



## A Turning Point in the Prostate Cancer Puzzle

Researchers at the Basil Hetzel Institute for Translational Health Research (BHI) are making new and exciting findings in the field of prostate cancer research, supported by generous donors through Australian Prostate Cancer (APC). Head of the Cancer Biology Group, Dr Grant Buchanan and Postdoctoral researcher, Dr Damien Leach are at a real turning point in their journey in piecing together the puzzle that is prostate cancer, a disease affecting one in four men before the age of 85.

### Is 80 the New 60?

Through his research with Dr Leach, Dr Buchanan thinks it is becoming more important to look at cancers in older men. With men now living longer and healthier, it's important that men within this age bracket are still appropriately informed of their anticipated life-expectancy and treatment options.

"There is an assumption within the health profession and the community that if for example, an 84-year-old man is diagnosed with prostate cancer, he will die with the prostate cancer and not from it," Dr Buchanan said.

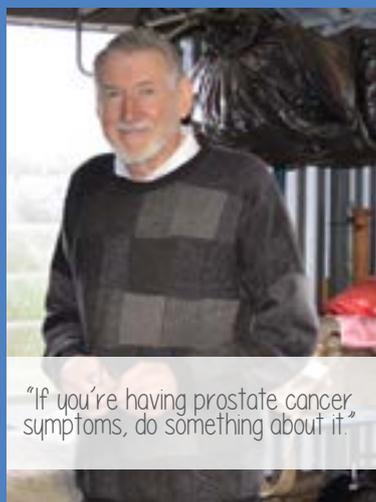
"However, in a cohort of South Australian men we've recently been studying where the average age is around 85, around half were found to have actually died as a direct result of their prostate cancer."



Dr Buchanan is interested in looking at prostate cancer in older men to ensure these men are well informed and treated appropriately.

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## "Research is Vital" - A Patient Perspective



"If you're having prostate cancer symptoms, do something about it."

An avid motorbike rider, when Graeme was diagnosed with prostate cancer ten years ago he was uncertain how it would change the active lifestyle he was accustomed to.

"Up until age 70 I was in good health and I thought I would live forever," said the now 80 year old great grandfather.

During a regular visit to the GP Graeme was told his PSA level had risen to 3.47 and follow up

tests confirmed he had prostate cancer.

"I wasn't at all surprised because my father had prostate cancer and he died from it," he said.

Luckily for Graeme his cancer was contained within the prostate, however the day after open surgery he suffered internal bleeding and was back on the operating table.

"I had spoken to men before my surgery who told me it would be a piece of cake, but mine wasn't."

Whilst faced with setbacks Graeme remained positive

and recovered quickly.

Now ten years on, he still rides his motorbike every Sunday morning and just recently celebrated his 50th wedding anniversary.

"Without surgery I wouldn't have had the last ten years."

Drawing on his experience to support others, Graeme strongly believes in encouraging men to have regular check-ups, particularly if prostate issues run in the family.

"We know it is hereditary and that is why I keep telling my son to have regular check-ups," he said.

"My advice – if you are having prostate cancer symptoms, do something about it. Do some research and get a second opinion, but most importantly don't ignore it."

Graeme has monthly blood tests to monitor his PSA level and is a strong advocate for research into prostate cancer to improve people's recovery process after surgery.

"I believe research is vital in keeping men's quality of life after treatment exactly as it was before."

Regrettably in the last few months Graeme's PSA levels have continued to rise and his cancer has returned.

"Despite my advice to others, I should have appreciated that the rise of my PSA levels in the past few months were of significance."

True to his style Graeme remains positive and has begun radiotherapy treatment.

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"Because many men of this age can now still expect to live longer, we may need to rethink the need for more definitive treatment.

"On the other hand, it's interesting when you consider today's 65-year-olds, who in the health setting are considered as being appropriate for geriatric assessment.

"These days many men of that age are only just entering the formative years of their life – many are still working, while others are travelling, staying fit or enjoying retirement.

**"If you're a 65 year-old now diagnosed with prostate cancer, certain treatments may decrease your quality of life, which may be another 25 years."**

"This brings us to an interesting paradox. If we could predict how aggressive the prostate cancer was at diagnosis, you could decide which older men needed to be treated actively, and for which younger men treatment was not necessary or could be delayed."

Now at a point where they've been able to make a new discovery which can determine the aggressiveness of the cancer and how it will affect your lifespan, Dr Buchanan believes there is the long term possibility of applying new therapies in clinical practice.

### Setting the Scene with Past Research

Getting them to the stage they're currently at, Dr Leach's PhD research was focused on the cells (fibroblasts) that surround prostate cancer, how these interact with the cancerous tumour and specifically how androgens (testosterone) work within these fibroblasts to affect the cancer.

