

ANTENATAL GUIDELINES

Reduced fetal movements and Antenatal Cardiotocography (CTG)

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1. Reduced fetal movement (RFM)

There is no universally agreed definition of reduced fetal movements (RFM). Most women will have felt movements by 20 weeks gestation which plateau at approximately 32 weeks. There should be no reduction in the frequency of fetal movements in the late third trimester. All clinicians should be aware of the potential association of decreased fetal movements with key risk factors such as:

- placental insufficiency
- congenital malformations

2. Management of reduced fetal movements

2.1 Clinical history and examination

When a woman presents with RFM, a history and clinical assessment should be undertaken to assess her risk factors for stillbirth and fetal growth restriction (FGR). The majority of high risk pregnancies are identified at the time of booking by the GROW programme and will be having serial ultrasound scans so the purpose of the history is to identify any new risks.

The history must include a comprehensive stillbirth risk evaluation by enquiring or taking into account the following risks for stillbirth:

- hypertension
- known fetal growth restriction
- diabetes
- extremes of maternal age
- primiparity
- smoking
- placental insufficiency
- congenital malformation
- obesity
- racial/ethnic factors
- poor past obstetric history (including FGR and stillbirth) or known genetic factor in current pregnancy e.g. Down, Patau's, Edward or Turner syndrome, where incidence of stillbirth increases.

The history must elicit:

- whether this is the first occasion the woman has perceived RFM
- the duration of RFM
- the gestation at which the woman presents with RFM (remember "Term" is considered ≥ 37 weeks gestation).

Clinical examination

- blood pressure (pre-eclampsia is associated with FGR)
- urinalysis for proteinuria. The presence of proteinuria and reduced fetal movements should not be ignored, even if blood pressure is normal
- abdominal palpation and measurement of symphysiofundal height (SFH)
- auscultation of fetal heart (24-27+6 weeks) or CTG (>28 weeks)
- maternal heart rate documentation.

2.2 Management before 24⁺⁰ weeks

Women reporting decreased fetal movements are to be seen by community midwife or GP on the same day as the referral to have FH auscultation. The woman is to be reassured when the fetal heart is auscultated and referral to Triage is not required.

If fetal movements have never been felt by 24 weeks, referral to WDS (Women's Day Services) midwife sonographer /fetal medicine should be considered.

2.3 Management between 24⁺⁰ – 27⁺⁶ weeks

If a woman reports significantly reduced fetal movements the fetal heartbeat should be auscultated by her community midwife or GP.

There is no evidence to recommend the routine use of CTG surveillance or the routine use of ultrasound assessment in this group and should be discouraged. However, a CTG may be performed where there are reports of reduced movements, combined with other clinical concerns and when intervention may then be planned dependent upon the results.

For women not already having serial GROW scans and clinically there is evidence of fetal growth restriction when the symphysiofundal height is plotted on the individualised fundal height chart, an ultrasound scan should be arranged.

2.4 Management from 28⁺⁰ weeks

Women should be encouraged to report RFM on the day of the occurrence and not to wait until the next day.

On admission to Triage take:

- appropriate medical and obstetric history
- measure symphysiofundal height (SFH) and chart on individualised fundal height chart
- record maternal observations
- computerised cardiotocograph.

2.5 First occurrence of reduced fetal movements

Women presenting with their first episode of RFM, who have an otherwise low risk pregnancy, are found to have an appropriately grown fetus clinically, observations within the normal range and the CTG is normal, may be reassured and discharged.

If the perception of RFM persists despite a normal CTG or if there are any additional risk factors for FGR/stillbirth then an Ultrasound scan assessment should be undertaken.

All women should be advised that if they have any further concerns or another episode of reduced fetal movements, to make contact with the maternity unit and not to delay.

2.6 Repeat occurrence of reduced fetal movements

The history taken from women presenting with repeated occurrence of RFM must be clear in both the **frequency** of episodes and the **time apart** that each episode has occurred.

If there have been **2 or more episodes of RFM** (even if she would have been less than 28 weeks gestation on previous reported occasion) this should then be regarded as repeated RFM and a growth ultrasound arranged.

