

# Alcohol exposure before birth may later amplify neurological problems from stroke

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Exposure to alcohol before birth might impair kidney blood flow in adulthood and heighten neurological problems caused by a stroke, according to an animal study presented at the American Stroke Association's International Stroke Conference 2016.

A research team from Texas A&M Health Science Center, College of Medicine, administered ethanol to six pregnant mice twice daily for four days, from gestational day 12 through 15, and administered water to six other pregnant mice. At 12 days of gestation, the mice were in a stage of pregnancy comparable to late in the first trimester for humans, researchers said.

Using ultrasound testing, the team measured blood flow in both male and female offspring of the mice at 3 months of age, a period equivalent to young [adulthood](#) in humans. Blood flow analysis showed evidence for increased arterial resistance within the kidneys—a sign of possible early onset renal hypertension—in the male offspring that were exposed to [alcohol](#) before birth.

Researchers then assessed neurological damage caused by stroke in both male and female offspring and found greater levels of impairment in the six female and six male mice that had fetal alcohol [exposure](#), compared with the dozen that were not exposed to alcohol.

Measurements of the stroke-damaged area of the brain were correlated to scores on neurological testing in the females, but not the males, with

fetal alcohol exposure. "The finding indicates that in mice exposed to alcohol before [birth](#), sex appears to play some role in whether the volume of damaged tissue in the brain correlates with functional and neurological impairment," said lead researcher Shameena Bake, Ph.D., and assistant professor at Texas A&M Health Science Center in Bryan, Texas.

Provided by American Heart Association

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