

ISUOG Practice Guidelines: The Role of Ultrasound in Managing Twin Pregnancies

A Patient's Guide



This guide translates the ISUOG Practice Guidelines on the role of ultrasound in twin pregnancies into clear, accessible information for expectant parents.

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FOREWORD

The publication of the 'ISUOG Practice Guidelines (updated): role of ultrasound in twin pregnancy' is a critically important document for medical professionals caring for families expecting twins. Even more important for these families is this patient guide which translates the information into a more readable form.

The International Council of Multiple Birth Organisations (ICOMBO) is a volunteer-run organisation that champions the rights of multiples. We are passionate about ensuring that the unique needs of multiples and their families are understood and met. A pivotal document we have developed is the Declaration of Rights and Statement of Needs of Twins and Higher Order Multiples. This outlines what we believe are the fundamental requirements necessary to benefit twins and more, as well as their families, throughout their lives. Families expecting multiples need access to health care, social services and education which respect and address the differences from those carrying singletons. Ultrasound has a critically important role to play in setting the foundation to ensure optimal medical care. It is important that the findings of ultrasounds and the implications are understandable to parents to be.

We believe that parents have a right to expect accurate recording of placentation, determination of chorionicity and amnionicity. This should be established by ultrasound as accurately and as early as possible, as this information is critical for antenatal care. Parents also have a right to appropriate management of their multiple pregnancy no matter what the outcome, recognising as outlined in this document that there are increased risks of demise and serious complications. Ultrasound information is also critical for decisions on the timing and mode of delivery of twins. Parents need to understand why decisions are being made and their situation may be different to other parents who are also expecting twins.

We really hope this guide will be a huge benefit to those families who are expecting twins.



Dr Carolyn Lister

Chair and Research Director

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HOW TO USE THIS GUIDE

This is a patient guide to the ISUOG Practice Guidelines (updated): Role of Ultrasound in Twin Pregnancy. The purpose of this guide is to help you understand the guidelines and why they are in place, particularly when it comes to the extra tests and scans you'll have during your twin pregnancy.

As a twin parent, you'll experience more frequent monitoring than you might expect. This is normal, and it's done to ensure both you and your babies stay healthy throughout the pregnancy. You may notice the term "risk" comes up a lot in the guidelines. While this might sound worrying, the purpose of the close monitoring is to detect potential issues early, so they can be managed quickly if needed. The majority of twin pregnancies don't face serious complications, and these tests are there to help ensure that things continue smoothly.

When we talk about "risk," think of it as what could happen rather than what will happen. The guidelines are all about ensuring early intervention if needed, to keep both babies safe. This guide will explain the different types of twin pregnancies, what the recommended tests are for, and how the ultrasound scans help doctors make the best decisions for your care.

At the end of this guide, there is a glossary of definitions for the medical terms used, which should help clarify things as you read through.

The most important thing is that during your pregnancy you are not alone. We have listed some valuable resources for you at the end, but we also encourage you to connect with your local multiple birth organisation, look for online communities and talk with your care team about anything you might need to know.

DISCLAIMER

This guide is intended to help you as a patient understand the ISUOG Practice Guidelines on the role of ultrasound in twin pregnancy. It provides a general overview of the standard care for twin pregnancies, but it is not a substitute for medical advice. Always discuss your pregnancy care and any concerns with your healthcare provider to ensure the best decisions are made for you and your babies, and for your individual circumstances.

While country-specific guidelines may exist, the ISUOG guidelines offer a comprehensive, international perspective. They are based on evidence gathered from experts worldwide and reflect a global standard of care for twin pregnancies.

For further details, please refer to the full guidelines:

Khalil A, Sotiriadis A, Baschat A, Bhide A, Gratacos E, Hecher K, Lewi L, Salomon LJ, Thilaganathan B, Ville Y. ISUOG Practice Guidelines: Role of ultrasound in twin pregnancy. Ultrasound Obstet Gynecol 2025.



ABOUT THE CLINICAL STANDARDS COMMITTEE

The Clinical Standards Committee of ISUOG creates guidelines to help doctors and midwives give the best care during pregnancy. These guidelines are based on expert advice and research, offering practical recommendations to improve health for parents and babies. They are not strict rules but helpful advice that can change depending on personal needs, local practices, or resources. The goal is to guide care, not control it. ISUOG also encourages sharing these guidelines to support good healthcare everywhere.

INTRODUCTION

Why do these Guidelines exist?

Multiple pregnancies present unique challenges and require careful management to ensure the best outcomes for both parents and babies. These pregnancies are becoming more common due to assisted reproductive technologies and delayed childbirth, making it essential for expecting parents and healthcare professionals to be well-informed. The guidelines aim to provide clear, evidence-based recommendations to manage multiple pregnancies, from early detection to delivery and beyond.

The healthcare team plays a critical role in monitoring and providing support to parents throughout the pregnancy. Understanding the potential complications that can arise, such as preterm birth, growth restrictions, and the increased risk of pre-eclampsia, can help parents make informed decisions and prepare for the journey ahead. The guidance ensures that medical practices are standardised and that parents are given the information they need to manage expectations and decisions at each stage of the pregnancy.

These guidelines are designed for healthcare professionals but are presented here in simple language for expecting parents. It's important to remember that every pregnancy is different, and the advice shared will be tailored to your unique situation.

OUTLINE / SCOPE

What do the Guidelines cover?

The guidelines for multiple pregnancies cover a comprehensive range of topics to guide healthcare professionals in managing these pregnancies effectively. The key areas include:

- **Dating of the Pregnancy:** Determining gestational age.
- **Determining Chorionicity and Amnionity:** Understanding whether the babies share a placenta or sac, which influences management and outcomes.
- **Twin Labelling:** Identifying each twin clearly for monitoring and medical purposes.
- **Timing, Frequency, and Content of Ultrasound Assessment:** Recommendations for how often and what to monitor during ultrasound scans.
- **Screening for Aneuploidy:** Testing for chromosomal abnormalities in the babies.
- **Prenatal Diagnosis of Aneuploidy:** Further diagnostic testing if screening indicates a potential issue.
- **Screening for Structural Abnormalities:** Identifying any physical defects in the babies.
- **Diagnosis and Management of Discordant Twin Pregnancy:** Handling situations where one twin has abnormalities.
- **Fetal Reduction/Selective Termination:** Considerations for reducing the number of babies in certain cases.
- **Screening for the Risk of Preterm Birth:** Identifying pregnancies at risk for premature delivery.
- **Screening, Diagnosis, and Management of Fetal Growth Restriction (FGR):** Monitoring and managing cases where one or both babies are not growing as expected.
- **Management of Twin Pregnancy Complicated by Single Intrauterine Death (IUD):** Approaches when one twin dies during the pregnancy.
- **Complications Unique to Monochorionic Twin Pregnancy:**
 - Screening, Diagnosis, and Management of Twin-to-Twin Transfusion Syndrome (TTTS).
 - Screening, Diagnosis, and Management of Twin Anemia-Polycythemia Sequence (TAPS).
 - Management of Twin Reversed Arterial Perfusion Sequence (TRAP).
 - Management of Monochorionic Monoamniotic (MCMA) Twin Pregnancy.
 - Diagnosis and Management of Conjoined Twins.

These guidelines aim to provide consistent, evidence-based recommendations tailored to the unique needs and challenges of multiple pregnancies.





IDENTIFICATION AND ASSESSMENT OF EVIDENCE

How they look at and use the evidence.

To create these guidelines, a search for the best available evidence was carried out. This included looking through trusted medical databases, such as the Cochrane Library and MEDLINE, for studies and research papers about multiple pregnancies. The search also included information from conferences, unpublished studies, and other medical guidelines.

The aim was to find the most reliable studies to support the recommendations. When strong evidence was found, it was used to form the advice in the guidelines. In cases where there wasn't enough evidence, experts used their professional judgment to suggest good practices, which are noted separately.

RECOMMENDATIONS

The ISUOG guidelines for managing twin pregnancies highlight the importance of regular ultrasound monitoring to keep both you and your babies safe.

This guide is structured in the same way as the recommendations from ISUOG, however, we have provided the information in everyday language.

For each recommendation, you will see the following format:

- Summary: an overview of the recommendation
- What is the recommendation?:
- Why is this done? An overview of the reasons behind the recommendation.
- What does the evidence say? How the recommendation is supported by available evidence.

For more detail, please refer to the original document: Khalil A, Sotiriadis A, Baschat A, Bhide A, Gratacos E, Hecher K, Lewi L, Salomon LJ, Thilaganathan B, Ville Y. ISUOG Practice Guidelines: Role of ultrasound in twin pregnancy. Ultrasound Obstet Gynecol 2025.

