



Greater Manchester and Eastern Cheshire Strategic Clinical Networks

# Greater Manchester & Eastern Cheshire (GMEC)

# Strategic Clinical Networks

# Reduced Fetal Movement (RFM) in Pregnancy Guidelines

March 2019 Version 1.3a



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#### **Document Control**

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#### Miss Karen Bancroft

Maternity Clinical Lead for the Greater Manchester & Eastern Cheshire SCN

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## 1 What is this Guideline for and Who should use it?

The purpose of this guideline is to provide a standardized pathway across GM&EC for pregnant women presenting to maternity services after perceiving reduced fetal movements (RFM). It also aims to standardize information given to women about fetal movements.

This guideline is intended to be used by maternity care professionals including obstetricians, midwives, and ultrasonographers.

#### 2 What do I need to know?

Maternal perception of fetal movement is one of the first signs of fetal life and is regarded as a manifestation of fetal wellbeing. A significant reduction or sudden alteration in fetal movements is a potentially important clinical sign and can be a concern for both the mother and those providing care for her pregnancy. It has been suggested that reduced or absent fetal movements may be a warning sign of fetal compromise, which if not investigated may lead to fetal death. The significance of exaggerated fetal movements is currently less clear.

The importance of providing accurate information for mothers about fetal movements and acting upon RFM has been highlighted by two Confidential Enquiries into antepartum stillbirth conducted 15 years apart (Confidential Enquiry into Stillbirths and Deaths in Infancy 2001, Draper, Kurinczuk et al. 2015). Two Cochrane reviews highlight the lack of evidence surrounding the best way to monitor fetal movements and the management strategy employed when women perceive RFM (Hofmeyr and Novikova 2012, Mangesi, Hofmeyr et al. 2015). However, current management is based on the best-available evidence synthesized in RCOG guideline (Royal College Of Obstetricians and Gynaecologists 2011). This guidance is based upon the evidence reviewed in that guideline.

Maternal perception of RFM affects up to 15% of pregnancies (Sergent, Lefevre et al. 2005). Importantly, the majority (70%) of these mothers will have a normal pregnancy outcome (O'Sullivan, Stephen et al. 2009). Up to 29% of the women complaining of Reduced Fetal Movements (RFM) have a small-for- gestational-age baby and there is an increased risk of subsequent stillbirth (O'Sullivan, Stephen et al. 2009, Dutton, Warrander et al. 2012, Scala, Bhide et al. 2015).

Randomized controlled trial evidence does not support the routine use of formal fetal movement counting (Grant, Elbourne et al. 1989); women should be made aware of the importance of becoming familiar with their baby's pattern of moving, and to report any change as soon as possible.

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## 3 What is the Guideline?

A wide range of conditions are associated with maternal perception of RFM:

- Intrauterine death
- Fetal sleep
- Congenital fetal malformations (e.g. neurological, musculoskeletal)
- Fetal anaemia or hydrops
- Acute or chronic fetal compromise resulting from placental insufficiency leading to:
  - Oligohydramnios
  - Fetal growth restriction
- Polyhydramnios
- Anterior placenta (before 28/40)
- Maternal sedating drugs that cross the placenta (e.g. alcohol, benzodiazepines, barbiturates, methadone, narcotics)
- Smoking
- Administration of corticosteroids for enhancement of lung maturity
- A busy mother who is not concentrating on fetal activity
- Acute or chronic fetomaternal haemorrhage

#### 3.1 Physiology

Fetal movements are generally perceived by the mother from 16-24 weeks of gestation. Multiparous women may notice movements earlier (16 weeks); primiparous women later (20-24 weeks). From 16-24 weeks onwards, a pregnant woman should feel the baby move more and more up until 32 weeks, then stay roughly the same until she gives birth. The mother should CONTINUE to feel her baby move right up to the time she goes into labour and fetal movements may continue to be perceived whilst she is in labour too.

RFM is a marker for fetal compromise, this is thought to represent a fetal response to chronic hypoxia by conserving energy, with the subsequent reduction of fetal movements is an adaptive mechanism to reduce oxygen consumption (Maulik 1997). It is recognised that intrauterine death is preceded by cessation of fetal movements for ≥24 hours (Stacey, Thompson et al. 2011, Heazell, Budd et al. 2018). Between 40-55% women with stillbirth experience RFM prior to diagnosis of intrauterine fetal death (Efkarpidis, Alexopoulos et al. 2004).

