDATION: A ROADMAP TO HEAVY PARTICLE THERAPY

As invited speaker at the TERA (TERapia con Radiazioni Adroniche) Symposium organized at CERN on September 15, 2022, Jacques Bernier revisited, in the Opening Address of the Symposium, the footprint of the Foundation along the main hadrontherapy advances, throughout the 30 years of its activities in Research and Development, giving also birth to successful offsprings. In particular, the CNAO Foundation – which has built and manages the Italian National Center for ion therapy in Pavia, and the start-up EBA-Med – which is developing an AI-based cardio-kit that will allow the treatment of cardiac arrhythmias with commercial proton therapy accelerators. Scientific exchanges are underway between the Medical Applications Division of CERN and Swiss Medical Network.

#### TEAMWORK APPLICATIONS FOR PATIENT AND PERSONNEL SAFETY @ MAYO CLINIC, ROCHESTER, USA

Jacques Bernier was a member of a swiss group that gathered eight physicians for a study visit at the Mayo Clinic, Rochester, on 10-11 October 2022.

The Mayo Clinic is ranked # 1 among the US healthcare institutions. Initiatives to enhance value for patients in terms of safety, quality, patient experience, delivery and affordability (cost) were analyzed in depth, also through the lens of resolute policies promoting teamworks. Interactive sessions covered a number of burning issues within the focus put by the Mayo on the added value for the patient. Among the issues addressed during the visit: institutional structure and strategic priorities; decision making models; quality strategy and underlying tactics; patient safety reporting systems; data analytic models to drive better quality. Particular emphasis was put on the processes of outcome and quality measurements, as well as new research models on patient experience. Integrating scientific domains, clinical activities and educational platforms was also part of the discussions during these two days.

#### SWISS BRIDGE FOUNDATION

As Board member of the Swiss Bridge Foundation, Jacques Bernier participated, on October 26, 2022, to the yearly Award ceremony. "Cancer and Infection" was the general theme of the research programs submitted in 2022 to the Foundation Scientific Committee of the Foundation. The Swiss Bridge Award, established in 2000, has become one of Europe's most important research awards.





## SCIENTIFIC PARTNERSHIPS

### SITEM START-UP CLUB (SSC) - BERN

In Bern, Anna Graebner, Stanley Hautdidier and Jacques Bernier, systematically participated to the frequent meetings organized all along 2022 by the Start Club of SITEM-INSEL AG (Swiss Institute for Translational and Entrepreneurial Medicine), the Genolier Foundation/Swiss Medical Network is Leading Partner of.

In particular, their expertise was constantly requested on the occasion of the pitching events set up by the Institute to assess the value of research programs developed by swiss and international start-ups.

### BIOPÔLE - LAUSANNE

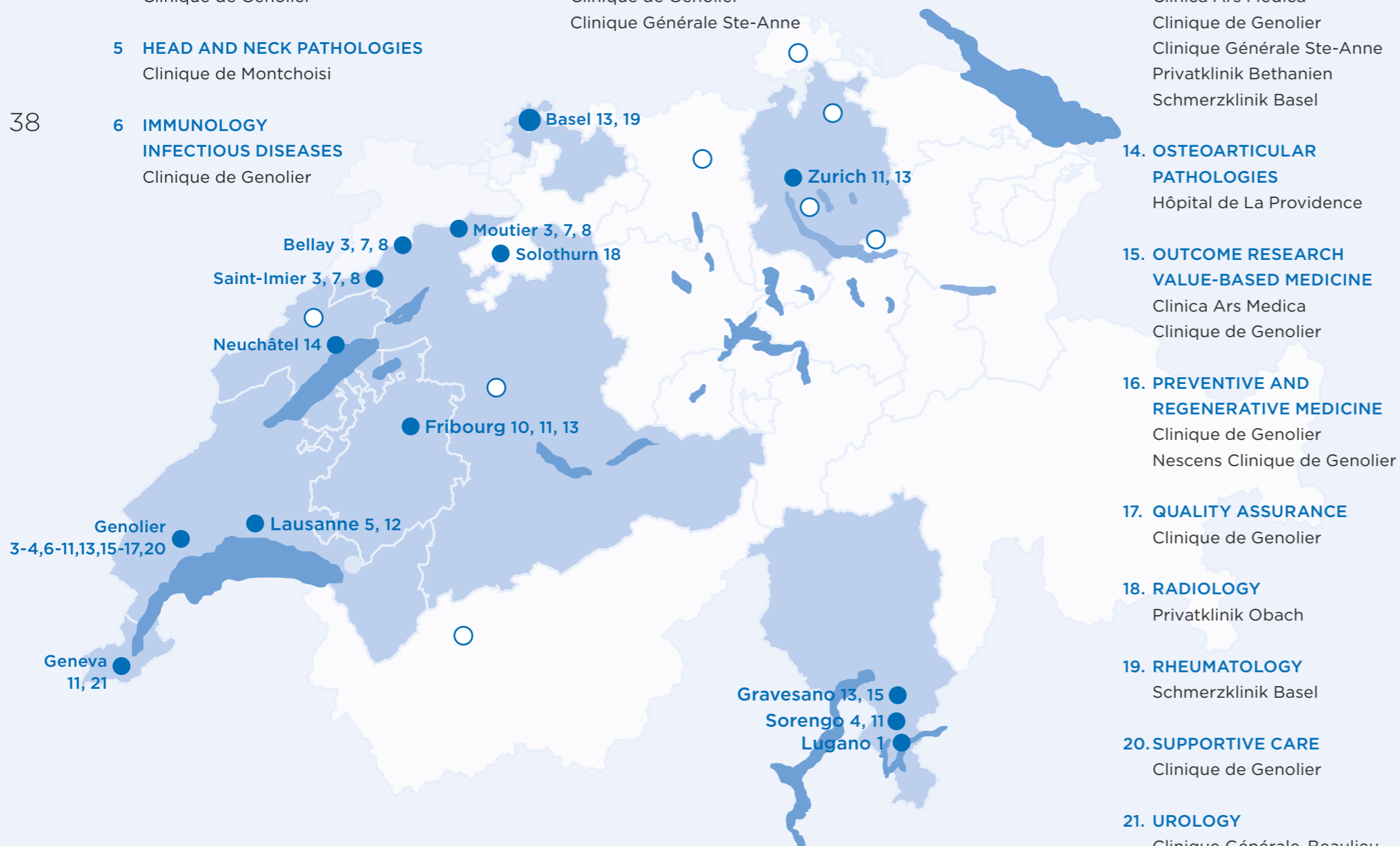
Likewise, the same team regularly participated to the scientific events organized by the Biopôle in Lausanne, in the framework of the new partnership between this entity and Swiss Medical Network. Monthly videoconferences allowed to identify and select research programmes started at Biopôle and likely to be integrated in a second phase into one of the entities of the Genolier Healthcare Campus.

