Drinking at conception boosts diabetes risk for baby

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Karen Moritz

Babies conceived by women who drink alcohol around the time of conception face dramatically increased risks of type 2 diabetes and obesity in early middle age, a University of Queensland study has found.

The discovery was made by School of Biomedical Sciences scientist Associate Professor Karen Moritz during research into how events – particularly alcohol consumption – before and during pregnancy affect the long-term health of offspring.

Using a laboratory rat model, Dr Moritz and PhD student Ms Emelie Gardebjer discovered that the equivalent of five standard drinks consumed around the time of conception altered the development of the foetus.

"Before the egg implants, before any organs start to develop, alcohol consumption somehow causes changes to the embryo," Dr Moritz said.

"Anything that affects foetal development can cause long term programming, which means offspring can be born with increased risk and susceptibility to disease later in life.

"Monitoring the offspring of the laboratory rat model, we found the risk of becoming obese and developing type 2 diabetes in early middle age dramatically increased.

"The usual risk factors of these two diseases are attributed to poor diet and lack of exercise, but our research showed exposure to alcohol around conception presents a risk similar to following a high-fat diet for a major proportion of life."

Dr Moritz said the study was particularly important as 50 per cent of pregnancies in Australia were unplanned.

"Although most women stop drinking once they discover they are pregnant, a significant proportion are consuming alcohol at the time of conception, before they even know," she said.

"Our future research will be focusing on the possibility of administering preventative interventions.

"One possibility is giving some type of nutrient to the mother, even in later pregnancy, to see if the changes caused by the early alcohol

exposure can be prevented, and in turn prevent the possible long-term disease outcomes for offspring."

The research is published in The *Journal of the Federation of American Societies for Experimental Biology*.

More information: *Journal of the Federation of American Societies for Experimental Biology*, www.ncbi.nlm.nih.gov/pubmed/25733565

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