NCRIS Health Group

Enabling health innovation and translation

Together, we tackle complex, multidisciplinary medical challenges using world-class national research infrastructure. Our experts, data and tools shepherd health discoveries toward better prevention, diagnosis and treatments for Australians. The NCRIS Health Group accelerates Australian health research and industry innovation, reducing the time and costs of getting new health solutions to patients.

Improving heart health

Fighting Australia's leading killer by collaborating on data, genetics, drugs, imaging

Coronary heart disease remains Australia's leading cause of death, and the NCRIS Health Group is helping transform cardiovascular research and patient care.

Bioplatforms Australia first supported development of the BioHEART biobank that links de-identified health data with genetic, imaging, metabolic and treatment outcomes. This led to a coordinated national effort that translated into the CAD Frontiers consortium – gathering researchers, clinicians and industry – supported by NCRIS providers including Bioplatforms Australia, Data Connect Australia (formerly the PHRN), Phenomics Australia and the National Imaging Facility.

Therapeutic Innovation Australia, via its Pipeline Accelerator awards, also enabled researchers to move toward producing a safe and scalable stem cell therapy alternative to transplantation.

Together, Health Group providers have variously supported data management, analysis and sharing through the Australian Cardiovascular Data Commons; found new potential drug targets; received significant funding and industry engagement; and created spin-out companies.

Uniting the cardiovascular research community and strengthening our national research capacity has already created clinical impacts for Australian patients.

"It is thought that more than 400,000 Australians have had a heart attack at some stage in their lives and that there is roughly one heart attack every 10 minutes. Through our research, we have the opportunity to change the negative impact of these statistics."

