

2017 ANNUAL REPORT

Swiss pediatric liver center

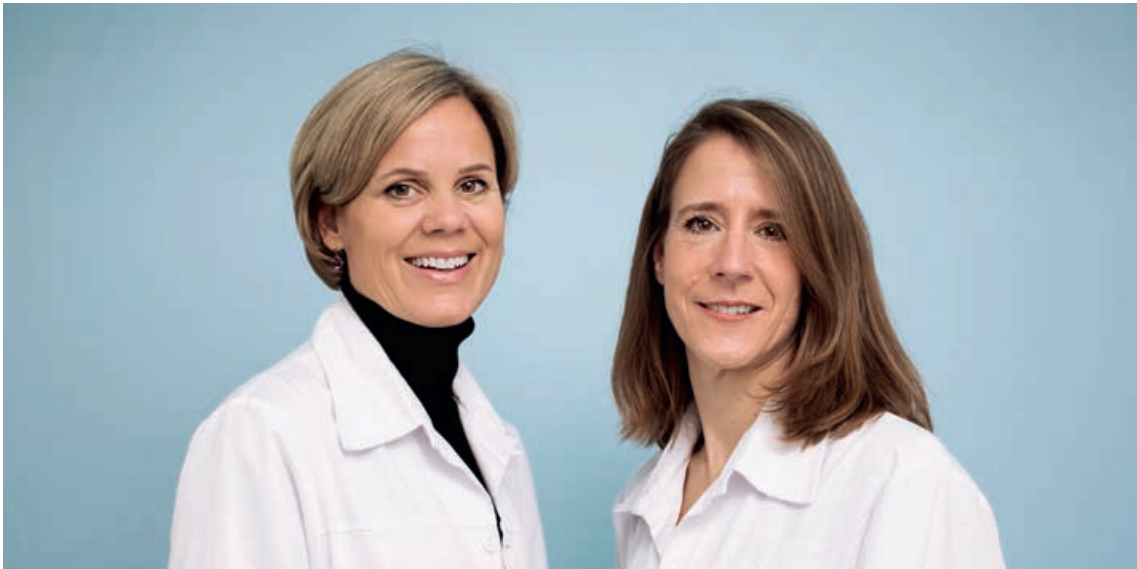


Foreword

*« Il faut remplacer l'exploit solitaire
par la réussite solidaire »*

*“We must replace solitary exploits
with solidary success”*

Albert Jacquard



This is the approach we take when caring for children and striving to meet the many challenges we face every day!

Parents, paediatricians, coordinators, doctors, nurses, donors and a host of internal and external collaborations: each link of the chain is essential in caring for the children who come to the Center.

Together, hand in hand, we will be able to care for them and continue to be the quality benchmark center that we are.

With all our heart and on behalf of the children, we wish to thank you all sincerely.

Prof. Barbara Wildhaber

Prof. Valérie McLin

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The Swiss pediatric liver center's mission

Over 170 children have received a liver transplant in Geneva since 1989! A great feat for HUG's past and present medical healthcare teams!

This is a multidisciplinary effort combining expertise in surgery, hepatology, anaesthesiology, resuscitation, radiology and histopathology with paediatric specialities (haematology, oncology, infectious diseases, endocrinology, nephrology, etc.) and nursing care specialised in welcoming and caring for these very young patients.

The other distinctive feature of this healthcare provision is the close collaboration with paediatricians and expert regional centers throughout Switzerland, allowing coordinated care on a national level. It has led to great success. The quality of this care is demonstrated by an actuarial survival rate greater than 90%, a rate that is unequalled by major European centers.

From 1989 onwards, paediatric transplant pioneers, namely Professors Dominique Belli and Claude Le Coultre, have established a close collaboration with their adult transplant surgeon counterparts. This has allowed Geneva University Hospitals (HUG) to make a name for itself as the benchmark national center for treating children with liver and bile duct diseases, a nationally and internationally renowned center.

In 2012, the intercantonal agreement on highly specialised medicine (MHS) formalised this recognition by awarding HUG the realm of children's hepatobiliary surgery and paediatric liver transplants. It was also on this date that the Swiss pediatric liver center ("Centre suisse du foie de l'enfant") came into being.

Today, almost 300 families receive care at the CSFE.



Working & collaborations

The team

The team is made up of several members involved in medical and surgical treatments specific to liver diseases in children, which is why HUG has been nationally recognised as the benchmark center for children's hepatobiliary diseases.

Prof. Barbara Wildhaber, head of the paediatric surgery department, and **Prof. Valérie McLin**, physician in charge of the paediatric gastroenterology, hepatology and nutrition unit, are the Center's two heads.

The Center's activity is by definition multidisciplinary, from the point of view of both medical disciplines and professional skills. The names and titles of the staff members that appear below reflect the situation in 2017.



Mehrak D
Aanooshiravani



Dominique
Belli



Romain
Breguet



Luigi
Cataldi



Vladimir
Cousin



Laure
Elkrieff



Luca
Garzoni



Emiliano
Giostra



Laurianne
Giovannoni



Pierre
Guyon



Maxime
Hensen



Marie-Claude
Kempf



Kalinka
Lambert



Pietro
Majno



Valérie
McLin



Laetitia Marie
Petit



Barbara
Repond



Anne-Laure
Rougemont



Dominique
Schluckebier



Anais
Schneider



Vanessa
Spyropoulou



Michèle
Steiner



Sylvain
Terraz



Christian
Toso



Seema
Toso



Jim
Wilde



Barbara
Wildhaber

The list is in no way exhaustive and many other members of staff from various departments and units work with the Center!

