MedicalXpress

Cell study explains why younger people more at risk of vCJD

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Specific cells within the immune system could help explain why younger people are more susceptible to variant CJD, scientists believe.

Patients diagnosed with variant CJD are, on average, 28 years old but it has been unclear why older people are not as affected by the disease.

Research at The Roslin Institute of the University of Edinburgh has identified specific cells within the immune system that attract corrupted proteins - known as prions - linked to variant CJD and encourage them to multiply and spread.

The study, published in the Journal of Immunology, looked at how these cells behaved in mice and found that the cells were impaired in older mice. As a result, they were unable to trap and replicate the prions and the mice did not develop clinical disease.

Neil Mabbott, of The Roslin Institute, said: "It has always been unclear why younger people were more susceptible to variant CJD and the assumption that they were more likely to eat cheap meat products is far too simplistic.

"Understanding what happens to these cells, which are important for the body's immune responses, could help us develop better ways of diagnosing variant CJD or even find ways of preventing prions from spreading to the brain. It could also help to create a vaccine."

Prions accumulate in lymphoid tissues - part of the body's immune system that include the spleen, lymph nodes and tonsils - before spreading to the central nervous system where they kill off brain cells and cause neurological disease.

Attempts to estimate the number of people carrying variant CJD have relied upon identifying the presence of prions in tonsil and appendix samples collected during routine operations.

The latest study, funded by the Biotechnology and Biological Sciences Research Council, suggests that even more people may be infected than previously thought as researchers also found prions present in brain tissue from older mice, which had not developed clinical disease.

Even when prions were present in the brains of older mice, however, they were not always found in lymphoid tissues, suggesting that the prediction of cases may be underestimated. It is thought the prions may have spread to the brain before they died off in the lymphoid tissues.

Source: University of Edinburgh