National Women & Infants Health Programme

QUICK SUMMARY DOCUMENT

Reduced Fetal Movements

This QSD is a resource for all clinicians working in healthcare in Ireland who are involved in the care of pregnant women with reduced fetal movements.

Following a comprehensive literature review a number of evidence-based recommendations for assessment and management of pregnant women reporting reduced fetal movement (RFM) in the Republic of Ireland.

Key Recommendations

1. Reduced fetal movements (RFM) is defined as any alteration in maternal perception of fetal movements including change in pattern (strength and/or frequency), reduction or cessation of movements.
2. Clinicians and pregnant women should be aware that fetal movements tend to increase in strength throughout pregnancy and normally follow a diurnal pattern with a stronger more active period observed in the evenings.
3. Clinicians should be aware of the outcomes associated with RFM including the increased risk of stillbirth and/or fetal growth restriction (FGR).
4. Women reporting RFM should undergo a comprehensive assessment of fetal wellbeing.
5. Clinicians should be aware that fetal growth restriction (FGR) is associated with adverse pregnancy outcomes in women with RFM.
6. Clinicians should be aware of the risk factors for stillbirth and be vigilant in their assessment of women with RFM when any of these risk factors are identified.
7. Women should be provided with verbal and written information about fetal movements by 24 weeks' gestation. They should also be provided with contact information to facilitate reporting of concerns about fetal movements.
8. Clinicians should take the opportunity to remind women about the importance of maternal awareness of fetal movement at each scheduled and unscheduled contact.
9. Healthcare staff should advise women reporting RFM to attend their maternity unit/hospital for further evaluation without delay.
10. Assessment of women reporting RFM should not be delayed for any reason, including with non-evidence-based advice on methods to stimulate movements such as consuming certain foods or drinks or concentrating on movements for a period of time prior to attending for review.
11. The use of "kick-charts" or pre-set alarm limits for monitoring fetal movements is not recommended in routine antenatal care.
12. Maternal reports of altered fetal movements should be used as a trigger to evaluate fetal wellbeing.
13. The initial assessment of women with RFM should include a detailed history, examination and a thorough assessment of risk factors for fetal growth restriction and/or stillbirth.
14. The evaluation should include a comprehensive assessment of changes in fetal movement pattern (strength and frequency), along with any associated symptoms such as bleeding and abdominal pain.
15. The fetal heart should be auscultated using hand-held Doppler or Pinard Stethoscope to confirm viability. If an intrauterine fetal death (IUFD) is suspected, urgent senior obstetric review is warranted and IUFD confirmed using real-time ultrasound.
16. A CTG should be performed on all women reporting RFM who are ≥ 28 weeks' gestation to exclude acute fetal compromise.

17. All women with RFM should have a bedside ultrasound, by an appropriately trained healthcare professional, at the initial presentation to assess liquor volume and the presence/absence of fetal movements.
18. Women can be discharged to routine antenatal care if all the following criteria is met: first presentation with RFM, normal initial assessment including normal CTG and bedside ultrasound, no risk factors for fetal growth restriction and/or stillbirth identified, and maternal concerns regarding fetal movements have resolved.
19. Where the discharge criteria are not met, discussion with a senior Obstetrician is recommended and consideration given for admission and further investigations.
20. A Departmental ultrasound assessment of fetal biometry (if not done in the preceding 2 weeks), liquor volume and umbilical artery Doppler should be considered for all women with RFM, especially those with persistent RFM, risk factors for fetal growth restriction and/or stillbirth and those with concerns raised at their initial assessment.
21. Routine testing for feto-maternal haemorrhage (FMH) in cases of RFM is not currently recommended. However, if there is a high index of suspicion of FMH, then testing for it could be considered following review by a Consultant Obstetrician.
22. Given the limitations of the Kleihauer-Betke test in this setting and lack of availability outside routine working hours, discussion with the hospital laboratory and/or Consultant Haematologist is required prior to the test being requested.
23. Clinicians should be aware that pregnancies complicated by recurrent presentations of RFM (more than one) are at increased risk of adverse pregnancy outcomes.
24. Women with recurrent presentations of RFM should undergo a Departmental ultrasound examination to assess fetal biometry (if not done in the preceding 2 weeks), liquor volume and umbilical artery Doppler.
25. In the absence of other identifiable causes of recurrent RFM, further investigations for FMH should be considered following review by a Consultant Obstetrician, depending on the expertise available. These tests include assessing Middle Cerebral Artery Peak Systolic Velocity (MCA-PSV) on ultrasound and the Kleihauer-Betke test.
26. If all investigations are normal and following discussion with the woman, it is reasonable to consider increased antenatal surveillance in women with recurrent RFM, especially in the presence of risk factors for placental dysfunction.
27. Care should be individualised and shared decision making between the woman and the clinician with regard to the timing of birth should be encouraged. We recommend that clinicians discuss with women the risks and benefits of expediting birth/delivery, and consider the woman's preferences, gestational age, clinical assessment and risk factors for stillbirth.
28. It is reasonable to consider expediting birth/delivery in women with RFM who are ≥ 39 weeks' gestation, especially women with recurrent presentations of RFM and those with risk factors for stillbirth.
29. Consideration should be given to sending the placenta for histopathological examination if the birth occurs as a result of a clinical complication associated with RFM. (Best Practice)
30. In cases of RFM <28 weeks gestation, the initial assessment should include a detailed history, clinical examination and confirmation of fetal viability through auscultation of the fetal heart.
31. The decision to perform a CTG between 26-27+6 weeks' gestation should be made by a senior Obstetrician on a case-by-case basis. It is reasonable to consider a CTG assessment at this gestation in those with risk factors for stillbirth and/or placental insufficiency. However, caution should be adopted in the interpretation of the CTG at this early gestation.
32. An anatomy ultrasound is recommended for women RFM < 28 weeks' gestation, if not performed earlier in the pregnancy.
33. For women with RFM <28 weeks' gestation, a Departmental ultrasound scan for fetal biometry (if not done in the preceding two weeks), liquor volume and umbilical artery Doppler should be considered in those with risk factors for stillbirth.