Division of paediatric surgery

Prof. Barbara Wildhaber, head of division and the Center's joint head; Dr Jim Wilde, associate physician; Laeticia Didier Laurent, nurse; Pascale Mudry, nurse; Alexandra Schoch, nurse; Giancarla Vendetti, nurse; Willy Soares, healthcare and community health assistant; Danielle Tissot, head nurse of the division

Division of Transplant Surgery

Prof. Thierry Berney, head of division; Prof. Christian Toso, registered associate surgeon, adult visceral surgery; Dr Axel Anders, associate physician, adult visceral surgery; Prof. Pietro Majno, head of the hepatobiliary center; Prof. Emiliano Giostra, registered associate physician; Dr Marek Bednarkiewicz, consultant physician

Transplant coordinators

Hélène Ara-Somohao; Marie-Laure Carballo; Solange Croyet; Pierre Guyon-Gellin; Marie-Claude Kempf; Sabine Leray; Eric Masson; Lilian Penfornus

Division of paediatric specialisations

Prof. Maurice Beghetti, director of the French-speaking Swiss Paediatric Cardiac Surgery and Cardiology University Centre; Marie-Laure Noszkowicz, nurse

Division of general paediatrics

Prof. Dominique Belli, head of division (until September 2017); Prof. Klara Posfay Barbe, head of division

Division of paediatric intensive care

Prof. Peter Rimensberger, head of division; Dr Anne-Laure Martin, associate physician

Division of clinical pathology

Prof. Laura Rubbia-Brandt, head of division; Dr Anne-Laure Rougemont-Pidoux, associate physician

Paediatric gastroenterology, hepatology and nutrition unit

Prof. Valérie McLin, head of unit and the Center's joint head; Dr Laeticia-Marie Petit, associate physician; Dr Dominique Schluckebier, senior resident; Dr Côme Tissandier, senior resident;

Dr Luca Garzoni, senior resident; Catherine Schmitt, specialist nurse; Michèle Steiner, primary nurse; Luigi Cataldi, primary nurse; Sylvie Mansey, specialist nurse; Barbara Repond, dietician; Florianne Chavanne, medical secretary; Marie Gillard, medical secretary; Monica Gosselke, medical secretary

Interventional radiology unit

Prof. Sylvain Terraz, head of unit; Dr Romain Breguet, associate physician

Paediatric onco-haematology unit

Prof. Marc Ansari, head of unit; PD Dr Fabienne Gumy-Pause, associate physician; Dr Veneranda Matiello, senior resident

Paediatric radiology unit

Prof Sylviane Hanquinet, head of unit; Dr Mehrak Anooshiravani, associate physician; Dr Seema Toso, senior resident

Paediatric anaesthesiology unit

Prof. Laszlo Vutskits, head of unit; Dr Michel Pellegrini, associate physician; Prof. Walid Habre, registered associate physician; Dr Chantal Mamie, associate physician; Dr Fanny Bonhomme, associate physician

Paediatric pneumology unit

Prof. Constance Barazzone-Argiroffo, head of unit; Dr Isabelle Ruchonnet-Métraiiller, senior resident

Paediatric infectiology unit

Prof. Klara Posfay Barbe, head of unit; Dr Noemi Wagner, associate physician

Division of gastroenterology and hepatology

Prof. Jean-Louis Frossard, head of division

Paediatric nephrology unit

Prof. Paloma Parvex, head of unit; Dr Alexandra Wilhelm-Bals, associate physician; Dr Alexandra Goischke, senior resident

The Center's residents

Dr Maxime Hensen; Dr Vanessa Spyropoulou; Dr Laurianne Giovannoni; Dr Anaïs Schneider; Dr Vladimir Cousin; Dr Kalinka Lambert

Other collaborations

Simona Korff, clinical research coordinator; Teresa Saitta-Bloch, social worker; Cristina Späni Marguet, communication officer



Extra-HUG/national collaborations

Patients are referred via paediatricians and hospitals all across Switzerland. A great deal of work is subsequently put into coordinating care between the contact centers and our Center.

Collaborations also go beyond our Swiss borders, and we work closely with numerous Centers and hospitals in Europe.

We would like to take this opportunity to sincerely thank them all for the quality of care and the advice that they offer our young patients.

International reach

The Unit is recognised both in Europe and North America as a benchmark national center, as demonstrated by the collaborative research published and Prof. McLin's participation in numerous European and international multicentre projects.

The Center has also been recognised on a European level by the Childhood Liver Tumours Strategy Group (SIOPEL), in which Prof. Barbara Wildhaber, Prof. Marc Ansari, Dr Jim Wilde and Dr Fabienne Gummy Pause take part in expert panels and the development of future liver cancer treatment protocols and studies.

Accordingly, the Center's staff are regularly invited to give presentations at international conferences.

Associations and donors

It is only thanks to the generous support of associations and donors that many of our projects have been able to achieve their aims. We would like to take this opportunity to thank them wholeheartedly and express our gratitude.

Medical activities

The Center welcomes patients from all over Switzerland for scheduled, urgent and semi-urgent consultations requiring specialist treatment. In addition, we welcome patients from neighbouring France and a few patients per year from further afield. The number of outpatient consultations, hospital stays and their recent development are summarised on pages 9 and 10.

Between 8 and 12 paediatric liver transplants are carried out each year at HUG. The patients are closely monitored before and after the transplant by a multidisciplinary team until they reach adulthood. Morbidity and mortality in child liver transplants are primarily due to hepatic and biliary vascular aspects, or rejection and infection. However, the patient survival rate is excellent. The transplant indications in our Center are summarised in the chart below.

