Queensland researchers make cancer treatment breakthrough

Brisbane local, Eddie Chen is a living testament to the great work of QIMR researchers and power of the human body.

After being diagnosed with nasopharyngeal carcinoma (NPC), an aggressive throat cancer, two years ago, Eddie agreed to participate in a QIMR trial using an experimental treatment where his own immune system would be bolstered in the laboratory and then used to fight his cancer.

Following the procedure, Eddie now shows no signs of cancer, is back at work, feeling healthy and enjoying time with his family.

“My health is going from strength to strength. I feel healthier now than I ever have, with a whole new outlook on life,” Mr Chen said.

This trial was the culmination of 10 years of collaborative research between scientists from QIMR and The University of Hong Kong (HKU) Li Ka Shing Faculty of Medicine. It used immunotherapy, a process where the disease is successfully fought by the body’s own immune system.

QIMR’s Professor Rajiv Khanna said by enhancing the immune cells they have doubled the survival time of terminally ill NPC patients.

“NPC is associated with Epstein-Barr virus (EBV) infection which makes it a bit different to other cancers, in that the presence of EBV in the cancer cells gives the body’s immune system a definite target. This results in few side-effects,” Professor Khanna said.

“Patients who participated in the trial were in the late stages of the cancer and quite unwell, so it was important to ensure the treatment was non-invasive, non toxic and did not damage healthy cells.

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We are all aware of the importance of team work and QIMR is no exception. Local and international collaborations and partnerships are the cornerstone of our research and strengthen our research opportunities and improve outcomes.

QIMR’s commitment to collaboration has been highlighted by two exciting partnerships right here in Brisbane. QIMR has recently teamed up with the Princess Alexandra Hospital (PAH), The University of Queensland (UQ) and the Translational Research Institute (TRI) to open a specialised Brisbane based research centre for head and neck cancers.

The $15 million facility will be largely based at PAH and TRI and will carry out research to understand, prevent, diagnose and treat head and neck cancer in Australia and internationally.

Head and neck cancers are becoming more common in Australia, with over 2,000 deaths each year, and are a significant health issue for our Asian neighbours in China, Vietnam and India.

Establishing this new research centre will allow us to educate and train doctors, health professionals and scientists; vaccinate against viruses linked to cancers; and improve screening and diagnosis.

Funding from The Atlantic Philanthropies, the Queensland Government and the PAH has made the establishment of this Centre possible and the work we will be able to carry out will offer benefits well beyond our state’s borders.

In the area of infectious disease, QIMR has joined forces with UQ to tackle global problems.

The Australian Infectious Diseases Research Centre will bring together researchers from these two organisations to support research into diseases such as malaria, dengue fever and schistosomiasis.

Both organisations have pledged funds to support joint PhD scholarships and to nurture collaborations in infectious diseases research.

The combination of expertise from both QIMR and UQ will ensure rapid progress is made in the detection, understanding, treatment and prevention of a range of infectious diseases problems.
“By offering such targeted treatment, we were able to increase the expected time of patient survival from 200 to over 500 days, which is an extremely positive result.

“We believe that if we offer this treatment in the earlier stages, accompanied with chemotherapy and radiation, we can further enhance survival rates.

Twenty-four NPC patients were recruited at the Queen Mary Hospital, the teaching hospital of HKU and the trial was also expanded to the Princess Alexandra Hospital in Brisbane.

Blood was taken from patients then transported to QIMR where the white blood cells were grown and trained to specifically recognize EBV infected cancer cells. These trained immune cells were then infused into the patients where they selectively killed EBV infected cancer cells.

“While there is not a high incidence of NPC in Australia, it is common amongst our population from South-East Asian background and our neighbours in China, Indonesia, Thailand and many other countries in the South-East Asian region. Our work may hold the key to treating other cancers with a link to a specific virus such as glioblastoma and EBV associated lymphomas,” Professor Khanna said.

Asthma study update

QIMR is launching a trial to investigate if a readily available rheumatoid arthritis medication could have applications for asthma sufferers.

Geneticist Dr Manuel Ferreira from QIMR recently led an international study which identified genetic changes that increase the risk of asthma.

“Our study discovered that this gene is already a target for drugs that treat rheumatoid arthritis and we are eager to see if we can use this medication on patients with asthma.

“Thanks to the support of the Queensland Government through their Smart Futures Fellowships, we will be trialling the drug on small number of asthma patients that have been participating in QIMR’s asthma study.

