ICR The Institute of Cancer Research

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"No other family should receive a diagnosis without hope."

Ellie Mawdsley

Editorial

Cancer research is a collaborative endeavour. From ground-breaking discoveries and translational research to tireless efforts in grant writing and fundraising, the stories in this edition highlight the remarkable impact we can achieve together.

This year marks an incredible milestone for us, as it is now 30 years since our scientists helped discover the BRCA2 gene. This landmark discovery has enabled families around the world to assess their inherited cancer risk and take preventative action *(read more on page 3)*.

More recently, this year's American Society of Clinical Oncology's annual conference was also cause for celebration, with almost 50 of the research studies presented being led by or involving our scientists and our partners at The Royal Marsden hospital. It was a powerful affirmation of the global impact of our research *(see page 5)*.

Much of this research is only possible thanks to our supporters, who, fuelled by a determination to make a difference, continue to take on extraordinary challenges. George Southgate's transcontinental cycle ride – covering 100 miles a day – is just one example of the inspiring fundraising that powers our research *(see page 15)*. We're also grateful to The Ellie Mawdsley Foundation, which was established by Ellie's family following her passing from an aggressive brain tumour. Their generous support will be vital in advancing our research into childhood and young adult brain cancers *(see page 6)*.

In this issue, we are also celebrating our pioneering research into the diagnosis and treatment of prostate cancer – a field in which our researchers have made critical advances. Among them is Dr Alec Paschalis, a recently appointed Group Leader who is investigating how prostate cancers evolve resistance to hormone therapy with the goal of creating smarter, more effective treatments *(read more on pages 10–11)*.

Thank you for your continued support. Together, we remain united in our mission to defeat cancer.

Professor Kristian Helin
Chief Executive, The Institute of Cancer Research

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Contact us
The Institute of Cancer Research
123 Old Brompton Road, London
SW7 3RP

T 020 7153 5387
E supportercare@icr.ac.uk
W icr.ac.uk

Celebrating the 30th anniversary of our BRCA2 discovery

Sally Swift (recently retired), one of the team that discovered the BRCA2 gene

"This has been life-changing for many thousands of people."

Credit: John Nguyen/PA Wire

This year is a notable one for scientific discoveries, featuring several significant anniversaries. The Human Genome Project was launched 35 years ago this October, while November will mark 130 years since X-rays were discovered.

Most excitingly for us, we will soon celebrate the 30th anniversary of the BReast CAncer gene 2 (BRCA2) discovery. The identification of this cancer susceptibility gene in December 1995 has transformed cancer research and been life-changing for many thousands of people. We are incredibly proud that the scientists who led this research were based at the ICR.

Crucially, their discovery led to the development of PARP inhibitors – drugs that exploit a weakness in cancer cells with BRCA mutations. These include olaparib, which our scientists played a major part in developing. It is now an approved treatment for certain breast, ovarian, prostate and pancreatic cancers.

The race to identify BRCA2 was sparked by the discovery of BRCA1 the previous year. Our researchers committed to a challenging shift pattern that allowed them to run experiments 24 hours a day, seven days a week. After months of hard work, they pinpointed BRCA2's exact location on chromosome 13.

BRCA1 and BRCA2 help prevent the body's cells from dividing out of control – a hallmark of cancer. Faults in either gene increase the risk of various cancers, and they can be passed down in a family.

Following our research, clinics began offering genetic testing for faulty BRCA genes, giving thousands of people with inherited faults the opportunity to take preventative action to reduce their cancer risk.

We have made many further discoveries in the past three decades, but the BRCA2 discovery remains one of our most impactful.

Discovering how to remove skin cancer's protective armour


Professor Victoria Sanz-Moreno

Our scientists have uncovered a protein that helps aggressive melanoma skin cancer cells spread. New research led by Professor Victoria Sanz-Moreno revealed that the protein SLC7A11 acts as a suit of armour, shielding cancer cells from oxidative stress – a process that can damage cells as they move around the body.

The researchers also found that more aggressive melanoma cells produce high amounts of the protein. When they tried inhibiting SLC7A11, almost 75 per cent of the melanoma tumours' cells died.

This finding could not only open new avenues of research to disable the disease's defences but also lead to new tests to spot these aggressive tumours.