2.7 Results of fetal monitoring

Normal computerised CTG	If all other features normal, reassure and discharge.
Abnormal computerised CTG	Contact on call obstetrician for further review
If no fetal heart found	Arrange for transfer to CDS. Contact on call senior obstetrician for review and arrange scan for fetal heart by appropriately trained practitioner.

2.8 The role of ultrasound scanning

If an ultrasound scan assessment is deemed necessary, it should be performed when the service is next available - preferably within 24 hours.

Ultrasound scan for growth assessment should include the assessment of abdominal circumference (AC) and/or estimated fetal weight to detect the SGA fetus, and amniotic fluid index (AFI). This helps exclude placental insufficiency as a reason for RFM. If growth or AFI are abnormal then umbilical artery Doppler may be performed (knowing that the evidence for Doppler as a screening tool in this situation shows no benefit). Ultrasound should include

assessment of fetal morphology (anomaly scan) if this has not previously been performed and the woman has no objection to this being carried out.

2.9 Frequency of ultrasound scan

On the first presentation with RFM in a woman who has had a growth scan in the preceding 2 weeks, the measurement of the umbilical Doppler and amniotic fluid volume is appropriate. There is no need to request a further growth scan at this time.

If the woman continues to present with RFM, future scans should not be done more frequently than every fortnight. If there are additional clinical concerns, advice can be sought from the fetal medicine consultants / team as to whether additional Doppler studies are indicated.

All scans are undertaken by trained sonographers and reported Viewpoint software charts. If a fetus is known SGA and has RFM, the scans will be performed by the GROW team.

Induction of labour for SGA is recommended at 37 weeks unless otherwise clinically indicated (see guideline - The small for gestational age (SGA) fetus. <http://staffnet.plymouth.nhs.uk/Portals/1/Documents/Trust%20Documents/Maternity/Antenatal/The%20Small%20for%20Gestational%20Age%20SGA%20Fetus.pdf>).

3. Antenatal CTG and interpretation

CTG interpretation is used within the clinical context of the patient. All antenatal fetal monitoring should be performed using the Computerised Antenatal Cardiotocograph (CTG) interpretation which uses the Dawes Redman criteria.

3.1 Indications for CTG

- reduced fetal movements
- raised BP (> 140/90 twice at least 4 hours apart or any systolic ≥ 160 or diastolic ≥ 110 on any reading)
- antepartum haemorrhage
- uterine tenderness
- new antenatal admissions (not in labour)

3.2 Monitoring

Setting up the Sonicaid Team Monitor

Using the Sonicaid Team menu system the following details should be entered before commencing the CTG:

- Date and Time
- Gestation Period as number of weeks followed by number of days
- Patient name
- Patient hospital number

The computer analyses the CTG results and compares it with the Dawes Redman criteria at 10 minutes and every 2 minutes thereafter. If the CTG meets the Dawes Redman criteria,

“CRITERIA MET” appears in the monitor’s message bar. In this event, unless there are other clinical concerns, for example maternal systemic illness, ongoing bleeding or uterine pain, the analysis can be stopped after a **minimum of 20 minutes** and the printer will produce a report of the analysis results.

If the Dawes Redman criteria are not met the CTG should be continued for the maximum record length of 60 minutes. If not met by 60 minutes the CTG needs to continue and a senior doctor review must be sought.

If a non-labouring antenatal CTG is abnormal (see classification below) then senior review must be sought. The CTG needs to continue.

A preterm CTG has a different acceptable criteria than those at term ($\geq 37/40$), particularly below 34 weeks and the criteria in the table below only apply to **term** fetuses. The computerised CTG has a gestation corrected algorithm (down to 26 weeks) built in which is why it should be the default assessment.

3.3 Interpretation of CTG

NICE guidance for the interpretation of CTG in labour **should not** be used for antenatal non-labouring women. An antenatal CTG is either normal or abnormal and takes into account:

- Baseline rate (110-160 bpm)
- Baseline variability or short term variability (5bpm or more)
- The presence of accelerations – a reassuring marker and should be present when not in labour
- The presence of decelerations – always abnormal.

All 4 parameters must be within the normal range for a CTG to be classified as normal in a non-labouring CTG.

An abnormal CTG requires prompt review by an Obstetrician or senior midwife.

