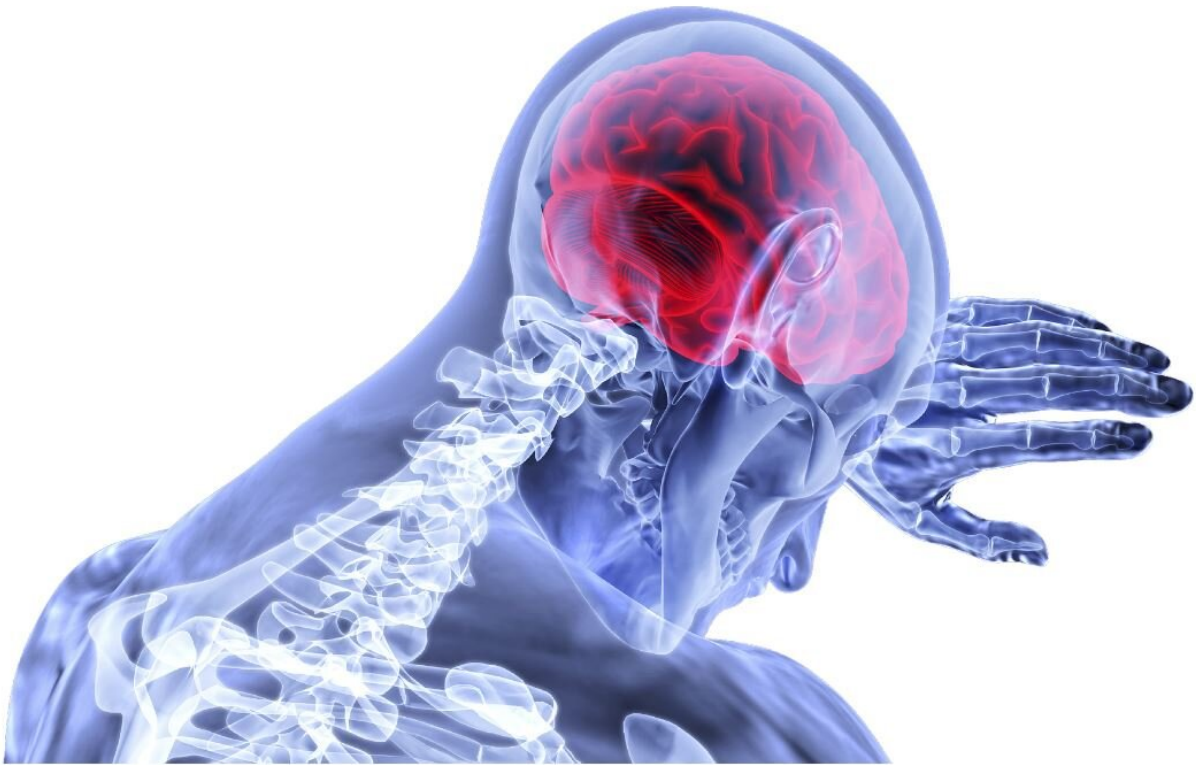


Leap forward for brain research

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Credit: Pixabay

Pre-clinical research into deadly brain cancer, Parkinson's, dementia, epilepsy and other major psychiatric and neurological conditions can speed up with the global commercialisation of an advanced neuromedium, called BrainPhys.

As outlined in Nature Communications, medical scientists in Australia and North America have given the BrainPhys Imaging (BPI) technology the thumbs-up, especially in vital work with live neurons in-vitro.

BrainPhys closely mimics the chemical environment of the healthy living brain, providing a platform for researchers to model a patient's disease in a laboratory, paving the way for more personalized research on individual disorders.

With commercial partner STEMCELL Technologies, the laboratory medium was formulated by Flinders University senior research fellow Dr. Cedric Bardy, who leads the Laboratory for Human Neurophysiology and Genetics based at the South Australian Health and Medical Research Institute (SAHMRI).

Dr. Bardy's laboratory is working on better personalized medicine for brain disorders, including Parkinson's, [brain cancer](#) and a form of childhood dementia, using avatars of individual human brains.

The use of human pre-clinical models is vital to boost the success of clinical trials in neurology, he says.

"We developed this medium to support optimal neuronal function and viability in live imaging experiments using patient-derived [brain cells](#) in vitro, and this study shows that BrainPhys Imaging is superior in a wide range of fluorescent imaging settings," Dr. Bardy says.

He says biotechnological innovations are extremely important in the quest to find treatments and cures for these devastating diseases, which currently have few treatment options and often result in painful death.

More information: Michael Zabolocki et al. BrainPhys neuronal medium optimized for imaging and optogenetics in vitro, *Nature*

Communications (2020). [DOI: 10.1038/s41467-020-19275-x](https://doi.org/10.1038/s41467-020-19275-x)

Provided by Flinders University

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