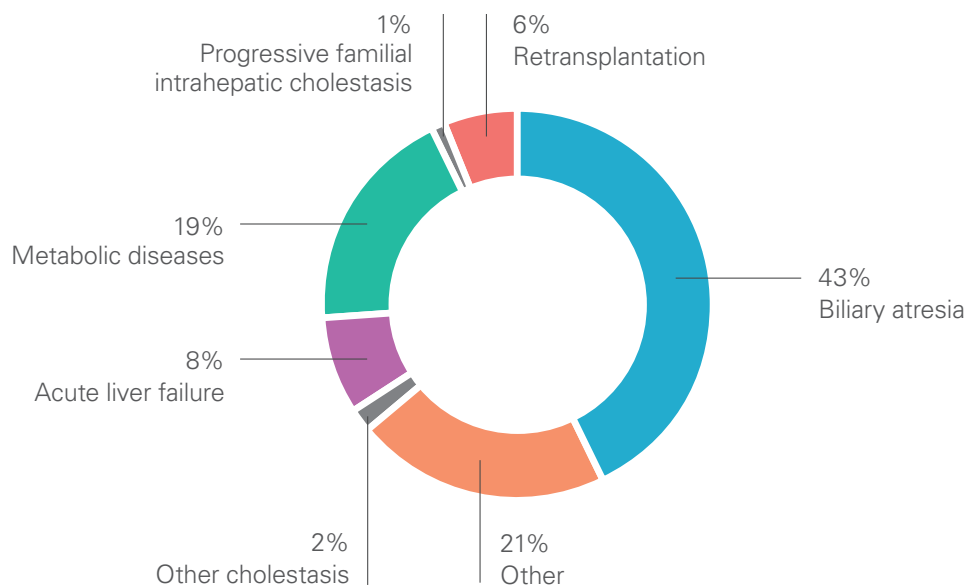
Follow-up is particularly focused on screening for complications so that children and young adults can enjoy good quality of life in adulthood and longevity in line with the population that has not had an organ transplant.

It is worth bearing in mind that in the European registry ten-year mortality is 20%, whereas it is only 9% for the cases included within the framework of the national Swiss programme.

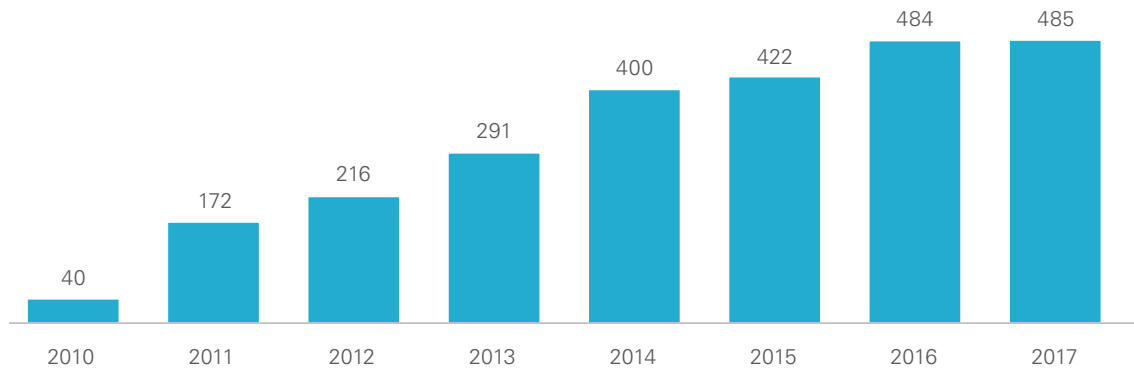
Other pathologies treated by the Center

The Center also provides surgery and medical treatment for children from all across Switzerland with liver tumours, as well as surgery for children suffering from bile duct diseases, which are often curable without needing liver transplantation. In addition, vascular disorders of the liver regularly require treatment via surgery or interventional radiology, in order to cure these patients in the vast majority of cases.

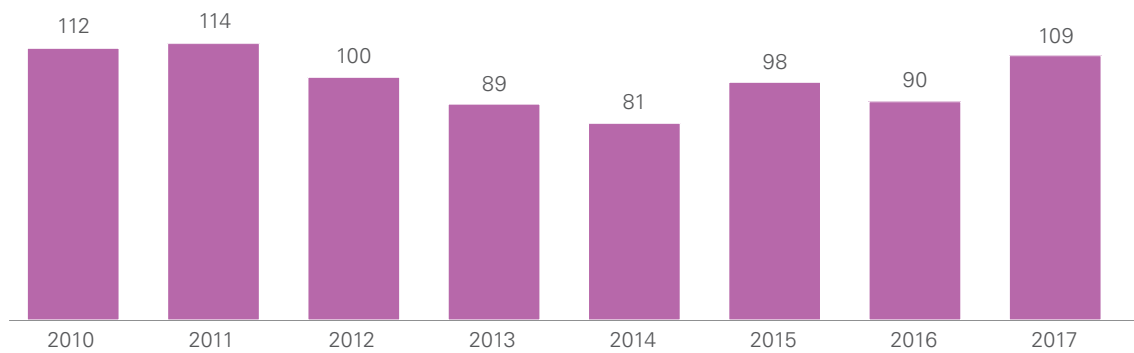
Indications for paediatric liver transplants in Geneva (2007- 2017)



