

# Low/moderate drinking in early pregnancy has no adverse effects on children aged 5: research

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Low and moderate weekly alcohol consumption in early pregnancy is not associated with adverse neuropsychological effects in children aged five, suggests a series of papers published today in *BJOG: An International Journal of Obstetrics and Gynaecology*. However, high levels of alcohol per week were linked with a lower attention span among five year olds.

The Danish researchers have produced five papers looking at the effects of low, moderate, high and [binge drinking](#) on five year olds. Women were recruited from the Danish National [Birth Cohort](#) at their first antenatal visit.

Low average weekly alcohol consumption was defined as 1-4 drinks per week, moderate as 5-8 drinks per week and high levels as 9 or more drinks per week. Binge drinking was defined as intake of 5 or more drinks on a single occasion. Participants who did not drink during pregnancy were included as the unexposed reference group.

The definition of a drink in these papers comes from the Danish National Board of Health, which states one standard drink is equal to 12 grams of pure alcohol. However, the amount of alcohol in a standard drink varies significantly from country to country. In the UK the volume of alcohol in a drink is measured in units and one unit of alcohol is defined as 7.9 grams.

1,628 women took part in the studies. The average [maternal age](#) was 30.9 years, 50.1% were first-time mothers, 12.1% were single and 31.4% reported [smoking during pregnancy](#).

The papers looked at the [effects of alcohol](#) on IQ, [attention span](#), executive functions such as planning, organisation, and self-control in five year old children.

Overall, the papers found that low to moderate weekly drinking in [early pregnancy](#) had no significant effect on neurodevelopment of children aged five years, nor did binge drinking. Focusing on children's IQ and executive functions, no differences in [test performance](#) were observed between children whose mothers reported 1-4 or 5-8 drinks/week per week in pregnancy compared to children of abstaining mothers. However one finding showed that high levels of alcohol, intake of 9 or more drinks per week, was associated with lower attention span amongst five year olds.

Attention was measured using the Test of Everyday Attention for Children at Five (TEACH-5) which measures a child's selective attention and sustained attention. There were no significant effects on test performance in children of mothers drinking up to eight drinks per week compared to children of abstaining mothers. However, there was a significant association between maternal consumption of 9 or more drinks per week and risk of low overall attention score.

Child outcome measures and maternal IQ were obtained during a 3-hour assessment at a university or health clinic site. Children's intelligence was assessed with the Wechsler Primary and Preschool Scales of Intelligence-Revised (WPPSI-R). It consists of five verbal subtests and five performance (non-verbal) subtests.

In conclusion the authors of the papers state that it remains the most conservative advice for women to abstain from alcohol during pregnancy, however, small amounts may not present serious concern.

Ulrik Schiøler Kesmodel, Consultant Gynaecologist and Associate Professor at Aarhus University and Aarhus University Hospital, and Erik Lykke

Mortensen, Professor of Medical Psychology at the Institute of Public Health, Medical Psychology Unit, University of Copenhagen, Denmark and co-authors of the studies said:

"High prenatal exposure to alcohol has consistently been associated with adverse effects on [neurodevelopment](#). Areas such as intelligence, attention and executive functions have been found to be particularly vulnerable. However, less is known about the effects of low to moderate, weekly average consumption levels and binge drinking.

"Our findings show that low to moderate drinking is not associated with adverse effects on the children aged five. However, despite these findings, additional large scale studies should be undertaken to further investigate the possible effects."

John Thorp, *BJOG* Deputy-Editor-in-Chief added:

"These five papers are important as they look at a range of drinking patterns amongst women in early pregnancy. It is important to note the difference in [alcohol](#) levels from country to country and a standard drink varies greatly.

"More research is needed to look at long term effects of [alcohol consumption](#) on children. The best advice is to choose not to drink however small amounts have not been shown to be harmful."

#### **More information:**

Paper 1: Kesmodel U, Bertrand J, Støvring H, Skarpness B, Denny C, Mortensen E, the Lifestyle During Pregnancy Study Group. The effect of different alcohol drinking patterns in early to mid pregnancy on the child's intelligence, attention, and executive function. *BJOG* 2012; [DOI: 10.1111/j.1471-0528.2012.03393.x](#)

Paper 2: Falgreen Eriksen H, Mortensen E, Kilburn T, Underbjerg M, Bertrand J, Støvring H, Wimberley T, Grove J, Kesmodel U. The effects of low to moderate prenatal alcohol exposure in early pregnancy on IQ in 5-year-old children. *BJOG* 2012; [DOI: 10.1111/j.1471-0528.2012.03394.x](#)

Paper 3: Kesmodel U, Falgreen Eriksen H,

Underbjerg M, Kilburn T, Støvring H, Wimberley T, Mortensen E. The effect of alcohol binge drinking in early pregnancy on general intelligence in children. *BJOG* 2012; [DOI: 10.1111/j.1471-0528.2012.03395.x](#)

Paper 4: Underbjerg M, Kesmodel U, Landrø N, Bakketeig L, Grove J, Wimberley T, Kilburn T, Sværke C, Thorsen P, Mortensen E. The effects of low to moderate alcohol consumption and binge drinking in early pregnancy on selective and sustained attention in 5-year-old children. *BJOG* 2012; [DOI: 10.1111/j.1471-0528.2012.03396.x](#)

Paper 5: Skogerbø A, Kesmodel U, Wimberley T, Støvring H, Bertrand J, Landrø N, Mortensen E. The effects of low to moderate alcohol consumption and binge drinking in early pregnancy on executive function in 5-year-old children. *BJOG* 2012; [DOI: 10.1111/j.1471-0528.2012.03397.x](#)

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