# The Bottom Line: Electronic Fetal Heart Rate Monitoring

Despite strong evidence that electronic fetal heart rate monitoring (EFM) increases the cesarean rate without improving long-term neonatal outcomes, it remains the most widely used routine obstetric intervention. According to the 2013 *Listening to Mothers III* survey of U.S. women's experiences in childbirth, 89% of laboring women had EFM either alone or in combination with a hand-held device such as a doppler or stethoscope.[1] In 2017 (and reaffirmed in 2019), the American College of Obstetricians and Gynecologists joined with almost all other national and international maternity care organizations in recommending the option of intermittent auscultation to monitor low-risk, healthy laboring women.[2,3]

Let's take a look at the evidence and recommendations of professional maternity care organizations.

## WHAT RECENT EVIDENCE SAYS

**CMAJ,** 2021, Systematic Review and Meta-Analysis

"Compared with other types of fetal surveillance, intermittent auscultation seems to reduce emergency cesarean deliveries in labour without increasing adverse neonatal and maternal outcomes."[4]

**Cochrane Library**, 2017, (considered the "gold standard")

"Continuous CTG [EFM} was associated with fewer fits for babies although there was no difference in cerebral palsy; both were rare events. However, continuous CTG was also associated with increased numbers of caesarean sections and instrumental births, both of which carry risks for mothers. Continuous CTG also makes moving and changing positions difficult in labour and women are unable to use a birthing pool. This can impact on women's coping strategies. Women and their doctors need to discuss the woman's individual needs and wishes about monitoring the baby's wellbeing in labour."[5]

**Cochrane Library**, The Admission Strip, 2017

"Although many hospitals carry out CTGs on women when they are admitted to hospital in labour, we found no evidence that this benefits women with low-risk pregnancies. We found that admission CTGs may increase numbers of women having a caesarean section by about 20%."[6]

***Seminars in Perinatalogy***, 2016

Two approaches to intrapartum monitoring – fetal pulse oximetry and fetal ECG ST segment analysis (STAN) failed to show benefits to either operative deliveries or neonatal outcomes. The authors stated,

"Although the results were negative, the studies actually prevented adoption of these methods without appropriate evidence, as happened with the original introduction of fetal heart rate monitoring."[7]

***Evidence Based Birth: The evidence on: Fetal Monitoring*** by Rebecca Dekker, 2018

"Randomized trials have found that EFM has contributed to an increase in the Cesarean rate, without making any improvements in cerebral palsy, Apgar scores, cord blood gases, admission to the neonatal intensive care unit, low-oxygen brain damage, or perinatal death (which includes stillbirth and newborn death). EFM is linked to a lower rate of newborn seizures; however, newborn seizure events are rare and it is not clear how often they lead to long-term health problems."[8]

## WHAT PROFESSIONAL ORGANIZATIONS SAY

**World Health Organization**, 2020

"17. Routine cardiotocography is not recommended for the assessment of fetal well-being in healthy pregnant women undergoing spontaneous labor.
"18. Intermittent auscultation of the fetal heart rate with either a Doppler ultrasound device or Pinard fetal stethoscope is recommended for healthy pregnant women in labour."[9]

**American College of Obstetricians and Gynecologists**, 2019

"To facilitate the option of intermittent auscultation, OB-GYNs and other obstetric care providers and facilities should consider adopting protocols and training staff to use a hand-held Doppler device for low-risk women who desire such monitoring during labor."[3]

**American College of Nurse-Midwives**, 2015

"IA [intermittent auscultation] is the preferred method for monitoring the FHR during labor for women at term who at the onset of labor are at low risk for developing fetal acidemia."[10]

**Society of Obstetricians and Gynaecologists of Canada,** 2018

"Allow women to move about and position themselves as they prefer throughout labor and delivery. Avoid obstetrical interventions that limit women's mobility. In the absence of medical contra-indications, intermittent auscultation should be favoured to continuous electronic monitoring."[11]

***Williams Obstetrics***, 2018 (page 478)

"At Parkland Hospital, all high- risk labors are continuously monitored electronically. In low-risk pregnancies, both intermittent auscultation and continuous electronic monitoring are used depending on clinical circumstances, including the woman's desire to ambulate."[12]

*June 2021. Chart compiled by Debby Amis for The Family Way Publications,* www.thefamilyway.com.
*See References and Permissions on reverse side*

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## ADDITIONAL REFERENCE: Thought-provoking article


Sartwelle, T.P., Johnston, J.C. & Arda, B. (2017). The ethics of teaching physicians electronic fetal monitoring: And now for the rest of the story. *The Surgery Journal, 3*(1), e42-e47.