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## Genetic cause for migraine found

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A genetic defect that is a key cause of migraines has been identified by researchers funded by the Medical Research Council (MRC). The study offers researchers new hope for finding better treatment for a common form of migraine.

Scientists at the MRC Functional Genomics Unit based at the University of Oxford and colleagues in Canada have identified a specific gene, TRESK, found in a family suffering from migraines. This gene was found to be directly attributable as a cause and could be a significant reason for the one in five women and one in ten men worldwide who suffer from migraines.

The study found that if the gene known as TRESK does not work properly, it can more easily trigger sensitive pain centres in the brain and cause a severe headache. The international team used DNA samples from people with common familial migraine to identify the defective gene.

A migraine is a severe, long-lasting headache usually felt as a sharp pain at the front or on one side of the head. Some people can have a warning visual disturbance before the start of the headache called an aura and many people also have symptoms, such as nausea and sensitivity to light during the headache itself. Until now, the genes responsible have been unknown. The World Health Organization rates migraine as a leading cause of disability worldwide and it is estimated to be the most costly neurological disorder in Europe.

Dr Zameel Cader from the Medical Research Council Functional Genomics Unit at the University of Oxford said:

*"We have now made a major step forward in our understanding of how people suffer with migraine and how in certain cases, your family can literally give you a headache! Previous studies have identified parts of our DNA that increase the risk in the general population but have not found genes which can be directly responsible for common migraines. What we've found is that migraines seem to depend on how sensitive our nerves are in the pain centres of the brain. This finding should lead to the key player which controls this excitability and will give us a real opportunity to find a new way to fight migraines and improve the quality of life for those suffering."*

The study is published in *Nature Medicine* today. It was funded by the Medical Research Council, Genome Canada, Genome Quebec, Eisai Therapeutics, the Wellcome Trust and Pfizer.

This work forms part of the MRC's commitment to link laboratory knowledge to clinical investigation and deliver discoveries that will lead to the development of new treatments and medical practices. The MRC invests strongly in basic and other research on natural mechanisms that protect the body against disease.

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