

Research Strategy to 2030.

Part of our charity strategy;
leading transformation in
kidney health



Summary.

In our charity strategy, *Leading transformation in kidney health*, we have pledged to drive a major surge in the UK kidney research effort. To deliver this, we are changing how we do things.

We will continue to fund high quality kidney research, but we will also strengthen and develop our role as an enabler, thought-leader, disrupter and collaborator. We will be a research organisation that brings groups together, supports innovation and challenges the status quo. We will be a catalyst that ignites kidney research with new investment, new capacity, new ideas and new energy.

This Kidney Research UK Research Strategy sets objectives for the broad scope of knowledge we must accumulate and utilise through research. However, to deliver change for people affected by kidney disease, we also need to focus. That is why we will boost the research effort around three priority areas:



Transforming treatments



Multiple health conditions



Health inequalities

Six supporting principles will underpin the way we operate as a research organisation:

- **The continuum of discovery** – supporting all kinds of research from bench to bedside
- **Collaboration and partnership** – we can do more together than any organisation alone
- **Patient involvement and engagement** – harnessing the power of lived experience
- **Champions of innovation** – thinking differently to achieve more
- **Investing in talent** – building the kidney research workforce
- **Make it count** – ensuring the potential of research is realised for patients

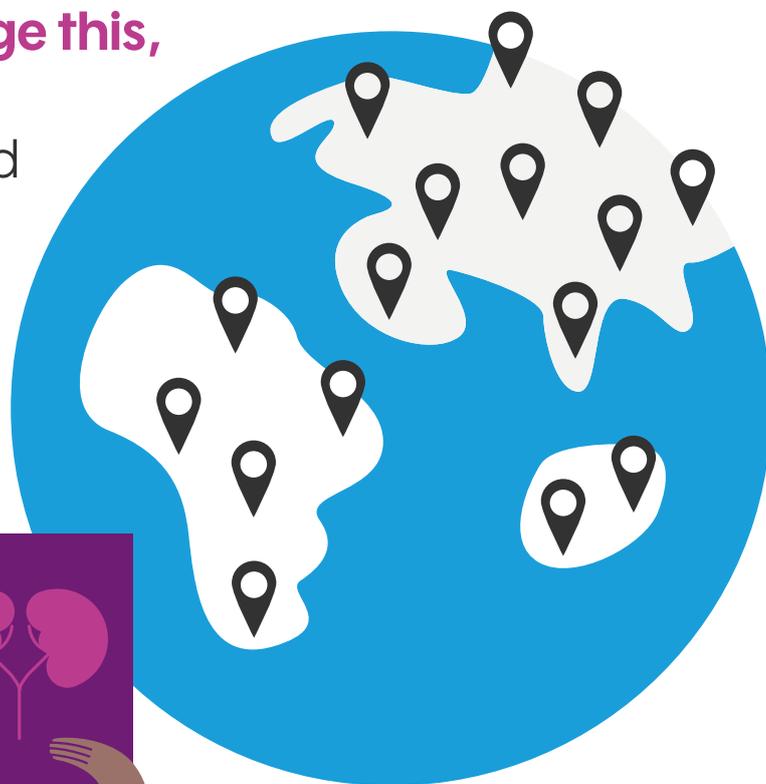
We invite everyone with a stake in kidney health to read this research strategy, and to get involved however you can.

Read our overarching charity strategy **Leading transformation in kidney health** at kidneyresearchuk.org/strategy

Introduction.

Kidney disease affects three million people in the UK and 850 million worldwide. Our research has changed the future for many kidney patients, yet the number of people living with kidney failure continues to rise. Treatments can be gruelling and there is no cure.

Only research can change this, but right now not enough research is happening and progress is too slow.



...continued from the introduction

We are the leading kidney research charity and nothing will stop us in our urgent mission to end kidney disease. We have pledged to lead a transformation in kidney health over the next ten years, by accelerating discoveries and translating them rapidly into medical advancements.

We will be a catalyst for change.

To intensify the kidney research effort, we need to shake things up. We are ready to work differently, and we ask the kidney research community to join us.

