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Leading immunologist recognised for breakthrough discovery that could transform patient care in severe respiratory viral infections

- One of Australia's leading immunologists, Professor Katherine Kedzierska, has spent two decades investigating why some people become critically ill from respiratory viruses while others recover quickly.
- Her internationally recognised research identified the critical role of the OLAH* gene in driving the life-threatening inflammation associated with severe and fatal cases of influenza (flu), COVID-19, and respiratory syncytial virus (RSV).¹
- As respiratory viral infections continue to pose a significant global threat, this discovery could help clinicians identify which patients are most at risk of becoming critically ill before symptoms rapidly worsen.
- Professor Kedzierska's team is now working to develop a rapid blood test and explore new therapies aimed at reducing the harmful immune response that drives severe disease.
- In recognition of these achievements, Professor Kedzierska has been named the 2026 GSK Award for Research Excellence (ARE) winner.

For two decades, Professor Katherine Kedzierska has been searching for the answer to one of medicine's most important questions: why do some people recover quickly from respiratory viruses while others become critically ill?

Respiratory viruses such as flu, RSV and COVID-19 continue to place a significant burden on Australians every year. As of August 2026, over 240,000 national notifications and more than 4,500 hospitalisations due to the three respiratory viruses have been recorded nationally, with severe disease primarily occurring in young children or older adults.² With growing concern around other emerging respiratory viruses such as avian flu, understanding why some people develop severe disease has never been more important.

Yet despite decades of medical advances, clinicians still have limited tools to predict which patients will rapidly deteriorate and which will recover. Professor Kedzierska has spent her career trying to change that.

Her work in understanding infectious diseases has now been recognised with the 2026 GSK Award for Research Excellence (ARE).

Accepting the award, Professor Kedzierska said:

"When I began my career, I simply wanted to understand how the immune system protects us from disease. I never imagined that question would take me through the 2009 H1N1 influenza pandemic or COVID-19."

"It is an incredible honour to receive the 2026 GSK Award for Research Excellence. This recognition reflects the dedication of an extraordinary team of researchers and collaborators whom I have had the pleasure of working alongside over many years."

Professor Jason Trubiano, infectious diseases physician and Head of Infectious Diseases at the Peter Doherty Institute for Infection and Immunity, said Professor Kedzierska's ability to connect clinical care with scientific discovery is what makes her research so powerful.

"When a patient comes into hospital with a respiratory infection, one of the biggest challenges is understanding who may go on to become seriously unwell. Katherine's research is helping us get closer to answering that question by connecting what we see in patients at the bedside with what is driving the immune response."

A National Health and Medical Research Council Leadership Fellow, laboratory head at the Peter Doherty Institute for Infection and Immunity, Distinguished Professor at the University of Melbourne and recently elected Fellow of the Australian Academy of Science, Katherine Kedzierska is internationally recognised for her research into the



immune mechanisms that determine how people respond to respiratory viral infections.

Her interest in respiratory viruses intensified during the 2009 H1N1 flu pandemic, which highlighted just how differently patients can respond to the same infection and inspired her to dedicate her research to understanding why.

Among her team's most significant breakthroughs is the discovery that elevated activity of the OLAH gene is consistently associated with fatal outcomes across multiple respiratory illnesses. While studying patients hospitalised with avian flu, her team observed unusually high levels of OLAH in those who became critically ill. Years later, they found the same biological pattern in patients with severe COVID-19 and also in RSV, suggesting OLAH may represent a common pathway underlying severe respiratory disease across multiple viruses.

The discovery has now sparked a new phase of research, with the potential to revolutionise future clinical management. Professor Kedzierska and her collaborators are working to develop a rapid blood test capable of identifying patients most at risk of facing life-threatening outcomes when they first arrive at the hospital, alongside potential new therapies designed to interrupt the harmful inflammatory response driven by OLAH before it becomes life-threatening.

Reflecting on the next steps for this research, Professor Kedzierska said:

"Respiratory infections are often a race between the virus and our immune system. Our goal is to better understand why that balance tips towards severe disease in some people, so we can identify those at greatest risk earlier and ultimately develop therapies that prevent the immune response from causing further harm."

"This award and accompanying grant will help us take the next step by advancing research into new ways of predicting severe disease and evaluating potential therapies that could improve outcomes for patients."

Speaking to the potential impact of the research, Professor Trubiano said:

"In the longer term, this research has the potential to guide more targeted approaches to treatment and prevention for those at higher risk. Katherine is an exceptional collaborator who keeps patients at the centre of her work, and this recognition is incredibly well deserved."

The accompanying \$150,000 GSK Award for Research Excellence grant will support the next phase of Professor Kedzierska's research, including the development and validation of a rapid blood test capable of predicting disease severity, alongside laboratory testing of promising therapeutic candidates targeting the harmful inflammatory pathways associated with OLAH.

Speaking at the award presentation, Dr Alan Paul, Executive Country Medical Director at GSK Australia, said:

"I am delighted to see Professor Kedzierska recognised with the 2026 GSK Award for Research Excellence. Her dedication to understanding one of the biggest challenges in infectious diseases has the potential to transform the way clinicians predict and manage severe respiratory illness."

"For 46 years, the GSK Award for Research Excellence has celebrated Australian researchers whose discoveries have advanced medicine and improved patient care. Professor Kedzierska's work is a powerful example of that legacy, and we are proud to support the next phase of her research."

The GSK Award for Research Excellence is one of Australia's most prestigious and longstanding independent awards recognising excellence in medical research.

Previous recipients include some of Australia's most distinguished scientists, including:

- Professor Georgina Long AO and the late Professor Richard Scolyer AO (2018)
- Professor Brendan Crabb AC (2019)



- Professor Mark Febbraio (2020)
- Professor Jamie Cooper AO and the late Professor Rinaldo Bellomo AO (2021)
- Professor Georgia Chenevix-Trench AC (2022)
- Professor David Komander (2023)
- Professor Matthew Kiernan AO (2024)
- Professor Edward Holmes (2025).

ENDS

***OLAH encodes oleoyl-ACP hydrolase**

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References

¹ Jia X, Crawford J, Gebregzabher D et al. High expression of oleoyl-ACP hydrolase underpins life-threatening respiratory viral diseases. *Cell*, 2024; 187, 4586-4604.e20

² Australian Centre for Disease Control (2026). Australian Respiratory Surveillance Report: 15 June to 28 June 2026. Australian Government Department of Health, Disability and Ageing.