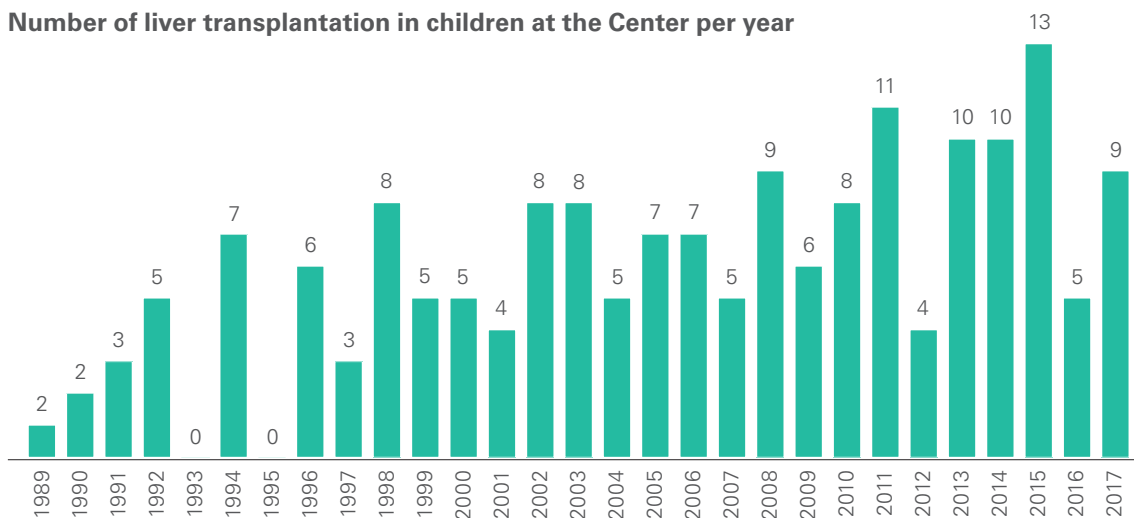
Number of outpatient visits at the Center per year



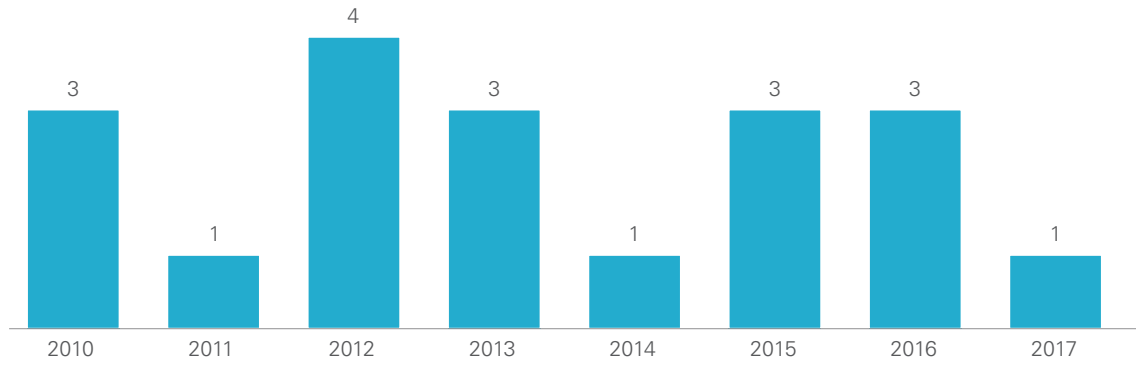
Number of inpatient days at the Center per year



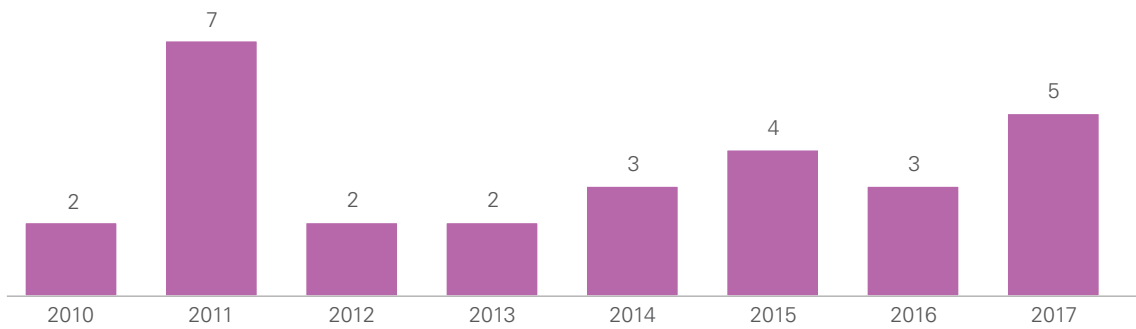
Number of liver transplantation in children at the Center per year



Number of children treated for liver tumours at the Center per year



Number of patients with new diagnosis of biliary atresia treated at the Center per year



Clinical research

Towards an understanding of chronic hepatic encephalopathy in children (Prof. Valérie McLin et al.)

There is very little data about the neurocognitive and neurological manifestations associated with chronic liver diseases arising in childhood, whereas chronic hepatic encephalopathy is being increasingly better characterised in adults. The aim of this project is to characterise at a molecular and clinical level the neurocognitive impairment spectrum in children with chronic liver disease, joining forces with a multicentre observational prospective study using high-resolution spectroscopy available at the Ecole polytechnique fédérale de Lausanne (EPFL).

Immunomonitoring after paediatric liver transplantation – in search of markers of over- or under-immunosuppression (Prof. Valérie McLin / Dr Simona Korff)

One of the main challenges today in caring for patients after a liver transplant consists in optimising immunosuppression in order to reduce drug toxicity along with infections, while maintaining adequate immunosuppression to prevent rejection and loss of the transplant.

One of the difficulties in achieving this goal lies in the understanding of the functional level of therapeutic immunosuppression due to considerable variability. The absence of reliable biomarkers is a hindrance to the development of customised immunosuppression protocols. The development of a panel of immune markers is a first logical step in the search for customised immunosuppression for patients benefiting from a liver transplant in childhood.

International registry for congenital portosystemic shunts (Prof. V. McLin / Prof. B. Wildhaber / Prof. M. Beghetti / Dr Hachulla-Lemaire / Dr Rougemont)

To date, the prevalence of congenital portosystemic shunts is not known, but the severity of their repercussions is well known. The complications associated with congenital portosystemic shunts include benign and malignant liver tumours, concentration and attention disorders (encephalopathy), and serious cardiopulmonary complications, all occurring at an early age.

