The Shrewsbury and Telford Hospital NHS Trust

Small for Gestational age and Fetal growth restriction Risk assessment, surveillance and management

VERSION 2.6

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Consultation	:	Obstetric Medical Staff, Midwives Maternity Governance
Comments	:	References to SaTH Guidelines in the text pertain to the latest version of the Guideline on the intranet. Printed copies may not be the most up to date version.

Version	Implementation Date	History	Ratified By	Review Date
1.1	1st November 2017	New guideline	MGG Maternity Governance	November 2022
1.2	1st May 2018	Revision to fundal height measurement and plotting section 5.4 Revision to serial USS criteria and frequency section 5.5 Addition of appendix 1 and 2	MGG Maternity Governance	November 2022
1.3	21st October 2019	Addition of Appendix 3 Process for management of SGA and FGR identified at ultrasound scan	MGG Maternity Governance	November 2022
1.4	20th July 2020	Minor revision to aspirin dose Revision to existing appendix 3 for management and FMS review	GC Authorised	November 2022

1.5	1st March 2021	Minor revisions in line with SBL	GC Authorised	November 2022
2.0	18th November 2022	Full version review and revisions in line with SBL fetal surveillance pathway, aspirin, SGA and FGR management	Maternity Governance	November 2025
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2.3	31st January 2024	Revisions in line with SBLCB version 3 Digital BP monitoring at booking	National Guidance Maternity Governance	November 2025
2.4	7th May 2025	• Revision of gestational week curtailment of aspirin in line with RCOG Small-for-Gestational-Age Fetus and a Growth Restricted Fetus, Investigation and Care (Green-top Guideline No. 31) 2024 • GROW 2.0 examples	National Guidance Maternity Governance	November 2025
2.5	16th July 2025	Auditable Standards removed (Appendix 6)	Louise Weaver Clinical Audit Facilitator	November 2025
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1.0 Introduction

Fetal Growth Restriction: Importance of Screening, Diagnosis and Management
Stillbirths are the largest contributor to perinatal mortality.[1] Fetal Growth Restriction (FGR) is the most important condition associated with stillbirths; excluding congenital abnormality, FGR accounts for about 50% stillbirths and neonatal deaths.[2,3] A fetus affected by FGR has a 5-11 fold increased risk of in-utero death.[4]

FGR is a precursor of cerebral palsy.[5] In the UK less than half of babies born with FGR are detected antenatally.

Antenatal detection of FGR and appropriate referral for investigations and interventions can significantly reduce avoidable perinatal deaths by over 80%.[1,6, 7] Although there is no specific in-utero treatment for FGR; management consists of detection, close surveillance and timely delivery, balancing risks of prematurity against risks of FGR.[6] The RCOG Green Top Guideline "Small for Gestational Age Fetus, Investigation and Management"[11] makes recommendations for widespread serial scanning for a number of at risk groups. Similarly, the more recent Saving Babies Lives Care Bundle version 2 (SBLCBv2) document released in 2019 makes similar recommendations.[10]

Staff managing fetal growth problems should appreciate that small for gestational age (SGA) (estimated fetal weight (EFW) <10th centile) and FGR (where a fetus fails to reach its growth potential) are distinct entities. Although SGA babies are at increased risk of FGR compared to appropriately grown fetuses, fetuses <3rd centile are far more likely to be FGR than fetuses between 3rd – 10th centile.

2.0 Aim

To provide a clear, standardised pathway to screen, diagnose and manage SGA and FGR in **singleton** pregnancies (for multiple pregnancies refer to the Twin and Triplet guideline).

3.0 Objectives

3.1 To provide guidance to clinicians on the management of women who have no identified risk factors for fetal growth problems
3.2 To identify women who have an increased risk of developing fetal growth problems and provide appropriate surveillance
3.3 To ensure correct management of women with suspected SGA and FGR
3.4 To ensure appropriate clinicians have undertaken training in the use of Customised Growth charts, understand the difference and significance of FGR and SGA and have been assessed in undertaking Symphysis Fundal height measurements
3.5 To plan timing of delivery with women according to individual circumstances and to provide information to enable informed decision making.

4.0 Definitions / Abbreviations

Small–for–gestational age (SGA) refers to an infant born with a birth weight less than the 10th centile. Historically SGA birth has been defined using population centiles. But the use of centiles customised for maternal characteristics (maternal height, weight, parity and ethnic group) as well as gestational age at delivery and infant sex, identifies small babies at higher risk of morbidity and mortality than those identified by population centiles. With respect to the fetus, definitions of SGA birth and severe SGA vary. Antenatally, SGA fetuses can be identified by either an estimated fetal weight (EFW) or an abdominal circumference (AC) less than 10th centile.

Fetal growth restriction (FGR) is not synonymous with SGA. FGR implies a pathological restriction of the genetic growth potential. Some, but not all, growth restricted fetuses/infants are SGA while 50–70% of SGA fetuses are constitutionally small with fetal growth appropriate for maternal size and ethnicity. The likelihood of FGR is higher in severe SGA infants. Growth restriction implies a pathological restriction of the genetic growth potential. As a result, growth restricted fetuses may manifest evidence of fetal compromise (abnormal Doppler studies, reduced liquor volume). Low birth weight (LBW) refers to an infant with a birth weight < 2500 g regardless of gestation.

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

- Birth weight below 3rd centile
- Early onset placental dysfunction necessitating birth <34 week
- Birthweight below 10th centile with evidence of placental dysfunction, (defined as below for current pregnancy)

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

- EFW or AC below 3rd centile
- EFW or AC below 10th centile with evidence of placental dysfunction (either):
    - Abnormal uterine artery doppler (mean pulsatility index >95th centile earlier in pregnancy (20-24th weeks) and/or
    - Abnormal umbilical artery doppler (absent or reversed end diastolic flow or pulsatility index above 95th centile)

AEDF – Absent End-Diastolic Flow
ANC – Antenatal Clinic
APH – Antepartum Haemorrhage
APLS – Antiphospholipid Syndrome
BMI – Body Mass Index
cCTG – Computerised Cardiotocograph
(Computerized fetal heart rate analysis)
CLC – Consultant Led Care
CLU – Consultant Led Unit
CMV – Cytomegalovirus
DV – Ductus Venosus
EFW – Estimated Fetal Weight
FGR – Fetal Growth Restriction
IOL – Induction of Labour
LV – Liquor Volume
MCA – Middle Cerebral Artery Doppler
MLU – Midwifery Led Unit
P I – Pulsatility index
PRH – Princess Royal Hospital
REDF – Reversed End-Diastolic Flow
RSH – Royal Shrewsbury Hospital
SFH – Symphysis-Fundal Height
SGA – Small for Gestational Age
UAD – Umbilical Artery Doppler
USS – Ultrasound Scan
UtA - Uterine artery

Women – term used throughout document which is inclusive of all pregnant people.