A/Prof James Chong, Westmead Institute for Medical Research

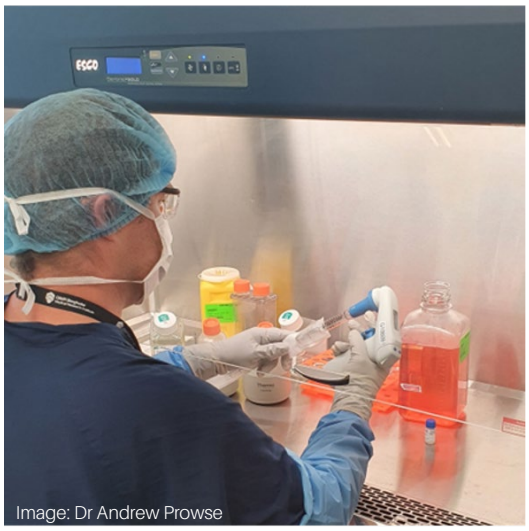


Image: Dr Andrew Prowse

Coronary heart disease is responsible for about

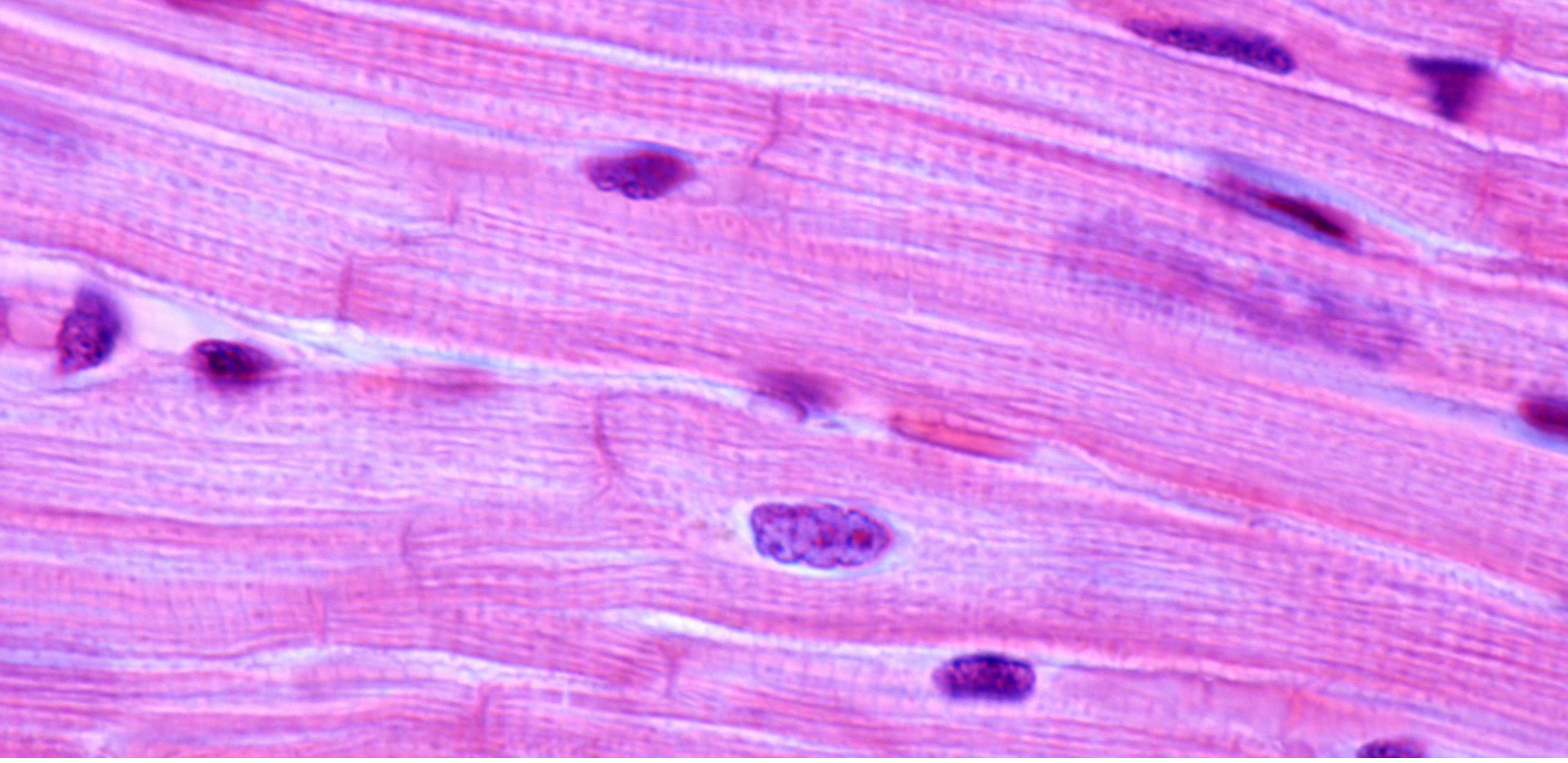
1 in 10 deaths per day

for Australians

First Nations adults have coronary heart disease at more than

twice the rate

of non-Indigenous adults



Improving heart health

Biotech startup uses NCRIS to build mini heart model for heart disease answers

Australian researchers have developed a world-first heart-mimicking 'cardiac organoid' that models human heart tissue to unlock the root causes of heart failure. This breakthrough builds on the NCRIS Health Group's providers that combine advanced disease modelling, high-resolution imaging and precision fabrication.

Professor James Hudson was awarded a Phenomics Australia Pipeline Accelerator voucher, enabling access to infrastructure which accelerated organoid development and genetic disease modelling. Microscopy Australia's facilities were used to verify that the organoid cells' internal structures closely matched those found in real human heart cells. Australian National Fabrication Facility's precision engineering manufactures the moulds for growing the organoids on a high-throughput scale.

The biotech start-up Dynomics used the NCRIS Health Group's integrated, nationally funded platforms to move from discovery to unprecedented insights into cardiac biology – a tool that promises to transform cardiovascular drug discovery and treatment understanding.

"The support of the voucher scheme enabled us to generate a novel line, which ... provided really important information to show that these cells resemble native cardiac cells. We hope to now extend these findings and discover new therapeutics."

Prof James Hudson, QIMR Berghofer

Cardiovascular disease remains the leading cause of death worldwide.

In Australia alone, each day

157 individuals

experience an acute coronary event, and

112 suffer a stroke