

Which comes first? Parkinson's or eye trouble?



Project information

Lead researcher	Dr Tara Moore
Location	University of Ulster, Coleraine; Mater Hospital and Royal Victoria Hospital, Belfast
Cost	£32,962 over 8 months
Start date	December 2009
Type of project	Innovation grant
Project code	K-0907

Project background

Dr Moore's team in Northern Ireland have noticed that many people with Parkinson's also see an optician for eye conditions such as dry eye and blepharitis. Both of these eye problems can have a major impact on people's health and their ability to get by day-to-day. It is possible that having Parkinson's causes the eye trouble, perhaps because it makes people blink less often. However Dr Moore's team suspect that some people with a history of this kind of eye trouble go on to develop Parkinson's. It may even be the case that the eye problems can trigger Parkinson's through a complex sequence of events happening inside the nerve cells that connect the eye to the brain. But there hasn't yet been any research that can tell us how big the problem is or whether there is any true link, so this will be the first study to investigate.

- **What are dry eye and blepharitis?** Dry eye gets its name because the tear ducts are dryer than usual. The symptoms include itchy, dry and irritated eyes, along with a burning sensation. People with dry eye compare their discomfort to having angina. Blepharitis is diagnosed when one or both eyelids repeatedly become red and swollen.

- **How common are these eye problems?** It's estimated that 15% of the population suffer from these conditions, but we don't know whether that figure is the same for people who have Parkinson's. Dr Moore's team suspect that they are more common in people with Parkinson's, based on their observations in the eye clinic. This study aims to get some firm figures.
- **How are the problems linked to Parkinson's?** We don't yet know for sure whether there is a link, but other brain conditions such as Alzheimer's have been linked to infection and the immune system. 40% of patients with an allergic eye disease have dry eye and so it is possible that these people also have a problem with their immune systems. If so, it may be that repeated eye infections could trigger Parkinson's in some people.

What the researchers are doing

In this project, Dr Moore and the team will compare 500 people with Parkinson's to 500 people without the condition, in order to answer two questions. 1) Are dry eye and blepharitis more common in people who have Parkinson's? And 2) which came first – a Parkinson's diagnosis or eye trouble – in people who have both. The team will get a detailed medical history and a small sample of blood for genetic analysis from all participants. The participants will also have a range of eye tests and will answer a questionnaire about the symptoms of dry eye.

How the research will help people with Parkinson's

When the project ends, we should know more about how blepharitis and dry eye affect people who have Parkinson's. This will help to ensure that treating the conditions is given the right priority. We should also know whether eye trouble typically precedes Parkinson's or not. If Parkinson's comes first, the team will be in a position to do some in-depth genetic research with the blood samples collected from participants. So this project could open up some new areas for research to prevent Parkinson's or to detect it early on.

For more information, please talk to the Research Team

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