#### 3.2 Definition of RFM

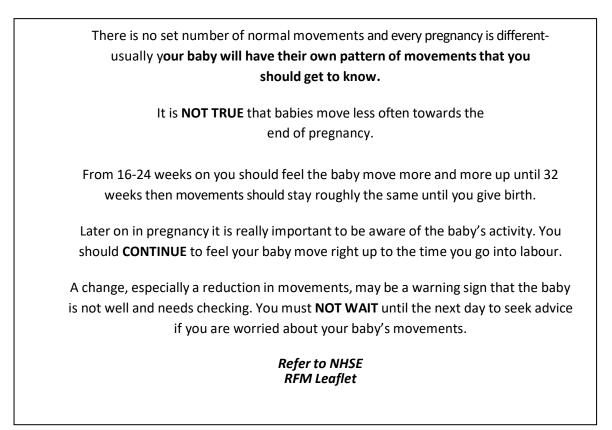
Here RFM is defined as maternal perception of reduced or absent fetal movements. There is no set number of normal movements. Usually a fetus will have its own pattern of movements that the mother should be advised to get to know.

There is no established definition of recurrent episodes of RFM. For the purposes of this guideline, a consensus of 2 or more episodes of RFM occurring within a 21-day period after 26 weeks' gestation was agreed.

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#### 3.3 Advice

Women should be informed about fetal movements during their pregnancy. An example of advice given in pregnancy may be:



All women should be given the NHSE Leaflet before 24 completed weeks' gestation, the leaflet should be easily accessible in women's hand –held notes.

#### 3.4 Ask

At relevant antenatal contacts professionals should ask women and document whether they have normal perception of fetal movements. Women should be advised to be aware of their baby's individual pattern of movements. If they experience reduced or cessation of fetal movements they should contact their midwife or the maternity unit **immediately** (explain it is staffed 24 hrs. 7 days a week).

#### 3.5 Assess

All reports of reduced/absent fetal movements should be taken seriously and explored. If a woman reports reduced/absent movement she should not be told to wait for two hours and monitor movements before presenting.

#### Women reporting no fetal movements should be seen as soon as possible.

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Basic assessment on first presentation should include:

- A detailed history
- Assessment of risk factors for Fetal Growth Restriction or Stillbirth in this or previous pregnancy – e.g. consider women eligible for the SGA pathway (smoking, previous stillbirth, previous SGA baby, SFH <10<sup>th</sup> centile, maternal medical conditions, raised uterine artery PI in second trimester)
- Record maternal blood pressure, pulse rate, temperature and urinalysis.
- Abdominal palpation and measurement of symphysis fundal height (SFH) and plotting on a customised SFH chart if not done in the last two weeks.
- Fetal heart assessment (auscultation less or equal to 25+6 weeks gestation and for CTG if 26 weeks or over)

| Factor  | Odds Ratio | Reference              |
|---|------------|------------------------|
| Cigarette smoking                                     | 2.0        | Dutton et al. 2012     |
| Past Obstetric History of SGA baby or stillbirth      | 2.1        | O'Sullivan et al. 2009 |
| Past Medical History (e.g. Diabetes/Hypertension)     | 3.0        | O'Sullivan et al. 2009 |
| Recurrent presentation with RFM (≥2)                  | 1.9        | O'Sullivan et al. 2009 |
|   | 8.0        | Scala et al. 2015      |
| Symphysis-fundal height <10 <sup>th</sup> centile     | 19.5       | O'Sullivan et al. 2009 |
| Raised uterine artery PI in 2 <sup>nd</sup> trimester | 5.7        | Scala et al. 2015      |

 Table 1 – Risk factors for adverse outcome after maternal presentation with RFM

\* Some risk factors for stillbirth in the general population e.g. nulliparity are not included in this list because they were not associated with increased risk of adverse outcome after RFM. Professionals should still assess each case individually.

# Please use the Reduced Fetal Movement proforma and manage according to the flow chart as found on page 1 and Appendix 2.

