Oxford University Hospitals NHS
NHS Foundation Trust

Growth Scan Guideline

Category:	Guideline
Summary:	This document provides guidance for all maternity staff involved in performing growth scans for women during the antenatal period
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Valid from:	21/12/2022
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Approval date/ via:	21/12/2022 by Chair's Action (MCGC)
Related documents:	Anomaly Scan Guideline Ultrasound Department SOP for Growth Scans Antenatal Care Guideline 'My baby is breech' patient information leaflet Placenta Praevia Guideline
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Further information:	
This document replaces:	Growth Scan Guideline v2.0 – valid from 26/09/22

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It is the responsibility of all users to this document to ensure that the correct and most current version is being used.
This document contains many hyperlinks to other related documents.
All users must check these documents are in date and have been ratified appropriately prior to use.

Document History

Version valid from	Version number	Reason for review/update
21/12/2022	2.1	**To begin February 2023:** In line with SBLCBv2, a growth scan for DCDA twins should be offered at 24 weeks gestation in addition to the 28, 32 and 36 week growth scans (please see the Growth Scan Pathway for Twins Table on page 8). **(New in v2.0)** Growth Scan Referral Pathways added (Appendix 2) on pages 18/19
26/09/2022	2.0	Changes to guidance re: • EFW >95th centile replacing AC >95th centile as a

		predictor of fetal Macrosomia • Action for management of predicted fetal macrosomia <35+0 weeks gestation • Action for management of fetal macrosomia predicted ≥ 35+0 weeks gestation • Action for management of polyhydramnios <35+0 weeks gestation • Action for management of polyhydramnios ≥ 35+0 weeks gestation
09/03/2020	1.3	3 yearly review
28/04/2016	1.2	3 Yearly review

Consultation Schedule

Who? Individuals or Committees	Rationale and/or Method of Involvement
Consultant Obstetrician FMU Lead	Author and Review
SST Fetal Medicine	Review
Screening Coordinator	Review
Ultrasound Manager	Author and review
Ultrasound Interim Manager	Author and review
Quality Assurance and Improvement Midwife	Review
Document Review Group (DRG)	Review and pre-approval for MCGC

Contents

Who should read this document?

1. This document should be read by all midwifery and medical staff who perform Ultrasound growth scans and who provide antenatal and intrapartum care and/or information to women and their families within the Oxford University Hospitals NHS Foundation Trust (OUHFT).

   Gender inclusive language in OUH Maternity and Perinatal Services:

   - This guideline uses the terms woman and women throughout. These terms should be taken to include people who do not identify as women but who are pregnant. Similarly, where the term parent(s) is used, this should be taken to include anyone who has main responsibility for caring for a baby.
   - The term partner refers to the woman's chosen supporter. This could be the baby's father, the woman's partner, a family member or friend, or anyone who the woman feels supported by and wishes to involve in their care.

Background/ Scope

2. Small for gestation (SGA) babies, and those whose growth slows from what is expected, are at a significantly increased risk of stillbirth, neonatal death and perinatal morbidity. Currently in the UK we identify only about 30% of babies who are small for their gestational age during pregnancy.

3. Since 2010 the number of additional scans, such as for growth, presentation and placental site, has been rising significantly. In 2015, the OUHFT performed 2000 more of these scans than in 2010, despite the number of anomaly scans remaining similar. This means that for each anomaly scan done, the same number of additional scans after 20 weeks were performed, adding significant pressures to the healthcare system.

4. The growth scan pathway is designed to reduce the need for a number of the additional scans and monitor the wellbeing of pregnancies in a more structured, planned and clinically effective way that should improve the identification of babies who are growing poorly in utero, and therefore at risk of a number of complications, including stillbirth.

5. The use of ultrasound for assessment of fetal growth has been structured.

6. Each woman will be offered a growth scan at 36/40 which will include the measurement of the umbilical artery (umbA) Doppler and Mid Cerebral Artery (MCA) Doppler to allow calculation of the cerebro-placental ratio (CPR).

7. In addition to the 36/40 growth scan, some women will be offered growth scans at 28/40, or 28/40 and 32/40 according to whether they have any of the defined risk factors and the results of a uterine artery Doppler which is performed routinely at the anomaly scan. The risk factors chosen are simple to allow easy early risk stratification; additional scans may be booked by the clinician according to more complex criteria.

8. Additional scans outside of the Growth Scan Pathway must meet the criteria for referral as detailed in the full guideline.

