



Funded by:



Researchers' Newsletter



WELCOME TO THE VIVO Biobank Newsletter

September marks **Childhood Cancer Awareness Month**, a time to recognise the advances already achieved and the discoveries still to come. VIVO Biobank has been supporting researchers by sourcing high-quality solid tumour and leukaemia samples from children and young people across the UK, while continuing to contribute to valuable studies nationally and internationally. This growing collection provides an invaluable resource for advancing discoveries and improving treatments for children and young people with cancer.

In this issue, we highlight how VIVO samples have contributed to recent high-impact publications, including research featured in *Nature*, and provide an update on newly approved research applications and their outcomes. We also give an overview of the current and legacy trials supported by the biobank and offer a guide to accessing VIVO samples, helping researchers navigate our resources with confidence.

Together, these updates reflect how VIVO Biobank is enabling research that drives meaningful progress in childhood cancer.

Inside this Issue :



Biobank in numbers: New registered samples and summary of research applications & outcomes



Real- life impact: How our samples supported Nature Publications



Euro Ewing's legacy samples: now available in our biobank, plus an overview of current and legacy collections.



Meet our new staff members + CCLG Conference highlights



Accessing VIVO samples: A guide to our application process and types of samples we hold



Follow us on Instagram and other Social media platforms

Patient and public involvement

One of the most important parts of the VIVO Biobank is the input of patients and the public. Their perspectives ensure that everything we do truly serves the community we are here to support.

We are proud to have **15 active PPIE members**, who bring their experiences and expertise to help shape our work. They play a vital role in a range of our committees and join us at quarterly meetings. Their contributions help us:

- Communicate research in clear and meaningful ways.
- Understand the challenges patients and families face.
- Make sure our biobank is accessible and responsive to the community.

*Our PPIE members are **invaluable partners** - helping us engage effectively, overcome barriers, and ensure that the patient and family voice is at the heart of biobank decisions.*

👉 Interested in joining or PPIE committee or learning more? Visit our website at: <https://vivobiobank.org/ppi> for more information and contact details. Everyone is welcome to apply.

Childhood Leukaemia Research: Uncovering the “Cut-and-Run” Process

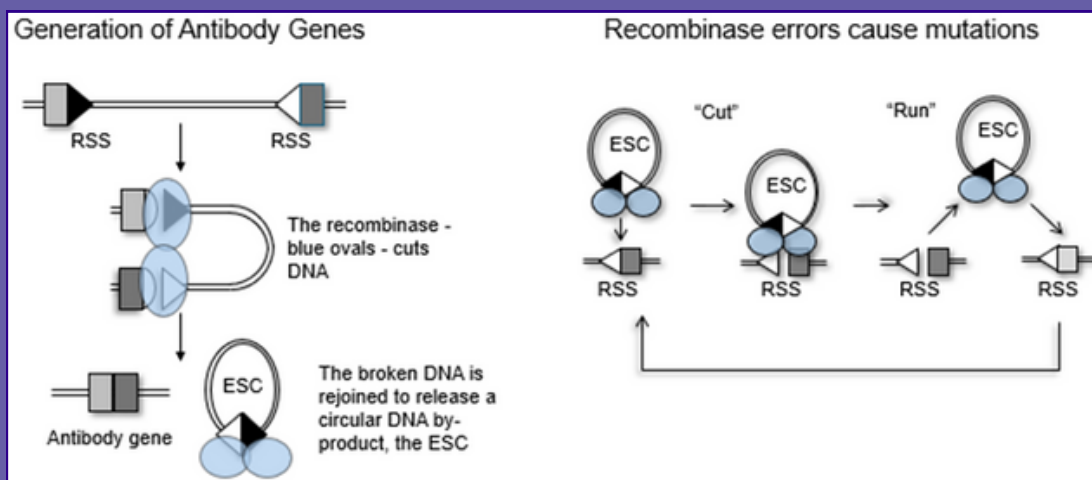
Dr Joan Boyes

VIVO Biobank recently supported research that uncovered a completely new mechanism behind childhood leukaemia relapse, published in Nature: [Excised DNA circles from V\(D\)J recombination promote relapsed leukaemia | Nature](#)

“Many thanks indeed for your support of this work. Without the VIVO Biobank samples, we simply would not have made these discoveries.”

