Lothian NHS Board

Lothian NHS Board
Mainpoint
102 Westport
Edinburgh
EH3 9DN
Main Switchboard: 0131 242 100

www.nhslothian.scot

Date 25/08/2025
Your Ref

Our Ref 10279

Enquiries to Richard Mutch
Extension 35687
Direct Line 0131 465 5687
loth.freedomofinformation@nhs.scot
richard.mutch@nhs.scot

Dear

FREEDOM OF INFORMATION – MATERNITY

I write in response to your request for information in relation to maternity documents.

Question:

- I wish to request guidelines, policies, proforma documents and any other document available, as at June and July 2022, relating to the following:

  - Identification and management of reduced fetal movement;
  - Assessment and recording of symphysis fundal height;
  - Management of reduced symphysis fundal height;
  - Symphysis fundal height measurement and recording chart

Answer:

Please see enclosed documents to answer your request.

I hope the information provided helps with your request.

If you are unhappy with our response to your request, you do have the right to request us to review it. Your request should be made within 40 working days of receipt of this letter, and we will reply within 20 working days of receipt. If our decision is unchanged following a review and you remain dissatisfied with this, you then have the right to make a formal complaint to the Scottish Information Commissioner within 6 months of receipt of our review response. You can do this by using the Scottish Information Commissioner's Office online appeals service at www.itspublicknowledge.info/Appeal. If you remain dissatisfied with the Commissioner's response you then have the option to appeal to the Court of Session on a point of law.

If you require a review of our decision to be carried out, please write to the FOI Reviewer at the email address at the head of this letter. The review will be undertaken by a Reviewer who was not involved in the original decision-making process.

FOI responses (subject to redaction of personal information) may appear on NHS Lothian's Freedom of Information website at: https://org.nhslothian.scot/FOI/Pages/default.aspx

Yours sincerely

ALISON MACDONALD
Executive Director, Nursing
Cc: Chief Executive
Enc.

Reduced Fetal Movements (RFM)
Maternity Services Lothian
Guidelines

NHS Lothian

1. INTRODUCTION:

Stillbirth rates in Scotland
Stillbirth is a major cause of perinatal mortality. The UK has high stillbirth rates compared to other high-income countries (ranked 33 out of 35 in a Lancet study [1]). The overall stillbirth rate in Scotland was 3.67 stillbirths per 1,000 total births in 2016 [2], which equates to around 1 in 250 births. This is a slight increase compared to 2015. An aim of the Scottish Patient Safety Programme Maternity and Children Quality Improvement Collaborative is to reduce stillbirths and neonatal mortality by 35% by 2019 (since it began in 2013 there has been a 22% reduction in stillbirths in Scotland) [3].

Association between reduced fetal movements, placental dysfunction and stillbirth
Maternal perception of reduced fetal movements is associated with placental dysfunction [4,5], fetal growth restriction [6] and stillbirth [7]. Reduced fetal movements affects around 5-15% of pregnancies. Studies have shown that at least 55% of intra-uterine deaths are preceded by a reduction in fetal movements (RFM) in the 24 hours before diagnosis and the adjusted odds ratio (95%CI) of late stillbirth in women with decreased fetal movements (compared to controls) is 2.37 (1.29-4.35) [8]. Most women that experience reduced movements go on to have a normal pregnancy and outcome.

What is RFM?

- There is **no formal definition of decreased fetal movement** –the ***woman's perception of decreased fetal movements*** is the most helpful definition of decreased fetal movement. An arbitrary reference range for movements is not recommended.

What influences women's perceptions of fetal movements?

- Women perceive most movements when lying down
- Sedating drugs may have a transient effect
- Increase in movements with maternal blood glucose
- There may be a reduction in movements with cigarette smoking

2. AIM:

To reduce the risk of stillbirth by

- Increasing pregnant women's awareness of the need to report early when they perceive a RFM.
- Providing a management plan for identification and delivery of the "at risk" fetus in women with reduced fetal movements.

3. GUIDELINES:

i) Discussion about RFM

1. Discus the importance of fetal movements with all women by 24 weeks, and again if they present with RFM.
2. Advice should include the information in Box 1
3. Women should be signposted to information on RFM in Ready Steady Baby, and the videos and leaflets available through https://www.tommys.org/pregnancy-information/symptom-checker/baby-moving-less/movements-matter-raising-awareness-fetal-movements (see appendix)

4. Check her understanding using talk back, and document in woman's records that this has taken place.

Box 1

Discussion about fetal movements should include

Each baby will have their own pattern of movements that you should get to know. From 16-24 weeks babies move more and more up until 32 weeks then stay roughly the same until you give birth. It is NOT TRUE that babies move less towards the end of pregnancy. You should CONTINUE to feel your baby move right up to the time you go into labour and whilst you are in labour too.

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

Do not use any hand-held monitors, Dopplers or phone apps to check your baby's heartbeat. Even if you detect a heartbeat, this does not mean your baby is well.

ii) If a woman phones triage with decreased fetal movements

1. Assess if the woman has already followed the advice in Box 2. If not, advise her to do so.

2. If she has followed advice in Box 2 and the there is no return of fetal movements, then advise her to attend for assessment as soon as possible.

3. Record your assessment and advice

Box 2

Advice for women with decreased fetal movements

- If you have not felt your baby move as he or she would usually move then
  - Find space and time to lie down for one hour on your left side.
  - Have a hot or a cool drink.
  - Don't watch TV or read or become otherwise distracted.

- If you are still worried that your baby has stopped moving or is moving less than normal, call your maternity unit immediately. *Get help straight away. DO NOT WAIT UNTIL THE NEXT DAY TO SEEK HELP*

iii) Assessment of all women who present with RFM

1. Perform maternal observations including Temp, Pulse and BP and Urinalysis, and Symphiso-Fundal height measurement

2. Assess risk factors for fetal growth restriction and stillbirth (see box 3)

3. Review previous imaging and growth charts (if performed)

Box 3

Risk Factors for Fetal Growth Restriction
(NB This list is not exhaustive, please consider the whole history)

Maternal history:
- Maternal age>40yrs
- Recurrent miscarriage (i.e. no live children following 3 consecutive miscarriages)
- Large fibroids, 1 or more >6cm
- Asthma requiring current use of oral steroids or recent hospital admission
- Chronic hypertension
- Chronic kidney disease
- Uterine anomaly
- Substance misuse including alcohol
- Pre-existing Diabetes
- BMI>40 or previous bariatric surgery
- Newly diagnosed or uncontrolled hyperthyroidism
- SLE/Connective Tissue Disease/ Antiphospholipid syndrome
- Eating disorder
- Maternal Cardiac Disease
- Cystic fibrosis
- Sickle cell disease

Previous Pregnancy:
- Previous SGA (<10th centile at delivery)
- Previous stillbirth

Current Pregnancy:
- Smoker with CO level 5ppm or more
- Late bookers (at or after 21 weeks gestation)
- PAPP-A <0.4MoM on 1st trimester screen
- Recurrent bleeding (similar to menses)
- Positive Uterine Artery Dopplers (mean PI >95th centile) at 22-24 weeks
- <10th centile, Echogenic bowel or femur length <5th centile on fetal anomaly (20 week) scan
- Symphisio-fundal height <10th centile or static or falling SFH
- Recurrent Antepartum Haemorrhage (2 bleeds >20 wk)

Addendum

MANAGEMENT OF REDUCED FETAL MOVEMENTS DURING COVID PANDEMIC 2020
(from 180320, updated 220520 to include recurrent attendance)

IN WOMEN WITHOUT POSSIBLE COVID-19 SYMPTOMS

RFM < 24+0wks
SFH: Auscultate FH
SGA risk assessment
Revert to routine care

RFM 24+0 -26+6wks
Phone advice, if not reassured on call back advice to come in.
Attend OTA for MEWS, SFH, FH auscultation + SGA risk assessment
Plan growth scans if risk factors present in line with SGA guidance.

RFM >27+0wks
If not resolved by telephone triage and advice, advise tci to OTA/ DAU
MEWS, CTG + SGA risk assessment
Minimise reattendance at hospital. Plan growth scans if risk factors present (other than single episode of RFMs) in line with SGA guidance **or if recurrent RFMs within 21days.** Attendance >21 days is a new episode.

RFM > 39wks
MEWS, SFH, CTG + SGA risk assessment.
Minimise repeated attendance at hospital. **Offer IOL.** If IOL declined, then offer CTG x2/week and weekly LV.

ANY ABNORMAL CTG REQURIES IMMEDIATE ESCALATION TO MEDICAL STAFF.

OUTWITH COVID Pandemic 2020
iv) Single episode of reduced fetal movements (also see flow chart).

Definition: *A single episode of RFM is either a first episode of reduced movements OR a subsequent episode of RFM that is >21 days from the last presentation with RFM that resolves within 24 hours. The management depends on the gestation.*

37+0 weeks gestation or more

Perform CTG within 2 hours.

