

# Fetal growth surveillance pathways

## Risk assessment for fetal growth restriction

### Management of the small for gestational age fetus

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#### Quick Reference Guide

For example:

<https://viewer.microguide.global/guide/1000000295#content,0246bdf4-1d44-48b6-a1e7-4d4cbaa6d8ed>

The link refers the reader to a completed policy example to assist completion

## 2. Indications

### 2.1 Background

SGA fetuses are at greater risk of stillbirth, intrapartum hypoxia, neonatal complications, impaired neurodevelopment and possibly diabetes and hypertension in adult life.

An SGA fetus or baby may be constitutionally small; i.e. have reached their growth potential and be 'normal'. However, there may be other underlying causes including placental insufficiency, chromosomal and other genetic abnormality, congenital infection and maternal disease.

### 2.2 Aim/purpose

To identify the FGR fetus and provide optimum care, so reducing the perinatal morbidity and mortality rates.

### 2.3 Patient/client group

All women booked for pregnancy care at SFT

### 2.4 Exceptions/ contraindications None

### 2.5 Options

### 2.6 Definitions

There are no universally accepted definitions for FGR.

For the purposes of this guideline, birthweight, ultrasound Estimated Fetal Weight (EFW) or Abdominal Circumference (AC) < 10<sup>th</sup> centile are used.

The term does not distinguish between those who have fetal growth restriction (FGR) i.e. those who have failed to reach their growth potential and those who are constitutionally small.

Not all fetuses with FGR will be SGA.

The definitions recommended with the Saving babies Lives Care bundle V2 are as below:

**Definition of FGR in a previous pregnancy as a risk factor:** defined as any of the following:

- birthweight <3rd centile
- early onset placental dysfunction necessitating delivery <34 weeks
- birthweight <10th centile with abnormal fetal dopplers

**Definition of FGR in a current pregnancy:** defined as either of the following:

- EFW or abdominal circumference (AC) <3rd centile
- EFW or AC <10th centile with abnormal fetal dopplers

### 3. Clinical Management

#### 3.1 Staff & equipment

Doctors and Midwives appropriately trained in Growth Assessment Protocol  
Ultrasound equipment and trained sonographers

#### 3.2 Method/procedure

##### 3.2.1 Aspirin to reduce Early Onset Fetal Growth Restriction and Pre-eclampsia

Aspirin has been shown to reduce the risk of placental dysfunction, especially pre-eclampsia.

All women should have the Aspirin Risk Assessment completed by the booking midwife.

If there are *2 moderate risk factors* or *one high risk factor*, the midwife at booking should:

1. advise the woman to commence aspirin 150mg once daily at night from 12 weeks until 36 weeks (if no contraindications).
2. explain that this reduces the risk of severe pre-term pre-eclampsia and growth restriction, both caused by placental problems.

Contraindications:

1. previous significant upper GI ulcers or bleeding
2. aspirin allergy
3. hypersensitivity to other NSAIDs (eg ibuprofen)
4. women with asthma who give a clear history of aspirin allergy (this is unusual).

Risk level	Risk factors	Recommendation
<b>High</b>	<ul style="list-style-type: none"> <li>• Essential hypertension</li> <li>• Previous pregnancy with gestational hypertension / pre-eclampsia</li> <li>• Previous baby &lt;10<sup>th</sup> centile</li> <li>• Stillbirth</li> <li>• Placental histology confirming placental dysfunction in a previous pregnancy</li> <li>• Type 1 or type 2 diabetes</li> <li>• Autoimmune disease (eg: systemic lupus erythematosus or antiphospholipid syndrome)</li> <li>• Chronic kidney disease</li> <li>• PappA &lt;0.41</li> </ul>	Recommend aspirin 150mg if the woman any of these high risk factors
<b>Moderate</b>	<ul style="list-style-type: none"> <li>• First pregnancy</li> <li>• Current smoker at booking</li> <li>• Are 40 years or older at booking</li> <li>• Pregnancy interval of more than 10 years</li> <li>• Body mass index (BMI) of 35kg/m<sup>2</sup> or more at first visit</li> <li>• Family history of preeclampsia in a first degree relative</li> <li>• Multiple pregnancy</li> </ul>	Consider aspirin if the woman has two or more of these factors

### **3.2.2 Women without risk factors for SGA:**

Both abdominal palpation and symphysis fundal height measurement (SFH) have limited accuracy to predict an SGA fetus.

However routine ultrasound in the third trimester has not been shown to improve outcome in low risk pregnancies and therefore measurement of SFH is used as a screening test in routine care.

In all women assessed as low risk at booking, measure the SFH at each antenatal visit from 24 weeks gestation.