- Dr Joan Boyes

This study shows how leftover DNA from normal antibody production can combine with DNA-cutting enzymes to create breaks in important genes — a process the researchers call “cut-and-run.” These breaks can trigger changes that lead to leukaemia or cause it to return after treatment.



“How ‘cut-and-run’ DNA damage happens in immune cells and can lead to leukaemia relapse.”

Q&A: Understanding the “Cut-and-Run” Process

What is this research about?

Our immune system shuffles DNA inside immune cells to make antibodies, but mistakes can happen. Researchers discovered a new type of DNA damage called “cut-and-run,” where leftover DNA teams up with DNA-cutting enzymes and moves to other parts of the genome, causing breaks linked to childhood leukaemia.

Why is it important?

Although most children with leukaemia are successfully treated, relapses are harder to cure. “Cut-and-run” may be a key reason why some leukaemias return, making this discovery crucial for improving outcomes.

What are the researchers doing?

Using samples from our biobank, scientists are comparing DNA from children’s leukaemia samples at diagnosis and relapse. They are tracking how “cut-and-run” contributes to harmful mutations which could help identify which patients are at **higher risk of relapse**.

How could this help patients in the future?

Since “cut-and-run” relies on leftover DNA that isn’t essential for normal immune function, it could potentially be targeted with new drugs. Blocking this process may prevent relapse and improve survival, reducing the need for aggressive treatments.

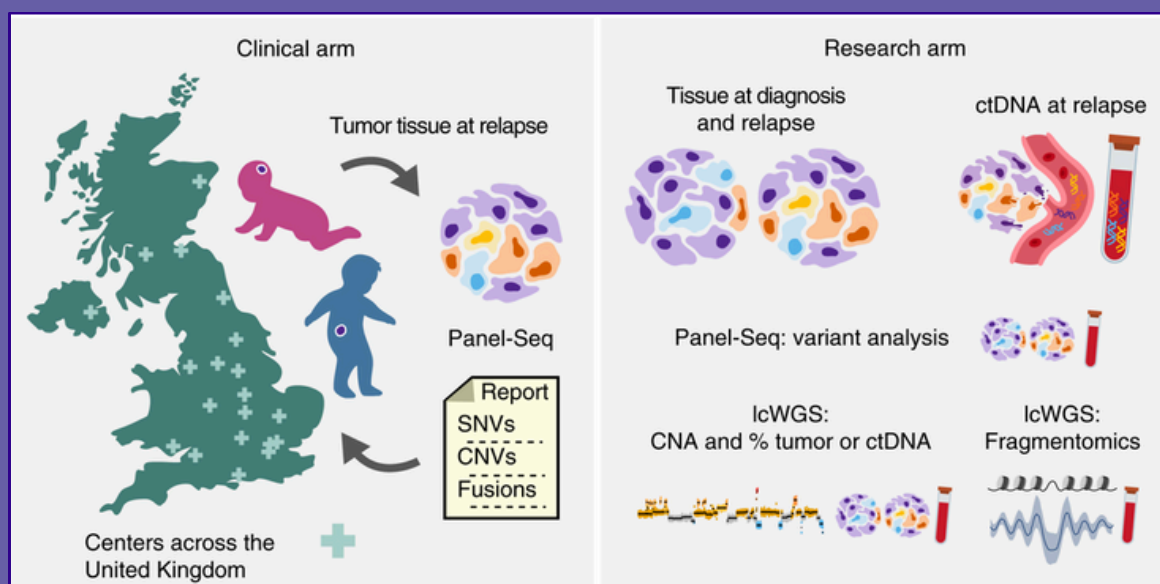
Childhood Solid Tumour Research: Blood Tests Uncover Relapse Drivers

Dr Sally George, Prof Louis Chesler Dr Mike Hubank, and others

VIVO Biobank recently supported research published in Cancer Discovery: [Stratified Medicine Paediatrics: Cell-Free DNA and Serial Tumour Sequencing Identifies Subtype-Specific Cancer Evolution and Epigenetic States](#)

This research demonstrates that DNA fragments from solid tumours circulating in the blood (**cell-free DNA, cfDNA and ctDNA**) can be sequenced to track how cancers change over time.