1. If CTG abnormal - arrange delivery, with input from senior obstetrician on timing and mode of delivery.

2. If CTG normal - perform USS for EFW /AC/DVP +/-umbilical artery Doppler* next working day. If RFM persist, then daily CTG until Growth USS performed.
    a. If EFW/AC >10th centile, growth trajectory normal AND fetal movements have returned to normal, discharge back to routine care.
    b. If AC or EFW ≤10th centile or reduced liquor volume or there is decreased growth velocity or abnormal Doppler deliver with input from senior obstetrician on timing, and certainly within 48 hours.

c. If all investigations are normal but fetal movements have not returned to normal within 24 hours follow recurrent reduced fetal movement pathway.

3. If ≥ 40 weeks, consider delivery within 48 hours as an alternative to USS.

27+0 – 36+6 weeks gestation

Perform CTG within 2 hours.

1. If CTG abnormal involve senior obstetrician in management plan.
2. If CTG normal perform USS for EFW /AC/DVP (+/- Umbilical artery Doppler *) next working day
    a. If EFW/AC >10th centile, growth trajectory normal AND fetal movements have returned to normal discharge back to routine care.
    b. If AC or EFW ≤10th centile or reduced liquor volume or there is decreased growth velocity or abnormal Doppler review by senior obstetrician as per Lothian SGA guideline. Plan delivery by 37 weeks for women with fetal growth restriction.
    c. If all investigations are normal but fetal movements have not returned to normal within 24 hours, follow recurrent reduced fetal movement pathway.

24+0 – 26+6 weeks gestation

Confirm fetal viability. Perform fetal anomaly scan if not already completed. If risk factors or FGR and stillbirth present (Box 3) arrange serial growth USS as per Lothian SGA guideline (usually not initiated before 28 weeks).

v) Recurrent episode of reduced fetal movements (also see flow chart)

Definition: Recurrent reduced fetal movement is defined as persistent reduced fetal movement for more than 24 hours or second or subsequent episode within 21 days of first presentation.

*****NB If previous attendance ≥ 21days ago follow single episode guidance above*****

37+0 weeks gestation or more

Perform CTG within 2 hours.

1. If CTG abnormal – arrange delivery with input from senior obstetrician.
2. If CTG normal - Offer delivery from 39 weeks (e.g. induction of labour) with input from senior obstetrician on timing. If delivery not planned within 48 hours, then perform LV next working day and consider twice weekly CTG and weekly LV monitoring until either movements return to normal or delivery is planned.

27+0 – 36+6 weeks gestation
Perform CTG within 2 hours.

1. If CTG abnormal involve senior obstetrician in management plan.
2. If CTG normal - schedule repeat USS scan for EFW/AC/DVP (+/- Umbilical Artery Doppler*) ≥ 21 days since previous USS.

If further reassurance required, consider weekly CTG monitoring and LV until then.

Thereafter, manage according to repeat scan results.

a. If measurements of EFW/AC are ≤ 10th centile, or reduced liquor volume, or if there is decreased growth velocity, or abnormal Doppler review by senior obstetrician

b. If EFW/AC are > 10th centile with normal growth velocity, return to routine care with no increased monitoring. This is the new normal pattern of movements for this pregnancy.

24+0 – 26+6 weeks gestation
Confirm fetal viability. Perform anomaly scan, if not already done. If risk factors for FGR (box 3) arrange serial growth USS as per Lothian SGA guideline (usually not initiated before 28 weeks).

*NB Umbilical artery Doppler is to be performed if AC/EFW 10th centile or less or growth trajectory is decreased

vi) Reporting and interpreting USS results

AC/EFW and Umbilical artery Doppler resistance index should be plotted on appropriate chart and filed in woman's record. The measurements from the 20 week ultrasound should also be plotted as a baseline measurement.

Box 4

Abnormal Ultrasound Results – Involve senior obstetrician

1. Liquor Volume (DVP)
    - ≤2cm low
    - >8cm high
2. Growth Scans
    - AC or EFW ≤10th centile
    - Growth trajectory decreased (crossing centiles)
    - Umbilical artery Doppler >95th percentile or absent or reversed end diastolic flow

(*Umbilical artery Doppler will be performed if AC/EFW ≤10th

vii) Definitions:

Stillbirth – a baby born with no signs of life after 24 completed weeks of pregnancy

Reduced Fetal Movements (RFM) – a change in the frequency or intensity of fetal movements as perceived by the mother

Recurrent Reduced Fetal Movements- persistent RFM for more than 24 hours OR one or more episodes more than 24 hours apart within 21 days of the first presentation.

Small for Gestational Age (SGA)- growth parameters at or below the 10th centile for gestational age. This may represent a constitutionally small baby or growth restriction.

Fetal Growth Restriction (FGR)- pathological restriction of genetic growth potential.

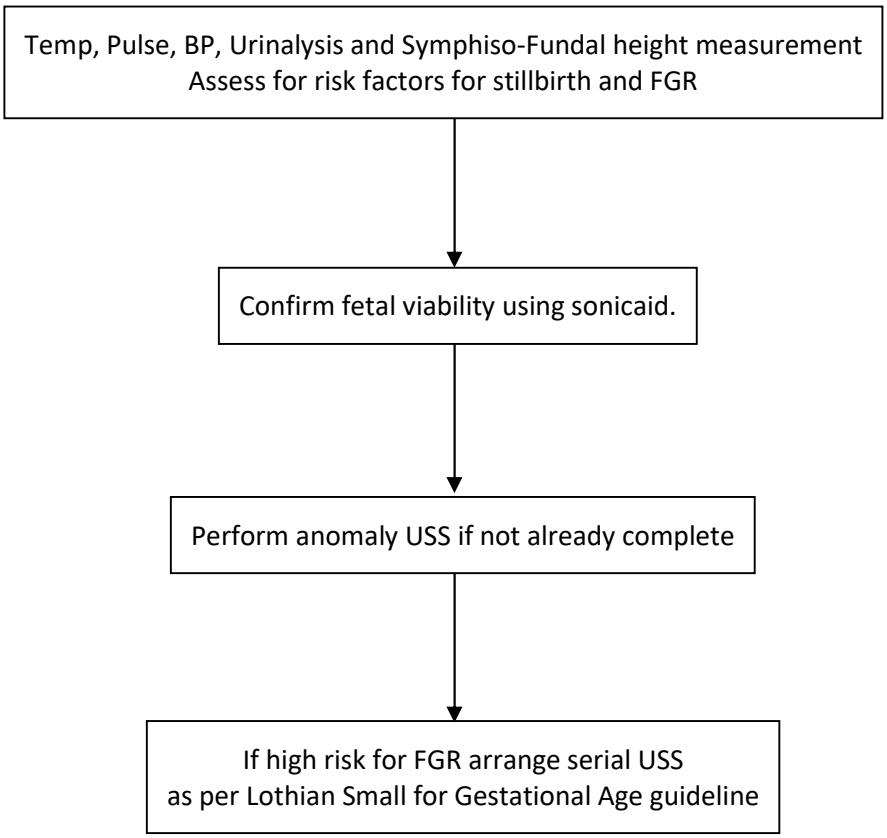
Liquor Volume (LV) – assessment of the amniotic fluid volume by measuring Deepest Vertical Pocket (DVP). ≤2cm reduced; 2-8 cm normal; >8cm increased.

DVP - Deepest Vertical Pocket of amniotic fluid.

