NHS
Greater Glasgow and Clyde

CLINICAL GUIDELINE

Altered fetal movements in pregnancy

A guideline is intended to assist healthcare professionals in the choice of disease-specific treatments.

Clinical judgement should be exercised on the applicability of any guideline, influenced by individual patient characteristics. Clinicians should be mindful of the potential for harmful polypharmacy and increased susceptibility to adverse drug reactions in patients with multiple morbidities or frailty.

If, after discussion with the patient or carer, there are good reasons for not following a guideline, it is good practice to record these and communicate them to others involved in the care of the patient.

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Important Note:

The online version of this document is the only version that is maintained.
Any printed copies should therefore be viewed as 'Uncontrolled' and as such, may not necessarily contain the latest updates and amendments.

The care of women presenting with altered fetal movements.

Aim: To provide midwives and obstetricians with guidance for assessing and investigating women who present with a perception of altered fetal movement in pregnancy. The guideline also provides standardised evidence for advice for women regarding fetal movement.

Users of the guideline: Midwives and doctors involved in the care of the pregnant woman.

Background: Maternal perception of altered fetal movement is one of the most common unscheduled maternity care events.

The aim of investigating altered fetal movements is to exclude fetal demise and identify pregnancies which are high risk for adverse pregnancy outcome.

Maternal perception of fetal movement is one of the first signs of fetal life and is regarded as a manifestation of fetal wellbeing.

A fetal movement is a discrete kick, flutter, swish or roll.

Fetal movement should have been felt by 24+0 weeks into a pregnancy.

Fetal movement can be felt by some women as early as 16+0 weeks, with the number of movements and pattern emerging as a pregnancy progresses up to around 32+0 weeks. After this the number of movements and the pattern should be relatively consistent until labour commences. Multiparous women are likely to perceive fetal movement earlier than primiparous women. Fetal movement pattern is individual to each woman and therefore reporting of altered fetal movement should be encouraged if there are concerns. It is more important for the woman to consider her usual pattern of movement as opposed to the number of kicks or movements.

Maternal perception of reduced fetal movement affects up to 15% of pregnancies (1). 70% of women will have a normal pregnancy outcome (2). 29% of women who perceive reduced fetal movement will have a small for gestational age baby of which there is a risk of subsequent stillbirth (1,3)

Reduced fetal movement is the fetal response to chronic hypoxia by conserving energy. By reducing movement, oxygen demands are less for the fetus. 45- 55% of women with a stillbirth will experience reduced fetal movement prior to the diagnosis of intrauterine death (1).

Antenatal education.

All women should be provided with written or electronic and verbal information.

All women should have this information by 23+6 weeks. Women should be asked at all antenatal clinic appointments from 24+0 weeks about their babies' movements.

Women should be informed:

- There is no set 'normal' number of movements and every pregnancy is different.
- Their baby will have their own pattern of movement with a pattern emerging around 32 weeks.
- Baby movements do not reduce towards term.
- From 16-24 weeks you should have commencement of movement which should increase in quantity until 32 weeks whereby after this, the movement and pattern should remain consistent.
- A reduction in movement, should result in assessment the same day and advice should be sought from maternity triage if there is a perceived reduction.

Women should be given opportunities to ask any questions regarding fetal movement and encouraged to report altered movement. Contact telephone numbers for the maternity unit should be given at the pregnancy booking appointment.

Women should be signposted to the following information resources which are available via their Badger net app: '*Your baby's movements in pregnancy' and 'Reduce the risk of stillbirth video (NHS Scotland 2021)*

Factors influencing fetal movement perception:

Perception of fetal movement can be affected by maternal factors including:

- Maternal distraction
- Sleep patterns of mother
- Certain medications (sedating medications for example)
- Maternal obesity
- Smoking
- Administration of steroids to promote lung maturity in the fetus.

Fetal factors affecting movement can include:

- Fetal sleep
- Congenital malformations
- Placental insufficiency leading to fetal growth restriction or oligohydramnios
- Polyhydramnios
- Under 24 weeks gestation
- Anterior placentation
- Positioning of the fetus.

Whilst the above factors can all influence movement, women should feel empowered to seek advice and investigation if they have concerns. Women should be reviewed if they perceive altered fetal movement.

Phone triage assessment of the women with altered fetal movement

All women who contact the maternity assessment unit with **altered movement,** which is subsequently confirmed on discussion with the woman, should be invited to attend her maternity unit for review.

If a woman is **unsure** if she has altered movement it is reasonable to give advice about how she can observe movement and re-contact the maternity unit if she remains concerned. Women should be advised to re contact if they remain concerned.

Any woman who has had altered or absent movement for >24 hours should have this classified as **two episodes** of altered fetal movement.

Assessment on arrival to the maternity unit

All women presenting for assessment of altered movement should have a full antenatal check and auscultation of fetal heart with a handheld Doppler or Pinard from 16 weeks' gestation.

Fetal heartbeat must be differentiated from maternal heart rate by assessing maternal pulse.