Key Updates

(New in v2.1) In line with Saving Babies Lives v2 - for DCDA twins, growth scans should be offered at 24/40, 28/40, 32/40 and 36/40 (please see Growth Scan Pathway Table for DCDA twins on page 8).

(New in v2.0) EFW >95th centile will replace AC>95th centile as a predictor of fetal macrosomia.

(New in v2.0) Large for dates/ fetal macrosomia - Action for <35 weeks gestation:

- If EFW is >95th centile - blood glucose assessment is worthwhile. Please refer to the Community Midwife via EPR for a Glucose tolerance test (GTT) (please see Growth Scan Guideline).

(New in v2.0) Large for dates/ fetal macrosomia - Action ≥ 35+0 weeks gestation:

- If EFW is >95th centile - blood glucose assessment **should not be performed.** In this instance, **t**he sonographer should ask the woman if they have missed a GTT and/or assess if the woman has risk factors for GDM which are:
  - Previous GDM
  - BMI >30
  - Previous baby > 4.5kg
  - Family history of diabetes (1st degree relative)
  - Any ethnicity at high risk of GDM
  - If any risk factors are identified women should be referred to the diabetes Midwives via EPR.

(New in v2.0) Women with a macrosomic baby (EFW >95th centile) detected at the 36-week scan who have not missed a GTT and have no risk factors for GDM, should be offered referral (by the USS Dept) to a consultant antenatal clinic for shared decision making and individualised birth planning.

(New in v2.0) Polyhydramnios - Action required for <35 weeks gestation:

- If the AFI ≥ 25cm but <30cm, the woman should be referred to a consultant antenatal clinic and have a GTT.
- If the AFI is ≥ 30cm, the woman should be referred to FMU.
- If polyhydramnios is observed in a woman who is known to be diabetic, she does not need referral to FMU or another antenatal clinic.

(New in v2.0) Polyhydramnios - Action ≥ 35+0 weeks gestation:

- If the AFI ≥ 25cm but <30cm, the woman should be referred to antenatal clinic – **however a GTT should not be performed.**
- If the AFI is ≥ 30cm, the woman should be referred to FMU.
- The sonographer should ask the woman if they have missed a GTT and/or assess if the woman has risk factors for GDM which are:
    - Previous GDM
    - BMI >30
    - Previous baby > 4.5kg
    - Family history of diabetes (1st degree relative)
    - Any ethnicity at high risk of GDM
    - If any risk factors are identified women should be referred to the Diabetes Midwives via EPR.

Key Recommendations

- Repeat scans to assess the growth of a large baby should not be arranged.

- Uterine Dopplers will be performed at the anomaly scan and, depending on these results and defined risk factors, the woman may be offered additional growth scans at 28/40, or 28/40 and 32/40.

- Each woman will be offered a routine growth scan between 35+0/40 and 37/40, including MCA Dopplers

Aim(s)

9. This The purpose of this guidance is to aid the identification and investigation of the SGA and particularly growth restricted fetus.

Full Guideline

Growth Scan Pathways

10. From the 09/05/2016 every woman will be offered a growth scan between 35+0 weeks and 37+0 weeks (also known as the 36-week scan) which will include the measurement of the umbilical artery (umbA) Doppler and Mid Cerebral Artery (MCA) Doppler to allow calculation of the cerebro-placental ratio (CPR).

11. In addition to the 36/40 growth scan, some women will be offered growth scans at 32/40, or 28/40 and 32/40 according to whether they have any of the risk factors* (see below) and the results of a Uterine artery Doppler which is performed routinely at the anomaly scan.

12. The pathway for each woman will be indicated on the Growth Scan Pathway Form by the sonographer. This will be filed in the hand-held notes at the time of the Anomaly Scan. The Ultrasound Department will book all the scans advised at the time of the anomaly scan. The scans can be booked +/- 5 days of the advised gestation.

13. Women should be assigned to a growth scan pathway according to the tables below:

Growth scan Pathway for Singletons

	Risk Factors	Uterine artery Doppler	=	ACTION
Pathway A →	**No *risk factors** (no boxes ticked yes)	**Normal** Uterine arteries **(total PI <2.5)**	**Low risk for SGA/PET**	**36/40 growth scan**
Pathway C →	***Risk factors** (one or more boxes ticked yes)	**Normal** Uterine arteries **(total PI <2.5)**	**Med risk for SGA/PET**	**32/40 and 36/40 growth scans**
Pathway D →	***Risk factors** (whether ticked or not)	**Abnormal** Uterine arteries **(total PI ≥ 2.5)** **Abnormal** Uterine arteries **(total PI >3)** **If the combined Pulsatory index (PI) is > 3** women should be offered a follow up ANC appointment at 36/40 for review and birth planning discussion	**High risk for SGA/PET**	**28/40, 32/40 and 36/40 growth scans** Needs to be under Consultant Care. Needs MW/ cons. appointment @25/40 and 31/40 for BP check or if booked under Silver Star, 24/40 SS appointment.

