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Aisha Najera Chesler*, aisha.najera@cgu.edu, and **Ami E Radunskaya**. *Heart Rate and EEG modeling during labor: predicting fetal distress*. Preliminary report.

During labor, fetal well-being is typically monitored by measuring fetal heart rate (FHR). However, continuous FHR monitoring has been associated with increased rates of surgical interventions (e.g., caesareans) and is not a reliable predictor for severe acidemia (low pH in the blood) which can develop from the lack of oxygen reaching the tissues. This condition is commonly caused by umbilical cord occlusions and can cause permanent brain injuries to the fetus. More reliable monitoring modalities and methods of signal analysis, which can provide early detection of developing acidemia, are needed. To address this, I present a mathematical model which explores the monitoring of two signals, FHR and electroencephalogram (EEG), as a way to predict fetal distress. (Received August 25, 2013)