Clinical research a no-brainer

By Dr Heath Ecroyd*

Let's start with the good news. The census data released on 21 June 2012 shows that Australians are living longer than ever and that death rates from heart attacks and some kinds of cancer are falling.

However, our increasing life span comes at a cost. Indeed, if you live long enough, it is very likely that you will experience some kind of neurodegenerative disorder which may be a form of mild dementia or something more serious like Alzheimer’s disease.

Current figures suggest that over 260,000 Australians already suffer dementia, with some predicting that this figure will grow to one million by 2050.

Unfortunately, the Illawarra is likely to become a hotspot for these kinds of diseases as we already have a higher proportion of people aged 85 years and over (16 per cent) than the NSW average (14 per cent) and, by 2021, it is predicted that the population aged 70-84 years will increase by 45 per cent, while the 85 years and over group will more than double.

It doesn’t take a mathematical genius to see that we are likely to be in for a bit of a rough ride when it comes to neurodegenerative disorders; especially when you consider that current treatments for these diseases are based on alleviating the symptoms, rather than treating the cause.

As health “consumers”, Illawarra residents probably imagine that scientists around the world are working hard on understanding these diseases and seeking cures – and they are. What many may not realise, however, is that right here in the Illawarra, there is a growing group of researchers who are also trying to piece together the puzzle about the causes of neurodegeneration - a term we use to describe the progressive loss of function and eventual death of neurons.

Based at the Illawarra Health and Medical Research Institute (IHMRI) and the University of Wollongong, we all have slightly different views on how to piece the puzzle together, but what we all share is a focus on the fundamental science behind these diseases. What that means is that we are focused on understanding the cause. By doing so, we hope that we can one day discover a cure.

My area of interest is the role that proteins play in diseases such as Parkinson’s disease.
As we get older, the proteins in our body can start to lose their shape and, because of this, they start to malfunction and form clumps that sit in the brain and cause disease. These clumps are the telltale signs of many neurodegenerative diseases, including Parkinson’s. Our current thinking is that, if you can stop the clumping, you can stop the onset of the disease. A number of clinical trials are now being conducted internationally on drugs that do exactly this – which means we are on the right track.

Normally, our body has systems in place to prevent this clumping but, as we age, these too do not work like they used to, making us more vulnerable to disease. The focus of my work is discovering how we can boost the activity of these systems in order to stop those clumps forming in the first place.

While a cure may still be a way off, the fact that we have people working in this area and access to state-of-the-art facilities in the Illawarra means that we have just as much of a chance to finding a solution than any other lab or scientist.

In fact, we are attracting more funding and more talented researchers to Wollongong. In November this year we will host a major conference focused on these diseases and what causes them. It has attracted some of the best national and international researchers, giving us the opportunity to hear the latest results from leading labs around the world as well as highlighting the great work we are doing here at IHMRI.

I feel it is important to promote what we do as it is the Australian tax payer who ultimately funds our work and we want to show that that money is being put to good use.

* By Dr Heath Ecroyd is an Australian Research Council Future Fellow in the School of Biological Sciences at the University of Wollongong and a group leader at the Illawarra Health and Medical Research Institute.