DATING OF TWIN OR MULTIPLE PREGNANCY

How due dates are calculated

Summary

Accurate dating of a multiple pregnancy is important for monitoring the development of the babies and ensuring the best care. For multiple pregnancies, dating should ideally be done early, before 13 + 6 weeks of gestation. The larger twin's length, measured from the baby's top (head) to bottom measured in the first three months (before 14 weeks), helps estimate the age of the baby. After 14 weeks, the head size of the larger twin becomes the more accurate way to date the pregnancy. For pregnancies conceived through in-vitro fertilisation (IVF), the age of the embryo and the date it was transferred should be used for dating.

What is the recommendation?

- For twin or multiple pregnancies that happen without medical assistance, the pregnancy should ideally be dated before 13 + 6 weeks.
- In the first three months (before 14 weeks), use the size of the larger twin (measured from the baby's top (head) to bottom) to estimate how far along the pregnancy is.
- After 14 weeks, use the head size of the larger twin to estimate the pregnancy's age.
- For pregnancies conceived through in-vitro fertilization (IVF), date the pregnancy based on the age of the embryo and the date it was transferred.

Why is this done?

Dating the pregnancy early on helps doctors track the babies' growth and spot any potential issues. The larger twin's length (measured from the baby's top (head) to bottom) is the most reliable way to date the pregnancy in the first three months (before 14 weeks). Although some suggest using the smaller twin's length, it hasn't been shown to improve outcomes, and using the larger twin's length helps avoid mistakenly thinking the smaller twin is growing fine when it might not be. After 14 weeks, using the larger twin's head size gives a more accurate estimate.

What does the evidence say?

Studies support using the larger twin's length in the first three months (before 14 weeks), as it provides the most consistent and reliable results. While using the smaller twin's length in IVF pregnancies has some support, there's no strong evidence that changing the current practice would lead to better outcomes.

DETERMINING CHORIONICITY (NUMBER OF PLACENTAS) AND AMNIONICITY (NUMBER OF SACS OF POCKETS OF FLUID WHERE THE BABY DEVELOPS INSIDE THE WOMB) IN MULTIPLE PREGNANCY

What are the number of placentas and sacs in the pregnancy, and why is this important?

Summary

It's important to find out whether twins share a placenta (chorionicity) or an amniotic sac (amnionicity). This should be done early, ideally before 13 + 6 weeks, when the scan is most accurate. Chorionicity is checked using an ultrasound, and if it's unclear, a second opinion from a specialist should be sought. Amnionicity can be checked from 8 weeks for twins who share a placenta. If twins share both a placenta and an amniotic sac (MCMA), they should be referred to a specialist center for care.

What is the recommendation?

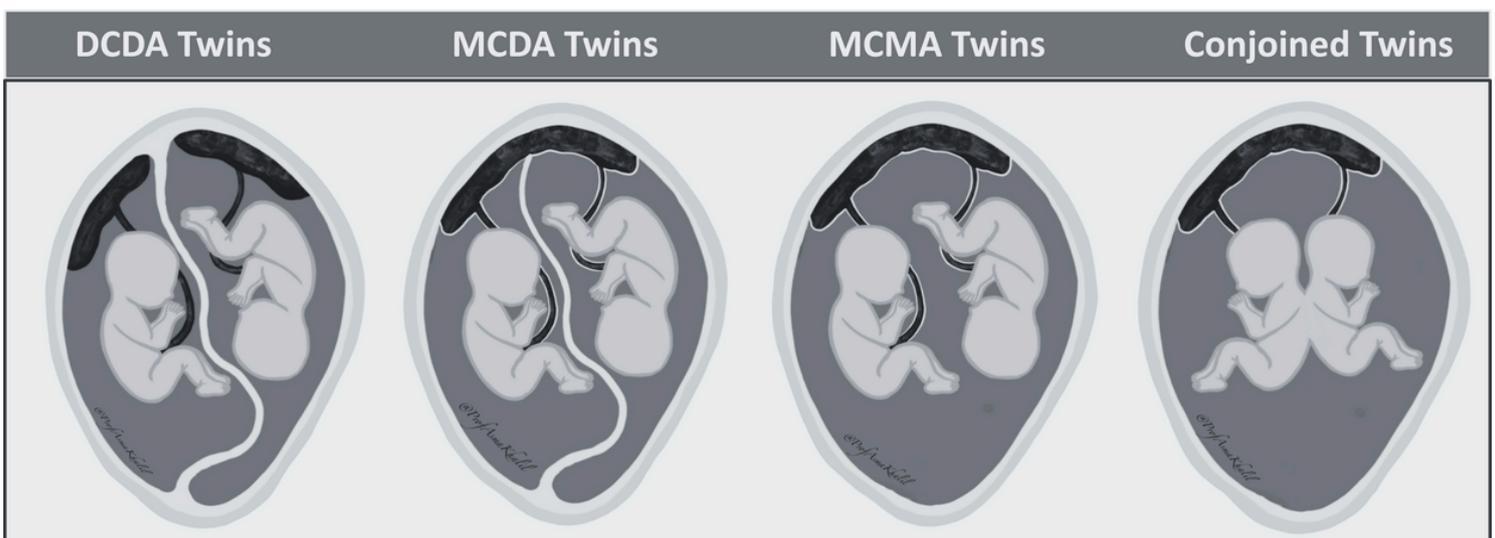
- Chorionicity should be determined before 13 + 6 weeks using ultrasound.
- If it's unclear, get a second opinion from a specialist center.
- Amnionicity can be checked from 8 weeks if the twins share a placenta.
- MCMA twin pregnancies should always be referred to a specialist.
- Keep an ultrasound image of the chorionicity in the medical records.

Why is this done?

Knowing whether the twins share a placenta or an amniotic sac helps doctors manage the pregnancy properly. It's important to confirm this early to avoid mistakes in care. If the twins share a placenta, there are extra risks that need careful monitoring. MCMA twin pregnancies need specialised care to avoid serious complications. Storing the ultrasound images helps doctors refer back to them if needed.

What does the evidence say?

The best time to check chorionicity and amnionicity is in the first one third of the pregnancy when the scan is most accurate. Chorionicity is checked using ultrasound signs like the intertwin sheet. If these signs are unclear, a second opinion from a specialist center is recommended. Amnionicity can be checked from 8 weeks for twins sharing a placenta. For MCMA twin pregnancies, a specialist is needed to manage the care. Keeping the ultrasound image in the medical records helps ensure that this important information is available later.





LABELLING OF TWIN BABIES

Identifying the babies on ultrasound

Summary

Labelling twins clearly and consistently is important for tracking each twin's development and growth. It helps the healthcare providers stay organised and ensure each twin gets the care they need. When labelling the twins, as many details as possible should be used to identify each baby. It's also important for parents and healthcare providers to understand that the order in which twins are labelled may not match the order in which they are born, especially if they are born by Caesarean section.

What is the recommendation?

- Twins should be labelled clearly, based on their position (right/left or upper/lower (top/bottom)) or other noticeable features such as gender or large differences in size.
- This labelling should be written down in the medical records to avoid confusion.
- In complex cases, like monochorionic monoamniotic (MCMA) twin pregnancies where the babies share the same amniotic sac, where labelling is hard to determine, other identifying details should be used.
- Parents and healthcare providers should be reminded that the order of labelling using ultrasound during pregnancy may differ from the order at delivery (e.g. twin 1 during the pregnancy is delivered second at birth), especially if the babies are born by a Caesarean section.

Why is this done?

Labelling the twins accurately is important to ensure that each one receives the right monitoring throughout pregnancy, delivery, and after birth. It helps prevent mistakes and makes sure that everyone—parents, doctors, and midwives—knows which twin is which. This is particularly important for twins who might have health differences or who need special attention. It's also important because, sometimes, the labelled order may not be the same as the delivery order, and knowing this helps everyone be prepared for what to expect.

What does the evidence say?

Labelling based on features like their position or sex makes it easier to identify them correctly during scans and follow-up appointments. In some cases, like MCMA twin pregnancies, labelling may not be as easy, but using other identifying details can still be helpful. It's also been shown that letting everyone know that the twins might not be delivered in the same order they were labelled helps reduce misunderstandings and makes sure that the right care is given to each twin.



