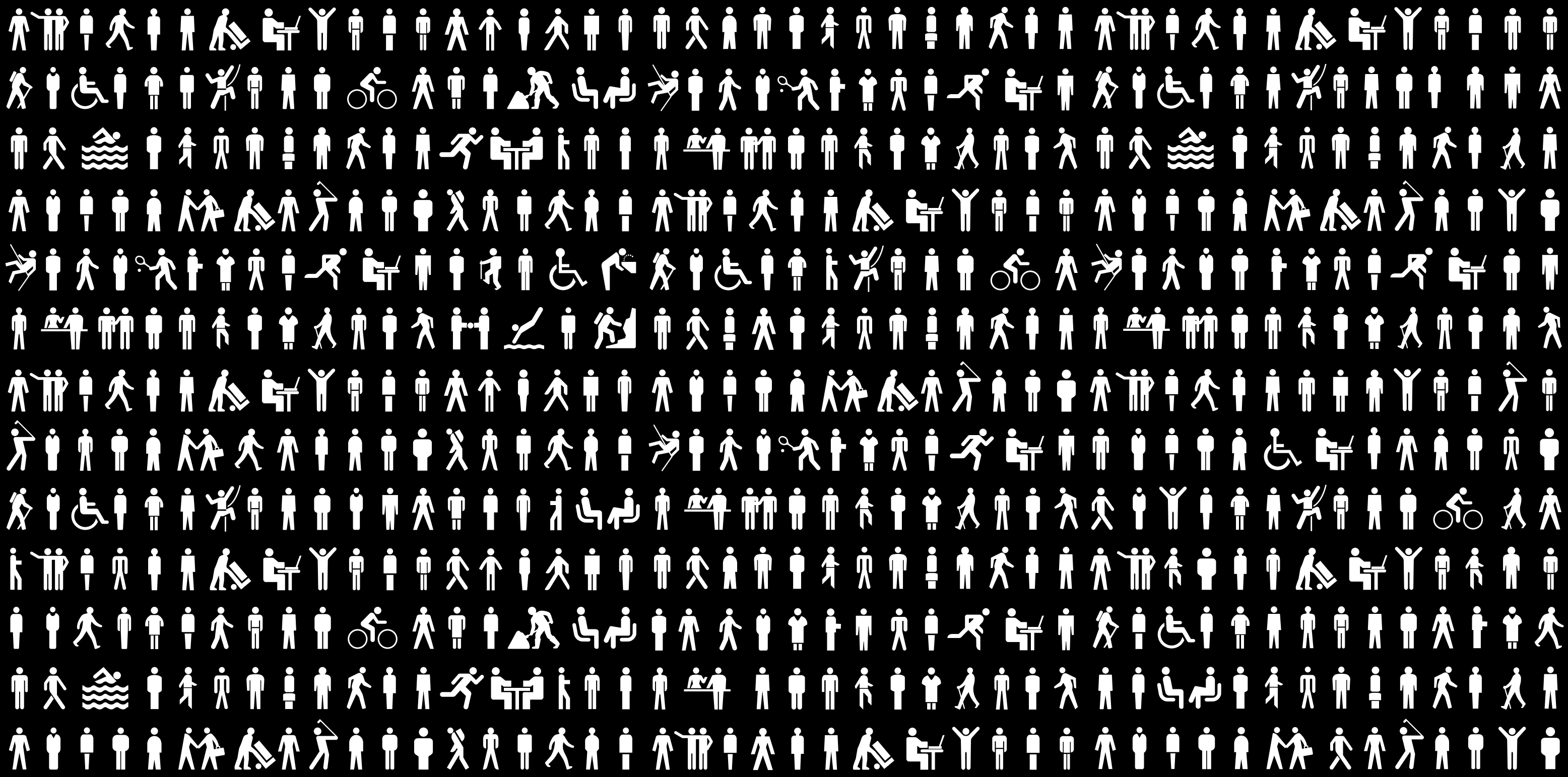


Research strategy 2015-2025

**PROSTATE
CANCER UK**





We have a bold ambition - to tame prostate cancer within a decade. This is underpinned by our ambitious ten year Research strategy, which sets out how we will invest in the most innovative ideas to accelerate the development of new tests and treatments to benefit all men with, or at risk of, aggressive disease.