5.0 Process

5.1 1st Trimester

- Women will be assessed at the initial booking consultation by 14 weeks gestation for **FGR risk** and identified as either low, moderate, or high risk for FGR to identify those women who require increased surveillance. The women's information may subsequently be assessed by the Clinical Risk Team.
- The risk assessment includes centile calculation of previous birth weights using the GROW Centile Calculator. There may be further assessment of risk by the Fetal Medicine Consultants based upon previous history and co-existing factors that may lead to FGR in the index pregnancy.
- Women should also be assessed at booking for conditions where **serial** SFH measurements are not appropriate (e.g., raised BMI >35 kg/m^2; presence of uterine fibroids, uterine anomalies, multiple pregnancies) as these women will need growth scans regardless.0
- Assess all women at booking to determine if prescription of Aspirin is needed (see 5.2)
- Recommend Vitamin D supplementation to all pregnant women.
- Assess smoking status and manage findings (refer to Smoking cessation in Pregnancy and the Postnatal Period Trust guideline)
- **All women** should have their blood pressure recorded using a digital monitor that has been validated for use in pregnancy

  <u>To reduce errors in blood pressure measurement:</u>

  - Use only those automated devices validated for pregnancy. Note: It is recommended from Saving Babies Lives (re: Element 2) that a validated digital monitor used to measure blood pressure.
  - Do not 'check' raised BP with manual reading, to limit risk of user bias.
  - Measure blood pressure in the sitting or semi-recumbent position so that the arm is at the level of the heart.
  - Ensure the correct size of cuff is used.

Refer to **Hypertensive Disorders of Pregnancy in the Antenatal, Intrapartum and Postnatal Period (Including Management of Severe Pre-Eclampsia and Eclampsia)** for further guidance with management.

5.1.1 GROW Centile Calculator

Departments that complete initial consultation (booking) appointments will have access to the GROW Centile Calculator programme.

The centile calculator requires the following information in order to provide a centile calculation of a birth weight.

- Parity (at booking)
- Maternal height (cm) and weight (kgs) at **current booking** (if there is a substantial weight difference i.e. 10 kgs (+ or -) use the maternal weight related to the previous pregnancy to provide a more accurate centile for the baby)
- Ethnic origin
- Gender of previous baby(ies)

- Gestation at birth of previous baby(ies)
- Birth weight of previous baby(ies) (grams)

5.1.2 Customised Growth Charts

Women will have an individual customised growth chart generated after their dating scan including birth weights and centiles of previous children (if applicable). Both 10th and 3rd centile lines will be generated on the chart– **also refer to Appendix 2**

5.2 Aspirin

NICE[8] recommends Aspirin to reduce the risk of pregnancy complications related to placental dysfunction, particularly preeclampsia. At initial 'booking consultation, women are risk assessed to determine if aspirin is required. Aspirin as a preventative medication appears to be safe in pregnancy and therefore there is a substantial net benefit of daily aspirin use to reduce the risk. Supply of aspirin by midwives is supported by a Patient Group Direction (PGD) – refer to **Aspirin PGD**

Women for whom it is appropriate will be offered low-dose aspirin (150mg ideally taken in evening or at night) from 12 weeks to 36 weeks gestation to reduce risk of pre-eclampsia**.**

Current Aspirin PGD covers

2 moderate risk factors	**or**	**1 high** risk factor
Risk factors for pre-eclampsia		
Moderate		**High**
• First pregnancy * Nulliparity • Age ≥ 40 years • Pregnancy interval > 10 years • BMI ≥ 35 Kg/m^2 at first visit • Family history of pre-eclampsia (woman's 1st degree relative) • Multiple pregnancy		• Hypertensive disease during previous pregnancy • Chronic kidney disease • Autoimmune disease such as systemic lupus erythematosis or antiphospholipid syndrome • Type 1 or 2 diabetes • Chronic hypertension • Placental histology confirming placental dysfunction in a previous pregnancy

Per SBLCBv2

Women with a previous (SBLCBv2)

- child < 3rd customised centile
- early onset placental dysfunction necessitating delivery <34 weeks
- birthweight <10th customised centile with evidence of placental dysfunction (see **5.6** for definitions)

Current pregnancy

- Women who are found to have a low level of PAPP-A (≤0.415 MoM) as part of their first trimester combined screening test will be offered low-dose aspirin from 12 weeks to 36 weeks gestation. **Refer to Low PAPP-A Management of results from combined screening SOP**

Refer to SOP on Aspirin (antenatal supply for women at risk) and PGD for Aspirin

5.3 2nd Trimester Screening and current pregnancy risk changes (all trimesters)

Uterine Artery Doppler Screening (UtAD) (see appendix 3)

Women identified as high risk for SGA/FGR fetus at the booking consultation will be referred for uterine artery doppler screening (UtAD) following their dating USS. Uterine artery doppler screening is to be completed at the fetal anomaly ultrasound scan as per the trust Uterine Artery doppler guideline or by 24 weeks. This referral will be made by the midwife sonographer after completion of the dating scan or by the booking midwife based on the risk assigned to the woman (a woman with 1 high risk factor qualifies for UtAD screening).

High risk factors for FGR include:

Medical history

- Hypertension
- Renal impairment
- Autoimmune disease (SLE, APLS)
- Cyanotic congenital heart disease

Obstetric History

- Previous FGR baby (<3rd centile)
- Hypertensive disease in pregnancy requiring intervention
  - also refer to **Hypertensive Disorders of Pregnancy in the Antenatal, Intrapartum and Postnatal Period (Including Management of Severe Pre-Eclampsia and Eclampsia) Version 3 Trust guideline.**

Women with the following will require an individualised fetal surveillance plan commencing with the offer of a UtAD

- severe pre-eclampsia
- pre-eclampsia that resulted in birth <34 weeks
- pre-eclampsia with a baby whose birth weight <10th customised centile intrauterine death (associated with pre-eclampsia)
- placental abruption (associated with pre-eclampsia)

Current Pregnancy (see appendix 4 for pathway changes)

- Previous SGA stillbirth
- PAPP-A ≤0.415 MoM
- Fetal echogenic bowel
- Significant bleeding
- EFW <10th customised centile
- Single Umbilical Artery

For women with Diabetes (Type 1, 2 and GDM) refer to **Pre-existing and gestational Diabetes (Antenatal, Intrapartum and Postnatal Care) Version 5.1** guideline for fetal growth surveillance

Refer to appendix 3, and the trust Uterine artery doppler guideline for subsequent surveillance of these pregnancies.

