

Gene find could aid nerve repair

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Scientists have pinpointed a gene that controls how quickly a person's nerves can regenerate after injury or disease.

Researchers at the University of Edinburgh say the find could lead to better understanding and treatment of conditions that affect the body's nerves, such as motor neurone disease and carpal tunnel syndrome.

Scientists say the discovery could also help to predict how quickly a person's nerves will recover from a severe physical trauma, such as being involved in a car accident.

In the long term, the research could help to develop more appropriate treatment programmes for those people who are likely to experience a slow recovery.

Researchers were already aware that the gene - named apolipoprotein E (APOE) - controls how quickly nerve cells repair themselves in the brains of people affected by conditions such as stroke or Alzheimer's disease.

The latest study, however, shows for the first time that one form of the gene - APOE4 - slows the regrowth of nerves outside the brain and spinal cord.

These include nerves that connect to muscles in the arms and legs and those that carry sensory information from the skin.

The team says it may now be possible to identify patients who will have a slow recovery after nerve injury.

Scientists could also use genetic analysis to identify those who are likely to have poorer responses to treatments for conditions such as motor neurone disease.

The research was conducted in mice, however, around one in three humans carry the E4 version of the gene.

"This research helps us to understand how a person's genetic makeup can determine how likely they are to recover from nerve injury or disease. Identifying [genes](#) that control regeneration of the nervous system therefore takes us one step closer to developing personalised treatments that improve [nerve](#) re-growth and speed up recovery." said Tom Gillingwater, Professor of Neuroanatomy.

The findings have been published in the journal *Human Molecular Genetic*.

Provided by University of Edinburgh

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