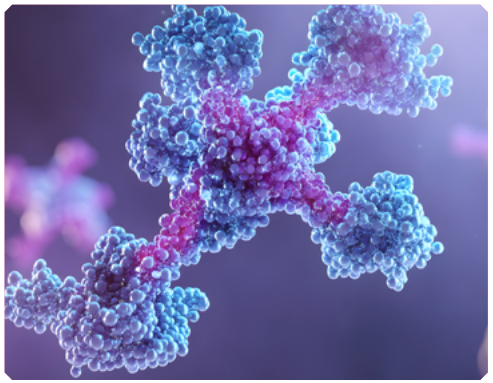
New drug combination offers hope to more people with lymphoma

Our scientists found that the drug tazemetostat – which is already approved for use in patients with one type of B-cell lymphoma – could work better when combined with another targeted drug. It could also effectively treat the most common type of B-cell lymphoma, diffuse large B-cell lymphoma, improving outcomes for thousands of patients.

Professor Kristian Helin, study lead and Chief Executive of the ICR, said:

"We need to have more treatment options available that will keep patients' cancer at bay for longer and overcome cancer's ability to adapt, evolve and become drug resistant. Combining drugs that have different mechanisms of action is an important tool in our arsenal to achieve this."

ASCO round-up

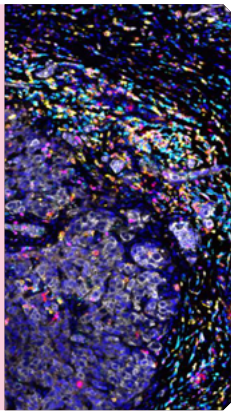


Highlights from the world's largest cancer conference
We are proud that some of our researchers took centre stage at the American Society of Clinical Oncology (ASCO) Annual Meeting, which took place in Chicago in June.

New AI test for prostate cancer
Professor Nick James *(pictured)* presented research on a new AI test to select which men with high-risk prostate cancer that has not spread will require the life-extending drug abiraterone. When the team analysed tumour samples from more than 1,000 participants in the STAMPEDE trial, they found that three out of four men could be spared unnecessary treatment, making the drug – discovered at the ICR – more affordable for the NHS.

Promising new therapies for breast cancer
Professor Nick Turner presented two sets of clinical trial results at ASCO. The first was the final results of the INAVO120 trial, which demonstrated that a promising new therapy – combining a new targeted drug called inavolisib with palbociclib and fulvestrant – can help patients with aggressive advanced breast cancer live longer and delay the need for further chemotherapy.

The second was the results of the phase III SERENA-6 trial in advanced, oestrogen receptor-positive breast cancer. These showed that a new drug called camizestrant helps patients who develop an ESR1 mutation during treatment to stay well for longer. ESR1 mutations, which make cancer cells resistant to standard hormonal therapy, are relatively common, so camizestrant could improve outcomes for many people.



Activating the immune system against head and neck cancer
Results from the phase III Keynote-689 trial were also shared at the conference by Professor Kevin Harrington *(pictured)*. His team found that adding the immunotherapy drug pembrolizumab to standard therapy gave head and neck cancer patients extra years disease-free. After three years, patients given pembrolizumab had a 10 per cent reduced risk of their cancer returning elsewhere in the body. This indicates that the immune system was successfully activated to hunt down metastatic cancer – cancer that has spread to other areas of the body.

“We wanted Ellie to be the one to survive”

Ellie Mawdsley was diagnosed with DIPG, an aggressive brain tumour, in December 2021, and she passed away less than two years later at the age of 23. Her parents, Karen and Ian, set up The Ellie Mawdsley Foundation to raise awareness and continue her legacy. Here, Karen tells her story and explains why the charity is funding our vital research into brain tumours.

“Ellie’s symptoms first started in October 2021. An MRI scan later revealed a brain tumour and within 48 hours of a biopsy, we received Ellie’s diagnosis: DIPG.

“Her prognosis was 12 to 18 months. Ellie was heartbroken. She had a wonderful life ahead of her and it was being swept away. We were determined to make memories and do everything we could for her.

“It was hard to believe the only treatment available was palliative radiotherapy.

