



Rothschild Medical
Development

ANNUAL REPORT

2023



ROTHSCHILD FOUNDATION
HOSPITAL
HEAD AND NECK EXPERTISE

Rothschild
Medical
Development





CONTENTS

Research in figures	P4
Editorial	P5
Rothschild Medical Development Ecosystem	P6
Highlights	P8
Unit for Clinical Research	P10
Rothschild Medical Development Platforms	P12
Calls for Tender and Publications	P26

RESEARCH IN FIGURES



€18.2M
budget revenue



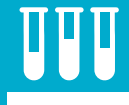
759
patients included
in the clinical investigation
platform



3,738
patients included
in research studies



6
patents filed
or pending



60,323
samples stored in the Biological
Resource Center



554
patients who
received research
imagery



924
students



4
Fellowships



325
publications



199
studies opened
for inclusions



37
calls for tender
submitted



15
calls for tender
won



Rothschild
Medical
Development

In 2023, Rothschild Medical Development continued to grow.

The Rothschild Foundation Hospital combines translational and clinical research under a single structure, Rothschild Medical Development (RMD), and is committed to ISO certification of all support teams. We have now received two certifications for the Biological Resource Center and the Unit for Clinical Research.

- This agile hospital-university research structure collaborates with ESPIC institutions (RESPIC and Unicancer associations) and participates actively in local research networks (GIRCI Paris region).
- RMD partners with several universities, including Université Paris-Cité, Harvard, Stanford, and Pittsburgh in the United States, and collaborates with major public research institutions (Inserm, Inria, CNRS, Vision Institute, etc.), primarily as part of three Investing in the Future programs. The Rothschild Foundation Hospital is a full member of the Brain and Mind Consortium, which won this extremely competitive and elite call for tender.
- The Hospital is a European leader in data and AI for Head and Neck pathologies with enrichment and structured matching of patient data. Dr. Dan Milea, who arrived from Singapore, is an internationally recognized expert in the field and a tireless explorer of the boundaries between neuroscience and ophthalmology, and has thus further expanded our work in this area. A new Ophthalmologic Imaging Reading and Research Center, directed by Dr. Ramin Tadayoni, will allow us to create qualified sets of extremely high quality images for data science research.
- For R&D programs developed with manufacturing partners, RMD has two platforms for clinical research and medical device assessment and approval. In 2023, the hospital's research teams and partners in manufacturing were successful in the field of innovative imaging in ophthalmology (winner of the France 2030 program in innovative imaging). RMD has also been certified as a third-party location for innovation in ophthalmology and neuroscience, which will encourage innovative startups to work with us with the support of the Banque Publique d'Investissement (BPI).
- In 2023, the Hospital was also certified for 11 Rare Disease Reference Centers, which treat diseases that are too often misdiagnosed. Dr. Éric Gabison was awarded a major grant from AFM-Telethon for his work on gene therapies applied to rare corneal diseases.
- RMD continues its research in as yet little-explored areas in nursing and medical-economic studies.



ROTHSCHILD MEDICAL DEVELOPMENT ECOSYSTEM



Guillaume Le Hénanff
Rotshchild Medical Development Coordination

SUPPORT PLATFORMS FOR RESEARCH

Unit for Clinical Research



Dr. Amélie Yavchitz
Head of Unit
for Clinical Research

• Investigation Division



**Lucia
Lopes**

• Promotion Division



**Lucia
Lopes**



**Vivien
Vasseur**

• Promotion, Innovation, Third-Party Experimentation Locations Division



**Assia
Nouar**

• Design and Analysis Division



**Dr. Chloé
Le Cossec**

Sterile Production and Clinical Trials Unit



Dr. Chloé Dupont
Unit Head

Multimodal Clinical Investigation Platform and Rare Disease Monitoring

- External Module (Ophthalmology & Neurology/Ophthalmology)
- One-Day Hospitalization Module (Neurology)
- Intensive Care Module (Neurovascular)
- Rare Disease Monitoring and
- Data Collection, BAMARA



Vivien Vasseur
Head



Dr. Sophie Bonnin
Head of Medicine in
Ophthalmology



**Dr. Caroline
Bensa Koscher**
Head of Medicine
in Neurology



**Dr. Jean-Philippe
Désilles**
Head of Medicine
in Interventional
NeuroRadiology

Unit for Assessment of Innovative Medical Devices



**Dr. Georges
Nicolaos**

Data Science and Digital Innovation Unit

- Design and Method Division
- Med'Dream and Technical Infrastructure Division
- Analysis and Algorithms Division



**Dr. Johann
Gutton**

French Image Reading Center



**Dr. Sophie
Bonnin**

Biological Resource Center (CRB)



**Dr. Mikael
Mazighi**



**Dr. Jean-Philippe
Désilles**

Imaging Research Platform



**Dr. Julien
Savatovsky**



**Dr. Augustin
Lecler**

Nursing, Rehabilitation, and Medical Techniques Research



**Sofia Da Silva
Mendes**

CLINICAL SERVICES AND THEMATIC RESEARCH TEAMS

RHU BOOSTER



**Dr. Mikael
Mazighi**

French Myopia Institute



**Dr. Ramin
Tadayoni***

Translational Research and Experimental Cornea Surgery (T-REX Lab)



**Dr. Éric
Gabison**

Center of Expertise and Research in Visual Optics (CEROV)



**Dr. Damien
Gatinel**

Rothschild BRAIN Lab



**Dr. Dan
Milea**

Startups

- BaseCampVascular (BCV)
- BrainWaves
- NAOX

Neurovascular Pathology Research and Training Center (CREF)



**Dr. Mikael
Mazighi**

Human Brain Signals: Acquisition and Analysis (SCHAA)



**Dr. Gilles
Huberfeld**



**Dr. Pierre
Bourdillon**

Neuropsychology, Neurovision, Neurocognition Institute (I3N)



**Dr. Léa
Conversy**

Multiple Sclerosis Reference Center



**Dr. Caroline
Papeix**

Rare Disease Reference Centers

Reference Center for Wilson's Disease
and Other Rare Copper-Related Diseases
(Coordinating Site)



**Dr. Aurélia Poujois,
Coordinator**

SUPPORT

Income and Expense Monitoring



**Cécile
Robisco**

Communication



**Mélanie
Roulleau**

Quality and Risk Management



**Jessica
Capou**

**At the time of publishing of the 2023 report,
the successor of Dr. Ramin Tadayoni has not yet
been selected.*

HIGHLIGHTS



Double Success at Third-Party Experimentation Locations

The Rothschild Foundation Hospital is a two-time winner of France 2030's **Third-Party Experimentation Locations call for tender, for HealthTech Innovation, supported by Foch Hospital and Visual Impairments**, supported by Streetlab. This program recognizes institutions as facilitators of innovation in healthcare, whether for digital innovation or new medical devices.



GENE THERAPY, A SUCCESSFUL FIRST FOR THE STERILE PRODUCTION UNIT

On December 5, the Sterile Production Unit prepared its very first gene therapy, operating on a 3rd child at the Rothschild Foundation Hospital with UPSTAZA.