It is therefore a real systemic disease that occurs in children and has severe repercussions, as these can lead to cancer, a liver or even a lung transplant.

As pleomorphic complications can be diagnosed at any age, our ambition is to create an international registry drawing up an inventory of all cases presented, both paediatric and those occurring in adulthood.

Our aim is to better characterise malformations and their complications. We are aiming to draw up an unequivocal and internationally recognised nomenclature to determine the short- and long-term complications, the best way to treat these patients, the risk factors with regard to developing them, and identify the clinical signs that could lead to a diagnosis.

Above all, our aim is to offer patients the best care from the moment the diagnosis is given. In the long term, this will probably be synonymous with early intervention in children to prevent late complications. However, in order to do so, we need more information than is currently available.

www.espgan.org/about-espgan/committees/hepatology/working-groups/congenital-porto-systemic-shunts/

Retrospective studies based on the Swiss pediatric liver center's database (Prof. V. McLin / Prof. B. Wildhaber)

The database approved by the local ethics committee has been continually maintained and updated since the advent of the liver transplant programme in 1989 and has given rise to numerous publications and theses.

The database gives us the opportunity to explore both specific liver problems and extrahepatic complications with paediatric liver transplants with the aim of improving results in the long term. Recent publications are described in the attached list of publications and have also been used for quality improvement projects within the Center.

They also highlight that, by using the database, our Center is undertaking collaborations with other paediatric subspecialties within the department, as well as with the adult liver transplant team.

Interdisciplinary collaborations in 2017

Markers of renal progression in liver-transplanted patients

Prof. P. Parvex / Dr A. Wilhelm-Bals / Dr A. Goischke

Diagnostic accuracy of mesenteric Rex shunts

Dr S. Toso / Dr M. Anooshiravani / Prof. B. Wildhaber

Study on the postoperative pulmonary complications in the cohort of transplanted patients

Prof. C. Barazzone-Argiroffo / Dr Isabelle Ruchonnet - Métrailler



Basic research

Chronic hepatic encephalopathy in the developing and adult brain (Prof V. McLin et al.)

Chronic liver disease affects both adults and children and leads to a severe neuropsychiatric disorder known as hepatic encephalopathy, which has a major impact on quality of life in adults and long-term cognition in children.

In infants and young children with liver disease, studies suggest that there is a neuropsychological deficit before the liver transplant, which persists after the graft.

This suggests that – contrary to observations in other paediatric recipients of solid organs – the deficits are often irreversible after a liver transplant. The way in which the infant or child's brain reacts to metabolic changes in chronic liver disease and how these mechanisms differ from those in adult patients are both unknown.

For this reason, in collaboration with EPFL's and UNIL / CHUV's partners, we are exploring the differences between adult and baby rats after biliary duct ligation, an established model of chronic liver disease.

The main aims and state of progress of this collaboration:

- ▶ Understand the molecular changes associated with chronic HE in adult and baby rats, using the advantages of high-field magnetic resonance spectroscopy ¹H on rats. For the first time, we have demonstrated that, after biliary duct ligation, there is a highly significant difference between the response of the baby rat's brain compared to the adult brain.
- ▶ Test potential neuroprotective strategies (i.e. therapies that would minimise the effect of liver disease on the brain).
- ▶ Analyse the impact of bile acids on in vitro neuronal development. Most liver diseases in children are so-called cholestatic diseases, in other words they lead to the retention of bile acids in the blood. Bile acids are highly biologically active molecules. This has led us to explore their role in a model of chronic encephalopathy in children. With organotypic cultures that recapitulate the development of rats' brains in vitro, we have already demonstrated on a preliminary basis an impairment in cell viability in organoids exposed to certain bile acids.

Our aim is to explore the effect of other bile acids and analyse whether there is synergistic effect of ammonium, which is typically high in encephalopathy. In parallel, we are studying the impact of chronic cholestatic liver disease on the neuronal networks, in collaboration with Prof. L. Vutskis, a renowned specialist in the field.

Induced hepatic progenitor cells for the highly efficient expansion of human primary hepatocytes
(Prof. B. Wildhaber et al.)

