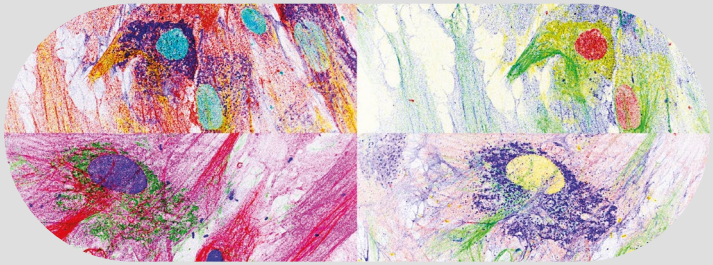

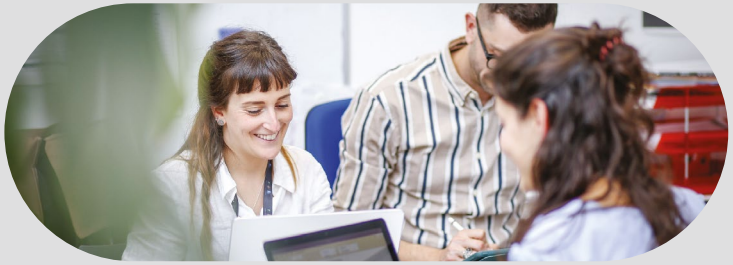

THE **ROGER WILLIAMS** INSTITUTE OF **LIVER STUDIES**

in association with

NHS
King's College Hospital
NHS Foundation Trust

REVOLUTIONISING
LIVER DISEASE RESEARCH AND CARE

The Roger Williams Institute of Liver Studies (RW-ILS) is at the forefront of delivering world-leading discovery science and translating it into impactful solutions for patients with liver disease. By working closely with local public and patient groups throughout the research journey, we ensure our innovations are relevant, transformative, and centred around patient needs.

A Unique Partnership for Breakthroughs

As a pioneering collaboration between the **Foundation for Liver Research (FLR), King's College London (KCL)** and **King's College Hospital NHS Foundation Trust (KCH)**, we bridge the gap between cutting-edge science and real-world patient outcomes. Our approach integrates clinical expertise with advanced research to tackle liver disease from every angle.

Driving Excellence Across Five Research Themes:

1. Transplantation, Advanced Therapies & Regenerative Medicine
2. Steatotic Liver Diseases
3. Cirrhosis & Gut-Liver Axis
4. Hepatobiliary Cancer
5. Paediatric Hepatology & Rare Diseases

Shaping the Future with Policy Impact and Global Collaboration

Our mission extends beyond research. We actively engage in **policy development** to shape healthcare practices and improve patient access to innovative treatments. We are outward-looking, fostering dynamic collaborations with leading researchers, industry partners, and policymakers across the UK and internationally.

Training Tomorrow's Leaders

We are committed to training the next generation of scientists and healthcare professionals to work seamlessly together, tackling complex liver problems with interdisciplinary expertise. Our educational initiatives ensure that future leaders are equipped to address the evolving challenges of liver disease.

World-Class Facilities and Leadership

Under the scientific leadership of **Director Professor Philip Newsome** and **Deputy Director Professor Alberto Sanchez-Fueyo**, the RW-ILS encompasses over **15 scientific groups** with more than **100 staff and students**.

Our state-of-the-art facilities are located on the **Denmark Hill campus of King's College London**, including:

- The 3-storey Roger Williams Building with advanced laboratory capabilities
- Wet laboratory facilities at the King's College London James Black Centre
- The Alex Mowat Paediatric Research Laboratories at King's College Hospital
- An extensive footprint supporting clinical and academic staff at King's College Hospital

Together, We Are Shaping the Future of Liver Disease Management

Through patient-centred research, groundbreaking science, and policy influence, RW-ILS is pioneering breakthroughs that change lives. Join us on our mission to transform liver disease care worldwide.