Prostate cancer is not a single disease, but is made up of many different types of cancers, each with its own specific molecular make up. And as cancers grow and spread, they evolve, so detection and treatment of metastatic tumours is even more difficult than we originally thought.

This means that we need to be smarter in how we detect and treat prostate cancer at every stage. We need to develop personalised approaches for every man, and his particular cancer.

We don't have all the answers; we don't even have all the questions, but that won't stop us trying to achieve the best outcomes for men.

Ultimately, we want fewer men to die from prostate cancer. We want more men with aggressive prostate cancer to be diagnosed early, before it spreads outside the prostate, so that fewer slip through the net with advanced disease. We will also work towards better treatments for localised disease, and more effective, well-tolerated treatments for advanced prostate cancer.

We know that we won't be able to do this alone, so we aim to influence (and work in partnership with) other organisations with similar goals. Meanwhile, we will focus our resources on areas where we can have the most impact. We have identified three key areas: better diagnosis, better treatments and better prevention. Tackling these three areas will make the most difference to men with, or at risk of, prostate cancer.

Importantly for a Research strategy of this scale, we can be confident that these outcomes are eminently achievable through our robust and multi-pronged research programme. We're excited about getting started on this challenging and ambitious journey, and look forward to you accompanying us along the way.

Dr Iain Frame
Director of Research, Prostate Cancer UK





Better diagnosis

Men affected by prostate cancer tell us the most important issue they want us to fix is our inability to tell whether or not a cancer is clinically significant at the point of diagnosis. The ultimate aim of this strand of our strategy is to change this.

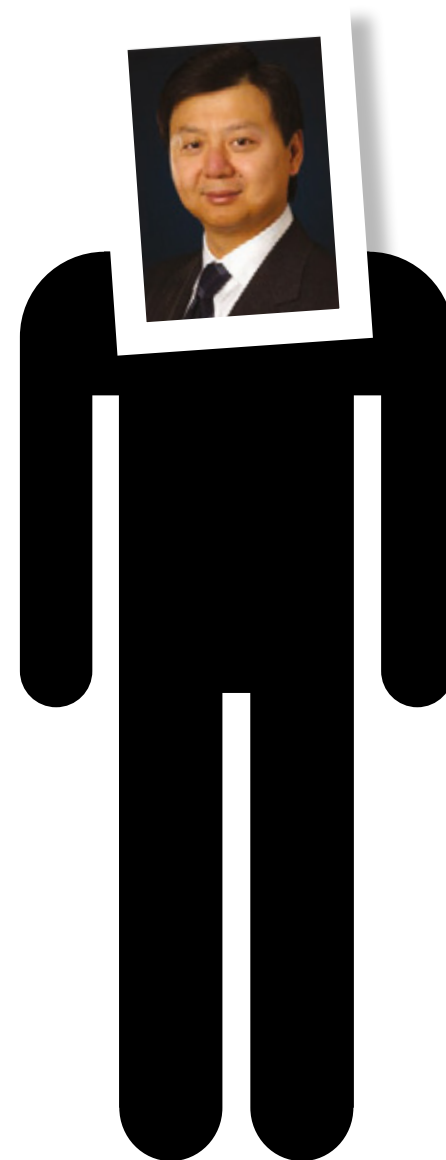
We want to increase the proportion of men whose clinically significant prostate cancer is detected before it spreads outside the prostate. And we want to reduce the number of men who undergo unnecessary biopsies, and are diagnosed with and treated for, harmless prostate cancers.

It has so far been impossible to implement a national screening programme, or to make a reliable call for every man about whether his cancer needs treatment or not. The reason? We don't have a dependable, widely applicable and easy way to assess an individual man's risk of significant prostate cancer. We will fund research that aims to turn our knowledge of biological and genetic markers into tools to improve the diagnosis of clinically significant disease. We will also

fund research to develop tests to determine whether a prostate cancer needs immediate treatment.

We will support research to develop and test a tool to predict a man's risk of significant prostate cancer. We will also continue to support research that would enhance such a tool. This is likely to be through discovery, validation and translation of other markers associated with the presence of clinically significant prostate cancer, and/or with an increased risk of developing it. Ideally, we will get to a position where we only diagnose prostate cancers that need to be treated and neither diagnose, nor treat, clinically insignificant cancers.

