

MEDIA RELEASE

6 July 2018

A new hope for those at risk of world's third deadliest cancer

Centenary Institute scientists have successfully created a more realistic model of primary liver cancer; placing medical researchers in a much better position to develop more effective treatments for the third-most common cause of cancer death worldwide.

More than 2,000 Australians are expected to die from liver cancer this year alone. Developing effective therapies for liver cancer is difficult, with many failed clinical trials. Most of the modelling to date has been unable to effectively mimic human liver cancer, and even then, can take up to 12 months to complete.

But a three-year study, led by PhD Student James Henderson and Professor Mark Gorrell (from Centenary's Liver Enzymes in Metabolism and Inflammation program) has developed a more efficient model of human liver cancer, which is useful for a better understanding of how liver disease and liver scarring advances into liver cancer – often resulting in a poor outcome for patients.

The study has significantly reduced the time in which liver samples can be analysed from nine to five months, meaning results are fast-tracked. By feeding laboratory mice a fatty, sugary diet, James has also decreased the time it takes before the early scarring and inflammation stages of liver cancer start to develop, to just three months.

With obesity and cirrhosis (late stage of scarring) key drivers of liver cancer, this method more closely reproduces a common pathway to damage in human liver, and is applicable to the modern lifestyle.

“Our novel model has progressed two key areas: fast-tracking the time it takes to conduct modelling, while more closely replicating liver cancer drivers that occur in humans,” said James.

“This places researchers in a much better position to develop effective therapies in future to treat liver cancer in the early stages; reducing the burden on Australia's health-care system and improving patient outcomes.”

Read the full paper *Multiple liver insults synergize to accelerate experimental hepatocellular carcinoma* published in *Scientific Reports*: <https://www.nature.com/articles/s41598-018-28486-8>

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