By comparing cfDNA with matched tumour samples, scientists identified relapse-driving changes, including new mutations and epigenetic switches. The study shows that blood tests can reveal the hidden complexity of solid tumours in a safe and meaningful way.



George SL et al. Stratified Medicine Pediatrics: Cell-Free DNA and Serial Tumor Sequencing Identifies Subtype-Specific Cancer Evolution and Epigenetic States. Cancer Discov. 2025 Apr 2;15(4):717-732.

Relapse tumour samples from 20 UK centres were rapidly sequenced to guide clinical reporting, while researchers also compared these tumour samples with blood-derived DNA (cfDNA) using targeted and whole-genome methods.

Q&A: Understanding Solid Tumour Evolution with cfDNA

What is this research about?

Children's solid tumours release small fragments of DNA into the bloodstream. By sequencing this "liquid biopsy," researchers can study how these cancers change at relapse and uncover features that may not appear in a single tumour biopsy.

Why is this important?

Solid tumours in children, such as sarcomas and neuroblastomas, are often aggressive and can return after treatment. Taking new biopsies is difficult and sometimes unsafe. Blood tests offer a safer and more practical way to monitor tumours, helping doctors understand why solid tumours relapse and how to treat them more effectively.

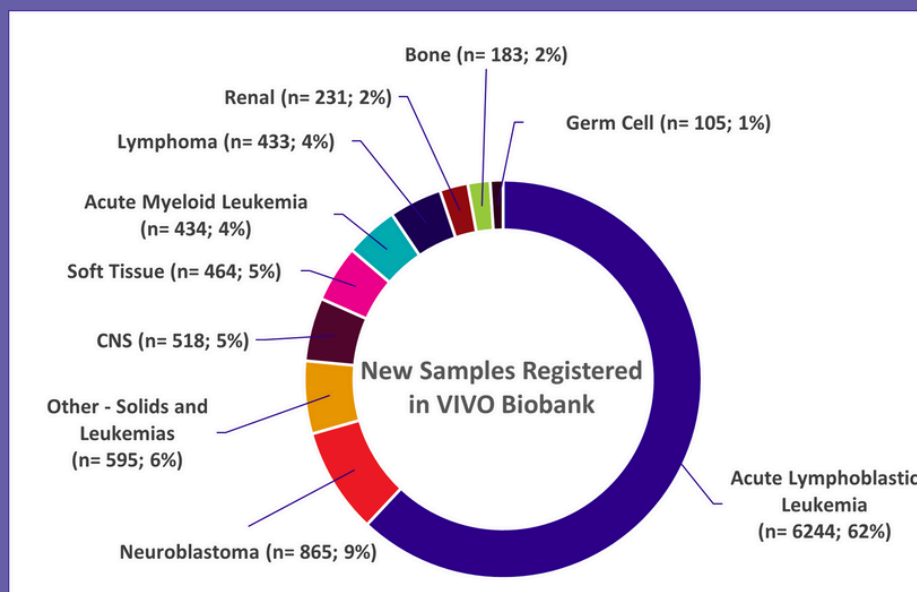
What are the researchers doing?

Through the **SMPaeds study**, children and young people with relapsed solid tumours across 20 UK cancer centres provided tumour and blood samples. Sequencing showed that cfDNA matched tumour results and sometimes revealed even more changes, including epigenetic alterations that drive resistance and relapse.

How could this help patients in the future?

Blood-based cfDNA testing could guide doctors in real time, helping them choose the right treatment and track whether it is working. Because it is minimally invasive, it can be repeated safely, offering hope for earlier detection of relapse, more precise treatments, and better outcomes for children with solid tumours.

Biobank in numbers



Since **July 2022**, VIVO Biobank has registered over **10,000** new liquid and solid samples (excluding CCLG legacy collections). The majority are from acute lymphoblastic leukaemia (ALL), but we are now focusing on increasing the number of solid tumour samples to strengthen support for a wider range of research projects.