## MAIN SCIENTIFIC PROGRAMS AND RESEARCH SITES

(in alphabetical order)

- 1 CELL THERAPIES**  
Swiss Stem Cell Foundation, Lugano
- 2 CLINICAL CARE AND MANAGEMENT**  
Swiss Medical Network
- 3 DIGITAL HEALTH/DATA SCIENCE**  
Clinique de Genolier  
Réseau de l'Arc
- 4 GENOMICS**  
Clinica Sant'Anna  
Clinique de Genolier
- 5 HEAD AND NECK PATHOLOGIES**  
Clinique de Montchoisi
- 6 IMMUNOLOGY  
INFECTIOUS DISEASES**  
Clinique de Genolier
- 7 INTEGRATED CARE**  
Clinique de Genolier  
Réseau de l'Arc
- 8 INTERNAL MEDICINE**  
Clinique de Genolier  
Réseau de l'Arc
- 9 INTERVENTIONAL RADIOLOGY**  
Clinique de Genolier
- 10 NEUROSURGERY**  
Clinique de Genolier  
Clinique Générale Ste-Anne
- 11 ONCOLOGY**  
Clinica Sant'Anna  
Clinique de Genolier  
Clinique Générale-Beaulieu  
Clinique Générale Ste-Anne  
Privatklinik Bethanien
- 12 OPHTHALMOLOGY**  
Clinique de Montchoisi  
Swiss Visio Montchoisi
- 13 ORTHOPEDIC SURGERY**  
Clinica Ars Medica  
Clinique de Genolier  
Clinique Générale Ste-Anne  
Privatklinik Bethanien  
Schmerzlinik Basel
- 14 OSTEOARTICULAR  
PATHOLOGIES**  
Hôpital de La Providence
- 15 OUTCOME RESEARCH  
VALUE-BASED MEDICINE**  
Clinica Ars Medica  
Clinique de Genolier
- 16 PREVENTIVE AND  
REGENERATIVE MEDICINE**  
Clinique de Genolier  
Nescens Clinique de Genolier
- 17 QUALITY ASSURANCE**  
Clinique de Genolier
- 18 RADIOLOGY**  
Privatklinik Obach
- 19 RHEUMATOLOGY**  
Schmerzlinik Basel
- 20 SUPPORTIVE CARE**  
Clinique de Genolier
- 21 UROLOGY**  
Clinique Générale-Beaulieu

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## Swiss Medical Network sites with ongoing research projects

-  **BASEL**  
Schmerzlinik Basel
-  **BERN**  
Réseau de l'Arc  
(Sites Bellay, Moutier et Saint-Imier)
-  **FRIBOURG**  
Clinique Générale Ste-Anne
-  **GENEVA**  
Clinique Générale-Beaulieu
-  **GENOLIER**  
Clinique de Genolier  
Nescens Clinique de Genolier
-  **LAUSANNE**  
Clinique de Montchoisi  
Swiss Visio Montchoisi
-  **NEUCHÂTEL**  
Hôpital de La Providence
-  **SOLOTHURN**  
Privatklinik Obach
-  **TICINO**  
Swiss Stem Cell Foundation, Lugano  
Clinica Ars Medica, Gravesano  
Clinica Sant'Anna, Sorengo
-  **ZURICH**  
Privatklinik Bethanien

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○ Other Swiss Medical Network sites.





## ON-GOING RESEARCH: STUDY PROTOCOLS

STUDY NAME	CLINICAL TARGETS
<p><b>SAKK 23/16 (TAXIS)</b> Tailored AXillary Surgery with or without axillary lymph node dissection followed by radiotherapy in patients with clinically node-positive breast cancer. A multicenter randomized phase III Trial.</p>	Breast
<p><b>PREVENT</b> Etude suisse, multicentrique, randomisée, placebo contrôlée, sur l'utilisation préventive de la prégabaline chez les patientes à haut risque de développer des douleurs persistantes après une chirurgie de cancer du sein.</p>	Breast
<p><b>RIB-ELLE</b> 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.</p>	Breast
<p><b>SAKK 23/18</b> Vacuum assisted biopsy Immediately before Surgery as an Intra- or pre-Operative surrogate for patient response to Neoadjuvant chemotherapy for breast cancer (VISION I).</p>	Breast
<p><b>HEDGE</b> Integration of the Histolog Scanner (HLS), a novel ex-vivo confocal microscope designed for breast cancer detections at the margins of breast lumpectomy specimens.</p>	Breast
<p><b>SAKK 96/12 (REDUSE)</b> Prevention of symptomatic skeletal events with Denosumab administered every 4 weeks versus every 12 weeks - A non-inferiority Phase III Trial.</p>	Breast Prostate
<p><b>MYRISK</b> Efficacy and safety evaluation of oral Akynzeo® in patients receiving MEC at high risk of developing CINV based on a prediction tool. A multinational and multicentre study.</p>	Various cancers



## Breast cancer

### SAKK 23/16 (TAXIS): TRIAL OVERVIEW

- 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.

#### 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.

#### 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 Phase

Clinical trial phase III.

#### Sponsor

University Hospital Basel.

#### Coordinating investigator

W.P. Weber, CH-Basel.

## Breast cancer

### PREVENT: STUDY OVERVIEW

- Patients entered into this study are those presenting with high-risk breast cancer and treated by surgery.
- Persistent postsurgical pain occurs in more than 30% of patients undergoing breast cancer surgery.
- This clinical study aims at determining whether pregabalin, a drug with analgesic and anxiolytic activities, may reduce the incidence of persistent postsurgical pain.
- Should a significant analgesic effect of pregabalin be demonstrated by this study, the administration of this drug would be strongly recommended in the future for breast cancer patients at risk of developing post-surgical, chronic pain syndrome.

#### Study Title

Swiss multi-center, randomized, placebo controlled trial of pregabalin for prevention of persistent pain in high risk patients undergoing breast cancer surgery.

#### Clinical Phase

Clinical phase III study.

#### Sponsor-Investigator

B. Rehberg-Klug, CH-Geneva.

#### Patient population

High-risk patients undergoing breast cancer surgery.

#### Background and Rationale

Persistent postsurgical pain occurs in more than 30% of patients undergoing breast cancer surgery. Evidence that gabapentinoids such as pregabalin may reduce the incidence of persistent postsurgical pain is ambiguous, potentially because in previous trials prophylactic treatment was administered to every patient undergoing surgery. The patients at low risk of long-term pain are exposed to side effects without much benefit to expect.