The SFH measurement should be documented in the handheld notes and plotted on the personalised GROW growth chart.

Women unsuitable for monitoring by fundal height measurement

- Large fibroids (>5cm)
- BMI >35

These women require monitoring as per the GAP care pathway.

Indications for a growth scan (if the woman has not had one in the last 2 weeks) are:

- First SFH measurement below 10<sup>th</sup> centile
- Static growth: no increase in sequential measurements
- Slow growth: defined as serial SFHs with a trajectory less than the slope of the 10<sup>th</sup> centile

Carry out BP, urine dip and fetal movements.

A growth scan should be arranged within the next 2-3 working days.

If additional scans have been arranged for women as part of the screening for fetal growth restriction, SFH measurements are not required unless there is clear documentation to do so.

If scans are planned to start later eg 32 weeks, perform SFH measurement at every contact >24 weeks until then.

A repeat scan is not indicated if there has been a normal scan within the last 2-3 weeks.

Midwives may request a scan for a clinically small baby without review by a doctor first if the clinical situation fits the criteria described above (regarding SFH measurement).

If the EFW plots between the 10<sup>th</sup> and 90<sup>th</sup> centile and is following the centile curve, and the liquor volume is normal, the woman will be asked to attend her next antenatal appointment as planned (this should already have been confirmed with the woman by the referring midwife or obstetrician). *If resources permit a scan EFW should be repeated in 3 weeks time to ascertain velocity as a single scan cannot provide reassurance about the growth velocity of the fetus*

If the EFW does not plot within the 10<sup>th</sup> and 90<sup>th</sup> centile, or is not following a centile curve, or there are concerns regarding the liquor volume or umbilical artery Doppler, then the patient should be reviewed in the ANC by obstetric team to determine the appropriate pathway and level required for investigations and surveillance.. FMU advice should be sought if there is significant concern before 32-34 weeks.

The subsequent management should adhere to the GAP care pathway (Appendix)

When ordering further scans the clinician should clearly state the reason for the scan, time frame for the scan and the plan for follow up in the referral form and ante natal notes.

The clinician requesting the scan must arrange appropriate follow up after the scan according to the pathway of care.

### **3.2.3 Women with risk factors for SGA**

If the woman is already under a consultant, clinic appointments and scans should be arranged together, where possible, to avoid duplication of attendances.

Management should adhere to the GAP care pathway (Appendix)

If a scan is being requested at <3 weekly intervals, the case and indication for scans should be discussed with a consultant.

### 3.2.4 Growth scan documentation

At the growth scan the sonographer should:

- Confirm dating of the pregnancy by reviewing the previous scans
- Measure: BPD, HC, AC, FL and EFW (using Hadlock charts)
- Growth (Biometry) will not be performed at an interval of less than 2 weeks
- Assess amniotic fluid volume. Oligohydramnios is defined as a deepest pool < 2cm at any gestation. Polyhydramnios is defined as a deepest pool > 8cm at any gestation.
- Document in Viewpoint whether the AFV is normal, oligohydramnios or polyhydramnios. TORCH screens and BM profiles should not be requested unless there are additional features on the ultrasound.
- Measure the umbilical artery Doppler on all growth scans after 24 weeks. Document whether the EDF is positive, absent or reversed and the PI.
- If the baby is <10<sup>th</sup> centile for growth, or if growth velocity is slowing, an MCA Doppler should be performed from 34 weeks, even if the umbilical artery Doppler is normal.

### 3.2.5 Management following scan

#### 3.2.5a Normal scan

- Consistent growth velocity, AC and EFW above 10th centile, normal amniotic fluid volume (AFV) and fetal Dopplers.
- Woman can be reassured by the sonographer.  
She does NOT routinely need to see a midwife or doctor immediately after each scan.
- Ensure appropriate FU arranged with MW as per AN care schedule

### **3.2.5b SGA - normal fetal Dopplers (less than 36+0 weeks)**

- AC <10<sup>th</sup> centile or EFW < 10<sup>th</sup> centile
- Slow or static growth

Refer for review in ANC on the day of the scan.

Midwife:

- Review the antenatal notes and history
- Ask about fetal movements
- BP and urine dip

If there are no other concerns (normal FM, normal BP and urinalysis with an otherwise low risk pregnancy) then give advice about reduced fetal movements

Consultant:

The woman should be reviewed by the Consultant in ANC and an individual plan made regarding further monitoring. Consideration of risk factors for stillbirth should be taken into account. FMU advice should be sought if there is significant concern before 32-34 weeks.

CTG monitoring in DAU should not be required for these women unless at the request of a consultant.

