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World-first brain cancer clinical trials launched in Melbourne

A world-first clinical trial platform launching in Melbourne is set to transform research into new therapies for brain cancer and deliver more targeted, personalised treatment for patients.

The Brain-POP (brain perioperative) clinical trial platform will enable doctors to precisely see the effect of a new drug therapy on a patient's brain cancer for the first time, by comparing tumour samples before and after treatment.

The new platform is led by The Brain Cancer Centre and research partners WEHI, The Royal Melbourne Hospital, Peter MacCallum Cancer Centre, The Royal Children's Hospital and the University of Melbourne, with \$16 million in funding support from the Victorian Government.

At a glance

- Brain-POP launches in Melbourne, transforming clinical research into the development of new therapies for brain cancer
- Samples of tumours will be taken pre- and post-treatment with new therapies, in a world-first approach to brain cancer clinical trials
- Led by The Brain Cancer Centre research partners across Melbourne's world-class biomedical precinct and supported by the Victorian Government

Survival rates for brain cancer have barely shifted in three decades, with 80 per cent of patients diagnosed dying within five years. One Australian is diagnosed with brain cancer every five hours and more children die from brain cancer in Australia than any other disease.

Dr Jim Whittle, Laboratory Head at The Brain Cancer Centre / WEHI, and medical oncologist at the Peter MacCallum Cancer Centre and RMH, said Brain-POP would begin to address the critical lack of trial options available to brain cancer patients and enable research discoveries to be rapidly translated into the clinic.

"The lack of progress over the last 30 years shows the need to radically change the way that drugs are developed and the way that clinical trials are run for brain cancer," Dr Whittle said.

"The Brain-POP platform offers a unique approach to help us test whether a drug actually gets into the brain and find out if it's having the effect we want.

"This is what we need to invest our efforts into - the most powerful and promising therapies, stopping the development of those that don't work and delivering far better outcomes for brain cancer patients."

Professor Kate Drummond, Director of Neurosurgery at The Royal Melbourne Hospital, said the collaborative and integrated trial program would draw on extensive expertise from researchers and clinicians across Melbourne's biomedical precinct.

“Brain-POP's unprecedented approach will establish Victoria at the forefront of brain cancer research,” Professor Drummond said.

“This new research program will be available for patients and will transform how we do clinical research in brain cancer, acting as a beacon of hope for patients and their families across Victoria.”

The Victorian Government has committed \$16 million in funding to support Brain-POP. The clinical trial program will deliver innovative, perioperative clinical trials with paediatric, adolescent and adult patients that will help researchers to create a holistic picture of brain cancer treatment that has so far been missing from research.

Minister for Innovation, Medical Research and the Digital Economy, The Hon Jaala Pulford MP, said the Victorian Government investment is being used to support a clinical trial platform over the next four years and deliver a globally unique program that is set to save the lives of more children, adolescents and adults with primary brain cancer and brain metastases.

“We urgently need to find more effective and curative treatments for brain cancers. As a global leader in cancer care and medical research, Victoria is perfectly positioned to lead this ground-breaking work,” she said.

“This is an important milestone in the search for better treatments and cures for brain cancer and I congratulate the team on their important work to date.”

Window of opportunity

Brain-POP is the first perioperative or 'Window of Opportunity' clinical trial program for brain cancer, where biopsies are taken before and after treatment to provide critical information on drug activity through small, well-designed studies that guide further development.

This approach is often used in clinical trials for other cancers such as breast cancer, melanoma or leukaemia but has not been available for brain cancer, because of the delicate surgical challenges involved.

The first clinical trial (NCT05577416) to run through the new Brain-POP platform has begun recruitment and focuses on patients with low grade glioma, a type of slow-growing brain tumour.

Newly diagnosed patients will receive advanced diagnostic testing and samples of tumours will be taken from trial participants before and after treatment with a new drug therapy. Blood samples will also be used in the trial, to investigate less intrusive ways of measuring the effect of treatments.

The results will be used to personalise treatment, enabling doctors to be more targeted with available therapies for brain cancer patients.

New standard of care

Dr Whittle said the Brain-POP program would create a new standard of care, over time enabling every brain cancer patient at treating hospitals in Victoria to access a clinical trial during the course of their disease.

“We hope that by demonstrating the effectiveness of our unique trial method, we can scale Brain-POP nationally so that every patient diagnosed in Australia will in future have access to this new standard of care,” he said.

Through collaborations with biotech and pharmaceutical partners, the Brain-POP platform will also enable patients to receive cutting-edge or advanced cancer treatment such as Gamma Knife radiosurgery, immunotherapies or targeted therapy.

Founded by Carrie's Beans 4 Brain Cancer, The Brain Cancer Centre was established in 2021 in partnership with WEHI and with support from the Victorian Government.

The Brain Cancer Centre's collaborating partners are: Monash University, Murdoch Children's Research Institute, Peter MacCallum Cancer Centre, The Royal Children's Hospital, The Royal Melbourne Hospital, The University of Queensland, The VCCC Alliance and WEHI.

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About The Brain Cancer Centre

The Brain Cancer Centre, founded by Carrie's Beans 4 Brain Cancer and established in partnership with WEHI (Walter and Eliza Hall Institute), is bringing together the brightest medical research minds with a single focus: that one day no lives are lost to brain cancer.

The Centre brings together phenomenal talent, infrastructure and experience through our collaborators: Monash University, Murdoch Children's Research Institute, Peter MacCallum Cancer Centre, The Royal Children's Hospital, The Royal Melbourne Hospital, The University of Queensland, Victorian Government, VCCC Alliance and WEHI.

Find out more at www.thebraincancercentre.org.au

About WEHI (Walter and Eliza Hall Institute of Medical Research)

WEHI is where the world's brightest minds collaborate and innovate to make life-changing scientific discoveries that help people live healthier for longer. Our medical researchers have been serving the community for more than 100 years, making transformative discoveries in cancers, infectious and immune diseases, developmental disorders, and healthy ageing. WEHI brings together diverse and creative people with different experience and expertise to solve some of the world's most complex health problems. With partners across science, health, government, industry, and philanthropy, we are committed to long-term discovery, collaboration, and translation. At WEHI, we are brighter together.

Find out more at www.wehi.edu.au