Professor Philip Newsome
Institute Director

Professor Alberto Sanchez-Fueyo
Deputy Director

DRIVING EXCELLENCE ACROSS FIVE RESEARCH THEMES

TRANSPLANTATION, ADVANCED THERAPIES & REGENERATIVE MEDICINE

The Transplantation, Advanced Therapies & Regenerative Medicine theme brings together multidisciplinary biomedical expertise to harness the scientific strengths of the RW-ILS and the diversity of its clinical cases. The focus is on advancing both fundamental science and translational research in areas such as transplant immunology, liver genetics, stem cell biology, organ perfusion, and cell-based therapies.

Research groups within this theme are leading cutting-edge collaborative projects across King's College London and beyond, including partnerships with the Francis Crick Institute. There are strong industrial links in biotechnology, genomics, and cell therapy, exemplified by successful spin-outs such as Quell Therapeutics.

Future research will build on existing strengths in engineered cell platforms, gene editing, and advanced in vitro models using multicellular organoids. These tools will enable investigations into immune modulation, tissue injury, and liver regeneration.

The integration of machine perfusion technologies with clinical services will support hypothesis-generating discovery science and enable rapid translation into pre-clinical and clinical trials. Across all research streams, there is a strong commitment to collaboration and to developing impactful partnerships with industry.

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STEATOTIC LIVER DISEASES

Steatotic liver disease (SLD) is fast becoming one of the most prevalent and pressing global health challenges. Driven by rising rates of obesity, insulin resistance, metabolic dysfunction, and alcohol use, SLD is characterised by the build-up of fat in the liver. Left unchecked, this can trigger inflammation, fibrosis, cirrhosis, and even hepatocellular carcinoma.

SLD affects people across the life course, from adults with metabolic syndrome to a growing population of children and adolescents, where paediatric MASLD is emerging as a major concern. This rise parallels the obesity epidemic and reflects the complex interplay between environment, lifestyle, and genetics.

A 2023 international Delphi consensus has ushered in a major shift in how we define and diagnose SLD. The updated nomenclature, designed to be more inclusive, clinically relevant, and aligned with pathophysiological mechanisms, distinguishes between:

- **MASLD** (Metabolic dysfunction-associated SLD)
- **ALD** (Alcohol-related liver disease)
- **MetALD** (a dual aetiology combining metabolic dysfunction and alcohol use)

This redefinition not only captures the reality of overlapping risk factors but also highlights the dangers of even moderate alcohol consumption in individuals with underlying metabolic dysfunction.

Our department is at the forefront of this transformation. With one of the largest paediatric and adult SLD and bariatric clinical services in the UK, we are uniquely positioned to lead translational and experimental medicine programmes. Our research integrates:

- **Basic science and organ pathophysiology**
- **Experimental therapies and biomarker discovery**
- **Clinical trials and real-world cohort studies**

We work closely with diabetes and endocrinology teams to address the systemic nature of metabolic liver disease and ensure joined-up care across disciplines.

From bench to bedside, we are committed to reducing the burden of SLD and improving outcomes for all patients, at every stage of life.