*Risk factors:

- Previous (singleton) baby born <2500g (5lbs 8oz) at any gestation
- Smoking ≥10 day (not including e-cigarettes)
- Aged 40 or above and nulliparous
- PAPP-A <0.3MoMs (this will 'flag' in Viewpoint when patient's entry 'opened')

Growth Scan Pathway for DCDA Twins

DCDA twin pregnancy (Note: MC twins and high order multiples will be scanned in FMU)	**Offer 24/40 (NEW in v 2.0), 28/40, 32/40 and 36/40 growth scans -** Please arrange usual clinic and scan follow up in the current manner if not already booked

14. The following Patient Information Leaflets are available in print and on the OUHFT Intranet to support this pathway:

Mid-pregnancy Anomaly Scan
Uterine Artery Doppler Ultrasound Measurement
Maternity Growth scan

Additional scans outside of the Growth Scan Pathway

Requesting growth scans

15. Please ensure all referrals for scans meet the conditions below:
    - When requesting, it is essential that the indication for referral is clearly documented, and if 'other' is used detail should be provided.
    - The referral also needs to include the agreed EDD and clear patient contact details and referrer details.
    - Requests will be reviewed by a senior doctor.
    - Failure to complete the referral to these standards ***may result in a delay or refusal of the scan.***
    - In these circumstances the referrer will be responsible for liaison with the woman.
16. The indications for growth scans are:

New pregnancy complications (NEW)

These are:

- PV bleeding
- symphysis fundal height 3cms or more under gestation if more than 26 weeks (repeated scan assessments are not required if the SFH discrepancy does not increase with gestation)
- new hypertension
- reduced fetal movements (if criteria met according to reduced fetal movements guideline)
- gestational diabetes, (one extra scan only) **(NEW)**
- other (this must be stated)

Pre-existing problems

17. Women at very high risk on basis of pre-existing medical disease or previous obstetric history may have scans as requested by their clinicians, as currently occurs. These are:
    - Previous SGA baby. Note that if the previous baby was <2500g they would already be on Pathway C or D (i.e. automatically have extra scan(s) in addition to a 36 week scan). However, if the previous birthweight was <10th centile but the baby was born after 36 weeks they should also have scan(s) from 38 weeks in addition to the routine 36-week scan. Babies that were SGA but born well at >2.5kg should NOT normally have 'serial growth scans' before 36 weeks
    - previous pregnancy loss after 16 weeks
    - pre-existing medical disease (antiphospholipid syndrome, chronic hypertension requiring treatment etc)

Additional scans: not permitted

18. The following indications may not be used for referral for ultrasound:

    Placental site (no PV bleeding) unless not recorded at 20 weeks or equivocal at 36-week scan

- Presentation. If ≥36 weeks these women should be referred to the breech clinic (see below)
- Large for dates

- Serial growth scans for 'low risk' indications e.g. IVF, previous SGA baby >2.5kg, anxiety

19. Growth scans requests for scans (unless Doppler only for known SGA risk baby) within 2 weeks of a previous scan are also not permitted.

Explanation of growth scan diagnosis codes

20. Fetal growth is assessed according to the following criteria and used as diagnosis codes on ultrasound reports. The following is a simplified interpretation of diagnosis codes:

Normal fetal growth:

- The baby has grown consistently, and the estimated fetal weight (EFW) is ≥ 10th centile for gestational age, with normal Doppler indices (umbA or CPR). This baby is currently at low risk of adverse outcomes.

Normal fetal growth but abnormal Dopplers:

- This situation can be due to normal variation, over-estimation of size or, occasionally, acute placental events. These women should be reviewed in FMU to determine the best course of action. The ultrasound department will normally arrange this.

SGA risk with normal Dopplers:

- The EFW is <10th centile for gestational age or the abdominal circumference (AC) has dropped centiles, a 40+ centile drop from the anomaly scan, but fetal condition currently appears good. Repeat scans every 2 to 3 weeks are normally indicated if the gestation is <36 weeks. The ultrasound department will normally arrange these for 3 weeks after the scan and arrange a clinic appointment on the same day.