#### Objective(s)

The PREVENT study has two aims:

- Validating or refuting the utility of pregabalin to prevent long-term postoperative pain in patients at high risk of persistent pain after breast cancer surgery.
- Analyzing how side-effect information influences treatment tolerance.

In addition, genetic material will be collected for a later genetic association analysis on acute and chronic post-surgical pain.

## Breast cancer

### RIB-ELLE: STUDY OVERVIEW

- The patients entered into this study are post-menopausal female patients (≥ 18 years old), 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.

#### Patient population

The study will enroll 200 adult post-menopausal female patients (≥ 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.

Nevertheless, 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).

#### 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 Phase

Clinical non-interventional study.

#### Sponsor-Investigator

Dr. Nadine Pasche, Novartis Pharma Schweiz AG.



## Breast cancer

### SAKK 23/18: TRIAL OVERVIEW

- 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 imaGenolier Innovation Networkg 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 Phase

A multicenter prospective feasibility trial. Clinical trial with other health intervention.

#### Sponsor

Swiss Group for Clinical Cancer Research (SAKK).

#### Coordinating investigator

C. Tausch, CH-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, MO. Following neoadjuvant chemotherapy resulting in a radiological complete response or near complete response on MR-Ima Genolier Innovation Network.

#### 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 it depends on several factors such as biological subtype, the used chemotherapy regimen and anatomic stage. As NAC induces different response patterns, radiologic imaGenolier Innovation Networkg 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 in order 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.

## Breast cancer

### HEDGE: STUDY OVERVIEW

- Patients entered into this study are female patients of at least 18 years old, diagnosed with breast cancer, whatever the type, treated with breast conserving surgery.
- So far at least 20% of patients undergo more than one procedure to achieve acceptable cancer-negative margins as part of breast- conserving strategy. Applying a second procedure has physical, psychological and economic sequelae and delays the administration of adjuvant therapy. An efficient intraoperative assessment of the margin may solve these issues.
- The aim of this observational study is to show that the pathologist can perform the analysis of the resection margins with an accuracy at least similar to the current standard of care by using the Histolog Scanner (HLS), a recent confocal laser scanning microscopes (CLSM) imaging equipment which can improve fresh tissue ex-vivo imaging.
- Should the analysis of the resection margins with the Histolog Scanner with an accuracy at least similar to the current standard of care, and with a required time to assess the margins comparing favourably with that required for the same current standard of care, the Clinique of Genolier would use the innovative solution brought by the Histolog Scanner to analyze resection margins.

#### Patient population

Female patients of at least 18 years old, diagnosed with breast cancer, whatever the type, treated with breast conserving surgery.

#### Background and Rationale

Although there is no universally accepted definition of negative surgical margins, at least 20% of patients undergo more than one procedure to achieve acceptable cancer-negative margins as part of breast- conserving strategy. Applying a second procedure has physical, psychological and economic sequelae. It delays the administration of adjuvant therapy, and has been associated with an elevated risk of local and distant disease relapse. An efficient intraoperative assessment of the margin may solve these issues. Today, no studies with high levels of evidence demonstrate a significant improvement from alternative intraoperative margin assessment methods in breast conservative surgery. All have unique limitations and to date none has gained universal international adoption. There is a clear need to improve the performance of the procedure(s) analyzing tumor resection margins in breast conserving surgery.

#### Objective(s)

The primary objective is to compare the performance achieved retrospectively for breast cancer detection in lumpectomy margins using Histolog Scanner images with the detection performance achieved with the intraoperative standard of care practice performed in the Clinique de Genolier. The secondary objective is to compare the time required to assess the margins with the Histolog Scanner to the time required for the standard of care intraoperative assessment.

#### Trial Title

HEDGE: Integration of the Histolog Scanner (HLS), a novel ex-vivo confocal microscope designed for breast cancer detections at the margins of breast lumpectomy specimens, at the Clinique de Genolier.

#### Clinical Type

Monocentric, prospective, single arm, observational study.

#### Sponsors

GSMN Suisse SA  
Clinique de Genolier.

#### Coordinating investigator

Magdalena Kohlik,  
Clinique de Genolier,  
CH-Genolier.



## Breast and Prostate cancer

### SAKK 96/12 (REDUSE): TRIAL OVERVIEW

- Patients entered into this study are those presenting with bone metastases from castration resistant prostate cancer or from breast cancer.
- Denosumab, a monoclonal antibody, has a high activity in preventing skeletal related events. Although denosumab is generally well tolerated, severe toxicities as marked hypocalcemia can be observed after the administration of this drug.
- The main objective is to compare two modalities of Denosumab administration, namely every month vs every three months, in these two patient populations.
- Should a dose reduction of this drug show equivalent efficacies, patients could be treated with less toxicities, resulting in a better quality of life.

#### Trial title

SAKK 96/12. Prevention of Symptomatic Skeletal Events with Denosumab Administered Every 4 weeks versus every 12 Weeks – A Non-Inferiority Phase III Trial.

#### Clinical phase

A Non-Inferiority Phase III Trial.

#### Sponsor

Swiss Group for Clinical Cancer Research (SAKK).

#### Coordinating investigator

R. von Moos. Kantonsspital Graubünden, CH-Chur.

#### Patient population

Patients with bone metastases from castration resistant prostate cancer or from breast cancer.

#### Background and Rationale

Based on their ability to inhibit osteoclast activity, bisphosphonates have been used for more than a decade to delay the onset and to reduce the incidence of skeletal related events (SREs) in people with breast and prostate cancer. Traditionally, SREs were defined as a pathologic fracture, spinal cord compression, requirement for radiation therapy or surgery to bone or change in antineoplastic therapy to treat bone pain. Denosumab, a human monoclonal antibody against RANKL, entered the field and three phase 3 studies have shown a higher activity in preventing SREs as compared with zoledronic acid without impact on disease progression or death. Although denosumab is generally well tolerated, severe hypocalcemia (corrected serum calcium <1.75 mmol/L) was reported to occur in 3.1% of patients treated with denosumab (versus 1.3% of patients treated with zoledronic acid), and even fatal and prolonged cases have been reported. The impact of dose reduction on SREs has therefore to be investigated.

#### Objective(s)

The main objective is to establish that denosumab 120 mg given every 12 weeks is non-inferior to denosumab 120 mg given every 4 weeks, in patients with bone metastases from castration resistant prostate cancer or from breast cancer.

