

Low-cost Parkinson's disease diagnostic test a world first

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Scientists at Melbourne 's Howard Florey Institute have developed a cost-effective diagnostic test for Parkinson's disease (PD), which will also assist researchers to understand the genetic basis of PD and to undertake large-scale studies to identify the genes that cause this debilitating condition.

Currently there is no specific PD diagnostic test and doctors rely on their observations to make a diagnosis, which means some patients may not be prescribed the most suitable medication and around 15% of those diagnosed may actually be suffering from something else.

Whilst conventional DNA sequencing of all six known Parkinson's disease genes is available, this test costs \$4,000 and is not covered by Medicare.

Florey research leader, Dr Justin Rubio, has created a ' gene-sequencing chip' that screens 17 genes in all, including the six known Parkinson's disease genes plus some other suspects in one simple test, at a cost of \$500.

Dr Rubio said the gene-sequencing chip would allow for routine testing of people suspected of having Parkinson's disease.

“Around 100,000 Australians have Parkinson's disease but few have had DNA testing for the known genes that cause the disease due to the prohibitive cost,” Dr Rubio said.

“We are now seeking funding to conduct a large-scale trial to examine the effectiveness of our \$500 chip compared with the \$4,000 DNA test and we are confident our chip will prove to be the better option.

“In addition to providing a genetic diagnosis it is hoped that our chip will eventually be able to pinpoint genetic changes that help to predict a person’s prognosis and even the treatment that best suits them.

“As the test is relatively cheap and only involves collecting a sample of blood or saliva, it could also be made available to the patient's relatives and those at risk of developing PD.

“In addition to being a diagnostic tool, this low-cost chip will allow researchers to undertake an Australia-wide gene-mapping study to identify further genes that are involved in PD.

“More genetic information will deepen our understanding of PD and enable researchers to work towards ways of preventing and treating the disease.

“The successful implementation of this technology could also lead to genetic testing for other diseases ,” Dr Rubio said.

Dr Rubio plans to test the chip on DNA samples from 400 people with PD who were recruited from Victoria and Tasmania, and this project involves collaborators from hospitals and research institutes in both states.

Using the gene-sequencing chip, Dr Rubio and his collaborators now hope to extend the ‘Gene Discovery’ project to all Australian states to determine the genetic basis of PD.

Source: Research Australia

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