“Asthma impacts one in 10 Australians and can have a debilitating effect on their quality of life, so it is exciting to be able to look at possible future treatment options.

“Asthma is complex and there is still so much to understand about this disease, but trialing this potential treatment will hopefully offer more treatment options for sufferers.”

The trial is expected to take three years and 200 asthma sufferers will be tested for suitability, then narrowed down to 32 participants.

Dr Ferreira leads the largest Australian study of asthma genetics – the Australian Asthma Genetics Consortium – which has brought together the top asthma experts from across the country to try to identify genes that increase the risk of asthma.

“There is still the opportunity for people to become involved with the asthma study at QIMR, with the potential of participating in the drug trial,” Dr Ferreira said.

If you have been diagnosed with asthma by a doctor and are interested in participating in the study please call 1800 257 179 or visit www.asthma.qimr.edu.au.

Committee vacancy

The QIMR Animal Ethics Committee (AEC), established to ensure the maintenance of ethical standards in research with laboratory animals and compliance with regulatory guidelines, has a vacancy for a lay person.

The ideal candidate will have a demonstrable commitment to, and an established track record of involvement in furthering the welfare of animals. Candidates for this position have never been employed by or associated with the QIMR, and are not involved in the care and use of animals for scientific purposes.

No formal qualifications are required. Veterinarians with specific animal welfare interests and experience with improving the welfare of animals would be welcome to apply. For selection criteria or more information please contact QIMR-AEC Secretary, Ms Jo Chow on (07) 3362 0259 or Jo.Chow@qimr.edu.au

Applications close 27 July 2012.
The 2011 Rio Tinto Ride to Conquer Cancer was a great success, with over 1300 riders helping raise $4.7 million for cancer research at QIMR. Some of these funds are already making a great difference and are helping our scientists research different forms of this deadly disease. Here are two of the wonderful projects the ride has made possible.
Understanding the causes of skin cancer

Researchers aim to improve our understanding of the causes of skin cancer and develop a tool that will assist GPs in preventing and diagnosing this terrible disease.

Each year, more than 2,600 Queenslanders are diagnosed with melanoma, and more than 250 people die from melanoma. The numbers afflicted by non-melanoma skin cancer are so large as to be deemed ‘unable to be counted’. The costs of diagnosing and treating skin cancers dwarf those of all other cancers.

Professor David Whiteman from QIMR’s Cancer Control Laboratory is currently carrying out the largest skin cancer research study ever conducted in Australia – Q-Skin. The study aims to document the skin cancer experience of over 43,000 Queenslanders over a 10 year period. Each participant has answered questions about a range of factors that may prove to influence skin cancer risk: previous sun exposure, number of freckles and moles, skin type, family history of cancer, and many other factors.

By linking this information with Medicare records, QSkin will provide comprehensive information about people’s skin cancer risk, explore the causes of melanoma, quantify the burden of skin cancer on the Queensland community, and develop risk prediction tools for clinicians.

Through this knowledge, we hope to gain a better understanding of how skin cancers develop and who is at greatest risk.

Researchers will then develop a tool that doctors and patients can use to predict a person’s future risk of developing melanoma and other skin cancers – with prevention the ultimate goal. For example, doctors may be able to identify people at high risk of developing skin cancer, who can be offered regular skin checks.

Response to chemotherapy in ovarian cancer patients

Funds raised by the Rio Tinto Ride to Conquer Cancer will allow Associate Professor MacGregor to identify the genes which explain why there are differences in response to chemotherapy in ovarian cancer.

Ovarian cancer affects more than 1,200 Australian women each year and only 40% of women diagnosed survive more than five years.

Women diagnosed with ovarian cancer typically undergo surgery, followed by chemotherapy. However, the effectiveness of chemotherapy varies widely. Some women respond well, whilst others are exposed to the toxic effects of a treatment with little health benefit.

The project will examine 300,000 pieces of DNA in more than 200 women who respond well to chemotherapy and compare with those from women who respond poorly to the treatment.

The ability to predict drug response could help identify patients who will not respond to chemotherapy and allow the selection of a potentially more effective treatment.

If successful, this research will yield a test which can be routinely used to provide individualised chemotherapy and improved outcomes in women with ovarian cancer.
Professor Michael Breakspear at work on FaceLab
QIMR is working to understand depression and other mental health issues by tackling them head on with the help of cutting edge technology.