#### 3.6 Act

#### Management is dependent upon gestation at presentation

- Auscultate fetal heart (using hand-held Doppler/Pinard)
- Perform cardiotocograph (CTG) if 26 weeks or over, to assess fetal heart rate in accordance with national guidelines. Ideally, this should be a computerized CTG using Dawes-Redman criteria (Grivell, Alfirevic et al. 2012)
- If >26 weeks' gestation and risk factors are present for FGR/Stillbirth (See Table 1) or women are already on the SGA pathway then an ultrasound scan for assessment of fetal biometry, liquor volume and umbilical artery Doppler should be performed unless it has been performed in the preceding 3 weeks
- If the mother has had a normal growth scan in the preceding 3 weeks then liquor volume and umbilical artery Doppler should be assessed following RFM and a growth scan repeated 3 weeks from the previous scan
- If the preceding growth scan was abnormal then an individualized care plan should be made following discussion with a senior obstetrician

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Examples of indications for ultrasound assessment are:

- SFH < 10th centile (or decreasing fetal growth on customised growth chart)
- Oligohydramnios is suspected on abdominal palpation)
- 1st episode and identified risk factor for FGR/Stillbirth (see Table 1)
- 2nd episode if less than 39/40
- The mother is over 39/40 gestation and the mother declines IOL
- Neither the midwife, obstetrician or woman herself are reassured by the initial assessment

All patients with RFM should be seen in a place where suitable management can be given. Women with abnormal results should be reviewed promptly by a senior obstetrician or midwife and a plan discussed with the mother.

**NB**. If a woman presents at any outlying ANDUs/ANCs and states **whilst she is present** there that she has Reduced Fetal Movements (RFM) – staff should perform a CTG. If the CTG shows any abnormality, the woman should be transferred to a main hospital unit with obstetric and neonatal care.

If there is any contact with a midwife or a woman telephones before arrival and RFM is discussed, the woman should attend a Triage Unit at a main hospital unit with obstetrics and neonatal care to allow for any CTG abnormality to be acted upon promptly.

# Perform Ultrasound scan for growth, liquor volume assessment and umbilical artery Doppler on the day of referral unless out of hours and then on the next working day.

#### If on a bank holiday weekend extra surveillance with CTG might be considered.

The AFFIRM study found that standardised management for RFM including ultrasound scan for fetal biometry, liquor volume and umbilical artery Doppler and planned delivery (by induction of labour or Caesarean section) for women with recurrent RFM after 37 weeks increased obstetric intervention and admission to neonatal unit, but did not reduce perinatal mortality. (*Norman JE et al. Sep 2018*)

If abnormalities are identified on CTG or ultrasound scan an individualized management plan should be developed following discussion with a senior obstetrician. Steroids should be given when preterm delivery is considered.

Prior to 39 weeks gestation, induction of labour or operative delivery is associated with small increases in fetal morbidity. Thus, a decision for delivery needs to be based upon evidence of fetal compromise (e.g. abnormal CTG, estimated fetal weight <10<sup>th</sup> centile or oligohydramnios) or other concerns (e.g. concomitant maternal medical disease such as hypertension or diabetes) in addition to RFM.

After 39 weeks gestation, induction of labour is not associated with an increase in Caesarean section, instrumental vaginal delivery, fetal morbidity or admission to the neonatal intensive care unit. Therefore, if the mother has RFM at or after 39 weeks, IOL could be offered if vaginal delivery is appropriate.

#### 3.7 Advise

Convey results of investigations to the mother. Record all advice given. Women should be asked to reattend if further reductions in fetal movements at any time.

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#### 3.8 Act again

Check that the woman still has the RFM leaflet for future reference.

# 4 How will we know that Regional RFM Guidance is being used effectively?

There should be an annual audit of the regional RFM guideline to evaluate compliance. This will be augmented by an annual survey of women's views about the information they receive.

The audit should be undertaken on a minimum of 2 weeks cases or 20 case notes, whichever is the smaller number. The audit findings should be reported to the local governance meeting and to the SCN Saving Babies Lives' group. An example audit proforma is shown in Appendix 5.

The audit standards are:

- 1. Fetal movements leaflet to be given to women by 24 weeks' gestation
- 2. Fetal movements to be discussed at every subsequent contact
- 3. Management of RFM is in accordance with the checklist, specifically:

i) Was a computerised CTG performed?

- ii) Was an ultrasound scan for growth, liquor volume and Doppler performed if the mother had risk factors?
- iii) Was induction of labour (IOL) or delivery offered according to the guideline?