SGA risk with abnormal Dopplers

- The EFW is <10th centile for gestational age, or the abdominal circumference (AC) has dropped centiles by 40 centile points from the anomaly scan and the umbilical artery Dopplers or CPR are abnormal. This baby is at risk of adverse outcome.

Management of singleton pregnancy according to scan findings

21. At any antenatal review the USS report should be examined by the clinician.

22. Decisions for delivery of a baby where the primary indication is SGA or abnormal Dopplers (risk of placental problems) should only be made by the FMU (FGA) team. Where delivery is expedited, these babies are at risk of hypoglycaemia and should be monitored as per guideline for SGA babies.

Abnormal findings

23. If UmbA AEDF/ REDF:

- Admit for CTG
- <32 weeks: urgent FMU review
- ≥32 weeks: urgent consultant or FMU review, probably LSCS

24. If SGA risk with abnormal umbA Doppler:

- <32 weeks: refer FMU
- 32-36 weeks: twice weekly umbA Doppler, in FMU. A CTG is not required unless another indication or AREDF is present.
- >36 weeks: arrange delivery. Consider CTG

25. If SGA risk (with normal umbA Doppler) see Fig 2 and below:

- <36 weeks
- repeat scan in 2-3 weeks, usually with follow up antenatal clinic appointment the same day.
- >36 weeks: refer to the FMU fetal growth assessment clinic who will manage:
- According to EFW, CPR, gestation and other risk factors.

26. If abnormal umbA Doppler or CPR but *not* SGA risk:

- All women should be referred to FMU growth assessment clinic where an assessment and management plan will be made. This will normally have happened from the ultrasound department. They should not be sent to the DAU or MAU and a CTG should not be routinely arranged. Pregnancy management should not be routinely altered.

Normal findings

27. **If not SGA risk, normal umbA +/- CPR Dopplers:**

- <36 weeks
- No routine scan follow up is required. However, the routine 36-week scan will go ahead unless a scan has been performed <7 days prior to the time for which it has been booked.
- >36 weeks
- No routine scan follow up is required.

Incomplete findings

28. If the MCA cannot be obtained, and there is no 'SGA risk' (see definitions) further scan appointments are not required. If there is SGA risk, the patient should be referred to FMU.

Late booking/ uncertain dates

29. If a woman books late and a growth scan after 20 weeks is being used to assign dates (HC), no routine second scan follow up is required, providing the umbilical artery Doppler is normal. If it is not, referral to FMU is indicated.

Abnormal presentation from 35 weeks

Transverse Lie

Multiparous women

30. This is common at 35 to 36 weeks in multiparous women and is not abnormal. These women should **NOT** be sent to MAU, a Consultant clinic or the ECV clinic. There is usually no reason to admit them unless there are major risk factors for preterm birth. The presentation should be reviewed by the community midwife at around 38 weeks, and if malpresentation is still an issue they can then refer to the ECV clinic.

Nulliparous women:

31. Placental site should be rechecked, and the woman should be referred directly to the ECV clinic (extension 21987 or 21988) for the first Tuesday after 36+0 weeks gestation.

Breech presentation

32. Multiparous women should be sent to the ECV clinic for an appointment from 37+0 weeks.
33. Nulliparous women should be seen in the ECV clinic from 36+0 weeks.
34. Please give women referred a 'My baby is breech' leaflet.

Abnormal placental site

No prior caesarean sections:

35. In a woman with no bleeding, the placental site should not alter management until confirmed at the growth scan. Scans should not be requested for this indication.
36. At the growth scan, if the placenta is found to be either covering the cervix (placenta praevia), or the lowermost edge of the placenta is <2 cm distant from the internal os (low lying) an antenatal clinic appointment is required (see Placenta Praevia guideline). Caesarean section should normally be offered.

Previous caesarean section

37. Ensure that women with a low placenta or placenta praevia have been referred to FMU placental clinic. This will normally have happened following the anomaly scan.

Large for dates/Fetal Macrosomia

38. **(New in v2.0) Large for dates/ fetal macrosomia - Action for <35 weeks gestation:**
    - If EFW is >95th centile - blood glucose assessment is worthwhile. Please refer to the Community Midwife via EPR for blood glucose assessment (please see Growth Scan Guideline).
39. **(New in v2.0) Large for dates/ fetal macrosomia - Action ≥ 35+0 weeks gestation:**
    - If EFW is >95th centile - blood glucose assessment **should not be performed.** In this instance, the sonographer should ask the woman if they have missed a GTT and/or assess if the woman has risk factors for GDM which are:
        - Previous GDM
        - BMI >30
        - Previous baby > 4.5kg
        - Family history of diabetes (1st degree relative)
        - Any ethnicity at high risk of GDM
        - If any risk factors are identified women should be referred to the diabetes Midwives via EPR.
40. Women with a macrosomic baby (EFW >95th centile) detected at the 36-week scan who have not missed a GTT and have no risk factors for GDM, should be offered referral (by the USS Dept) to a consultant for shared decision making and individualised birth planning.

