

MEDIA RELEASE

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ARC grant to fuel research into cellular ageing

Centenary Institute researchers have been awarded an Australian Research Council (ARC) Discovery Project grant worth \$709,714 to advance understanding of the intricate mechanisms underlying cellular ageing.

Professor Jennifer Gamble and Dr Yanfei (Jacob) Qi will lead the study, investigating the ageing processes of blood vessel cells. They will focus on the lipid (fat) composition of the cell membrane as a potential crucial determinant in how and when cells begin to show the adverse effects of age.

Outcomes from the study say the researchers, could include the identification of new indicators for unhealthy or premature cell ageing which contribute to age-related disease such as heart disease and dementia.

Lead Chief Investigator on the project Professor Gamble, from the Centenary Institute's Centre for Healthy Ageing said that ageing at the cellular level determines the health span of individuals.

"Our project seeks to fill a gap in our understanding of what happens as our cells age, with a particular focus on one of the key cell types found in blood vessels, endothelial cells," said Professor Gamble.

"Endothelial cells are important because they line our blood vessels. When they age they can stop working properly, leading to heart problems, high blood pressure, blood clot formation and other issues. So, keeping these cells healthy is vital for our overall well-being," she said.

Dr Qi from the Centenary Institute's Centre for Cardiovascular Research and an expert on the study of lipids said that changes in the lipid composition of a cell's membrane could affect its properties and functions, as well as its response to stress.

"Our study seeks to see how these lipid membrane changes might contribute to the overall ageing of endothelial cells and their capacity to function optimally over time. This study may also indicate why some people age healthily," said Dr Qi.

"This knowledge will provide us with a foundation to explore strategies aimed at decelerating the ageing process of these cells, ultimately with a view to fighting disease and enhancing health outcomes."

The [ARC Discovery Projects](#) scheme supports excellent basic and applied research to expand Australia's knowledge base and research capability.

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Images:

Professor Jennifer Gamble:

https://drive.google.com/file/d/18SLibvQaiFVmwNw2C3viHd8GQelmHfbJ/view?usp=drive_link

Dr Yanfei (Jacob) Qi:

https://drive.google.com/file/d/1RMuP0PSLD9HiWoVhnRu9OZ5pu0oKN9o7/view?usp=drive_link

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About the Centenary Institute

The Centenary Institute is a world-leading independent medical research institute, closely affiliated to the University of Sydney and the Royal Prince Alfred Hospital. Our research spans the critical areas of cancer, cardiovascular disease, rare diseases, inflammation, infectious diseases, healthy ageing and biomedical AI. Our strength lies in uncovering disease mechanisms and applying this knowledge to improve diagnostics and treatments for patients.

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