## Various cancers

### MYRISK: STUDY OVERVIEW

- Patients entered into this study are those presenting patients treated with intravenous moderately emetogenic chemotherapy and at high risk of chemotherapy-induced nausea and vomiting (CINV).
- Despite the availability of effective antiemetics and evidence-based guidelines, up to 40% of cancer patients receiving chemotherapy fail to achieve complete nausea and vomiting control.
- Akynzeo® contains two active substances: netupitant, a NK1 RA, and palonosetron, a 5 HT3 RA, thus representing a valid and convenient therapeutic option associated with improvement of patient's compliance.
- The study hypothesis is that Akynzeo® is more effective in preventing CINV than the standard of care in patients treated with high-risk MEC.
- Should this superiority of the new drug be confirmed, its use would then be considered as standard of care in this patient population.

#### Patient population

Patients with diagnosis of any cancer scheduled and intended to be treated for three consecutive cycles with a single dose of any IV MEC regimen, per cycle, including adjuvant or neo-adjuvant chemotherapy.

#### Background and Rationale

Akynzeo® contains two active substances: netupitant, a NK1 RA, and palonosetron, a 5 HT3 RA, thus representing a valid and convenient therapeutic option associated with improvement of patient's compliance.

The clinical development program consistently demonstrates that Akynzeo® with dexamethasone provides additional benefit in terms of complete response, both in the delayed, the acute, and the overall phases of CINV in both cisplatin-based chemotherapy (HEC) and AC based chemotherapy (formerly defined as MEC and more recently re-classified as AC HEC).

#### Objective(s)

The primary objective is to evaluate if the use of netupitant and palonosetron in patients treated with IV moderately emetogenic chemotherapy and at high risk of CINV is more effective in preventing CINV than standard of care antiemetics over three cycles of chemotherapy.

#### Trial Title

MyRisk: Efficacy and safety evaluation of oral Akynzeo® in patients receiving MEC at high risk of developing CINV based on a prediction tool. A multinational and multicentre study.

#### Clinical Phase

Post-registration clinical study phase IV

#### Sponsor

Helsinn Healthcare SA, CH-Pazzallo - Lugano

#### Principal investigator

Matti Aapro, Clinique de Genolier, CH-Genolier.

## IMPACT OF RESEARCH PROGRAMS ON PATIENT PATHWAYS

### Examples of successful cooperative and internal clinical studies involving swiss medical teams

#### ONCOLOGY

##### EGFR AND HER2 EXON 20 INSERTIONS IN SOLID TUMOURS: FROM BIOLOGY TO TREATMENT

Protein tyrosine kinases of the human epidermal growth factor receptor family, including EGFR and HER2, have emerged as important therapeutic targets especially in non-small-cell lung, breast and gastroesophageal cancers.

Cancers with insertion mutations in exon 20 of either EGFR or HER2 are considerably less sensitive to the currently available tyrosine kinase inhibitors and antibodies targeting these receptors. These exon 20 insertions are structurally distinct from other EGFR and HER2 mutations, providing an explanation for this lack of sensitivity.

This contribution discusses the prevalence and pan-cancer distribution of EGFR and HER2 exon 20 insertions, their biology and detection, and associated responses to current molecularly targeted therapies and immunotherapies. It also focuses on novel approaches that are being developed to more effectively target tumours driven by these non-classic EGFR and HER2 alterations.

**Reference:** Friedlaender A, Subbiah V, Russo A, Banna GL, Malapelle U, Rolfo C, Addeo A. *Nat Rev Clin Oncol.* 2022 Jan;19(1):51-69. doi: 10.1038/s41571-021-00558-1. PMID: 34561632. Review. IF: 65.01. <https://pubmed.ncbi.nlm.nih.gov/34561632/>

#### INTERNAL MEDICINE

##### AUTOMATIC DETECTION OF ADVERSE DRUG EVENTS IN GERIATRIC CARE: STUDY PROPOSAL

One-third of older inpatients experience adverse drug events (ADEs), which increase their mortality, morbidity, and health care use and costs. In particular, antithrombotic drugs are among the most at-risk medications for this population.

This study aims to develop and validate an automated detection tool for monitoring antithrombotic-related ADEs using EMRs from 4 large Swiss hospitals and to assess cumulative incidences of hemorrhages and thromboses in older inpatients associated with the prescription of antithrombotic drugs, identify triggering factors, and propose improvements for clinical practice.

After accounting for the inclusion and exclusion criteria, we will include 34,522 residents aged  $\geq 65$  years. The data were analyzed in 2022, and the research project will run until the end of 2022 to mid-2023.

This project will allow for the introduction of measures to improve safety in prescribing antithrombotic drugs, which today remain among the drugs most involved in ADEs. The increased performance of natural language processing as an important complement to structured data will bring existing tools to another level of efficiency in the detection of ADEs. Currently, such systems are unavailable in Switzerland.

**Reference:** Gaspar F, Lutters M, Beeler PE, Lang PO, Burnand B, Rinaldi F, Lovis C, Csajka C, Le Pogam MA; SwissMADE study. *JMIR Res Protoc.* 2022 Nov 15;11(11):e40456. doi: 10.2196/40456. PMID: 36378522; PMCID: PMC9709671. IF: 7.08. <https://pubmed.ncbi.nlm.nih.gov/36378522/>

#### NEUROSURGERY

##### HERNIATION WORLD FEDERATION OF NEUROSURGICAL SOCIETIES SCALE IMPROVES PREDICTION OF OUTCOME IN PATIENTS WITH POOR-GRADE ANEURYSMAL SUBARACHNOID HEMORRHAGE

An international prospective multicentre study was conducted in grade V poor-grade aneurysmal subarachnoid hemorrhage patients comparing the World Federation of Neurosurgical Societies (WFNS) classification with a modified version-the herniation WFNS scale (hWFNS).

Comparing, in the 250 patients included in the study, the WFNS and hWFNS scale after neurological resuscitation, the specificity to predict poor outcome increased from 0.19 (WFNS) to 0.93 (hWFNS) (McNemar,  $P < 0.001$ ) and the positive predictive value from 61.9 to 88.3 ( $P < 0.001$ ). For mortality, the specificity and positive predictive values also increased significantly.

This study shows that the identification of objective positive signs of brain stem dysfunction significantly improves the specificity and positive predictive value with respect to poor outcome in grade V patients. Therefore, a simple modification, namely the presence of brain stem signs, should be added to the WFNS classification.

**Reference:** Raabe A, Beck J, Goldberg J, Z Graggen WJ, Branca M, Marbacher S, D'Alonzo D, Fandino J, Stienen MN, Neidert MC, Burkhardt JK, Regli L, Hlavica M, Seule M, Roethlisberger M, Guzman R, Zumofen DW, Maduri R, Daniel RT, El Rahal A, Corniola MV, Bijlenga P, Schaller K, Rölz R, Scheiwe C, Shah M, Heiland DH, Schnell O, Fung C. *Stroke.* 2022 Jul;53(7):2346-2351. doi: 10.1161/STROKEAHA.121.036699. Epub 2022 Mar 23. PMID: 35317612. IF: 10.17. <https://pubmed.ncbi.nlm.nih.gov/35317612/>

## EDUCATION

In 2022, a range of medical conferences and seminars were organized either in presential or hybrid mode.