Management of RFM

Initial Response

- Ask all women reporting reduced fetal movements to attend their maternity unit/hospital immediately for review.
- Do not delay assessment for any reason, including with non-evidence-based advice on methods to stimulate movements such as consuming certain foods or drinks or concentrating on movements for a period of time prior to attending for review.

Fetal Death Suspected

- Urgent review by senior Obstetrician
- Confirm intrauterine fetal death with ultrasound scan
- Management in line with National Guideline for Stillbirth.

Initial Assessment

- **Detailed history** including details of change in fetal movement pattern, prior presentation with reduced fetal movements, other associated symptoms (e.g. pain, bleeding), pre-existing medical conditions and risk factors for fetal growth restriction/placental insufficiency and stillbirth*.
- **Clinical examination** including vital signs and symphysial fundal height measurement.
- **Confirmation of fetal viability:** Auscultate fetal heart using hand-held Doppler or Pinard Stethoscope

Initial Investigations

- **CTG:** exclude acute fetal compromise. If abnormal, seek urgent senior obstetric review.
- **Bedside ultrasound:** Assess liquor volume and presence/absence of fetal movements.

Further Investigations

If concerns raised at initial assessment or discharge criteria not met, senior obstetric review is recommended, and consideration given to admission and further investigations:

Departmental Ultrasound: Fetal biometry (if not done in preceding 2 weeks), liquor volume and umbilical artery Doppler. Timeframe will depend on clinical urgency.

FMH testing: If there is a high index of suspicion of FMH and in the absence of other causes of RFM, then testing for it could be considered following review by a Consultant Obstetrician, and in discussion with laboratory/Haematology services.

Discharge Criteria

Consider discharge to routine antenatal care if **ALL** the following criteria are met:

- First presentation with RFM.
- No identified risk factors for stillbirth*
- Normal assessment, CTG and liquor volume.
- Maternal concerns regarding fetal movements have resolved.

Ensure appropriate advice given regarding further RFM.

Birth Planning and Recurrent RFM

Consider increased antenatal surveillance if recurrent RFM especially in presence of risk factors for stillbirth.

Individualised and shared decision making between women and clinicians with regard to the timing of birth.

Reasonable to consider expediting birth/delivery in women with RFM who are ≥ 39 weeks.

An assessment of risk versus benefit should be adopted if considering expediting birth/delivery <39/40.

***Stillbirth Risk Factors**

- Previous stillbirth
- Maternal age
- Maternal tobacco use
- Assisted reproduction
- Obesity
- Nulliparity
- Recurrent presentations with reduced fetal movements
- Pre-existing conditions (e.g. diabetes, hypertension)
- Pre-eclampsia
- Small for gestational age
- Alcohol and other illicit substances
- Low socioeconomic status
- Gestational age: Post-term pregnancy

Auditable standards

Audit using the key recommendations as indicators should be undertaken to identify where improvements are required and to enable changes as necessary, and to provide evidence of quality improvement initiatives.

Auditable standards for this guideline include:

1. The number of women documented to have received verbal and written information (PIL) on RFM with contact details for each maternity unit/hospital between 20-28 weeks' gestation.
2. The number of women reporting RFM who are asked to attend their maternity unit/hospital for assessment, in accordance with the Guideline recommendations.
3. The number of women reporting RFM ≥ 28 weeks who undergo a CTG and bedside ultrasound assessment as part of their initial evaluation.
4. The number of women with RFM not meeting the discharge criteria (i.e. have risk factors for stillbirth and/or FGR, persistent/recurrent RFM, abnormal initial investigations) who have a departmental ultrasound scan within the next working day.
5. The number of women with recurrent RFM or who do not meet the discharge criteria who are reviewed by a senior clinician.
6. The number of women with RFM for whom intervention is planned (induction of labour or caesarean section) before and after 39 weeks' gestation.

