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Media Statement

LARGEST STUDY INTO TYPE 1 DIABETES IDENTIFIES DOZENS OF NEW GENES

In one of the world's largest genetic studies and biggest breakthroughs towards understanding type 1 diabetes, an international group of scientists has identified more than 40 genes, including 25 totally new discoveries, as risk factors for the disease.

Leading the Asia Pacific arm of the research group, Professor Grant Morahan from the Western Australian Institute for Medical Research (WAIMR) said this was the largest genetic studies into type 1 diabetes the world had seen.

The research will be published in *Nature Genetics* online today and will feature in the June edition of the prestigious journal.

"We've been able to pinpoint over 40 genes that increase the risk for type 1 diabetes including many new genes, so this is one of the most significant discoveries to date in understanding this disease," Professor Morahan said.

"Where this discovery has much potential is that it could show us how to stop the disease returning by controlling how the risk genes work.

"This study involved screening DNA samples donated by more than 10,000 people with type 1 diabetes from across the world, and more than 11,000 people without the condition – including more than 2000 families in which two children have type 1 diabetes.

"What's really surprising about these findings is not only did we find so many new genes, but we've also come across risk factors that are located between genes along the chromosomes, and at least three of these are in what we call 'gene deserts'.

"The purpose of gene deserts is still a scientific mystery, so this discovery could give us an insight into the function of these chromosome regions, as well as clues to how type 1 diabetes develops."

Genetic samples for the decade-long project came from the International Type 1 Diabetes Genetics Consortium, which involved more than 300 Australian families via the Australian Childhood Diabetes DNA Repository.

Professor Morahan, who helped plan the mammoth project and led the recruitment of study participants across the Asia Pacific region said the next step was to investigate the functions of these genes.

"Our WA team will now help determine the function of these genes and how they might trigger type 1 diabetes by investigating the level of expression of these genes between different people with the condition," he said.

WAIMR Director Professor Peter Klinken said this discovery had opened the flood gates for more breakthroughs in type 1 diabetes research and WA was playing a major role.

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“This is a huge study which will no doubt pave the way for a host of new discoveries towards treating and curing type 1 diabetes, and one in which WA researchers and volunteers have played a big part,” he said.

“I’m thrilled WA has stepped up to the global stage in this vital area of research and proud to see Professor Morahan leading the way.”

The international study was funded by United State’s National Institutes of Health (NIH).

The Australian Childhood Diabetes DNA Repository has been funded by the National Health and Medical Research Council, with additional support from WAIMR, the Diabetes Research Foundation, Diabetes WA and The University of Western Australia.

For more information about the Australian Childhood Diabetes DNA Repository, visit www.acddr.org.au(.)

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