ROUTINE MONITORING OF TWIN PREGNANCY WITH ULTRASOUND

Regular ultrasound scans for twin pregnancies

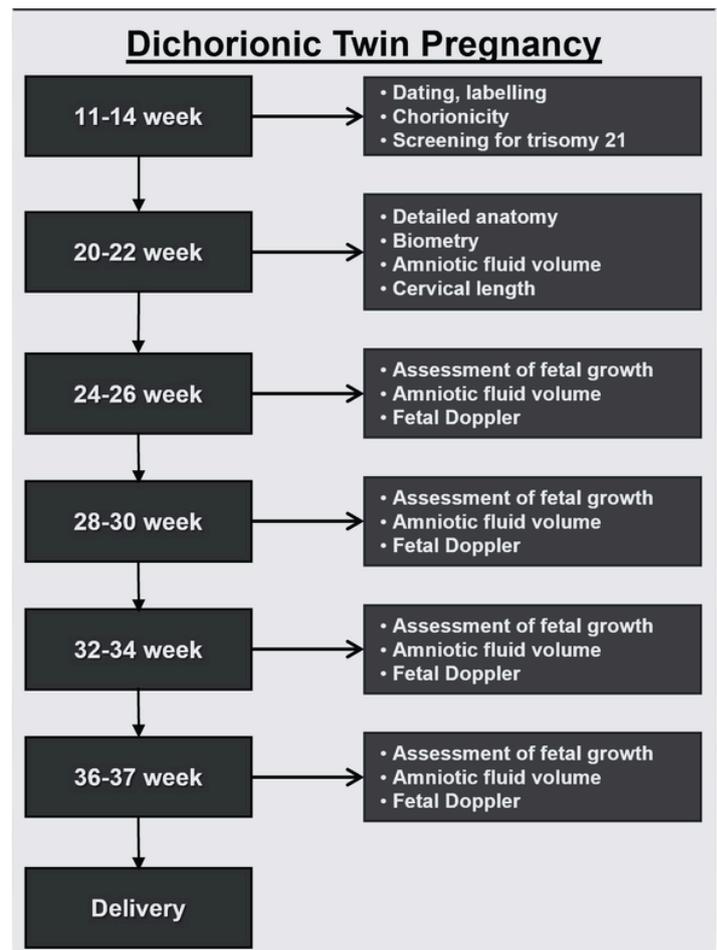
Summary

Routine ultrasound monitoring is essential for checking the development of twins during pregnancy and spotting any potential problems. The frequency of these scans depends on whether the twins share one placenta or have separate placentas. For dichorionic pregnancies (where the twins have separate placentas), scans typically take place in the first trimester, at 20 weeks for a detailed scan, and then every 4 weeks after that. Monochorionic pregnancies (where the twins share a placenta) require more frequent monitoring, starting with a scan in the first trimester and continuing every 2 weeks from 16 weeks onward. This helps detect conditions like Twin-to-Twin Transfusion Syndrome (TTTS) or Twin Anaemia Polycythaemia Sequence (TAPS) early. The timing of delivery is also important to minimise risks for the babies, with specific recommendations for when delivery should take place.

What is the recommendation?

Dichorionic Twin Pregnancies

- An ultrasound scan in the first third of the pregnancy at approximately 12 (11-13) weeks to confirm the pregnancy dating and the presence of separate placentas.
- A detailed scan should be done at 20 weeks to check for any abnormalities, assess the size and growth of the babies, the amount of fluid and measure the length of the neck of the womb to assess the risk of premature birth.
- After 20 weeks, ultrasound scans should take place every 4 weeks to monitor the growth of the babies, unless complications arise that require more frequent scans.
- For uncomplicated dichorionic twin pregnancies, the recommended delivery window is between 37+0 and 37+6 weeks to minimize risks.



Monochorionic Twin Pregnancy

11-14 week	• Dating, labelling • Chorionicity • Screening for trisomy 21
16 week	• Fetal growth, DVP • UA PI
18 week	• Fetal growth, DVP • UA PI
20 week	• Detailed anatomy • Biometry, DVP • UA PI, MCA PSV • Cervical length
22 week	• Fetal growth, DVP • UA PI, MCA PSV
24 week	• Fetal growth, DVP • UA PI, MCA PSV
26 week	• Fetal growth, DVP • UA PI, MCA PSV
28 week	• Fetal growth, DVP • UA PI, MCA PSV
30 week	• Fetal growth, DVP • UA PI, MCA PSV
32 week	• Fetal growth, DVP • UA PI, MCA PSV
34 week	• Fetal growth, DVP • UA PI, MCA PSV
36 week	• Fetal growth, DVP • UA PI, MCA PSV

Monochorionic Twin Pregnancies

- An ultrasound scan in the first third of the pregnancy at approximately 12 (11-13) weeks to confirm the pregnancy dating and the fact that the babies share one placenta, but each has its own amniotic sac (pocket of fluid)
- After 16 weeks, ultrasound scans should be scheduled every 2 weeks. This is essential for detecting problems that could arise, such as TTTS early, which improves the chances of a better outcome. At each scan, the sonographer or doctor will assess the size and growth of the babies, the amount of fluid and blood flow in each baby. At approximately 20 weeks, we should also measure the length of the neck of the womb to assess the risk of premature birth.
- If complications like TTTS or TAPS are suspected, more frequent scans may be necessary.
- The recommended delivery window for uncomplicated monochorionic twins is between 36+0 and 36+6 weeks to reduce the risk of one of both babies dying during pregnancy.

Why is this done?

Regular ultrasound scans are crucial for tracking the babies' growth, fluid levels, and blood flow. For monochorionic pregnancies, more frequent ultrasound scans help detect TTTS and TAPS early, which can significantly improve the chances of a positive outcome when treated promptly. Monitoring allows healthcare providers to act quickly if any issues arise, ensuring the safety of both the parent and babies. The timing of delivery is also important: for dichorionic twins, delivering beyond 37 weeks may increase the risk of complications, while delivering monochorionic twins between 36 and 37 weeks helps avoid the risk of stillbirth.



What does the evidence say?

Research shows that for dichorionic twin pregnancies, ultrasound scans at key times (first trimester, 20 weeks, and every 4 weeks after that) are effective in identifying potential problems early. This helps healthcare providers manage risks and improve outcomes.

For monochorionic twin pregnancies, more frequent scans (every 2 weeks from 16 weeks) are supported by evidence to detect TTTS early, which significantly improves the chances of a positive outcome. Monitoring fetal growth, fluid levels, and blood flow also helps identify other complications, such as TAPS or growth differences, allowing for timely intervention.

Studies show that early detection of complications leads to better management and outcomes, which is why more frequent scans are recommended. Additionally, delivering monochorionic twins between 36+0 and 36+6 weeks helps avoid the risk of stillbirth.

Ultrasound Monitoring Pathway

Dichorionic Twin Pregnancy

- **11–14 weeks:** Dating, chorionicity, screening for trisomy 21
- **20–22 weeks:** Detailed anatomy scan, measuring baby's size, checking for the difference between the size of the babies, assessing the amniotic fluid volume, cervical length
- **24–26 weeks, 28–30 weeks:** Checking baby's size, checking for the difference between the size of the babies, assessing the amniotic fluid volume, fetal Doppler (measuring blood flow)
- **32–34 weeks, 36–37 weeks:** Assessing baby's size, checking for the difference between the size of the babies, assessing the amniotic fluid volume, fetal Doppler (measuring blood flow), and planning delivery timing

Monochorionic Twin Pregnancy

- **11–14 weeks:** Dating, chorionicity, screening for trisomy 21
- **16 weeks, 18 weeks:** measuring baby's size, checking for the difference between the size of the babies and assessing the amniotic fluid volume
- **20 weeks:** Detailed anatomy scan, measuring baby's size, checking for the difference between the size of the babies, assessing the amniotic fluid volume, umbilical artery Doppler (blood flow in the umbilical cord), middle cerebral artery peak systolic velocity (blood flow in the brain), and cervical length
- **28–30 weeks:** measuring baby's size, checking for the difference between the size of the babies, assessing the amniotic fluid volume, umbilical artery Doppler (blood flow in the umbilical cord), middle cerebral artery peak systolic velocity (blood flow in the brain),
- **32 weeks, 34 weeks, 36 weeks:** measuring baby's size, checking for the difference between the size of the babies, assessing the amniotic fluid volume, umbilical artery Doppler (blood flow in the umbilical cord), middle cerebral artery peak systolic velocity (blood flow in the brain),

SCREENING FOR CHROMOSOMAL (GENETIC) ABNORMALITIES IN TWIN PREGNANCY

Testing for chromosomal conditions in twin pregnancies

Summary

Screening for chromosomal abnormalities, like Down's syndrome (trisomy 21), is an important part of antenatal care in twin pregnancies. The most accurate test available for this screening is a blood test called non-invasive prenatal testing (NIPT), which can be done from 10 weeks of pregnancy. For twins, NIPT is the best option for detecting whether one of both babies have Down's syndrome, though it may be a little less accurate than in singleton pregnancies. If NIPT isn't available, there are other tests that can be done at 12 (11-13) weeks, such as a combined test that includes maternal age, the nuchal translucency (fluid space at the back of the neck) (NT) measured during the scan and the level of certain proteins in the parent's blood (β -hCG and PAPP-A).

What is the recommendation?

