

## Clinical Research Strength 02:

### Neurosciences including mental health

Neurosciences, including mental health, is one of the pillars of research excellence in the Melbourne Biomedical Precinct. There is a strong translational thread running through the program, bringing the science out of the research institutes and into the community, hospitals, clinics and patients. The spirit of collaboration is evident in the establishment of pioneering umbrella organisation Neurosciences Victoria (NSV).

#### Main players

- Bio21 Institute
- Bionics Institute
- The Florey Institute
- Melbourne Brain Centre
- Murdoch Children's Research Institute
- NorthWestern Mental Health
- Orygen, The National Centre of Excellence in Youth Health
- The Royal Children's Hospital
- The Royal Melbourne Hospital
- The Royal Women's Hospital, Centre for Women's Mental Health
- School of Psychological Sciences, The University of Melbourne
- St Vincent's Hospital Neuroscience
- St Vincent's Institute

#### Advancing areas of strength

- Epilepsy program – including expertise in genetic causes, imaging techniques and treatment.
- Neurodegenerative diseases of the ageing brain – including understanding the molecular basis of Alzheimer's Disease and Parkinson's Disease.
- Translational research in youth mental health – led through Orygen, one of the world's leading translational research centres in mental health of young people.
- Psychosis – including molecular neuroscience, neuroimaging, behaviour modification, early recognition, clinical intervention and policy in youth mental health services.
- Stroke – The Melbourne Biomedical Precinct has been involved in almost every important clinical trial involving early management of stroke using thrombolysis and is a global leader in acute stroke imaging. Australia's first specialist 'stroke ambulance' was launched in the Melbourne Biomedical Precinct (November 2017), offering earlier intervention for time-critical care.
- Complex human processes – expertise in understanding and modelling complex human behaviours, from basic psychology of individuals to theories that describe social networks.
- Multiple sclerosis – developing effective approaches to identify and treat inflammatory autoimmune diseases of the nervous system.
- Neural bionics – using latest neural engineering expertise to investigate how the nervous system controls digestive, urinary, cardiac, blood pressure, visual and auditory functions.

---

Orygen, The National Centre of Excellence in Youth Mental Health, in partnership with Deakin University, released in 2017 the results of a world-first study testing the effects of lithium, a mood stabiliser introduced in the 1970s, and comparing it with those of quetiapine, a more modern and commonly prescribed alternative. The results showed the older medication lithium to be superior to quetiapine in terms of symptoms of mania, psychosis, depression, quality of life and functioning.

---