Process measures are:

- 1. Proportion of women who present with RFM >24 hours
- 2. Proportion of women who have IOL (or delivery) for RFM as sole indication

Outcome measures:

- 1. Neonatal outcome (Live birth, Stillbirth, Neonatal Death)
- 2. NICU admission
- 3. Mode of delivery

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# 5 Abbreviations & Definitions of terms used

| Abbreviations | Definition   |
|---------------|--|
| <             | Less than  |
| >             | More than  |
| 2             | More than or equal to  |
| AC            | Abdominal circumference  |
| AFFIRM        | Awareness of Fetal movements and Focusing Interventions Reduce Fetal |
|               | Mortality  |
| AFI           | Amniotic Fluid Index   |
| RFM           | Reduced Fetal Movements (RFM)  |
| AN            | Antenatal  |
| ANC           | Antenatal clinic   |
| ANDU          | Antenatal Day Unit   |
| CESDI         | Confidential Enquiry into Stillbirths and Deaths in Infancy          |
| CTG           | Cardiotocograph  |
| DVP           | Deepest Vertical Pool  |
| EWS           | Early Warning Score  |
| FGR           | Fetal Growth Restriction   |
| IOL           | Induction of Labour  |
| IUGR          | Intra Uterine Growth Restriction                                     |
| LV            | Liquor Volume  |
| NHSE          | NHS England  |
| Outlying      | Remote from centre   |
| PAPP          | Pregnancy-associated plasma protein                                  |
| PET           | Pre-eclampsia  |
| SBL           | Saving Babies' Lives   |
| SFH           | Symphysis Fundal Height  |
| SGA           | Small for Gestational Age  |
| USS           | Ultrasound   |

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|   | <u>At p</u>   | presentation  |  |
|---|---|---|--|
|   | Maternal observations   | adverse outcome after RFM (See Table 1)<br>ustomized growth chart (if ≥26w and not  |  |
| >24 weeks - ≤25+6 ~ Auscultate with Doppler for 1 min ~ If FM NEVER felt by 24 weeks check<br>anomaly scan performed and normal,<br>if not arrange anomaly USS and<br>consider referral to fetal medicine clinic<br>for assessment of neuromuscular<br>condition. ~ If all well reassure and resume<br>normal AN care | 2<br>Perform CTG*<br><u>1st episode of RFM</u><br>~ Normal CTG and no other risk factors -<br>~ If abnormal CTG refer to senior Obstet<br>~ If risk factors for stillbirth or FGR prese<br><u>2nd episode of RFM within 21 days</u><br>~ Arrange ultrasound scan <sup>#</sup> on day of ree<br>(If out of hours/ at the weekend/ bank h<br>performed at the earliest opportunity if<br>maternal wellbeing)<br>If abnormalities identified on invest<br>individualized m | <b>39+</b><br>Perform CTG<br>Perform ultrasound scan if IOL<br>not indicated or not taking place<br>for >24h #<br>~ Offer cervical assessment<br>~ Offer induction of labour if<br><u>recurrent</u> RFM (*unless vaginal<br>delivery inappropriate) |  |
| Recurrent RFM (2 or more episod<br>Offer serial USS:<br>- 3 weekly Growth/LV and Doppler i<br>- Offer IOL after 39 weeks discussion   |   | If patient prefers no<br>~Offer cervical assessment +/- sweep<br>~Arrange ultrasound scan <sup>#</sup> within 24hrs<br>~If scan normal offer - twice weekly CTG and U<br>~Offer IOL at any time if FM remains reduced                               |  |

\*Ideally Computerised CTG should be performed <sup>#</sup>for fetal biometry (if not done within preceding 21 days), liquor volume and umbilical artery Doppler, otherwise do liquor volume and umbilical artery Doppler.