The Unit for Clinical Research Certified ISO 9001

After an audit at the end of January 2024, AFNOR Certification approved ISO 9001 : 2015 certification for the Unit for Clinical Research. After the Biological Resource Center, which was certified in February 2023, this is the second Rothschild Medical Development unit to be ISO 9001 certified.



The VISIO Foundation Provides Financial Support for the Research Program on Artificial Intelligence Applied to Neuro-Ophthalmology: Reconnecting the Eye and Brain (ROC), Piloted by Dr. Dan Milea

The overall goal of his clinical research study is to use the power of scalable Artificial Intelligence to detect and identify pathologies of the retina and optic nerve with unparalleled accuracy and use the results as a basis for research on artificial vision, with the goal of restoring the visual perception of the blind and visually impaired. The VISIO Foundation also supports the Detection of Myopic Choroidal Neovascularization by OCT Volumetric Analysis and Deep Learning study, piloted by Dr. Sophie Bonnin.

APPOINTMENTS

Dr. Jean-Philippe Désilles and Dr. Augustin Lecler

Jean-Philippe Désilles, neurologist in the NRI Unit and Augustin Lecler, neuroradiologist in the Imaging Unit, were both appointed PU-PH (University Professor - Hospital Practitioner). They are both previous winners of the Fellowship program supported by the Edmond de Rothschild Foundations, at Stanford University in 2018 for Dr. Lecler, and at Harvard Medical School in 2019 for Dr. Désilles.

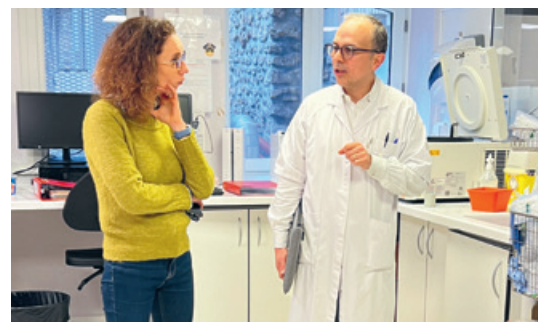


DGOS Call for Tender: 3 Winning Projects

Our expertise in clinical research in ophthalmology and neuroscience has once again been recognized with 3 positive responses during the DGOS 2023 calls for tender: **GALICE** (Dr. Jean-Philippe Désilles), **RESET** (Dr. François Delvoye), **SIMCAT** (Dr. Alain Saad).

The Agency for Health Innovation Meets the Rothschild Medical Development Teams

Identified by the Agency for Health Innovation as an innovative and strategic project partner for France, the Hospital's Research & Innovation teams presented their current clinical research, innovative medical devices in development, and startups to Lise Alter, Director of the Agency.



THE ROTHSCHILD FOUNDATION HOSPITAL IS A MEMBER OF THE BRAIN & MIND BIOCLUSTER

Winner of the second Biocluster Call for Expression of Interest, part of the France 2030 Brain & Mind plan, of which the Rothschild Foundation Hospital is a founding member alongside the Brain Institute, the Vision Institute, and the FondaMental Foundation. This plan seeks **to bring together scientific, medical, and manufacturing partners in the Paris region** in order to accelerate developments in neuroscience.



Excellent Results from a Surgical First

Dr. Benjamin Penaud successfully performed the first implant of the EyeWatch device, a valve that is placed between the inside and outside of the eye to treat refractory glaucoma.

Successful First Research Evening



On Thursday, April 6, around one hundred people attended the first research evening organized by Rothschild Medical Development's Research and Innovation teams. It was an opportunity to learn about the doctors' studies and scientific advances and hear reports from the doctoral students who studied abroad as part of the Edmond de Rothschild Fellowship program.



Medical Imaging: the Holodoppler Consortium

One of 4 Winners of the France 2030 Program

This program, which receives €2.8 million in public funding, is working on a **non-invasive medical device capable of quantitatively measuring ocular blood flow**. Digital holography optical doppler makes it possible to quantify ocular hemodynamics and improve the diagnosis and monitoring of glaucoma and hypertension.

UNIT FOR CLINICAL RESEARCH



Dr. Amélie Yavchitz
Head of the Unit
for Clinical Research

**Our mission: provide support for all projects,
from designing the study to publishing the results.**



The Unit for Clinical Research (SRC) is a single point of contact for research scientists at the Rothschild Foundation Hospital and our manufacturing and academic partners. The Hospital's medical teams have been receiving support for their research and innovation by this unit since 2011. DRCI (Delegation for Clinical Research and Innovation) certified in 2016 by the Ministry of Solidarities and Health, the Rothschild Foundation Hospital's Unit for Clinical Research is one of eight DRCIs in the Paris region.

THIS UNIT HAS FOUR PRIMARY ROLES

- **Assisting in the design, analysis, and publication of research studies.** The unit provides expertise in methodology and biostatistics for designing research studies to be submitted for calls for tender, conducts statistical analyses of studies, and assists authors in scientific publication.
- **Promoting clinical trials** conducted by scientists at the Rothschild Foundation Hospital. The unit obtains the necessary authorizations, manages human resources needed for research, and monitors financing. It guarantees respect of clinical best practices, participant safety, and ensures that studies produce quality data. This unit also includes a Clinical Trial Vigilance Unit.
- **Supporting research** to ensure that studies conducted at the Hospital run smoothly: assisting with patient inclusion, planning the treatment and research process, collecting research data, relationships with promoters. This unit includes a Clinical Investigation Platform (PIC) in ophthalmology.

- **This unit supports** research scientists at the Hospital as they innovate. It aids in setting up academic and manufacturing partnerships, seeking funding, and preparing applications for responses to national and international calls for tender. The Innovation, Promotion, and Third-Party Experimentation Locations Unit also promotes national and international innovation in Head and Neck as part of a network that facilitates this innovation through Third-Party Experimentation Locations co-piloted by the Hospital: HealthTech Innovation and Visual Impairments.

THE UNIT FOR CLINICAL RESEARCH IS AN ACTIVE PARTICIPANT IN RESEARCH NETWORKS

- **RESPIC:** group of 10 ESPICs that promotes research and development. The Rothschild Foundation Hospital is Vice-Chair of RESPIC and works with UNICANCER.
- **GIRCI :** The Rothschild Foundation Hospital is ESPIC's representative at GIRCI IdF and provides vigilance for clinical trials of partner institutions. Dr. Amélie Yavchitz began a two-year term as Chairwoman in January 2024.
- **La Teppe Institute :** The Unit for Clinical Research supports clinical research at La Teppe Institute. The two institutions actively collaborate on research on epilepsy.



THE UNIT FOR CLINICAL RESEARCH ISO 9001 CERTIFIED

After an audit at the end of January 2024, AFNOR Certification approved ISO 9001 : 2015 certification for the Unit for Clinical Research. After the Biological Resource Center, which was certified in February 2023, this is the second Rothschild Medical Development unit to be ISO 9001 certified.

