Does sperm from teenage fathers carry more mutations?

You may have come across the story. ‘Teenagers more likely to pass on genetic mutations to children,’ reported The Independent. ‘Teenage boys more likely to father child with birth defect due to mutating sperm,’ declared The Metro. The Mail on Sunday was even prepared to put a figure on it: ‘Teenage boys’ babies are 30 percent more likely to develop autism, schizophrenia and spina bifida.’

But was there research showing anything of the sort? The simple answer is no.

The story came from a research paper published in The Proceedings of the Royal Society B in which researchers analysed DNA from 24,000 parents and their offspring. Looking at DNA microsatellites, they counted the number of mutations arising in these stretches of DNA during the production of either the sperm or the egg.

What they found was that, at all ages, the rate of these mutations was around six times higher in sperm than in eggs, suggesting that, even just after puberty, sperm cells have gone through more cell divisions than eggs.

But the researchers took their findings further by suggesting that their results showed that teenage fathers pass on more mutations to their offspring than older fathers and that therefore these children are more likely to be born with birth defects. And it was this claim that made it into the press.

The authors came to this conclusion because the rate of mutation was numerically higher in men aged 15 to 19.9 years than in the 20 to 24.9 year age group. However, the authors’ statistical analysis would seem to indicate that the rate of mutation does not significantly differ between the two age groups. This would hardly be surprising given that, out of the study of 24,000 parents, only 401 mutations were detected and, of these, only 23 were definitively assigned to paternal origin in the teenaged group.

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