- For all twin pregnancies: It's recommended that parents are offered the option to have screening for Down's syndrome in the first one third of pregnancy. The best test for this is NIPT, which uses a blood sample from the pregnant parent to test for Down's syndrome and other genetic conditions (such as Edward syndrome and Patau syndrome).
- If NIPT isn't available: Parents should have the option of the combined test, which includes maternal age, the nuchal translucency (fluid space at the back of the neck) (NT) measured during the scan and the level of certain proteins in the gestational parent's blood (β -hCG and PAPP-A).
- For pregnancies with a vanishing twin: The NT test, along with maternal age, is used to estimate the risk. In some cases, adding hormone levels (β -hCG) can help.

PRENATAL TESTING FOR TWIN PREGNANCIES

Prenatal testing in twin pregnancies

Summary:

For parents of twins, when considering genetic testing, the method and timing are important. In pregnancies with twins that have separate placentas (dichorionic twins), CVS (Chorionic Villus Sampling) is preferred over amniocentesis because it can be done earlier, allowing for quicker results. In pregnancies where the twins share a placenta (monochorionic twins), the situation is more complicated. If one twin has a health issue, both sacs should be tested to ensure both babies are checked properly.



What is the recommendation?

- For twins with separate placentas (dichorionic), CVS is the preferred method because it provides results earlier than amniocentesis.
- For twins that share a placenta (monochorionic), if one baby has a health issue, both sacs should be tested. This may involve a technique called double amniocentesis.
- In any case where invasive testing is necessary, it should be carried out by a fetal medicine expert to ensure accuracy.

Why is this done?

The earlier you can get results, the better, as it allows for earlier decision-making, particularly in cases where one twin may have a genetic condition. For dichorionic twins, CVS allows for early testing, which helps with managing the pregnancy more effectively. In monochorionic twin pregnancies, testing both babies is critical since the twins share a placenta, and one may have a different condition from the other. It's also essential to map the position of the twins accurately to avoid errors in testing.

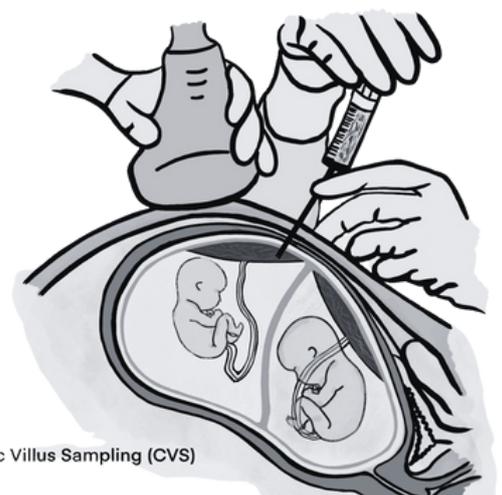
What does the evidence say?

- For dichorionic twins, CVS is favoured because it's performed earlier than amniocentesis, leading to faster diagnosis and better outcomes, especially if a decision about selective termination needs to be made.
- In monochorionic twins, if one twin has a health issue, both sacs should be tested. This ensures that both twins are checked thoroughly, as genetic differences can rarely occur even in twins that share a placenta.

The risk of miscarriage with both CVS and amniocentesis is small (likely approximately 1%). However, the benefit of early diagnosis usually outweighs the risks in most cases. The parents should have the appropriate counselling in order to make an informed choice.



Amniocentesis



Chorionic Villus Sampling (CVS)



IMPLICATIONS OF DISCORDANCE (DIFFERENCE) IN THE SIZE OF THE TWINS EARLY IN PREGNANCY OR THE MEASUREMENT OF THE NUCHAL TRANSLUCENCY

What discordant measurements in the first trimester (one third of the pregnancy) mean for twins

Summary

When there is noticeable size difference between the twins in the early stages of pregnancy, such as differences in the nuchal translucency (NT which is the fluid space at the back of the baby's neck) or crown-rump length (CRL which is the baby's length from top to bottom), it's important to seek expert advice. This is particularly true if there is a difference of 10% or more in CRL or 20% or more in NT. Discussing these findings with a fetal medicine specialist will help ensure the best possible care based on your specific circumstances.

What is the recommendation?

- If the difference in NT or CRL between the twins is 10% or more, or 20% or more for NT, it is important to discuss the situation with a fetal medicine specialist.
- Depending on local guidelines and available resources, the expert may recommend further testing or a detailed ultrasound to check for any abnormalities.
- This could help identify potential issues early on and guide decisions for managing the pregnancy.

Why is this done?

Twin pregnancies where there is a sizable difference in the measurement of the NT or CRL are more likely to be affected by a genetic condition or developmental abnormality of one of the babies. While there is some link between difference in these measurements in monochorionic twin pregnancies and certain complications (such as TTTS or a problem with the growth of one of the babies later on in the pregnancy), the relationship is not always clear, so expert consultation is recommended for understanding what these differences mean for your pregnancy.

What does the evidence say?

The evidence shows that while a discordance of 20% or more in NT is found in about 25% of monochorionic twin pregnancies, it only has a moderate ability to predict complications like TTTS. In fact, the predictive value is not very high, meaning that a large difference does not always lead to problems. However, having a significant difference in NT or CRL does slightly increase the risk of complications, such as early pregnancy loss, birth defects or the development of TTTS. So, careful monitoring and expert advice are essential.

ULTRASOUND SCREENING FOR STRUCTURAL (DEVELOPMENTAL) ABNORMALITIES IN TWIN PREGNANCY

Checking for birth defects

Summary

It's essential to screen for any structural abnormalities in twin pregnancies early on. This includes a first-trimester (at 11-13 weeks) scan to check for major anomalies, followed by a routine second-trimester anomaly scan at around 20 weeks. If you're carrying monozygotic twins, it's especially important to assess the heart of both babies. Screening gives parents the opportunity to plan for potential complications and make informed decisions.

What is the recommendation?

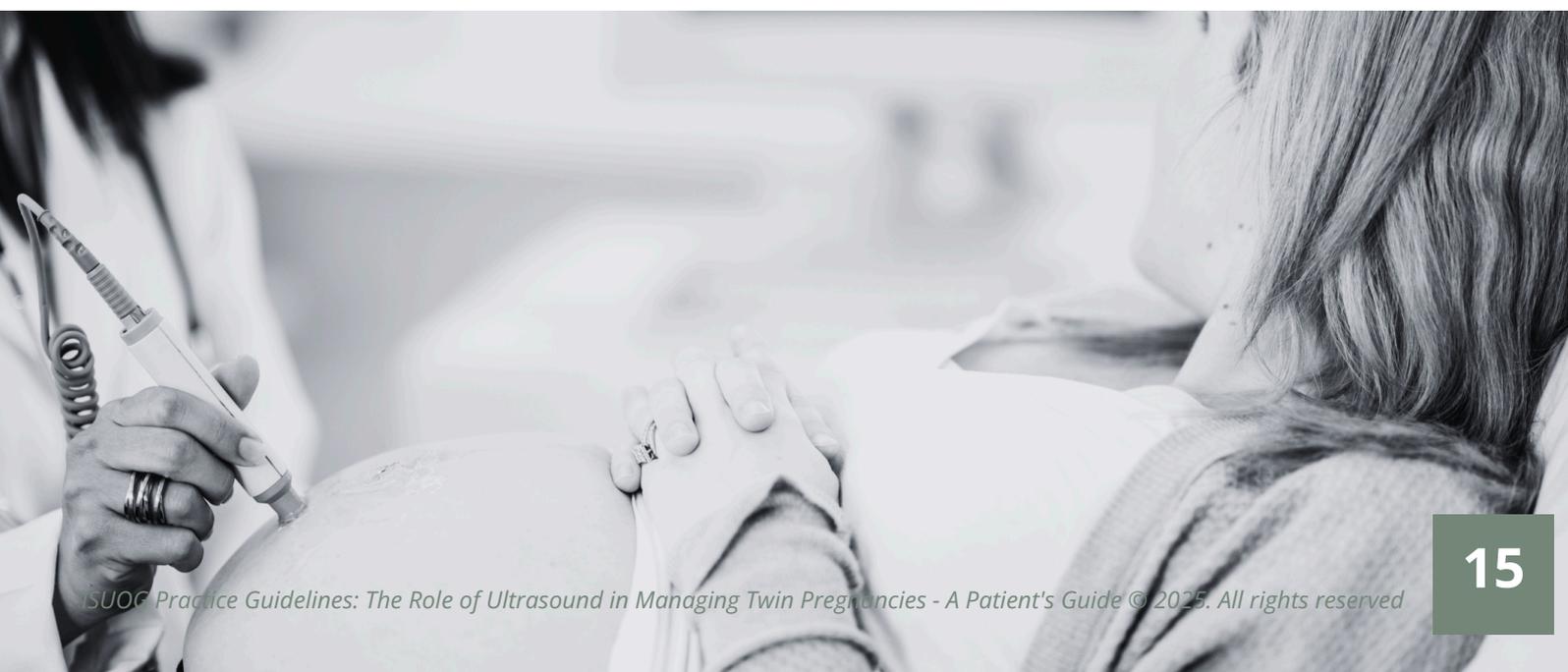
- Twin pregnancies should be checked for major structural abnormalities at the first-trimester scan (between 11 and 13 weeks).
- A routine second-trimester anomaly scan should be carried out at around 20 weeks (between 18 and 22 weeks) to further check for fetal anomalies.
- Fetal cardiac assessment should be performed for monozygotic twins, depending on the available resources and expertise.