KEY FIGURES 2023



33 new studies
in 2023

363
DGOS score
for the Unit for Clinical Research

€ MERRI DRCI
FUNDING
€937,432

€ SIGREC FUNDING
€3,033,719

€ SIGAPS
FUNDING
€6,921,318

325 MAJOR PUBLICATIONS

84 OF WHICH ARE A-RANKED, INCLUDING:

LANCET NEUROLOGY (FRAC SCORE: 8)

- *The quest for optimal blood pressure management after stroke.*

Dr. Mikael Mazighi

RHEUMATOLOGY (OXFORD) (FRAC SCORE: 6)

- *Scalp necrosis during a giant cell arteritis relapse triggered by a VZV infection*

Dr. Thibaud Chazal, Dr. Gaëlle Clavel

BR J OPHTHALMOL (FRAC SCORE: 5)

- *Cystoid macular oedema after descemet membrane endothelial keratoplasty*

Dr. Damien Guindolet, Dr. Odile Huynh, Dr. Gilles Martin,
Dr. Hugo Disegni, Dr. Georges Azar, Dr. Isabelle Cochereau,
Dr. Éric Gabison



**ROTHSCHILD
MEDICAL DEVELOPMENT
PLATFORMS**



Dr. Ramin Tadayoni*
Head of the
Ophthalmology Unit

FONDATION
VOIR & ENTENDRE



> RESEARCH ON RETINAL DISEASE: AN IMPACT UNEQUALED IN EUROPE

Many new projects were launched in 2023, which led to in 2024:

- **Winning a FRANCE 2030 call for tenders**, with a public/private consortium (Essilor International, InSimo, Voir et Entendre Foundation, Inria, Mines-Télécom Institute). The Premyom research study aims to prevent and curb the progression of myopia in children and adults.
- **Creating an Image Reading Center** to harness the potential of big data and AI to achieve high-quality image classification for clinical trials.
- **Signing a partnership with a French start-up** (AcuSurgical) to develop a surgical robot that increases the surgeon's accuracy during delicate retinal surgeries.
- In 2024, **starting inclusions in the Myoco1000** cohort: 1,000 people with severe myopia (IHU Foresight - Institut de la Vision partnership). Additionally, this team has been conducting research on diabetic retinopathy since 2019 under RHU-EVIRE (France 2030 program).

** At the time of publishing of the 2023 report, the successor of Dr. Ramin Tadayoni has not yet been selected*

68
publications

12
studies
on the retina

112
patients
included



**INSTITUT
FRANÇAIS
DE MYOPIE**

**1ST RESEARCH AND TREATMENT INSTITUTE
SPECIALIZING IN MYOPIA IN EUROPE**

This institute, which opened in March 2024, is the first of its kind in Europe (there are only 3 others in the world) and thus places France at the forefront of the fight against myopia.

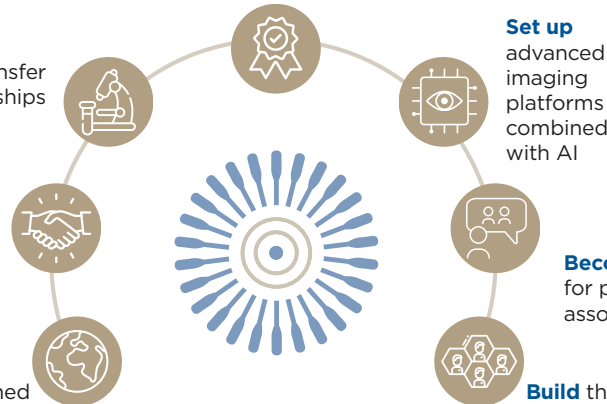
The French Myopia Institute seeks to be the leading and largest institute for research and innovation in pathological myopia in adults and children in Europe and the point of contact for Southeast Asian myopia research teams and teams from the United States who are beginning to tackle this issue.

Become the reference center for severe myopia in France: certification for remote expertise centers, training for professionals

Accelerate research transfer through partnerships

Work in network with university hospitals and research teams in France and Europe

Reach international learned societies, research, fellowship, conferences



Set up advanced imaging platforms combined with AI

Become the expert point of contact for public policy makers and patient associations

Build the largest myopia cohort in Europe

RESEARCH CHAIR

Following the death of Dr. Ramin Tadayoni on April 19, 2024, and at the request of the family, we will create the Ramin Tadayoni Chair of Myopia Research.

12
articles
published

50
research
studies

4,500
actions
per year



Vivien Vasseur
Coordinator
of the Clinical
Investigation
Platform



> CLINICAL INVESTIGATION PLATFORM IN OPHTHALMOLOGY

Since 2014, the Clinical Investigation Platform (PIC), certified by the Carnot Institute, **has provided resources and staff for patients participating in clinical research trials in ophthalmology.** It provides the Hospital's teams with the latest medical equipment for imaging the posterior segment of the eye (retina and optic nerve) as well as a qualified team specializing in ophthalmology and clinical research (5 ophthalmologists, 4 orthoptists, 2 clinical research

nurses, 5 clinical research technicians, 2 project managers, and 1 coordinator). The platform's ophthalmologists and orthoptists also conduct research studies in medical retina and neuro-ophthalmology.

Continuing the collaboration with Insep that began in 2022, a **partnership was signed with Racing 92 in 2023**, making sports and vision a focus for the platform's research in the years to come.

6
anterior
segment
research
studies

21
articles
published



Dr. Damien Gatinel
Head of Science
at CEROV

> CENTER FOR ASSESSMENT AND RESEARCH IN VISUAL OPTICS

The Center for Assessment and Research in Visual Optics (CEROV), part of the Rothschild Foundation Hospital since 2021, provides an appropriate setting for research studies that focus on ocular optics and exploration of the anterior segment of the eye. Through preclinical trials, the center approves and improves prototypes and equipment developed by manufacturing partners for diagnostics and treatment. In 2022, Dr. Gatinel was awarded the Fondation de France Eye Award for his work in mathematical modeling and artificial intelligence under CEROV.

Current studies:

- **PEARL-DGS formula:** further development of a new formula for calculating implant power for cataract surgery, adapting it to complex situations (e.g. after refractive surgery).
- **Artemis:** assessment of a new implant for cataract surgery, proof of concept.
- **A new automated algorithm** for assessing corneal edema in machine learning.
- **HtrasPKR** compares two surface ablation surgical techniques.
- **A new automated algorithm** for assessing crystalline transparency (cataracts) in machine learning.

A UNIQUE AND STRUCTURED APPROACH TO PATIENT INCLUSION IN RESEARCH

The Rothschild Foundation Hospital, through Rothschild Medical Development's dedicated research units, meets the optimal conditions for including patients in research protocols.

The Ophthalmology and Neuroscience Clinical Investigation Platforms are spaces dedicated to research, located right at the hospital. The platforms have all the expertise and support of the Rothschild Medical Development teams so that academic and manufacturing clinical research runs smoothly, qualified research staff (technicians, research assistants, medical and paramedical staff, hospital pharmacy dispensers dedicated to clinical trials), and an ISO 9001 certified quality assurance policy. Our Clinical Investigation Platforms also work closely with national and international research networks and programs. They have built strong relationships with major players in their fields, such as the Vision Institute the Brain and Marrow Institute. These partnerships will be strengthened in the coming years, particularly through the Brain&Mind Biocluster, of which the research teams of the Rothschild Foundation Hospital are an integral part.