During his studies, it was discovered that if there is little action from androgens within these fibroblasts then it is more likely the patient will be diagnosed with prostate cancer.

Dr Buchanan explained this is interesting in regards to the age phenomena, as a man's testosterone level significantly declines as he gets older.

"Fibroblasts look like they are more sensitive to age related decline in testosterone than the cancer cells and this dysfunction might explain why some people are getting aggressive cancer, and some are not," he said.

### Paving the Way With Current Research

Dr Leach is now exploring what the androgen does within the fibroblast and how that relates to a patient's positive outcome for prostate cancer.

The current research has shown that androgens do a significant amount, most importantly they control the production of the extra cellular matrix (ECM), which is essentially a net of proteins that surrounds all cells in the cancer environment.

"I identified that through altering the amount of androgen action in the fibroblast it changes the structure of this net," said Dr Leach.

The role of the ECM is to hold cancer cells in place. If the net can be strengthened it will stop the spread of cancer cells. However, if it is weakened it may allow the cancer to escape from the prostate and spread to other parts of the body.

"Now I am looking into mechanisms for how to control and



Dr Leach believes the future is bright in this area of research and hopes to play a key role in stopping the spread of prostate cancer

strengthen the net to stop the spread of prostate cancer."

### The Future

The future is bright for this research area and both researchers are now investigating a way to influence the proteins which control how the fibres within the ECM network interact with each other, to essentially control the gaps between the net and make it stronger.

**"Ultimately we are hoping to find a way to influence these proteins to control the ECM and stop the spread of prostate cancer."**

"In the future we hope to further this research by looking into the effects of radiation therapy on fibroblasts and how this may interact with patient outcomes," said Dr Leach.

Dr Buchanan would like to continue research in this field, with the shorter term goal of running a clinical trial to determine better survival and quality of life outcomes for both young and old patients. Then within ten years, the goal is to apply new therapies to clinical practice that prevent aggressive cancers, regardless of a patient's age, from becoming lethal.

The Cancer Biology Group at the BHI is very appreciative of the support of the Australian community through APC, which has allowed them to advance their research in collaboration with researchers at Monash University in Victoria and the South Australian Prostate Cancer Clinical Outcomes Collaborative.



This research would help men over the age of 80 choose the appropriate treatment for their prostate cancer, enabling them to live life to the fullest.

## Forever in Her Heart - Anne's Story

After experiencing back pain and going back and forth to the doctors for several months Anne's father, Robert, was diagnosed with prostate cancer.

"He was diagnosed on his 45th birthday. I was only 21," Anne said.

"His body was riddled with the deadly disease. The cancer was like freckles throughout his body.

"Apart from the back pain, Dad had no symptoms. He just looked a bit tired."

If prostate cancer is caught in its early stages, before it spreads, it is generally curable. Unfortunately for too many men, prostate cancer has very few symptoms in its early stages. Symptoms like Robert's back pain often occur when the cancer has spread – which is usually too late.

While Robert's cancer was aggressive and the doctors gave him only three days to live, he was not going to give up easily.

Robert surpassed the three days he was given and lived for another 14 months.

On the Friday of the June long weekend Robert rang his family and told them he was admitting himself to hospital.

"That's when we knew the time had come," Anne said.

Bringing her wedding forward a year in the hope her dad would make the special day – sadly it was too late.

Robert passed away when he was only 46 years old.



United with friends, Anne hosted a Longest Table to #forkcancer with her friend Jane on June 20 this year.



With the memory of her father forever in her heart, Anne will continue to raise awareness of prostate cancer for years to come.

"I miss him. I hate that he's not here; especially that he's missed out on meeting my daughters. He would be so proud," she said.

"He tried his hardest to get there but we didn't expect to have another year with him so it was nice to have a last Christmas and Father's Day.

"A lot of our families' friends have all had scares but because of dad, they all get checked out once a year and if they've been diagnosed, got rid of it and been ok.

"I guess it's a positive from a negative. Our family friends have learnt a lot from the whole experience."

### Inspired to #forkcancer

On the June 20th this year, Anne together with her close friend Jane hosted a Longest Table to raise money for cancer research.

Their motivation to hold the event was personal with both their fathers having battled prostate cancer.

With 20 guests, Jane and Anne hosted a night to remember with a beautiful outdoor set up, raffles and a delicious five course meal. Together they raised an amazing \$1,601.