As a research organisation, we will embody a spirit of resourcefulness to get more done. We will bring people together in innovative new networks, funding partnerships and strategic alliances to invigorate the research effort. We will support kidney researchers to learn from and work with other disciplines, with industry and the commercial sector, and with patients, and to be entrepreneurial in finding investment.

We will continue to fund high-quality kidney research across the continuum of discovery and – by being an influential advocate to end kidney disease – we will encourage other funders to do the same.

We're proud to share our plans.

In the following pages we state the research objectives and priorities that are in our sights. We detail the principles that will guide us and outline the 'routes to discovery' – the mechanisms through which we will invest funds and resources to achieve our goals.

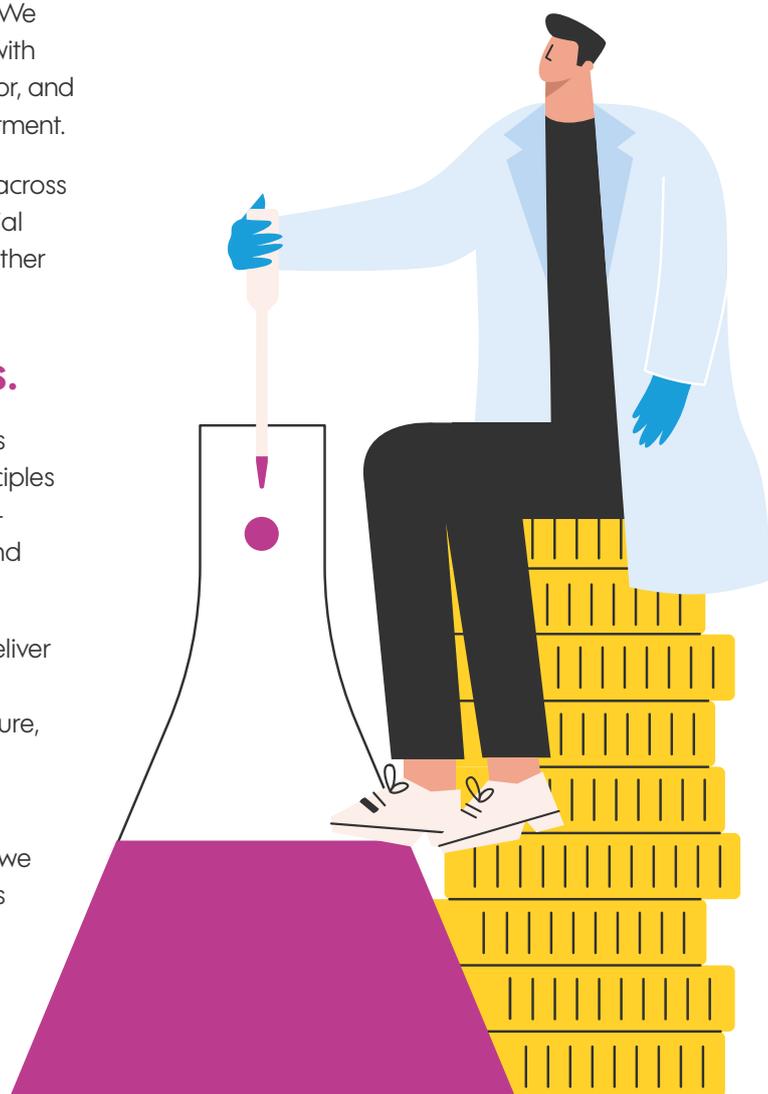
Over the coming decade, through research, we will deliver new evidence-based approaches to **prevent** kidney disease, **protect** people from experiencing kidney failure, and improve how we **treat** kidney disease.

There is a great deal to do, and whatever your role – researcher, patient, funder, supporter, policy-maker – we invite you to help us reach the day when everyone lives free from kidney disease.

Kidney disease ends here.

Dr Aisling McMahon

Executive director research, innovation and policy





The UK Renal Research Strategy

In 2016, Kidney Research UK was instrumental in developing the ten-year UK Renal Research Strategy (UKRRS). It was the first of its kind in the UK and brought together professional and patient organisations across the kidney sector.

Since then, the UKRRS has provided a direction of travel that we and our partner organisations agreed would deliver maximum benefits in the health and welfare of kidney patients and those at risk of kidney disease.