“We raised money to pay for treatment from Germany. We wanted Ellie to survive and were prepared to fight this with everything. But the drug brought no noticeable improvement.

“In January 2023, Ellie’s health took a downturn. The local hospice offered her palliative care at home. We never left her side and Ellie passed away with us all around her on 17 July 2023.

“After her passing, Ellie’s brain tissue was donated to Professor Chris Jones’ lab for research into brain cancer affecting children and young adults, as was her wish. She was adamant that she wanted to make a difference and support research into this awful disease. I’m incredibly proud of Ellie for this.

“She always wanted to help others, so we set up The Ellie Mawdsley Foundation to continue her legacy.

“My wish is that no other family receives a diagnosis without hope. That’s why we’re donating £57,500 to fund research in Professor Chris Jones’ lab. There needs to be better treatment for this cancer, and we want to play our part in finding a cure.”

“She wanted to make a difference and support research into this awful disease. I’m incredibly proud of Ellie for this.”

Karen Mawdsley
Ellie’s mother

Childhood Cancer Awareness Month

Thanks to Ellie Mawdsley’s selfless desire to help others, and her parents’ dedication to raising vital funds in her name, we can continue working towards giving young people with cancer and their families hope of a better outlook.

Throughout Childhood Cancer Awareness Month, which takes place every September, we have shared stories from other families who have generously supported our research after having to see their children go through cancer. You can view their stories on our website or explore recent posts on our social media channels.

You can also read about the important research our scientists are currently carrying out to improve the detection, diagnosis and treatment of paediatric cancer.

In recent decades, we have made remarkable advances in diagnosing and treating cancers that affect children, teenagers and young adults. However, some of these cancers remain very difficult to treat, meaning survival rates continue to be poor.

If you would like to help us make more discoveries that will offer young cancer patients the chance of a cure and a good quality of life, you can donate using the QR code below.

Going the distance for our life-changing research

Our #TeamICR runners raised an incredible £144,600 at this year's London Marathon. Here, three of them tell us their inspiring stories.

Credit: © Sportograf

£144K+

Total raised at this year's London Marathon

Mary Nassiri

"During my cancer treatment, running a marathon became my goal"

Mary Nassiri was diagnosed with breast cancer in 2021, six months after her sister received a similar diagnosis. During treatment, she promised herself that once recovered, she would run a marathon.

"My sister's diagnosis was a huge shock. I never expected either of us to be diagnosed with breast cancer in our 40s.

"I was hopeful mine had been caught early and would be treatable with surgery, so it was terrifying to hear that a small but aggressive tumour had been found. I needed chemotherapy and long-term hormone treatment.

"Struck by the realisation that you never know what's round the corner, I set myself a bucket list of goals. Before becoming ill, I'd completed a few half marathons. I'd always wanted to do a marathon but wasn't sure I'd ever achieve it. I promised myself that when better, I'd run one for a cancer charity.

"I feel lucky I was treated successfully and am now well. I know that's thanks to research.

"I'm so proud to have achieved my goal while also raising £4,500 for the ICR. It was such an incredible day – the memories will stay with me forever."

Eric Lo

"The Institute of Cancer Research is playing a key part in the global fight against cancer"

Eric Lo travelled from his home in Hong Kong to run the London Marathon in memory of his father, Lo Chun Wah, who died from lung cancer 25 years ago, and to raise money for our vital research.

"I am no stranger to running marathons – the London marathon was my ninth.

"It was warmer than I expected on race day, and I had a few painful niggles. But this was no excuse to quit, and I enjoyed the whole marathon, appreciating the excellent scenes of London and the generous cheering from everyone around me.

"The embrace from my wife at 35km was the best support, and crossing the finishing line was the most emotional experience of all my marathon races.

"I ran to support the ICR because it is a key research institution and has made many important discoveries that have improved the lives of patients worldwide.

"With its commitment to academic research, I'm sure the ICR can play a key part in the global effort to defeat cancer."

Professor Chris Bakal

"Every step helps fuel the research we do"

Professor Chris Bakal is Group Leader of the Dynamical Cell Systems Group within our Division of Cell and Molecular Biology. A keen runner, he is also an ambassador for Terry Fox Run UK.

