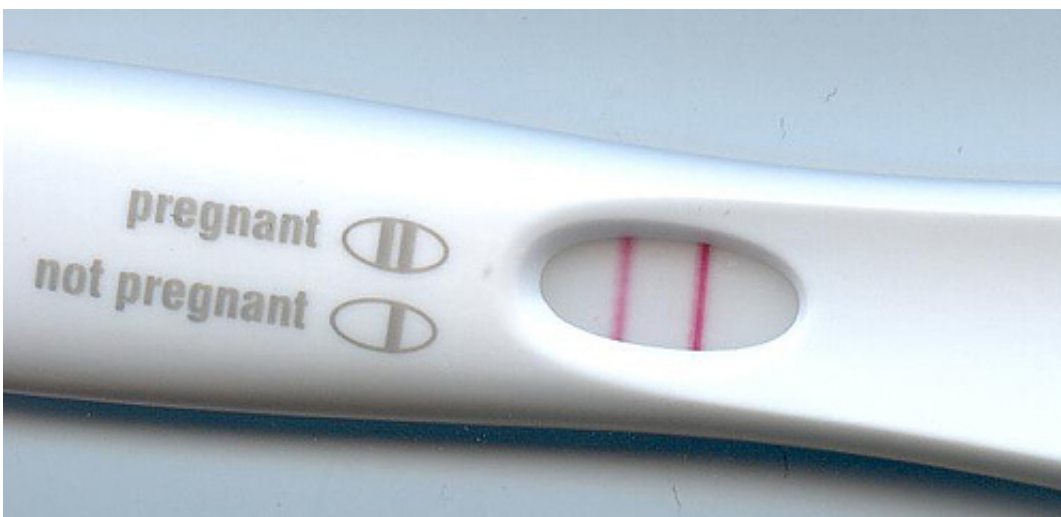


In utero exposure to extreme morning sickness may cause developmental deficits in children

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Pregnancy test. Credit: public domain

Women who experience extreme morning sickness during pregnancy are three times more likely to have children with developmental issues, including attention disorders and language and speech delays, than woman who have normal nausea and vomiting, a UCLA study has found.

This is the first research to look specifically at in utero exposure to extreme morning sickness, or Hyperemesis Gravidarum (HG), and childhood neurologic developmental outcomes, said study first author Marlena Fejzo, an associate researcher in the David Geffen School of

Medicine at UCLA.

Fejzo said this was especially true in women whose HG symptoms began very early, prior to five weeks gestation.

"These findings show that it is vital to take HG seriously so these pregnant women can get nutritional support right away," Fejzo said. "An encouraging finding is that we did not find any association with medications to treat this disorder and neurodevelopmental delays, so I speculate that the neurodevelopmental outcomes are more likely caused by nutrient deficiency early in pregnancy rather than medication."

The study appears in the early online edition of the *European Journal of Obstetrics and Gynecology and Reproductive Biology*.

HG is the condition that Duchess Kate Middleton experienced with both her pregnancies. Its cause is unknown and the symptoms are intense - the continuous nausea and vomiting can be so violent that women can suffer from detached retinas, blown eardrums, cracked ribs and torn esophagi, Fejzo said. The symptoms can last for several months or the entire pregnancy.

This study looked at 312 children born to 203 mothers with HG between 2007 and 2011 and compared those to 169 children born to 89 mothers who did not have HG. The disorders found included attention and sensory disorders and learning, speech and language delays. The mechanism for exposure to HG and the resulting abnormal neurologic development is not yet known, Fejzo said.

The women in the study experienced nausea and vomiting so severe that they lost at least five pounds and became so dehydrated they needed intravenous fluids. Children exposed in utero to HG have a 3.28-fold increased risk of neurodevelopmental delays, Fejzo said.

"There is an urgent need to address whether aggressive treatment that includes vitamin and nutrient supplementation in women with early symptoms of severe [nausea and vomiting](#) decreases that risk of neurodevelopmental delay," she said.

Fejzo said HG is diagnosed in 0.2 to 2 percent of pregnant women, although rates may be higher in Asia. It accounts for more than 285,000 hospitalizations in the United States every year.

Previous studies have shown that HG is associated with [low birth weight](#) babies, small size for gestational age and preterm births. Fejzo showed previously that HG was associated with a 3.6-fold increased risk of behavioral or emotional disorders in adults.

Fejzo and her team are investigating the genetic basis of HG, as well as looking at risk factors and outcomes. Going forward, they hope to determine whether earlier treatment in [women](#) with symptoms limits or prevents the adverse outcomes identified in this study.

"A significant increase in neurodevelopmental and behavioral disorders in children exposed to

HG in utero was demonstrated which suggests HG may be linked to life-long effects on the exposed fetus," the study states. "The cause for this is unknown, but may be due to maternal stress, abnormal hormone levels during fetal development and/or maternal-newborn bonding after birth, or malnutrition and vitamin deficiency."

Provided by University of California, Los Angeles

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