

## PROJECT FACT SHEET

### Lower PAPP-A Levels a Factor in Pregnancy Risk

Investigators: Anne Spencer  
Master's, Community Health & Epidemiology  
Research Analyst, IWK Health Centre  
Department of Obstetrics & Gynaecology  
Dalhousie University

Linda Dodds  
Professor  
Department of Obstetrics & Gynaecology, Pediatrics, and Community Health & Epidemiology  
Dalhousie University



*Researchers have witnessed the increasing popularity of a test measuring levels of pregnancy associated plasma protein A (PAPP-A) in early pregnancy. Dr. Linda Dodds took a closer look at this test and found that while low levels of PAPP-A increase a women's overall risk of poor pregnancy outcomes, the test alone is not an effective screening tool.*

Abnormal development of the placenta can both affect the flow of nutrients to the fetus which can result in miscarriage or infants that are born underweight, and also cause hypertensive disorders in the mother such as preeclampsia. These poor outcomes may result in serious maternal and infant illness; even death. Doctors have questioned whether low levels of PAPP-A found in a women's blood early in her pregnancy is an indication that the placenta may not be developing properly and be an early sign of women who are at greater risk of a poor outcome.

#### Anne Spencer

Anne Spencer, who received her Master's degree from Dalhousie University, and Linda Dodds, a professor in the Department of Obstetrics & Gynecology, Pediatrics, and Community Health & Epidemiology at Dalhousie University, investigated the effectiveness of the PAPP-A screening test. Data from nearly 500 women in early pregnancy was collected and analyzed, and it was found that lower levels of PAPP-A did correspond to higher risk of miscarriages, hypertensive disorders of pregnancy, and smaller infant size.

"Women with a low PAPP-A measure had twice the risk of developing an adverse outcome," notes Ms. Spencer.

"Though low PAPP-A is associated with these adverse outcomes, the test has limited value as a one-time single-marker test," notes Dr. Dodds. "However, it could be valuable when used as part of a risk-scoring system."

Currently PAPP-A measurement is used in combination with other tests to calculate a risk score for first trimester screening for chromosomal anomalies such as Down's syndrome. PAPP-A

results from women undergoing these tests could be used to target those who may require increased prenatal care to watch for early signs of other adverse outcomes. This research will help practitioners manage infant and mother risk—helping to lead to better outcomes for mother and baby.

- 30 -

Contact information:

Anne Spencer

IWK Health Centre

Phone: 470-6447

[anne.spencer@iwk.nshealth.ca](mailto:anne.spencer@iwk.nshealth.ca)