QIMR’s Mental Health and Complex Disorders Research Program Coordinator, Professor Michael Breakspear said by using state of the art equipment, his team hopes to develop an accurate, non-invasive tool to effectively diagnose a range of mental disorders.

“We are analysing recordings of people’s facial expressions and eye movements taken whilst viewing emotionally charged film clips and identifying differences in depressed patients compared with healthy people from the general community,” Professor Breakspear said.

“We have found that people suffering with depression tend to show fewer facial expressions during funny and sad film clips and we believe this difference may be used to better diagnose mental illness.”

Professor Breakspear and his team are studying the brain activity of study participants using the latest brain imaging and computer modelling to better understand the causes and physical impacts of mental illness.

“Our aim is to work very closely with patients when they first present for assessment – prior to receiving treatment. The information collected will provide us with a better understanding of the impact these mental illnesses have on thinking and brain function and help identify causes of disturbances in basic day to day functioning,” Professor Breakspear said.

“Depression is one of the most common of all mental health problems. At least one in five Australians will experience major depression sometime in our lifetimes, and about half of people with depression also suffer from anxiety disorders.

“Mental illness can impact every facet of your life and your family’s life, yet still so many mental illnesses are misunderstood.

“Ideally, through improvements in diagnosis and management, our research aims to improve the quality of life for those with a mental illness.

“We hope our work will also reduce the stigma of mental illness so it is considered equal to physical illnesses.”

Professor Breakspear is looking for healthy volunteers to participate in his research. If you’re between 18 and 85 years old and interested in helping, please contact 07 3845 3850.

What is depression?

Depression is more than just a low mood – it is a serious illness. While we all feel sad or low from time to time, some people experience these feelings intensely, for long periods of time and often without reason. People with depression find it hard to function every day and may be reluctant to participate in activities they once enjoyed.

Depression symptoms include: feeling sad, down or miserable most of the time, losing interest or pleasure in most of your usual activities, changes in weight, appetite, and sleep patterns, poor concentration, lack of energy, and difficulty thinking.

Men are less likely than women to seek help for depression, but are more likely to turn to alcohol or other drugs when they are depressed. As a result, depression in men often goes unrecognised and untreated. This is reflected in the statistics for suicide rates. Four times more young men than young women commit suicide and in the past 30 years, the suicide rate for males aged 15 to 24 years has tripled.

If you’re suffering with depression and need support, call Lifeline on 13 11 14.

More information about depression can be found at the Black Dog Institute www.blackdoginstitute.org.au, Beyond Blue www.beyondblue.org.au or SANE Australia www.sane.org
Luke’s swim

In March, John and Lee Ogden held a fundraiser with a difference: braving the chilly Victorian weather to hold a 10 hour swim-a-thon to raise funds for QIMR’s Ataxia-telangiectasia (A-T) research.

John and Lee’s son, Luke suffers from A-T, a rare genetic condition that causes neurodegeneration, reduced immune response, premature ageing and cancer development.

QIMR is presently conducting the only A-T research in Australia. Our research is examining the gene responsible for this disease, which usually repairs damaged DNA. If the gene is not functioning properly, it can cause cells to malfunction all over the body, hence the variation of symptoms in A-T.

John and Lee’s swim-a-thon was a resounding success, raising over $22,000 for this vital research.

Thank you for your hard work and support, John and Lee!
Blackwater CountryCo leant its support to QIMR’s cancer research by holding an art show in March. The CountryCo gang’s art show displayed art with an Australian outback theme, featuring canvas works and sculptural pieces assembled with saw blades and other farm-based equipment.

CountryCo owner and manager Greg Hardgrave has long supported cancer research, but with the help of employee, Lynelle Karrasch, they decided to do a fundraiser with an artistic twist. Lynelle worked closely with local artists Pamela Partridge and Kathy Hawkins to bring together a great collection of art and help raise funds for QIMR.

CountryCo’s art show raised over $5,000 for QIMR’s cancer research. Thank you for your support!

Putting the ‘art’ in heartfelt support!

The Rio Tinto Ride to Conquer Cancer is a two-day, 200 kilometre cycle experience that helps support cancer research hear at QIMR. Most who participated in the first event last year will say it was amazing, but a testing experience. However, those battling cancer face an even bigger challenge and the Ride honours their fight and determination.

