# Specific brain areas found to be linked to depression

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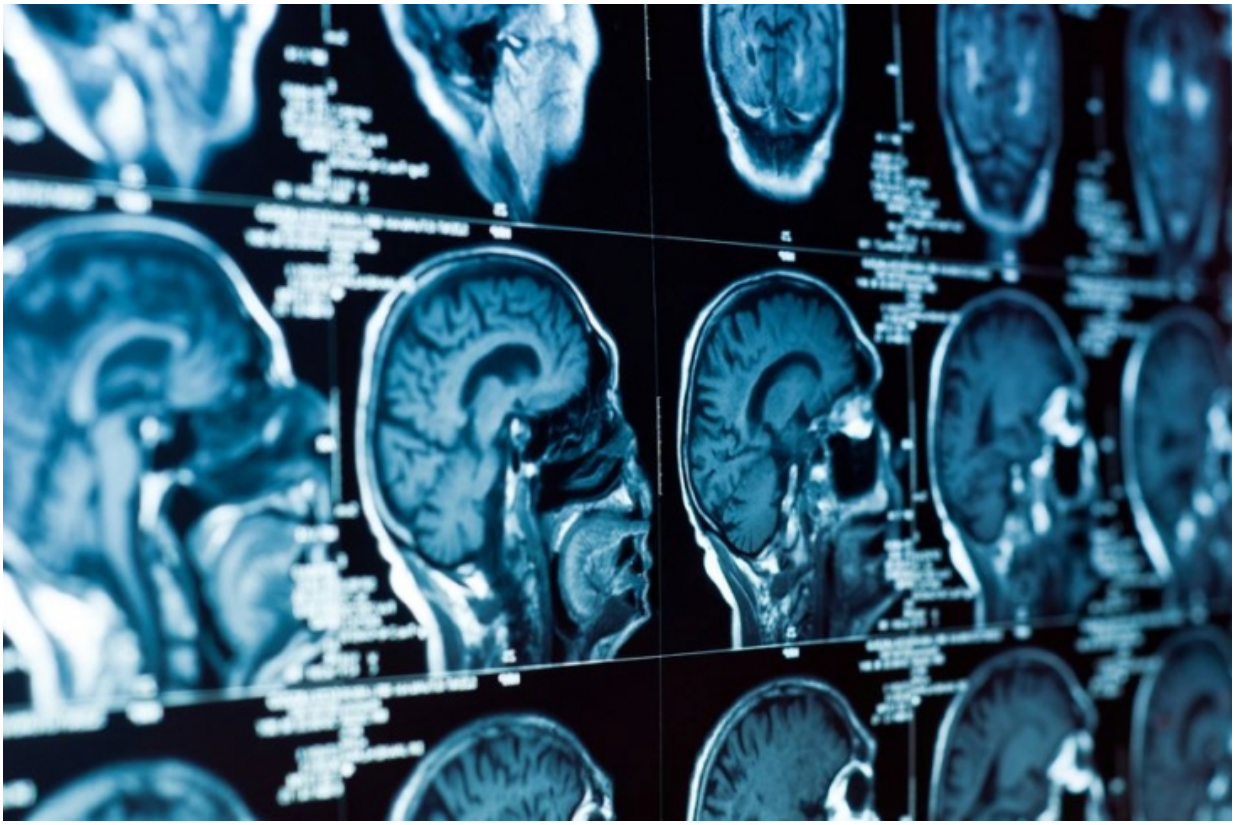

Damage in specific brain structures has been found to be associated with a greater risk of depressive symptoms in late life according to research from the University of Aberdeen.

Data gathered from the Aberdeen Birth Cohort of 1936, was used to find how depressive symptoms are linked with localised brain damage and if intelligence and physical fitness have an effect on the presentation of depressive symptoms.

Professor of Radiology, Alison Murray used Magnetic Resonance Imaging (MRI) and complex statistical modelling to find the link between areas of brain damage, intelligence, physical fitness and depressive symptoms in a study published in Archives of Gerentology and Geriatrics.

The MRI scans were used to identify the location of brain lesions – areas of brain damage, usually indicative of blood vessel disease in the brain - and it was found that if the lesions were found in deep brain structures, the individual affected was more likely to have depressive symptoms than if the damage was anywhere else.

However, it was found that higher levels of intelligence and better physical fitness reduced the risk of depressive symptoms even in people with deep brain lesions.

Professor Murray said: "Our results confirmed previous findings that lesions predict depressive symptoms, but we went a step further to show that the presentation of depressive symptoms depends on where the lesions are in the brain.

"This is the first study that has determined what symptoms people are likely to experience depending on where lesions are.

"We found that if the lesions involve deep structures in the brain they are more likely to be associated with depressive symptoms. Whereas, if they are in the brain stem and cerebellum, people are more likely to be physically impaired.

"In addition to this, we found that people with higher intelligence and better physical health are protected from the depressive symptoms associated with these lesions. This supports the whole concept that exercise is good for brain and mood and can reduce depressive symptoms.

"In terms of practical applications, this research means that in the future, we can use this information to identify and those at greater risk of depressive symptoms and in doing so target appropriate people to treat. "

"We are extremely grateful to Aberdeen birth cohort participants for giving up their time to help us understand major health problems like depression.

Provided by University of Aberdeen