### CLINICA ARS MEDICA, GRAVESANO

<b>Mal di schiena</b>	
Soirée d'information	12.09.2022
<b>Il dolore neuropatico intrattabile nell'arto superiore</b>	
Conférence médicale	22.09.2022
<b>Swiss Arthrowrist</b>	
Formation	20-21.10.2022

### CLINICA ARS MEDICA, GRAVESANO - CLINICA SANT'ANNA, SORENGO

<b>Radioprotezione Corso BO</b>	
Formation	24.05.2022
<b>Radioprotezione Corso RX</b>	
Formation	07.06.2022
<b>Sanità sostenibile</b>	
Symposium	06.08.2022

### CLINICA SANT'ANNA, SORENGO

<b>Simposio di Perinatologia</b>	
Symposium	09.04.2022
<b>Swiss Multidisciplinary Oncology Network</b>	
Update meeting	29.06.2022

### CLINIQUE DE GENOLIER, GENOLIER

<b>Oncologie en 2022: thèmes pour le praticien</b>	
Conférence médicale	30.10.2022
<b>Cancer du poumon: du dépistage au diagnostic et traitement</b>	
Conférence médicale	08.11.2022
<b>Actualité en Chirurgie vasculaire</b>	
Conférence médicale	22.11.2022
<b>Swiss Multidisciplinary Oncology Network</b>	
Update meeting	21.06.2022
<b>Mise à jour des recommandations pour le suivi des hémorragies et des thromboses</b>	
Symposium Synlab	03.03.2022

### CLINIQUE DE MONTCHOISI, LAUSANNE

<b>Le mauvais œil de l'apnée du sommeil</b>	
Conférence médicale	03.03.2022

### CLINIQUE DE MONTCHOISI, LAUSANNE - SWISS VISIO NETWORK, SWITZERLAND

<b>Innovations et nouveautés en ophtalmologie</b>	
Symposium d'ophtalmologie	31.03.2022

### CLINIQUE DE VALÈRE, SION

<b>L'épaule douloureuse - du diagnostic au traitement</b>	
Conférence médicale	30.03.2022

### CLINIQUE GÉNÉRALE-BEAULIEU, GENEVA

<b>Mammogène</b>	
Symposium	08.04.2022
<b>1<sup>ère</sup> Journée de cancérologie</b>	
Symposium	28.04.2022
<b>Journée de l'obstétrique</b>	
Symposium	19.05.2022
<b>Swiss Multidisciplinary Oncology Network</b>	
Update meeting	22.06.2022
<b>Portes ouvertes de la maternité</b>	
Portes ouvertes	17.09.2022
<b>Journée du diabète et de l'obésité</b>	
Symposium	17.11.2022

### CLINIQUE VALMONT, GLION SUR MONTREUX

<b>Maladie de Parkinson: prise en charge et innovation</b>	
Symposium de neurologie	02.11.2022



**PRIVATKLINIK BETHANIE, ZÜRICH**

<b>Interdigest-Fortbildung</b>	
Ärzte-Fortbildung	31.03.2022
<b>Swiss Multidisciplinary Oncology Network</b>	
Update meeting	28.06.2022
<b>Mammakarzinom-Fortbildung BrustCentrum Zurich</b>	
Ärzte-Fortbildung	29.09.2022
<b>Interdigest-Fortbildung</b>	
Ärzte-Fortbildung	24.11.2022

**PRIVATKLINIK OBACH, SOLOTHURN**

<b>Ausbildung</b>	
MPA-Anlass	01.05.2022
<b>Ausbildung</b>	
Mitarbeiter-Anlass	10.06.2022
<b>Sprung- oder Fussgelenkbeschwerden: Was tun?</b>	
Publikumsvortrag	24.11.2022
<b>100 Jahre Jubiläum</b>	
Tag der offenen Türe	09-10.09.2022

**KLINIK PYRAMIDE AM SEE, ZÜRICH**

<b>Rückenschmerzen: Vorbeugen und richtig behandeln</b>	
Publikumsvortrag	12.05.2022
<b>Kniearthrose: Wann ist der Einsatz einer Knieprothese sinnvoll</b>	
Publikumsvortrag	29.09.2022
<b>Refluxkrankheit: Reine Symptombekämpfung oder Behandlung der Ursache?</b>	
Publikumsvortrag	12.11.2022

**SCHMERZKLINIK BASEL, BASEL**

<b>Schmerzsymposium</b>	
Symposium	29.09.2022
<b>Neues zur Diagnostik und Therapie der Gicht</b>	
Lunch Lecture	11.01.2022
<b>Muskeldystrophien als Differentialdiagnose der Myositiden</b>	
Lunch Lecture	08.02.2022
<b>Schmerzerkrankungen aus psychiatrischer Sicht</b>	
Lunch Lecture	08.03.2022
<b>Spinalstenose – wann operieren?</b>	
Lunch Lecture	12.04.2022
<b>Update Systemsklerose</b>	
Lunch Lecture	10.05.2022
<b>Das Sprunggelenk – die Büchse der Pandora?</b>	
Lunch Lecture	14.06.2022
<b>Update Wirbelsäulen Infiltrationen»</b>	
Lunch Lecture	12.07.2022
<b>Spondylarthritis und CED – therapeutische Dos and Don'ts</b>	
Lunch Lecture	09.08.2022
<b>Rheumatoide Arthritis: neue Therapiekonzepte</b>	
Lunch Lecture	20.09.2022
<b>Künstliche Intelligenz in der Rheumatologie</b>	
Lunch Lecture	11.10.2022
<b>Rheumatologische Erkrankungen: Uveitis, Skleritis, Sicca?</b>	
Lunch Lecture	08.11.2022
<b>Riesenzellarteriitis – welche Diagnostik wählen?</b>	
Lunch Lecture	13.12.2022
<b>SWISS VISIO NETWORK, SWITZERLAND</b>	
<b>Les beaux yeux du sport</b>	
Conférence médicale	22.09.22

## CONCLUSION

This annual report shows that the Swiss Medical Network's hospitals intensified the concentration of the available resources on focused scientific programs. Science & Innovation, the new scientific platform it launched in 2022, is aiming at intertwining more intensively clinical and translational research programs, monitoring the safety and effectiveness of the clinical interventions provided in all sites of the network, and facilitating a direct access to innovative forms of diagnosis and treatment, also in the framework of total health.

The main axes of codevelopment continue to promote interdisciplinary and concerted actions among research teams, patient safety, as well as treatment outcomes and quality measurements.