The first three-year progress report, published in 2019, highlighted areas in which – as a community – we have made inroads, and others in which we have yet to make a significant impact. These insights, alongside the views of people affected by kidney disease, have shaped the development of this Kidney Research UK Research Strategy 2020–2030.

Our strategic research principles and priorities will build upon the progress we know is happening in some areas, such as funding the full spectrum of research, from bench to bedside and beyond. We are also paying particular attention to the gaps and unmet needs highlighted in the UKRRS progress report. These include the need to attract talented scientists, clinicians and allied health professionals into kidney research, and to build the evidence base of the effects of living with kidney disease alongside other health conditions.

Acknowledgements

Thank you to everyone who has been involved in helping us to develop this research strategy:

- Research Strategy Committee
 - Research Grants Committee and all our peer reviewers
 - Lay Advisory Group
 - Kidney Voices
 - UK Kidney Research Consortium
 - Grant holders past and present
 - UK Renal Research Strategy
 - Development Advisory Board
 - Readers Panel
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Ten-year objectives.

Here we state our four strategic research objectives; the things we must achieve through research over the ten-year term of this strategy to deliver for people living with and at risk of kidney disease.

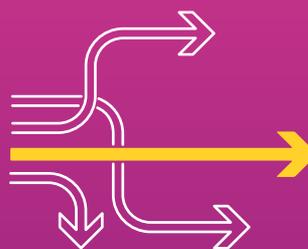
Under each objective we outline some of the areas of knowledge we must build upon to make progress. Each will require significant investment in research activity across the spectrum, from underpinning science to human and system studies.



Objective 1

To increase our understanding of kidney health and kidney disease

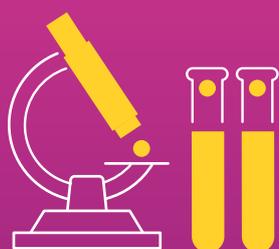
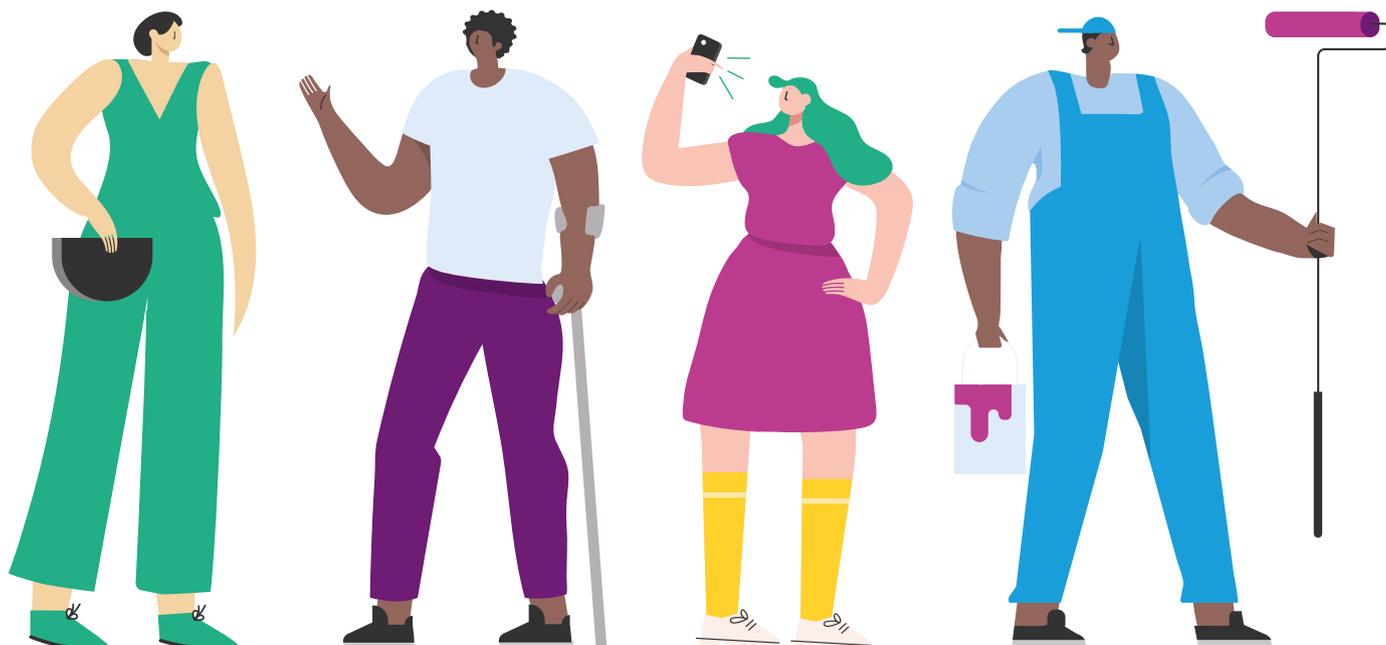
- Identify the genes and pathways involved in kidney diseases.
- Identify the tipping point at which kidney decline becomes irreversible, and the factors that determine how rapidly this happens.
- Understand the interactions between kidney health and other chronic conditions, as well as new and emerging threats such as Covid-19.



