

Teenage fathers are more likely to have babies affected by birth problems

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Teenage fathers are at increased risk of having babies born with birth problems ranging from pre-term delivery or low birth weight, through to death in or near to the time of delivery, according to new research published today.

In contrast, the study also found that older fathers, aged 40 and over, were not at increased risk of having babies affected by these problems. The results were independent of the age of the mother or other maternal factors that might be expected to have an impact on birth outcomes.

The research, which is published in Europe's leading fertility journal *Human Reproduction*, is the largest study on the effects of paternal age on adverse birth outcomes. The researchers, from the Ottawa Health Research Institute, Canada, used data from the National Center for Health Statistics for nearly all the births (99%) in the USA between 1995-2000 – a cohort of more than 23.6 million births. From these, they looked at 2,614,966 singleton babies born live to married women without previous childbearing histories, aged between 20-29, where there was complete information on paternal age, race, maternal education, prenatal care, and gestational and birth weight.

They chose women aged between 20-29 because they were the least likely to be affected by fertility problems, some of which can have an impact on birth outcomes. Since it is already known that fathers aged between 20-29 have the lowest risk of adverse birth outcomes, the researchers used this age group (the reference group) to compare all the

other age groups against.

Compared to the reference group and after adjusting for confounding factors (such as race, education, smoking and alcohol drinking during pregnancy, adequacy of prenatal care and the sex of the baby), babies born to teenage fathers (aged less than 20) were more likely to be born early (a 15% increased risk), have low birth weight (13% increased risk), be small for gestational age (17% increased risk), have a low Apgar score (13% increased risk) or to die within the first four weeks after birth (22% increased risk) or to die in the period from four weeks to one year after birth (41% increased risk), although in all cases the absolute risk of death remained less than 0.5% . Fathers aged 40 or over did not have an increased risk of these adverse birth outcomes.

One of the authors of the study, Professor Shi Wu Wen, senior scientist at the Ottawa Health Research Institute and professor at the University of Ottawa, said: “Our study indicated that being a teenage father was an independent risk factor for adverse birth outcomes, whereas advanced paternal age was not. The paternal influence of younger fathers on adverse birth outcomes clearly warrants further investigation, and may lead to a deeper understanding of the causes of such outcomes.

“Although the increased relative risks for most outcomes were small, the magnitude of the risks to society could be huge, given the number of births worldwide, if the increases we found are truly attributable to paternal age.”

The study looked at babies born to fathers in seven age groups, from teenagers through to those aged 50 and over, and Prof Wen said this, together with the large size of the study and the limited age range of the mothers, meant that the findings were unlikely to be affected by chance or confounding factors. However, there was no information available on the socio-economic status and lifestyle of the fathers, and this could have

an impact.

“The mechanisms by which being a teenage father may contribute to an increased risk of adverse birth outcomes are not clear,” said Prof Wen. “Both biological and socio-economic status might play some roles in the observed findings.”

Previous studies have shown that younger men can have lower sperm counts, semen volume, total numbers of spermatozoa and percentage of motile sperm. Immature sperm may be associated with adverse birth outcomes, possibly as a result of the abnormal formation of the placenta in the uterus (placentation).

“It is biologically plausible that paternal age might play a role in the risk of adverse birth outcomes associated with abnormal placentation,” said Prof Wen.

However, there are also possible social explanations too. “Young fathers are more likely to come from economically disadvantaged families and to have lower educational attainment. Socio-economic factors such as education and occupation are known to be associated with a number of health outcomes. People from less affluent backgrounds are less likely to utilise prenatal care services, which is associated with an increased risk of adverse birth outcomes,” explained Prof Wen.

Other social factors that might play a role, perhaps by adversely affecting the mother’s health, include domestic violence, lack of financial or emotional support, paternal illicit drug use, smoking and alcohol drinking. “These are more prevalent in teenage fathers, and previous studies have found associations between paternal smoking and alcohol and adverse reproductive outcomes,” he said.

Of the finding that older fathers were not more likely to have babies

affected by adverse birth outcomes, Prof Wen said: “In our present study, we did not find an association between older fathers and the increased risk of adverse birth outcomes. We could not exclude the possibility that older fathers who married women aged 20-29 years without childbearing history might have a higher socioeconomic status than our control groups. The advantaged socioeconomic conditions might offset some biological risk of adverse birth outcomes associated with older fathers.”

Prof Wen said he and his colleagues were planning a pre-conception study to look at various paternal and maternal factors that might have an effect on the health of babies, including paternal age.

Source: European Society for Human Reproduction and Embryology

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