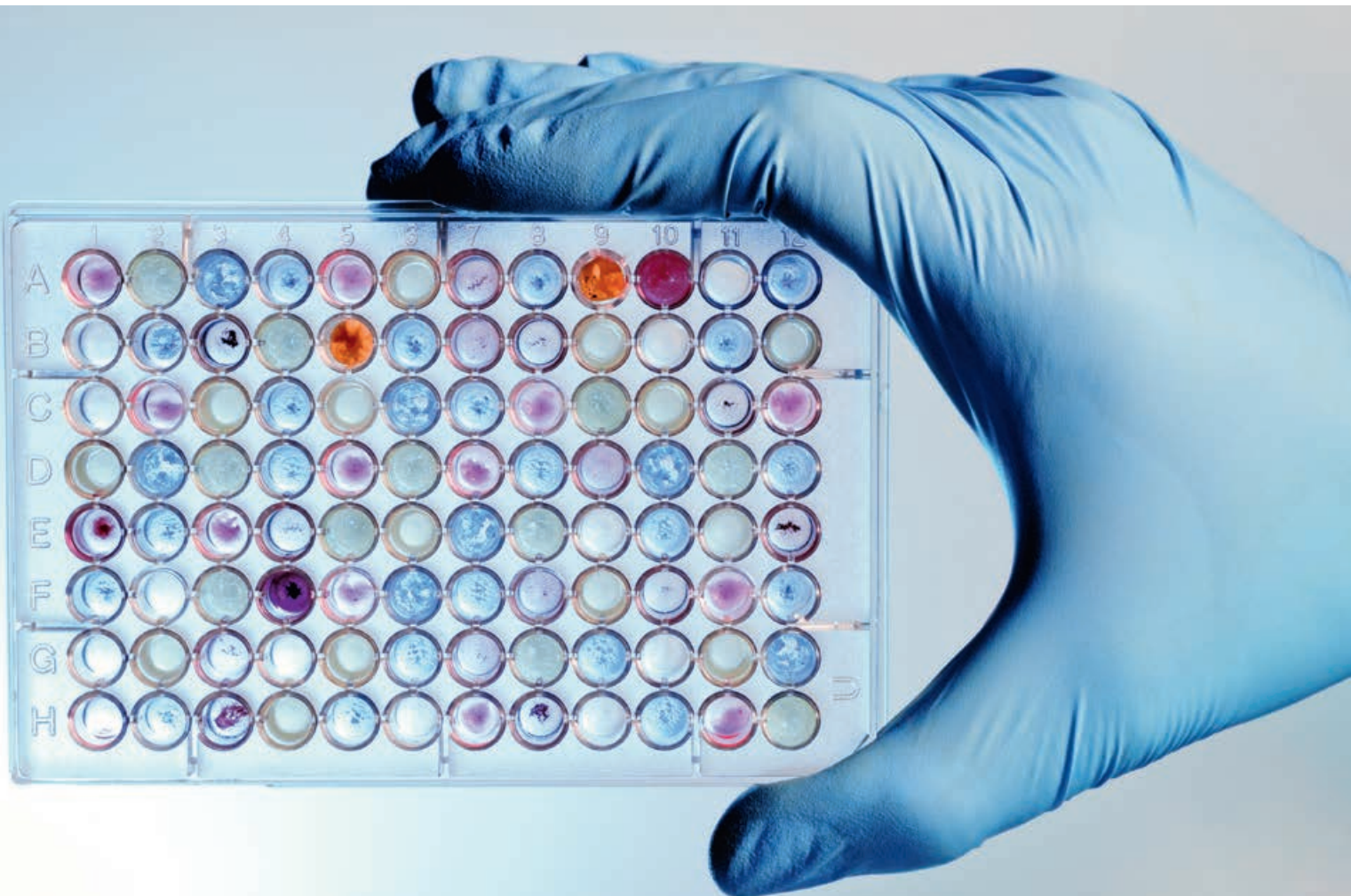
The liver is an organ with a significant regenerative capacity, but mature hepatocytes very rarely develop *in vitro*, which is one of the greatest limitations for liver disease cell therapy.

iPS cells (induced pluripotent stem cells) can help to overcome this obstacle, but often these cells carry genetic and epigenetic anomalies, which limits their potential.

Together with our partners at EPFL Lausanne, we have therefore developed a new cell cate-

gory: *induced human hepatic progenitor cells*. These cells are produced with a cocktail of small-molecule factors that imitate the signalling events during liver regeneration. These cells are genetically stable and above all can be redifferentiated *in vitro* into mature hepatocytes with metabolic functions. From an epigenetic point of view, these cells are much more similar to mature hepatocytes than the hepatocytes that were obtained from iPS cells.

Our current results promise a variety of applications for these induced human hepatic progenitor cells, such as testing new drugs, modelling liver diseases, or developing a bioartificial liver.



Teaching, presentations & academic projects

Teaching in 2017

Undergraduate and postgraduate faculty teaching (University of Geneva)	Prof. V. McLin
Teaching Task Force Member, University of Geneva, from 2014 to present	Prof. V. McLin
Continuing education in general and gastro/hepato paediatrics on a national level	Prof. V. McLin
ESPGHAN Liver Transplant School (in-class, e-learning, training centre network)	Prof. V. McLin
AASLD NASPGHAN Pediatric Symposium 2017 'Lung and liver'	Prof. V. McLin
Inter-University Diploma thesis supervision Dr Ino Kanavaki 'HHV6 in clinically indicated liver biopsies following paediatric liver transplantation'	Prof. V. McLin
Undergraduate and postgraduate faculty teaching (University of Geneva & University of Lausanne)	Prof. B. Wildhaber
Continuing education in paediatric and hepatobiliary surgery on a national and international level	Prof. B. Wildhaber
Supervisor of two Masters' dissertations (University of Geneva & University of Lausanne)	Prof. B. Wildhaber
Paramedical teaching (nurse lessons, HUG & CHUV)	Prof. B. Wildhaber