Recommended reading:

1. HSE Nomenclature for Clinical Audit https://www.hse.ie/eng/about/who/nqpsd/ncca/nomenclature-aglossary-of-terms-for-clinical-audit.pdf
2. HSE National Framework for developing Policies, Procedures, Protocols and Guidelines at https://www.hse.ie/eng/about/who/qid/use-of-improvement-methods/nationalframeworkdevelopingpolicies/
3. Mangesi L, Hofmeyr GJ, Smith V, Smyth RM. Fetal movement counting for assessment of fetal wellbeing. Cochrane Pregnancy and Childbirth Group, editor. Cochrane Database Syst Rev [Internet]. 2015 Oct 15 DOI: 10.1002/14651858.CD004909.pub3
4. Holm Tveit JV, Saastad E, Stray-Pedersen B, Børdahl PE, Frøen JF. Maternal characteristics and pregnancy outcomes in women presenting with decreased fetal movements in late pregnancy. Acta Obstet Gynecol Scand. 2009 Dec;88(12):1345-51. DOI: 10.3109/00016340903348375
5. Saastad E, Winje BA, Stray Pedersen B, Frøen JF. Fetal Movement Counting Improved Identification of Fetal Growth Restriction and Perinatal Outcomes – a Multi-Centre, Randomized, Controlled Trial. Belizan JM, editor. PLoS ONE. 2011 Dec 21;6(12):e28482. DOI: 10.1371/journal.pone.0028482
6. Bradford BF, Hayes DJL, Damhuis S, Shub A, Akselsson A, Radestad I, *et al.* Decreased fetal movements: Report from the International Stillbirth Alliance conference workshop. Int J Gynecol Obstet. 2023 Dec 8;ijgo.15242. https://doi.org/10.1002/ijgo.15242
7. Smith V, Muldoon K, Brady V, Delaney H. Assessing fetal movements in pregnancy: A qualitative evidence synthesis of women's views, perspectives and experiences. BMC Pregnancy Childbirth. 2021 Dec;21(1):197. https://bmcpregnancychildbirth.biomedcentral.com/articles/10.1186/s12884-021-03667-y
8. Winje B, Wojcieszek A, Gonzalez-Angulo L, Teoh Z, Norman J, Frøen J, *et al.* Interventions to enhance maternal awareness of decreased fetal movement: a systematic review. BJOG Int J Obstet Gynaecol. 2016 May;123(6):886-98. DOI: 10.1111/1471-0528.13802
9. Tveit JVH, Saastad E, Stray-Pedersen B, Børdahl PE, Flenady V, Fretts R, *et al.* Reduction of late stillbirth with the introduction of fetal movement information and guidelines – a clinical quality improvement. BMC Pregnancy Childbirth. 2009 Dec;9(1):32. https://bmcpregnancychildbirth.biomedcentral.com/articles/10.1186/1471-2393-9-32

10. Saastad E, Tveit J, Flenady V, Stray-Pedersen B, Fretts RC, Børdahl PE, *et al.* Implementation of uniform information on fetal movement in a Norwegian population reduced delayed reporting of decreased fetal movement and stillbirths in primiparous women – a clinical quality improvement. BMC Res Notes. 2010;3(1):2. DOI: 10.1186/1756-0500-3-2

11. Flenady V, Gardener G, Ellwood D, Coory M, Weller M, Warrilow K, *et al.* My Baby's Movements: a stepped-wedge cluster-randomised controlled trial of a fetal movement awareness intervention to reduce stillbirths. BJOG Int J Obstet Gynaecol. 2022 Jan;129(1):29-41. DOI: 10.1111/1471-0528.16944

12. Norman JE, Heazell AEP, Rodriguez A, Weir CJ, Stock SJE, Calderwood CJ, *et al.* Awareness of fetal movements and care package to reduce fetal mortality (AFFIRM): a stepped wedge, cluster-randomised trial. The Lancet. 2018 Nov;392(10158):1629-38. DOI: 10.1016/S0140-6736(18)31543-5

13. Billie F. Bradford, Robin S. Cronin, Jane Warland, Anna Akselsson, Ingela Rådestad, Alexander EP Heazell, Christopher J.D. McKinlay, Tomasina Stacey, John M.D. Thompson, Lesley M.E. McCowan, Fetal movements: A framework for antenatal conversations, Women and Birth, Volume 36, Issue 3, 2023, Pages 238-246, ISSN 1871-5192, https://doi.org/10.1016/j.wombi.2022.09.003

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Kalisse T, Farrell AM, Verling AM, Rutherford E, Ravinder M, Khalid A, O'Donoghue K. National Clinical Practice Guideline: Reduced Fetal Movements. National Women and Infants Health Programme and The Institute of Obstetricians and Gynaecologists. May 2024

https://www.hse.ie/eng/about/who/acute-hospitals-division/woman-infants/clinical-guidelines/

https://www.rcpi.ie/faculties/obstetricians-and-gynaecologists/national-clinical-guidelines-in-obstetrics-and-gynaecology/