This report also shows that Swiss Medical Network's researchers are playing a significant role in the scientific publications they co-author in most cases, these publications result from national or international collaborations.

56 The Science & Innovation platform is also providing, in this 2022 report, three examples of successfully lead studies with strong and direct impact on patients pathway.

In oncology, the study on treatment modulations potentially deriving from the presence of EGFR and HER2 exon 20 insertions in solid tumours.

In internal medicine, the study proposal on the introduction, in geriatric care, of measures to improve safety in prescribing antithrombotic drugs, which today remain among the drugs most involved in adverse events.

In neurosurgery, the finding that, in patients with grade V aneurysmal subarachnoid hemorrhage, a simple modification, namely the presence of brain stem signs, should be added to the current international classification to improve significantly its specificity and positive predictive value.

Last but not least, the expansion of Science & Innovation represents a robust strategic and operational bridge between the partners of the Genolier Innovation Network, the Genolier Innovation Hub that will be activated at the turn of next year, and the research teams of the clinical sites of Swiss Medical Network willing to implement, test and improve innovative solutions in the clinical setting.





## Scientific Publications in Peer-Reviewed Journals

(Biomedical domains listed in alphabetical order)

This list of bibliographical references is a compilation of scientific articles that physicians from Swiss Medical Network authored or co-authored in 2022, in the framework of in-house research programs or of their participation to collaborative works, whose results were published by national/international cooperative groups or other institutions.

### CELL THERAPIES

#### Gianni Soldati (Swiss Stem Cell Foundation, Lugano)

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#### Kathrin Aprile von Hohenstaufen Puoti (Clinique de Genolier)

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### INTERNAL MEDICINE

#### Pierre-Olivier Lang (Clinique de Genolier)

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#### Textbooks

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- Martini A, Mazzarello P, Mira E, [Mudry A](#). *Alfonso Corti the discovery of the hearing organ*. Padova: University Press, 2022.

#### UROLOGY

[Charles-Henry Rochat](#); [Gregory Johannes Wirht](#), [Martina Martins-Favre](#)  
(Clinique Générale-Beaulieu, Geneva)

- Windisch O, Benamram D, Martins Favre M, Diamand R, Djouhri M, Chevallier M, Guillaume B, Oderda M, Gatti M, Faletti R, Lefebvre Y, Bodard S, Dariane C, Fiard G. Une qualité d'IRM insuffisante (PI-QUAL < 3) sous-estime le stade T et est associée à une progression sur la pièce de prostatectomie radicale. *Progrès en Urologie – FMC*. Volume 32, Issue 3, Supplement, November 2022, Page S62. <https://doi.org/10.1016/j.fpurol.2022.07.068>. IF: 1.09.
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#### Textbook

- *Ureteral Complications of Gynecological Surgery: Prevention, Diagnosis and Treatment*. Jean Bernard Dubuisson, Jean Dubuisson, Martina Martins Favre, Gregorz J. Wirth, Editors – Springer 2022. ISBN: 978-3-031-15598-7.

## Scientific Communications

(Specialities in alphabetical order)

### CELL THERAPIES

Gianni Soldati (Swiss Stem Cell Foundation, Lugano)

#### Meetings

- **iCAST meeting**  
SSCF organizes every year the iCAST scientific meeting. In 2022 it was organized in Genolier with more than 100 specialists attending. Here below the listing of divulgation activities during 2022. Here below the program of the meeting of the year 2022.
- **IMCAS Paris World Congress**  
Paris, F. How to standardize adipose tissue extraction. June 2<sup>nd</sup>-5<sup>th</sup> 2022.

#### Formation

- Master thesis of Alessandro Ferrari, University of Uninsubria, Varese, Italy. "Validation of a new microfluidic device for mesenchymal stem cell separation". Academic Supervisor: Prof.ssa Gariboldi Marzia Bruna, external Supervisor: Dr. Gianni Soldati, PhD and Co-Supervisor: Dr. Giulio Rusconi, PhD.

### NEUROSURGERY

Rodolfo Maduri (Clinique de Genolier)

- **22<sup>nd</sup> Annual Meeting of the Swiss Society of Spine Surgery (SGS) - Geneva 26th August, 2022. Winner of the "Best Oral Presentation" Prize awarded by the Swiss Society of Spine Surgery**  
Transtubular image-guided surgery for spinal intradural lesions: techniques, results, and complications in a consecutive series of 60 patients.
- **71<sup>th</sup> Congress of the Italian Society of Neurosurgery (SINCh), Naples, 14 October 2022**  
Treatment of lumbar stenosis in elderly patients: surgical results of exoscopic transtubular image guided laminoplasty in a consecutive series of patients.

### ONCOLOGY

Radio-Oncology

Clinique de Genolier; Clinique Générale-Beaulieu, Geneva

#### Oral presentations

- **60<sup>èmes</sup> journées scientifiques de la SFPM, Avignon**  
Perichon N, Jaccard M, Fargier-Voiron M, Matzinger O, Bulling S. Set up of a new Cyberknife treatment planning system: from commissioning to treatment.
- **60<sup>èmes</sup> journées scientifiques de la SFPM, Avignon**  
Fargier-Voiron M, De Marco C, Perichon N, Jaccard M, Matzinger O, Bulling S. Dosimetric comparison between Tomohelical and VMAT technique for left breast irradiation in deep inspiration breath hold and free breathing.
- **Raystation Symposium 2022, Dinard**  
Perichon N. End to End tests for Cyberknife robotic delivery system with Raystation.
- **User meeting francophone Cyberknife et Tomotherapy, Grenoble**  
Jaccard M. QA machine du CyberKnife avec la SRS MapCheck,

- **Accuray symposium. Journées Auvergne-Rhône-Alpes-Bourgogne de Radiothérapie Stéréotaxique, Lyon**

Perichon N. End to End tests for Cyberknife robotic delivery system

#### Posters

- **SOCH annual meeting, Basel**  
Picardi C, Caparrotti F, Montemurro M, Ris F, Christen D, Lestrade L, Matzinger O. Contact X-ray Radiotherapy (Papillon) to improve complete response and organ preservation in early rectal cancer.
- **ESTRO annual meeting, Copenhagen**  
Jaccard M, Perichon N, Fargier-Voiron M, Matzinger O, Bulling S. Commissioning of a new treatment planning system for CyberKnife robotic stereotactic radiotherapy.
- **26<sup>th</sup> Annual SASRO Meeting 2022, Baden**  
Perichon N, Jaccard M, Fargier-Voiron M, Veres I, Caparrotti F, Matzinger O, Bulling S. First CyberKnife treatment with RayStation treatment planning system and RayCare Oncology information System: experience sharing.
- **26<sup>th</sup> Annual SASRO Meeting 2022, Baden**  
Veres I, Perichon N, Fargier-Voiron M, Jaccard M, Matzinger O, Bulling S. SRS MapCheck for CyberKnife machine QA.
- **26<sup>th</sup> Annual SASRO Meeting 2022, Baden**  
Fargier-Voiron M, De Marco C, Perichon N, Jaccard M, Matzinger O, Bulling S. Comparison of Tomohelical and VMAT plans for left breast irradiation with deep inspiration breath hold SASRO.
- **26<sup>th</sup> Annual SASRO Meeting 2022, Baden**  
Driouch A, Lenoir A, Legros S, Aubry C, Bulling S, Matzinger O. Comparison of skin marks and surface imaging for breast radiotherapy patient positioning.