- **The Ophthalmologic Clinical Investigation Platform**, created in 2014, is equipped with the latest medical devices for imaging the posterior segment of the eye (retina and optic nerve), its own exam rooms, and a qualified team specializing in ophthalmology and clinical research, under the medical direction of Dr. Sophie Bonnin and coordinated by Vivien Vasseur.

- **The Neuroscience Clinical Investigation Platform**, created in 2024, with two one-day hospitalization beds, is directed by Dr. Caroline Bensa-Koscher, neurologist, and Marion Dubois, project manager.
- **In July 2019, the Neurovascular Pathology Research and Training Center and the Unit for Clinical Research** set up a process to include patients in research protocols and clinical trials 24 hours a day, and 7 days a week. This avant-garde, unique, and innovative system educates all hospital teams on clinical research in healthcare.

FRENCH IMAGE READING CENTER

French Image Reading Center is an ophthalmologic imaging expertise platform, founded in 2024 by Dr. Ramin Tadayoni and under the medical direction of Dr. Dan Milea and Dr. Sophie Bonnin, accompanied by a team of expert annotators. It is supported by the Data Science Unit, which develops tools for storing, managing, and analyzing images.

The French Image Reading Center's mission is to:

- Establish and make available databases of high quality, raw and/or annotated ophthalmologic image data
- Analyze and annotate ophthalmologic images
- Develop algorithms for marker detection, diagnosis, and prediction of ophthalmologic pathologies
- Its services and collaborative tools are intended for both internal and external academics (scientists, doctors, hospitals, research centers) and manufacturers (large companies, SMEs, startups).

contact-FrenchReadingCenter@for.paris

6
publications

2
grants: European
Innovation Council
Accelerator
(Panntherapi) and
Messidore Inserm



**Dr. Gilles
Huberfeld**

Head of Clinical
and Translational
Research in Adult
Epileptology



PANAXIUM



PANNTHERAPI

> TRANSLATIONAL AND FUNDAMENTAL RESEARCH

The Epileptology and Electroencephalography Team conducts translational clinical research. This research seeks to decode neural signals related to normal and pathological brain function and identify abnormalities in neural signaling, particularly for epilepsy and gliomas. It is developing **innovative brain recording devices** in close collaboration with startups:

- a conductive polymer electrode (Panaxium) to record neurons of the cortex and map brain activity during neurosurgical procedures.
- An in-ear EEG device (NAOX) with prolonged outpatient recording to improve monitoring of epileptic activities in order to better quantify, anticipate, and treat them.

Translational and fundamental research is conducted at the Paris Institute of Psychiatry and Neuroscience (INSERM U1266 - Université Paris-Cité) by the Neural Signaling in Epilepsy and Glioma team, led by Dr. Huberfeld. This research is mainly conducted on human tissues and seeks to understand the relationship between neuron activity and the growth of brain tumors, as well as the neural mechanisms that lead to epileptic activities. It has revealed new pathological mechanisms, including the role of pannexin channels, used in treatment development with the startup Panntherapi, co-founded by Dr. Huberfeld.



Dr. Pierre Bourdillon
Neurosurgeon



> RESTORING IMPAIRED NEUROLOGICAL FUNCTIONS

Recording the human brain, in addition to contributing to research on the mechanisms of epilepsy, has given us access to a valuable window into how cognitive functions work. **The goal is to use this improved understanding to develop strategies for restoring impaired neurological functions.** With this in mind, a new laboratory was created this year at the Université Paris-Cité UMR 8002, the Translational Cognitive Neuroscience and Neuroengineering lab (TC2N).

This lab brings together scientists with a pluridisciplinary approach (neurosurgery, theoretical physics, cognitive neuroscience, psychology, robotics). Currently, two PhD students in computational neuroscience/artificial intelligence are working full-time to analyze intracranial recordings as part of this project.

A collaboration agreement was also signed with the Neuromodulation Institute, recently created in Paris after a call from the **President** and designed to assess the new therapeutic possibilities of this field.



Dr. Éric Gabison
Head of the
Translational
Research
Lab

Research team:
Benoît Souquet
Damien Guindolet
Ludovic Perraud
Catalina Tolosa-Leal
Nathan Iglicki
Yanis Paschalides
David Laudanovic
Mathilde Tydgat



> A SPECIFIC LABORATORY FOR TRANSLATIONAL RESEARCH IN CORNEAL OPHTHALMOLOGY

The T-REX (Translational Research and Experimental Surgery of the Cornea) lab's team, composed of doctors, scientists, a pharmacist, and an engineer, studies pathologies of the cornea and develops specific treatments, such as those for rare diseases, preventing fibrosis, and slowing down Fuchs' dystrophy. **The lab specializes in innovative treatment for corneal disorders associated with loss of transparency and new surgical techniques for corneal transplant.**

This research lab is affiliated with the Stem Cell and Biotechnology Team led by Dr. Jérôme Larghero (Hôpital St Louis, AP-HP), which performs stem cell cultures and produces and delivers cell therapy products for clinical trials. T-REX has set up a large number of collaborations with manufacturing and academic partners in biotechnology and is financially supported by several manufacturers, public entities, and non-profits.

49
publications
since the
lab opened
in 2018

4
patents filed

2
national PHRC
in cell therapy
for ocular burns
and GVHD eye
damage



Dr. Dan Milea
Head
of the Rothschild
BRAIN Lab

> NEURO-VISUAL AND COMPUTATIONAL SCIENCE LABORATORY

Founded in October 2023, Dr. Milea's laboratory explores eye/brain interactions and develops efficient computational methods for detecting diseases that affect vision, from the retina to the brain. The laboratory's members are also working on developing new applications of artificial intelligence for the visually impaired, ranging from sensory substitution to artificial vision. Research primarily focuses on:

- **Deep learning in neuro-ophthalmology**, in connection with ophthalmology and neurology
- **Computational computer vision** in humans
- **Retinal biomarkers** of neurodegenerative diseases
- **Integrative neurobiology** for diseases of the optic nerve, ranging from genetic optic neuropathies to glaucomatous neurodegeneration.

In 2023, Dr. Milea's laboratory obtained **major support from the VISIO Foundation.**



55

data extractions

3

data scientists

1

data engineer

3

research studies



Dr. Johann Gutton
Head of the Data
Science and Digital
Innovation Unit

> DATA SCIENCE AND DIGITAL INNOVATION UNIT: FROM RAW DATA TO APPLIED DATA

In 2023, the Data Science and Digital Innovation Unit participated in 55 data studies, providing expertise in data extraction, enrichment, and analysis while helping to write scientific articles. The unit has assisted with 2 large-scale studies funded by the BPI and the VISIO Foundation, which have annotated more than 60,000 ophthalmology images and indexed 2 million consultations to support data science studies. The team grew in 2024 with two new data scientists

and data engineers. They actively participated in creating the French Image Reading Center and helped develop the institution's Infocenter, which sets policies. 2024 will be devoted to implementing the health data warehouse, developing the Med'DREAM project to facilitate data collection, developing AI algorithms and implementing them in the clinic, and continuing to support and promote the institution's data science studies.

