



**DEMENTIA RESEARCH
NETWORK IRELAND**

Prevention, Cure & Care for
Neurodegenerative Diseases

Researcher In Focus Series – February 2021

This month's Researcher in Focus is Dr Eilís Dowd, who is a Parkinson's disease researcher based in the Galway Neuroscience Centre at the National University of Ireland (NUI) Galway.



What is your area of research?

I work on the preclinical evaluation of novel treatments for the neurodegenerative condition, Parkinson's. The development of new therapies for all neurodegenerative diseases is critically important. The vast majority of therapies for these conditions that are available to patients just treat the symptoms but they do not tackle the underlying disease process. Therefore, they do not slow, halt or reverse any damage that has been done in the brain due to the condition. My work is focused on developing novel treatments that might someday slow or reverse the damage underlying Parkinson's.

One of my long-term interests in this field has been the development of cell therapies for Parkinson's. The concept here is quite simple (although the execution is anything but!) in that cell therapy is a cell replacement transplantation approach where cells that have died are replaced with healthy cells.

One of the main issues that has limited cell transplantation therapies for Parkinson's is that the cells survive very poorly after transplantation into the brain. My recent work has shown that this can be dramatically improved by implantation of the cells in a protective water-based gel made from the protein, collagen.

What sparked your interest in this area?

I got into biomedical research really because I had very severe asthma as a child and relied on drugs to keep me breathing. I was utterly fascinated when I learned how these drugs worked as an undergraduate student at University. Hence, my interest in drugs, pharmacology and researching novel therapies was born.



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What stage are you at in your career and are there any achievements you are particularly proud of?

I have been working at NUI Galway as a Parkinson's researcher for 15 years. In that time I have had some incredible young scientists working in my team and I am very proud of each and every one of them. I was also very excited recently to see my collagen hydrogel research feature in an article by the BBC Science Focus magazine as one of "[Five incredible advances in brain condition treatment](#)".

What impact would you like your research to have?

Developing new treatments for neurodegenerative diseases is frustratingly slow – largely because of the immense complexity of the brain and our relatively poor understanding of it. One day, I hope that I will be able to say that I contributed to the decades-long and world-wide hunt for a cure for Parkinson's.

Who has helped or inspired you in your area of research?

I am, and always will be, very grateful to one of my mentors while I was a PhD student at Cardiff University - Prof Steve Dunnett. Steve was a wonderful person and scientific mentor, advocate and support for me, both while I was in Cardiff and since I moved to NUI Galway. Thanks Steve!

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