### OPHTHALMOLOGY

Kaweh Mansouri, André Mermoud (Swiss Glaucoma Research Foundation; Swiss Visio Network, Lausanne)

#### Educational Activities

- **Glaucoma on the Lake series: Didactic courses on the theme of glaucoma organized during dinners in suggestive settings in different cities and aimed at young ophthalmologists:**
  - Glaucoma on the Lake Geneva (04.11.2022)
  - Glaucoma on the Lake Zurich (20.11.2022)
  - Glaucoma on the Lake Lugano (21.11.2022)
  - Glaucoma on the Lake Lausanne (01.12.2022)
- **6<sup>th</sup> International Montchoisi Glaucoma Symposium**  
A meeting of international interest with speakers from all over the world. We counted more than 100 participants in the beautiful site of the Olympic Museum in Lausanne. The feedback from participants at the event has been overwhelmingly positive.
- **7<sup>th</sup> International Montchoisi Glaucoma**  
We are already active in the organization of the 7<sup>th</sup> International Montchoisi Glaucoma Symposium. This half-day event will feature a selection of leading speakers on the theme of glaucoma around the world.

### Training activities

The Swiss Glaucoma Research Foundation continues to support the development of physicians' clinical and surgical skills in the treatment of glaucoma through several training programs. Thus, during the year 2022, the SGRF ensured:

- Training of 2 young doctors (research program of young doctors)
- Surgical training of 2 young ophthalmologists (surgical training program for young ophthalmologists)
- ICO (International Council of Ophthalmology) fellow: Dr. Fauziyah Hayati (Indonesia)

### Aude Ambresin (Swiss Visio Retina Research Center; Swiss Visio Montchoisi, Lausanne)

- Liquide sous rétinien en DMLA humide : ami ou ennemi? ImagingI 4<sup>th</sup> Edition, Module 1, Lausanne, 30<sup>th</sup> June 2022.
- Perfusion choroïdienne et activité sportive, Swiss Visio Symposium "Les beaux yeux du sport", Lausanne, 22<sup>nd</sup> September 2022.
- Comparison perfusion time in fluoresceine angiography/digital valuelx in OCT-Angiography/Comparaison temps de perfusion en angiographie avec produit de contraste et valeurs métriques de l'OCT angiographie. Ophthalmic Imaging Congress, Paris, September 23<sup>rd</sup> 2022.
- Nouveautés dans le traitement de la DMLA sèche et intermédiaire, ImagingI 4<sup>th</sup> Edition, Module 2, Lausanne, 10<sup>th</sup> November 2022.
- Y-a-t-il une place pour l'utilisation des corticostéroïdes en intravitréen dans la DMLA exsudative? Colloque sur les nouveaux traitements en rétine médicale et chirurgicale, Centre Ophtalmologique La Colline, Geneva, 1<sup>st</sup> december 2022.

### Poster presentations @ SFO 2022

- Rapidly progressive visual field deterioration in a glaucomatous patient treated with several anti-VEGF injections for neovascular AMD: a Case report. Calci C, Gallo Castro D, Mermoud A, Ambresin A, Paris, SFO, 7-9 May 2022.

### Poster presentations @ SSO 2022

- Rapidly progressive visual field deterioration in a glaucomatous patient treated with several anti-VEGF injections for neovascular AMD: a Case report. Calci C, Gallo Castro D, Mermoud A, Ambresin A. Basel, SSO, 24-26 August 2022.
- Retreatment of recurrent wet AMD with an alternative intravitreal anti-VEGF drug after ocular inflammation following intravitreal brolocizumab injection : about two cases. El Karmy B, Gallo Castro D, Ambresin A. Basel, SSO, 24-26 August 2022.
- Cardiovascular risk prediction by artificial neural networks using dye-based angiography and OCT angiography data. Vallée R, Ambresin A. Basel, SSO, 24-26 August 2022.

### ORTHOPEDIC SURGERY

#### Victor Valderrabano (Schmerzlinik Basel, Basel)

#### Presentations, Moderations, Workshops in Conferences

- Numerous presentations on national and international conferences and webinars

#### Chairmanships

- SMN Orthopaedic Symposium, Swiss Medical Network (SMN) Medical Days 2022, 3 April 2022
- IBRA Orthopaedic Foot & Ankle MASTER COURSE, International Bone Research Association IBRA, Anatomy Department, University of Basel, 18-19 November 2022
- 1<sup>st</sup> Basel International Ankle Osteoarthritis Course, IBRA Orthopaedic Foot & Ankle MASTER COURSE, International Bone Research Association IBRA, Anatomy Department, University of Basel, 1-2 July 2022
- IBRA Orthopaedic Foot & Ankle ADVANCED COURSE, International Bone Research Association IBRA, University of Sao Paulo, Brazil, 9-10 December 2022

#### Clinica Ars Medica (Gravesano)

- **International Federation of Societies for the Surgery of the Hand (IFSSH) Congress, London 2022**
  - Skier's thumb treatment with a modified orthosis and early mobilization  
Rosana Stojmenova, Silvano Rech, Thomas Giesen  
Ergoterapia Cecile Kayar, Giubiasco, Switzerland; Studio di Ergoterapia Rech, Lugano, Switzerland; Centro manoegomito, Clinica Ars Medica, Gravesano, Switzerland
  - Metacarpophalangeal extension blocking splint for the treatment of thumb CMC arthritis  
Lorenzo Priora, Rosana Stojmenova, Thomas Giesen  
Ergoterapia manoegomito, Mendrisio, Switzerland; Ergoterapia Cécile Kayar, Giubiasco, Switzerland; Centro manoegomito, Clinica Ars Medica, Gravesano, Switzerland
  - Heterotopic ossifications after distal biceps repair: an underreported complication or a link to the suture material?  
Thomas Giesen, Nicola Altin, Massimo Sammons, Federico Costagli, Ivan Tami  
Centro manoegomito, Clinica Ars Medica, Gravesano, Switzerland; Réseau Hospitalier Neuchâtelois, Neuchatel, Switzerland
  - Modified traction splint for displaced finger fractures in children  
Susanna Pagella, Ivan Tami, Thomas Giesen  
Ergoterapia manoegomito, Mendrisio, Switzerland; Centro manoegomito, Clinica Ars Medica, Gravesano, Switzerland
  - A series of 15 total wrist implants for wrist arthritis and acute complex distal radius fractures  
Ivan Tami, Urs Hug, Federico Costagli, Massimo Sammons, Thomas Giesen  
Centro Manoegomito, Clinica Ars Medica, Gravesano, Switzerland; Clinic für Hand und Plastische Chirurgie, Luzerner Kantonsspital, Lucerne, Switzerland
  - Retrograde arterialized free venous flaps: pushing the size limit  
Thomas Giesen, Olga Politikou, Urs Hug, Maurizio Calcagni  
Centro manoegomito, Clinica Ars Medica, Gravesano, Switzerland; Plastic and Hand Surgery Department, University Hospital Zurich, Zurich, Switzerland; Hand and Plastic Surgery Department, Luzerner Kantonsspital, Lucerne, Switzerland



