NEWS

Parental age has different impact on autism, schizophrenia

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Children born to parents who are 35 or older are at an increased risk of autism, and the risk continues to rise with parental age, a new study suggests[1]. For schizophrenia, by contrast, the increased risk is limited to those born to mothers in their teens or early 20s.

The study is one of the largest to explore the effects of parental age on the risk of these conditions in children. In 2014, researchers reported that children born to older fathers or younger mothers are at an elevated risk of both autism and schizophrenia[2]. But the risk-age relationship varies from study to study.

“This type of research has been going on for over three decades, and there’s been all sorts of patterns of results,” says lead researcher Sean Byars, who did the work as a postdoctoral fellow in **Jacobus Boomsma’s** lab at the University of Copenhagen in Denmark. The work appeared 16 September in *Evolution, Medicine and Public Health.*

Byars and his colleagues used Danish national registries to probe the health histories of more than 1.7 million people born between 1978 and 2009. Of these individuals, 10,703 have an autism diagnosis and 3,817 have schizophrenia.

The researchers grouped the individuals by the age of their parents at the time of their birth. They then measured how the numbers of autism and schizophrenia cases vary with the parents’ ages.

The analysis revealed that children born to men aged 35 to 60 are up to 24 percent more likely to have autism than children with fathers aged 31 to 34. Likewise, children born to women aged 32 to 46 are up to 34 percent more likely to have autism than those born to women who are 29 to 31.

Consistent with this trend, parents who are 15 to 30 years old are the least likely to have a child with autism: Men in this age group have up to a 14 percent lower chance and women in this age

group have a 17 percent lower chance than parents in their early 30s.

Opposite effect:

The findings confirm those of earlier studies probing **parental age and autism risk**. However, unlike previous studies, the researchers did not find a link between the father's age and the risk of schizophrenia.

They found that children born to women who are 22 to 24 years old have a 29 percent higher risk of schizophrenia than those with mothers in their early 30s. For children born to mothers 15 to 21 years old, the risk of schizophrenia jumps by 76 percent.

That parental age influences autism and schizophrenia risk in opposite directions hints at separate underlying mechanisms, says **Daniel Weinberger**, professor of psychiatry, neurology and neuroscience at Johns Hopkins University in Baltimore, who was not involved with the study.

For instance, the risk of autism from having an older father may stem from **spontaneous mutations** in sperm that accumulate over time, Weinberger says. This type of mutation may be less important for **schizophrenia risk**. (Some have cast doubt on the **aging sperm theory** in autism as well, however.)

The study also revealed that both autism and schizophrenia risk increase as the **age difference between parents** expands — a finding in line with previous reports.

The researchers controlled for variables that influence autism and schizophrenia risk, such as a family history of psychiatric conditions and birth complications. But because older mothers have a high risk of complications such as preterm birth, controlling for those problems may lead to artificially low estimates of the effects of maternal age, says **Brian Lee**, associate professor of epidemiology and biostatistics at Drexel University in Philadelphia, who was not involved with the study.

In the end, prospective parents should remember that the odds of having a child with either condition are small, Weinberger says. Large epidemiological studies can reveal trends, but their conclusions should not dictate the decision to have a child.

REFERENCES:

1. Byars S.G. and J.J. Boomsma *Evol. Med. Public Health* **2016**, 286-298 (2016) **PubMed**
2. McGrath J.J. *et al. JAMA Psychiatry* **71**, 301-309 (2014) **PubMed**