#### Equality Impact Assessment for Reduced Fetal Movements (RFM) Guideline

To be completed by the Lead Author (or a delegated staff member)

| For each of the Protected Characteristics &<br>equality & diversity streams listed answer the<br>questions below using<br>Y to indicate yes and<br>N to indicate no:   | Age | Disability | Ethnicity /<br>Race | Gender | Gender<br>Reassionment | Marriage &<br>Civil<br>Partnership | Pregnancy &<br>Maternity | Religion/belief | Sexual<br>orientation | Human Rights | Carers | Please explain your justification      |
|--|-----|------------|---------------------|--------|------------------------|------------------------------------|--------------------------|-----------------|-----------------------|--------------|--------|--|
| <ol> <li>Does the practice covered have the<br/>potential to affect individuals or<br/>communities differently or<br/>disproportionately, either positively or<br/>negatively (including discrimination)?</li> </ol> | N   | N          | N                   | Y      | N                      | N                                  | Y                        | N               | N                     | N            | N      | Positive effect – for pregnant women   |
| 2. Is there potential for, or evidence that, the proposed practice will promote equality of opportunity for all and promote good relations with different groups?  | Y   | Y          | Y                   | Y      | N                      | N                                  | Y                        | Y               | Y                     | Y            | N      | All women will receive this management |
| 3. Is there public concern (including media,<br>academic, voluntary or sector specific interest)<br>in the document about actual, perceived or<br>potential discrimination about a particular<br>community?          | N   | N          | N                   | Y      | N                      | N                                  | Y                        | N               | N                     | N            | N      | Media interest in Saving Babies' Lives |
| Your Name:   | Υοι | ır De      | signati             | on:    |                        | 1                                  |                          | 1               | 1                     | 9            | Signe  | d*: Date:                              |

#### To be completed by the relevant Equality Champion following satisfactory completion & discussion of answers above with author

| Equality Champion: | Directorate: | Signed*: | Date: |
|--------------------|--------------|----------|-------|
|                    |              |          |       |

#### Appendix 3 - Checklist for Required Management of Reduced Fetal

#### Movements (RFM)

|   | Attendance with Reduced Fetal Movements (RFM)  |  |
|---|--|--|
|   | Please initial and date when complete  |  |
| 1 | Ask<br>Is there maternal perception of Reduced Fetal Movements (RFM)?  |  |
| 2 | Assess<br>Are there risk factors for Fetal Growth Restriction or Stillbirth? (see section 3.5)<br>Consider – women eligible for SGA pathway and issues with access to care<br>Risk factors include: Cigarette smoking, Past Obstetric History of SGA baby or stillbirth, Pa  |  |
|   | History (e.g. Diabetes/Hypertension), Recurrent presentation with RFM ( $\geq 2$ ), Symphysis-f <10th centile, Raised uterine artery PI in 2nd trimester (if measured).  |  |
| 3 | Act<br>Auscultate fetal heart (hand-held Doppler / Pinard)   |  |
|   | Perform cardiotocograph to assess fetal heart rate in accordance with national guidelines.   |  |
|   | Act upon abnormal results promptly: If risk factors for FGR/Stillbirth, perform<br>ultrasound scan for fetal growth, liquor volume and umbilical artery Doppler on the day<br>of referral unless out of hours and then on the next working day. If on a bank holiday<br>weekend extra surveillance with CTGs might be considered.<br>See Flow Chart on page 1. |  |
| 4 | Advise<br>Convey results of investigations to the mother. Check leaflet is still present<br>Mother should re-attend if further reductions in fetal movements at any time.  |  |
| 5 | Act again<br>Check that the woman still has the RFM leaflet for future reference   |  |

#### ASK ALL WOMEN TO ATTEND TRIAGE FOR ASSESSMENT AND FOLLOW THE CARE PATHWAY

If a woman presents at an outlying ANDUs/ANC, and states **whilst she is present** there that she has Reduced Fetal Movements (RFM) – staff will perform a CTG. However, if there is any contact with a midwife or telephone before arrival and Reduced Fetal Movements (RFM) are discussed, the woman should attend the main unit Assessment unit to allow for any CTG abnormality to be acted upon promptly.

## IN THE EVENT OF ABSENT FETAL ACTIVITY

#### Admit immediately for assessment / reassurance

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## **Appendix 4 - Information Leaflet**

# Feeling your baby move is a sign that they are well

Most women usually begin to feel their baby move between 16 and 24 weeks of pregnancy. A baby's movements can be described as anything from a kick, flutter, swish or roll. The type of movement may change as your pregnancy progresses.

# Image: Note of the provided of

From 16-24 weeks on you should feel the baby move more and more up until 32 weeks then stay roughly the same until you give birth.