Why is this done?

The purpose of these scans is to identify any major structural issues early on. Twins are at higher risk for abnormalities compared to singleton pregnancies, and the risk is even greater for monozygotic twins. Early detection can help parents prepare for any potential complications and make necessary arrangements for care or treatment, including the possibility of an intervention during pregnancy or a planned transfer to a specialist center.

What does the evidence say?

Research shows that the rate of fetal anomalies is higher in twin pregnancies than in singletons. In dizygotic (fraternal) twins, the anomaly rate is about 30% higher, while it's two to three times higher in monozygotic (identical) twins. Most fetal anomalies affect only one twin, and certain issues, like brain or heart abnormalities, may not be visible until later in the pregnancy. In monozygotic twin pregnancies, fetal cardiac defects are more common than in singleton or dichorionic twin pregnancies. Therefore, thorough screening is recommended to detect these abnormalities early.



MANAGING TWIN PREGNANCY DISCORDANT FOR FETAL ANOMALY

Managing twin pregnancies with different birth defects

Summary

When one twin is diagnosed with a serious problem, such as a major structural abnormality, the pregnancy should be referred to a specialised fetal medicine center. This allows for a thorough assessment to determine the best course of action. The main choices involve either managing the pregnancy without intervention or considering the termination of the affected twin. The decision depends on factors like the severity of the condition and how it affects the other twin, as well as the parents' choice and the legal regulations

What is the recommendation?

- Twin pregnancies where one baby has a serious problem should be referred to a fetal medicine center for expert management.
- This referral allows for a detailed assessment, which may include further ultrasound scans, genetic testing, and discussion of the best approach.
- If one twin is diagnosed with a fatal or life-threatening condition, doctors will discuss options. In dichorionic (separate placentas) pregnancies, conservative management (no intervention during pregnancy) may be suggested, while in monochorionic (shared placenta) pregnancies, intervention may be needed to protect the healthy twin from complications caused by the demise of the affected twin.

Why is this done?

The recommendation ensures that the complex situation of one twin being affected by a serious condition is managed appropriately. Without specialist care, there may be risks to both twins, particularly in pregnancies where they share a placenta. In these cases, the healthy twin may be at risk of complications such as death due to the other twin's condition. Specialist care helps provide the right decision-making and intervention for the best possible outcome for both babies, whether that means managing the pregnancy or considering selective termination.

What does the evidence say?

Approximately 4% of twin pregnancies involve one twin with a significant anomaly. The risk is higher in monochorionic twins (those that share a placenta), where conditions affecting one twin are more common. Studies have shown that in cases of discordant anomalies, both expectant management (waiting to see how things develop) and selective termination of the affected twin (stopping the heart beats of the affected twin to protect the healthy one) can lead to similar live birth rates. However, there's no one-size-fits-all approach, and each case needs to be managed individually, with expert advice based on the specific circumstances.

If you are faced with this situation, please check our resources section for support resources



SELECTIVE FETICIDE IN TWIN PREGNANCY

Termination of one twin in a pregnancy

Summary

Selective termination is a difficult and emotional decision that may be needed when one twin is diagnosed with a serious health condition. The procedure involves ending the pregnancy of the affected twin. In order to protect the healthy twin from potential complications, like premature birth or fetal demise, the timing of this procedure is important, with earlier procedures linked to fewer risks. It's a personal decision, and it's crucial that parents have detailed discussions with medical professionals to understand all their options and the potential impact on both twins.

What is the recommendation?

- In twin pregnancies where the twins have separate placentas (dichorionic), selective termination (feticide) is usually done by injecting a medication, such as potassium chloride or lignocaine, into the affected twin. This is generally done in the first trimester, if possible.
- If the condition is diagnosed later, in the second trimester, the parents may choose to have the procedure later in the pregnancy in order to decrease the chance of prematurity to the other baby, depending on local laws and personal choice.
- In twin pregnancies where the twins share a placenta (monochorionic), the procedure is more complex. It involves blocking the blood flow to the affected twin, using methods like cord occlusion, laser therapy, or radiofrequency surgery. This helps protect the healthy twin.

Why is this done?

This procedure is done when one twin is diagnosed with a serious health condition that cannot be treated. The goal is to protect the healthy twin from complications, such as premature birth or fetal demise. Early termination is preferred because it lowers the risks for the surviving twin, such as miscarriage or preterm birth. Parents should discuss their options with a specialist to make the best decision for their situation.

What does the evidence say?

Studies show that selective termination in the first trimester carries lower risks of miscarriage and premature birth for twins with separate placentas. Early procedures are linked to a miscarriage risk of just 1%, compared to 8% when done later. If one twin shares a placenta with the other, the procedure carries a higher risk, but most healthy twins survive. However, there is some risk of complications, including preterm birth. In these cases, fetal brain MRI might be recommended to assess the health of the surviving twin. Ultimately, the decision should be made with care and professional guidance to ensure the best outcome for both babies and the parents.

If you are faced with this situation, please check our resources section for support resources

SCREENING FOR THE CHANCE OF PRETERM (PREMATURE) BIRTH IN TWIN PREGNANCY

Checking for the risk of early birth in twin pregnancies

Summary

In twin pregnancies, measuring the length of the cervix (neck of the womb) can help predict the risk of preterm birth (birth before 37 weeks). If the cervix is short, there's a higher chance of delivering early. Cervical length is best measured with an ultrasound, ideally at the anatomy scan and again if there are extra risk factors (such as a previous pregnancy resulting in a premature birth). If a twin pregnancy has a short cervix (less than 25 mm), doctors may consider treatments like progesterone or a procedure called cerclage (a stitch to help keep the cervix closed). However, not all treatments work for everyone, and they should be considered carefully depending on the circumstances of each pregnancy.

What is the recommendation?

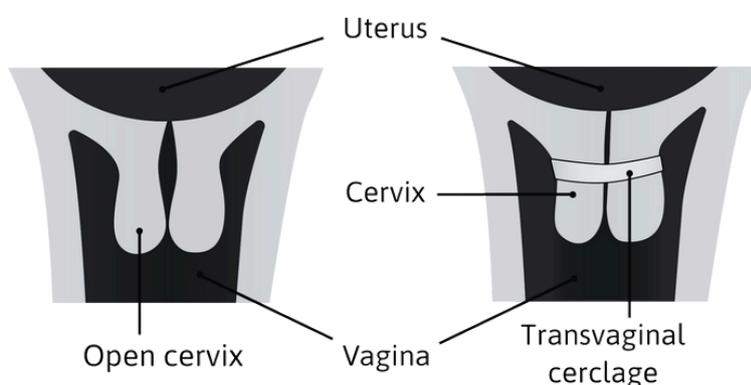
- Cervical length should be measured with an ultrasound at the anatomy scan and again before 24 weeks if there are additional risk factors.
- A cervical length of less than 25 mm between 18 and 24 weeks indicates an increased risk of preterm birth.
- Routine use of progesterone is not recommended to prevent preterm birth in all twin pregnancies.
- If the cervix is shorter than 25 mm, vaginal progesterone may be considered to help prevent preterm birth.
- If the cervix is already dilated before 24 weeks, treatments like cerclage (stitch), antibiotics, and medicines to prevent labor may be considered.
- If the cervix is 15 mm or shorter before 24 weeks, cervical cerclage (a stitch in the cervix) may be considered to help prevent early birth.

Why is this done?

The goal of monitoring cervical length and using specific treatments is to reduce the risk of preterm birth, which is more common in twin pregnancies. Preterm birth can lead to serious health issues for the babies, so doctors aim to delay delivery if possible. Shortening of the cervix signals that labor might start early, and early interventions may help prevent this. However, not all treatments are effective for every twin pregnancy, so they must be considered based on the individual situation.

What does the evidence say?

Studies show that measuring cervical length is a helpful way to predict the risk of preterm birth in twin pregnancies, especially when the cervix measures less than 25 mm. This measurement is more accurate if taken in the second trimester. While progesterone or cerclage (cervical stitch) might help in some cases, they don't work for every pregnancy. For example, progesterone has been shown to reduce the chance of premature birth in pregnancies with a short cervix, but it's not effective for all twins. Likewise, cerclage may help some people, but it's not a guaranteed solution. The key is that these treatments should be carefully considered based on each individual pregnancy, with the aim of reducing the risk of premature birth.