Polyhydramnios

41. **(New in v2.0) Polyhydramnios - Action required for <35 weeks gestation:**
    a. If the AFI ≥ 25cm but <30cm, the woman should be referred to antenatal clinic and have a GTT.
    b. If the AFI is ≥ 30cm, the woman should be referred to FMU.
    c. If polyhydramnios is observed in a woman who is known to be diabetic, she does not need referral to FMU.
42. **(New in v2.0) Polyhydramnios - Action ≥ 35+0 weeks gestation:**
    - If the AFI ≥ 25cm but <30cm, the woman should be referred to antenatal clinic – **however a blood glucose assessment should not be performed.**
    - If the AFI is ≥ 30cm, the woman should be referred to FMU.
    - If polyhydramnios is detected, the sonographer should ask the woman if they have missed a GTT and/or assess if the woman has risk factors for GDM which are:
        - Previous GDM
        - BMI >30
        - Previous baby > 4.5kg
        - Family history of diabetes (1st degree relative)
        - Any ethnicity at high risk of GDM
43. If any risk factors are identified women should be referred to the Diabetes Midwives via EPR.

FAQs

44. If the pregnancy had abnormal/raised Uterine artery Dopplers at the Anomaly scan, but the scans afterwards show normal growth and the pregnancy has continued normally, can the woman be considered for delivery at the SPIRES, a MLU, or a homebirth?

Yes, but ensure there is no co-existing indication for induction of labour.

45. What should be done if a woman has not has an anomaly scan at the OUHFT – for example if she has moved from out of area, or has booked late?

She should be managed according to her pregnancy risk and growth scans only requested according to the above criteria. A routine 36 week scan will still be offered.

46. If a woman declines the additional growth scan/s, should any other care be put in place?

This should be documented and referral to a consultant antenatal clinic offered.

47. If a woman has an otherwise low risk pregnancy what does abnormal uterine artery Dopplers mean?

The pregnancy is at higher risk of growth restriction and pre-eclampsia than was suggested by her history and repeat scanning is indicated. These women should be under consultant care. Nevertheless, most women will still have a normal pregnancy outcome.

48. If a woman has a normally grown baby but the Dopplers are abnormal what does this mean?

In most cases the Doppler measurement has been taken inaccurately but occasionally this means that although the growth appears normal the baby is at more risk than suggested by its size. Because this is complicated and unusual these babies will usually be assessed in FMU.

49. If a baby is growing consistently but the EFW is below the 10th centile and the Dopplers are normal what does this mean?

This is likely to be a constitutionally normal baby, but after 37 weeks there is a slightly increased risk of adverse outcome. There are FMU guidelines for assessment of risk and follow up will be performed there.

50. If a baby is growing consistently but the EFW is below the 10th centile and the Dopplers are normal what does this mean?

This is likely to be a constitutionally normal baby, but after 37 weeks there is a slightly increased risk of adverse outcome. There are FMU guidelines for assessment of risk and follow up will be performed there.

EPR Considerations

51. All referrals to members of the MDT/ANC/Diabetes Midwives etc, should be made via EPR to ensure efficient and contemporaneous communication between the MDT.

Implementation Plan

No.	Recommendation for Implementation	Action to be taken	Evidence of Action	Responsible Person	Date Action to be completed by	R.A.G. Action completion status[2]
1	Raise awareness of changes to new guideline	Ratified At A Glance circulated to Maternity Directorate	- Email Circulating At A Glance - At A Glance uploaded to intranet page	Guideline Author	Within 2 days of guideline being uploaded	
2	Raise awareness of changes to new guideline	Include in Monthly Guidelines Update Table	Email/Diginews electronic platform Circulating Maternity Bulletin	Quality Team for inclusion in Monthly Guidelines Updates Table	Within 2 weeks of guideline live date	

References

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RCOG (2013), Green-top guideline no. 31: the investigation and management of the small-for-gestational-age fetus. *Royal College of Obstetricians and Gynaecologists Press*, London