The foundations to help us distinguish clinically significant from insignificant cancers early in the diagnostic pathway already exist. So in this area, our early focus will be on translational research. This is where we will build strong collaborative links with other organisations and key stakeholders to help us achieve success.



Thank you to Prostate Cancer UK for taking a global leadership role in this important area of prostate cancer risk. I am truly confident that this is not only achievable, but will massively improve the outlook for men at risk of prostate cancer.

Professor Robert Nam, Sunnybrook Health Sciences Centre, Toronto



By 2025 we will have:

- Designed, evaluated and tested the feasibility of a risk-based assessment tool that can be used for first line detection of clinically significant prostate cancer within the NHS. We will have validated that it improves early detection of clinically significant prostate cancer and reduces the number of men who undergo unnecessary biopsies. We will also have ensured widespread user acceptability for men and healthcare professionals.
- Funded research into the discovery and validation of new biomarkers and molecular changes that could feed into, or complement this risk tool. We will also have ensured that the tool is flexible enough to incorporate additional risk factors and improvements as they emerge.
- Developed imaging as an effective, consistent and accessible tool for prostate cancer diagnosis.
- Helped discover which markers (biological, genetic, epigenetic and imaging) show most promise for use in diagnosis and prognosis of clinically significant prostate cancer. We will also have funded research to build on these discoveries, so that men feel the benefit as quickly as possible.
- Established partnerships to ensure that research results are translated to health benefits for men as quickly as possible.



Better treatments

We have entered a new era of prostate cancer treatment. There are now a number of treatments available, and more in the pipeline, but we still have a lot to do. Within ten years, we're likely to make the biggest difference to men by making the most of those that we already have. This includes optimising drug dosage and delivery, identifying the most effective treatment combinations, and

clarifying the benefits or otherwise of sequential drug or treatment use. At the same time, we'll continue to fund high-quality early stage research focussed on discovery and development of new therapies.

Although we welcome the wider range of treatment options available now, we don't know enough about which treatments work best for each man. We need to support research that will address this uncertainty and help stratify men according to the treatments that will work best for them.



Men with advanced prostate cancer need more treatment options. But we also need to make sure we're using those we've got as well as possible. Clinical trials (such as the UK - led STAMPEDE study) have already shown large improvements in life expectancy from using chemotherapy earlier on in the treatment pathway. Imagine what else we could achieve with more research like this.

Dr Simon Chowdhury, Consultant Oncologist, King's College Hospital

We believe that this personalised medicine approach will be achieved by using knowledge of the molecular variations within and between prostate tumours to predict how individuals will respond to different treatments. We will make it a priority to translate this evidence into clinical benefit as early as possible.

In addition, we still don't know whether some treatments could be even more beneficial if applied earlier in the treatment pathway. For example, we need to discover whether giving treatments for advanced disease to men with high-risk localised disease could increase cure rates. Alongside this, we need

to investigate new treatment pathways for prostate cancer, and to exploit ongoing work in other cancer types or disease areas. This will help us to introduce effective treatments more quickly and more cheaply than would be possible by developing new treatments completely from scratch.

Finally, we need to explore the possibility of shortening the timeline for clinical trials of both new and existing treatments, for example by investigating whether intermediate measures can replace overall survival as a clinical endpoint.



On September 17 2012, my father died of advanced prostate cancer. He was 54 years old, and I was 17. He had radiotherapy and chemotherapy, but after that he was out of options. I hope that in the future, more and better treatments will be developed for this disease, so that other men – and their families – don't have to go through what we did.

Luke Cassels



By 2025 we will have:

- Effective targeted treatments, with minimal side effects that are available to every man regardless of age, ethnicity or where he lives.
- Established the optimal use of existing treatments.
- Funded high quality, innovative early-stage research that will eventually lead to new first-in-field treatments for prostate cancer. We will also have ensured the timely transfer of research to other funders to develop, if appropriate.
- Supported the development of new drugs, and the repurposing of existing drugs for use in prostate cancer. This will include development of drugs that target the androgen receptor in novel ways as well as research investigating targets other than the androgen receptor.
- Developed new tests to predict treatment response based on an individual's molecular make-up and that of his prostate cancer.
- Developed imaging as an effective and consistent tool to monitor responses to treatment.
- Ensured that intermediate endpoints are validated, accepted by regulators, and used in clinical trials to help speed up the development and appraisal of new treatments.