SCREENING, DIAGNOSIS AND MANAGEMENT OF FETAL GROWTH RESTRICTION (FGR)

Monitoring, diagnosing, and managing growth issues in twins

Summary

Fetal growth restriction (FGR) is a serious concern in twin pregnancies, where one twin grows slower than the other. This condition is called selective fetal growth restriction (sFGR). Detecting and managing sFGR involves checking the babies' growth regularly using ultrasound and meeting specific criteria. How sFGR is treated depends on whether the twins share a placenta (monochorionic) or have separate placentas (dichorionic). It's crucial to understand what sFGR is, how it's diagnosed, and how it should be managed to ensure both babies have the best chance for a healthy outcome.



What is the recommendation?

Screening: All twin pregnancies should have regular ultrasound scans to check the babies' growth. Key measurements, such as the size of the head, abdomen, and leg, are used to estimate the babies' weight. If one twin's weight is below the 10th percentile (outside of the normal range) or if the difference in weight between the twins is 25% or more, the pregnancy should be referred to a specialist fetal medicine centre for further evaluation and care.

Diagnostic criteria for sFGR:

- Monochorionic (MC) pregnancies: sFGR is diagnosed if two or more of the following apply: the smaller twin has a weight below the 10th percentile, a smaller abdomen (tummy) size, the weight difference between the twins is 25% or more, or the blood flow in the smaller twin's umbilical cord is abnormal.
- Dichorionic (DC) pregnancies: Two or more of the following criteria need to be met: the smaller twin's weight is below the 10th percentile, there's a 25% or more weight difference between the twins, or the blood flow in the smaller twin's umbilical cord is abnormal.



If you are faced with this situation, please check our resources section for support resources

sFGR classification in MC pregnancies: This is based on the blood flow in the umbilical cord of the smaller twin:

- **Type I:** The blood flow is normal, and there's a high chance of survival for both twins.
- **Type II:** The blood flow is either absent or reversed, which puts the smaller twin at risk for death and preterm birth.
- **Type III:** The blood flow is irregular, increasing the risk of sudden death for the smaller twin and potential demise or brain damage for the larger twin.

Management:

- **For DC pregnancies with sFGR:** Care is similar to singleton pregnancies. Regular monitoring, including Doppler tests to check blood flow, and biophysical profiles (a type of ultrasound to check the babies' health) should be done. The timing of delivery should be carefully considered based on the risks and benefits.

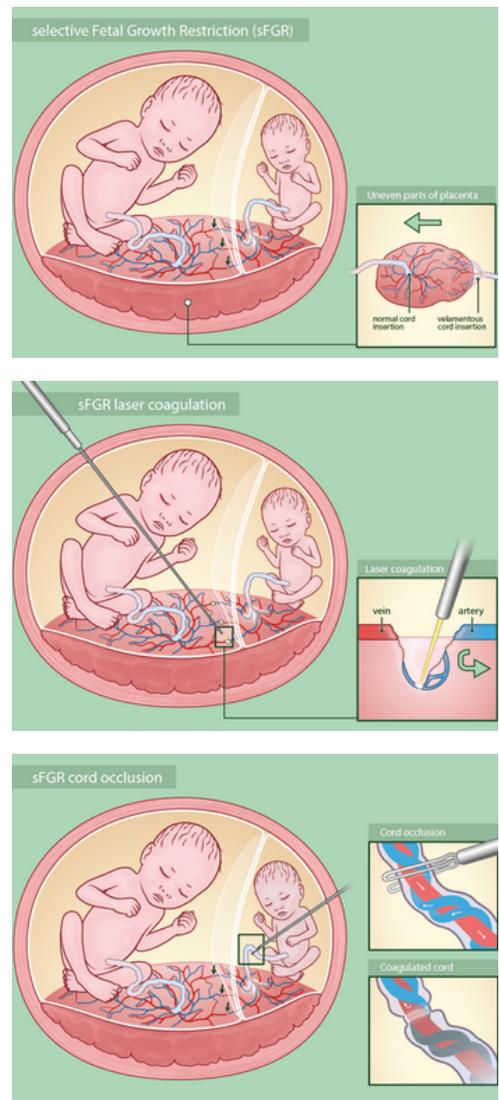
For MC pregnancies with sFGR: Closer monitoring is needed, including Doppler tests at least once a week. If the risk of the smaller twin dying before 26 weeks is high, the doctors may recommend selective termination (removing the smaller twin) to protect the larger twin or Laser surgery to separate the babies' circulations.

Why is this done?

FGR (both babies are small) and sFGR (only one twin is small) are linked to significant risks, such as premature birth, stillbirth, and possible brain damage. Identifying and managing sFGR early in a twin pregnancy can improve the chances of both twins surviving and being healthy. Regular monitoring helps doctors decide when to intervene, aiming to avoid the death of a twin and reduce the chances of long-term health issues. For monochorionic twins, where they share one placenta, the risks are higher, so it's important to follow a specific plan for their care.

What does the evidence say?

- **Diagnostic criteria:** Research shows that a weight difference of 25% or more between the twins is linked to higher risks, such as early birth or even the loss of one twin. A difference of 20% is also a key marker for identifying pregnancies that might be at risk.
- **Differences between MC and DC pregnancies:** In MC pregnancies, the growth restriction often happens because the twins share one placenta, which can cause more serious complications. In DC pregnancies, the risks are similar to those in singleton pregnancies, and the management of growth restriction is usually similar to a single baby.
- **Gratacos classification:** This system helps predict outcomes for MC pregnancies based on blood flow in the smaller twin's umbilical cord. For example, Type I is linked to a high chance of both twins surviving, while Types II and III are linked to more serious risks, including the possibility of death for the smaller twin and long-term health problems for the larger twin.



MANAGING THE SURVIVING TWIN AFTER DEMISE OF ITS COTWIN

Caring for the surviving twin after the loss of the other twin

Summary

When one twin dies in a twin pregnancy, it can be very challenging for the surviving twin, and special care is needed. This situation is known as a single intrauterine death (SIUD). The surviving twin may experience complications such as preterm birth, brain injury, or developmental delays. The management of the surviving twin depends on several factors, including the stage of pregnancy and whether the twins share the same placenta (monochorionic) or not (dichorionic). It's important to closely monitor the surviving twin and make decisions with expert medical support to provide the best possible outcome.

What is the recommendation?

- **Referral to specialised care:** After the death of one twin, the individual should be referred to a tertiary-level center with expertise in managing these situations.
- **Monitoring the surviving twin:** Ultrasound and Doppler tests should be done to check the health of the surviving twin, especially looking for signs of anemia or brain injury. The parents might be offered an MRI of the brain of the surviving twin.
- **Timing of delivery:** In most cases, continuing the pregnancy until the surviving twin is more mature is recommended. If the pregnancy is close to term, delivery may be recommended sooner. Regular monitoring is necessary to assess the wellbeing of the surviving twin, and delivery should be considered between 34 and 36 weeks, especially if the twin is at risk.
- **Counseling:** Parents or caregivers should be fully informed about the risks to the surviving twin, including potential neurological or other long-term health issues. The healthcare team will provide clear guidance on the possible outcomes.

Why is this done?

When one twin passes away, it can cause complications for the surviving twin, including loss of blood and a drop in the oxygen level, which may affect the brain or other organs. Early identification and careful monitoring of the surviving twin help to manage risks, such as brain damage or preterm birth. The goal is to protect the surviving twin as much as possible while also offering compassionate care and support to the parents or caregivers during this difficult time.

What does the evidence say?

Studies show that when one twin dies, the surviving twin may experience serious complications. These include preterm birth, brain injury, or developmental delays. The risks are higher in pregnancies where both twins share the same placenta (monochorionic), with a greater chance of the surviving twin facing these challenges. Close monitoring and expert care can improve the chances of a better outcome, but it is important to be aware that some neurological damage may already have occurred by the time the loss is detected. Decisions about delivery and ongoing care should be made carefully, based on the gestational age and the health of the surviving twin.

If you are faced with this situation, please check our resources section for support resources





COMPLICATIONS UNIQUE TO MONOCHORIONIC TWIN PREGNANCY

Complications specific to twins sharing a placenta

Complications that can happen only in pregnancies where the twins share the same placenta (monochorionic pregnancies) include conditions like Twin-to-Twin Transfusion Syndrome (TTTS), Twin Anemia-Polycythemia Sequence (TAPS), the Twin Reversed Arterial Perfusion (TRAP) sequence, monoamniotic pregnancies where the twins share a single amniotic sac, and conjoined twins

SCREENING, DIAGNOSIS, STAGING, AND MANAGEMENT OF TTTS

Summary:

Twin-to-twin transfusion syndrome (TTTS) is a serious condition that occurs when twins who share a placenta experience an imbalance in blood flow, with one twin receiving too much blood and the other too little. This can lead to severe complications, including the death of one or both twins. Early screening and diagnosis are essential to improving outcomes, and timely interventions like laser surgery can help balance blood flow and increase the chances of survival for both twins.