Sovio, U, White, I, ,Dacey, A, Pasupathy, D, Smith, GCS, (2015); Screening for fetal growth restriction with universal third trimester ultrasonography in nulliparous women in the Pregnancy Outcome Prediction (POP) study: a prospective
cohort study, Lancet 2015; 386: 2089–97

Appendix 1 – Supporting information about Doppler Ultrasound

Umbilical artery (umbA) Doppler

This is a useful test before 35 weeks to help distinguish the normal small baby from the small, compromised baby and helps determine monitoring frequency and iatrogenic preterm delivery. Chronic placental dysfunction may lead to increased resistance (RI) and pulsatility (PI) in the arteries. The waveform is considered abnormal if the pulsatility index is >95th centile or if there is absent or reversed end-diastolic flow. These latter two describe increasing degrees of placental dysfunction. Umbilical artery Doppler it is not useful after 35 weeks except as part of the 'CPR'.

Middle cerebral artery (MCA) Doppler

This has 2 principal uses.

Firstly, it can be used to exclude fetal anaemia in at risk fetuses e.g. Rhesus disease. The peak systolic velocity PSV, or Vmax) is assessed.

Secondly the waveform (PI normally used) may demonstrate head sparing: more blood is sent to the brain in fetal diastole as a 'survival' mechanism. The pulsatility (PI) reduces in adverse circumstances. Its principal usage is therefore as part of the cerebroplacental ratio (see below).

Cerebroplacental ratio (CPR)

This is thought to be useful at after 35 weeks to help distinguish between the normal small baby from the small, compromised baby and is considered abnormal if reduced. It may also help identify chronic fetal compromise babies that are not obviously small for gestational age. It is calculated by dividing the MCA PI by the umbA PI.

Uterine artery (utA) Doppler

This is a screening test, which is most effective for growth restriction and pre-eclampsia that occurs before 34 weeks. It can be measured at any gestation but is routinely used at 20 weeks at the anomaly scan. A high pulsatility or resistance waveform (PI or RI) suggests less effective placental implantation. A normal result implies a low risk of early growth restriction or indeed pre-eclampsia and this is a more effective screening test than just using maternal history: this allows fewer scans and intervention in apparently higher risk women. It is used in this guideline to reduce the number of women having 'serial scans' to allow more room for later pregnancy scans: late onset (>34 weeks) growth restriction is less reliably predicted by abnormal uterine artery waveforms.

Pregnancy associated plasma protein A (PAPP-A)

This serum analyte forms part of the combined test screening for aneuploidy at 12 weeks. A low level (<0.3MoMs) also suggests a higher later pregnancy risk of growth restriction, pre-eclampsia and stillbirth.

Appendix 2: Growth Scan Referral Pathways

Growth Referral Pathway
26+0 → 34+6/40

(NB: In event of both SGA pathway and also urgent scans e.g. ↓FM's or SFD)

SGA RISK = **AC↓ ≥ 40 centiles from anomaly** **AND/OR** **EFW <10th centile**	**ABNORMAL DOPPLER =** **Umbilical Artery PI = > 95th centile** **AND/OR** **Cerebro Placental Ratio (CPR) = < 1.1**

Finding:	Referral pathway:
Normal growth & normal Doppler PI and CPR	36/40 scan as planned if ≥ 7 days from scan. (NB: No ANC referral)
Normal growth + **Abnormal** umbilical Doppler PI or CPR	Refer FMU. If AEDF/REDF/CPR<1.1 for immediate review in FMU (Refer to MAU if FMU staff nor available)
SGA risk & normal Umbilical Doppler PI and CPR	Repeat scan in 2-3 weeks and arrange follow up ANC on the same day.
SGA risk + **Abnormal** umbilical Doppler PI AND/OR CPR	Refer FMU. If AEDF/REDF/CPR<1.1 for immediate review in FMU (Refer to MAU if FMU staff nor available)
Unobtainable MCA + **Abnormal** growth.	Refer to FMU FGA clinic
If other concerns following scan then refer for review. Please highlight "for review" on report and email.	
NB: DCDA twins are NOT referred to FMU FGA clinic as they will be seen by LWI in clinic after scan	
IF THE MCA VMAX (in viewpoint) IS >100CM/SEC REFER TO FMU .	

