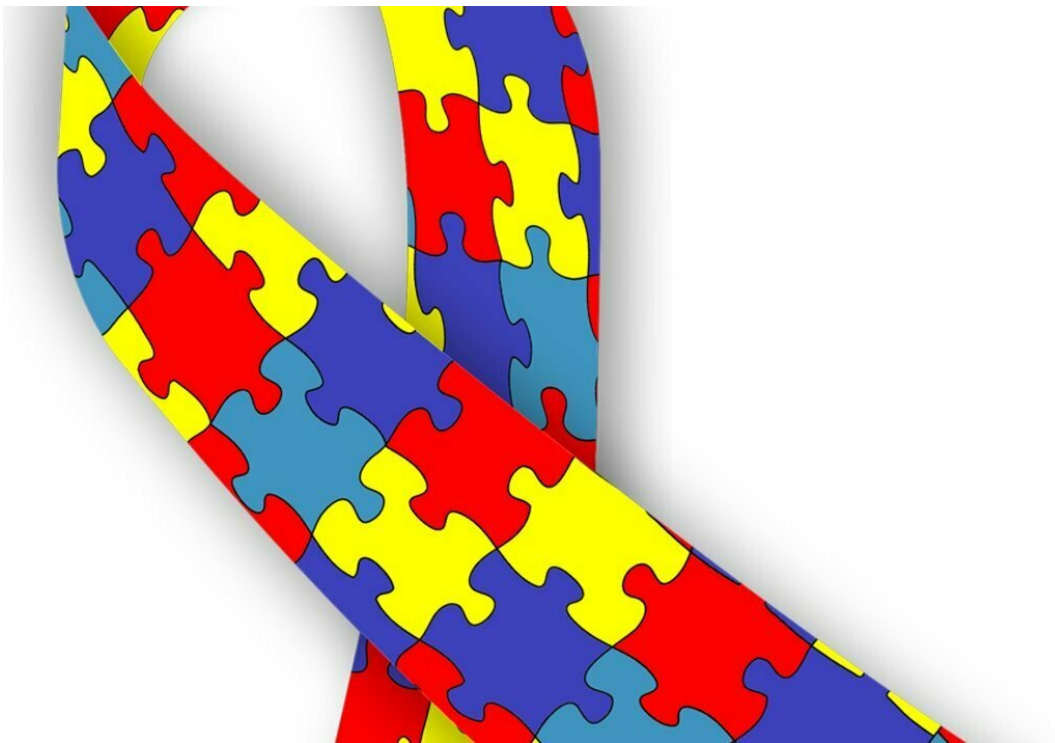


Scientists uncover underlying genetic mechanism that leads to motor issues in autism spectrum disorders

February 13 2019, by Julia Short



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Researchers from Cardiff University have established a link between a genetic mutation and developmental movement impairments in autism.

The study, which found that the mutation of the CYFIP1 gene leads to changes in the development of brain cells, leading to the motor issues, also suggests that motor learning difficulties occur at a young age and can be reversed through behavioural training.

Dr. Stéphane Baudouin, Cardiff University's School of Biosciences, said: "People with [autism](#) tend to experience difficulties in social interaction, communication and repetitive behaviours. As well as this, [movement disorders](#), such as issues with posture, motor planning and coordination, are common.

"We know that the mutation of the CYFIP1 gene is associated with genetic forms of autism spectrum disorders, but we wanted to understand if this specific genetic mutation is involved in the [movement](#)-related issues associated with autism, and if so, how it's involved.

"Previous research suggested that this CYFIP1 mutation effects the structural stability of brain cells. Our study has built on this research and is the first to prove this is true."

The team found that the mutation in the CYFIP1 gene affected the formation of the spines of brain cells, causing them to become unstable – which led to the motor issues that occur during development in autism.

Through [early intervention](#) with movement therapies, they believe that movement impairments could be lessened.

"Our results found that the motor learning difficulties occurred at a young age, but are reversible through behavioural training," commented Dr. Baudouin.

"We think that if movement therapy is given at a young age, when autism is diagnosed in childhood alongside the motor impairments, this

can help prevent motor impairment later in life.

"Our research has not only unveiled some of the genetic and biological reasons why these movement impairments occur in autism, but has given us a plan to help ease these symptoms through early intervention."

The study "Behavioral training rescues motor deficits in Cyfip1 haploinsufficiency mouse model of autism spectrum disorders" is published in *Translational Psychiatry*.

More information: Sven O. Bachmann et al. Behavioral training rescues motor deficits in Cyfip1 haploinsufficiency mouse model of autism spectrum disorders, *Translational Psychiatry* (2019). [DOI: 10.1038/s41398-018-0338-9](https://doi.org/10.1038/s41398-018-0338-9)

Provided by Cardiff University

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