

Transabdominal Fetal Blood Oximetry

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Technology description

Cesarean section (C-section) is a major abdominal surgery that's either planned or performed when unexpected problems happen during delivery. Children born via C-section have increased risks for long term complications such as asthma, bronchopulmonary dysplasia, and interstitial lung disease. By developing an inexpensive, easy-to-use, noninvasive fetal oximetry device, clinicians and patients can access a key piece of information that allows them to objectively assess if a C-section is warranted for a given situation.

Researchers at the University of California, Davis have developed a method and apparatus for clinical-grade transabdominal fetal blood oximetry. The system contains dual near-infrared (NIR) LED probes that allow for deeper tissue penetration compared to conventional NIR pulse oximeter and the unique signal processing algorithm can reliably filter and separate maternal and fetal tissue oxygenation. The novel design of the probe and algorithms for signal processing enable clinical-grade utilization of the system for patients with various body shapes and sizes, single and twin pregnancies, and as the fetus moves within the uterus during the active labor and delivery process.

Application area

Determine fetal position and fetal blood oxygenation

Advantages

Fetal position and fetal blood oxygenation
During the active labor and delivery process

Institution

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