

Children's Medical Research Institute study on telomeres could help save children with cancer

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Looking for a successful treatment ... Ella Dinham, 9, with her mum Allison, in Sydney today. Picture: Justin LloydSource: News Corp Australia

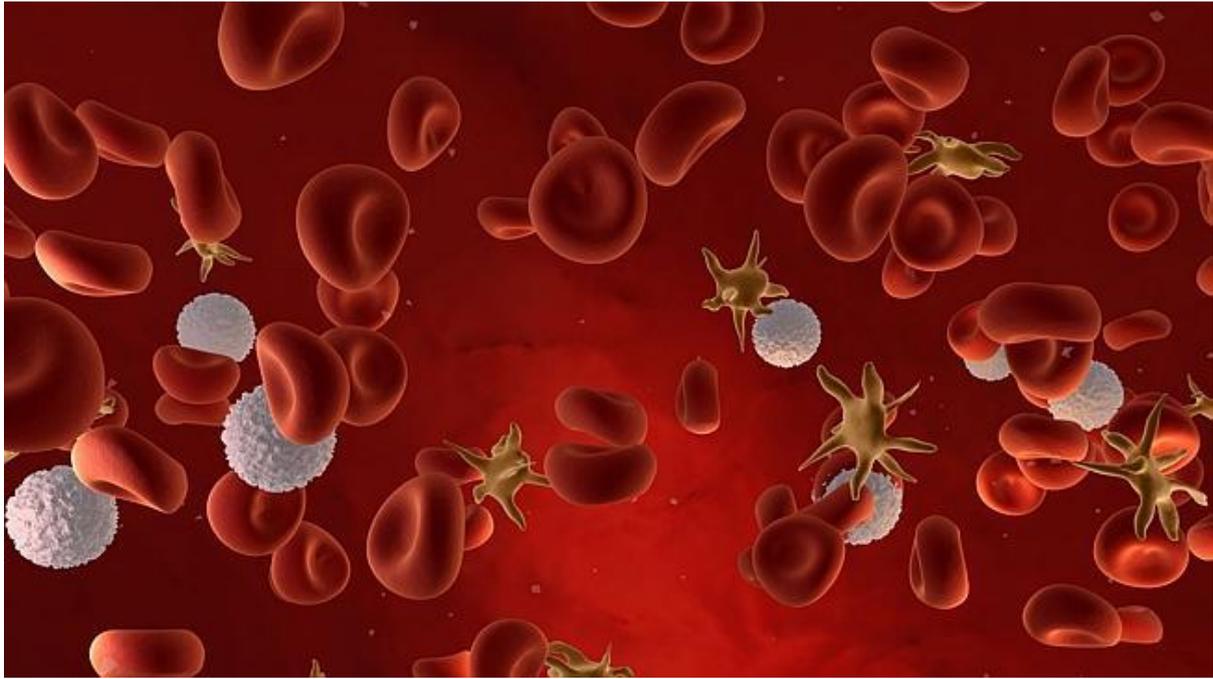
CHILD cancer sufferers could avoid debilitating chemotherapy because of a breakthrough in new Australian research that is examining how to stop cancer cells dividing.

The discovery could also lead to treatments for children who suffer from a rare syndrome that makes their organs age prematurely.

And the research into telomeres could also unlock the secret of how to stop the human body ageing.

[Children's Medical Research Institute](#) director Professor Roger Reddel says one way cancer cells can keep on dividing is by keeping the ends of their chromosomes, called [telomeres](#).

Normally telomeres become shorter and cells stop dividing as a person ages but this does not happen in [cancer cells](#).



Stopping the spread ... an artist's impression of cancerous cells in the blood stream. Picture: Thinkstock Source: News Limited

Most cancers beat the shortening process by using an enzyme called telomerase, discovered by Australian-born researcher [Professor Elizabeth Blackburn](#) who won the Nobel prize for this and related discoveries in 2009. About 15 per cent of cancers use a different mechanism called the alternative lengthening of telomeres to stay alive, this was discovered by the Children's Medical Research Institute in Sydney.

The institute will become a world leader in research into telomeres next year when it opens a \$2 million Telomere Research Centre with access to microscopy technology and analysis stations that will allow them to examine thousands of cells at a time using automated screening.

"We are on the cusp of something transformative," said CMRI Genome Integrity Group leader Dr Tony Cesare.



Drugs designed to unleash the body's own immune system against cancer are significantly prolonging the lives of some people with hard-to-treat forms of the deadly disease. WSJ's Jeanne Whalen joins Tanya Rivero on Lunch Break to explain.
Photo: Getty

World leading medical researchers in telomeres will meet in Sydney this week to share insights on the best way to treat patients with rapid organ ageing and cancer.

Professor Reddel says part of the research will aim to help children who suffer from shortened telomere syndrome, a condition that sees their organs age prematurely. They need a treatment to stimulate the lengthening of their telomeres.

Cancer patients need the opposite — a treatment to stop their telomeres staying longer.

“The hope is to have a treatment that has much fewer side effects than current chemotherapy,” he said.

The risk of any such cancer treatment is that it will shorten the normal cells in a persons body, causing them to age prematurely.



It's hard to fathom but there are Aussies in the fight of their lives right now, who feel isolated and ignored because people are too embarrassed to discuss bowel cancer

“Conceivably the normal cells may well be able to tolerate treatment for long enough for the cancer to be death with,” Professor Reddel said. “You couldn’t leave people on the treatment forever.”

Allison Dinhim — whose nine year old daughter Ella was diagnosed with leukaemia last year — welcomes any attempt to ease the need for toxic chemotherapy treatments.

In the past nine months Ella missed two terms of school, lost her hair and had to use a wheelchair during the intensive phase of her chemotherapy.

“The work they are doing is going to change things, to make it more bearable than it is now,” she said.

Although the eventual treatment may be too late to help Ella, she has taken part in trials to fine tune existing chemotherapy so the lowest effective dose can be found to minimise side effects.