

The Daily Telegraph

ProCan project explores proteins to find missing piece in cancer puzzle



Sally Fitness with her twins Chloe and Zara at the Children's Medical Research Institute Westmead.
Picture: AAP Image/Monique Harmer

SOFTWARE that can detect patterns in patients will help crack the cancer code. It'll nudge Westmead a little closer to earning the title of the world's first entire cancer database.

ProCan, a Children's Medical Research Institute (CMRI) project, explores the connections between DNA, RNA and protein.

The cancer research project has been given a \$41 million boost from the State and Federal governments.

This will put the team on a trajectory that not only gives them more of a physical presence at Westmead, but the ability to create groundbreaking software, detecting protein patterns.

Until now, no medical research team has been able to measure proteins on the scale needed.

This will mean individualised treatment plans for newly diagnosed cancer patients, straying from the current system of “one size fits all approach” within 72 hours.



Natasha Doughty with her daughter Elizabeth chatting with NSW Health Minister Brad Hazzard and Premier Gladys Berejiklian.

Picture: Monique Harmer

CMRI director Roger Reddel said they were on the cusp of transformational changes and these changes would increase chances of a cure and avoid side effects.

“DNA is the recipes. RNA is the photocopy of the recipe and proteins are the end product.” Mr Reddel said proteins were responsible for most processes of life and were the missing jigsaw piece in the cancer puzzle.

“We want to analyse molecules and use a computer to find molecular patterns of the DNA, RNA and protein.”

In six years time, Professor Reddel said they will have tested 70,000 cancers and any newly diagnosed patients should receive a precise treatment plan within 72 hours.

At the funding announcement on Monday, Premier Gladys Berejiklian said she was constantly looking at what will give our state the edge in 10 years time. She said medical research is what can put NSW on the map.



Ms Berejiklian with Children’s Medical Research Institute director Roger Reddel.
Picture: Monique Harmer

“We need to invest in brains and talent ... and unlock the mystery of proteins,” she said.

Federal Health Minister Greg Hunt said 136,000 Australians would be diagnosed with cancer this year and 47,000 won’t survive the journey.

“It’s an immensely important topic that attacks people of all ages. Western Sydney can be the world leaders in proteomics,” he said.

State Health Minister Brad Hazzard said the concept behind ProCan was to make Westmead the home of the world's first database of the entire cancer spectrum.

Giving a little insight into the cancer journey, mum Natasha Doughty spoke.



Mr Hazzard, Federal Health Minister Greg Hunt and Children's Medical Research Institute's Frank Martin.

Picture: Monique Harmer

She said while her daughter Elizabeth had been cleared of a stage three muscle-based tumour growing in her sinus and eye orbit, knowing the exact proteins in her cancer could have personalised and shortened treatment. Elizabeth had 28 days of radiation and chemotherapy once a week for a year.

She has long-term effects as a result of the tumour and treatment which means she sees five departments at the Children's Hospital at Westmead in an ongoing capacity.