3.4 Documentation when CTG discontinued

The healthcare professional should print and sign their name and note the date and time the CTG is discontinued together with a reason for discontinuing trace. An overall classification of the CTG should be documented on the CTG itself, using the antenatal CTG review sticker ([see appendix 2](#)). The interpretation of baseline, variability, presence/absence of

accelerations, presence/absence of decelerations and contractions must be documented in the patient handheld records or on the CTG paper.

4.0 Management after assessments

If all assessments are normal, the patient can be discharged back to the lead professional. If the assessments are not normal, contact a senior Obstetrician for further management.

Women with recurrent RFM with a normal scan and normal CTG should be offered the option of Consultant led review. The risks and benefits of delivery versus conservative management at term (**≥ 37 weeks**) should be discussed on an individualised basis.

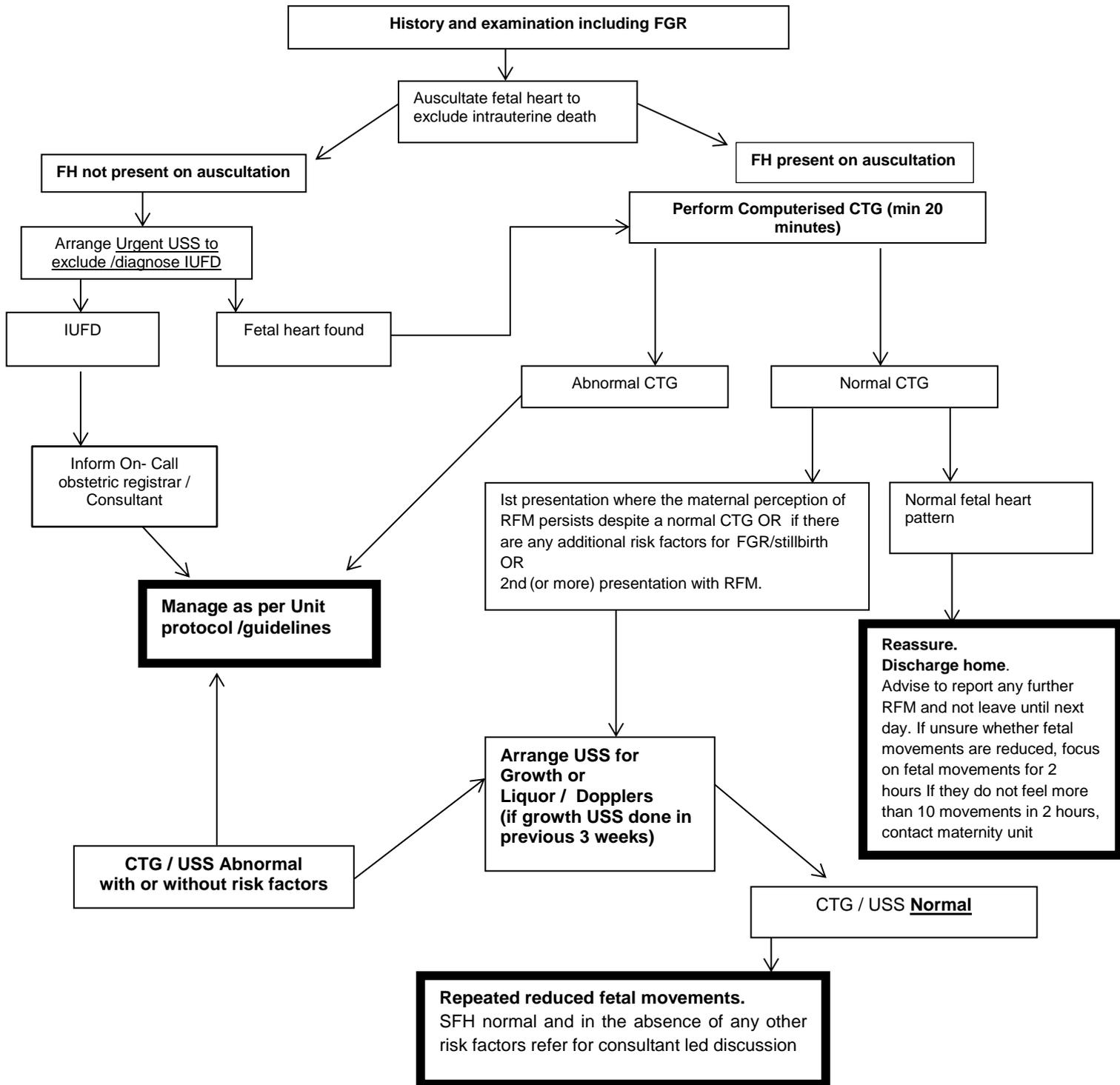
Women with RFM **after** the estimated date of delivery/post-term must be offered Obstetric opinion due to the increased incidence of acute placental insufficiency irrespective of other risk factors and findings on clinical examination. A lower threshold for USS assessment or induction should be employed for these women.

