

Fetal alcohol study uncovers new facts

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U.S. medical researchers have found cholesterol supplementation prevents fetal alcohol spectrum defects in alcohol-exposed zebra fish embryos.

The Duke University Medical Center study by Yin-Xiong Li and colleagues details the mechanism and prevention of fetal alcohol defects and has implications for potential preventative prenatal intervention.

Experts estimate approximately 100 babies are born daily suffering from alcohol related defects that include abnormalities such as neurological, craniofacial, and cardiac malformations.

Using the zebra fish model, the researcher found alcohol interferes with embryonic development by disrupting cholesterol-dependent activation of a critical signaling molecule, called sonic hedgehog. They also showed cholesterol supplementation of the alcohol-exposed embryos restored the functionality of the molecular pathway and prevented development of such defects.

In addition, the authors report alcohol related-like defects in zebra fish resulted from minimal fetal alcohol exposure, equivalent to a 120-pound woman drinking one 12-ounce bottle of beer.

The findings suggest even small amounts of alcohol might be unsafe for pregnant women and also indicate cholesterol supplementation may be a potential means to prevent fetal alcohol defects.

The study is available online at the Web site of the journal Laboratory Investigation.

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