Women who are found to have a severely SGA fetus at the mid-pregnancy fetal anomaly scan (and on follow up growth scan if arranged) will be offered an appointment with a

Feto-Maternal Specialist / Consultant Obstetrician trained in USS for a detailed fetal anomaly survey with Doppler studies.

Early onset SGA should be considered if femur length is consistently below the 5th centile on two or more occasions.

Karyotyping will be discussed for severely SGA fetuses, especially those with structural anomaly.

Serological screening for CMV and toxoplasmosis infection will be offered for severely SGA fetuses. Syphilis and malaria testing will be considered in high risk women.

5.4 3rd Trimester Screening - fundal height measurement

Measurement of symphysis fundal height (SFH) is recommended at each routine antenatal appointment commencing before 28+6 weeks of pregnancy for those women who have no risk factors for fetal growth restriction. The measurement should be performed by a suitably trained clinician (all staff performing these measurements should be competent in measuring, plotting, interpreting appropriately and referring when indicated) with the woman semi-recumbent and with an empty bladder (**refer to appendix 1)** and plotted on her customised growth chart. It is recommended that SFH plots are completed every 2-3 weeks.

NB Fundal height measurement at the onset of labour is part of routine assessment and should be recorded in the MIS. It is **unusual** for the fundus to 'drop' with head engagement and/or rupture of membranes.

Women with an initial single SFH which **plots below the 10th** customised centile should be referred for an USS. A scan EFW should then be repeated in 2 - 4 weeks' time to ascertain velocity, as a single scan cannot provide reassurance about the growth trajectory of the fetus.

Serial measurements which demonstrate **slow or static growth (refer to appendix 2 for examples)** and **normal** fetal movements will be referred for ultrasound assessment **within 1 week**.

Serial measurements which demonstrate **slow or static growth** and **reduced** fetal movements will be referred to Triage straight away for a full review. An ultrasound assessment will then be arranged appropriately.

Women who have serial growth scans as listed in **section 5.5** will only require fundal height measurement to be completed and plotted on an individual customised growth chart where indicated (except for initial intrapartum assessment)

5.5 Serial USS in the third trimester for growth, liquor volume and umbilical artery Doppler:

Women at a high risk for having a SGA/FGR fetus will be offered UtAD screening and subsequent surveillance will be dependent on the outcome of this screening at the fetal anomaly USS.

- Women with a normal UtAD will have a single SFH around 28 weeks at a routine antenatal check and serial growth scans from 32 weeks every 4 weeks until delivery

- Women with an abnormal UtAD and EFW >10th customised centile will be referred for serial USS from 26-27 weeks' gestation every 3 weeks until delivery.

- Women with an abnormal UtAD and EFW <10th customised centile will be discussed with the fetal medicine specialist (FMS) and an individualised care plan developed.

Women with a EFW <10th in their current pregnancy ≥24+1 weeks are considered high risk and should follow appendix 4

Women at moderate risk for having a SGA fetus based upon the following risk factors will be offered a single SFH around 28 weeks at a routine antenatal check and serial growth scans from 32 weeks every 4 weeks until delivery

- Previous SGA (<10 to >3rd customised centile with **no** evidence of placental evidence of placental dysfunction (see **5.6** for definitions)
- Previous stillbirth – normal birthweight
- Maternal age ≥40 years at booking
- On-going smoker (at booking)
- Substance misuse
- BMI <18.5 kg/m 2 & other features (e.g., eating disorder, bowel disorder causing weight loss)
- Gastric Bypass surgery
- Previous PTB/ Second T miscarriage (placental mediated)

Where <u>serial</u> SFH is unreliable because of **high BMI (35+), large or multiple fibroids or Significant Uterine Anomalies** growth monitoring by serial ultrasound scan is indicated from

- BMI >40 from 28 weeks gestation every 4 weeks until delivery (no SFH assessment)
- BMI 35-39.9 and fibroids – single SFH at routine antenatal check and serial growth scans from 32 weeks every 4 weeks until delivery
- Significant Uterine Anomalies (e.g. septate, bicorporeal) from 28 weeks gestation every 4 weeks until delivery (no SFH assessment)

Women who are undergoing planned serial scan surveillance should **cease** SFH measurement after serial surveillance begins. SFH measurement should also cease if women are moved onto a scan surveillance pathway in later pregnancy for a developing pregnancy risk (e.g., recurrent reduced fetal movements, GDM).

5.6 Diagnosing/defining SGA and FGR

Definition of SGA in current pregnancy:

- EFW or AC under the 10th customised centile with normal umbilical artery Doppler and liquor volume

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

- EFW or abdominal circumference (AC) <3rd customised centile
- EFW or AC <10th centile with evidence of placental dysfunction (either):
    - Abnormal uterine artery Doppler (mean pulsatility index >95th centile) earlier in pregnancy (20 – 24 weeks) and/or
    - Abnormal umbilical artery Doppler (absent or reversed end diastolic flow or pulsatility index >95th centile).

Suboptimal fetal growth ≥ 10th centile:
When assessing fetal growth, a pattern of slowing growth velocity (i.e., a downward trend in the percentile) indicates an increased risk of morbidity and stillbirth and should necessitate review.

- This review should include assessment of all fetal biometry measurements since the anomaly scan to identify potentially erroneous single measurements and also the presence or absence of other risk factors for FGR.
- Particular attention should be paid to a downward trend in abdominal circumference growth velocity.

FGR is rare >20th centile, so early delivery (<39+0 weeks) should only be considered following senior review.

Following a diagnosis of either SGA or FGR an explanation of diagnosis will be provided to the woman. She will be offered further investigation in the form of serial ultrasound assessment of fetal size, liquor volume assessment and umbilical artery Doppler or delivery dependent upon the gestation.

When a fetal growth disorder is suspected or diagnosed an assessment of fetal wellbeing should be made to include:

- a discussion regarding fetal movements
- a cCTG
- A maternal assessment should be made to include a blood pressure measurement using a digital monitor that has been validated for use in pregnancy and proteinuria assessment.