What is the recommendation?

- **Screening** for TTTS should begin at **16 weeks** of pregnancy, with ultrasound scans performed every 2 weeks to monitor for signs of TTTS. Doctors will check the levels of amniotic fluid around each twin, as differences in fluid levels can indicate TTTS.
- **Diagnosis** of TTTS is confirmed when one twin has too little amniotic fluid (oligohydramnios) and the other has too much (polyhydramnios). This indicates an imbalance in blood flow.
- **Staging** TTTS helps doctors determine the severity of the condition, using the **Quintero classification** system. The stages range from **Stage I (mild)** to **Stage V (severe)**:
- **Stage I:** Mild signs of TTTS.
- **Stage II:** Moderate imbalance.
- **Stage III to IV:** Severe cases, with risks of complications.
- **Stage V:** One or both twins have died.

If TTTS is detected at **Stage II, III or IV**, laser surgery is recommended to correct the blood flow imbalance. This surgery works by sealing off the shared blood vessels in the placenta.

- In **Stage I**, regular monitoring may be sufficient, though surgery may be needed if the condition worsens.
- For **Stage III or higher**, prompt intervention is crucial to improve the chances of both twins surviving.

Why is this done?

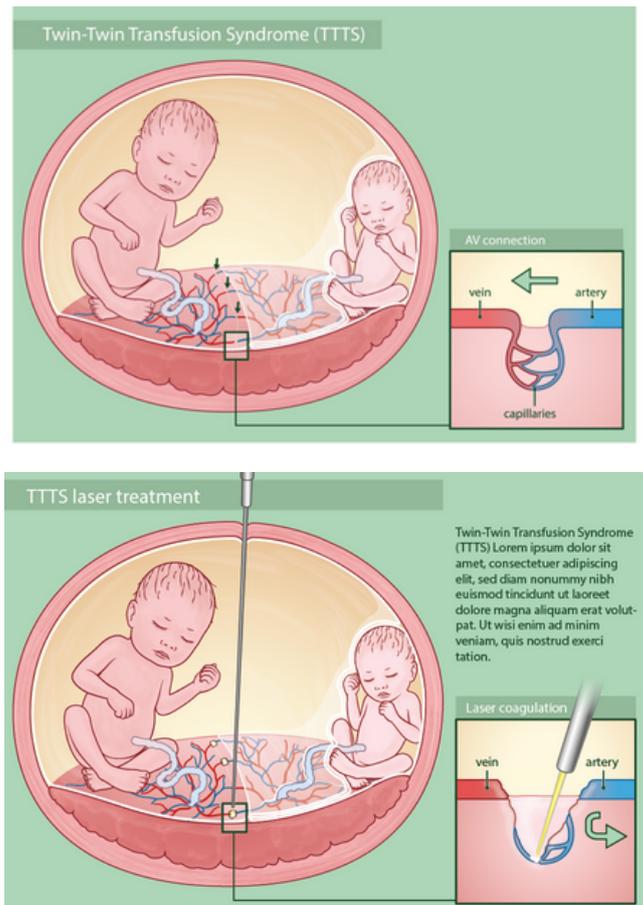
The goal of early screening and intervention is to give both twins the best chance of survival and reduce the risk of long-term health issues. Without treatment, TTTS can lead to death or severe complications for the twins. Early diagnosis and treatment, such as laser surgery, can significantly improve survival rates. In fact, 60-70% of twins treated with laser surgery survive, with 80-90% survival for at least one twin.

What does the evidence say?

Regular ultrasound scans starting at 16 weeks are key to detecting TTTS early, which helps ensure timely intervention. The Quintero staging system is commonly used to assess the severity of TTTS. While it's not perfect, it's a valuable tool for making treatment decisions.

Laser surgery is the recommended treatment for TTTS at Stage II or higher, and studies show it improves survival rates when done before 26 weeks of pregnancy. After surgery, follow-up scans are essential to monitor the twins' progress. Weekly scans are recommended for the first two weeks, with follow-up scans every two weeks after that.

If you are faced with this situation, please check our resources section for support resources



SCREENING, DIAGNOSIS, AND MANAGEMENT OF TWIN ANEMIA-POLYCYTHEMIA SEQUENCE (TAPS)

Summary

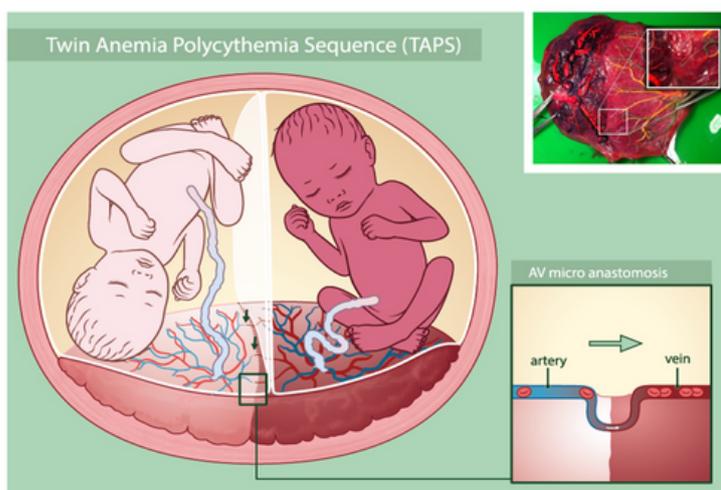
Twin Anemia-Polycythemia Sequence (TAPS) is a rare condition that can affect monochorionic twin pregnancies, where one twin (the donor) becomes anemic (thin blood), and the other (the recipient) develops polycythemia (thick blood). This can lead to a range of outcomes, from healthy twins to serious complications. Early diagnosis and careful management are essential for improving outcomes. The condition is often diagnosed using Doppler ultrasound to assess blood flow differences between the twins. While the best treatment approach is still under investigation, timely monitoring and appropriate care are crucial for minimising risks.

What is the recommendation?•

- **Diagnosis:** TAPS is primarily diagnosed prenatally by observing differences in blood flow in the twins' middle cerebral arteries (MCA; blood flow in the brain). The donor twin typically shows signs of anemia, with a higher peak systolic velocity (PSV) in the MCA, while the recipient twin shows signs of polycythemia, with a lower PSV.
- Diagnostic criteria:
 - **MCA-PSV** in the donor twin should be greater than 1.5 multiples of the median (MoM), suggesting anemia.
 - **MCA-PSV** in the recipient twin should be less than 1.0 MoM, indicating polycythemia.
- Other ultrasound findings that may help with diagnosis include differences in the placental echogenicity and thickness, and in some cases, a 'starry-sky' appearance in the liver of the recipient twin.
- **Management:** Treatment options for TAPS depend on the severity and gestational age at diagnosis, and they should be tailored to the individual case. Options include conservative management, early delivery, laser surgery, blood transfusions, or a combination of these treatments. The decision should be made in consultation with medical professionals and based on the risks and benefits for both twins.

Why is this done?

TAPS can lead to significant complications for both twins, including severe anemia, polycythemia, and long-term developmental issues. Early detection through monitoring blood flow differences can help prevent the worst outcomes, including the death of one or both twins. While the long-term effects of TAPS are still being studied, there is a known risk of neurodevelopmental delays, particularly in the donor twin, and brain imaging and neurodevelopmental assessments are recommended. By carefully managing TAPS, healthcare providers can improve the chances of delivering healthy twins.



***If you are faced with this situation,
please check our resources section for
support resources***

What does the evidence say?

Evidence shows that Doppler ultrasound is effective in detecting TAPS before birth, although it is not without limitations. Studies suggest that measuring differences in blood flow between the twins (using specific criteria) helps identify most cases of TAPS. While these criteria are useful, they are not perfect, and ongoing research aims to refine diagnostic practices. Recent findings indicate that early detection of TAPS through Doppler ultrasound can reduce risks and improve outcomes for both twins. However, further research is needed to determine the most effective treatment options.

TWIN REVERSED ARTERIAL PERFUSION (TRAP) SEQUENCE

Summary

TRAP sequence is a rare and serious condition that affects some monochorionic twin pregnancies. In this condition, one twin (the "pump" twin) has a normal heart and helps pump blood to the other twin (the "acardiac" twin), who has little to no functioning heart. This unusual blood flow happens through abnormal blood vessels, which can cause the pump twin's heart to become overworked, leading to heart failure. If untreated, the pump twin may have a higher risk of dying. However, with careful monitoring and early treatment, the survival chances of the pump twin can improve. Treatment options include minimally invasive techniques to reduce the stress on the pump twin's heart, and these treatments can help save the pump twin's life if applied early in pregnancy.

What is the recommendation?