Objective 2

To find new ways to protect kidney health and preserve kidney function

- Discover how to actively protect and preserve kidney function, so that far fewer people become kidney patients or experience kidney failure.



Objective 3

To discover better ways to detect, diagnose and treat kidney disease

- Identify markers in saliva, urine or blood that can help us to detect kidney disease, before it's too late.
- Create new ways to accurately monitor disease progression including imaging, so fewer patients have to endure invasive biopsies.
- Improve current treatments and discover new treatments.



Objective 4

To utilise research evidence for improvements in kidney healthcare

- Identify how kidney care can be delivered in ways that make it safe, timely, equitable, efficient, effective, patient-centred, and environmentally sustainable.

Immediate priorities.

We are ambitious, but our resources are limited, so we must focus our energy, our people and our funds to achieve the greatest benefits for the short and long term. In our charity strategy, we identified the urgent priority areas in which we can and must make the greatest impact over the next decade. For research, these are:



Transforming treatments



We will find ways to make kidney transplants last longer, dialysis more tolerable, reduce the burden of treatment and monitoring, and improve quality of life for people living with kidney disease. We will harness and

develop technology to enable people to take control of their kidney health.

Multiple health conditions



We will investigate how kidney disease is linked to other conditions that people commonly experience at the same time, including heart disease, diabetes and mental health problems.

Health inequalities



We will highlight the inequalities of kidney disease; we will investigate why some groups of people are more at risk of kidney disease, and progress to kidney failure much faster. We will press for greater diversity in

kidney research, so that discoveries benefit everyone.

Beyond our priorities

While we will focus energy and resources into our three priorities, we will continue our efforts in other areas.

We will continue to support and enable research into rare, hereditary and paediatric kidney problems, acute kidney injury, and the health complications that come with kidney disease.

We will advance the fundamental understanding of inflammation and fibrosis, and realise the potential of regenerative medicine and imaging.

We will partner in or lead efforts to improve infrastructure for kidney research across all areas.

We will continue to support efforts to understand the impact of Covid-19 on kidney patients. And, learning from the pandemic, we will keep a watching brief on emerging threats to kidney health.

Our supporting principles.

The following six principles will be at the heart of our thinking, planning, delivery and decision-making around all areas of research in the coming years.

1. The continuum of discovery

We will enable research across the spectrum, from laboratory studies of single cells to clinical trials involving thousands of people. This is how we will transform current treatments for patients today, while building knowledge to create the treatments and prevention strategies of tomorrow.



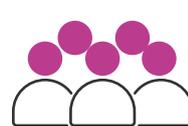
In vitro studies of cells and tissues



Pre-clinical studies



Studies involving people/patients



Population studies



Health service research

2. Collaboration and partnership

We will seek to work in powerful, progressive and innovative partnerships for kidney research that deliver more, and faster than any of us could achieve alone.

We will welcome and invite collaboration with a diverse range of charities and professional bodies, industry and commercial sector, bioscience organisations and the NHS, to drive research progress in kidney disease and linked health problems.

We will create meaningful opportunities for cross-fertilisation of ideas between patients and researchers in different fields, by establishing and supporting multi-disciplinary networks centred around kidney research challenges.

To achieve the stretch goals we've set ourselves we will need to work in new ways across specialties and across multiple healthcare disciplines. We will also need to find new ways of funding research looking at different sources including traditional and novel fundraising, the health service, other research funders, the healthcare industry, and venture capital.