Hospital admission is not necessary if fetal movements are normal and ultrasound assessment of liquor volume and umbilical artery Doppler is normal.

5.7 Management of SGA Fetuses (see appendix 4)

SGA fetuses are defined as those with an EFW or AC <10th customised centile but ≥3rd centile with normal liquor and normal umbilical artery Doppler and normal growth velocity

Following an USS where the EFW or AC is found to be <10th but >3rd customised centile the woman will be referred to triage for a medical review (if not in a Consultant ANC). If no further concerns following medical review a follow up growth USS should be arranged for two weeks and antenatal clinic.

The FGR risk assessment should change to high risk on the woman's MIS (EFW<10th centile -see high risk criteria 5.3) and continue with assessment of fetal growth every two weeks by USS & umbilical artery doppler (UAD), and if growth velocity is maintained and no other fetal (reduced fetal movements) or maternal (e.g., hypertension) concerns aim for IOL from 39+0 weeks.

If the EFW returns to ≥10th centile the risk should remain high and USS surveillance should continue at no more than 3 weekly intervals until birth. Place of birth should be reviewed from 37 weeks if the EFW remains ≥10th centile. Midwifery led care may still be suitable if the woman is otherwise low risk.

5.8 Management of FGR Fetuses (see appendix 5)

FGR fetuses are defined as those whose AC or EFW is below the 10th customised centile with Doppler changes (described in the definitions of FGR) or AC/EFW less than the 3rd customised centile.

Growth velocity should be assessed by USS every two weeks, and fetal wellbeing by liquor volume and umbilical artery Doppler every week. Further monitoring of wellbeing is determined by gestation and UAD assessment.

If the EFW returns to ≥10th centile the risk should remain high and USS surveillance should continue at no more than 3 weekly intervals until birth

5.8.1 Surveillance in FGR, normal Dopplers:

- Biometry and EFW assessed every 2 weeks
- Weekly wellbeing assessment by LV, UAD, cCTG and maternal assessment of blood pressure measurement using a digital monitor and proteinuria assessment until delivery.
- An abnormal LV but with normal Dopplers and fetal movements should not prompt delivery prior to 37 weeks.
- Delivery should be initiated at **37+0 weeks and no later than 37+6** weeks as per guidelines for FGR fetus.

5.8.2 Surveillance and management in FGR, abnormal umbilical artery Dopplers (see appendix 5):

- For fetuses with **borderline (PI >95TH centile)** umbilical artery Doppler changes, wellbeing assessment can continue on a weekly basis but should be individualised based on risk factors, fetal weight and fetal movements.
  Birth should occur at **36 weeks**.

- For fetuses with **pre-critical (Absent EDF)** umbilical artery Doppler changes, wellbeing assessment should occur at least twice per week up to alternate day to be individualised based on risk factors, fetal weight and fetal movements. Birth should occur at **34 weeks**. Earlier delivery should be prompted by a change to a reversed a wave in the DV or abnormal STV on the cCTG.

For fetuses with **critical (Reversed EDF)** umbilical artery changes early delivery should be prompted by a reversed a wave in the Ductus venosus and/or abnormal STV on the cCTG and must be delivered at 32 weeks. Birth can be delayed for 24 hours for magnesium sulphate and steroid administration (12 hourly administration), transfer to

appropriate neonatal facilities with fetal monitoring twice daily. (N.B. Assessment of the Ductus Venous maybe undertaken by a clinician trained in the technique**5.9**

5.9 Fetuses with EFW >10th customised centile with a change in growth velocity.

Suboptimal growth (slowing) in a fetus with EFW ≥ 10th customised centile and **no** other features of fetal compromise should prompt a repeat USS in 2 weeks (biometry, LV, UAD) by antenatal clinic or Midwife Sonographer.

Referral to Triage if **any** concerns regarding fetal compromise (additional factors i.e., reported RFM, abnormal dopplers, reduced LV)
Following a full assessment in Triage, institute fetal wellbeing monitoring weekly. Delivery should not occur routinely prior to 39 weeks unless evidence of fetal compromise.

Static growth (no change in biometry over 2 weeks) in a fetus with EFW ≥10th customised centile and no other features of fetal compromise should prompt assessment of fetal wellbeing as per the FGR pathway and delivery after 37 weeks if no fetal compromise.

A fetus with static growth or suboptimal growth and EFW ≥10th and evidence of fetal compromise (abnormal LV, abnormal Doppler or concerns regarding fetal movements) should subsequently be managed as per the FGR pathway.

Unusual cases or any concerns can be discussed with a fetal medicine consultant.

5.10 Ongoing management

Following diagnosis USS will be no less than 2 weeks apart, this will include growth LV, Doppler assessment. However, plan may be individualised based on other concerning features or reports of reduced fetal movements.

The presence of absent or reversed end diastolic flow in the umbilical artery or FGR prior to **34** weeks gestation **will require fetal medicine consultant input**. Therefore, referral to a fetal medicine consultant should be made.

5.11 Place of birth

If,after screening, a woman, is found not to have a SGA/FGR fetus in the current pregnancy, birth options should be reviewed and options discussed with the women.

If the fetus is SGA or shows signs of FGR it will be recommended that the woman gives birth within the Consultant Unit.

5.12 Planned timing of birth

5.12.1 Less than 34 weeks gestation

Prior to 34 weeks, management of the FGR fetus will require fetal medicine input to determine the most appropriate monitoring for fetal wellbeing and timing of delivery where fetal compromise is demonstrated.

Preparation for Birth

Antenatal corticosteroids should be offered to women between 24+0- and 34+6-weeks' gestation who are at high risk of imminent preterm birth (for example, having a planned preterm birth). Use betamethasone 12mg 24 hours apart – 2x doses.

Magnesium sulphate - offered to any fetus <30 weeks and women with an FGR fetus between 23+1 – 33+6 weeks.

Mode of birth - before 34 weeks the most appropriate mode of birth may be caesarean section. After 34 weeks, vaginal birth could be considered depending on fetal condition and maternal obstetric history and cervical assessment.

5.12.2 SGA/FGR after 34 weeks gestation

EFW <3rd centile in later pregnancy, delivery should be initiated at **37+0 weeks** gestation (or earlier if there are other concerning features present such as FGR, abnormal Doppler assessment, reduced liquor volume) and no later than **37+6 weeks.**

For women who decline induction of labour, counselling must include a full discussion of the potential risks of FGR (document fully discussion on the MIS

SGA with EFW between the 3rd and 10th centile

In the absence of any high-risk features, delivery, or the initiation of IOL should be offered at **39+0 weeks**.