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Growth Referral Pathway
35+0 → 40+

(NB: In event of both SGA pathway and also urgent scans e.g. ↓FM's or SFD)

SGA RISK =	**ABNORMAL DOPPLER =**
AC↓ ≥ 40 centiles from anomaly **AND/OR** **EFW <10th centile**	**Umbilical Artery PI = > 95th centile** **AND/OR** **Cerebro Placental Ratio (CPR) = < 1.1**

Finding:	Referral pathway:
Normal growth + Normal umbilical + normal CPR	No FU required.
Normal growth + **Abnormal** Umbilical Doppler AND/OR CPR	Refer to FMU Fetal growth assessment clinic. **If AEDF/REDF/CPR<1.1 for immediate review in FMU** (Refer to MAU if FMU staff not available)
SGA risk + Normal umbilical Doppler + normal CPR	Refer to FMU Fetal growth assessment clinic.
SGA risk + **Abnormal** umbilical AND/OR abnormal CPR	Refer to FMU FGA clinic. **If AEDF/REDF/CPR<1.1 for immediate review in FMU** (Refer to MAU if FMU staff not available)
Unobtainable MCA with normal growth + Normal Umbilical Doppler	No further scans if no SGA risk
Unobtainable MCA + **Abnormal** growth.	Refer to FMU FGA clinic
If other concerns following scan then refer for review. Please highlight "for review" on report and email.	
NB: DCDA twins are NOT referred to FMU FGA clinic as they will be seen by LWI in clinic after scan	
IF THE MCA VMAX (in viewpoint) IS >100CM/SEC REFER TO FMU .	

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Appendix 3: Definitions

Term	Definition
AC	Abdominal Circumference
AEDF	Absent End Diastolic Flow
CPR	Cerebroplacental Ratio (MCA PI/ UmbA PI)
EFW	Estimated Fetal Weight
EDF	End Diastolic Flow
FGR	Fetal Growth Restriction
FL	Femur Length
FMU	Fetal Medicine Unit
HC	Head circumference
IUGR	Intra Uterine Growth Restriction
MCA	Middle Cerebral Artery
PD	Pool Depth
PI	Pulsatility Index
PET	Pre-Eclampsia
PAPP-A	Pregnancy associated plasma protein A
REDF	Reversed End Diastolic Flow
RI	Resistance Index
SGA	Small for Gestational Age
UmbA	Umbilical Artery

1. **Possible reduction in growth velocity:** The AC has dropped ≥40 centile points from the anomaly scan
2. **Small for gestational age:** An EFW <10th centile
3. **SGA risk:** Either there is a reduction in AC growth velocity (see above) OR the fetus is small for gestational age
4. **Abnormal umbA PI:** An umbA PI >95th centile
5. **Abnormal CPR:** A CPR of <1.1

Appendix 4: Education and Training

1. There is no mandatory training associated with this guideline. Individuals' training needs will be identified through annual appraisal and supervision".

Appendix 5: Monitoring Compliance

Compliance Standard	Monitoring method	By whom and when	Reporting to
% Women having 36-week growth scan and within +/- 5 days	Viewpoint	Every 3 years	MCGC/AHSN
% Women having 36-week growth scan who are getting CPR calculation	Viewpoint	Every 3 years	MCGC/AHSN
No of women having growth scans outside standard pathway	Viewpoint	Every 3 years	MCGC/AHSN

Appendix 6: Equality Impact Assessment

1. Information about the guideline, service or function

What is being assessed?			
New Guideline/Procedure	[ ]	New Service/Function	[ ]
Existing Guideline/Procedure	[X]	Existing Service/Function	[ ]
Staff member completing assessment: **Marie Barnard**			
Name of guideline: **Growth Scan Guideline**			
Details about the guideline: This document provides guidance for all maternity staff involved in performing Ultrasound growth scans. It also applies to all midwifery and medical staff who provide care antenatal and intrapartum care and/or information to women and their families within the Oxford University Hospitals NHS Foundation Trust (OUHFT).			

Review Date: 09/09/2022	**Date assessment completed:**
Signature of staff member completing assessment: **Marie Barnard**	**Signature of staff member approving assessment:**

2. Screening Stage

Who benefits from this guideline, service or function? Who is the target audience? (*tick all that apply*)					
Patients	[x]	Family/Carers	[xx]	Not applicable	[ ]
Staff	[x]	Other (*specify*):			

Does the guideline, service or function involve direct engagement with the target audience?		
Yes	[x]	Continue with full equality impact assessment
No	[ ]	Full equality impact assessment not required

3. Research Stage

Notes:

If there is no impact for a particular group or characteristic, mention this in the Reasoning column and refer to evidence where applicable.

[1]Race categories follow those used in the National Census by the Office for National Statistics. Consideration should be given to the specific communities within broad categories such as Bangladeshi people.

[2]Please select age groups which may be impacted by the guideline, service or function and complete as appropriate.

