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News

Brain study examines causes of autism

A new University study has revealed how abnormalities in brain development may lead to autism and behavioural disorders.

Research into Fragile X syndrome - a genetic condition that is the leading known cause of autism - has found that critical phases in the brain's development may be mistimed in people with the condition.

This may result in inappropriate communication between brain cells, potentially causing the symptoms experienced by Fragile X patients.

These include hypersensitivity to touch and sound, as well as social withdrawal, hyperactivity and anxiety.

Fragile X syndrome

Fragile X syndrome is as common as cystic fibrosis - it affects around one in 4000 males and one in 8000 females worldwide. It causes intellectual disability as well as social, language and behavioural problems

The University research, conducted with scientists at Northwestern University in the US, sought to identify how the brains of people with Fragile X differ from those of healthy people.

It found that these changes in the brain's connections occur much earlier than previously thought, midway through a baby's development in the womb.

Treatment window

The study, published in the journal Neuron, suggests there are key "windows" when treatments for Fragile X and autism could be most effective.

Researchers used a mouse model of the condition to investigate how the regions of the brain responsible for processing sensory information - such as touch - may develop differently in Fragile X patients.

The team believes that the changes they found in this area of the brain may be mirrored in other regions, explaining the range of symptoms experienced by people with Fragile X syndrome.

> We've learned that changes in the brains of Fragile X mice happen much earlier than previously thought, which gives valuable insight into when we should begin future therapeutic intervention in patients. These findings also have implications for treating autism since the changes in the brains of Fragile X and autistic people are thought to significantly overlap.

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