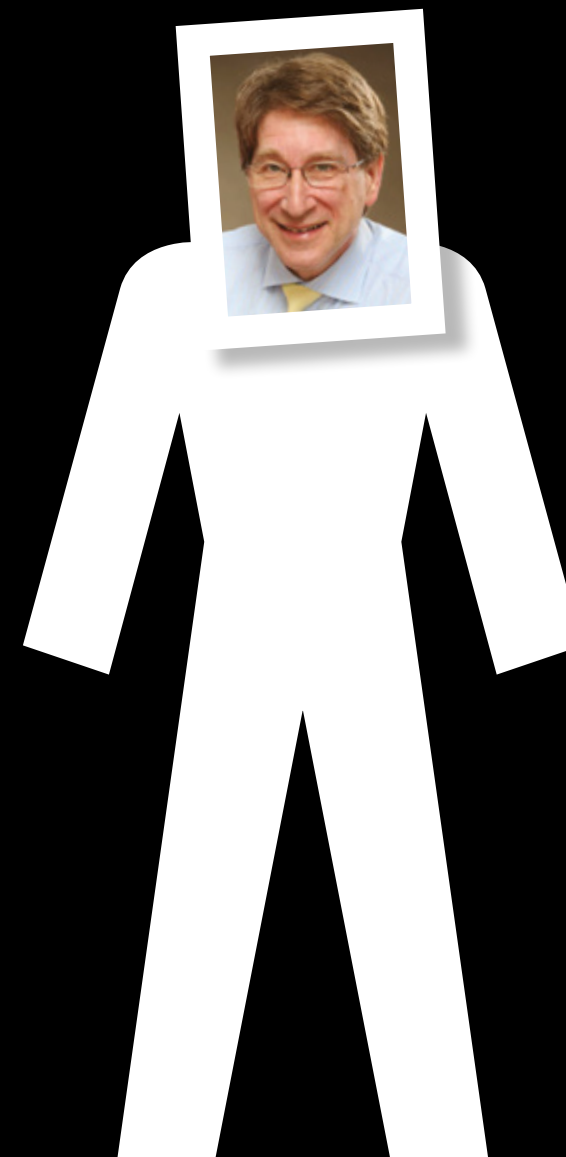


Better prevention

A successful prevention strategy can only be based on a deep understanding of how prostate cancer starts and develops. To get to this stage, we will need further research into the basic biology of the disease. We will fund work in this area, if it's clear that it will add significantly to our understanding and inform future work on prevention. We will also support research into prevention of prostate cancer recurrence after initial treatment.