Samples Available in VIVO Biobank

VIVO Biobank holds a diverse range of high-quality childhood cancer samples, available for researchers to apply for. Below is an overview of the types currently in our collection.

Sample type	Source	Storage Condition
Viable cells	Bone Marrow	Vapour phase liquid nitrogen
Non-Viable cells (MRD lab excess)	Bone Marrow	-80°C
Plasma	Bone Marrow	-80°C
Plasma	Peripheral Blood	-80°C
Serum	Peripheral Blood	-80°C
Cell Pellet (for DNA extraction)	Peripheral Blood	-80°C
CSF supernatant / cell pellet	Cerebrospinal Fluid	-80°C
Fresh Frozen Tissue	Solid Tumour	-80°C / Vapour phase liquid nitrogen
FFPE tissue	Solid Tumour/ Normal tissue	Room Temperature

If you are interested in additional sample types (e.g. pleural fluid, saliva, urine etc), please contact us at : enquiries@VIVOBiobank.org for further information. Solid tissue samples for PDX models can also be collected upon request for specific research projects.

Current & Legacy Clinical Trial Samples in VIVO Biobank

VIVO Biobank serves as the central repository for samples collected through a wide range of childhood cancer trials. These include both **current** studies, where samples are actively being collected, and **legacy** trial collections, now available to support new research. Access to these samples provides researchers with a unique opportunity to work with well-characterised patient cohorts, generating insights that can help advance diagnostics and therapies for children and young people with cancer.

Current Trials:

- **ALLTogether01** - acute lymphoblastic leukaemia
- **FaRMS** - rhabdomyosarcoma
- **BEACON 2** - relapsed neuroblastoma
- **Infant ALL** - infant acute lymphoblastic leukaemia
- **BIOMECA** - ependymoma
- **IMPORT** - renal Tumours
- **HR-NBL2** - high-risk neuroblastoma

Legacy Trials (completed, samples now available) :

- **EuroEwings 2012** - ewings' Sarcoma
- **HR-NBL1** - high risk neuroblastoma
- **MyeChild01** - acute myeloid leukaemia (AML)
- **UKALL2003** - acute lymphoblastic leukaemia
- **UKALL2011** - acute lymphoblastic leukaemia
- **UMBRELLA** - renal tumour
- **UMSCOM** - neuroblastoma with opsoclonus - myoclonus ataxia syndrome
- **LGG1** - low grade glioma
- **SMPaeds1** - paediatric solid tumour



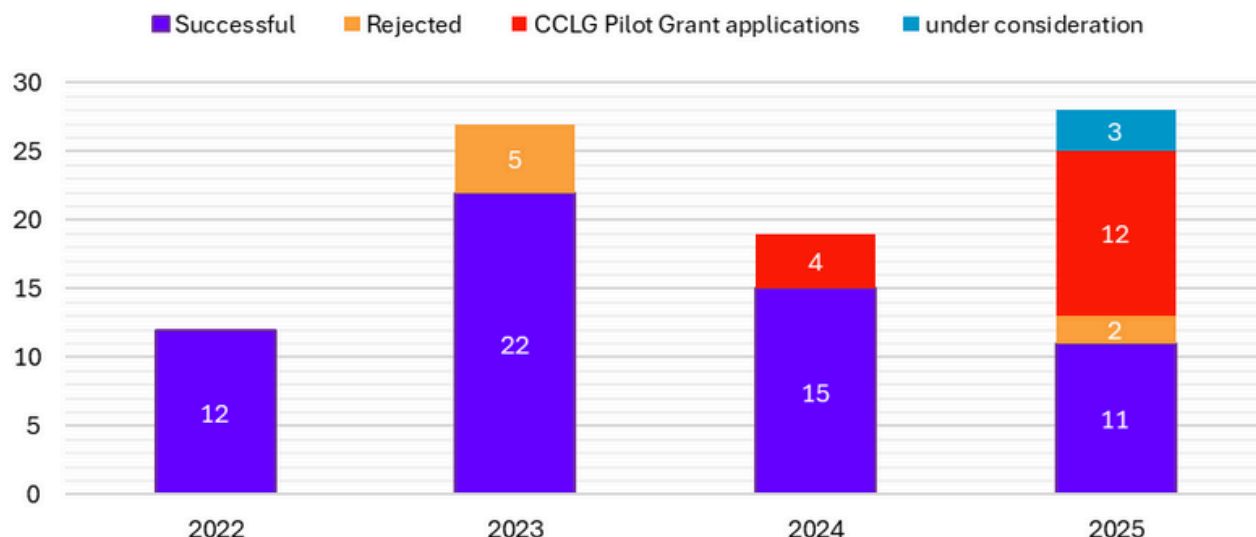
Researchers can apply to access samples via the VIVO Biobank **Sample and Data Access Committee (SDAC)**.