Presentations / Continuing education / Conferences in 2017

<p>Liver transplant news French-speaking Gastroenterology, Hepatology and Nutrition Group Amiens / France, 31.03.2017</p>	McLin V
<p>Hepatitis ABC Europediatrics Congress 2017, Bucharest / Romania, 8-10.06.2017</p>	McLin V
<p>Liver transplantation in inborn errors of metabolism— a GSD IV case report European Metabolic Group, Zagreb / Croatia, 25-27.05.2017</p>	Forny P, Burer C, Truffer-Richard B, Schumann A, Hackenberg A, Buhr P, McLin V, Plecko B, Rohrbach M
<p>Pre-transplant hyperparathyroidism is associated with acute cellular rejection in pediatric liver transplant recipients. 50th Annual Meeting of the European Society for Pediatric Gastroenterology, Hepatology, and Nutrition, Prague / Czech Republic, 05/2017</p>	Anghileri E, Petit LM, Cousin V, Colombo C, McLin V
<p>Association of donor specific antibody profile with portal infiltrate in protocol biopsies after pediatric liver transplantation</p>	Cousin V, Rougemont AL, Ferrari-Lacraz S, Belli D, Wildhaber B, Villard J, McLin V
<p>Procalcitonin for early infection in the first week after pediatric liver transplantation</p>	Cousin V, Lambert K, Trabelsi S, Galetto-Lacour A, Posfay-Barbe K, Wildhaber B, McLin V
<p>Factors associated with immune hemolytic anemia after pediatric liver transplantation</p>	Rock N, Ansari M, Ferrari-Lacraz S, Villard J, Waldvogel S, McLin V
<p>The effect and safety of prostaglandin administration in pediatric liver transplantation.</p>	Lironi C, McLin V, Wildhaber B
<p>Pre-transplant hyperparathyroidism is associated with acute cellular rejection in pediatric liver transplant recipients.</p>	Anghileri E, Petit LM, Cousin V, Colombo C, McLin V
<p>Effects of plasma transfusion on antithrombin levels after pediatric liver transplantation. International Pediatric Transplant Association, Barcelona / Spain, 05/2017</p>	Arni D, McLin V, Wildhaber BE, Rimensberger P, Ansari M, Fontana P, Karam O
<p>Treatments in chronic liver disease induced hepatic encephalopathy: a longitudinal in vivo 1H-MRS study of brain metabolism using rifaximin. International Society for Magnetic Resonance in Medicine (ISMRM), Hawaii, 2017</p>	Flatt E, Cudalbu C, Braissant O, Mitrea S, Sessa D, McLin V, Gruetter R
<p>In vivo longitudinal 1H MRS study of hippocampal and cerebellar metabolic changes in BDL rats.</p>	Rackayova V, Cudalbu C, Berset C, Grosse J, Gruetter R, McLin V, Braissant O
<p>Probiotic treatment improves outcome of chronic Hepatic Encephalopathy in BDL rats, an in vivo longitudinal 1H MRS study</p>	Rackayova V, Braissant O, Berset C, Grosse J, Capobianco D, Mastromarino P, McLin V, Cudalbu C
<p>Rifaximin in chronic liver disease-induced hepatic encephalopathy: an in vivo longitudinal study of brain metabolism on BDL rats. International Society for Hepatic Encephalopathy and Nitrogen Metabolism, India, 03/2017</p>	Flatt E, Cudalbu C, Braissant O, Mitrea S, Sessa D, Gruetter R, McLin V

<p>Modern management of portopulmonary hypertension in children experience of an expert center. Poster, ERS international congress, Milan / Italy, 09/2017</p>	Joye R, Wacker J, McLin V, Giostra E, Aggoun Y, Wildhaber B, Beghetti M, Lador F
<p>Modern management of portopulmonary hypertension in children: experience of an expert center. CHEST 2017, Basel / Switzerland, 06/2017</p>	Joye R, Wacker J, McLin V, Giostra E, Aggoun Y, Wildhaber B, Beghetti M, and Lador F
<p>Diagnostic accuracy of ultrasound, computed tomography and wedge portography in the work-up for mesenterico-rex bypass in children with extrahepatic portal hypertension. European Society of Pediatric Radiology, Davos / Switzerland, 06/2017</p>	Toso S, Dumont M, Wildhaber B, Breguet R, Terraz S
<p>International Survey on Anticoagulation Strategies After Pediatric Liver Transplantation. Poster, World Congress of the International Pediatric Transplantation Association (IPTA), Barcelona / Spain, 05/2017</p>	Calinescu A, Karam O, Wilde JH, McLin V, Wildhaber B
<p>Giving Measles Vaccine After Solid Organ Transplantation? A prospective interventional cohort study demonstrating the safety and immunogenicity of measles vaccine in children after liver transplantation. Oral presentation, World Congress of the International Pediatric Transplantation Association (IPTA), Barcelona / Spain, 05/2017</p>	Pittet L, Verolet CM, McLin V, Wildhaber B, Rodriguez M, Cherpillod P, Laiser L, Siegrist CA, Posfay KM
<p>KidsETransplant: an innovative serious game for kids with liver disease and following liver transplantation. Poster, World Congress of the International Pediatric Transplantation Association (IPTA), Barcelona / Spain, 05/2017</p>	Steiner M, Wildhaber B, Spahni S, Geissbühler A, McLin V
<p>Liver transplantation in children PLDO donor friends and family day, Vevey / Switzerland, 02.12.2017</p>	Wildhaber B
<p>Pediatric Liver Malignancies – Surgical treatment options 1st international meeting on pediatric liver disease, Hamburg / Germany, 23.11.2017</p>	Wildhaber B
<p>Pediatric liver transplantation – donor issues SODP, Geneva / Switzerland, 05.09.2017</p>	Wildhaber B
<p>Pediatric liver transplantation – current status WOFAPS, Basel / Switzerland, 14.08.2017</p>	Wildhaber B
<p>Transition to adult care in kidney and liver transplantation Swiss Transplant Forum, Bern / Switzerland, 13.06.2017</p>	Wildhaber B
<p>Cholestase néonatale Refresher in Pediatrics, Lausanne / Switzerland, 20.05.2017</p>	Wildhaber B
<p>Challenges in medicine: The Swiss conjoined twins. Congrès In4Med, Coimbra / Portugal, 26.02.2017</p>	Wildhaber B
<p>Why should you vaccinate transplant recipients with live vaccines? International Pediatric Transplant Association (IPTA), Barcelona / Spain, 29.05.2017</p>	Posfay Barbe K
<p>Diagnostic accuracy of ultrasound, CT and wedge portography for pre-operative work-up of mesenteric Rex shunts. French Radiology Day, Paris / France, 05/2017, ESPR Davos / Switzerland, 10/2017</p>	Toso S

Research grants & publications in 2017

Research grants

A huge thank you to all our donors, without whom we would not be able to bring these projects to life!