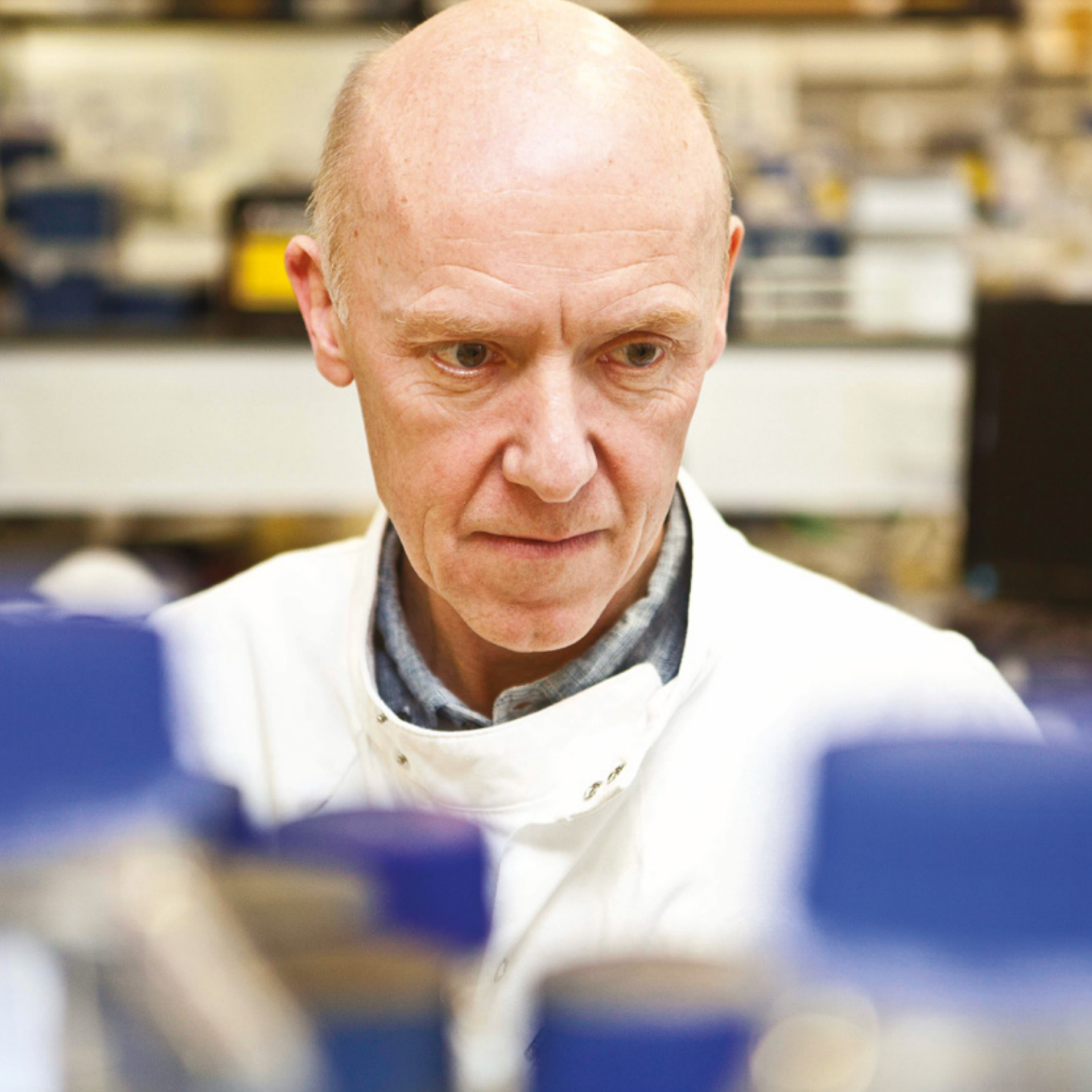
A number of clinical trials into prostate cancer prevention are ongoing, and we don't intend to duplicate these efforts by commissioning our own large-scale clinical trials. In general, we need more information about prostate cancer prevention before we can act. Therefore, we will keep a watching brief for scientific developments, particularly around preventative immunotherapies, dietary and lifestyle interventions, and chemoprevention strategies.

Further research into prostate cancer prevention is a longer-term priority for us. We will target this research towards men at highest risk of significant prostate cancer. As conclusive evidence emerges, we'll work in partnership with other funders, governments and industry to help men adopt appropriate diet and lifestyle changes that could minimise their risk of prostate cancer.



Prostate cancer recurrence, disease that comes back even after a first treatment like surgery or radiotherapy, is still a big problem. But it's one that we can – and should – address. It's heartening to see that this area of research is being prioritised in Prostate Cancer UK's new Research strategy.

Professor Malcolm Mason,
Cardiff University



By 2025 we will have:

- Funded research to investigate whether there are any events that trigger prostate cancer growth and whether those early events may be preventable.
- Collated any strong evidence about modifiable risk factors like diet, exercise or environmental exposure that might reduce prevalence at a population level.
- Supported research into prevention of prostate cancer recurrence after successful initial treatment.
- Implemented the results of research into prevention of prostate cancer recurrence, to improve cure rates from radical treatments.
- Gained a far greater understanding of the genetic changes (inherited or acquired) that drive prostate cancer to become aggressive, and how we could potentially target these changes to prevent deaths from prostate cancer.





Approach

Over the next ten years we will regularly review progress of the Research strategy to capitalise on new research findings as they arise.

Be flexible and nimble:

- We will support the best research that has the greatest potential for change, conducted by the best researchers, wherever they are based.
- We will learn from, and act on, research in other diseases.
- We will ensure that research results are translated into health benefits, by working in partnership within and outside our organisation.



In developing their new Research strategy, Prostate Cancer UK has demonstrated a strong understanding of not only the current state of prostate cancer research, but also of the external research and healthcare environment. This strategy conveys a clear sense of direction and a detailed picture of what needs to happen for them to succeed. It's ambitious, but it's firmly grounded in reality.

Dr Chris Parker, Chair of the NCRI Prostate Cancer Clinical Studies Group

Our partners will include:

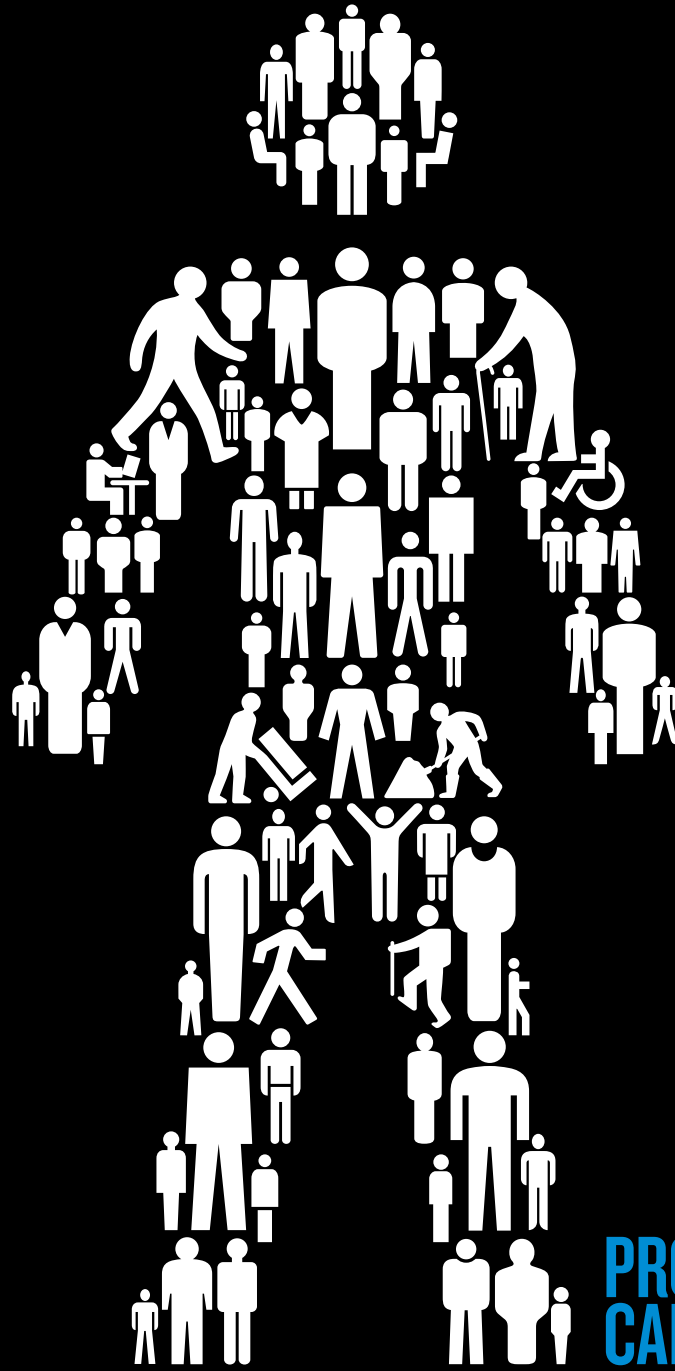
- Men affected by prostate cancer, their families, partners and carers.
- International experts in research and in the delivery of prostate cancer treatment and care.
- Other research funders across the world.
- Other interested stakeholders who can help to ensure that research results are put into practice.

To ensure that our world class research programme directly benefits men we will:

- Continue to meet the Association of Medical Research Charities' guidance on best practice.
- Be aware of research activity and outcomes, and use that knowledge to tackle the most pressing issues in prostate cancer.
- Monitor and evaluate the outcomes of our research to ensure that we use the knowledge we gain to best effect, either by funding further research or by supporting translation into clinical practice.

- Use innovative approaches to fund the best research.
- Fund Research Innovation Awards, Training and Leadership Schemes and Major Strategic Awards such as the Movember Centres of Excellence.
- Establish an effective knowledge translation programme.





**PROSTATE
CANCER UK**