- For current trial collections, additional review by the trial investigators is required.
- For legacy trials, investigator review is not usually necessary.

To learn more or begin an application, please visit our Access Portal or contact us at: enquiries@VIVOBiobank.org

VIVO Biobank Applications and Outcomes

VIVO Biobank applications and outcomes by year (2022-2025)



This graph outlines the number and outcomes of applications received by the VIVO Biobank between 2022-2025. All 4 CCLG pilot grant applications submitted in 2024 were successful. The 12 pilot grant applications submitted in 2025 are currently under review.

Your Guide to Accessing VIVO Samples

Samples

Use the form to query our database and see what samples may be available.

Main category: <Any>
Main diagnosis: <Any>
Subtype: <Any>
Sex: <Any>
Sample type: <Any>

Patients: 29040
Samples: 92863
Aliquots: 257671

1. Enquiries

- Search the available samples on the **VIVO Biobank website**: [VIVO Biobank - Samples](#)
- Email: enquiries@VIVOBiobank.org with more details about the types and number of samples you require to confirm availability

2. Application

- Complete **VIVO Application form**: [VIVO Biobank - Applying](#) & attach **CV + Grant/Funding documents**; send to: enquiries@VIVOBiobank.org

3. Review

- Internal Review conducted by at least 5 members of the **Sample and Data Access Committee (SDAC)** - made up of clinicians, researchers and PPIE reps
- If an External Review has been conducted, this should be submitted to **SDAC** for further consideration

4. Outcome

-  **Approved**
-  **Provisional**
-  **Not Approved**

5. Research Ethics Committee (REC) Approval

- If **UK Based** and SDAC approved, no further REC needed (if criteria met: [VIVO Biobank - Applying](#))

6. Sample Release

- **Material Transfer Agreement (MTA)** signed by institutions' legal team 
- Samples dispatched from VIVO Biobank or associated centres 
- Researcher covers costs of **transport** 

7. End of Study

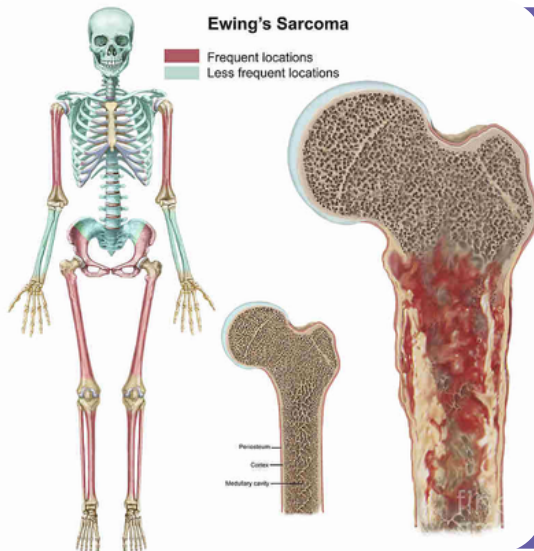
- Any surplus samples/derivatives should be informed to **SDAC** - decides whether samples can be:

- returned
- reused
- destroyed



Rare or high quality samples may be approved for further use.

General Biobank Updates



Legacy Ewing's Sarcoma clinical trial samples now available from VIVO Biobank

VIVO Biobank is pleased to announce the availability of legacy samples from the **Euro Ewing's 2012 clinical trial**. This new addition offers researchers a valuable resource to investigate Ewing sarcoma using material collected from a large, multicentre study.

