

## ONLINE EXCLUSIVE

# Do abnormal fetal kick counts predict intrauterine death in average-risk pregnancies?

## Evidence-based answer

No. Structured daily monitoring of fetal movement doesn't decrease the rate of all-cause antenatal death in average-risk pregnancies (strength of recommendation [SOR]: **B**, single good-quality, randomized controlled trial [RCT]). Although maternal perception of decreased fetal movement

may herald fetal death, it isn't specific for poor neonatal outcome (SOR: **B**, single good-quality, diagnostic cohort study). Monitoring fetal movement increases the frequency of non-stress-test monitoring (SOR: **B**, single good-quality RCT).

## Clinical commentary

### A rare tragedy that monitoring can't prevent

Fetal movement is a marker of well-being. We draw on our experience with fetal monitoring to know that in healthy fetuses, movement increases sympathetic response and accelerates heart rate. Fetuses with severe acid-base disorders can't oxygenate their muscles adequately and don't move. Fetal movement, therefore, is a relatively simple indirect means of fetal assessment that indicates a lack of significant acidosis.

Intrauterine fetal demise (IUID) is a rare but devastating event in an uncomplicated term pregnancy; it occurs in about 5000 of

nearly 4 million US births each year (0.125). As the authors of this Clinical Inquiry state, nearly half of term IUIDs are unexpected and unexplained. Although it may be a logical extension to apply our knowledge of fetal physiology in an attempt to prevent IUID, no conclusive evidence suggests that daily monitoring of fetal movement improves fetal or neonatal outcomes. We can hope that, with more accurate dating methods and more aggressive control of hypertension, diabetes, and anemia in pregnancy, the number of term IUIDs will continue to fall.

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## FAST TRACK

**Structured daily monitoring of fetal movement doesn't decrease the rate of all-cause antenatal death in average-risk pregnancies.**

## Evidence summary

Nearly 50% of late-pregnancy IUIDs have no associated risk factors. Fetal demise, however, may be heralded by decreased fetal movement followed by cessation of movement at least 12 hours before death.<sup>1</sup> Maternal monitoring of fetal movement by kick counts has been

proposed as a method to verify fetal well-being and decrease the rate of IUID in the general obstetric population.

### Counting doesn't reduce antenatal death, large study shows

A well-done RCT randomized 68,654 women to either usual care or structured,

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**Almost 50% of late-pregnancy fetal deaths have no associated risk factors.**

daily monitoring of fetal movement using the count-to-10 method—daily maternal documentation of the amount of time it takes to perceive 10 fetal movements. Usual care was comprised of a query about fetal movement at antenatal visits and instruction to perform fetal movement monitoring at the provider's discretion. Mothers were told to visit their health-care provider for evaluation if they felt no movement in 24 hours or fewer than 10 movements in 10 hours during a 48-hour period. The trial showed no benefit from monitoring in reducing the rate of antenatal death from all causes.

The rate of all fetal deaths in the counting group was 2.9 per 1000 normally formed, live, singleton births; the rate in the control group was 2.67 (absolute risk reduction=0.24; 95% confidence interval [CI], -0.5 to 0.98). Women in the counting group spent an average of 160 hours counting during pregnancy and had a statistically significant increase in fetal non-stress-test (NST) monitoring (odds ratio [OR]=1.39; 95% CI, 1.31-1.49; number needed to harm [NNH]=50 to cause 1 additional NST). A statistically insignificant trend toward increased antepartum admissions was also noted in the counting group.<sup>2</sup>

**Maternal perception of less movement not linked to fetal outcome**

A retrospective cohort study of 6793 patients compared pregnancy outcomes of 463 women who presented for evaluation of decreased fetal movement with outcomes among the general obstetric population. The study excluded women who reported complete cessation of fetal movement.

Pregnancies evaluated for decreased fetal movement were less likely to have an Apgar score <7 at 5 minutes (relative risk [RR]=0.56; 95% CI, 0.29-0.96;  $P=.05$ ) and less likely to be preterm (RR=0.68; 95% CI, 0.48-0.94;  $P=.02$ ). No significant difference in cesarean section for fetal distress or admission to the neonatal intensive care unit was noted between

the study and control groups. The study suggests that maternal perception of decreased fetal movement is not associated with poor fetal outcome.<sup>3</sup>

A recent rigorous systematic review yielded no significant outcome effect related to fetal kick counts.<sup>4</sup> A prospective cohort study of 4383 births in California, using historical controls, found a drop in fetal mortality from 8.7 to 2.1 deaths/1000. The historical control rate was higher than statewide data from the same time period, however. The overall weaker design of the study and probable effect of regression to the mean significantly limit the interpretation of outcomes.<sup>5</sup>

**Recommendations**

The American College of Obstetrics and Gynecology (ACOG) makes no recommendation for or against assessing daily fetal movement in routine pregnancies. ACOG notes that no consistent evidence suggests that formal assessment of fetal movement decreases IUFD.<sup>6</sup>

The Institute for Clinical Systems Improvement recommends instructing patients on “daily identification of fetal movement at the 28-week visit.” The institute doesn't recommend specific criteria for evaluating fetal movements or offer recommendations for follow-up of a maternal report of decreased fetal movement.<sup>1</sup> The National Institute for Clinical Excellence in Great Britain recommends against routine formal fetal-movement counting.<sup>7</sup> ■

**References**

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