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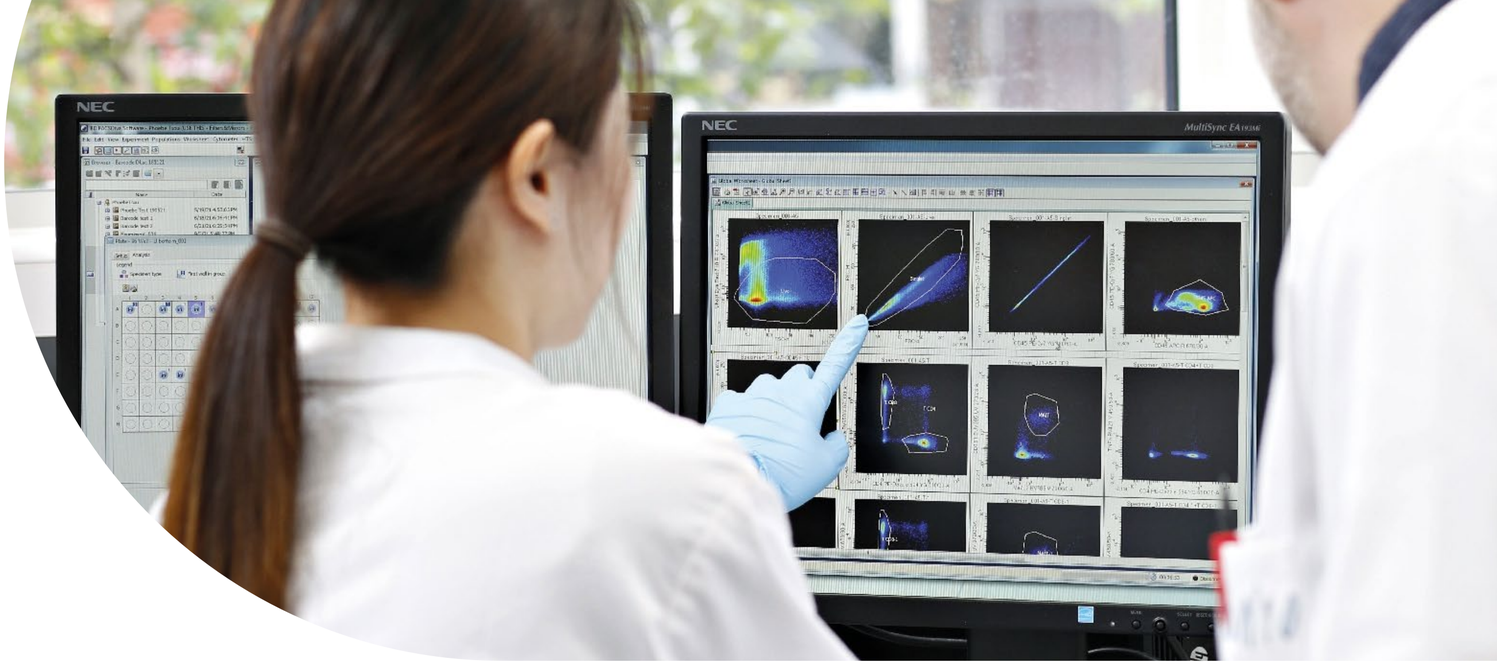
CIRRHOSIS & THE GUT-LIVER-BRAIN AXIS

Liver disease mortality has risen by over 400% in the past five decades, with cirrhosis representing the final, irreversible stage of chronic liver injury. Cirrhosis disrupts normal liver function and is frequently complicated by variceal bleeding, hepatic encephalopathy, infection, and progression to multi-organ failure. These outcomes are underpinned by dysfunction across the gut-liver-brain-immune axis, a complex network that plays a central role in disease progression and poorclinical outcomes.

This research theme is focussed on advancing mechanistic understanding of this axis and its role in driving systemic complications. Current work is examining the immunological, microbial, and neurological pathways that propagate organ failure and reduce resilience in patients with advanced liver disease. Particular attention is being given to characterising biomarkers of decompensation and immune dysregulation, with the aim of developing predictive tools and personalised therapeutic strategies.

Building on recent advances, the programme integrates discovery science with translational approaches to enable early-phase experimental medicine studies. There is a strong emphasis on identifying novel therapeutic targets and accelerating the development of interventions that can modify disease trajectory or prevent deterioration. Ongoing research is contributing to international clinical trial platforms focused on reducing hospitalisation, improving cognitive outcomes, and preventing infection-related complications in cirrhosis.

Future priorities include scaling up pre-clinical and human studies, developing integrated multi-omics datasets, and leveraging real-world cohorts to validate findings. The team is committed to delivering research with global impact, with the ultimate goal of informing practice-changing treatments that improve survival and quality of life for patients with end-stage liver disease.



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HEPATOBILIARY CANCER

Liver cancer is a rapidly rising global health challenge, characterised by poor prognosis and limited treatment options. The majority of patients are diagnosed at advanced, inoperable stages, by which time curative interventions are no longer feasible. Immune checkpoint inhibitors, currently the most promising class of systemic therapies, offer only modest survival benefits, with median overall survival remaining below two years. These limitations highlight the urgent need for deeper mechanistic insights into the drivers of tumour progression and resistance to immunotherapy within the unique hepatic tumour microenvironment.

