

## Moderate drinking during pregnancy does not appear to harm baby's neurodevelopment

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Moderate drinking during pregnancy — three to seven glasses of alcohol a week — does not appear to harm fetal neurodevelopment, as indicated by the child's ability to balance, suggests a large study, led by academics at the University of Bristol and published online in the journal *BMJ Open*.

But social advantage may be a factor, as more affluent and better educated mums-to-be tend to drink more than women who are less well off, say the research team led by Professor John Macleod at the University's School of Social and Community Medicine.

The researchers assessed the ability to balance — an indicator of prenatal neurodevelopment — of almost 7,000 ten-year-olds who were part of the University of Bristol's Avon Longitudinal Study of Parents and Children (ALSPAC).

ALSPAC has been tracking the long term health of around 14,000 children born between 1991 and 1992 to women resident in the former Avon region of the UK.

Those children whose mothers' alcohol consumption during (18 weeks) and after pregnancy (47 months) was known, underwent a 20-minute balance assessment when they reached the age of ten.

The assessment included dynamic balance (walking on a beam); and static balance (heel to toe balance on a beam, standing on one leg for 20 seconds) with eyes open and then again with eyes closed. Each child had two attempts at the test.

Their dads were also asked how much alcohol they drank when their partners were 3 months pregnant. Over half said they drank one or more glasses per week and one in five said they drank one or more glasses a day.

Most of the children's mums had drunk no alcohol (70 per cent) while pregnant, while one in four drank between one and two (low consumption) and three and seven glasses a week (moderate consumption).

Some 4.5 per cent drank seven or more glasses a week. Of these, around one in seven were classified as binge drinkers—four or more glasses at any one time.

Four years after the pregnancy, more than 28 per cent of the women were not drinking any alcohol, and over half were drinking between three and seven+ glasses of alcohol a week.

In general, the mums who drank more but were not binge drinkers were better off and older; the mums who binge drank were less well off and younger.

Higher total alcohol consumption by mums before and after pregnancy, and also higher consumption by the dad during the first three months of pregnancy, were associated with better performance in the children, particularly for static balance.

The genetic predisposition to low levels of alcohol consumption was assessed in 4,335 women by blood test. If the above surprising apparently "beneficial" effects of higher parental alcohol consumption on children's balance were true we would expect children of mums with the "low alcohol" gene to have worse balance. However there was no evidence that the children of these women were less able to balance than those whose mums who did not have this genetic profile. In fact there was a weak suggestion that children of mums with the "low alcohol" gene actually had better balance though this study was too small to show this reliably.

Taken together, the results showed that after taking account of influential factors, such as age, smoking, and previous motherhood, low to moderate alcohol consumption did not seem to interfere with a child's ability to balance for any of the three components assessed.

But in general, better static balance was associated with greater levels of affluence and educational attainment. In this group of mums moderate alcohol intake was a marker for social advantage which may itself be the key factor in better balance possibly overriding subtle harmful effects of moderate alcohol use.

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