Where a 39+0 IOL admission appointment not available due to capacity a full discussion with the Consultant on call to agree a plan of care must be made which may include exceeding IOL capacity, or the next available IOL date with a period of enhanced monitoring until IOL admission

Other features must be present for delivery to be recommended prior to 39 weeks. If FGR cannot be excluded, then delivery after 37 weeks should be discussed with the mother and an ongoing management plan individualised.

After 37 weeks, an abnormal middle cerebral artery (MCA), CPR or UCR can be used to guide timing of birth. A normal MCA, cerebroplacental ratio (CPR) or UCR does not provide reassurance that the fetus is not compromised, and, in all cases, birth is recommended prior to 39+6 weeks. (NB. MCA, CPR or UCR maybe performed by a clinician trained in the assessment).

For women who decline induction of labour or delivery at 39+0 weeks, counselling must include a discussion (document fully discussion on the MIS) 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.

5.12.3 Declining growth from 32 weeks

Fetuses who demonstrate declining growth velocity from 32 weeks' gestation are at increased risk of stillbirth from late onset FGR. Declining growth velocity can occur in fetuses with an EFW >10th centile. Evidence to guide practice is limited and guidance is currently based on consensus opinion. In fetuses with declining growth velocity and EFW >10th centile the risk of stillbirth from late onset FGR should be balanced against the risk of late preterm delivery. In infants where declining growth velocity meets criteria delivery should be planned from 37+0 weeks unless other risk factors are present. Risk factors that should trigger review of timing of birth are:

- reduced fetal movements,
- any umbilical artery or middle cerebral artery Doppler abnormality,
- cCTG that does not meet criteria,
- maternal hypertensive disease,
- abnormal sFlt1: PlGF ratio/free PlGF
- reduced liquor volume.

Opinion on timing of birth for these infants should be made in consultation with fetal medicine services depending on availability.

5.12.3 Anticipated need for help – when to call the Neonatal First on-call

Suspected FGR or suspected <10th centile with placental deficiency (abnormal UA doppler/oligohydramnios) should have a Neonatal 1st on call present at the birth incase additional resuscitation support required.

See - When to summon assistance on Delivery Suite & Alongside MLU for Neonatal Resuscitation SOP 041

5.13 Birth centile calculation

Customised growth charts are used for birth weight centile calculation when completing the delivery summary within the MIS.

6.0 Training

It is expected that Clinicians undertaking SFH measurements have had either Perinatal Institute GROW Training (to include competency assessment PI or local maternity GAP Link assessment) or local GROW training and competency assessment.

Midwife Sonographers/Sonographer's must have a Post graduate certificate in Medical Ultrasound (Obstetrics).

(Also refer to Training Needs Analysis Guideline).

7.0 Monitoring/Audit

See appendix 6 for auditable standards

Compliance with this guideline / SOP will be audited as part of the Shrewsbury and Telford Hospital NHS Trust's five-year rolling programme of NICE and local guideline audits, unless circumstances require an earlier or more frequent audit. The audit will be carried out against the auditable standards and the results of the audit will be reported and acted on in accordance with the Trust Clinical Audit Policy (CG25).

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Royal College of Obstetricians and Gynaecologists (2014) The Investigation and Management of the Small-for-gestational-age Fetus. https://www.rcog.org.uk/globalassets/documents/guidelines/gtg_31.pdf

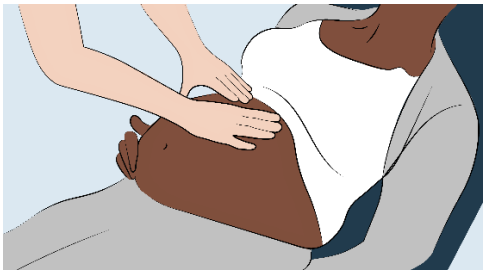
Department of Health (2017) Safer Maternity Care. The National Maternity Safety Strategy- Progress and Next Steps.

Appendix 1

Fetal Growth - Fundal Height Measurements – Perinatal Institute images

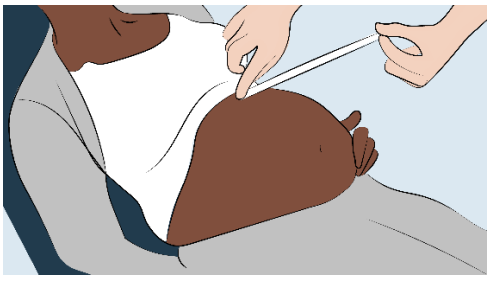
1. Mother semi-recumbent, with bladder empty.

- Explain the procedure to the mother and gain verbal consent
- Wash hands
- Have a non-elastic tape measure to hand
- Ensure the mother is comfortable in a semi-recumbent position, with an empty bladder
- Expose enough of the abdomen to allow a thorough examination



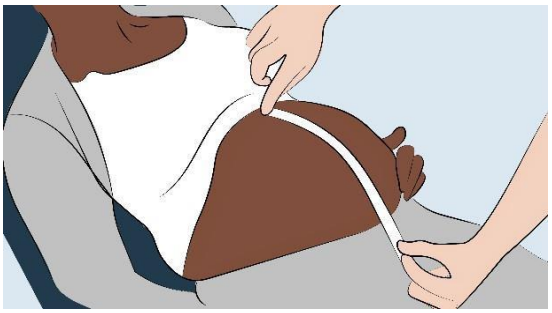
2. Palpate to determine fundus with two hands.

- Ensure the abdomen is soft (not contracting)
- Perform abdominal palpation to enable accurate identification of the uterine fundus.



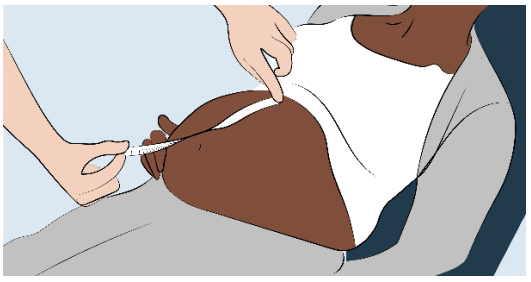
3. Secure tape with hand at top of fundus.