All women should have their maternity notes reviewed for any risk factors for the fetal growth restriction (FGR) (Appendix 2). *Please see Fetal growth restriction risk assessment, pregnancies at risk of FGR (1004) for list of risk factors- Right Decisions.*

Every woman should have individual assessment, however, the following risk factors in particular have been demonstrated in studies to increase risk of stillbirth following presentation with reduced fetal movement:

Table 1

Factor	Odds Ratio
Cigarette smoking (4)	2.0
Previous stillbirth or SGA infant (2)	2.1
Medical conditions affecting mother (2)	3.0
Recurrent presentation with altered fetal movement (2)	1.9
SFH $<10^{th}$ centile (2)	
Raised uterine artery PI in 2^{nd} trim (3)	5.7

Investigation depending on fetal gestational age for women presenting with altered fetal movement

16+0-23+6 weeks

All women between 16+0-23+6 weeks' should have an antenatal and fetal heart assessment completed. If the woman is in an antenatal clinic setting then this can be undertaken in community/hospital clinic. If all observations are normal, the woman should be discharged home with follow up as per their pregnancy pathway. The woman can be reassured that it is normal to feel irregular movements at this gestation.

Any woman who has felt no movement by 24+0 weeks' gestation should be referred for an ultrasound assessment.

>24+0 weeks

All women over 24+0 weeks' gestation should have symphyseal fundal height (SFH) measurement undertaken (if not documented within the preceding two weeks) and CTG analysis if over 26+0 weeks' gestation.

If the fetal heart is not able to be auscultated, this must prompt immediate ultrasound assessment by sonographer or doctor >ST2.

Onward investigation and management for pregnancies >26 weeks with a normal CTG following presenting with reduced fetal movement.

- If the SFH measurement is completed for the first time in a triage setting and is below the 10th centile, a scan should be arranged within 3 working days.
- If SFH is measured for the first time in maternity triage and is >97th centile, the woman should have an ultrasound completed within 5 days.

(For more information please read SOP GGC- SFH measurements available on Right Decisions)

- If >26+0 weeks with risk factors identified for FGR then an ultrasound should be performed ideally on the day of presenting to triage with reduced fetal movement, unless one has been undertaken in the preceding 3 weeks. The scan should calculate an EFW, end diastolic flow (EDF) and liquor volume (LV).
- Pregnancies identified as being at risk of FGR should have follow up consultation and ultrasound scan arranged at their consultant ANC 3 weeks from the first ultrasound scan.
- If the scan performed for investigation of reduced fetal movement, demonstrates any pathology (eg SGA, reduced LV), an individualised plan for the woman should be made following discussion with senior obstetric doctor.
- If the woman is >24+0 weeks and remains concerned about fetal movement and no risk factors identified for SGA +/- stillbirth, then Obstetric review should be offered and consideration for ultrasound scanning investigation.

There is no clear consensus for recurrent altered fetal movement therefore should be considered any two presentations after 28 weeks' gestation. If a woman reports reduced fetal movement for 24 hours or more, this should be classed as two episodes.

Induction of labour for reduced fetal movement

If the women is >39+0 weeks with an episode of reduced fetal movements then induction of labour (IOL) should be offered and commenced within 48 hours of presenting with reduced fetal movement.

A woman with recurrent reduced fetal movements with normal ultrasound findings should be offered an induction of labour from 39 weeks gestation.

A discussion regarding the pros and cons of IOL should be undertaken as well as a vaginal examination to assess Bishop's score. For further information regarding the evidence for induction then please see Appendix 1.

An induction of labour prior to 39+0 weeks should not be undertaken unless there is evidence of fetal growth concerns on ultrasound scan findings or CTG +/- maternal health concerns as well as RFM.

If the woman declines IOL then ongoing management should be arranged by a senior obstetric clinician through daycare unit or antenatal clinic which includes weekly ultrasound scans.

Any woman being discharged following investigation for reduced fetal movement should be signposted to GGC leaflet about RFM. All women should be advised to recontact if there are any further episodes of RFM.

Increased fetal movements.

If a pregnant woman reports ongoing increased fetal activity, she can be reassured that this is not associated with stillbirth. (5)

If a pregnant women reports an isolated period of increased fetal activity followed by absent movement then the woman should be invited in to maternity triage.

Women who remain concerned about their baby's movements following phone triage consultation should be invited into the department for assessment.

Appendix 1: Information to aid induction of labour discussion

The basis for investigating reduced fetal movement is to try and detect a baby at risk of stillbirth. The rationale behind a full antenatal examination at each presentation is to detect maternal pathology whereby the baby preserves energy by reducing movement. The methods for investigating a baby are by CTG to determine immediate compromise and by USS. The rationale behind offering USS following presentation with reduced fetal movement is to try and detect the SGA infant.

The risk of a baby being SGA is 9.8% if the woman has an episode of RFM after 28 weeks; this risk is increased to 44.2% if the woman presents with recurrent RFM (3).

Women should be offered induction of labour from 39 weeks if they present with RFM or have had recurrent RFM. Offering an induction of labour is to try and prevent stillbirth or perinatal death.