**In 2016, The Longest Table will be held on June 18th – you can register your interest at [thelongesttable.com.au](http://thelongesttable.com.au) and make sure you save the date!**

## A Timely Reminder - Keep Your Prostate in Mind!

Every September is Prostate Cancer Awareness Month and a time to remember that you can decrease your risk of prostate cancer by:

1. Eating a healthy diet and reducing your intake of red meat. Substitute this with fish that is high in omega-3 fatty acids such as tuna and salmon!
2. Exercise regularly – this could be swimming, running, walking or a gym class. According to research, maintaining a healthy body weight will decrease your risk of developing prostate cancer.
3. Avoid smoking and limit your intake of alcohol to moderate amounts.
4. Have regular check-ups with your doctor and yearly PSA tests, particularly if you are aged over 50 years or have a family history of prostate cancer.

## A Trip Worthwhile

The Rotary Club of Coromandel Valley has recently hosted the River to Rail Outback Tag-along Adventure raising an amazing \$10,000 for Australian Prostate Cancer (APC).

Run over eight nights, the tour commenced at Wentworth NSW on Saturday the 30th of May and travelled to Peterborough, SA where it ended on June 6th.

Kicking off with a paddle boat ride at the junction of the Darling and Murray Rivers, the 14 cars then made their way to Broken Hill, stopping at Tilpa Station for an Italian themed dinner extravaganza along the bank of the Darling.

From there the cohort travelled to Silverton where the local CFS was waiting with a bonfire and feast, before finishing up at the inaugural sound and light show at Peterborough Steam Town Museum.

To further boost their funds raised for APC, a number of auctions were held along the way with items donated by local CFS groups.

The masterminds and leaders of the Rotary Club's expedition; Terry Crabb, Don Ward and Ken Spratt, are thrilled with the amount of money raised and the number of people who got involved in the event.

"Since the tour we have sent out questionnaires to everyone involved and without exception they all had a wonderful experience," Terry said.

"We look forward to planning another expedition next year."

Having now conducted tag-along tours for five years, this was only the second tour specifically hosted to raise



(l-r) Ken, Terry and Dom who headed up the expedition raising vital funds for APC.

money for prostate cancer.

"It tracks back to a tag-along trip we did with our friend Brian who died of prostate cancer," Terry said.

"In memory of Brian we decided to host another tour and donate the funds raised to medical research into prostate cancer."

With one in four men diagnosed with prostate cancer, the tour was also a means of raising community awareness.

"Prostate cancer claims a lot of lives and it needs greater exposure - we were pleased to push that particular bandwagon," Terry said.

"Without research a cure will never be found and this demonstrated why we need to support research into this disease," added Don.

APC is incredibly grateful for the support from the River to Rail Group and look forward to working with them again in the near future!

## Running for a Cause

Made up of 12 nurses from a urology ward at SAN Hospital in Wahroonga, QLD, Team Prost8 raised over \$2,500 for Australian Prostate Cancer in the City 2 Surf!

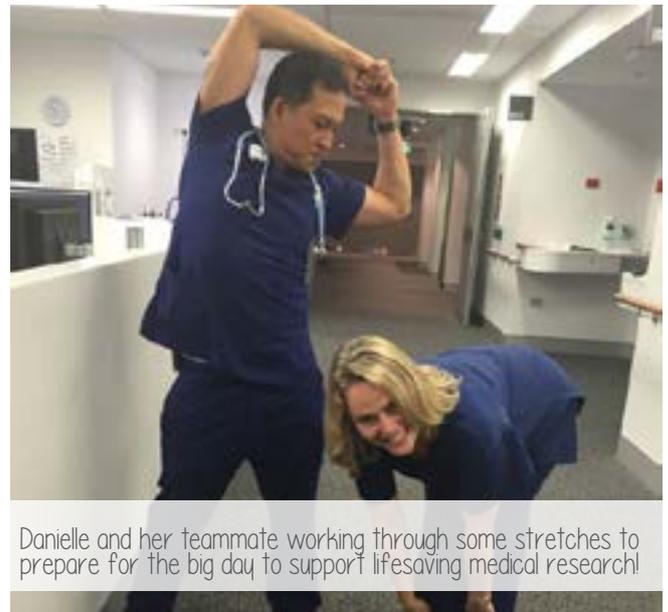
"We decided to support prostate cancer because we feel that there is a lot more awareness and support for breast cancer than for men," nurse Danielle Stone said.

"We wanted to do something positive for the ward and raise awareness for our patients who have prostate cancer – the exercise was an added bonus!"

Their family, friends and doctors that they work with all contributed to their cause – helping them to exceed their original fundraising target!

"It was a great day, the weather was fantastic and there was a great energy in the team! I think we accomplished what we set out to do."

Australian Prostate Cancer would like to thank the Prost8 Team for choosing to support life changing research!



Danielle and her teammate working through some stretches to prepare for the big day to support lifesaving medical research!

If you would like to support world-class prostate cancer research by hosting your own event please email [events@ausprostatecancer.com.au](mailto:events@ausprostatecancer.com.au) or call us on (08) 8243 1101.

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