More than
20

responses
to calls for tender
supported

80

R&D contracts

6

patents filed
or pending



Assia Nouar
Head of the Promotion,
Innovation,
and Partnerships Unit

> PROMOTION, INNOVATION, AND THIRD-PARTY EXPERIMENTATION LOCATIONS UNIT

This unit provides support for scientists at the Rothschild Foundation Hospital as they establish academic and manufacturing partnerships and seek funding by helping to compile applications for national and international calls for tender. It also promotes Head and Neck innovations to its network through two Third-Party Experimentation Locations that are co-piloted by the Hospital.

- **HealthTech Innovation:** Combining expertise in digital health with a complete and integrated service in Head and Neck/Neuroscience and Women's Health.
- **Visual impairments:** Offering a range of complementary services to be tested in real life and accelerating the time to market of innovative digital solutions for the visually impaired, caregivers, and healthcare professionals.



Dr. Mikael Mazighi
Head of the Biological
Resource Center



> THE BIOLOGICAL RESOURCE CENTER

The Biological Resource Center (CRB) supports research on neurovascular disorders. In order to amass a high-quality collection of biological samples and research data, a team is on-call 24/7 to adapt research to emergency and scheduled interventions. **The CRB now houses the largest collection of cerebral thrombi in Europe from mechanical thrombectomies conducted in the interventional neuroradiology OR.**

These biological resources serve as a basis for many academic and industrial research projects that mainly seek to develop new treatments by identifying new biological targets. In 2021, the CRB was selected to coordinate translational research programs on strokes by the STROKE-link network. The CRB collects, preserves, and stores all Hospital samples.

61
collections

60,323
samples
stored

24,842
samples
provided

Dr. Mikael Mazighi

Scientific
and Technical Coordinator
of RHU Booster

Research team:

Nahida Brikci-Ngassa
Dr. Jean-Philippe Désilles
Zainab Karee
Dr. Hélène Kryz Papayiannis
Mylène Hamdan
Sofia Da Silva Mendes
Hanaa Mokhtari
Mia Solo Nomenjanahary
Fatima Zemali
Perrine Boursin



> RHU BOOSTER

Le RHU BOOSTER, (BrainClot persOnalized therapeutic Strategies for sTroke Emergent Reperfusion), 2019 winner of the fourth call for tenders in Hospital-University Health Research for the Investing in the Future program, is piloted by Dr. Mikael Mazighi. **RHU BOOSTER seeks to develop precision treatment for ischemic strokes (AIS) following a large vessel occlusion (LVO).** It consists of 5 working groups (WP). The adventure continues with 1 unique imaging platform: more than 9,000 images for developing new algorithms

to predict responses to acute phase therapeutics, 3 clinical trials in progress with nearly 3,000 patients included. These advances have been presented at 74 conferences and in 23 publications. The French National Research Agency and Scientific Advisory Board International congratulated the RHU BOOSTER consortium for quality studies and innovation at the annual meeting on March 27, 2024.

1
company
founded

6
patents

29
significant
results

26
preparations
for research

228
batches of hospital
preparations

307
dispensations



Dr. Chloé Dupont
Unit Head

Dr. Victorine Mouchel
Head Pharmacist
of the Sterile
Production Unit

Dr. Alaki Thiémélé
Head Pharmacist
of the Pharmaceutical
Clinical and
Therapeutic Trials Unit

> **STERILE AND PHARMACEUTICAL PRODUCTION UNITS FOR CLINICAL AND THERAPEUTIC TRIALS**

The Sterile Production Unit (UPS) has moved to new premises, allowing it to diversify and expand.

The unit began preparing Plasma Rich in Growth Factor eye drops (PRGF) in autumn 2023 and has already treated more than 100 patients. These eye drops, prepared using the patient's own blood, are an innovative treatment for managing severe dry eye. The UPS team also prepared their first Breakthrough Therapy drug (MTD) this year. This gene therapy drug treats children with aromatic amino acid decarboxylase (AADC)

deficiencies. The Pharmaceutical Clinical and Therapeutic Trials Unit (UPEC) manages clinical trials involving a sterile or implantable drug or medical device. It is collaborating even more closely with the UPS through the ACUITY clinical trial, which evaluates the safety and tolerability of a new molecule for treatment of acute optic neuritis. Finally, UPEC and UPS have initiated a quality approach with the goal of obtaining ISO 9001 certification in 2025 and 2026, respectively.



> **GENE THERAPY**

The Rothschild Foundation Hospital has been authorized by the Regional Health Department to treat children with aromatic amino acid decarboxylase (AADC) deficiencies with gene therapy since November 2021. **A third child received surgery on Tuesday, December 5, 2023, conducted by Dr. Christophe Boulloud with UPSTAZA.** The treatment, which was previously prepared at the Saint-Louis Hospital Pharmacy (AP-HP), was developed in-house for the first

time at the Rothschild Foundation Hospital's Sterile Production Unit by Frédéric Baron, Victorine Mouchel, and Chloé Dupont. The drug, which must be stored at -80°C, is put in the syringe at the Sterile Production Unit and sent to the operating room, where it must be injected into the patient's brain within six hours of thawing. A second gene therapy project is also underway as part of a clinical trial with the Rare Disease Reference Center for Wilson's Disease.



Dr. Mikael Mazighi

Head of Neurovascular
Pathology Research
and Training Center

Perrine Boursin

Advanced Practice Nurse
Coordinator of
Neurovascular Pathology
Research and Training
Center

RNs:

Véronique Fornilli-Rata
Alicia Gambarini,
Hanan Abdouci,
Hafida Benzair,
Patrick Poly
Sofia Da Silva Mendes

> TRAINING A MAXIMUM NUMBER OF PRACTITIONERS IN NEUROVASCULAR PATHOLOGIES

The Neurovascular Pathology Research and Training Center (CREF) is an interventional neuroradiology team founded on the expertise of our experienced healthcare professionals in collaboration with all of the Hospital's teams. **The CREF facilitates complex education and research on treatment of acute phase strokes and provides nurses with an opportunity for new career paths. It is recognized for development of advanced nursing practices. On regional, national, and international**

levels, the CREF helps create and diffuse new knowledge through university education, developing research projects from design to application, responding to calls for tender, writing articles, actively participating in networks and working groups with the university and manufacturers, setting up clinical trials, and using new molecules for complex care in neuroscience emergencies.

545

patients included in the Boost research protocol (RHU Booster), mainly ran by nurses

120

practitioners trained in the fundamentals of vascular neurology, interventional neuroradiology, and research in stroke emergencies

1 APRESO

Convergence winner: the Learn-NIHSS project



Sofia Da Silva Mendes

Senior Nursing
Expert,
Nursing,
Rehabilitation, and
Medical Techniques
Research
Paramedical
Coordinator

Perrine Boursin

Advanced
Practice Nurse

> NURSING, REHABILITATION, AND MEDICAL TECHNIQUES RESEARCH

This unit's research in nursing, rehabilitation, and medical techniques is intended to facilitate research studies that are as closely aligned as possible with the needs of patients and the clinic. **They promote application of data to clinical, managerial, and educational professional practices.** In 2023, the Hospital actively participated in the GIRCI-IDF's GT-RESO Research in Nursing Working Group, which led to the

Innovation and Research in Nursing Day (JIRSI 2023), during which the I3N team's REVOIR study won the award for best poster. Internally, the CREF continued coordinating the neuroscience emergency research on-call nursing team, continued ongoing studies, prepared for PHRIP CanHope, had two successful studies at APRESO (REVOIR and Learn-NIHSS), and continued partnerships with manufacturers for clinical trials.