### **3.2.5c SGA after 36 weeks gestation:**

Midwife:

- Review the antenatal notes and history
- Ask about fetal movements
- BP and urine dip
- All women need a medical review

Consultant:

EFW 3-10<sup>th</sup> centile delivery should be initiated at 39+0 weeks if there is normal growth velocity, normal AFV and Doppler's

EFW < 3<sup>rd</sup> centile, **or** slow/static growth **or** abnormal dopplers should be delivered no later than 37 weeks,

### **3.2.5d Normal growth. Incidental finding of oligohydramnios**

- Normal growth. Reduced AFV (deepest pool < 2cm)
- The woman should be reviewed
- Review the antenatal notes and history
- Ask about fetal movements
- Ask about a history of PROM
- Check observations: temperature / Pulse / BP
- Perform a speculum if the history suggestive of PROM

CTG monitoring should not be required for these women (unless they are diagnosed as having PROM) unless at the request of the consultant.

If greater than 37 weeks induction of labour should be considered.

### 3.2.5e Incidental Doppler abnormality NOT SGA

- AC and EFW >10<sup>th</sup> centile
- Umbilical PI>95<sup>th</sup> centile (positive EDF) or MCA<10<sup>th</sup> (redistribution)

Sonographer:

Check biometry >10<sup>th</sup> centile and FM normal, ensure technically adequate measurement, repeat if necessary

Refer for consultant review in ANC on the day of the scan.

Midwife:

- Review the antenatal notes and history
- Ask about fetal movements
- Check BP and urine dip
- Perform a CTG if any concern about FM

Consultant:

If <36 weeks and no additional concern identified rescan in 1 week for Doppler with a review in ANC.

If >36 weeks - There is a need to consider timing of delivery (usually at 37 weeks) if persistent redistribution or UAPI>95<sup>th</sup> is confirmed.

A clear plan of management and follow up should be made.

### 3.2.5g

#### Absent or Reversed EDF in the umbilical artery

- Arrange computerised CTG (if more than 26 weeks)
- Urgent discussion and review by Consultant in ANC / On call consultant
- Consider in-utero transfer out if <28 weeks
- Reversed EDF deliver if >32 weeks
- Absent EDF deliver if >34 weeks
- ( intermittent absent EDF – consultant review and discussion)

### 3.2.5h SGA and Umbilical PI>95<sup>th</sup> centile / MCA<10<sup>th</sup> (redistribution)

The clinical context **must** be taken into account in interpreting fetal growth and Doppler.

Refer for review in ANC / DAU on the day of the scan.

Midwife:

- Review the antenatal notes and history
- Ask about fetal movements
- Check BP and urine dip
- Perform a CTG

Consultant:

*Between 24 – 36 weeks' gestation:*

Timing of delivery for preterm SGA or FGR should be made by Consultant only

Consider referral to, or discussion with, Southampton FMU

Delivery will be determined by a combination of computerised CTG ,EFW and Dopplers, including CPR MoM

Steroids should be considered if delivery is anticipated < 35 weeks.

Magnesium sulphate should be considered (as per the preterm labour guideline), for all fetuses <34+0 weeks

*More than 36 weeks – arrange delivery*

Mode of delivery will depend on the gestational age, condition of the fetus and suspected underlying cause and should be a consultant decision.

SGA is an indication for continuous CTG monitoring in labour and with any significant uterine activity during induction.

Consider sending the placenta for perinatal pathology.

For women who decline induction of labour or delivery after 39+0 weeks, counselling must include a discussion regarding evidence that there is no increase in risk for the baby or for the mother from delivery/induction at this gestation and that there is no evidence to determine how fetuses with SGA/FGR should be monitored if pregnancy continues.



**Flow Chart for Management of Growth Scans**

### 3.3 Potential complications / Risk Management

### 3.4 After care

## 4. Patient Information

## 5. Audit

### 5.1 Audit Indicators

### 5.2 Audit design

### 5.3 User Involvement

## 6. Evidence Base

### 6.1 Sources of information

1. NHS England Saving Babies Lives Care Bundle version 2 March 2019
2. Nice Hypertension in Pregnancy (2019)
3. RCOG greentop guideline: Small for Gestational Age No.31 February 2013
4. National Institute for Clinical Excellence. *Antenatal Care: Routine care for the healthy pregnant woman*.12; 2008