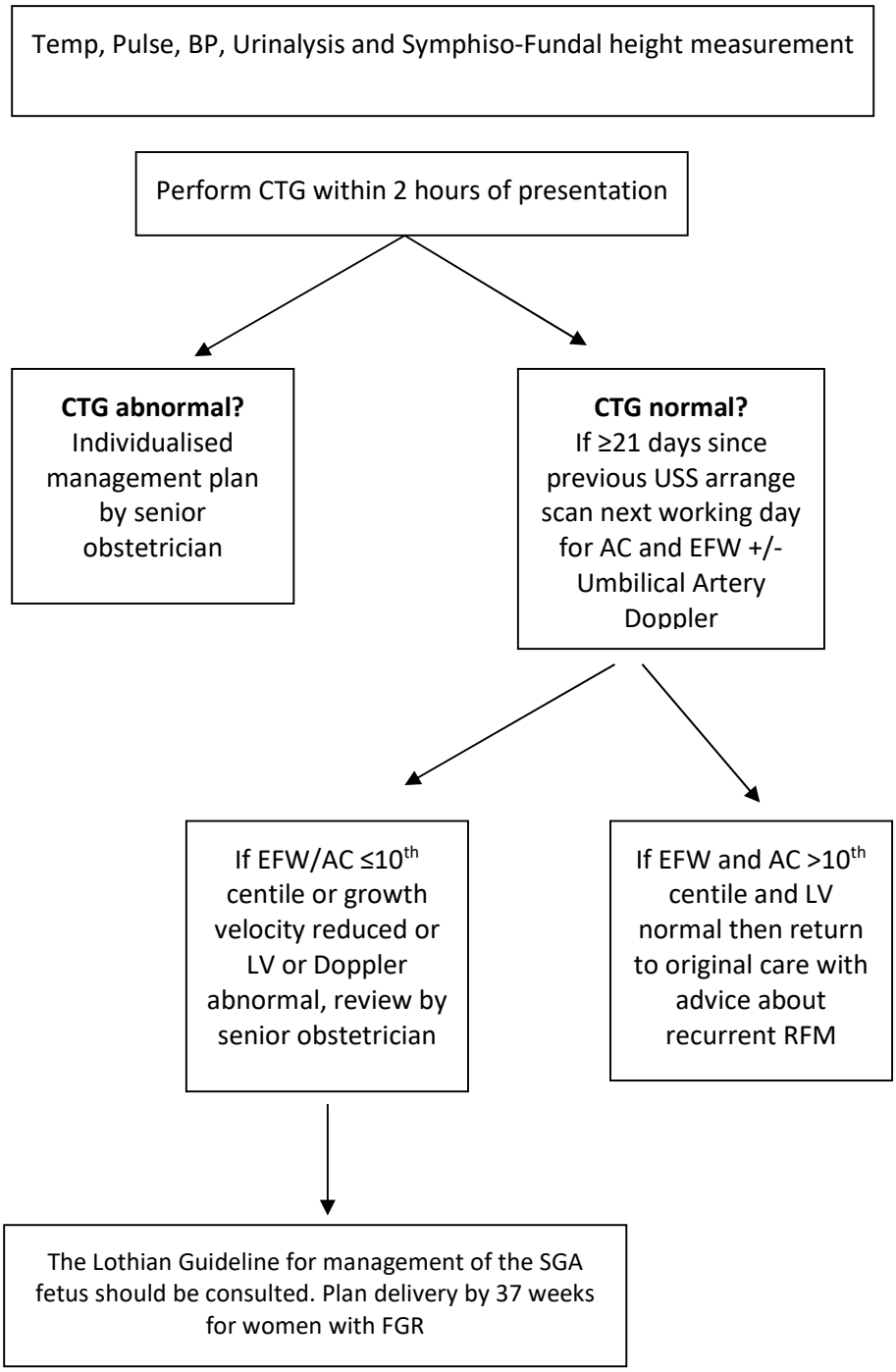
viii) FLOW CHARTS

First Episode of Reduced Fetal Movements (or previous episode of RFM ≥ 21 days ago)

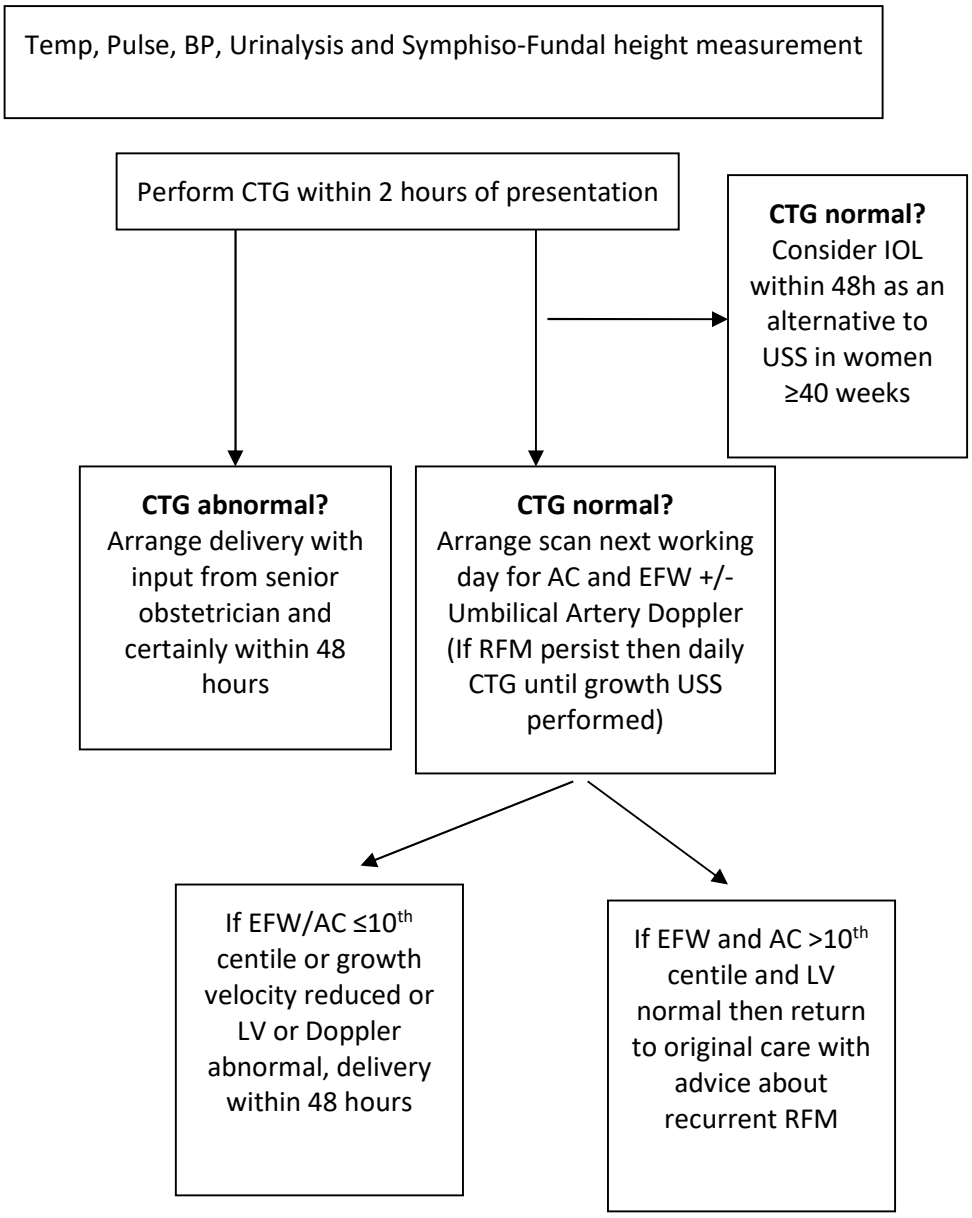
1. 24+0-26+6 weeks (1st episode *or previous episode of RFM ≥ 21 days ago*)



2. 27+0-36+6 weeks (1st episode *or previous episode of RFM ≥ 21 days ago*)

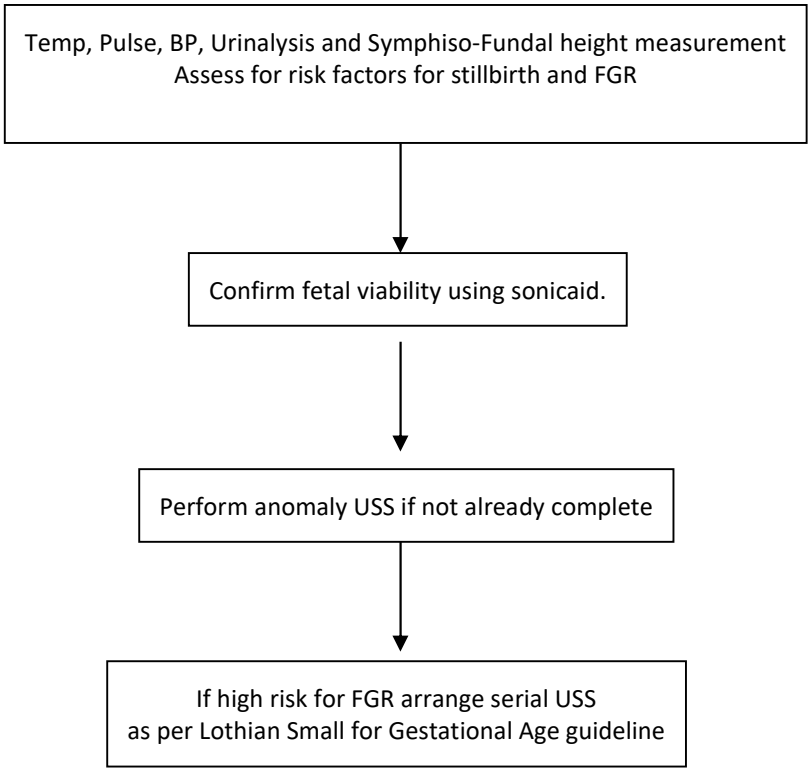


3. 37+0 weeks or more (1st episode *or previous episode of RFM ≥ 21 days ago*)