2

winners at the Paris region GIRCI's healthcare research (APRESO) call for tenders



Dr. Julien Savatovsky
Head of the
Imaging Unit

> IMAGING PLATFORM FOR NEUROSCIENCE AND OPHTHALMOLOGIC IMAGING RESEARCH

The Imaging Unit is equipped with three state-of-the-art 3T MRI machines exclusively **dedicated to exploring the brain, eye, head and neck regions, and the spinal cord.** With our new clinical operating authorization, we can now spread research projects over the three MRIs and balance clinical and research activities with more agility. At

the impetus of engineer Émilie Poirion, new sequences are being developed more quickly. These new tools will improve analysis of cerebral lymphatics and detection of abnormalities of the blood-brain barrier, which can be altered by many degenerative, inflammatory, and infectious pathologies.



Dr. Léa Conversy
Head of the I3N

> NEUROPSYCHOLOGY, NEUROVISION, NEUROCOGNITION INSTITUTE (I3N)

Screening and rehabilitation for neurovisual disorders in children and adults

Part of the Rothschild Foundation Hospital and associated with the Integrative Neuroscience and Cognition Center (INCC, CNRS UMR 8002), the I3N treats cognitive and neurovisual disorders in babies as young as 1 month old, children, and adults after a brain lesion (stroke, head injury, tumor, etc.), or in the case of neurodevelopmental disorders associated with rare diseases, which may be complex. This pluridisciplinary team directed by Dr. Léa Conversy works in collaboration with the Neurology, Neurosurgery,

Neuroimaging, Interventional Neuroradiology, Ophthalmology, Pediatric Ophthalmology, Neuro-Ophthalmology, and ENT Units. It brings together scientists and clinicians in order to understand, prevent, diagnose, and restore cognitive function disorders in children and adults. It also seeks to better understand the connection between visual function disorders and neurodevelopmental disorders and improve testing and treatment for neurovisual and learning disorders in children.





Dr. Caroline Papeix
Head of the General
Neurology Unit and
Federation
of Neurology



> RESEARCH ON NEURODEGENERATIVE DISORDERS

Dr. Papeix's team combines medical expertise in neurodegenerative disorders, **including cognitive disorders, movement disorders, and demyelinating disorders**, with research on clinical, biological, and radiological biomarkers of therapeutic response and diagnostic biomarkers at pre-symptomatic phases. The team is affiliated with Dr. Claire Paquet's Biomarkers of Neurodegenerative Disorders team (UMR-S 1144 Université Paris-Cité, Inserm).

The team is also collaborating nationally and internationally on **pharmacoepidemiology projects to define the best therapeutic strategy in the field of neurodegenerative disorders**. The team coordinates 2 PHRCs and is a member of 4 national cohorts (3,660 patients included). In April 2024, we opened a Neuroscience Clinical Investigation Platform in collaboration with the Unit for Clinical Research at the Rothschild Foundation Hospital.

10
manufacturing
clinical trials

15
academic clinical
trials (454 patients
included)

91 publications



> EUROPEAN NETWORKS AND RARE DISEASE REFERENCE CENTERS

- Reference Center for Wilson's Disease and Other Rare Copper-Related Diseases (Coordinating Site), Head: **Dr. Aurélia Poujois**
- Reference Center for Cerebral and Spinal Neurological Vascular Anomalies (Constitutive Site), Head: **Dr. Michel Piotin**
- Reference Center for Neuroretinal Diseases (Constitutive Site), Head: **Dr. Sophie Bonnin**
- Rare Disease Competency Center for Ophthalmology, Head: **Dr. Eric Gabison**
- Competency Center for Rare Keratopathies, Head: **Dr. Eric Gabison**
- Competency Center for Rare Conditions in Ophthalmologic Genetics, Head: **Dr. Eric Gabison**
- Competency Center for Neuromuscular Disorders North/East/Paris region, Head: **Dr. Antoine Gueguen**
- Competency Center for Rare Inflammatory Diseases of the Brain and Spinal Cord, Head: **Dr. Caroline Papeix**
- Competency Center for Rare Psychiatric Disorders, Head: **Dr. Léa Conversy**
- Competency Center for Neurogenetics and Rare Genetic Diseases of the Nervous System, Head: **Dr. Nathalie Dorison**
- Competency Center for Rare Epilepsies, Head: **Dr. Emmanuel Raffo**



Dr. Georg Dorf Müller
Unit Head

> PEDIATRIC NEUROSURGERY, AT THE FOREFRONT OF SURGICAL TECHNIQUES

The Pediatric Neurosurgery Unit treats all neurosurgical pathologies in children except for traumatology. It is the leading unit in France for the assessment and surgical treatment of refractory epilepsies in infants and children (EPIFOR) and is a certified ERN European Reference Center in the EpiCARE network.

- In 2021, Dr. Hannes Haberl, a German neurosurgeon and top European specialist in **selective dorsal rhizotomy (SDR)**, joined the Pediatric Neurosurgery Unit. SDR is a particularly effective surgical approach for treating spasticity in children. More than 60 children have been operated on at the Rothschild Foundation Hospital to date.

- The Rothschild Foundation Hospital has been authorized to use **gene therapy** to treat children with aromatic amino acid decarboxylase (AADC) deficiencies with UPSTAZA since November 2021. Three children have already received this treatment at the Hospital.

- In April 2024, the Hospital once again innovated in the field of pediatric neurosurgery and medical imaging by performing our first LiTT, **laser interstitial heat therapy** procedure. In this minimally invasive surgery, a laser is used to treat a brain lesion causing epileptic seizures in young patients.



Dr. Emmanuel Raffo
Deputy Head



Dr. Sarah Ferrand-Sorbets
Deputy Head



Dr. Georges Nicolaos
Deputy Head of
Internal Pharmacy Unit

> UNIT FOR ASSESSMENT OF STERILE MEDICAL DEVICES

In order to improve patient care at the Rothschild Foundation Hospital, surgeons and physicians promote innovation in Sterile Medical Devices (SMD). This approach is supported by Hospital executives, the pharmacy, the Sterilization Unit, the Biomedical Unit, and the operating room. Once the innovation is deemed relevant by surgeons and doctors, this entire ecosystem collaborates to implement it. After ensuring device conformity,

the pharmacy records the new uses.

Nearly 70 new SMDs were recorded 2023, and of course all disciplines are represented.

We innovated in all surgical disciplines (ophthalmology, neurology, ENT, INR, imaging, sterilization), with half of the trials concentrated in INR. The objective for 2024 is to continue this trend and raise awareness of our expertise among manufacturers.



> 2nd COHORT OF THE RUNNING A CLINICAL RESEARCH PROGRAM DIPLOMA

The Running a Clinical Research Program diploma, which teaches the rules and principles of clinical research and how to manage French and international funding, welcomed **its second cohort on October 12, 2023**. This course, taken by 15 students this year, consists of eight modules taught two days per

month at the Rothschild Foundation Hospital. This university diploma, taught by Dr. Mikael Mazighi and Dr. Amélie Yavchitz, is granted by Université Paris-Cité in partnership with Unicancer and RESPIC, with the support of the Edmond de Rothschild Foundations.



