



Even low to moderate alcohol consumption during pregnancy can be harmful

The board and scientific advisors of the European FASD Alliance are deeply concerned about recent press reports that drinking during pregnancy is not harmful to the unborn child. This erroneous message is based on a faulty understanding of a recent study carried out in Denmark, and published in a series of articles in BJOG.¹⁻⁵

Measures of risk used in this study

Using various standard tests for IQ, attention and other measures of neurological development, this study found that 5-year-old children prenatally exposed to up to eight drinks per week did not show any adverse effects.

Other measures of risk

Caution should be exercised, however, before stating that this is proof that low or moderate drinking is not harmful, for several reasons. First, other large-scale human studies have reported negative effects of these levels of drinking on neurological development.^{6,7} Secondly, the set of standard tests used in this study does not preclude the existence of other types of harm. For example, human studies have shown an increased risk of birth defects,⁸ childhood leukemia,⁹ and an increased risk of alcoholism at adult age.¹⁰

Human observational studies cannot be used to determine a safe dose

Human observational studies cannot be used to determine a safe dose for several reasons. First, human beings are very different genetically, and groups of pregnant women are heterogenous in age, health, parity and drinking or eating patterns, making it impossible to draw general conclusions. Second, self-reports of drinking habits are notoriously unreliable, and should be confirmed by biomarkers.¹¹ Finally, participation in the study is voluntary, and thus can lead to skewed results, as highly educated women may be more likely than less-educated women to participate in such studies.¹² In order to determine toxic and safe doses, it would be necessary to have participants randomly divided into control (non-drinking) and experimental groups (with standard alcohol exposures). Such an experiment would obviously be unethical, given the known risks of prenatal alcohol exposure.

How are safe exposure limits determined

The science of toxicology has standard procedures to set safe exposure limits to chemicals, food additives, and so forth. Both the American Food and Drug Administration and the European Food Safety Authority have standard procedures to set safe limits of exposure to various chemicals, drugs or food additives. In general, animal studies are used to set a "No observed adverse effect level" (NOAEL), that is, a level of exposure that shows no adverse effects of any kind. Then, before human testing, a margin of safety of 50- or 100-fold less is applied to allow for genetic differences between study animals and humans, and for a safety margin to allow for genetic variability in humans. Even more care is taken to

avoid any testing of potentially harmful substances in the case of pregnant women. If we were to consider alcohol (ethanol) as a drug or food additive, we would first look at animal data. Animal studies have shown that as little as a single drink can cause apoptosis (a chain reaction of cell death) in the developing brain.¹³ Thus according to accepted toxicological measures, even one tenth or one hundredth of a drink could not be considered “safe.”

Conclusion

The board and scientific advisory council of the European FASD Alliance continue to urge the prudent course, to completely avoid drinking alcoholic beverages during pregnancy.

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