The table below taken from MBRRACE, perinatal surveillance report 2016 with the risk of stillbirth at term in the UK being 1 in 666 live births. RFM increases the womans stillbirth risk 2 fold. Recurrent RFM increases the stillbirth risk 5 fold (6). The following table provides statistics to aid discussion with the mother. All statistics given must be given in a context of the woman's risk factors (eg age, medical comorbidities)

Gestation	Rate of stillbirth	Rate of Perinatal death
32 weeks- 36 weeks	16 per 1000 live birth (1 in 63 live births)	20 per 1000 live births (1 in 50 live births)
37-41+6	1.5 per 1000 live births (1 in 666 live births)	2 per 1000 live births (1 in 500 live births)
42 weeks	1 per 1000 live births (1 in 1000 live births)	1.5 per 1000 live births (1 in 666 live births)

The risk of perinatal death decreases with induction of labour but the risk of cesarean birth increases at an earlier gestation (albeit by a small margin). Babies birthed at earlier gestations following intervention are more likely to require admission to neonatal intensive care units or the special care baby unit (NICU/SCUBU). There is not an increased risk of cesarean birth with IOL from 39 weeks. In low risk women, IOL at 39 weeks does not increase NICU admission (7).

Perinatal mortality risk

Gestation	Expectant Management	Induction of labour
37 weeks	1 in 435 babies	1 in 1111 babies
38 weeks	1 in 500 babies	1 in 1250 babies
39 weeks	1 in 526 babies	1 in 1666 babies
40 weeks	1 in 555 babies	1 in 1250 babies
41 weeks	1 in 454 babies	1 in 1428 babies

Risk of cesarean section

Gestation	Expectant management	Induction of labour
37 weeks	1 in 12 women	1 in 10 women
38 weeks	1 in 12 women	1 in 11 women
39 weeks	1 in 12 women	1 in 11 women
40 weeks	1 in 9 women	1 in 12 women
41 weeks	1 in 7 women	1 in 9 women

NICU/SCUBU admission

Gestation	Expectant management	Induction of labour
37 weeks	1 in 13 babies	1 in 6 babies
38 weeks	1 in 14 babies	1 in 9 babies
39 weeks	1 in 14 babies	1 in 11 babies
40 weeks	1 in 14 babies	1 in 12 babies
41 weeks	1 in 12 babies	1 in 15 babies

Appendix 2:
Table from fetal growth restriction risk assessment, pregnancies at risk of FGR

Risk assessment using BadgerNet FGR tool Perform at booking and mid-trimester anomaly scan		Prevention	Screening for early onset FGR and triage to pathway	Screening/surveillance pathway for FGR/SGA	
Low risk	No risk factors	Nil	Anomaly scan and EFW ≥10th centile	Serial measurement of SFH	
Moderate risk	Moderate risk factors Obstetric history Previous SGA Previous stillbirth AGA birthweight Current risk factor Drug misuse Women ≥40 years of age at booking	Assess for history of placental dysfunction and consider aspirin 150mg at night <16 weeks as appropriate	Anomaly scan and EFW ≥10th centile	Serial USS from 32 weeks every 4 weeks until delivery	Reassess BadgerNet FGR risk assessment tool at 28 weeks and after any antenatal admission
High risk	High risk factors Medical history Maternal medical conditions (chronic kidney disease, hypertension, autoimmune disease (SLE,APLS), cyanotic congenital heart disease Obstetric history Previous FGR Hypertensive disease in a previous pregnancy Previous SGA stillbirth Current pregnancy PAPP-A <0.42 MoM Echogenic bowel Significant bleeding EFW <10th centile	Assess for history of placental dysfunction and consider aspirin 150mg at night <16 weeks as appropriate	Additional uterine artery Doppler to be performed at FAS Normal Uterine artery Doppler Abnormal uterine artery Doppler and EFW ≥ 10th centile Abnormal uterine artery Doppler and EFW <10th centile	Serial USS from 32 weeks every 2-4 weeks until delivery Serial USS from 28 weeks every 2-4 weeks until delivery Discussion with fetal medicine/obstetrician with interest in high risk obstetrics	Assess for complications developing in pregnancy e.g hypertensive disorders or significant bleeding Serial USS from diagnosis until delivery
Other	Women unsuitable for monitoring of growth by SFH measurement BMI ≥40, Fibroids	Nil	Anomaly scan and EFW ≥10th centile	Serial USS from 32 weeks every 4 weeks until delivery	

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Resources

Your baby's movements | Tommy's (tommys.org)

Reduced Fetal movement (Green Top guideline, No 57) Reduced Fetal Movements (Green-top Guideline No. 57) | RCOG

Awareness of fetal movement and care package to reduce fetal mortality (AFFIRM): A step wedge, cluster- randomised trial. Awareness of fetal movements and care package to reduce fetal mortality (AFFIRM): a stepped wedge, cluster-randomised trial - The Lancet

Stillbirth is associated with perceived alterations in fetal activity – results from an international case control study. BMC Childbirth. 2017; 17;369. Heazell, Warland, Stacey et al

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NICE- Antenatal care. Clinical guideline NG201. 2021 Recommendations | Antenatal care | Guidance | NICE