Dr. Clément Aveneau



Dr. Gilles Martin



Dr. Pia Vayssiere



Dr. Lucas Di Miglio

> 2023 WINNERS OF THE MEDICAL FELLOWSHIP PROGRAM

The committee convened on July 6 by the Rothschild Foundation Hospital selected the applications of promising doctors for a hospital-university course in Head and Neck. Thanks to the support of the Edmond de Rothschild Foundations, they each received a grant from the Medical Fellowship Program to study abroad. Several hospital-university cohorts have already been created through this highly selective program, ran in collaboration with the Université de Paris-Cité School of Medicine.

- **Dr. Clément Aveneau** is working on identifying a new alpha-synuclein biomarker for differential diagnosis and clinical prognosis in Lewy body dementia (LCD) at the University of Amsterdam.

- **Dr. Gilles Martin** is assessing a cataract surgery training program using a simulator in an environment that realistically reproduces an operating room at the University of Montreal's Surgical Ophthalmology Laboratory.

- **Dr. Pia Vayssiere's** thesis is based on an integrative approach to studying connectivity of the sensorimotor system in spasticity during rhizotomies performed at 3 hospitals at Schön Klinik Vogtareuth, Bonn.

- **Dr. Lucas Di Miglio** is working on identifying new biomarkers to predict delayed cerebral ischemia in patients with subarachnoid hemorrhage (SAH) using multimodal continuous monitoring at the Laboratory of Experimental Neurology, University Clinics of Brussels Neurology Department.

2023: A YEAR OF SUCCESS

Supported by the Promotion, Innovation, and Third-Party Experimentation Locations Division at the Unit for Clinical Research, the teams at the Rothschild Foundation Hospital responded to 37 calls for tender in 2023 and were selected for 15 of them, a success rate of 40%.

BPI Innovation in Medical Imaging

HOLODOPPLER, consortium composed of the Adolphe Rothschild Foundation Hospital (Dr. Sophie Bonnin), Quantel Medical, Ophthalmology CHN at the 15/20 Hospital, and ESPCI. Project to develop a digital holography optical Doppler measuring device to quantify ocular hemodynamics and improve the diagnosis and monitoring of glaucoma and hypertension. The objective is to develop a non-invasive medical device capable of quantitatively measuring ocular blood flow with satisfactory temporal and spatial resolution.

BPI i-démo 2022

PREMYOM project, 2024 winner of a FRANCE 2030 program that brings together a public/private research consortium coordinated by the manufacturer EssilorLuxottica and clinically managed by the French Myopia Institute (Dr. Ramin Tadayoni). This project seeks to model the progression of myopia and understand its developmental factors in children and young adults. Three large cohorts (1,000 myopic children ages 6 to 18, 100 emmetropic children ages 4 to 8, and 200 young adults ages 18 to 25) will make it possible, based on imaging data from a specific care pathway, to develop new pathophysiological understanding, model the growth of the eye, and create a myopic digital twin (diagnostic aid for progressive myopia).

ANR Call for Tenders

DELIASE (Dr. Jean-Philippe Désilles) aims to demonstrate that carbamoylation occurs in the thrombi responsible for acute ischemic stroke, and that it has a negative impact on their response to intravenous thrombolysis and mechanical thrombectomy, and that reversal of carbamoylation using recombinant decarbamoylase could serve as a basis for a novel adjuvant therapy to improve the efficacy of current recanalization strategies.

AFM Telethon Supports the Translational Research in Corneal Ophthalmology Lab

The research study **MICELLES**, led by **Dr. Éric Gabison**, was selected as a strategic program by AFM Téléthon's scientific committee in December 2022, which will support it financially for 4 years.

Third-Party Experimentation Locations, France 2030 in the Digital Health Acceleration Strategy

HealthTech Innovation (Assia Nouar): Combining expertise in digital health and a complete and integrated service in Head and Neck/Neuroscience and Women's Health in order to enrich the value provided to partner companies, in collaboration with patients and healthcare professionals. Consortium with Foch MEDICEN and UVSQ.

Visual Impairments (Assia Nouar): Offering a range of complementary services to be tested in real life and accelerating the time to market of innovative digital solutions for the visually impaired, caregivers, and healthcare professionals. Consortium with STREET LAB, CHNO XV XX and the Vyv Group.

VISIO Foundation

Rothschild BrainLab (Dr. Dan Milea): the laboratory explores eye/brain interactions and develops effective computational methods for the detection of diseases affecting vision, from the retina to the brain.

PRECISE STROKE (Dr. Mikael Mazighi) will assess the prediction of brain lesions induced by endovascular reperfusion of cerebral infarction.

SMARTLET (Dr. Mikael Mazighi) aims to better characterize the role of platelets in post-stroke cognitive function and brain plasticity and repair.

325 MAJOR PUBLICATIONS IN 2023

• DEPARTMENT OF OPHTHALMOLOGY

Dr. Caputo's Unit: *Management and Outcomes of Posterior Persistent Fetal Vasculature.* Ophthalmology. 2023 Aug; 130(8):844-853. DOI: 10.1016/J.Ophtha.2023.03.027. Epub 2023 Apr 11. PMID: 37044159
Guy de Saint Sauveur, Thibaut Chapron, Youssef Abdelmassih, Ismael Chehaibou, Augustin Lecler, Pascal Dureau, Florence Metge, Georges Caputo

Dr. Gabison's Unit: *Detecting Subclinical Corneal Edema Using Corneal Thickness Mapping in Patients Presenting Fuchs Endothelial Corneal Dystrophy.* Am J Ophthalmol. 2023 Feb;246:58-65. PMID: 36228778

Damien Guindolet, Anna Gemahling, Georges Azar, Hugo Disegni, Manal Samie, Isabelle Cochereau, Eric E Gabison

Dr. Gatinel's Unit: *A Simplified Method to Minimize Systematic Bias of Single-Optimized Intraocular Lens Power Calculation Formulas.* Am J Ophthalmol. 2023 Sep;253:65-73. DOI: 10.1016/J.Ajo.2023.05.005. Epub 2023 May 6. PMID: 37150337.