- Use the tape measure with the centimetres on the underside to reduce bias
- Secure the tape measure at the fundus with one hand



4. Measure to top of symphysis pubis.

- Measure from the top of the fundus to the top of the symphysis pubis
- The tape measure should stay in contact with the skin



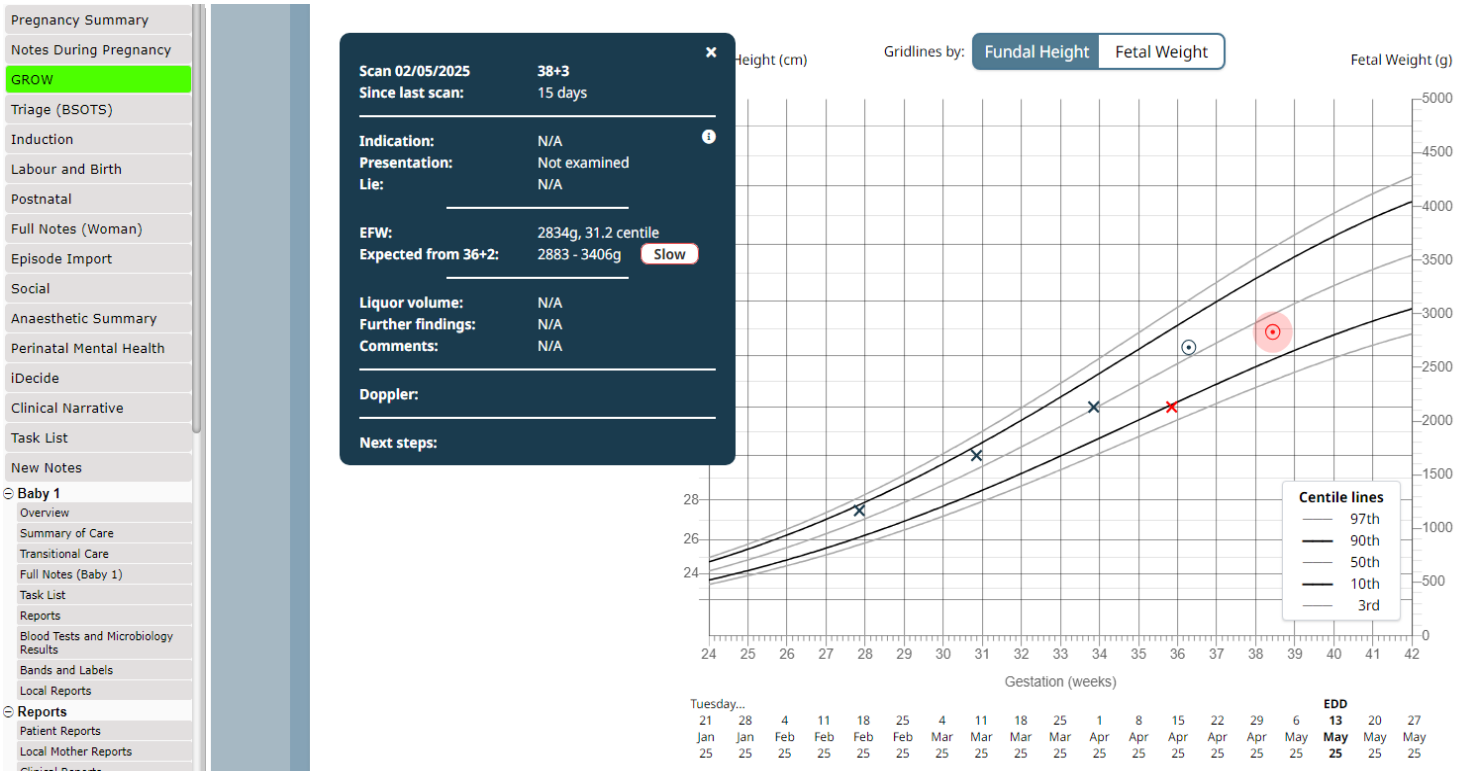
5. Measure along longitudinal axis of uterus, note metric measurement.

- Measure along the longitudinal axis without correcting to the abdominal midline
- Measure only once
- Record on Badgernet
- Check the plot by opening the GROW chart from the left side tabs. Click on the cross and the information box will advise if normal range. The plots will be in black if normal range.