## 8. Version information

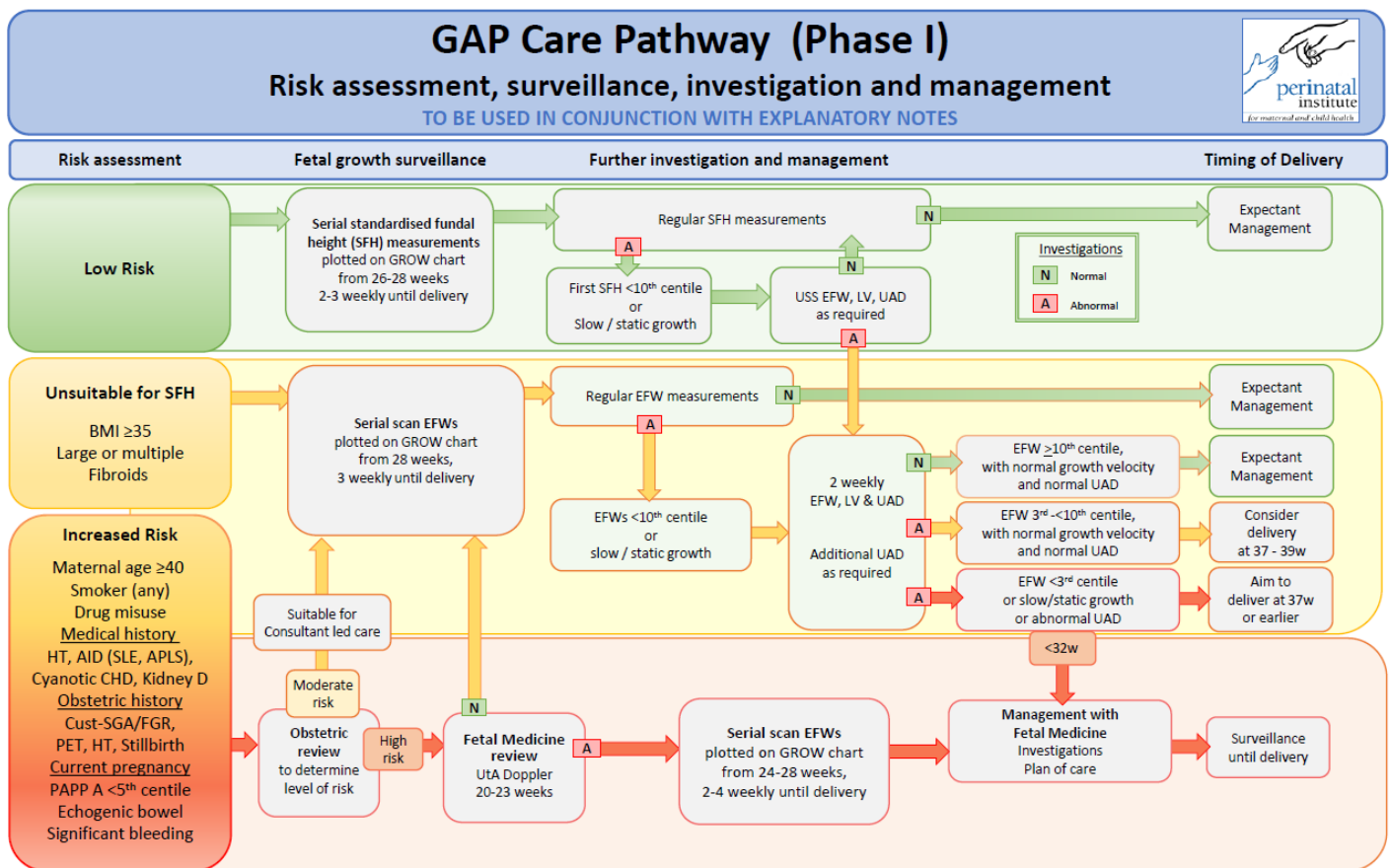
Version No.	Document owner and Post holder's title	Agreed at Maternity Governance	Final agreement	Description of Changes	Date on Microguide
1.0 04/01/2021	Mr S M Verdin Ms A Hawkins Ms H Rickard Consultant Obstetricians				

**MicroGuide**

	Advice from Dr Sian McDonnell – Consultant Obstetrician, Ashford and St Peter's NHS Foundation Trust				
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**Author Name and Date**

**Appendix One**



**Abbreviations:** AID= Autoimmune Disease; APLS= Antiphospholipid Syndrome; BMI= Body Mass Index; CHD= Coronary Heart Disease; EFW= Estimated Fetal Weight; FGR= Fetal Growth Restriction; SFH= Standardised Fundal Height; HT= Hypertension; LV= Liquor Volume; PET= Pre-eclampsia; SGA= small for gestational age; SLE= systemic lupus erythematosus; UAD= Umbilical Artery Dopplers; UtA= Uterine Artery Doppler. **See 'GAP Care Pathway v2 - Explanatory Notes'**