Fondation Andrea Ferrari Grant for the creation of an international registry for congenital portosystemic shunts	Prof V. McLin
Ferrari Foundation: "KidsETransplant" funding HUG Private Foundation: "KidsETransplant" funding PrimEnfance Foundation: "KidsECoeur" funding Debiopharm-Inartis Challenge: "KidsETransplant" funding Ernst & Young development award: "KidsETransplant" funding	Prof V. McLin, Prof B. Wildhaber
Swiss National Science Foundation Translational non invasive metabolic studies towards novel treatments of chronic hepatic encephalopathy in the developing brain, from 3D organotypic brain cell cultures in the in vivo rat and human brain	Prof V. McLin Dr C. Cudalbu PhD
HUG Project and Development Grants Measles vaccine for children after liver transplantation	Prof K. Posfay Barbe
HUG Project and Development Grants Chickenpox vaccine for children after liver transplantation	Prof K. Posfay Barbe

Publications

Long-term challenges and perspectives of liver disease occurring in pre-adolescence The Lancet Gastroenterology Hepatology, in press	Hadzic N, Baumann U, McKiernan P, McLin V, Nobili V
An attempt to determine the prevalence of Two Inborn Errors of Primary Bile Acid Synthesis: results of a European survey J Pediatr Gastroenterol Nutr. in press	Janel J, Zohrer E, D'Antiga L, Debray Dj, Dezsofi A, Haas D, Hadzic N, Jaquemin E, Lamireau T, Maggiore G, McKiernan P, Pinon M, Verkade H, Baumann U, Hierro L, McLin V, Fischler B, Gonzales E
Early complications after liver transplantation in children and adults: Are split grafts equal to each other and equal to whole livers? Procalcitonin in pediatric liver transplantation. BMC Infectious Disease, in press	Cousin V, Lambert K, Trabelsi S, Galetto-Lacour A, Posfay-Barbe KM, Wildhaber BE, McLin VA
Maintenance of long term immunity in pediatric liver transplant recipients after varicella-zoster immunization: 10 years follow-up Submitted American Journal of Transplantation	Verolet CM, Pittet LF, Wildhaber B, Rodriguez M, Grillet S, McLin V, Kaiser L, Siegrist CA, Posfay-Barbe K
Chirurgie pédiatrique: séparation de jumeaux siamois prématurés: possible grâce au travail d'équipe Swiss Medical Forum, Highlights, 2017/0102	Berger S, Raio L, Nelle M, Wagner B, Gronau J, Seiler S, Kader A, Wildhaber B
La chirurgie de l'enfant en Romandie Revue Médicale Suisse 2017;1:397-8	Wildhaber B
La médecine des enfants et des adolescents de demain – une vision Bulletin des médecins suisses -Schweizerische Ärztezeitung – Bollettino dei medici svizzeri 2017;98(10):309–310	Wildhaber B, Beutler H, Frey U, Pellaud N, Hofer M

La chirurgie de l'enfant en Romandie Rev Med Suisse. 2017 Feb 15;13(550):397-398.	Wildhaber B
La transplantation de foie chez l'enfant: un investissement pour la vie Bulletin des médecins suisses – Schweizerische Ärztezeitung – Bollettino dei medici svizzeri 2017;98(49):1632–1633	Wildhaber B, McLin V, Belli D
Bronchopulmonary sequestration with morbid neonatal pleural effusion despite successful antenatal treatment Front Pediatr. 2017 Dec 4;5:259	Divjak N, Vasseur Maurer S, Giannoni E, Vial Y, de Buys Roessingh A, Wildhaber B
The effect and safety of prostaglandin administration in pediatric liver transplantation Transplant Direct. 2017 May 18;3(6):e163	Lironi C, McLin V, Wildhaber B
Jejunal Occlusion Caused by Heterotopic Gastric and Duodenal Mucosa Int J Surg Pathol. 2017 Aug;25(5):453-457	Seyde O, Puppa G, Morel P, Wildhaber B, Rougemont A-L
Procalcitonin for infections in the first week after pediatric liver transplantation BMC Infect Dis. 2017 Feb 15;17(1):149	Cousin VL, Lambert K, Trabelsi S, Galetto-Lacour A, Posfay-Barbe KM, Wildhaber B, McLin V
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KidsETransplant platform

KidsETransplant is a fun and innovative platform for children with liver diseases or after liver transplantation, available on computer and tablet. Created in 2015 by the professors from the Swiss pediatric liver center, Barbara Wildhaber and Valérie McLin, it allows children and teenagers who have had or are going to have a transplant to get to grips with their disease and their medical record in order to monitor their disease better.

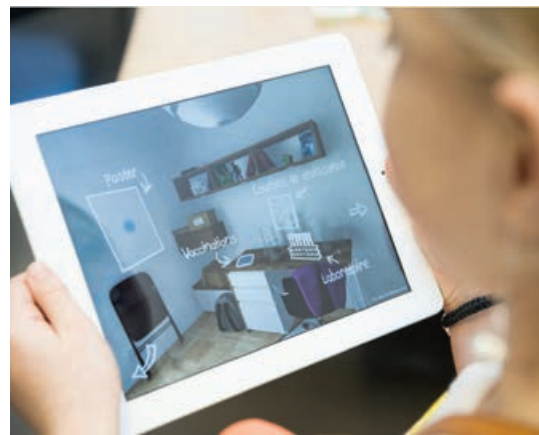
We would like to take this opportunity to sincerely thank our donors for all the support given to this project. It is thanks to this generous support that the platform has been able to be developed and is used by many families today.

The serious games are particularly attractive for young digital natives for whom learning is based on the use of computers and the internet and who are therefore very familiar with these video games.

This "serious gaming"-type tool gives access to medical information essential for medical care and is presented in the form of a fun, didactic

and interactive virtual space, in which the child navigates through a 3D world.

The aim is to empower young patients to increase the chances of successful grafts. In the long term, this model could be applied to other types of transplants and even other chronic diseases.



Prize

The KidsETransplant app won joint first prize in the second Debiopharm-Inartis Challenge in November 2017.



Practical information

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Getting there

Tram 12 and 18,
"Augustins" stop

Bus 35,
"Maternité-pédiatrie" stop