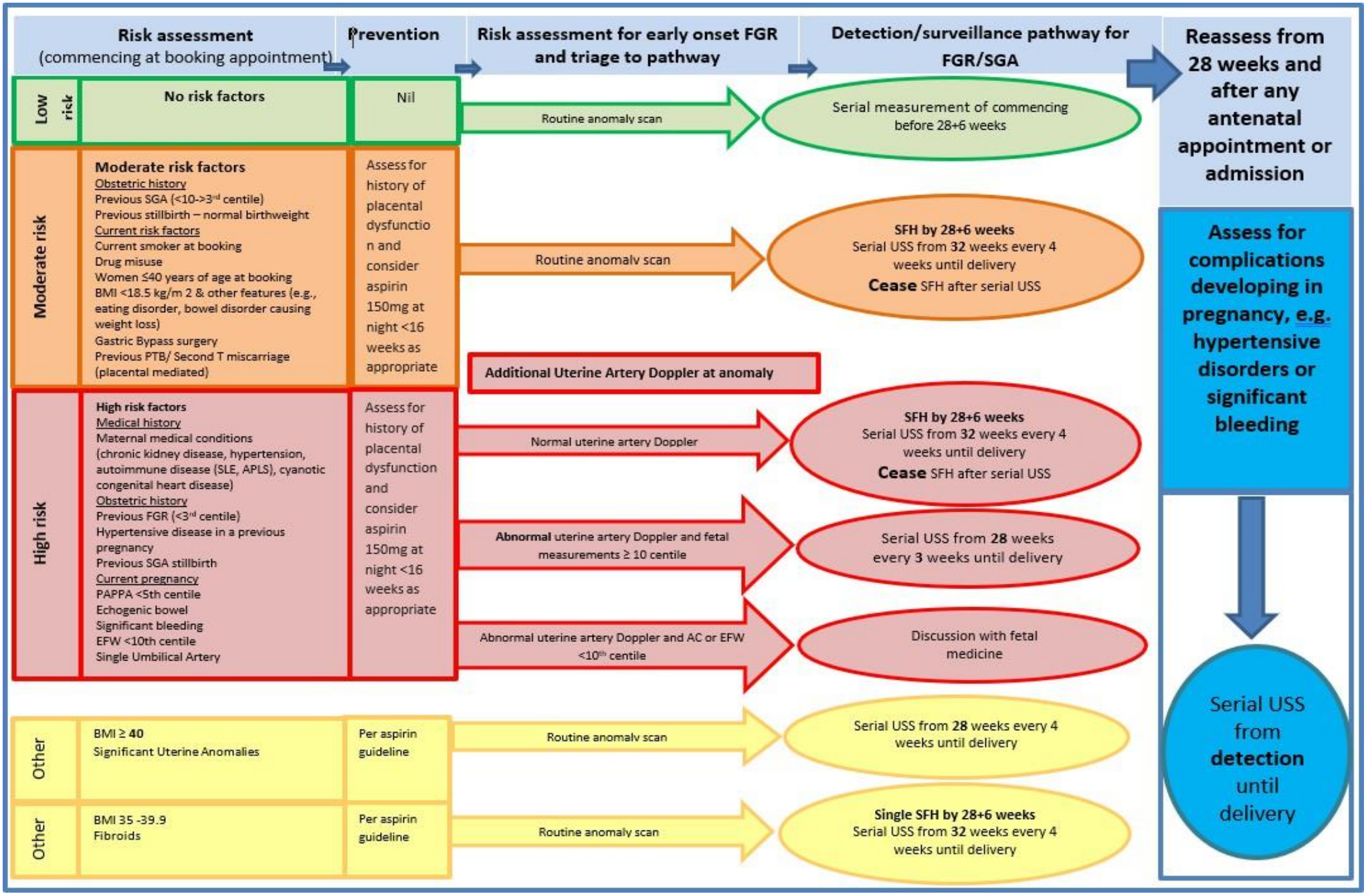
Appendix 2

Example of slow growth

The example below demonstrates a static SFH measurement (cross changed to red) and then a follow up growth scan showing slowed growth (red dot). The GROW information box also indicates slow growth



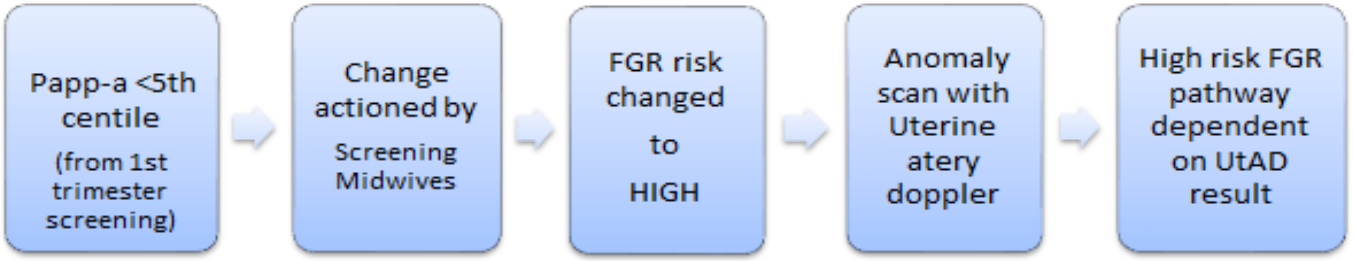
Appendix 3 – SBLV3 based Fetal Surveillance Pathway

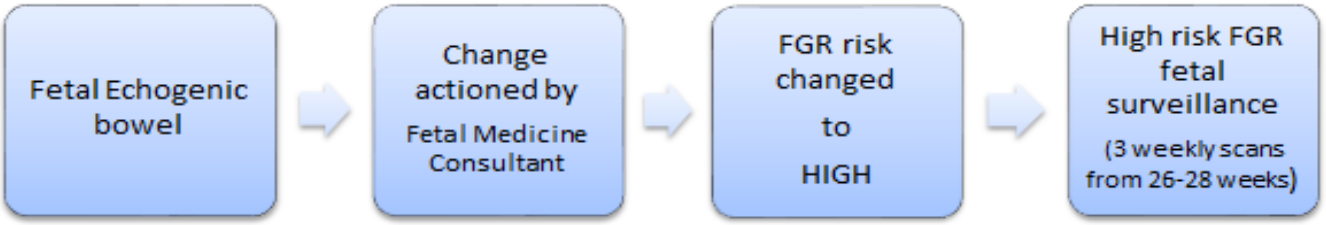


Appendix 4

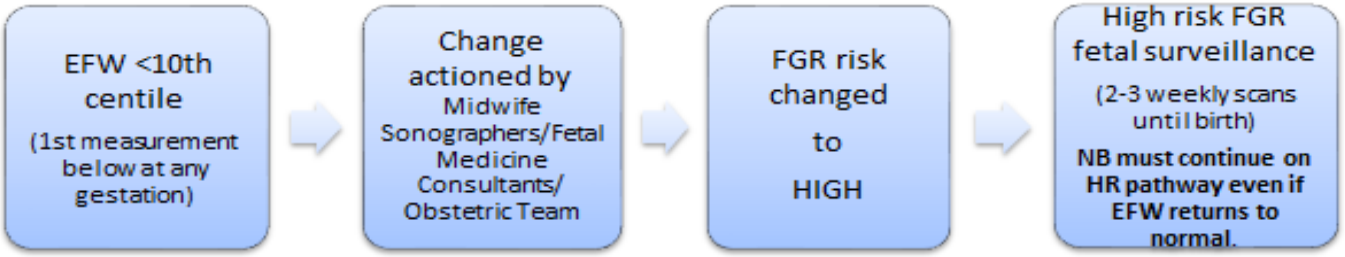
Current pregnancy-Badgernet FGR assessment change's after booking

To be used in conjunction with the following Trust guideline
Small for Gestational age and Fetal growth restriction risk assessment, surveillance and management VERSION 2.0



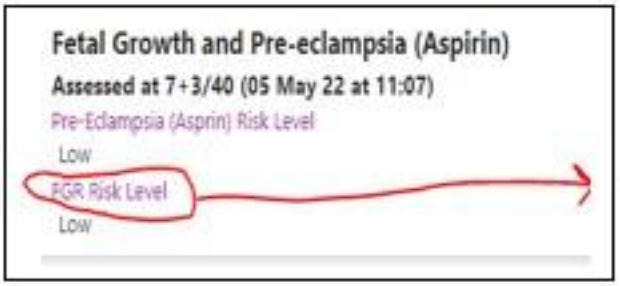


Significant bleeding (**APH requiring admission)** - APH from placental abruption or unexplained APH, the pregnancy should be reclassified as 'high risk' and antenatal care should be consultant-led. Serial ultrasound for fetal growth should be performed (single or recurrent episodes of APH from a cervical ectropion, subsequent antenatal care need not be altered) – RCOG Green-top Guideline No. 63 2011