Damien Gatinel, Guillaume Debellemanni, Alain Saad, Radhika Rampat, Avi Wallerstein, Mathieu Gauvin, Jacques Malet

Dr. Tadayoni's Unit: *The role of near-infrared reflectance imaging in retinal disease: A systematic review.* Surv Ophthalmol. 2023 May-Jun; 68(3):313-331. PMID: 36535488
Georges Sukkarieh, Raphaël Lejoyeux, Yannick LeMer, Sophie Bonnin, Ramin Tadayoni

Dr. Dan Milea's Unit: *Discriminating Between Papilledema and Optic Disc Drusen using 3D Structural Analysis of the Optic Nerve Head.* Neurology. 2023 10;100(2):e192-e202. PMID: 36175153 Michaël J A Girard, Satish Panda, Tin Aung Tun, Elisabeth A Wibroe, Raymond P Najjar, Tin Aung, Alexandre H Thierry, Steffen Hamann, Clare Fraser, Dan Milea

• DEPARTMENT OF NEUROSCIENCE

General Neurology Unit: *Vaccines and the Risk of Hospitalization for Multiple Sclerosis Flare-Ups.* JAMA Neurol. 2023 Oct 1; 80(10):1098-1104. PMID: 37669073
Lamia Grimaldi, Caroline Papeix, Yann Hamon, Albert Buchard, Yola Moride, Jacques Benichou, Tom Duchemin, Lucien Abenham

Neurovascular Unit: *Endovascular Therapy or Medical Management Alone for Isolated Posterior Cerebral Artery Occlusion: A Multicenter Stud.* Stroke. 2023 Apr; 54(4):928-937. PMID: 36729389

Candice Sabben, Frédérique Charbonneau, François Delvoye, Davide Strambo, Mirjam R Heldner, Elodie Ong, Adrien Ter Schiphorst, Hilde Henon, Wagih Ben Hassen, Thomas Agasse-Lafont, Loïc Legris, Igor Sibon, Valérie Wolff, Denis Sablot, Mahmoud Elhorany, Cécile Preterre, Nour Nehme, Sébastien Soize, David Weisenburger-Lile, Aude Triquenot-Bagan, Gioia Mione, Andreea Aignatoaie, Jérémie Papassin, Roxana Poll, Yannick Béjot, Emmanuel Carrera, Pierre Garnier, Patrik Michel, Guillaume Saliou, Pasquale Mordasini, Yves Berthezene, Vincent Costalat, Nicolas Bricout, Gregory W Albers, Mikael Mazighi, Guillaume Turc, Pierre Seners; ACAPULCO Collaborators

Adult Epilepsy Unit: *Animal models and human tissue compared to better understand and treat the epilepsies.* Epilepsia. 2023 May; 64(5):1175-1189. DOI: 10.1111/EPI.17552. Epub 2023 Mar 6. PMID: 36807867.
Giampaolo Milior, Mélanie Morin-Brureau, Johan Pallud, Richard Miles, Gilles Huberfeld

Adult Neurosurgery Unit: *Surgical treatment of hemifacial spasms: how to predict failure and complications through a series of 200 patients.* Neurochirurgie. 2023 Nov; 69(6):101498. PMID: 37741362
Abdu Alkhayri, Pierre Bourdillon, Dorian Chauvet, Abdulgadir Bugdadi, Mohammed Alyousef, Sultan Alsalmi, Caroline Apra, Jean-Pascal Lefaucheur, Sorin Aldea, Caroline Le Guérinel

Interventional Neuroradiology Unit: *Safety and efficacy of intensive systolic blood pressure lowering after successful endovascular therapy: a post hoc analysis of the BP TARGET trial.* J Neurointerv Surg. 2023 Sep; 15(E1):E142-E147. PMID: 36220337
Mohammad Anadani, Benjamin Maier, Simon Escalard, Julien Labreuche, Adam de Havenon, Candice Sabben, Bertrand Lapergue, Eva A Mistry, Benjamin Gory, Alejandro M Spiotta, Sébastien Richard, Igor Sibon, Jean-Philippe Desilles, Raphael Blanc, Michel Piotin, Mikael Mazighi; on behalf of the BP TARGET study group

• DEPARTMENT OF ANESTHESIOLOGY AND INTENSIVE CARE

Anesthesiology Unit: *Periorbital skin pallor due to skin vasoconstriction following 2.5% phenylephrine mydriatic eye drops instillation prior to retinopathy of prematurity treatment in preterm infant.* Paediatr Anaesth. 2024 Mar;34(3):277-278. PMID: 38055349

Simon Clariot, Florence Metge, Chloé Dupont, Jean-Michel Devys

Intensive Care Unit: *Feasibility of Prone Positioning for Brain-injured Patients with Severe Acute Respiratory Distress Syndrome: A Systematic Review and Pilot Study (ProBrain).* Anesthesiology. 2024 Mar 1; 140(3):495-512. PMID: 38088786
Yoann Elmaleh, Amélie Yavchitz, Teddy Léguillier, Pierre-Alexandre Squara, Clément Palpacuer, Charles Grégoire

• OTHER UNITS

Otorhinolaryngology (ENT) Unit: *Comparison of dislocation rates of Teflon and Titanium stapes prostheses: a retrospective survival analysis on 855 patients.* J Otolaryngol Head Neck Surg. 2023 Aug 11;52(1):52. PMID 37568166
Stéphane Gargula, Mary Daval, Adrien Lecoivre, Denis Ayache

Imaging Unit: *Contrast-Enhanced 3D Spin Echo T1-Weighted Sequence Outperforms 3D Gradient Echo T1-Weighted Sequence for the Detection of Multiple Sclerosis Lesions on 3.0 T Brain MRI.* Invest Radiol. 2023 May 1;58(5):314-319. doi: 10.1097/RLI.0000000000000937. Epub 2022 Dec 8. PMID: 36729811.

Ariane de Panafieu, Augustin Lecler, Adrien Goujon, Sidney Krystal, Antoine Gueguen, Jean-Claude Sadik, Julien Savatovsky, Loïc Duron

ADOLPHE DE ROTHSCHILD FOUNDATION HOSPITAL

The Adolphe de Rothschild Foundation Hospital, founded in 1905, specializes in all head and neck pathologies (ophthalmology, neuroscience, ENT) in adults and children.

This non-profit university hospital is a private health-care establishment of public interest (ESPIC) that provides excellent care in sector 1. We conduct more than 360,000 exams and tests each year and take in more than 45,000 ophthalmologic emergencies.

With our state-of-the-art technical equipment and world-renowned experts, our departments are regularly rated among the best in France. We cover the full spectrum of care, research, and university education, piloting more than 180 clinical research studies, publishing more than 300 scientific research papers per year and training more than 900 students per year.

MORE INFORMATION: www.for.paris

Recognized for public utility, the Foundation may receive donations and legacies.

INNOVATIONS AND FIELDS OF EXCELLENCE AT THE ADOLPHE DE ROTHSCHILD FOUNDATION HOSPITAL

- **Top French hospital** in ophthalmology
- **Top French hospital** for cornea transplants
- **1st artificial retinal implant in the world** for ADM patients
- **Largest French center** for intravitreal injections (IVT) for treating AMD
- **National reference center** for treating retinopathy in newborns
- **Only hospital in the Paris region** to provide 24-hour pediatric ophthalmologic emergency care
- **One of the top 3 hospitals in the world** for surgery in infants and children with drug-resistant epilepsy
- **National leader** in deep brain stimulation for Parkinson's disease and dystonia (children and adults)
- **Top hospital in the Paris region** for treatment of cerebral aneurysms
- **European leader** in stroke treatment through mechanical thrombectomy
- **One of 3 multiple sclerosis resource** and competency centers in Paris
- **Expert in the treatment of dystonia** and abnormal movements of the ENT system through botulinum toxin injections
- **Only research unit in France** to provide diagnosis, treatment, and follow-up for neurovisual disorders

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Foundation recognized for public utility by decree on April 20, 1909



Rothschild
Medical
Development



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