

DR JEREMY HENSON

– on the trail of a clinical cancer test

Children's Medical Research Institute



The biggest cause of cancer-related death in Australia remains lung cancer, and Jeremy Henson is very keen to do something about that. Specifically, he is seeking ways to ensure detection of the disease can happen much earlier.

"In lung cancer, early detection can improve patients' survival chances threefold," says Jeremy, 40, a researcher at the Children's Medical Research Institute (CMRI) at Sydney's Westmead Hospital.

Ultimately he would like a blood test for cancer that he's developed to become a clinical test that could soon benefit many patients, including those with lung cancer.

At the heart of Jeremy's field of interest is alternative lengthening of telomeres (ALT), one of two mechanisms which cancers rely on to keep growing indefinitely. These mechanisms are active in cancer cells but not in normal human cells, so inhibiting them can kill cancer cells without harming the regular ones.

LOW-SIDE-EFFECT THERAPY

"So far we can only inhibit ALT in cancer cells grown in a petri dish," explains Jeremy. "Finding a way of doing this in cancer patients could provide a low-side-effect therapy to treat the disease."

Up till now, though, an appropriate way of detecting ALT has been lacking and ALT has not been investigated in many of the common cancers. So with his \$89,000 Cure Cancer Australia grant Jeremy is running a project to use this test to look at ALT in relation to lung cancer.

Preliminary results suggest that 10% of lung cancers rely on ALT, he says. He and colleagues will confirm this and see if measuring ALT activity can aid patient management.

For example, if the blood test is sensitive enough it could be used as a screening test to aid early detection. It may also be useful in some cancers to help doctors determine prognoses and the patients who would benefit most from aggressive therapies. "Or we could monitor the success of chemotherapy in time to change the regime if it's not working."

OPENING THE DOOR TO FURTHER RESEARCH

Jeremy's current research was initiated by an earlier Cure Cancer grant to exploit a discovery he made while he was completing his PhD at the CMRI. It was the existence of an ALT-specific molecule which allowed him to begin developing a test for ALT. This, he believes, has opened many opportunities for further ALT research.

Like most researchers, Jeremy has much work to do and insufficient time and resources. The Cure Cancer grant is invaluable, he says, because it'll help fund the services of an assistant and reagents to allow the lung cancer study to proceed.

What motivates Jeremy? He's always had a great curiosity for science, initially in theoretical physics. "Maybe one day I will be able to return and do some quantum gravity research."

He was working as a locum doctor in accident and emergencies around New South Wales when he came across the work of Professor Roger Reddel, Director of the Children's Medical Research Institute and Head of the Cancer Research Unit at the University of Sydney.

"I was amazed to see someone of his calibre in Australia and working in the area I wished to be in, so I jumped at an opportunity to do a PhD in his lab and have been there since. I find working on ways to improve patient care more rewarding than treating patients and being restrained by current therapies."

Having stayed single until he could find the perfect partner, he got married in 2009 to Raquel, and they now have a son, Ethan. In his spare time – what little there is – his hobbies include bushwalking and going to the beach with his family.

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