Get to know your baby's normal pattern of movements.

# You must NOT WAIT until the next day to seek advice if you are worried about your baby's movements

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If you think your baby's movements have slowed down or stopped, contact your midwife or maternity unit **immediately** (it is staffed 24 hrs, 7 days a week).

- **DO NOT put off calling until the next day** to see what happens.
- Do not worry about phoning, it is important for your doctors and midwives to know if your baby's movements have slowed down or stopped.



# Why are my baby's movements important?

A reduction in a baby's movements can sometimes be an important warning sign that a baby is unwell. Around half of women who had a stillbirth noticed their baby's movements had slowed down or stopped.

# What next? See overleaf

For more information on baby movements talk to your midwife

heartbeat. Even if you detect a heartbeat,

Dopplers or phone apps to check your baby's

Do not use any hand-held monitors,

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## What if my baby's movements are reduced again?

If, after your check up, you are still not happy with your baby's movement, you must contact either your midwife or maternity unit straight away, even if everything was normal last time.

NEVER HESITATE to contact your midwife or the maternity unit for advice, no matter how many times this happens.



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#### Sources and acknowledgements

The information in this leaflet is based on RCOG Green–top Guideline No. 57 *Reduced Fetal Movements* (2011) and RCOG Patient Information Leaflet *Your baby's movements in pregnancy: information for you* (2012).

Thank you to the following organisations for supporting the development of this leaflet











# Appendix 5 – Proposed Reduced Fetal Movements Audit Proforma

| How long did the mother have RFM for?   | Hours  |
|---|--|
| What was the gestation at presentation?   | Yes/No   |
| Was this the second (or more) episode of RFM within 21 days?                          | Yes/No   |
| Did the mother have any known Risk Factors?   | Yes/No   |
| e.g. Smoker, previous SGA, previous FDIU, hypertension, symphysis fundal height belo  | ow the 10th centile.                                     |
|   |  |
| Did this woman have a computerised CTG?   | Yes/Non-computerised/No CTG                              |
| Was this CTG within 2 hours of the woman arriving?                                    | Yes/No   |
| Was the CTG pathological  | Yes/No   |
|   |  |
| Did this woman receive a scan for liquor volume and umbilical artery I previous scan) | Doppler (and growth if less than 21 days since<br>Yes/No |
| Was the scan before the end of the next working day                                   | Yes/No   |
| Was the ultrasound scan normal?   | Yes/No   |
|   |  |
| Was this woman offered IOL?   | Yes/No   |
| If yes, what was the indication for IOL (please state)                                |  |
| Was offer of IOL accepted?  | Yes/No   |
| Was induction commenced within 48hours?   | Yes/No   |
|   |  |
| What was mode of birth?   | Spontaneous vaginal delivery/                            |
|   | Instrumental vaginal delivery/                           |
|   | Caesarean section  |
| What was the neonatal outcome   | Live birth/Stillbirth/Neonatal Death                     |
| Was the baby admitted to NICU?  | Yes / No / Unknown                                       |
|   |  |

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# Information to Assist Discussion about Induction of Labour for Women with Reduced Fetal Movements

Investigations following maternal presentation with reduced fetal movements aim to detect acute fetal compromise (by cardiotocography) or evidence of placental dysfunction (by ultrasound scan). If these test results indicate an abnormality an appropriate plan should be made with the mother following consultation with a senior obstetrician.

When the results of investigations are normal the consequences of intervention need to be balanced against risks of stillbirth or perinatal death at that stage of pregnancy. Some relevant statistics are presented below to assist with discussions with mothers to plan their management. These statistics <u>must</u> be placed in the context of other risk factors for stillbirth e.g. maternal age >35, smoking, maternal medical conditions etc.