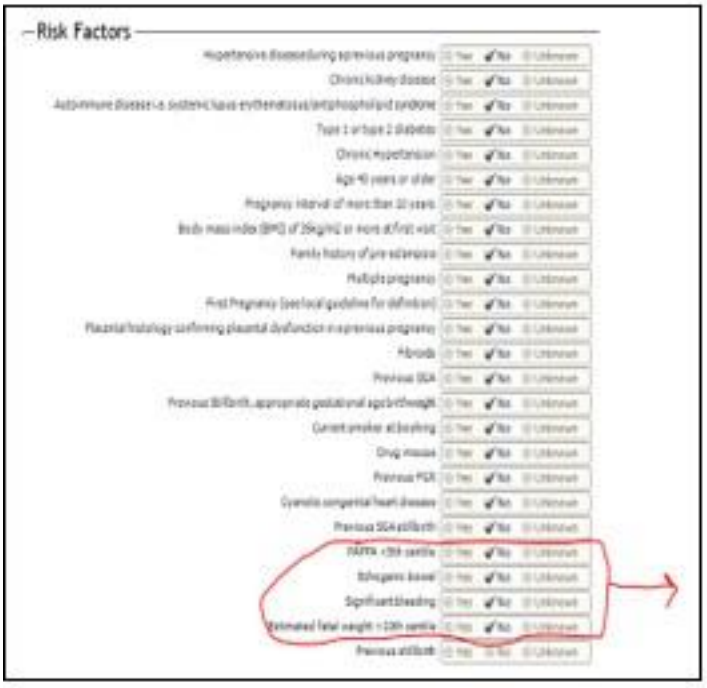


How to change

Current pregnancy-Badgernet FGR assessment change's after booking



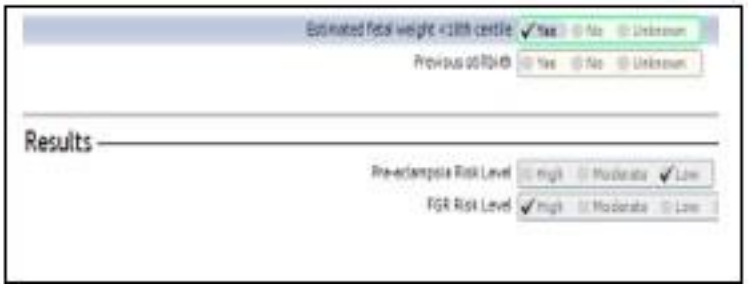
Click on FGR Risk Level



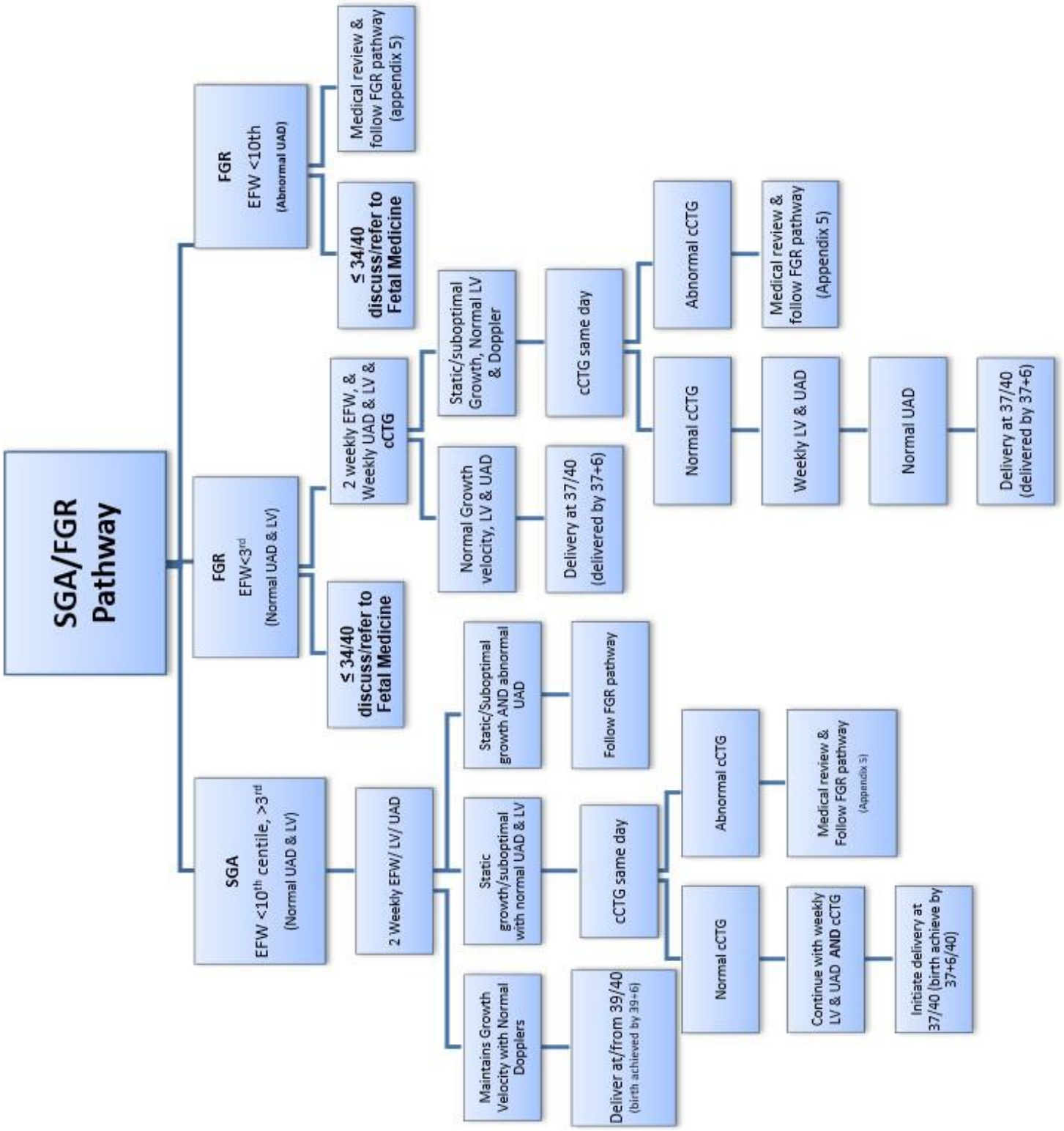
Click yes on the new issue

The FGR risk will change to **High**

It will also change on the home page



Appendix 4 - SGA/FGR Pathway



Appendix 4

Appendix 5 – Management of FGR