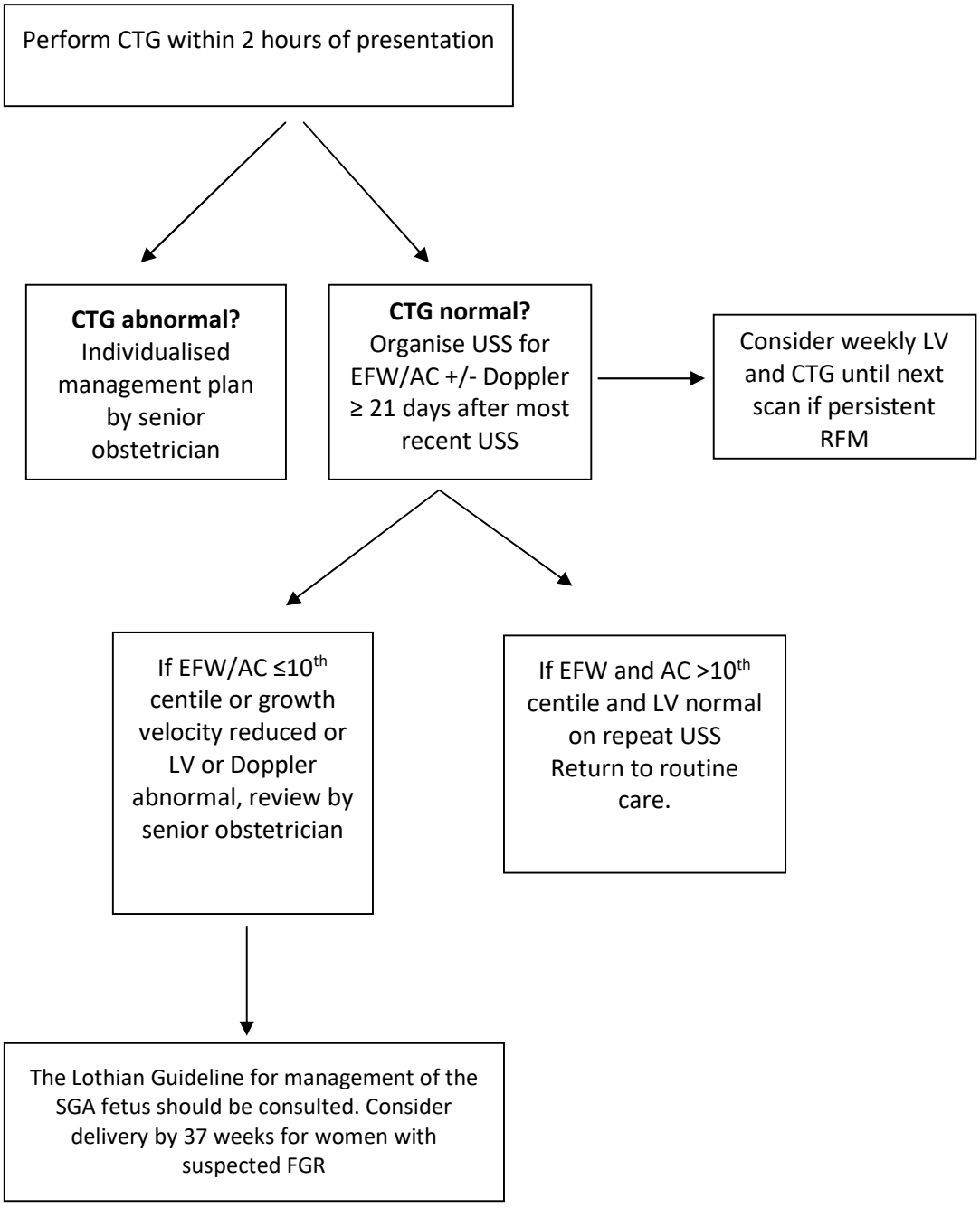


Recurrent Episodes of Reduced Fetal Movements (single episode lasting more than 24 hours, or one or more episodes within 21 days of first presentation)

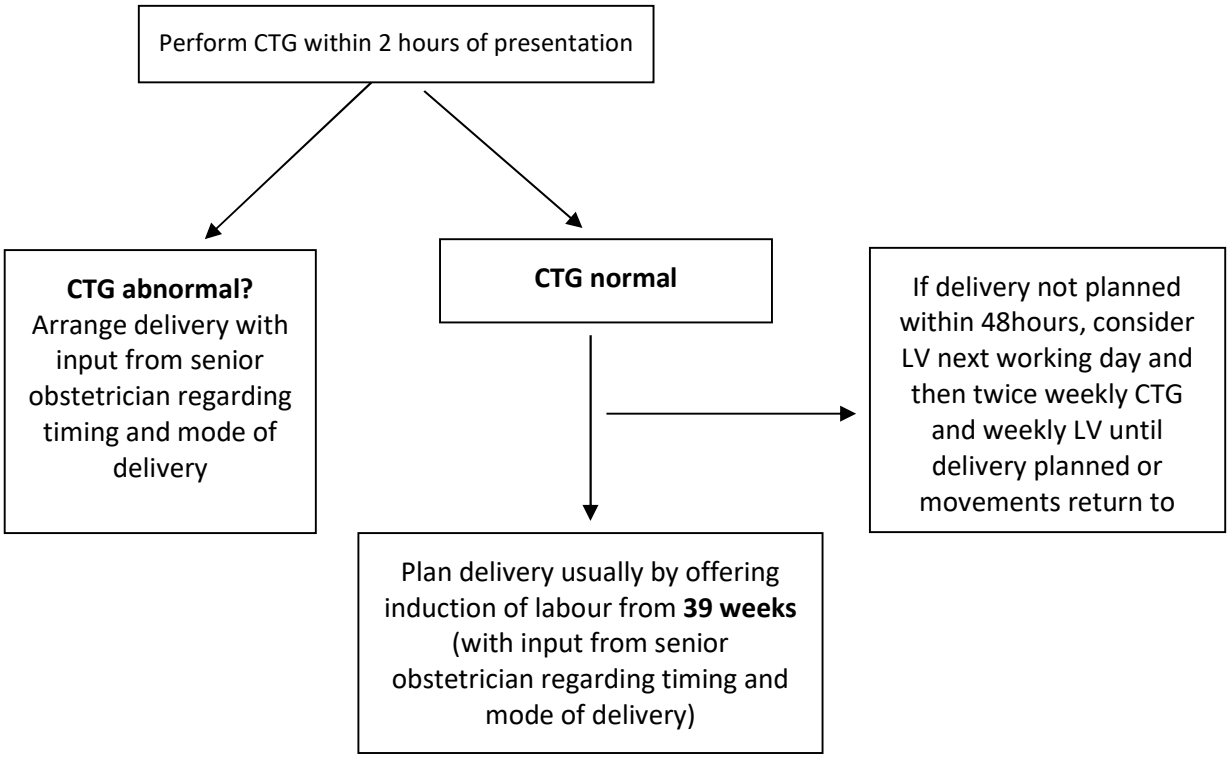
1. 24+0-26+6 weeks



2. 27+0-36+6 weeks (*single episode lasting more than 24 hours, or one or more episodes within 21 days of first presentation*)



3. ≥37 weeks (*single episode lasting more than 24 hours, or one or more episodes within 21 days of first presentation*)



3. ASSOCIATED DOCUMENTS:

Small for Gestational Age Guideline
Management of Intrauterine Death Protocol
Ready Steady Baby
https://www.tommys.org/pregnancy-information/symptom-checker/baby-moving-less/movements-matter-raising-awareness-fetal-movements

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.

How often should my baby move?

There is no set number of normal movements.

Your baby will have their own pattern of movements that you should get to know.

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.

It is NOT TRUE that babies move less towards the end of pregnancy.

You should CONTINUE to feel your baby move right up to the time you go into labour and whilst you are in labour too.

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

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.

Do not use any hand-held monitors, Dopplers or phone apps to check your baby's heartbeat. Even if you detect a heartbeat, this does not mean your baby is well.

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


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.

Reporting reduced fetal movements. What should I expect?

Tommy's
Funding research
Saving babies' lives

Are you worried about your baby's reduced movements? This leaflet outlines the care that you should expect to receive, depending on which stage of the pregnancy you are at.

Less than 24 weeks pregnant

-24

Most women first become aware of their baby moving when they are 16–24 weeks pregnant. If by 24 weeks you have never felt your baby move, you should contact your midwife, who will check your baby's heartbeat. An ultrasound scan may be arranged and you may be seen by a specialist to check your baby's wellbeing if a problem is suspected.

Between 24 and 28 weeks pregnant

24-28

You should contact your midwife and they should see you the same day if possible. If they can't see you, they may refer you to the hospital maternity unit. Your baby's heartbeat will be checked and you will have a full check-up that should include:

1. checking the size of your baby by measuring your bump
2. checking your blood pressure
3. testing your urine for protein.

If your baby is smaller than expected, an ultrasound scan may be arranged to check on your baby's growth.

What should I do if I find my baby's movements are reduced again?

When you go home you will be advised to keep an eye on your baby's movements. If your baby has another episode of reduced movements, you must contact your local maternity unit promptly. *Always contact your midwife or local maternity unit immediately, no matter how many times it happens. You are not being a nuisance.*

Over 28 weeks pregnant

28+

You must contact your midwife or local maternity unit. You must not wait until the next day to seek help and you should be seen on the same day. If it is out of hours you may be asked to go to the labour ward and wait to be seen.

1. You will be asked about your baby's movements.
2. You will have an antenatal check-up, including checking your baby's heartbeat and measuring the size of your bump.
3. Your baby's heart rate will be monitored using a CTG, usually for at least 20 minutes.