Charlie Tomson, Chair of Research Strategy Committee

CASE STUDY

Networking for progress in regenerative medicine

Studies involving regenerative medicine and stem cells help us to understand how the kidney forms and works, the impact of genetic disease and damage to kidney function, and the beneficial effects of regeneration. The UK Renal Regenerative Medicine Network was established in 2017, with support from Kidney Research UK. It provides a forum for the sharing of ideas, priority-setting, support and collaboration between researchers working in the field. It is also a point of contact for companies wishing to engage in renal regenerative medicine research in the UK, and for patients interested in this exciting area. All activities are shaped by the views of people affected by kidney disease, through patient representation.

An important first output from the network was a roadmap of work to tackle kidney disease through regenerative medicine. This set out the priorities for regenerative research in the short and medium term, and the impact this will have on patients. The roadmap will inform the direction of travel of renal regenerative research in the UK.

3. Patient involvement and engagement

We involve people living with and at risk of kidney disease in everything we do as a research organisation. We make sure that their voices and experiences are heard and influence research both within the charity and elsewhere.

We use our reach to create closer connections between patients and researchers, to improve the design, delivery and diversity of clinical research, and give more patients the opportunity to be actively involved in research.

Kidney Research UK helped us set up a virtual meeting with three patients who had already seen a summary of our clinical trial. We found it really valuable to discuss the trial with the patients, particularly the 'opt out' consent process that we had proposed.

Professor David Wheeler, University College London



It was great to be included in reviewing the research proposal and being part of the video call with David and his team. As a patient, knowing that your views are being heard, listened to and acted upon directly by the researcher to influence a research project, particularly at such an early stage, makes you feel valued.

Kathryn Crocker



4. Champions of innovation

Progress can come from unexpected places, so we are not afraid to take risks, and to look beyond convention to achieve our mission.

We are providing novel routes through which people can bring new research ideas to us – our '*open door initiative*'. We will support researchers to tap into novel sources of funding, such as commercialisation or accelerator finance, to fuel discoveries.



CASE STUDY

Alternative funding

Current funding opportunities for kidney research are limited. So, to achieve a step-change we need to tap into new sources of investment.

Working with Babraham Research Campus and UK BioIndustry Association, our alternative funding programme equips kidney researchers to think like entrepreneurs as they consider how to take their research to the next level.

This programme provides training, development and support to researchers around opportunities such as intellectual property and spin-out companies.

By raising awareness of the kidney research community to new income streams, we will significantly increase the investment available for vital kidney research.

To find out more, visit

kidneyresearchuk.org/alternative-funding

KIDNEY VOICES FOR RESEARCH

Join our Kidney Voices community to see how you can get involved in research: kidneyresearchuk.org/kidney-voices



5. Investing in talent

The UK produces and attracts world-leading researchers, capable of making life-saving advances. We will share the excitement and importance of kidney research to encourage the best young researchers to 'choose kidney'.

We will advocate for sustainable renal research careers, including by establishing a ladder of funding opportunities that provide a career path in kidney research, and offer the flexibility needed to attract a diverse workforce.

I am thrilled to have been awarded a Kidney Research UK Training Fellowship to complete my PhD studies investigating antiviral immunity to cytomegalovirus post kidney transplantation. Working with the charity to address this crucial clinical problem will give unprecedented insight into this vital area of research, and kickstart my clinical academic career.

Dr Farah Latif, Cardiff University



6. Make it count

We will support researchers to think about the steps beyond discovery and be 'translation-ready', so that the potential of every piece of research can be realised for patients. For instance, we'll ensure clinical trials are efficient, inclusive and designed with patients. We'll help researchers to have conversations with NHS or public health decision-makers, or to consider commercialising their work to accelerate progress.



CASE STUDY

Kalium Health – en route to impact

In 2017 and 2018, we funded researchers at the University of Cambridge to begin to develop rapid blood tests for self-monitoring of blood potassium. Potassium levels must be kept in check in people living with kidney disease, and the researchers wanted to help provide a solution to help patients monitor and manage their blood potassium at home.