The risks of stillbirth (per 1,000 live births) are shown below for specific stages of late pregnancy (data taken from MBRRACE perinatal surveillance report, 2016). This shows that the risk of stillbirth at term is approximately 1 in 666 live births.

| Gestation                         | Rate of Stillbirth       | Rate of Perinatal Death   |
|-----------------------------------|--------------------------|---------------------------|
| 28 weeks 0 days – 31 weeks 6 days | 77 per 1,000 live births | 97 per 1,000 live births  |
|                                   | 1 in 13 live births      | 1 in 10 live births       |
| 32 weeks 0 days – 36 weeks 6 days | 16 per 1,000 live births | 20 per 1,000 live births  |
|                                   | 1 in 63 live births      | 1 in 50 live births       |
| 37 weeks 0 days – 41 weeks 6 days | 1.5 per 1,000 live       | 2 per 1,000 live births   |
|                                   | births                   | 1 in 500 live births      |
|                                   | 1 in 666 live births     |                           |
| 42 weeks 0 days +                 | 1 per 1,000 live births  | 1.5 per 1,000 live births |
|                                   | 1 in 1000 live births    | 1 in 666 live births      |

Data suggest that a single episode of reduced fetal movements increases the risk of stillbirth by approximately 2-fold. Recurrent reduced fetal movements increase this risk further to over 5-fold.

The risk of a stillbirth following a single episode of reduced fetal movements after 28 weeks' gestation is 0.6% (1in 166 pregnancies); this increased to 1.4% if women presented more than twice with RFM (1 in 71 pregnancies) (*Scala et al. Am JOG 2015*).

The risk of having a small for gestational age baby is 9.8% following a single episode of reduced fetal movements after 28 weeks' gestation (1 in 10 pregnancies); this increased to 44.2% if women presented more than twice with RFM to 1.4% (2 in 5 pregnancies) (*Scala et al. Am JOG 2015*).

The short-term benefits and risks of induction of labour also varying according to gestation.

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In general, the risk of perinatal mortality (the baby being stillborn or dying within seven days of birth) decreases with induction of labour (Stock et al. BMJ 2012).

| Gestation | Expectant Management | Induction of Labour |
|-----------|----------------------|---------------------|
| 37 weeks  | 0.23%                | 0.09%               |
|           | 1 in 435             | 1 in 1111           |
| 38 weeks  | 0.20%                | 0.08%               |
|           | 1 in 500             | 1 in 1250           |
| 39 weeks  | 0.19%                | 0.06%               |
|           | 1 in 526             | 1 in 1666           |
| 40 weeks  | 0.18%                | 0.08%               |
|           | 1 in 555             | 1 in 1250           |
| 41 weeks  | 0.22%                | 0.07%               |
|           | 1 in 454             | 1 in 1428           |

However, at earlier stages of pregnancy the risk of Caesarean section increases. This is not the case after 39 weeks' gestation.

| Gestation | Expectant Management | Induction of Labour |  |
|-----------|----------------------|---------------------|--|
| 37 weeks  | 8.3%                 | 9.9%                |  |
|           | 1 in 12 women        | 1 in 10 women       |  |
| 38 weeks  | 8.0%                 | 8.8%                |  |
|           | 1 in 12 women        | 1 in 11 women       |  |
| 39 weeks  | 8.4%                 | 9.3%                |  |
|           | 1 in 12 women        | 1 in 11 women       |  |
| 40 weeks  | 10.8%                | 8.4%                |  |
|           | 1 in 9 women         | 1 in 12 women       |  |
| 41 weeks  | 14.1%                | 10.7%               |  |
|           | 1 in 7 women         | 1 in 9 women        |  |

Similarly, there is a higher risk of baby being admitted to NICU/SCBU following intervention at an earlier stage of pregnancy. This is not the case after 39 weeks' gestation.

| Gestation | Expectant Management | Induction of Labour |
|-----------|----------------------|---------------------|
| 37 weeks  | 7.8%                 | 17.6%               |
|           | 1 in 13 babies       | 1 in 6 babies       |
| 38 weeks  | 7.4%                 | 11.3%               |
|           | 1 in 14 babies       | 1 in 9 babies       |
| 39 weeks  | 7.3%                 | 9.3%                |
|           | 1 in 14 babies       | 1 in 11 babies      |
| 40 weeks  | 7.3%                 | 8.0%                |
|           | 1 in 14 babies       | 1 in 12 babies      |
| 41 weeks  | 8.4%                 | 6.6%                |
|           | 1 in 12 babies       | 1 in 15 babies      |

The lack of evidence for short term harms following IOL after 39 weeks' gestation is also supported by evidence from the ARRIVE trial of IOL at 39 weeks 'in low risk women which showed no different in Caesarean section (IOL 18.6% vs. Expectant 22%) and NICU admission (IOL 11.7% vs. Expectant 13.0%).

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