This research theme brings together hepatologists, oncologists, and translational scientists in a unified effort to address the fundamental biological mechanisms underpinning liver cancer development, progression, and therapeutic failure. A central focus lies in immuno-oncology, including the comprehensive characterisation of the immunosuppressive tumour microenvironment, elucidation of immune evasion pathways, and investigation of metabolic reprogramming that supports immune escape, particularly in the setting of chronic liver inflammation and fibrosis.

Strategic research priorities include the development of novel biomarker discovery platforms for early detection and patient stratification, the optimisation of immunotherapy combination regimens to overcome resistance mechanisms, and the implementation of precision medicine approaches. These efforts are underpinned by integrated genomic, transcriptomic, and immunological profiling to better define actionable targets and therapeutic vulnerabilities.

The programme will actively pursue multidisciplinary, high-impact grant applications, foster strategic partnerships with leading biotechnology and immunotherapy companies, and strengthen international research networks to accelerate translational progress. Through integrated mechanistic studies, innovative clinical trials, and a strong translational pipeline, this theme aims to drive the development of breakthrough therapies that transform the clinical outlook for liver cancer patients and contribute meaningfully to reducing global cancer mortality.

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PAEDIATRIC HEPATOLOGY & RARE DISEASES

This theme conducts innovative, interdisciplinary research aimed at improving the understanding, diagnosis, and treatment of liver diseases starting with children and young people and extending into adulthood. Our work spans four core areas:

Paediatric Liver Disease Pathophysiology and Immune Regulation

We investigate the biological mechanisms underlying liver disease in paediatrics, with a focus on immune dysregulation, chronic inflammation, and metabolic dysfunction.

Key research activities include:

- Characterising systemic inflammation in children with chronic liver disease
- Profiling T cell subsets and immune regulation in paediatric portal hypertension
- Investigating immunometabolic pathways in paediatric liver disease
- Identifying somatic mutations in paediatric metabolic liver disorders

Rare and Complex Liver Conditions

We study the clinical course, genetic underpinnings, and therapeutic options for rare and syndromic liver diseases to improve diagnostic accuracy and patient outcomes.

Current projects include:

- Investigating Fontan-associated liver disease
- Studying primary sclerosing cholangitis (PSC) during pregnancy
- Defining the natural history of autoimmune sclerosing cholangitis (ASC)
- Mapping the mutational landscape in PSC
- Leading the ASSERT trial of odevixibat in Alagille syndrome

Diagnostic Innovation and Disease Modelling

We utilise advanced genomic techniques and patient-derived organoid systems to uncover disease mechanisms and enable earlier, more accurate diagnoses.

Current initiatives include:

- Whole genome and transcriptome sequencing in undiagnosed paediatric liver disease
- Development of patient-derived and iPSC-derived cholangiocyte organoids for disease modelling

Child Development, Outcomes, and Nutritional Interventions

Recognising the holistic impact of liver disease, we examine developmental, educational, and nutritional outcomes in affected children and adolescents.

Ongoing studies include:

- Assessing brain maturation in children with liver disease
- Evaluating educational outcomes for paediatric liver disease patients in England
- Trialling medium-chain triglyceride supplementation in infants with biliary atresia
- Exploring polyphenol-rich dietary interventions in autoimmune liver disease

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GRANTS, FUNDING AND FELLOWSHIPS

EMERGING LEADER SCHEME (Non-Clinical)

The Emerging Leader scheme seeks to support outstanding early career scientists to develop their research interests and establish a research programme at King's College London. Individuals will be based at the Roger Williams Institute of Liver Studies and will be encouraged to develop collaborations with laboratories across King's College London as well as partner institutions such as The Francis Crick Institute.

Support and mentorship will be provided for career development fellowship applications to funders such as the Research Councils (e.g. MRC Career Development Award) and the Wellcome Trust. Successful applicants who secure such a fellowship will be eligible for a tenured King's College London position at the appropriate level provided they demonstrate continued performance.