SMILES AFTER CHLOE'S HEALTH SCARE

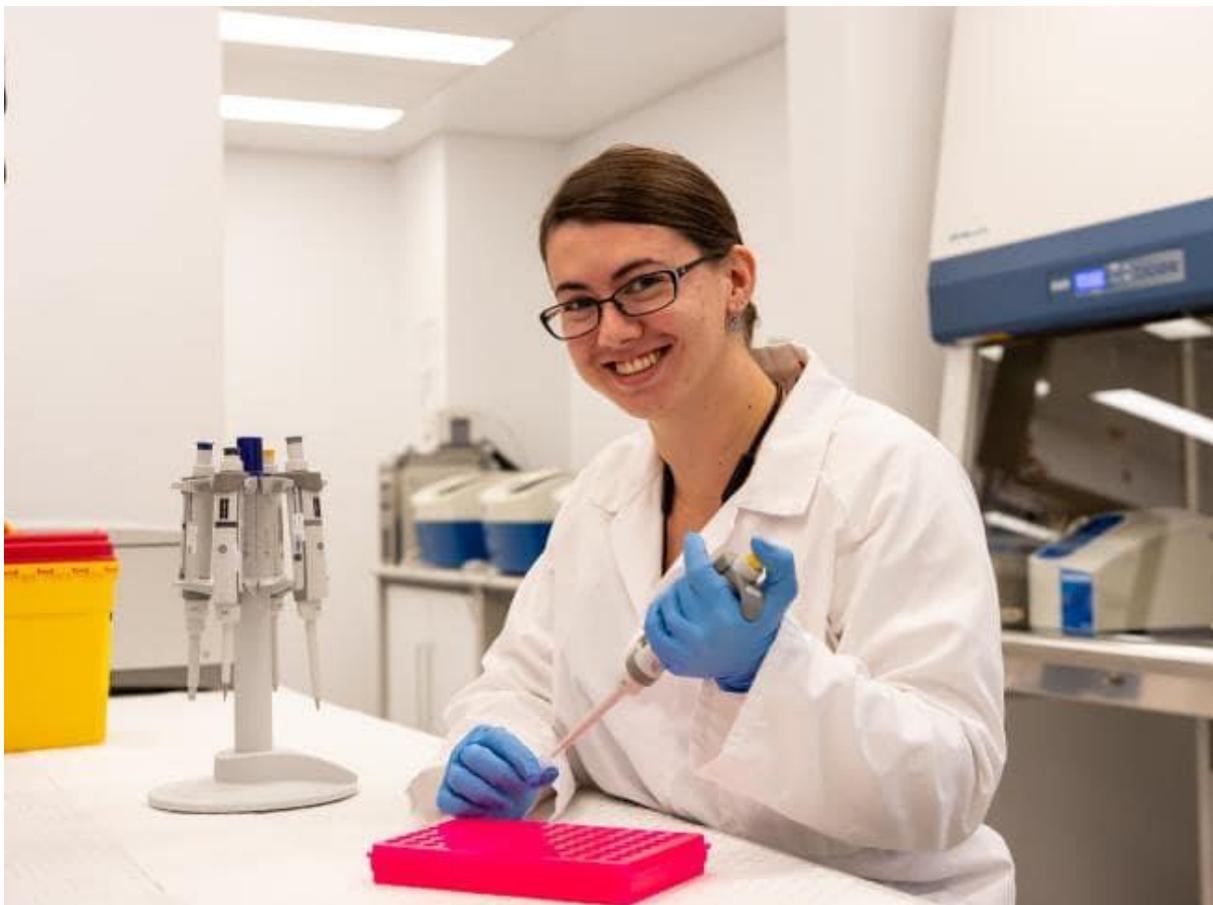
THE Filtness family know the cancer journey well. Sally and Tim Filtness have identical twin girls, Chloe and Zara, 4.

Chloe was diagnosed with stage five Wilms tumour on February 14, 2017. It was a little blood in her nappy that alarmed the Beecroft family so they went straight to the hospital thinking it was a urinary tract infection.

They went in on Monday and by Friday the then-two-year-old was having chemotherapy for the cancer.

The tumour had taken over all of her left kidney and spread to her lungs and lymph nodes.

“She had chemotherapy every Friday for three months followed by radiation and surgery to remove the left kidney and part of her right,” Mrs Filtness said.



PHD student Madeline Otway at the medical research institute.
Picture: Monique Harmer

When surgeons went in, the cancer had left the lung and decreased by half everywhere else. The family was relieved after a stressful three months.

During the seven-month ordeal, the youngster had a central line in and experienced continual temperatures resulting in 10 visits to the emergency department.

“It was hard for the girls to be apart. We’d tell Zara Chloe was sick and getting medicine to get better, but it was tough,” she said.

The family of four rang the bell on September 15, 2017 marking Chloe being in remission.

She now has an MRI and CAT scan every three months to monitor her health.

This will continue until she’s five. Then she’ll have six-monthly check ups until she’s eight followed by annual visits thereafter.

Sister Zara currently hasn’t got out of this unscathed. She has six-monthly visits at the moment.