"I had an amazing time running the London Marathon – though I'll admit, I needed more training! It had been 20 years since my last one, and I'd forgotten just how tough those final miles can be.

"But what made it unforgettable were Londoners. Running through the different neighbourhoods, each with its own energy and spirit, was like a tour of everything that makes this city special.

"Strangers cheering like old friends, kids handing out sweets, music on every corner – it really was emotional.

"And it meant a lot to run alongside our brilliant ICR fundraisers. Their dedication and passion reminded me why this kind of fundraising matters so deeply. Every step they take helps fuel the research we do. I was proud to run alongside them."

“Ultimately, we’re here to help patients”

Dr Alec Paschalis on tackling treatment resistance in prostate cancer

In May 2025, we were delighted to appoint Dr Alec Paschalis to lead the Translational and Experimental Medicine Group in our Division of Clinical Studies. Drawing on his extensive experience as both a clinician and researcher, Dr Paschalis is focused on understanding how prostate cancers develop resistance to standard-of-care hormone treatments – with the aim of developing smarter, more effective therapies.

Targeting one of the most common male cancers

Prostate cancer remains one of the most diagnosed cancers and a leading cause of cancer-related death in men globally. Although significant advances have been made in diagnosis and treatment, drug resistance remains a challenge, particularly in the later stages of the disease.

Dr Paschalis is working with his team to identify vulnerabilities in prostate cancers that are resistant to treatment and better understand how the disease adapts and survives when exposed to standard hormone therapies. After clarifying these mechanisms, he hopes to develop strategies to block them.

This mission began during his Clinical PhD Fellowship at the ICR under Professor Johann de Bono, where he studied a protein called JMJD6. His team discovered that JMJD6 helps generate a protein variant called AR-V7, which is important because it drives prostate cancer growth.

In collaboration with colleagues at the University of Oxford and the ICR, Dr Paschalis is advancing this work through a Cancer Research UK Catalyst grant. The next steps in his team’s research are to develop drugs to inhibit JMJD6 and test them in early-phase clinical trials.

From laboratory to clinic

Dr Paschalis’ interest in cancer research was sparked during clinical training, where he was drawn to the complexity of oncology and the potential to make a lasting impression through both science and patient care.

After completing his Medical Oncology training at The Royal Marsden hospital, Alec was awarded a Prostate Cancer Foundation Young Investigator Award to undertake postdoctoral research at the ICR. He divided his efforts between carrying out translational research in the laboratory and delivering early-phase clinical trials in the joint Drug Development Unit at the ICR and The Royal Marsden.

Now, as Group Leader at the ICR and Honorary Consultant in Medical Oncology at The Royal Marsden, Dr Paschalis also plans to investigate other emerging areas within the field. These include the role of cancer metabolism in driving resistance and the potential of PSMA – a protein found on prostate cancer cells – as a target for both imaging and therapy.

Putting patients at the heart of progress

For Alec, the goal is clear – to deliver better outcomes for patients.

He said:

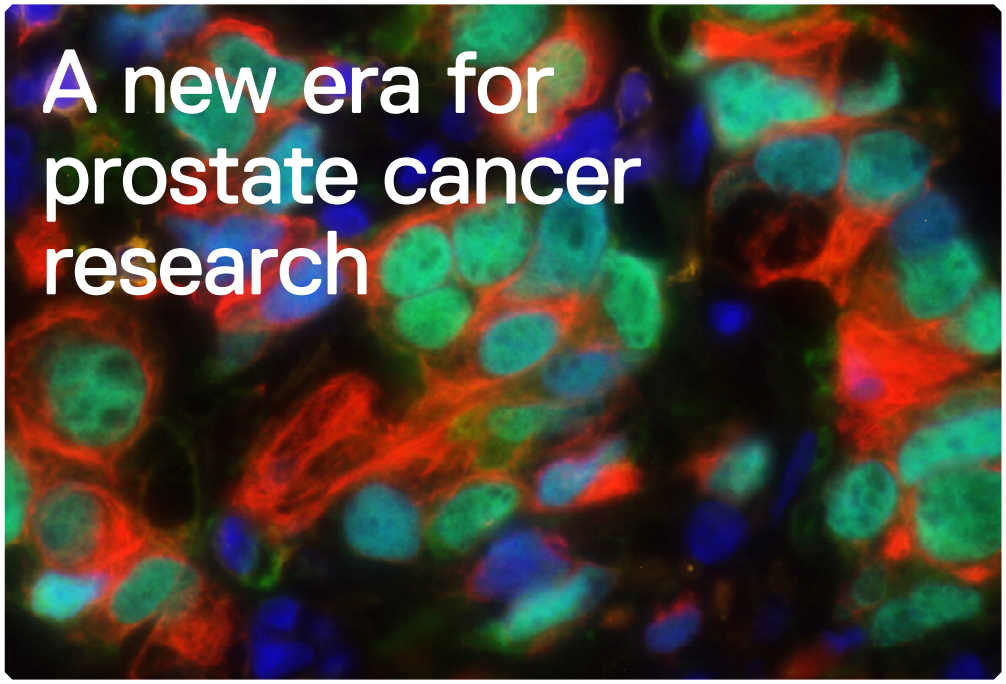
“We want to make effective treatments that help men live longer. That means targeting the cancer more precisely, with fewer side effects, and avoiding treatments that aren’t going to work.

