

UNDERSTANDING AND IMPROVING GUT HEALTH



Laureate Professor Nick Talley's ground-breaking research into unexplained gut disorders has transformed our understanding of these conditions and improved clinical care for patients around the world.

As an international authority in neuro-gastroenterology, Professor Talley specialises in unexplained disorders that affect nerves and muscles of the gut – such as irritable bowel syndrome (IBS), non-ulcer dyspepsia, gastroparesis (stomach failure) and similar disorders, which impact one in five Australians.

These conditions can lead to severe and daily symptoms that disrupt people's personal and professional lives.

During his medical training, Professor Talley encountered patients and friends who complained of unexplained gut issues. With no clear diagnosis or treatment options, many were suffering both physically and psychologically.

Motivated by their experiences, Talley has spent his career trying to find order in the chaos.

Due to the lack of obvious pathology, many of these unexplained disorders were previously considered to be functional or psychosomatic. Professor Talley's research has turned the field upside down and inside out.

Key research discoveries

Professor Talley's breakthroughs in IBS – a disorder that affects roughly one in six Australians – have been game changers.

- He was the first to discover that IBS has a genetic basis, identify a new genetic mutation, and find that the resulting abnormal function could be reversed with drug treatment.
- He has developed a body of evidence which indicates IBS is a collection of individual diseases, rather than one illness – some of which are driven by gut dysregulation and others through brain to gut disturbances.



DISCOVER MORE STORIES ABOUT OUR RESEARCH
IMPACT AT [NEWCASTLE.EDU.AU/RESEARCH-AND-
INNOVATION/RESEARCH-IMPACT](https://newcastle.edu.au/research-and-innovation/research-impact)

- He was the first to identify that the presence of a specific bacteria in the colon (spirochaetosis) was strongly associated with specific colon pathology and IBS diarrhoea.

Professor Talley also pioneered research into the role of *Helicobacter pylori* bacteria in dyspepsia and stomach cancer, which helped transform clinical practice by offering new diagnostic and treatment opportunities for patients.

- He identified a previously unrecognised pathology in dyspepsia (duodenal eosinophilia) which has attracted worldwide attention. While the field previously thought there was no organic cause for this disorder, Talley showed there is a subtle inflammatory process with dysregulation of immune homeostasis found in roughly 40 percent of people suffering from dyspepsia.
- He also developed a new disease model that explained both the gut and extra-intestinal manifestations. He and his team are now testing novel therapeutic strategies that provide new hope to affected patients.

Clinical impacts

- As a founding member of the Rome Foundation – an international organisation responsible for developing diagnostic criteria – Professor Talley helped develop the Rome Criteria for unexplained gut disorders. These criteria changed diagnostic practices worldwide, promoted new drug discovery programs, and led the US Food and Drug Administration to approve new treatment therapies.
- Professor Talley has led multiple long-term, prospective studies that have provided new knowledge on the prevalence, incidence, risk factors, pathology, microbiology and impact of unexplained gut disorders in patients.
- He has also led innovative clinical trials that have resulted in new therapies and revised medical guidelines.

Professor Talley's collective body of work has fundamentally changed clinical care, led to new fields of research, and transformed the lives of patients worldwide.

Additional impact indicators

Major awards

- Named **NSW Scientist of the Year** in 2018 – the fourth time in 11 years a University of Newcastle researcher has received this honour.
- Recipient of **Research Australia's prestigious Peter Wills Medal** (2018) for his outstanding, long-term contribution to building Australia's international reputation in health and medical research and for fostering collaboration for better health outcomes
- Received the **Companion of the Order of Australia** for 'eminent service to medical research and education in the field of gastroenterology and epidemiology as an academic, author and administrator at the national and international level
- Received the **Distinguished Educator Award** from the American Gastroenterological Association in 2017

Contributions to scientific knowledge

- Named **Australia's most cited academic** by Google Scholar in 2017 and has more than 100,000 citations in the medical literature to-date
- Has **published more than 1,300 articles** in leading national and international peer-reviewed journals, which have vastly improved the scientific understanding of the field of neurogastroenterology
- Took out **first prize in the British Medical Association's 2018 Medical Book Awards** for his text *Clinical Examination 8th edition* which he co-authored with the University of Newcastle's Dr Simon O'Connor. This text on the art of diagnosis is considered to be the authoritative textbook in its field and is used by medical students and specialists in training worldwide.
- Is **Editor-in-Chief of Medical Journal of Australia** – Australia's leading medical journal

To learn more about Nick's research impact:

Laureate Professor Nick Talley
 University of Newcastle
 Email: nick.talley@newcastle.edu.au
 Phone: +61 2 4921-5855
 Web: newcastle.edu.au/profile/nicholas-talley

To partner on health and medical research:

Laureate Professor John Aitken
 Pro Vice-Chancellor, Faculty Health and Medicine
 Email: john.aitken@newcastle.edu.au
 Phone: +61 2 4985 4466
 Web: newcastle.edu.au