

Research sheds new light on mental health risks to children of older fathers

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The increased risk of mental illness in children of older fathers is unlikely to result from men's genes mutating with age, according to new research from The University of Queensland.

Mathematical modelling by Queensland Brain Institute scientists suggests an alternative possibility – that men at high risk of psychiatric

disorders may become parents at a later age, in turn passing on [genetic risk factors](#) to their children.

QBI Centre for Neurogenetics and Statistical Genomics researcher Dr Jake Gratten said the finding was important as it challenged a long-held assumption that gene mutation in older men resulted in a higher risk of their children having [psychiatric disorders](#) such as autism and schizophrenia.

"People have assumed the [increased risk](#) of disorders like autism in children of [older fathers](#) must be due to the extra [mutations](#) they receive from their dads, and that therefore men should have kids when they are young," Dr Gratten said.

"Our study shows the story is more complicated than that."

The team from QBI, The University of Melbourne and VU University Medical Center used mathematical models to investigate if paternal age-related mutations could account for the increased risk of mental illness in children of fathers 10 years older than the average age of 25 to 30.

"The idea that age-related mutations are to blame is biologically plausible, but our modelling suggests that this mechanism explains at most about 10 to 20 per cent of the increased risk," Dr Gratten said.

"We found that a different genetic mechanism – that men at high genetic risk of [mental illness](#) may on average become parents later – could also contribute."

"Having said that, our results are based on models rather than actual data, and there may be a more nuanced combination of contributing factors. There is a compelling need for more research in this field."

The research, Risk of psychiatric illness from advanced paternal age is not predominantly from de novo mutations, is published in *Nature Genetics*.

More information: *Nature Genetics*, [dx.doi.org/10.1038/ng.3577](https://doi.org/10.1038/ng.3577)

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