[3]Religion or Belief covers a wide range of groupings, the most common of which are Muslims, Buddhists, Jews, Christians, Sikhs and Hindus; it also covers people who do not have a faith. Consider these individually and collectively when determining impacts.

Characteristic		Positive Impact	Negative Impact	Neutral Impact	Not Enough Information	Reasoning
Sex and Gender Reassignment	Men (incl. trans men)			x		All genders of pregnant people will have equal access to the provision of growth scans.
	Women (incl. trans women)			x		
	Non-binary people			x		
Race[1]	Asian or Asian British			x		All pregnant people will benefit from this guideline. Consideration should be taken if not able to read written English – including for white British people. Pictoral explanations may need to be used. Where English is not spoken or not first language, then language line should be used for consultations, especially when giving information of medication uses and doses.
	Black or Black British			x		
	Mixed Race			x		
	White British			x		
	White Other			x		
	Other:			x		

Disability	Disabled people			**x**		If the woman has any learning difficulties an advocate should be in attendance. If they have a hearing loss– a British Sign Language Interpreter should be offered which can be done via language line.
	Carers			**x**		
Age[2]				**x**		This guideline is only applicable to adult pregnant people. Please consult the Children's BNF or gain advise from a paediatrician before if the pregnant person is less than 18 years old.
				x		
				x		
Sexual Orientation				**x**		This guideline does not discriminate with regards to sexual orientation, as all people will have equal access to the advice and treatments described above.
Religion or Belief[3]				**x**		This guideline does not discriminate with regards to belief or religion, as all people will have equal access to the advice and treatments described above.
Pregnancy and Maternity		**x**				The advice in this guideline is for pregnant people therefore will have a positive impact on this group.
Marriage or Civil Partnership				**x**		This guideline does not discriminate with regards to marriage or civil partnership, as all people will have

						equal access to the guidance and care described above.
Other Groups /Characteristics	For example: homeless people, sex workers, rural isolation.			**x**		This guideline does not discriminate with regards to social situations, as all people will have equal access to the guidance and care described above.

List the sources of information used in the table below
OUH Trust Equality impact assessment procedure guideline – available via trust intranet Annual Equality and Diversity Report, Workforce Race Equality Standard Data, or the Equality Delivery System 2 report

Using the table below, list any protected groups you will target during the consultation process, and give a summary of those consultations.	
Group	**Summary of consultation**

List any other individuals/groups that have been or will be consulted on this guideline, service or function.
This guideline will be reviewed prior to publication by relevant Midwives, Obstetricians, Obstetric Physicians and Pharmacist

4. Summary Stage

Outcome Measures List the key benefits that are intended to be achieved through implementation of this guideline, service or function and state whether or not you are assured that these will be equitably and fairly achieved for all protected groups. If not, state actions that will be taken to ensure this.
The benefits of this guideline will be to improve the antenatal care women receive during pregnancy by offering growth scans to check fetal wellbeing where recommended. This guideline will help to ensure that women are risk assessed appropriately to ensure continued access to care provision by the most appropriate member(s) of the MDT in accordance with NICE and RCOG guidance risk assessment recommendations. Consideration should be taken in those pregnant women who may not be able to understand or read written English – including for white British women. Pictoral explanations may need to be used. Where English is not spoken or understood, then language line should be used for consultations, especially when giving information of medication uses and doses. If the pregnant women has any learning difficulties an advocate should be in attendance. If they are D/Deaf or d/Deaf or have a hearing impairment– a British Sign Language Interpreter should be offered and can be accessed via language line.
Positive Impact List any positive impacts that this guideline, service or function may have on protected groups as well as any actions to be taken that would increase positive impact.
This guideline has been written specifically to support the antenatal care provision for pregnant women, therefore this is a positive impact for this group.
Unjustifiable Adverse Effects List any identified unjustifiable adverse effects on protected groups along with actions that will be taken to rectify or mitigate them.

No adverse effects predicted on any group
Justifiable Adverse Effects List any identified unjustifiable adverse effects on protected groups along with justifications and any actions that will be taken to mitigate them.
No adverse effects predicted on any group

Equality Impact Assessment Action Plan
Complete this action plan template with actions identified during the Research and Summary Stages

Identified Risk	Recommended Actions	Lead	Resource Implications	Review Date	Completion Date
Pregnant women with learning disabilities having an understanding the information	Consider if the use of an advocate is required				
Difficulty accessing follow up and appointments for pregnant women who are homeless or have limited means of transport for appointments	Consider whether hospital transport is appropriate.				