- **Swiss society of hand surgery (SGH/SSCM) congress, Thun 2022**
  - What happens when the median nerve doesn't glide anymore: a case report  
Susanna Pagella, Francesca Ferrario, Mario, Gaetano Fioretti, Thomas Giesen  
Ergoterapia manoegomito, Mendrisio, Switzerland; Ergoterapia Cécile Kayar, Giubiasco, Switzerland; Centro manoegomito, Clinica Ars Medica, Gravesano, Switzerland
  - Treatment of the Ulnar Collateral Ligament of the Thumb with a Modified Splint  
Stojmenova R, Silvano G. Rech, Thomas Giesen  
Ergoterapia Cecile Kayar, Giubiasco, Switzerland; Studio di Ergoterapia Rech, Lugano, Switzerland; Centro manoegomito, Clinica Ars Medica, Gravesano, Switzerland
  - Metacarpophalangeal extension blocking splint for the treatment of thumb CMC arthritis  
Rosana Stojmenova, Lorenzo Priora, Thomas Giesen  
Ergoterapia Cecile Kayar, Giubiasco, Switzerland; Studio di Ergoterapia Rech, Lugano, Switzerland; Centro manoegomito, Clinica Ars Medica, Gravesano, Switzerland
  - An overview on biological DRUJ reconstructions  
Thomas Giesen  
Centro manoegomito, Clinica Ars Medica, Gravesano, Switzerland; Clinique de la main, Geneva, Switzerland
  - Open palm as the new classic: an answer to early Dupuytren disease?  
Thomas Giesen, Francesco Costa, Ivan Tami, Philippe Cuénod  
Centro manoegomito, Clinica Ars Medica, Gravesano, Switzerland; Clinique de la main, Geneva, Switzerland
  - Battle of the masters: Epicondylitis humeri radialis conservative vs. surgical therapy  
Thomas Giesen, Esther Vögelin  
Centro manoegomito, Clinica Ars Medica, Gravesano, Switzerland; Department of Hand Surgery, Inselspital, Bern, Switzerland
- **Italian Society of Hand Surgery (SICM) Congress, Varese 2022**
  - Best Paper Award:  
How to improve patients education: Learning Styles  
F. Ferrario, M. G. Fioretti, S. Pagella  
Ergoterapia Manoegomito, Lugano, Switzerland
  - The rehabilitation of patients after CMC thumb arthroplasty with the TOUCH® implant  
M. Malacrida Matteo, S. Pagella  
EMG Ergoterapia Manoegomito, Lugano, Switzerland

## RHEUMATOLOGY

Barbara Ankli (Schmerzklinik Basel, Basel)

### Teaching activities

- Bedside/Onsite Teaching Master and Bachelor Students at Basel University

### Lectures

- Lunch lectures Schmerzklinik Basel January 2022
- Fortbildungstag Schweizerische Gesellschaft für Rheumatologie 13.1.22:  
Multimodale Rheuma- und Schmerzbehandlung: Evidenzlage & Panel Diskussion
- Rheuma Top Pfäffikon 25.8.22 Fibromyalgia

## SPINAL SURGERY

Philippe Otten (Clinique Générale Ste-Anne, Fribourg)

### Educational activities

- Master en médecine

## UROLOGY

### Symposia and webinars

- 2 may 2022  
Hôpital de Tanguiéta, Bénin  
Opération live de fistule vésico-vaginale  
(modérateur C.-H. Rochat)
- 6 may 2022  
Centre hospitalier de Cotonou: cas complexes de fistules obstétricales  
J. Avakoudjo et C.-H. Rochat
- 2-3 june 2022  
Symposium de thérapie focale, Hôtel Métropole, Geneva  
Chirurgie live à la Clinique Générale-Beaulieu:  
S. Regusci: Traitement d'un carcinome prostatique localisé avec Focal One (EDAP)  
C.-H. Rochat: Prostatectomie radicale robot-assistée de rattrapage après traitement focal
- 20 september 2022 – Urologie à la Nautique  
Différentes approches de l'hyperplasie bénigne de la prostate  
(modérateur C.-H. Rochat)
- 4 november 2022  
The Robotic Assisted Microsurgical & Endoscopic Society 10<sup>th</sup> Annual Symposium  
Coronado Springs Resort, Lake Buena Vista, Florida  
G. De Boccard: Robotic Vasectomy Reversal: The Swiss Experience
- 11 november 2022  
Improving Practice in ObGyn Annual Symposium  
NYU Long Island School of Medicine  
C.-H. Rochat: Obstetric Fistula in Developing Countries: what did I learn in 25 years of practice?
- 2-3 december 2022  
Journées scientifiques de Tanguiéta, Bénin  
C.-H. Rochat: Trucs et astuces de la chirurgie vaginale

### Textbook chapters

- C.-H. Rochat : Robot-assisted Prostatectomy Anterior Approach  
Robotic Urology  
Hubert John and Peter Wiklund Editors. Springer, in press
- G. de Boccard : Robotic Assisted Vasectomy Reversal And Varicocelelectomy .  
Robotic Urology  
Hubert John and Peter Wiklund Editors. Springer, in press

### YouTube Videos

- C.-H. Rochat : live prostatectomie robot-assistée de rattrapage après traitement HIFU et diverticule vésical.  
Focal Therapy Geneva Symposium
- C.-H. Rochat et al.: Apport de la reconstruction 3D «Visible Patient» importée dans la console da Vinci pour une tumeur postérieure dans un rein en fer à cheval.
- G. de Boccard : Podcast TSR 36.9° du 25.04.2022. Contraception définitive pour qui ?