“My dual role of guiding cutting-edge research while caring for patients on clinical trials has given me a unique perspective. Seeing patients face to face and hearing their stories keeps our work grounded – ultimately, we’re here to help patients.”

As Dr Paschalis’ team grows, so too does the momentum behind its mission to outsmart resistance and bring personalised prostate cancer treatments to the forefront of care.

“We want to make effective treatments that help men live longer. That means targeting the cancer more precisely.”

Dr Alec Paschalis



A new era for prostate cancer research

Over the past decade, remarkable advances in diagnosis and treatment have significantly improved prostate cancer survival rates, even among people with advanced disease. Our researchers are continuing this momentum by taking increasingly innovative approaches to eliminating this disease, which affects one in eight UK men.

Making diagnosis easier and more accurate

A new test developed by Professor Ros Eeles and colleagues can identify the future risk of prostate cancer for some men more accurately than the standard PSA blood test. The relatively simple and inexpensive test, which requires users to collect a saliva sample at home, could help save thousands of lives by making it possible to detect prostate cancer earlier.

As prostate cancer incidence varies significantly across racial and ethnic groups, the team is now trialling the test in a cohort that better represents the UK's diverse population. The findings will help identify the highest-risk groups, who will likely be prioritised when the test is rolled out.

Using AI to inform treatment

As mentioned in our ASCO round-up (*see page 5*), Professor Nick James co-led a study using AI to study biopsy images of tumour samples from people with high-risk prostate cancer. It was able to detect features that predict treatment response but are invisible to the eye, making it easier to identify suitable candidates for abiraterone. The team hopes this tool may persuade NHS England to fund abiraterone for these patients.

Professor Ros Eeles

Dr Matthew Blackledge and his team have also had success using AI to develop a new imaging approach that helps radiologists assess the extent of bone disease in people with advanced metastatic prostate cancer. Their software solution minimises variability across imaging scans taken at different times and scanner sites, aiding the detection of disease progression. This gives clinicians the opportunity to intervene and switch the treatment if needed.

Identifying potential new treatment approaches

As part of a collaborative project team with Astex Pharmaceuticals, Dr Paul Clarke and colleagues identified a possible way to target a protein, eIF4E, that helps promote prostate cancer growth.

Long regarded as a promising anticancer target, eIF4E was considered undruggable. However, this research revealed a previously undocumented area of eIF4E that could serve as a binding site for cancer drugs. Follow-up research could generate treatments that are effective across multiple cancer types.

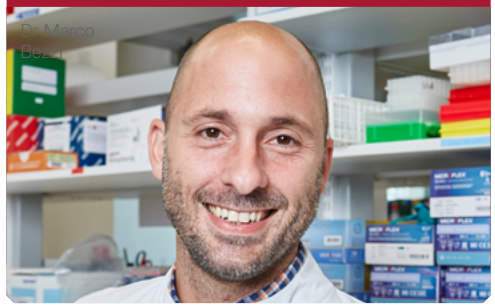
We have also continued to build on practice-changing research led by Professor David Dearnaley, which confirmed the safety and efficacy of treating localised prostate cancer with fewer, larger radiotherapy doses. This made the treatment kinder for patients by cutting the average number of hospital visits from 37 to 20.