3.5 Documentation in the maternal records

Full detail of the assessment and management are to be documented. Record the advice given about follow-up and when/where to present if a further episode of reduced fetal movements is perceived.

Ensure all women have received a RFM patient information leaflet, secured to their notes and signposted to PHNT maternity website for further information.

Appendix 1 Screening Protocol for Reduced Fetal Movements after 28 weeks



Appendix 2 – Antenatal CTG Review

Antenatal CTG Review		
Indication for CTG:	Parity:	Membranes: Intact / Ruptured
Mat HR:	Gestation:	Colour: PROM: Yes/No
Dawes Redman Criteria	Met	Not Met
CTG Features	Normal	Abnormal
Baseline FHR (bpm)	110-160 bpm 100-109 (if no other concerning features*)	Persistently less than 100 bpm or greater than 160 bpm
Variability (bpm)	5 bpm or more	Less than 5 bpm for over 30 minutes Or more than 25bpm for 15 minutes Or a sinusoidal pattern
Accelerations	Present	None for 40 minutes
Decelerations	None	Unprovoked decelerations
Impression And Plan		
Opinion	Normal CTG All features are normal	Abnormal CTG 1 or more abnormal features
Management Plan	Discontinue CTG and repeat as required *A baseline of 100-109bpm requires obstetric review* - even if no other concerning features	Obstetric or senior MW review
Comments		
Date	Time:	Signature/Name:

Antenatal CTG sticker to be placed on the CTG and summary documented in handheld notes.

Appendix 3 Patient Information Leaflets



Has your baby
moved today update

<https://www.tommys.org/pregnancy-information/symptom-checker/baby-moving-less/movements-matter-raising-awareness-fetal-movements>

https://www.tommys.org/sites/default/files/RFM-Infographic_0.pdf

Monitoring and Audit

Auditable Standards:

- appropriate medical and obstetric history
- measure symphysiofundal height (SFH) and chart on individualised fundal height chart
- record maternal observations
- computerised cardiotocograph
- Women >28/40 having CTG to exclude fetal compromise.
- Women having USS assessment as part of preliminary investigation when presenting with recurrent RFM
- Women presenting with recurrent RFM referred for a growth scan and liquor assessment.

Reports to:

Clinical Effectiveness Committee – responsible for action plan and implementation of recommendations from audit

Clinical Governance & Risk Management Committee

Frequency of audit:

Annual

Responsible person:

Midwife/doctor

Cross references

Fetal Loss (miscarriage, stillbirth, & termination for fetal abnormalities) and support for parents.

<http://staffnet.plymouth.nhs.uk/LinkClick.aspx?fileticket=3cymPIE0xIw%3d&portalid=1>

The small for gestational age (SGA) fetus.

<http://staffnet.plymouth.nhs.uk/Portals/1/Documents/Trust%20Documents/Maternity/Antenatal/The%20Small%20for%20Gestational%20Age%20SGA%20Fetus.pdf>.

Maternity Hand Held Notes, Hospital Records and Record keeping

<http://staffnet.plymouth.nhs.uk/Portals/1/Documents/Trust%20Documents/Maternity/Antenatal/Maternity%20hand%20held%20notes%20and%20hospital%20records.pdf>

References

National Institute for Clinical Excellence (NICE) Intrapartum care for healthy women and babies. CG 190. Feb 2017.

RCOG Green top Guideline No 31 Jan 2014 (2nd edition with minor revisions). *The investigation and management of small-for-gestational-age fetus*. RCOG, London

RCOG Green top Guideline No. 57 Feb 2011. *Reduced fetal movements*. RCOG, London

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