The collection includes **~1,270 PAXgene** tubes containing whole/peripheral blood (suitable for **RNA extraction**) and **~840 EDTA** tubes containing blood cell fractions (suitable for **germline DNA extraction**). Together, these samples offer complementary material to study gene expression and inherited genetic variation.

Together, these samples strengthen opportunities to generate new insights into the biology of Ewing's sarcoma and to inform the development of future treatments.

CCLG Early Career Researcher VIVO Biobank Pilot Grants

We were delighted once again to partner with **CCLG** to deliver **VIVO Biobank Pilot Grants**, which provide early career researchers with the opportunity to carry out innovative pilot biological studies using samples from our biobank.

These grants (up to **£15,000** each) are designed to support short-term projects that generate preliminary data for larger applications, or lead to useful, publishable results.



This round brought in over **15 enquiries** from researchers, with exciting and ambitious ideas spanning a variety of tumour types, including neuroblastoma, leukaemia, osteosarcoma, and rhabdomyosarcoma.

The pilot grant panel will review these over the coming months, with funding decisions due in December 2025.

We look forward to announcing the successful projects in our next newsletter.

CCLG Early career researcher VIVO Biobank Pilot Grants



The Children & Young People's Cancer Association

VIVO Biobank at the CCLG Conference 2025

In March, members of our team attended the Children's Cancer and Leukaemia Group (CCLG) Conference. This was a fantastic opportunity to connect with the childhood cancer research community.

Highlights from the conference:

- Hearing about the **latest progress** in childhood cancer research and treatment.
- Networking with **researchers, clinicians, and specialist nurses** who make biobanking possible.
- Raising awareness of the **importance of sample access** for breakthroughs.
- Exploring **new opportunities for collaboration**.

A huge thank you to CCLG for hosting such an inspiring event, and to everyone who stopped by our stall to learn more about our work (and maybe pick up some sweets along the way!).



New faces at VIVO Biobank!

In 2025, we've seen some changes in our team, as we said goodbye to a few familiar faces and welcomed new colleagues.

- **Taofik Adetoro**, our former Biobank Manager, moved on in September 2024 to take up an exciting role as a Trainee Clinical Scientist in the NHS
- **Emma Paizes** also left in September 2024 for a Trainee Clinical Scientist post in the NHS, but kindly joined us for the farewell tea.
- **Beth Cragg**, who combined her MRes studies in Edinburgh with part-time work for the biobank, officially finished with us at the end of August and is now heading off to travel before embarking on a new career.

We thank them for their dedication to VIVO Biobank and are excited to welcome three new staff members to continue their excellent work...



Beth's leaving do marked a smooth handover to welcome new colleagues into the team.

*Left to Right: Rachel Howarth, Robyn Watson (**Research Assistant**), Anne Thomson (**Biobank Manager**), Emma Paizes, Dona Saji, Eszter Tuboly, Deb Tweddle (**Director**) and Beth Cragg.*

- **Eszter Tuboly - Biobank Manager**

Eszter manages the **solid tumour side of the biobank**. She is working hard to open new TYA sites and encourage solid tumour banking, as well as keeping us on track with our bigger, long-term goals as a biobank.

- **Rachel Howarth - Research Assistant**

Rachel plays a key role within the biobank, co-ordinating the **Sample Data and Access Committee (SDAC)** applications from initial enquiries through to sending out samples to the researchers. This includes liaising with PPIE members who play a key role in reviewing applications we receive.

- **Dona Saji - Research Assistant**

Dona leads our **Patient and Public Involvement and Engagement (PPIE) group**, working closely with its members to exchange ideas and liaise with researchers. She also manages our social media and publicity, ensuring we raise awareness of the importance of biobanking, and highlight important research supported by our bank.

STAY CONNECTED WITH US!

Keep up to date with the latest news, research highlights, and behind-the-scenes updates from VIVO Biobank:



@vivobiobank



vivo-biobank



@VIVObiobank



vivobiobank.org



VIVOBIOBANK

Follow us to see how our samples are powering research and making real-world impact.