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EARLY-STAGE DETECTION OF PREGNANCY COMPLICATIONS

MEDICAL DEVICES

Screening test that assesses maternal-fetal blood flow coherence to facilitates early detection of obstetric complications during pregnancy.

TECHNOLOGY TYPE

Class I/II
Obstetrics
Software

STAGE OF DEVELOPMENT

- Early-stage prototype.

- Clinical validation studies still required.

IP PROTECTION

U.S. Utility Patent Issued

Method and Apparatus for Predicting Maternal Hypertension During Pregnancy Using Coherence Analysis of Maternal and Fetal Blood Velocity Waveforms
US7374539B2

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Reference Number: U-3244

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TECHNOLOGY SUMMARY

Almost half of pregnant women experience complications that increase their risk of maternal mortality and perinatal morbidity. When complications are identified early, treatment can reduce the risk of premature delivery and maternal fatalities. Studies indicate that early administration of therapeutic agents, particularly for preeclampsia, reduces the risk of severe complications during labor and delivery by up to 95 percent and decreases incidence of premature births. Fetal health screens, however, have a sensitivity of less than 25 percent before the 16th week, preventing early detection.

A new screening tool identifies pregnancies at risk of disease or prematurity at as early as 12 weeks. The test measures Doppler blood flow velocities to assess coherence between maternal and fetal blood flow, an indicator of various disease states. This enables first trimester detection of fetal and maternal health concerns and allows effective, preventive treatments to start early in the second trimester.

FEATURES AND BENEFITS

- Enables non-invasive, simple testing to monitor at-risk patients and administer preventative treatments.
- Detects certain abnormalities at 12 weeks with 90 percent accuracy.
- Demonstrates potential to reduce premature births and decrease healthcare costs.

RECENT PUBLICATIONS

Fernando, K., Mathews, V.J, Varner, M.W., Clark, E.B. 2004. Prediction of pregnancy-induced hypertension using coherence analysis. *2004 IEEE International Conference on Acoustics, Speech, and Signal Processing*. 5: 433-436. doi: [10.1109/icassp.2004.1327140](https://doi.org/10.1109/icassp.2004.1327140)

INVENTOR PROFILE

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