

Blood test for pregnant women could predict risk of having dangerously small babies

June 21 2012

Researchers from the Ottawa Hospital Research Institute (OHRI) and the University of Ottawa (uOttawa) have found a protein in the blood of pregnant women that can predict if they are likely to have a fetus that doesn't grow properly, and thus has a high risk of stillbirth and long-term health complications. The research, led by Dr. Andrée Gruslin, could lead to a widely available blood test and could help develop ways for improving the outcomes of women and their children who face this risk — estimated to be as many as one of every 20 pregnancies.

Dr. Gruslin's study, published in the *Journal of Clinical Endocrinology and Metabolism*, focuses on a protein called Insulin Growth Factor Binding Protein 4 (IGFBP-4). While this protein has been linked to pregnancy before, this study is the first to demonstrate its important role in human pregnancy complications. A key part of the study involved examining IGFBP-4 levels in first trimester blood samples from women who participated in a large study of pregnancies and newborns called the Ottawa and Kingston (OaK) birth cohort.

Dr. Gruslin found that women with high levels of IGFBP-4 were 22 times more likely to give birth to tiny babies (defined as the smallest five per cent by weight for their gestational age), than women with normal levels of IGFBP-4. This part of the study involved a total of 72 women — half with tiny babies and half with normal weight babies.

"Usually, we don't find out until later in a pregnancy that a [fetus](#) isn't growing properly, but this test can tell us in the first trimester if there's

likely to be a problem," said Dr. Gruslin, a Scientist at OHRI, High Risk Obstetrician at The Ottawa Hospital and Professor in the Faculty of Medicine at uOttawa. "By identifying these high-risk pregnancies early on, we will be able to monitor these women more closely and hopefully help them deliver a healthier baby."

The IGFBP-4 [blood test](#) is still experimental, but Dr. Gruslin hopes to develop a refined version that could be made available to all [pregnant women](#) within the next couple of years. She also hopes that her studies on IGFBP-4 could lead to new approaches that would improve fetal growth in high-risk pregnancies. This condition, called Fetal Growth Restriction or Intrauterine Growth Restriction, is thought to affect three to five per cent of all pregnancies, and cause close to half of all stillbirths. Babies born with this condition also have a higher risk of developing serious health complications in infancy and childhood, as well as chronic diseases such as hypertension and diabetes in adulthood.

Fetal Growth Restriction is thought to occur when the placenta, which provides nourishment and oxygen for the fetus, doesn't grow properly. Research by Dr. Gruslin and others suggests that IGFBP-4 blocks the activity of a key placental growth hormone called IGF-II, which results in poor growth of the placenta and fetus. Dr. Gruslin and her team are already testing a number of strategies for targeting IGFBP-4 to improve placental and [fetal growth](#).

Provided by Ottawa Hospital Research Institute

Citation: Blood test for pregnant women could predict risk of having dangerously small babies (2012, June 21) retrieved 4 May 2024 from <https://medicalxpress.com/news/2012-06-blood-pregnant-women-dangerously-small.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private

study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.