In February 2011, following a fall on a dance floor resulting in a broken leg, Brittany Johnston was diagnosed with osteosarcoma in her left femur. Brittany was an exceptional young woman, in that she saw her accident a blessing, because it meant the tumour was found and could then be treated.

Despite enduring months of pain and treatment, including being in traction for three months, rounds of chemotherapy and a femur bone replacement, her spirit stayed strong – even seeing her sign on to take part in the 2012 Rio Tinto Ride to Conquer Cancer.

Brittany’s fundraising page showed an enormous strength of character beyond her 19 years, “I always kept in mind that there is always someone who is worse off than me, however, we are all just trying to fight cancer, trying to beat it and then trying to get back to living our lives afterwards…”

Sadly, Brittany lost her battle with cancer on 4 May 2012.

Endometriosis and ovarian cancer link

As part of an international study, QIMR researchers have confirmed a link between endometriosis and ovarian cancer.

QIMR researcher, Dr Penny Webb said that women with a history of endometriosis, a sometimes painful condition linked to infertility, can have a higher rate of three types of ovarian tumours. These findings may improve future efforts in diagnosing this often-missed cancer.

“Our research found that women who have suffered with endometriosis have more than three times the risk of developing clear-cell ovarian cancer, more than double the risk of endometrioid ovarian cancer, and an increased risk of low-grade serous ovarian cancer when compared to women without endometriosis,” Dr Webb said.

“Previous studies have suggested these cancers were linked with endometriosis, but our research which included data from 13 different studies of almost 8,000 women with ovarian cancer and more than 13,000 women without cancer, has confirmed this link.

“Detection of ovarian cancer can be incredibly difficult as there is no screening test. The symptoms such as bloating or abdominal pain are very common and can be attributed to many other factors, so they often do not spark any concern.

“Defining risk groups is important for any type of cancer and confirming this link between endometriosis and ovarian cancer is a step in the right direction to better understanding this disease and may help us narrow our focus for future screening.

“We certainly do not want to worry women who suffer with endometriosis, because most women with the condition do not develop ovarian cancer, but we do want doctors to be aware of this increased risk.”

About endometriosis

Dr Webb said ovarian cancer affects more than 1,200 Australian women each year and only 40% of women diagnosed survive more than five years.

Endometriosis is estimated to affect approximately 10% of Australian women and occurs when the tissues that usually line the uterus start to grow on the outer walls of the ovaries, fallopian tubes, bowels and other nearby areas.

Currently, the causes of endometriosis are still unknown. Surgery and pain management are currently the only treatments for endometriosis and there is no cure.
Your details

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account, please call 1800 993 000 to request a form.

Would you like further information?

☐ I am considering providing for QIMR in my Will –
please send me information.
☐ I would like to take a free tour of QIMR.

Please post this form (no stamp required) to:
Queensland Institute of Medical Research
Reply Paid 70885
ROYAL BRISBANE HOSPITAL QLD 4029
A receipt will be sent to you shortly.

Thank you
Your generosity is appreciated

Upcoming event

The 21st Corneys Gentleman’s Charity Luncheon is just around the corner, with the annual event raising vital funds for QIMR’s prostate cancer research.

Come and enjoy a delicious lunch, with beer and wine, and plenty of entertainment from MC, Sam Kekovich; speaker, Alan Jones and comedian, Vince Sorrenti.

Friday 24 August at Jupiters Casino, Gold Coast.
Tickets $150 per person, or $1500 for table of 10.
For more information or to buy your ticket please call Rachael Greany on (07) 5507 5109 or email rachael@ebg.com.au

Upcoming tour dates

Did you know that QIMR holds regular tours and information sessions for members of the public?

Our tours are a great opportunity to learn about the latest in medical research, meet a scientist and see a working laboratory. Tours are run every month!

- Tuesday 31 July
- Tuesday 28 August
- Tuesday 25 September

We also run personalised tours for community groups, so call us today!

We also offer the opportunity for all members of the community to join us and hear about the exciting research taking place right here in Brisbane at QIMR.

Information sessions

AUGUST
1 August...5:30pm for a 6pm start
The future of cancer research
QIMR, 300 Herston Road, Herston

OCTOBER
10 October...10am for 10:30am start
Ageing and Mental Health
QIMR, 300 Herston Road, Herston

To book at spot at our information sessions or to book a free tour of the Institute, please call 1800 993 000 or email enquiries@qimr.edu.au

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