The Emerging Leader scheme provides 24 months of funding with salary aligned to King's College London pay scales and research expenses. The focus of the proposed research may be in any scientific discipline of relevance to liver biology and disease such as regenerative medicine, immunology, oncology or cell biology.

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4 YEAR PHD STUDENTSHIP PATHWAY (Non-Clinical)

An innovative 0+4 PhD programme, designed to cultivate multidisciplinary research skills and help promising talent to reach their full potential. This unique approach involves two rotation projects in different research groups, in alignment with the research themes of the Roger Williams Institute of Liver Studies. This ensures exposure to different disciplines and allows students to gain a better overall picture of the scientific nature of the Institute and the different technologies that are available.

At the conclusion of the second rotation, students have the chance to select their final PhD project and laboratory through a collaborative process with their supervisors and programme lead, ensuring a perfect fit for research interests.

As a part of this comprehensive training programme, students will engage in courses focused on transferable research skills through King's Doctoral College, including both live and online training sessions, alongside dedicated one-on-one support. The Roger Williams Institute of Liver Studies weekly Seminar Series will enable students to present their research and network with industry leaders and fellow students, enhancing their academic communication skills. Additionally, opportunities to participate in national and international scientific meetings will further enrich their experience.

- **Comprehensive Rotation Experience:**
  The programme includes two rotation projects in different research groups, allowing you to explore various disciplines and technologies, ultimately aiding you in finding the PhD project that aligns with your interests.
- **Flexible, Student-Centric Training:**
  Benefit from a flexible training approach with a focus on transferable research skills, facilitated by King's Doctoral College.
- **Robust Financial Support:**
  This programme offers a generous stipend along with coverage for tuition fees and consumables.
- **Strong Supervision and Networking Opportunities:**
  Access to a dedicated thesis advisory committee and supervisory team. Regular seminar presentations and networking events facilitate essential connections in the academic community.

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PUMP PRIME RESEARCH SCHEME

The Roger Williams Institute of Liver Studies Pump Prime Research Scheme provides strategic catalytic funding to accelerate transformative advances in hepatology research. Through targeted support of exceptional early-stage investigations, the scheme facilitates the development of innovative therapeutic and diagnostic approaches that address critical challenges in liver disease.

This structured funding mechanism identifies and nurtures high-potential research concepts that, while falling outside conventional funding parameters, demonstrate clear potential for scientific impact. By providing preliminary support, the scheme enables promising investigations to establish proof-of-concept and generate compelling preliminary data, ultimately securing substantial external funding for full-scale development and clinical implementation.

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PRE-DOCTORAL CLINICAL RESEARCH FELLOWSHIP PROGRAMME

The Pre-Doctoral Clinical Research Fellowship Programme offers two posts annually, starting in September with a '2+2' year configuration, recruited via King's College London University in partnership with King's College Hospital NHS Foundation Trust.

The first two years will be funded by the Foundation for Liver Research and King's College Hospital with 75% of time spent academically and 25% clinically. The post holder will use the first 9 months to formulate a project and generate preliminary data to apply for research council funding. If they succeed in securing external funding, they continue for a further two years in OOPR to complete a PhD. If they do not secure external funding, they will write up what they have as an MD and return to the clinical training programme after the initial two-year OOPR period.

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Consultant Hepatologist & Endoscopist
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CLINICAL CATALYST SCHEME

The Clinical Catalyst Scheme is a funding scheme designed to provide research-qualified health professionals, not currently undertaking any substantial research activity, the opportunity to form a collaborative high-quality research partnership with established biomedical and applied health researchers, and with protected time and funding to enhance their research skills and experience.

Each award will part-fund an applicant's basic salary to support protected research time, and costs to undertake the project. Projects can range from basic discovery science to translational and applied health research.

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FOR MORE INFORMATION, VISIT OUR WEBSITES:

- FOUNDATION FOR LIVER RESEARCH
- KING'S COLLEGE LONDON

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