

The Caring Edge

OF RESEARCH

Not many people may know or fully understand Calvary Mater Newcastle's important role in world-class cancer research. As part of National Medical Research Week, which began on 4th June 2010, *Hunter Lifestyle Magazine* caught up with some of the Hunter's top female researchers based at the Mater to discuss how they are leading the way in the 'caring edge of research'. STORY LAURA JACKEL, CALVARY MATER NEWCASTLE IMAGES DEAN OSLAND

The impact of a cancer diagnosis is one of the most confronting situations the human spirit will ever endure, not only for the patient but for their family and friends. Will I live? Will I die? What will happen to me? What is the best available treatment?

All over the world, researchers are working to try and find new ways to ease the pain and discomfort of patients with cancer and answer their questions by investigating new drugs and improved treatment methods.

Researchers at Calvary Mater Newcastle work hand in hand with the University of Newcastle, hospital clinicians, Mater patients and community members on world-class research projects that are contributing to the global fight against cancer. Although the Mater may be a relatively small facility, the level of research being produced is extremely competitive.

Calvary Mater Newcastle's Chief Hospital Scientists, Dr Lisa Lincz and Dr Jennette Sakoff and Hospital Scientists Dr Jayne Gilbert, Madhu Garg and Fiona Scorgie, represent the larger Mater research team that works to find cures and treatments for a number of illnesses every day. They may only occasionally work together, but they are united by a refreshing love for their work, passion for science and a desire to make a difference.

Dr Jennette Sakoff, Dr Jayne Gilbert and Madhu Garg have recently returned from the 101st American Association of Cancer Research (AACR) conference, the biggest cancer conference in the world, where they presented findings from some of their most exciting research projects to date.

"Dr Lisa Lincz, Madhu Garg and I have been working on a project that we know will make a huge difference to the lives of cancer patients around the world. We have been working with

colo-rectal cancer patients to develop a simple blood test that can determine the patient's 'blood age', said Dr Sakoff.

Blood systems age over time and this is not always related to a person's chronological age, but is best measured by the length of a patient's telomeres.

WHAT IS A TELOMERE? A telomere (pronounced tel-oh-meer) is a repetitive DNA sequence at the end of a human chromosome that protects it from deterioration. The study of telomeres is currently a hot area of interest and Australian Molecular Biologist, Professor Elizabeth Blackburn, won the 2009 Nobel Prize for Medicine for her work in this area.

Telomere length is affected by lifestyle factors including unhealthy diet, too much stress and over exercising.

"We discovered that patients who had shorter telomeres, which equates to an older "blood age", are more likely to experience extreme haematological toxicity (adverse reaction) following intense chemotherapy treatment," said Dr Sakoff.

"The resulting decline in circulating white blood cells leaves patients prone to infection and fevers which can seriously impact upon their treatment.

"Now we can test for this information through a simple blood test, we can tell immediately if someone can cope with high or low levels of chemotherapy and potentially modify or tailor the treatment to suit the individual."

"The benefit of this study is not only for colo-rectal patients but for any cancer patient receiving chemotherapy. It is amazing to think that it is our Mater patients that are providing us with this information that will go on to help people around the world receive individually tailored cancer treatment," said Dr Lincz. ▶



Above L-R: Dr Jennette Sakoff and Dr Jayne Gilbert from Medical Oncology and Dr Lisa Lincz and Fiona Scorgie from the Haematology Department at Calvary Mater Newcastle.



Clockwise: Dr Jennette Sakoff , Fiona Scorgie, Dr Lisa Lincz and Dr Jayne Gilbert the Hunter's top researchers based at the Calvary Mater Newcastle

The research teams of Drs Sakoff and Lincz are about to commence the next phase of this exciting research project with a clinical trial. Once again, patients and volunteers from the Hunter will be taking part to further develop our knowledge about telomeres and tailoring cancer treatment.

Another major research project presented at the AACR conference is a 12-year study for Dr Sakoff that has more recently involved Dr Gilbert. This project involved the development of new chemotherapy drugs or "compounds" for the treatment of cancer in collaboration with Dr Adam McCluskey, a medicinal chemist from the University of Newcastle.

"It is fascinating to work with new compounds that we have created and that the world has never seen before. Some of these new drugs are showing real promise and are currently undergoing pre-clinical testing," said Dr Sakoff.

A well known Mater research success story relates to trailblazing Kempsey man Ron Bannerman OAM, who back in 1998 was given just months to live after being diagnosed with a rare form of leukaemia. With nothing else to lose and by showing extreme bravery, Ron was given a combination of conventional treatments and the highly toxic substance of arsenic that had been used in traditional Chinese medicine.

Dr Lincz said Ron's treatment was an amazing breakthrough; he has essentially been in remission now for 11 years. The use of arsenic in Ron's particular strain of leukaemia is now being used around the world and we are currently conducting an Australia-wide study looking at tailoring arsenic treatment for different patients, as each person metabolises arsenic very differently.

Ron Bannerman OAM and the community of Kempsey have since raised an inspirational \$100,000 for haematological research at the Mater.

Not all research conducted at the Mater relates to cancer; there are many other areas including research in palliative

care, cardiovascular and stroke patients, and toxicology and pharmacology. As a complete aside from their work with cancer research, Dr Lincz and Fiona Scorgie work with renowned Clinical Toxicologist Dr Geoff Isbister researching how blood clots after a venomous snake bite from a number of Australian and Sri Lankan snakes.

"I analyse blood from snake-bite patients from all over Australia and Sri Lanka. Although the snakes are different, their toxins are similar in that they can cause widespread clotting in humans, and we know very little about how this occurs. By unraveling these mechanisms, Geoff's work is changing the way clinicians manage bites, making treatment much safer for snake-bite victims," said Fiona Scorgie.

Whatever the research project, local researchers are incredibly lucky, as unlike other parts of Australia, the Hunter boasts a near 100% participation rate by patients in research projects and the Mater is the second highest recruiter in NSW for haematological clinical trials.

"We are lucky in many ways, as not only do we conduct world-class research at the Mater but we also get to meet and work directly with the patients that are helping us with our projects. Hunter people are very community minded and they are always keen to assist us with our work.

"We must continue to aim toward finding a cure for cancer, however, improvements in current cancer treatment is going ahead in leaps and bounds and is highly important for our patients on their journey with cancer. It is with our patients' help that we continue to progress research here at the Mater, and in time, a diagnosis of cancer may not impact on patients, families and the community in the same way as it does today," said Dr Lincz. 

Calvary Mater Newcastle conducts approximately 80% of all cancer research here in the Hunter region for the benefit of our community. If you are interested in donating to furthering research initiatives at Calvary Mater Newcastle, please contact the Public Relations Department on 4014 4714 or email Ingrid Grenell, Public Affairs and Communications Manager on Ingrid.grenell@mater.health.nsw.gov.au.