You should not be discharged until you are happy with your baby's movements again.

You may also have an ultrasound scan if:

- your baby is smaller than expected
- your pregnancy has other factors that are associated with a higher risk of stillbirth.

The ultrasound scan is normally done within 24 hours.

These checks usually show that all is well. Most women who have one episode of reduction in their baby's movements go on to have a healthy baby.

Do not be tempted to use a home doppler to check on the health of your baby at home. Even if you detect a heartbeat it does not mean your baby is well.

This leaflet is based on recommendations made by the Royal College of Obstetricians and Gynaecologists about treatment of women who go in with reported reduced fetal movements. It was developed by Tommy's and is endorsed by NHS England. If you are not offered the care detailed in this leaflet, discuss it with your healthcare provider.

Health & care information you can trust

Published: Oct 2016
Review date: Oct 2019
Send feedback to:
mailbox@tommys.org

Source
RCOG, Reduced Fetal Movements, Green-top guideline No 57, Royal College of Obstetricians and Gynaecologists, London, 2011

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This section to be completed by document control.

4. REFERENCES:

1. Flenady V, Koopmans L, Middleton P, Froen JF, Smith GC, Gibbons K, et al. Major risk factors for stillbirth in high-income countries: a systematic review and meta-analysis. Lancet. 2011 Apr 16;377(9774):1331-40.
2. Draper ES, Gallimore ID, Kurinczuk JJ, Smith PW, Boby T, Smith LK, Manktelow BN, on behalf of the MBRRACE-UK Collaboration. MBRRACE-UK Perinatal Mortality Surveillance Report, UK Perinatal Deaths for Births from January to December 2016. Leicester: The Infant Mortality and Morbidity Studies, Department of Health Sciences, University of Leicester. 2018.
3. https://ihub.scot/improvement-programmes/scottish-patient-safety-programme-spsp/maternity-and-children-quality-improvement-collaborative-mcqic/maternity-care/stillbirth/
4. Vintzileos AM, Fleming AD, Scorza WE, Wolf EJ, Balducci J, Campbell WA, et al. Relationship between fetal biophysical activities and umbilical cord blood gas values. American journal of obstetrics and gynecology. 1991 Sep;165(3):707-13.
5. Warrander LK, Heazell AE. Identifying placental dysfunction in women with reduced fetal movements can be used to predict patients at increased risk of pregnancy complications. Med Hypotheses.. 2011 Jan;76(1):17-20.
6. Holm Tveit JV, Saastad E, Stray-Pedersen B, Bordahl PE, Froen JF. Maternal characteristics and pregnancy outcomes in women presenting with decreased fetal movements in late pregnancy. Acta obstetricia et gynecologica Scandinavica.. 2009;88(12):1345-51.
7. Saastad E, Winje BA, Stray Pedersen B, Froen JF. Fetal movement counting improved identification of fetal growth restriction and perinatal outcomes--a multicentre, randomized, controlled trial. PLoS One. 2011;6(12):e28482.
8. Tveit JV, Saastad E, Stray-Pedersen B, Bordahl 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 and childbirth. 2009;9:32.

5. AUTHOR/S:

Author 1: Claire Austin

Author 2: Dr Corrine Love

Author 3: Dr Kirsty Dundas

Author 4: Dr Sarah Stock

Author 5:

Author 6:

6. APPENDIX:

Arranging ultrasound assessment at the RIE

Liquor Volume scans

a. These are mainly be performed using the portable scan machine in Day Assessment Unit
b. Monday –Friday 09:00 -16:00 refer to Day Assessment Unit for ultrasound scan
c. Out of hours: trainees who have completed basic scan training can perform these scans once they have done an additional two supervised scans.

Growth USS

d. A seven day service operates, with a very limited ultrasound at the weekend
e. All requests must be put on TRAK before an appointment is issued or an ultrasound is done .Include on TRAK request
    i. Indication for scan of decreased fetal movements +/-any other relevant risk factors for IUGR
    ii. Location of patient e.g. Waiting in Obstetric triage/ward/DAU or discharged home
f. 08:30 and 16:30 Monday-Friday: Ultrasound reception will phone the relevant department with an appointment time. Please make sure you include information about where the patient is waiting on the TRAK request.
g. Out of hours Sunday -Thursday: Ask the woman to phone the ultrasound department between 8:30 and 10am the following day (0131 242 2801) to make a scan appointment. If they phone later in the day they may not be seen until the following day.
h. Out of hours Friday evening-Sunday morning: There are two designated appointments each day for growth scans due to reduced fetal movement: 9am and 9.45am. The appointment template is kept at Obstetric triage reception and the triage staff can issue the appointments. Put the name and CHI or a sticker on the appointment template so the Sonographer knows who is coming in and to indicate that the appointment has been used.
i. If these appointments have been used make appointment in one of the Monday emergency ultrasound slots (appointment book at triage reception) and inform woman of the appointment time. If no slots available, advise her to phone the ultrasound department between 8:30 and 10am on the Monday (0131 242 2801) to make a scan appointment.

Small-for-Gestational-Age detection and management: including indications for growth scans (singleton pregnancies)

Maternity Services Lothian Guidelines

1. INTRODUCTION:

Babies that have not achieved specific growth parameters by their gestation are small-for-gestational-age (SGA). These babies have increased incidence of stillbirth [1], complications in labour (eg intrapartum hypoxia) [2], neonatal problems [3], and poorer adult health [4].

The definition in Lothian for SGA is abdominal circumference or birthweight lessthan 10th centile.

SGA includes babies that are constitutively small and those with fetal growth restriction (FGR). FGR is the term used for fetuses that have not achieved their growth potential and is caused by placental dysfunction. FGR fetuses are at highest risk of complications.Not all fetuses that have FGR are SGA, but they are all at risk of poor outcomes[1].

In the antenatal period, screening for SGA and FGR is based on clinical assessment through symphysis fundal height [SFH] measurement. Diagnosis of SGA and FGR is byultrasound.

Detection of SGA and FGR is difficult – but the aim is to detect and monitor these babies and deliver them at a time that minimises risk. Decisions to deliver may be complex (particularly at early gestations) and should be made by a consultant obstetrician, in conjunction with fetal medicine and neonatology as appropriate.

2. AIM:

To provide guidance on
1. identifying women at risk of SGA,
2. clinical detection of SGA through SFH measurement
3. when to request growth ultrasound scans
4. management of babies with SGA

3. GUIDELINES:

Summary

1. **Gestation should be checked using the date estimated at booking scan performed at 11.0-13.6 weeks and recorded in TRAK**

2. **Risk factors for SGA should be assessed at booking and the screening pathway for SGA filled out and recorded in woman's record (see appendix 1).Ultrasounds should be requested at the fetal anomaly scan review visit.**

3. **Symphysio-fundal height measurement (SFH) should be measured at each antenatal attendance (including triage and day assessment) after 24 weeks, but not more often than every 2 weeks, and recorded on SFH charts in handheld records. If SFH static or falling then referral for growth scan should be made.**

4. **In certain women SFH measurement is inaccurate (eg BMI>40; large fibroids) –and these should be referred for growth scans.**

5. **Women referred for growth scans should have measurement of abdominal circumference (AC) and head circumference (HC) plotted on growth charts. AC and HC from fetal anomaly (20 week) scan must also be plotted and comparison should be made to these.**

6. **Women at very high risk of FGR; and those with FGR suspected by ultrasoundscan should be referred to/discussed with fetal medicine to arrange additional surveillance.**

7. **Growth scans are less accurate after 38 weeks gestation. If there is clinical concern about SGA beyond 38 weeks gestation then refer to day assessment unit for CTG, Doppler and liquor volume (deepest vertical pool) and/or discusswith senior trainee/consultant about timing of delivery.**

i). Referral for growth scans

Formal risk assessment should be made BY MIDWIFE BY 16-20 weeks and women referred as appropriate. If there is a concern or maternal condition which is not included below or in the risk assessment table, please contact the patient's namedconsultant for an individual management plan.