Last year, the five-year results of the ongoing phase III PACE-B trial, led by Professor Emma Hall, indicated that it may soon be possible to reduce the number of visits to just five by using an extremely accurate form of radiotherapy called stereotactic body radiotherapy (SBRT).

Advancing prostate cancer research more widely

Dr Marco Bezzi and his team have developed a complex new research platform called ProMPt, which accurately models the diversity and treatment responses of prostate cancer in a laboratory setting.

The ability to evolve and adapt allows cancer to become resistant to treatment, hindering efforts to defeat it. Using ProMPt, Dr Bezzi and his team are investigating what drives tumour evolution and how we can prevent it to make cancer treatment more effective. They will soon make this unique tool available to the global research community.



Dr Marco Bezzi

A hopeful future

These are just some examples of our cutting-edge work in prostate cancer research. By capitalising on advances in scientific fields including AI, imaging and targeted therapies, we are making, and will continue to make, historic progress. Each advance allows more people to receive effective, kinder treatments that both extend survival and improve quality of life.

“The research that’s going on now gives me hope”

Tony Collier, 68, was diagnosed with advanced prostate cancer in May 2017. He was originally scheduled to start hormone therapy followed by chemotherapy, but then he heard about positive new trial results for the drug abiraterone.

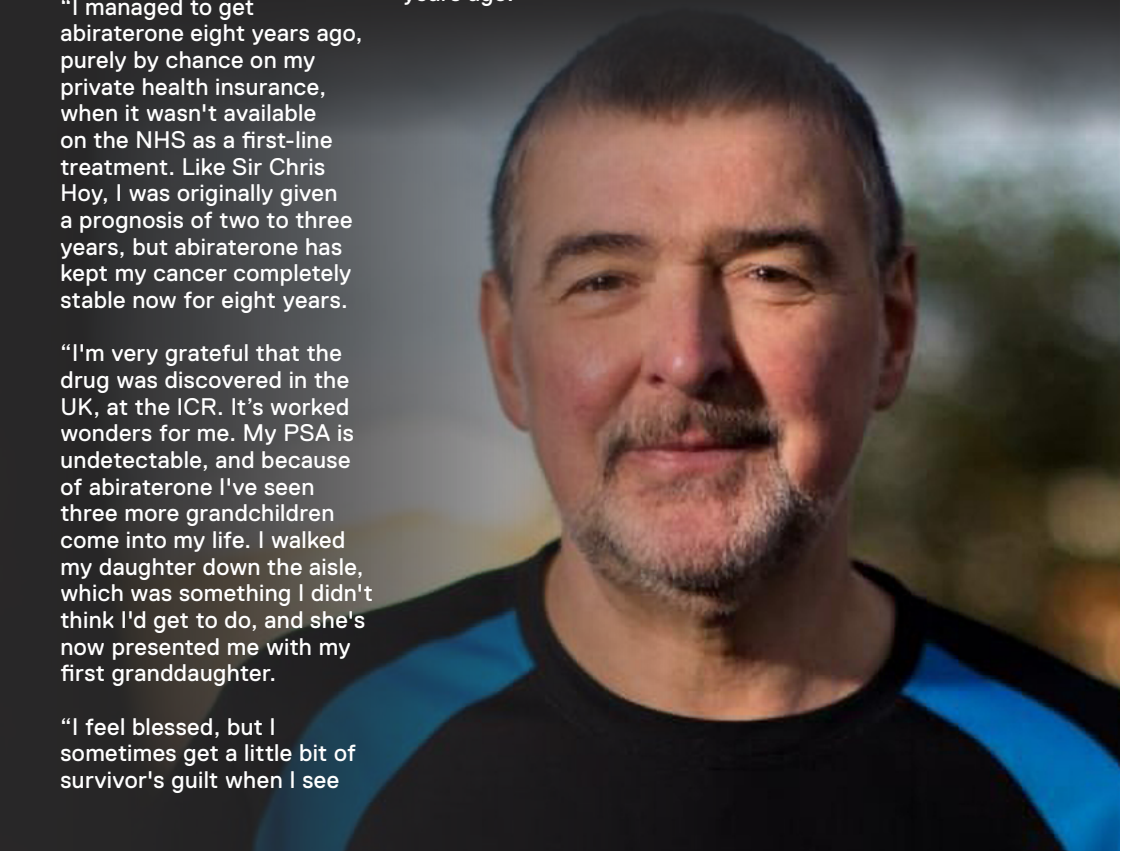
“I managed to get abiraterone eight years ago, purely by chance on my private health insurance, when it wasn't available on the NHS as a first-line treatment. Like Sir Chris Hoy, I was originally given a prognosis of two to three years, but abiraterone has kept my cancer completely stable now for eight years.