In 2019, we helped the same researchers with funding for their spin-out company (called Kalium Health), to take the development of their self-testing solutions to the next stage. The company has since been successful in applying for £150,000 from the National Institute for Health Research (NIHR) to start assessing the device's performance with volunteers in the UK. This brings us one step closer to quick, convenient and accurate at-home potassium monitoring for kidney patients and others.



Routes to discovery.

We have a range of ways through which we fund and facilitate high quality kidney research. Across each route, we apply high standards of governance and include active patient involvement in our decision-making.

Here we outline our areas of investment. For more information, and our calendar of application deadlines, go to kidneyresearchuk.org/research



Route to discovery	Areas of investment
Financial investment	Programme, project and start up grants
	Career development awards
	Directed and commissioned research
	Innovation competitions
	Biobanks and registries
Collaboration and support	UK Kidney Research Consortium (UKKRC)
	Research networks
	Research hubs
	Open Door
	Alternative funding

Description

We offer a range of grants for researchers, some funded in partnership with other organisations. Specific grants exist for applications relating to our strategic priorities (see page 8).

Our range of fellowships and studentships are for scientists, clinicians and allied health professionals at every stage of their career before tenure.

Opportunities include funding for those returning from a career break.

Many of our awards are funded in partnership with other organisations including the Medical Research Council, the National Institute for Health Research and the Chief Scientist Office.

We fund a range of studies in selected or discrete topic areas of kidney research identified either through a specific open call and competition or via a commissioned approach.

We will run a series of competitions offering several prizes for innovation projects that support the delivery of our strategic priorities. These include financial prize money and a programme of support.

We support high quality collections of kidney patient data and samples for use in research including:

- NURTuRE (National Unified Renal Translational Research Enterprise)
- RaDaR (National Registry of Rare Kidney Diseases)

Our partnership with the UKKRC, and its Clinical Study Groups and networks, provides support for early and translational research in all areas of kidney disease.

We develop, convene, administer and fund multidisciplinary networks of clinicians, scientists and patients to share insights and collaborate to accelerate progress against key kidney challenges. Current networks include:

- UK Organ Donation and Transplantation Research Network in partnership with British Transplant Society and NHS Blood and Transplant
- Dialysis research network
- Medical technology network
- Multiple health conditions network
- Renal data network

We will explore proposals to establish physical and virtual research hubs which will accelerate discovery and translation of research findings into improved clinical interventions for people living with kidney disease.

We are open to ideas that might not fit our other areas of investment, but could make a difference to people living with kidney disease. Anyone – patients, carers, inventors, industry, researchers, scientists or health professionals – can share their ideas at any time, through our 'open door'. Together, we can explore options to move ideas forward.

To make a step change in the investment available for kidney research, we are looking to new sources of finance. We will help kidney researchers understand and explore new ways to fund discoveries, for instance by tapping into intellectual property, or bioscience accelerator and start-up financing.

Measuring progress.

There is a great deal to do to achieve real change for kidney patients. Our research objectives and priorities are necessarily bold, and we will be transparent in reporting the progress made against them.

We will collect quantitative and qualitative data to measure how we're doing in meeting our research objectives, in funding high quality research, and to show where we've got to in bringing about change.

It is part of our responsibility as a member of the Association of Medical Research Charities (AMRC) to maintain high standards of research governance and fund the best quality research that has relevance to patients.

We will collect and report these data in an annual progress report.



Play your part.

Everyone has a stake in kidney health. Let's come together to achieve a step-change in the UK kidney research effort for people living with kidney disease, and those at risk.

Researchers and health professionals

- Subscribe to Research Roundup for all the latest news and grant calls. Sign up at www.kidneyresearchuk.org
- Get to know our portfolio of funding options, and apply for support, at www.kidneyresearchuk.org/research
- Join a network, see www.kidneyresearchuk.org/research-networks

Patients and carers

Join our online community Kidney Voices for Research to stay up to date with research news and opportunities to participate in studies. Go to www.kidneyresearchuk.org/kidney-voices-for-research

Everyone

- If you have a novel idea and need help moving it forward, talk to us through Open Door at www.kidneyresearchuk.org/open-door
- Support us and help us lead the step change in UK kidney research. Set up a Direct Debit at www.kidneyresearchuk.org/donate

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kidney disease ends here.