A. WOMEN UNSUITABLE FOR MONITORING BY FUNDAL HEIGHT

Large fibroids, 1 or more >6cm
BMI>40

-> Two growth scans should be requested at 30 and 36 weeks gestation

NB Women with multiple pregnancies should follow the multiple pregnancy carepathway

B. WOMEN WITH RISK Factors for SGA

Maternal age>40yrs
Smoker with CO level 5ppm or more
Substance misuse including alcohol
Previous SGA (<10th centile for birthweight -*see appendix 6 for 10th centile birthweight*)
Chronic hypertension
Chronic kidney disease
Recurrent bleeding (similar to menses, not spotting)
PAPP-A<0.4MOM on first trimester screen (or hCG >4 or AFP>2.5 MoM on second trimester screen)
Recurrent miscarriage clinic patient immediately prior to this pregnancy (i.e. no live children after miscarriages)
Late bookers (at or after 21 weeks gestation)
Asthma requiring current use of oral steroids or recent hospital admission
Uterine anomaly
Previous bariatric surgery/ BMI 40
Epilepsy on antiepileptic drugs (AED)

-> Two growth scans should be requested, one at 30 weeks gestation and one at 36 weeks gestation

Newly diagnosed or uncontrolled hyperthyroidism
Previous stillbirth (not associated with Fetal Growth Restriction [FGR] see also below)
SLE/Connective Tissue Disease
Eating disorder
Maternal Cardiac Disease
Cystic fibrosis
Diabetes – Pre-existing- Type 1&2

-> Three growth scans should be requested, at 28, 32 and 36 weeks gestation

C. WOMEN AT VERY HIGH RISK FGR

SGA (<10th centile) and/or Echogenic bowel and/or femur length <5th centile on FA scan (sonographer to refer)
Previous stillbirth with FGR (<10th centile for gestation or pathology suggests placental insufficiency)
Severe early onset FGR in a previous pregnancy (delivery before 34 weeks for growthrestriction and/or SGA <3rd centile at delivery)
Antiphospholipid syndrome
Positive Uterine Artery Dopplers (bilateral notching or mean PI >95th centile)
Sickle cell disease (NOT sickle cell trait)

-> should be referred to fetal medicine for personalised growth scan schedule

D. WOMEN WHO DEVELOP PREGNANCY COMPLICATIONS

Symphysio-fundal height (SFH) <10th centile or static or falling SFH
Recurrent Antepartum Haemorrhage (2 bleeds >20 wk)
Pre-eclampsia/PIH
Reduced fetal movements (RFMs)

➔ A growth scan should be requested.
➔ The Scan should be performed within 3 working days and results reviewed thesame day
➔ A further growth scan should be arranged 3 weeks later for comparison of growth trajectory

NB: Growth scans may be performed until a gestation of 40+0 weeks. Clinical concerns beyond 37wks may also necessitate DAU/ OTA review for CTG eg. RFMs

ii) Management of growth scan results

Women referred for growth ultrasound should have measurement of abdominal circumference (AC) and head circumference (HC) plotted on growth charts and placed in the notes.

- AC and HC should be plotted from fetal anomaly (20 week USS) and comparison should be made to these.
- Liquor volume (LV) should also be documented (normal/abnormal) Deepest Vertical Pool (DVP) should be recorded for abnormal results.
- Management should be directed as below

Normal USS results
AC is ≥10th centile, growth velocity maintained compared to previousscan(s), and LV normal (DVP ≥ 2cm)

- **Women should be referred back to routine antenatal care.**
- **SFH measurements should continue. If there is ongoing clinical concern a second growth ultrasound should be requested 3-4 weekslater.**

Abnormal USS results:
- ***SGA or suspected FGR:* All women in who AC <10th centile or AC is crossing centiles (20 or more) from previous scan/ fetal anomaly scan**
  - ***Should have umbilical artery Doppler performed and ResistanceIndex (RI) plotted on chart at time of scan***
  - ***Should be reviewed within 24 hours • DAU, DBU or ANC anddiscussed with consultant or senior trainee***

- **If umbilical artery flow is < 95th centile (ie normal) but growth velocityreduction significant, or <10th centile**
  - **Refer to fetal medicine for surveillance**
  - **Fetal medicine growth surveillance and wellbeing scans will bearranged**
  - **These will include relevant fetal Dopplers (eg Ductus venosusDopplers for severe early onset FGR; and/or Middle Cerebral Artery Doppler in cases >32 weeks)**
  - **Delivery is recommended at 37 weeks or sooner if monitoringdeteriorates**

- **If umbilical artery RI is > 95th centile (abnormal) but there is positiveflow**
  - **If ≥37 weeks gestation discuss with consultant regarding timingof delivery (delivery should be offered)**
  - **If <37 weeks gestation refer to fetal medicine for plans forongoing fetal surveillance and delivery planning. This will include twice weekly Umbilical artery +/- CTG.**
  - **If there is absent or reversed end diastolic flow (EDF)**
- **If gestational age is >32 weeks offer antenatal corticosteroids and magnesium sulphate as per protocoland arrange delivery**
- **If <32 weeks refer to fetal medicine for ongoing fetal surveillance with ultrasound and Dopplers (umbilical,MCA, DV) and delivery planning.**

➔ ***Isolated reduced LV*** **(DVP < 2cm)*: The prognostic value of reduced LV is limited.***
  - **Growth measurement and Umbilical artery Dopplers should bereviewed and if abnormal manage as above.**
  - **Rupture of membranes should be excluded.**
  - **If isolated reduced DVP in the absence of membrane rupture referral should be made to consultant obstetrician. Repeat LVand Doppler should be performed weekly, and growth USS fortnightly**
  - **Delivery plan should be made by consultant**

4. ASSOCIATED DOCUMENTS:

Small for Gestational Age Guideline Management of Intrauterine Death Protocol

5. REFERENCES:

1 RCOG Greentop Guideline No 31- The Investigation and Management of the Small forGestational Age Fetus. January 2014

2 Clausson B., Axelsson O., Cnattingius S.. Adverse outcomes in post-term births: the role of fetalgrowth restriction and malformations. *Obstet Gynecol* 1999;94: 758–762

3 McIntire D.D., Bloom S.L., Casey B.M., Leveno K.J.. Birth weight in relation to morbidity andmortality among newborn infants. *N Engl J Med* 1999;340: 1234–1238

4 P. E. Clayton S. Cianfarani P. Czernichow G. Johannsson R. Rapaport A. Rogol Management of the Child Born Small for Gestational Age through to Adulthood: A ConsensusStatement of the International Societies of Pediatric Endocrinology and the Growth HormoneResearch Society *The Journal of Clinical Endocrinology & Metabolism*, Volume 2007:92; 3; 804–810

Author 1: Lothian Guideline Group

Appendix 1 SGA risk assessment in handheld notes

Risk assessment and screening pathway for SGA

1. Complete and file in handheld record at booking assessment
2. Update pathway and request any required ultrasound scans at time of fetal anomaly (FA) scan review
3. State the scan indication on the scan request as listed below (NB scans for any indication not listed; or deviating from suggested scanning schedule will need to be discussed with ultrasound department at the RIE or SJH
4. Assess the fetal growth trajectory of plotted measurements from fetal anomaly scan and growth scans on charts overleaf

Risk Factor	TICK ▮	SGA Screening PATHWAY	REQUEST (initial)	Review of results
Large fibroids, 1 or more >6cm		2 growth ultrasounds (30 and 36 weeks gestation)		Midwife led
Maternal age>40yrs				Midwife led
Smoker with CO level 5ppm or more				Midwife led
Late bookers (at or after 21 weeks gestation)				Midwife led
PAPP-A <0.4MoM on 1st trimester screen (or hCG >4 or AFP>2.5 MoM on 2nd trimester screen)				Midwife led
Recurrent miscarriage clinic patient immediately prior to this pregnancy (i.e. no live children after 3 miscarriages)				Midwife led
Recurrent bleeding (similar to menses, not spotting)				Midwife led
Previous SGA (<10th centile at delivery)				Midwife led
Asthma requiring current use of oral steroids or recent hospital admission		2 growth ultrasounds (30 and 36 weeks gestation)		Midwife led (with AN care input from named consultant)
Chronic hypertension				Midwife led (with AN care input from named consultant)
Chronic kidney disease (CKD)				Midwife led (with AN care input from named consultant)
Uterine anomaly				Midwife led (with AN care input from named consultant)
Substance misuse including alcohol				Midwife led (with AN care input from named consultant/PREPARE team)
BMI>40 or previous bariatric surgery				Metabolic Antenatal Clinic Team
Newly diagnosed or uncontrolled hyperthyroidism		3 growth ultrasounds at 28/32/36 weeks gestation		Midwife led (with AN care input from named consultant)
Previous stillbirth (not associated with Fetal Growth Restriction [FGR] *see also below*)				Midwife led (with AN care input from named consultant)
SLE/Connective Tissue Disease				Midwife led (with AN care input from named consultant)
Eating disorder				Midwife led (with AN care input from named consultant)
Maternal Cardiac Disease				Cardiac Antenatal Clinic Team
Cystic fibrosis				Cystic fibrosis Team
Pre-existing Diabetes – Type 1&2				Diabetic Clinic Team
Positive Uterine Artery Doppler's (bilateral notching or mean PI >95th centile)		Refer to fetal medicine for personalized growth assessment schedule		Fetal Medicine Team
SGA (AC<10th centile) and/or Echogenic bowel and/or femur length <3rd centile on FA scan (*sonographer to refer*)				Fetal Medicine Team
Sickle cell disease (not sickle cell trait)				Fetal Medicine Team
Severe early onset FGR in a previous pregnancy (delivery before 34 weeks for SGA and/or <3rd centile at delivery)				Fetal Medicine Team
Previous stillbirth (Birthweight <10th centile for gestation or pathology suggests placental insufficiency)				Fetal Medicine Team
Antiphospholipid syndrome				Fetal Medicine Team
None of the above				Routine FAS