“I'm very grateful that the drug was discovered in the UK, at the ICR. It’s worked wonders for me. My PSA is undetectable, and because of abiraterone I've seen three more grandchildren come into my life. I walked my daughter down the aisle, which was something I didn't think I'd get to do, and she's now presented me with my first granddaughter.

“I feel blessed, but I sometimes get a little bit of survivor's guilt when I see people who are not doing as well. I’ve lost friends along the way – people who were diagnosed at the same time as I was, but who only got three or four years.

“But all the research that's going on now gives me hope. Since my diagnosis, six or seven new treatments have become available that weren't around eight years ago.

“I'm already in a situation where I know that if this treatment does stop working, there'll be something else that will keep me alive longer, enabling me to experience more amazing family moments. I want to see my grandchildren start secondary school, see them go to university and maybe even be at their weddings.”



“We want people to ride together to make a difference”

George Southgate, 27, is no stranger to a challenge. In June 2022, he raised more than £18,000 to support our bowel cancer research when he, along with three others, cycled from London to Paris in memory of his dad, Mike.

Mike was diagnosed with stage 4 bowel cancer in April 2020. He had treatment for almost two years but sadly passed away in January 2022, aged 59.

Mike tackled his cancer head on, maintaining positivity, optimism and humour throughout. He had a selfless attitude towards life and others. Unfortunately, he was unable to take part in a clinical trial, but he had wanted to participate – not just to improve his own health, but to help clinicians gain further understanding of advanced bowel cancer.

George is now keeping Mike’s legacy alive through his continued support of our vital work. From 4 to 11 July next year, he will once again be turning the pedals, with the aim of raising more than £100,000 for our pioneering research.

This time, he will be cycling from Berlin to London, through Germany and across the Netherlands, then travelling by ferry to the UK before finishing his journey outside our labs in Chelsea. Passing through rural countryside, small towns and villages, he will travel about 100 miles a day.

George is now actively recruiting about 50 adventurers to join him on his expedition.

He said: “You don’t have to be an experienced cyclist – just someone who is prepared to take on some significant training. We hope to bring together cyclists and non-cyclists in this exciting but difficult challenge, creating a chance for those who have been affected by cancer in some way to come together and make a positive difference.”

Keen to take part in this amazing challenge of a lifetime? Use the QR code below to join the team.

“There cannot be enough research into cancer. That’s why a legacy gift makes perfect sense.”

Jolyon Armstong

Jolyon Armstong, 75, faced his own cancer diagnosis in 2018 and has also seen members of his immediate family and “too many friends” touched by the disease. That’s why he has pledged to leave a gift in his Will to fund our ground-breaking research.

“My prostate cancer diagnosis affected my views on cancer research. Before I was diagnosed, I had always felt I was unbreakable, but I came to realise I was not indestructible. Thanks to advances in treatment, I am relieved, grateful and lucky to still be here today.

“Cancer is more and more prevalent these days and seems to be striking everybody. There simply cannot be enough research into this disease, to give more people hope of surviving. That’s why pledging to leave a gift in my Will to The Institute of Cancer Research makes perfect sense to me.”

Leaving a legacy is one of the most significant contributions you can make to help us defeat cancer. These incredible gifts help our scientists to drive forward their research and take on new challenges, with the support of long-term funding.

Our free online guide contains all the information you need to write or update your Will. We also have a number of ways you can make or update your Will for free, and we will cover the cost.

We are so grateful to everyone who has left us a gift in their Will and those who have pledged to do so, to sustain our work into the future.

Visit icr.ac.uk/legacy to find out more.

Written and produced by: