



Prostate Cancer  
Foundation of Australia

ISSUE 88 | AUGUST 2024

# BLUE SKY NEWS

## BIOMARKER BREAKTHROUGHS

Groundbreaking  
research set to  
save lives

## THE RISE OF ALPHA THERAPY

How targeted  
nuclear medicines  
are destroying  
prostate cancer

## STRIKING BACK AGAINST PROSTATE CANCER

All you need  
to know about  
the NanoKnife

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Cover Photography:  
West Australian Newspapers Limited

## ADVENTURE AWAITS

### Father's Day giveaway

Win a \$500 4WD Supacentre Gift Voucher. Our good friends at 4WD Supacentre have donated a \$500 gift voucher for one lucky supporter. Email enquiries@pcfau.org.au by Friday 30 August to go in the draw and live like an Adventure King.



Visit [www.4wdsupacentre.com.au/](http://www.4wdsupacentre.com.au/)



Jeff Dunn and Steve Callister

## Your fighting fund

A warm welcome to the August edition of Blue Sky News. In this issue, we'll profile cutting-edge research giving new hope to men with prostate cancer, and their families.

This issue also includes a groundbreaking study into biomarker testing that could more reliably predict patient outcomes, and a new form of hormone therapy treatment showing promising results in clinical trials. We will also examine how artificial intelligence is being deployed to ramp up the fight against prostate cancer.

Thank you for your ongoing support, and we hope you enjoy this issue.

**Adjunct A/Prof  
Steve Callister AM**  
National Board  
Chairman

**Professor  
Jeff Dunn AO**  
Chief of Mission and  
Head of Research

### With your Will, we can find a way.

If you or your family have been affected by prostate cancer, please consider leaving a gift in your Will to PCFA's Prostate Cancer Future Fund.

By doing this, you are supporting our aim to eliminate prostate cancer as a life-threatening disease for all Australian men. Please call our team today on 1800 22 00 99 to find out more.

For wording, go to [pcfau.org/wills](http://pcfau.org/wills)

## NEVER MORE NEEDED THAN NOW:

# Expert nursing support for Aussie men

*A groundbreaking report has revealed the life-saving role PCFA nurses play in reducing emergency department presentations among men with prostate cancer.*

An independent report has found highly trained Specialist Nurses reduce emergency department presentations and hospitalisations among men with prostate cancer by 60%, prompting calls from experts to expand specialist nursing services for men living with the disease.

The University of Queensland's Centre for the Business and Economics of Health's findings also show that PCFA nurses save the healthcare system as much as \$20m each year.

"The report highlights a range of important and life-changing outcomes for men as a result of our nursing program, including more timely and rapid referrals, greater compliance with treatment, reduced costs of care, and shorter wait times," says Adjunct Professor Sally Sara, PCFA's Director of Nursing.

"Our hospital-based service has provided nearly 500,000 occasions of care over the past nine years, including more than 200,000

consultations for men who live more than 100kms from a major city and face a 24% increased risk of death due to the tyranny of distance."

According to the report, at least three in five emergency department visits for prostate cancer are preventable.

"Our service provides comprehensive and personalised nursing care that can only be provided by specialists who have been trained in the complexities of managing prostate cancer," Adjunct Professor Sara says.

"Importantly, evidence also shows that our service enhances health related quality of life as well as clinical outcomes, which is

important to overall wellbeing."

Prostate cancer survivor and Gulf War veteran Paul Bain, now 54, credits the service with helping him cope after he was diagnosed with aggressive disease at age 50.

"The diagnosis came completely out of left field for me and blindsided me. Dealing with all the implications of the disease has been challenging, to say the least, with ongoing of treatment and the emotional, mental and physical fatigue that come with it.

"To have specialist nurses who understand what we're going through is just fantastic and provides peace of mind during what can be a really tough time." ♦



Prostate cancer survivor and Gulf War veteran Paul Bain

Call 1800 22 00 99 to connect with PCFA's Specialist Nursing Services.

# Biomarker breakthroughs

*A groundbreaking new research project funded by PCFA could pave the way for more accurate diagnosis and treatment.*

Australian scientists could be on the cusp of identifying precise biomarkers for prostate cancer, making it easier to identify and treat the most deadly forms of the disease.

The research could help thousands of Australian men living with low-risk forms of prostate cancer.

“Around one in five newly diagnosed men have a low-risk form of prostate cancer, equivalent to nearly 5,000 men diagnosed each year in Australia,” says PCFA Chief of Mission and Head of

Research, Professor Jeff Dunn AO.

“Of these, around 80% will go onto Active Surveillance, allowing clinicians to monitor the cancer to see what it does. For many of these men, the cancer will remain non-threatening, but for around one in three, it will become aggressive and spread.

“We urgently need to find ways of knowing which cancers are deadly, so we can treat it more rapidly and minimise all risks to the man’s life.”

That’s exactly what a new PCFA-funded research project is doing, led by Dr Jessica Logan of the University of South Australia.

“We’ve developed a biomarker panel that allows us to help pathologists interpret the cancer’s pathology, and in doing so, more reliably predict patient

outcomes,” she says.

“Being able to know which cancers will progress is critical to patient survival, so our research is about trying to get that balance right.”

The project builds on 15 years of work.

“This technology has been validated and implemented into clinical practice in the US, but is not currently available in Australia. This new funding from Prostate Cancer Foundation of Australia could change that,” Dr Logan says.

“Men in the US undergoing prostate cancer diagnosis can access biomarker testing. What we hope to achieve with the PCFA funding is to create a data set that will allow us to commence clinical trials that eventually bring the technology to Australian men and then men around the world.

“When we talk to prostate cancer patients, we hear that they feel a lot of anxiety around whether or not their cancer is progressing,” Dr Logan says.

“Being able to provide a patient

**“Being able to provide a patient with a clearer, more accurate prediction of their likely treatment pathway or their disease pathway is a really important thing to do.”**

*Dr Jessica Logan of the University of South Australia.*

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PCFA has large-scale plans to fund more work like this under the organisation’s Prostate Cancer Future Fund.

“Our hope is that this groundbreaking research, and more like it, will lead to more tailored and targeted treatments,” Professor Dunn says.

“Our ultimate goal is to eliminate deaths from prostate cancer, in our lifetime, by funding research that saves lives.” ♦



➤ Donations to the Prostate Cancer Future Fund can be made via [pcfa.org.au/donate](https://pcfa.org.au/donate)



# New horizons for hormone therapy

*Australian researchers believe Bipolar Androgen Therapy may provide hope to thousands of men at risk of treatment resistance.*

It's known as BAT, and could knock prostate cancer for six.

Bipolar Androgen Therapy is rapidly emerging as a game-changer for men with higher risk forms of prostate cancer, with early trials demonstrating its potential to help prevent or delay treatment resistance in men on hormone therapy.

With funding from PCFA, researchers at Monash University hope to unlock the most effective sequencing of the experimental treatment to save lives.

"Around 40% of men diagnosed with prostate cancer will undergo hormone therapy, or androgen deprivation therapy (ADT), at some point in their treatment," says Monash University Research Fellow Dr Nicholas Choo.

"The aim of hormone therapy is to lower male hormones so that we starve prostate cancer cells, but this type of treatment is not without its issues.

"Firstly, many patients with advanced prostate cancer eventually develop resistance to hormone therapy and other standard treatments, and secondly, men on continuous hormone therapy experience significant side-effects such as fatigue and loss of muscle mass and sexual function."

Bipolar androgen therapy, or BAT, provides a promising alternative.

"During BAT, men on hormone therapy receive sufficient amounts of testosterone so that they rapidly alternate between high and low levels of testosterone.

"In practice, that means that while on ongoing hormone therapy, men would receive intramuscular injections of testosterone every 28 days, which could help re-sensitise cancer cells to the treatment and prevent resistance.

"The cyclical nature of BAT also offers intermittent relief from the side-effects associated with ongoing hormone therapy, improving men's quality of life."

There are a number of BAT trials taking place in North America, Brazil and Australia, where

the treatment is being evaluated in various phases of clinical trials either on its own or in combination with other therapies.

The endpoints include PSA and radiological response rates, safety and tolerability. To date, clinical trials have shown that BAT is effective in around 30% of patients.

The goal of this new PCFA-funded research is to increase that percentage.

"Our research aims to improve the response rate of BAT, by combining it with other treatments," Dr Choo says.

"Ultimately, we want to find an outstanding BAT combination that improves the efficacy of this treatment."

The research may also pave the way for breakthroughs in other areas.

"Understanding the mechanisms through which the combination works will be just as important, as this can also improve patient selection for this new treatment," Dr Choo says.

"Our work is very interested in the mechanisms through which BAT elicits its effects on cancer cells, which are still not well understood, with opportunities for our research to make a profound contribution in this space."

The research is being conducted in collaboration with Australia's first clinical trial of BAT.

"This project aims to conduct concurrent, complementary experiments that address questions that cannot be answered by clinical trials alone," Dr Choo says.

"We are hopeful that our collaborations could help speed up progress, providing an active pathway for translating our own findings into new and larger-scale clinical trials." ♦

**The cyclical nature of BAT also offers intermittent relief from the side-effects associated with ongoing hormone therapy, improving men's quality of life.**

*Dr Nicholas Choo, Monash University Research Fellow*

➤ For more information on emerging research go to [prostate.org.au](http://prostate.org.au)

# All you need to know about the NanoKnife

*For men with intermediate-risk prostate cancers, contained in less than half of the prostate gland, NanoKnife therapy provides a game-changing treatment option that allows eradication of the cancer with minimal side-effects.*

Can a bolt of lightning beat prostate cancer?

For Professor Phillip Stricker, the answer is yes. As one of Australia's leading urologists, he has helped to pioneer NanoKnife therapy, which involves eliminating tumour cells with more electricity than a lightning bolt out of the stormy blue sky.

"You can't underestimate the potential of this technology," Professor Stricker says.

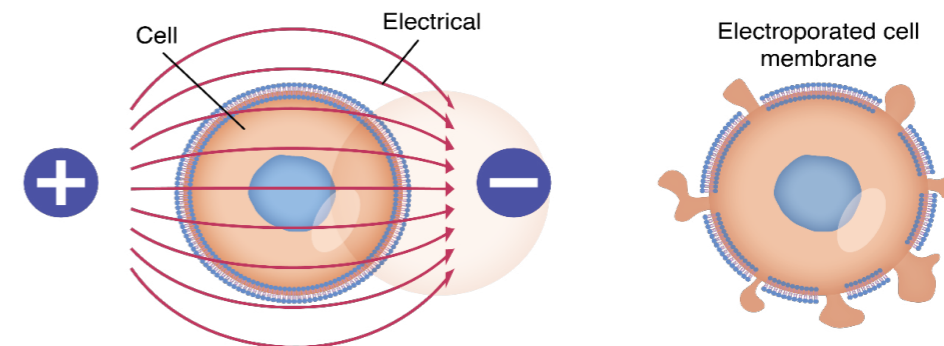
"It saves many men from undergoing

more invasive treatments, minimising unwanted side-effects."

NanoKnife is a form of Irreversible Electroporation, or IRE.

"Of the different energy sources used to treat local prostate cancer, these can largely be separated into thermal energies using freezing and heating and non-thermal energies.

"Thermal energies such as cryotherapy, high intensity focused ultrasound and laser therapy



**Above: NanoKnife is a form of Irreversible Electroporation that destroys cancer cells without using thermal energy, targeting prostate cancer with precision to induce cell death and ablate tumour tissue.**

destroy all tissue including cellular and non-cellular elements as well as nerves and blood vessels and major structures such as rectum, bladder and sphincter. Furthermore, it is difficult to reliably get heat and cold into some tissues with high blood flow and calcification.

"NanoKnife is a non-thermal ablative energy which selectively destroys cells whilst preserving non-cellular tissue elements.

"Needles are placed into the prostate via the skin behind the scrotum and a high-power electrical current is passed between the electrodes to destroy the cancer and a good safety margin of a minimum of 1 cm of surrounding tissue.

"It has low toxicity on critical anatomical structures such as vessels, nerves and organs such as the rectum, bladder and urinary sphincter.

"This makes this technology particularly attractive in the prostate where structures such as the neurovascular bundle which

**With high success rates with up to 10 years of follow-up in practice, NanoKnife is well worth considering for men with intermediate-risk prostate cancers.**

**Professor Phillip Stricker AO, Head of St Vincent's Prostate Cancer Research Centre**

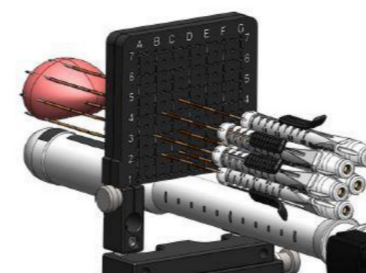
supplies erections, the rectum and the sphincter are very close by.

"Furthermore, this energy source is extremely reliable in destroying the tissue irrespective of the nature of the tissue. Finally, this is a repeatable treatment whereas other therapies such as brachytherapy and radiotherapy are not."

After the treatment patients stay in the day surgery unit for two to four hours and are discharged with a catheter in place.

"Postoperatively pain is minimal and patients are discharged with tablets for mild pain, moderate pain, bladder spasms and relaxation of the prostate and antibiotics as required," Professor Stricker says.

"With high success rates with up to 10 years of follow-up in practice, NanoKnife is well worth considering for men with intermediate-risk prostate cancers." ♦



**The technology allows immediate real-time visualisation of target areas in and around the prostate, minimising risks of damage to surrounding cells.**

➔ To find out more, phone 1800 22 00 99 and ask to speak to a Specialist Nurse about NanoKnife.

# The rise of Alpha Therapy

*Australia is fast becoming a powerhouse for research into Alpha Therapy, developing targeted nuclear medicines that destroy deadly cancer cells.*

Australian researchers are accelerating work on the development of next generation treatments in the fight against prostate cancer, with a new PCFA-funded project set to support men battling metastatic disease.

“For every 10 men diagnosed with prostate cancer, around three will go on to develop a more aggressive form of the disease,” says National Health and Medical Research Council Investigator and University of Queensland Fellow Dr Kevin Koo.

“The main problem is trying to identify those men who will go on to develop metastatic prostate cancer, and sparing the others from any unnecessary procedures or treatment.”

Dr Koo has just been awarded PCFA funding to investigate the

biological mechanisms behind Alpha Therapy, in a bid to make the emerging experimental treatment even more effective.

“This is cutting-edge research, being delivered in collaboration with a project team from AdvanCell, who have developed a PSMA-targeted nuclear medicine known as PSMA-212 Pb Alpha Therapy for treating metastatic castration-resistant prostate cancer.

“The development of PSMA-targeted Alpha Therapies builds on what we have learned from the creation of radioligand therapies that harness beta agents to target cancer cells at the molecular level and minimise harm to surrounding tissues.

“This new Alpha Therapy has the potential to wipe out tumours more effectively and to harness

the patient’s immune system in helping to eradicate tumour cell growth,” he says.

Evidence has proven the power of Alpha Therapies in extending longevity and enhancing quality of life, although researchers lack a detailed biological understanding of the mechanisms by which Alpha Therapy works.

“With most of these radiotherapies, they will be applied and then we’ll see the tumour shrinking — physically, on an imaging scan,” Dr Koo says.

“There’s very little biological understanding of what is actually happening, like what biological pathways are actually driving the shrinking of the tumours.

“This lack of understanding becomes especially problematic when patients develop

radioresistance, as almost all eventually do.”

The PCFA-funded work is aiming to fill this knowledge gap.

“By carrying out a molecular analysis of patient blood samples from the study, our hope is to identify the biological signals that predict resistance.

“The main aim of this research is to predict which patients will end up developing resistance to this radiotherapy. If we can do so earlier, we can then use a more targeted approach to treat those patients,” Dr Koo says.

Dr Koo is working as part of a multidisciplinary team at the University of Queensland’s Centre for Clinical Research, something

**“This new Alpha Therapy has the potential to wipe out tumours more effectively and to harness the patient’s immune system in helping to eradicate tumour cell growth”**

**Dr Kevin Koo, National Health and Medical Research Council Investigator and University of Queensland Fellow**

he thinks will be an advantage for this and other projects.

“I’m a biotechnologist, but I work closely with urologists, with clinicians who are on the frontlines

treating patients, with industry partners,” he says. “And we’re all working together towards this one common goal of trying to better detect and cure prostate cancer.”

While the research is still in early phases, Dr Koo is hopeful that within a few years the findings could help clinicians more accurately determine how patients will respond to targeted radiotherapy.

“It’s a Phase 1 trial, so at the moment we’re obtaining blood samples from patients who are in early stages of radiotherapy treatment. If all goes well, within three to five years we should be able to narrow down some of the biomarkers that predict resistance to the therapy.” ♦

➔ For more information about clinical trials, call 1800 22 00 99 or go to [prostate.org.au](http://prostate.org.au)

## HIS FATHER'S SON:

# A legacy of integrity

*Businessman John Poynton is no stranger to risk, having worked his way up from the floor of the Perth Stock Exchange to become one of Australia's most successful corporate advisors. But he's less well known for having survived prostate cancer, after taking evasive action in the wake of his father's own death from the disease.*

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"My father was a man of integrity - even as a young man I felt a certain pressure to live up to his standard," John says.

"When I reached my final years of school, I asked my father what he thought I should do, wanting to follow him into stockbroking. Instead, he set out a long list of skills and experiences he thought I should develop before settling on a career path.

"It was wise advice."

At age 72, John is the Co-Founder and Chair of corporate advisory firm Poynton Stavrianou, applying decades of experience in company strategy and capital market management.

In parallel with his career as an investment banker and equity strategist, John has also been an active non-executive director of ASX-listed companies, government and education bodies, and not-for-profit organisations.

He remains a non-executive chair of Strike Energy and is also a non-executive director of Perth Airport, having served on the boards of ASX, Multiplex, Alinta, Crown and Austal, as well as fulfilling roles for the Federal

Government as a director of the Export Finance & Insurance Corporation, the Reserve Bank of Australia's Payments System Board, and the Higher Education Endowment Fund.

To top it all off, John recently completed his 10-year term as a Guardian of Australia's sovereign wealth fund, the \$200 billion-plus Future Fund.

An experienced pilot with a commercial helicopter licence, he appreciates the importance of awareness and risks.

"My father died of prostate cancer primarily because of the lack of diagnosis early enough to catch it before it had gone too far," he says.

"Early detection made all the difference for me."

It's a subject John has rarely been quoted on, until now.

"It affects so many men, but because of certain sensitivities, we're often not really prepared to talk about it."

"There's still a tendency for a bit of a blokey culture, and the 'tough guy' thing means men don't always listen to the signals their bodies are sending them," he says.

Having recently accepted a role on PCFA's Prostate Cancer

Future Fund Committee, John's impact as a community leader and philanthropist continues to expand.

"We are putting the building blocks in place to increase awareness and funding," he says.

"It's a holistic approach, addressing this scourge on all fronts. This involves a combination of getting more and more people involved, articulating the message, raising awareness, and once you've done that, being able to better tap into a network of people and organisations that can provide financial support for the mission.

"It's a fantastic and long overdue initiative, because, as we've already seen with other cancers, when you support researchers and clinicians, it has a demonstrably beneficial impact.

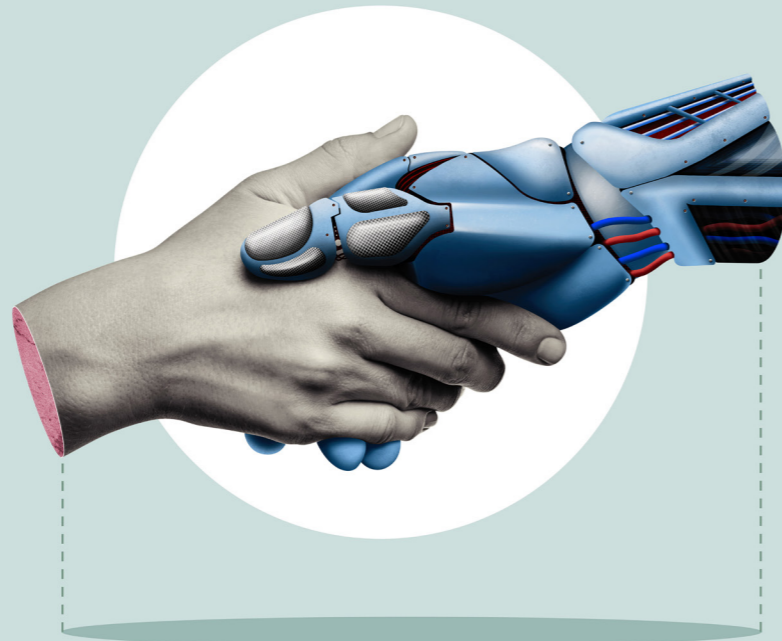
"The money is being carefully invested in a better future for Australian men and families.

"Ultimately our goal is to deliver new treatments and therapies that allow men to take control of their own diagnosis and treatment, so that we can eliminate deaths from this disease, in our lifetime." ♦

➔ Donate to the Future Fund by calling 1800 22 00 99 or via [pcfa.org.au/donate](https://pcfa.org.au/donate)

# A BOLD NEW WORLD: **Combatting cancer with Artificial Intelligence**

*Advances in Artificial Intelligence have opened the door to a world of new knowledge on prostate cancer, revealing powerful pathways for diagnosing and treating the disease.*



You may have seen the headline in a recent article in the Australian Financial Review, 'AI beats the experts at detecting prostate cancer'.

The story is one of many promising developments in oncology, reporting that scientists had developed an AI system that outperformed human experts in detecting clinically significant prostate cancers, with 50% fewer false positives.

Likewise, an international team of researchers recently applied AI inspired by neural networks in the human brain to discover two distinct subtypes of prostate cancer, in a finding that could revolutionise how the disease is treated.

"This study is really important because until now, we thought that prostate cancer was just one type of disease. But it is only now, with advancements in artificial intelligence, that we have been able to show that there are actually two different subtypes at play," says researcher Professor Colin Cooper.

The project used whole genome sequencing analysed by AI to identify differences in the DNA of nearly 200 tissue and tumour samples from men with prostate cancer.

The study found two clear groups of cancer among the samples, integrating the data into

evolutionary branches to depict how the two subtypes of prostate cancer develop.

This finding may help scientists to create genetic tests which can better tailor treatments to each individual patient, saving countless lives.

"One thing is clear," says PCFA's Chief Executive Officer Anne Savage, "A one-size-fits-all approach is a thing of the past.

"Our goal is to harness the Prostate Cancer Future Fund to accelerate the application of AI in practice, developing new treatments and therapies that provide men with world-leading and personalised care.

"There is no question that AI has much to teach us about what causes prostate cancer and how it can be beaten, and we're ready to ride this new wave of discovery to save men's lives." ♦

Phone 1800 22 00 99 to donate to the Prostate Cancer Future Fund or online at [pcfa.org.au/donate](http://pcfa.org.au/donate)

## LATEST NEWS: Progress in prostate cancer from around the world

We are proud to be part of a worldwide community working to combat prostate cancer. Every day, our work helps to inform new developments in the diagnosis and treatment of prostate cancer at home and abroad. Read more about what's in the news right now.

### Three new genes identified as drivers of deadly cancer



Researchers have discovered three new genes believed to be responsible for prostate cancer metastasis, providing hope that the genes can be targeted to stop the spread of disease. The findings were revealed following the use of advanced genome sequencing technologies, which allow researchers to better understand the molecular triggers for the growth of aggressive tumours.

Read more [pcfa.org/4eJB6z4](http://pcfa.org/4eJB6z4)

### MRI a must in minimising prostate cancer risks



New research has found that the use of MRI in screening for prostate cancer can help eliminate unnecessary biopsies and minimise risks of harm from overdiagnosis and treatment. The findings follow a systematic review and meta-analysis of more than 80,000 men across 12 different studies.

Read more [pcfa.org/3xJYXxZ](http://pcfa.org/3xJYXxZ)

### Patient-centred pathology proves pivotal to patient care



A landmark Australian study has found that patient-centred pathology reports have the potential to significantly enhance patient understanding of prostate cancer and strengthen knowledge retention for weeks after surgery and treatment, improving overall health outcomes.

Read more [pcfa.org/3VZjhF6](http://pcfa.org/3VZjhF6)

### Low PSA provides reliable prognostic marker for patient survival



A study of nearly 2,500 men has found that a low PSA at three and seven months after commencing treatment for metastatic hormone-sensitive prostate cancer can be a reliable predictor of longer survival, regardless of when hormone treatment commenced.

Read more [pcfa.org/3RHRnef](http://pcfa.org/3RHRnef)

Subscribe to our monthly newsletter via [enquiries@pcfa.org.au](mailto:enquiries@pcfa.org.au) or call 1800 22 00 99





# MAKING PROSTATE CANCER HISTORY

Conquer 72km for Australian men  
with prostate cancer this September.

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[thelongrun.org.au](https://thelongrun.org.au)



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