For all pregnancies* measure SFH and plot overleaf at each antenatal attendance
*with exception of BMI >40 and large fibroids

If
- SFH is <10th centile or static or falling
- Recurrent APH (2 bleeds >20 wk)
- Pre-eclampsia / PIH
- Reduced fetal movements

Arrange growth scan (within 3 working days)
Review results on the same day
If >20 centile drop from FAS, contact DAU who will f/up
If normal growth, arrange f/up scan for 3 weeks time

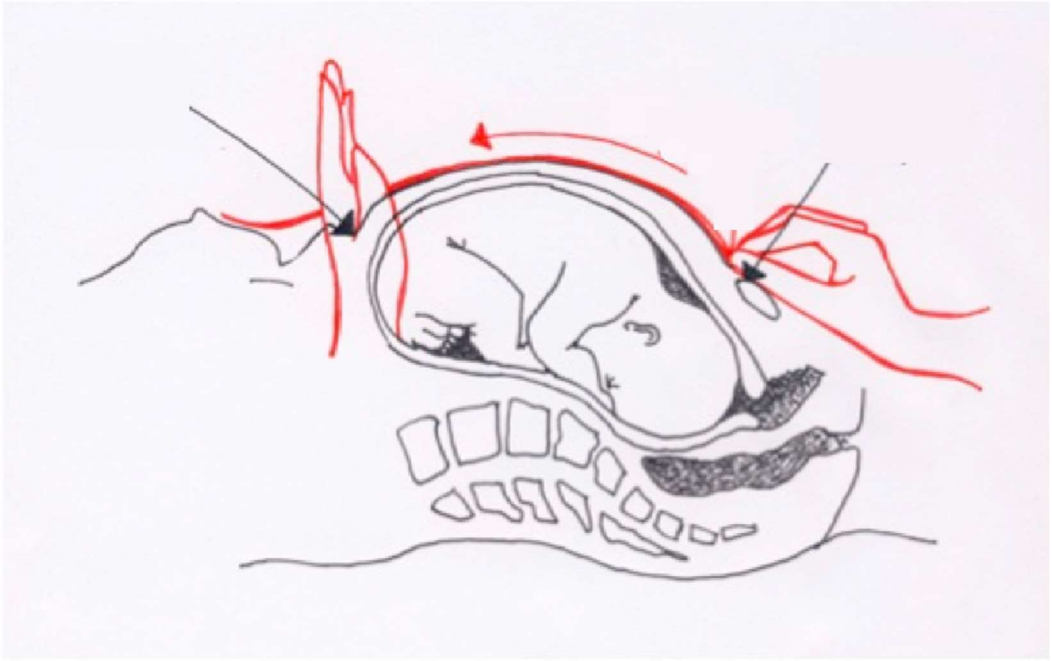
Note of actions taken

Guideline group approved: October 2021 V2

Appendix 2
Measuring and Plotting Symphysio-Fundal Height (SFH)

1. Explain the procedure to the mother, gain verbal consent, wash hands
2. The expectant mother should be in a semi-recumbent position (45 degree angle) on a firm surface, with an empty bladder and expose enough of the abdomen to allow thorough two handed palpation.
3. Use a non-elastic tape measure. Turn the tape measure over so no numbers are visible during the measurement.
4. With the palm of the other hand on the abdomen, pass the tape from the fundus of the uterus alongthe longitudinal axis of the uterus (not correcting to the midline) to the top of the symphysis pubis – the fixed point and more easily identified landmark.
5. Measure once only, and plot immediately on the chart for the right gestation (weeks and days) tothe nearest half centimetre.
6. SFH measurements should not occur more frequently than every two weeks.

Ref. Belizan J, Villar J et al. Diagnosis of intrauterine growth retardation by a simple clinical method: Measurement of uterine height. Am J Obstet Gynecol 1978 131:6: 643-64



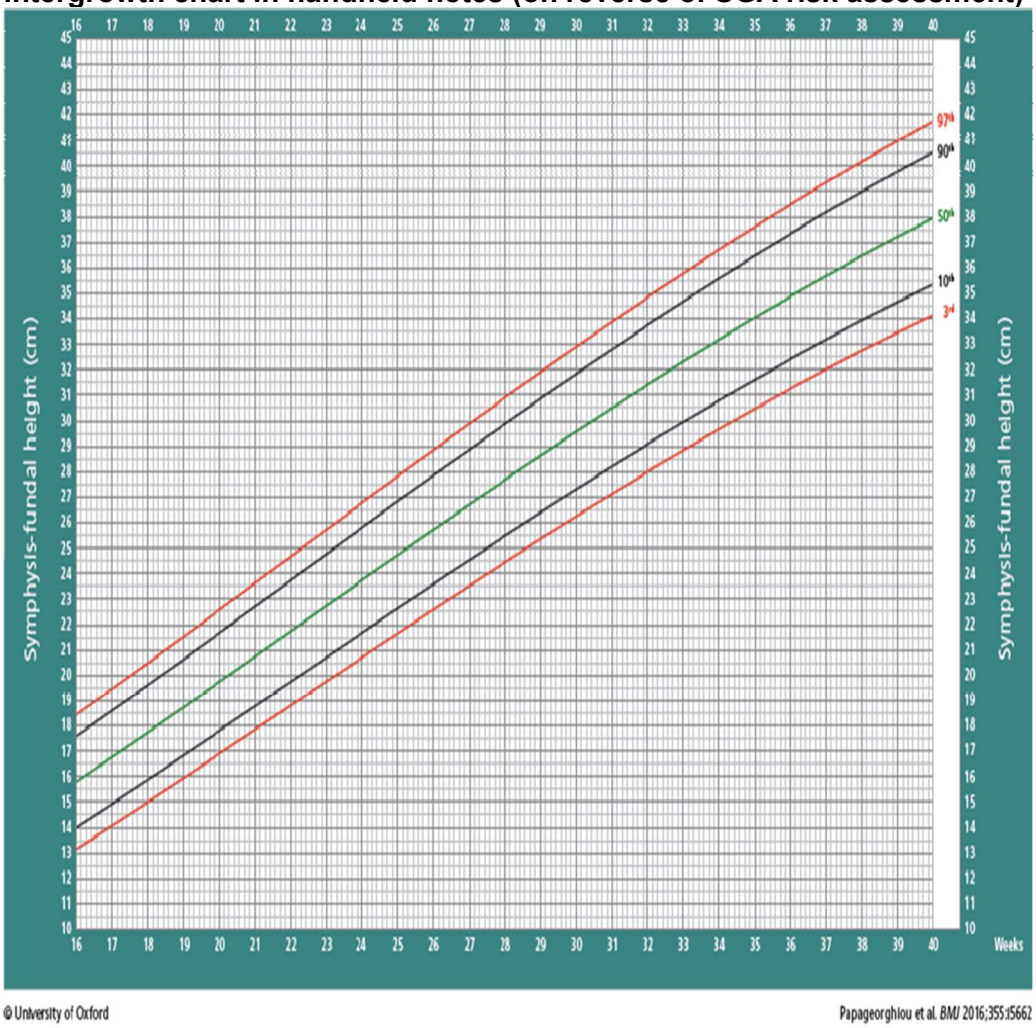
How to interpret results

You **do not** need to allow for decent of the head. The curves do not flatten towards term; uncompromised babies should continue growing until delivery.

Symphysio-fundal height **at or above** 10thcentile	Routine antenatal care with continuedSFH monitoring
SFH i**ncreased** since last measurement*	
Symphysio-fundal height **<10th** centile	**Directly refer for ultrasound scan (sho ld be performed within threeworking days)**
Static or falling SFH (2 week or more after previous meas rement)	

*Accelerated growth trajectory is **not** an indication for growth scan referral. If clinical concerns about excessive growth discuss with named consultant.

Appendix 3 Intergrowth chart in handheld notes (on reverse of SGA risk assessment)



SFH <10th centile before 28 weeks

Women are generally assessed at 22 and 28 weeks by community midwife (CMW). Occasionally symphysial fundal height (SFH) is measured in between. SGA guidance suggests ultrasound growth measurements are required if SFH<10th centile at gestations from4+0 weeks.
It should be remembered that absolute SFH < 24wks is more indicative of maternal BMI than fetal size and should NOT routinely be plotted. It is the trend of SFH growth that is important.If a CMW has clinical concern the below is a guide for review.

If SFH <10th centile suggest:
22-23 weeks: review growth measurements at anomaly US. If AC >10th centile considerrepeat SFH at 25wks
≥24 weeks: if <10th centile refer for growth US

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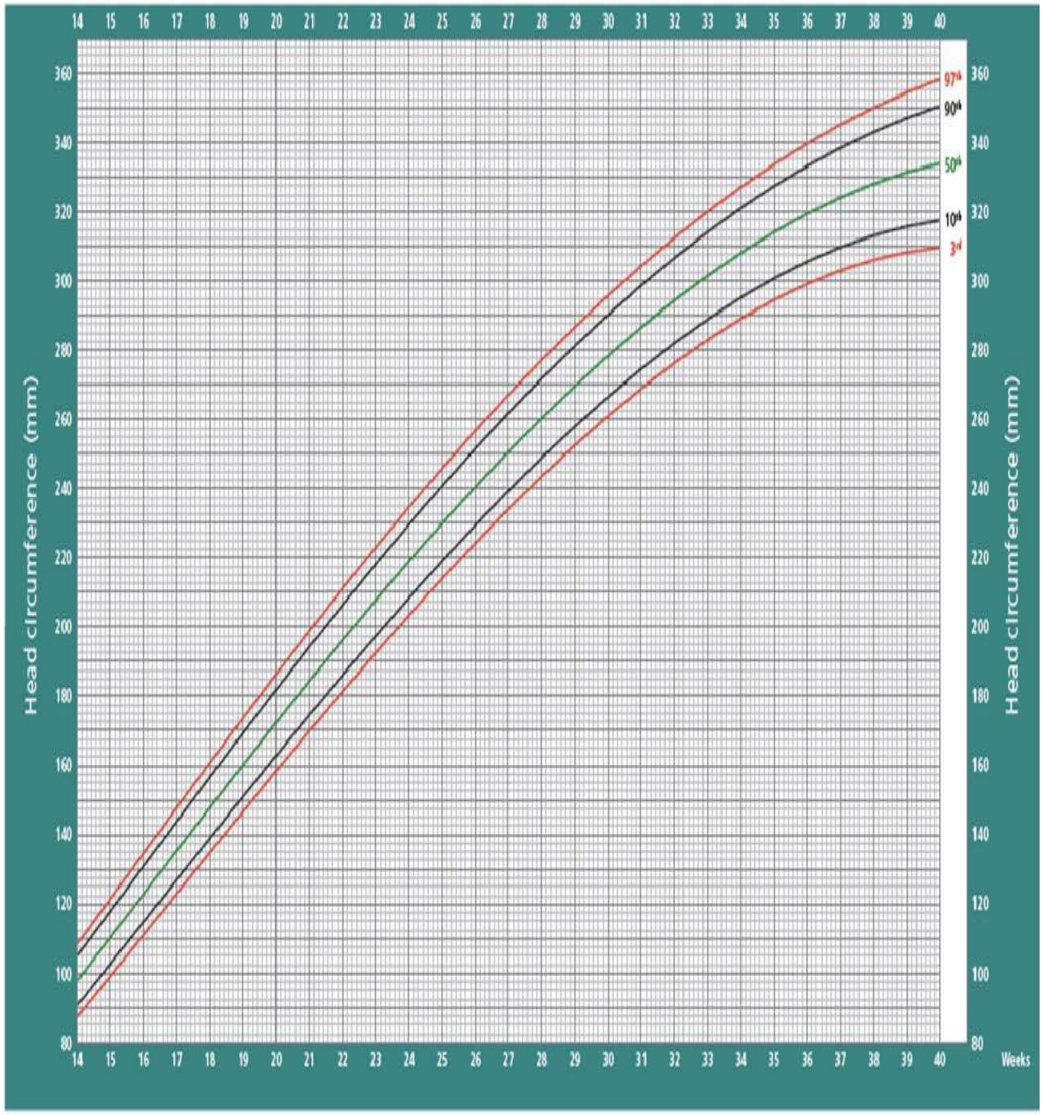
Appendix 4
Plotting Ultrasound Results

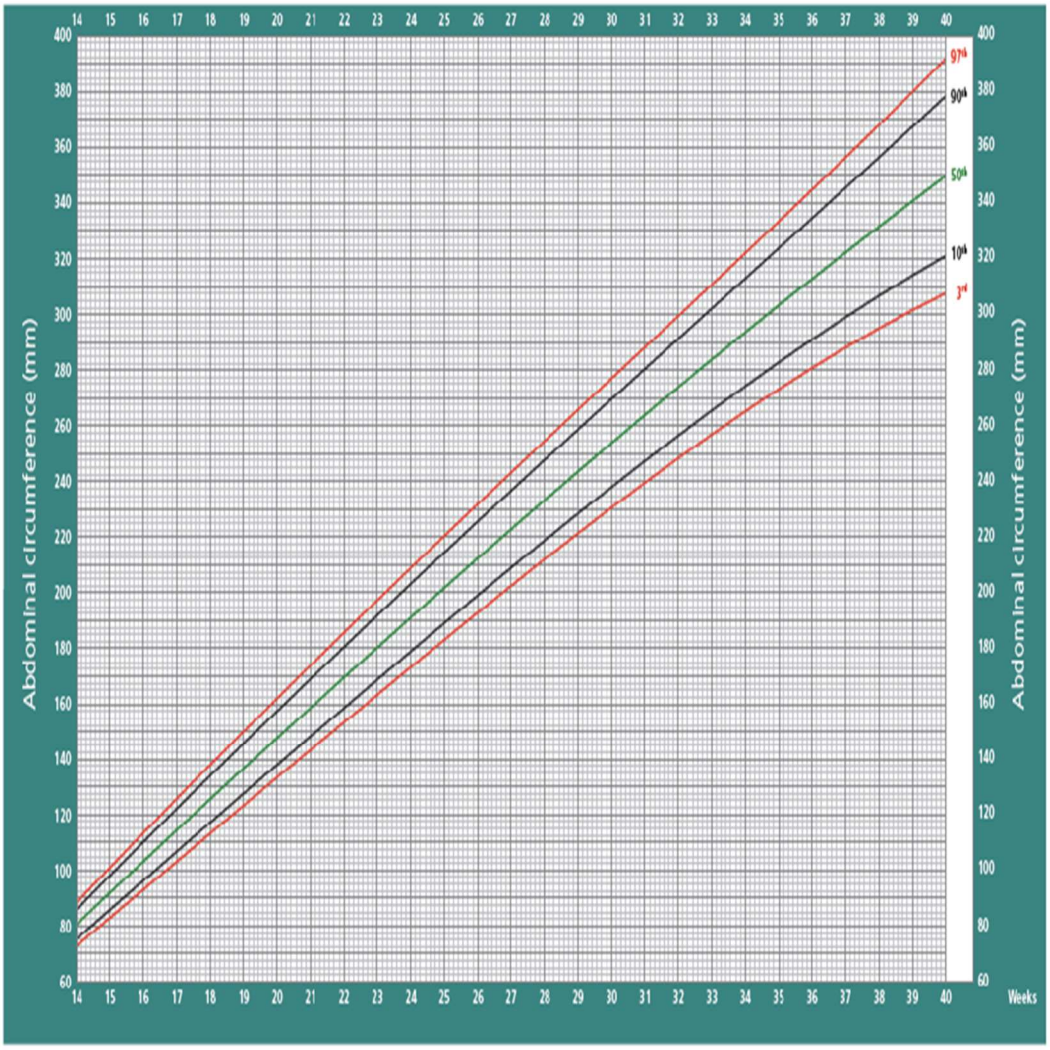
1. Plot HC and AC for appropriate **weeks** and **days** gestation
2. **Ensure measurements from **fetal anomaly** ultrasound are plotted for comparison**

How to interpret results

- If AC is less than 10th centile or the trajectory is reduced (crossing >20 centiles) thenrefer to DAU / DBA/ consultant ANC
- If HC is less than 3rd centile then refer to fetal medicine
- If ultrasound measurements are reassuring, continue routine antenatal care with SFH monitoring. If ongoing concern about SFH measurements **3 or more weeks** after ultrasound, refer for further scan and consultant review.

Appendix 5 Growth charts





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Papageorghiou et al. *Lancet* 2014;384:869-79

Appendix 6
3rd/ 10th centile table

This table below contains the weight in grams of a baby born on the 10th centile according to gestation and gender. Please use this table to assist completion of the risk assessment in appendix 1.

Gestation	Girls (10th centile)	Girls (3rd centile)	Boys (10th centile)	Boys (3rd centile)
23-23+6	425g	350g	475g	400g
24 – 24+6	500g	400g	550g	475g
25 – 25+6	575g	475g	625g	550g
26 – 26+6	650g	525g	700g	600g
27 – 27+6	725g	600g	775g	675g
28 – 28+6	800g	675g	875g	750g
29 – 29+6	900g	750g	975g	825g
30 – 30+6	1000g	850g	1075g	925g
31 – 31+6	1150g	950g	1200g	1025g
32 – 32+6	1300g	1075g	1350g	1150g
33 – 33+6	1450g	1250g	1550g	1300g
34 – 34+6	1650g	1400g	1750g	1475g
35 – 35+6	1850g	1600g	1950g	1675g
36 – 36+6	2050g	1800g	2150g	1875g
37 – 37+6	2275g	2000g	2375g	2075g
38 – 38+6	2475g	2200g	2575g	2275g
39 – 39+6	2675g	2400g	2775g	2475g
40 – 40+6	2850g	2600g	2950g	2675g
41 – 41+6	3000g	2750g	3100g	2800g
42 – 42+6	3150g	2900g	3250g	2950g