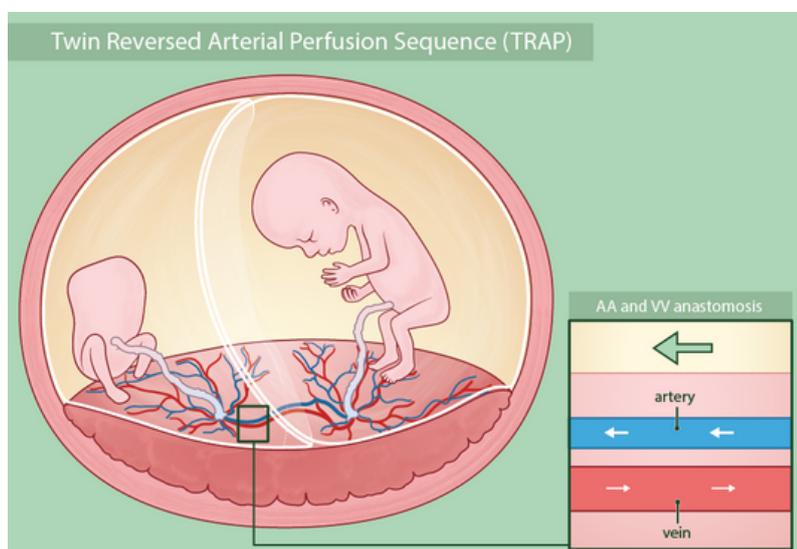
- **Diagnosis:** TRAP sequence is usually found through ultrasound when one twin is supplying blood to the other through abnormal blood vessels.
- **Treatment:** To help the pump twin survive, treatments like Laser surgery, stopping the blood flow in the abnormal (acardiac) twin, cord occlusion, to block the abnormal blood flow can be used. These are minimally invasive procedures designed to reduce strain on the pump twin's heart.
- **When to treat:** Treatment is needed if the pump twin shows signs of stress or other complications, like increased fluid around the babies (polyhydramnios). Early intervention, ideally before 16 weeks, has been shown to improve the chances of survival for the pump twin. Close monitoring with ultrasound is essential.
- **Follow-up:** Regular check-ups with a specialist are important. While monitoring is helpful, it doesn't always prevent sudden problems, so early intervention is key.

Why is this done?

The goal of treatment is to protect the pump twin from heart failure and other serious problems caused by the abnormal blood flow. By using these minimally invasive methods, doctors can stop or reduce the blood flow to the acardiac twin, which helps ease the strain on the pump twin's heart. Early treatment gives the pump twin the best chance of survival.

What does the evidence say?

Treatment for pump twins has a high success rate, with about 80% surviving when treated properly. The chances of survival are better when the condition is treated early, especially before 16 weeks, with most evidence supporting treatment between 12 and 14 weeks. However, more research is needed to determine the best timing. The best time for birth after treatment isn't fully clear, doctors adjust their approach based on the individual situation. The TRAP Intervention Study is currently looking at early versus later treatment to find the timing of intervention/surgery that works best.



MONOAMNIOTIC TWIN PREGNANCY

Summary

Monochorionic monoamniotic (MCMA) twin pregnancies are rare, making up about 5% of twin pregnancies where the babies share the same placenta. These pregnancies are more complicated because the babies also share the same amniotic sac, which can lead to higher risks. One common issue is the entanglement of the umbilical cords, which almost always happens in MCMA pregnancies. To ensure the best possible outcome for both babies, these pregnancies require special care and close monitoring. It's generally recommended that delivery occurs by Cesarean section between 32 and 34 weeks of pregnancy.



What is the recommendation?

- **Umbilical cord entanglement:** Nearly all MCMA twins have cord entanglement, which can increase the risk of complications. Regular check-ups with ultrasound and Doppler studies are important to monitor this.
- **Timing of delivery:** Doctors usually recommend a Cesarean delivery between 32 and 34 weeks of pregnancy to reduce the risk of serious problems. The exact timing should be carefully decided by the medical team based on each pregnancy.
- **Managing complications:** If complications like serious health issues with one twin occur, a procedure may be done to protect the healthier twin.

Why is this done?

MCMA pregnancies come with higher risks, such as the possibility of one or both babies dying before birth or being born prematurely. The chance of these risks increases after 32 weeks, which is why doctors often suggest delivering early by Cesarean section. The goal is to give both babies the best chance at a healthy birth and reduce the risks they may face.

What does the evidence say?

Studies show that MCMA pregnancies can be challenging, but advances in care have improved outcomes. In the past, nearly 50% of MCMA pregnancies ended in loss before 16 weeks, but newer studies show that the loss rate is now about 10–15%. After 32 weeks of pregnancy, the chances of survival for both babies improve significantly, although complications like twin-to-twin transfusion syndrome (TTTS) or brain injury may still happen. Research also shows that inpatient care has a slightly lower risk of complications than outpatient care, but the difference isn't large enough to say one is definitely better. Although nearly all MCMA twins have umbilical cord entanglement, this alone doesn't usually cause serious problems if the babies are healthy. The best approach is to manage these pregnancies in specialised centers with experienced doctors. Regular monitoring and timely decisions about delivery are key to giving both babies the best chance. Parents should work closely with their healthcare team to understand their options and make the best choices for their situation.

CONJOINED TWINS

Summary

Conjoined twins are an extremely rare type of twin pregnancy, occurring in about 1 in 100,000 pregnancies. These twins are always monochorionic monoamniotic (MCMA), meaning they share the same amniotic sac. Diagnosis is typically made through ultrasound during the first trimester, where the twins' bodies appear closely connected. Although some parents may choose to end the pregnancy, others face difficult decisions and increased risks. Only about 25% of pregnancies involving conjoined twins result in babies who survive to be discharged from the hospital, and many survivors experience serious health complications. Delivery by Cesarean section is strongly recommended, and the pregnancy should be managed at a specialized medical center with expert care.

What is the recommendation?

- Conjoined twins should be diagnosed early with ultrasound in the first trimester.
- A Cesarean section is recommended for delivery due to the high risks of vaginal birth.
- Ongoing pregnancies should be managed at a fetal medicine center with expert ultrasound and multidisciplinary counseling.
- Delivery should occur at a hospital experienced in managing conjoined twins, both medically and surgically, after birth.

Why is this done?

Conjoined twins face serious health challenges both before and after birth. Their bodies are physically attached, often sharing organs, which can complicate delivery and lead to high rates of health issues after birth. A Cesarean section helps reduce risks such as obstructed labor and uterine rupture. Early diagnosis and expert care are critical to preparing for potential complications and ensuring the best possible care for both the twins and their parents.

What does the evidence say?

Research shows that conjoined twins are typically diagnosed early through ultrasound. While some parents choose to terminate the pregnancy, about 25% of those who continue have babies who survive to be discharged from the hospital. However, most survivors face significant health complications. Cesarean section is the standard method of delivery, and the pregnancy should be managed at a specialised center. Due to the high risks of postnatal mortality and complications, care must be planned with expert help.



GLOSSARY

MCDA

Monochorionic Diamniotic

A type of twin pregnancy where the twins share one placenta (monochorionic) but have separate amniotic sacs (diamniotic). This is common in identical (monozygotic) twins.

MCMA

Monochorionic Monoamniotic

A type of twin pregnancy where the twins share both a placenta (monochorionic) and an amniotic sac (monoamniotic). This is a rarer and higher-risk form of identical (monozygotic) twins, requiring more frequent monitoring.

DCDA

Dichorionic Diamniotic

A type of twin pregnancy where each twin has its own placenta (dichorionic) and separate amniotic sac (diamniotic). This is the most common type of twin pregnancy, typically seen in fraternal (dizygotic) twins. These twins can also be monozygotic (identical)

Acardiac twin

A twin that is underdeveloped or lacks a heart due to a condition called "twin reversed arterial perfusion" (TRAP) sequence. This occurs in monochorionic pregnancies when one twin (the "pump twin") provides blood to the acardiac twin through abnormal blood vessel connections in the placenta. The acardiac twin may have incomplete or no heart development but is typically dependent on the pump twin for circulation. (see pump twin)

Amniocentesis

A test where a small sample of the amniotic fluid surrounding the baby is taken to check for genetic conditions or other potential health issues. Typically done during the second trimester.

Amniotic Fluid Volume

The amount of fluid surrounding the baby in the womb. It helps protect the baby and supports its development. Both too little or too much fluid could indicate a problem.

Amniotic Sac

The protective membrane that surrounds the baby during pregnancy, filled with amniotic fluid. It provides a cushioning environment for the baby.

Anastomoses

Blood vessels that connect between the circulatory systems of twins in a shared placenta (monochorionic pregnancy). These connections can lead to conditions like Twin-to-Twin Transfusion Syndrome (TTTS) if blood flow is uneven.

Anatomy Scan

A detailed ultrasound scan done around 20 weeks of pregnancy to check for any birth defects or issues with the baby's development.

Anomaly Scan

An ultrasound scan done around 20 weeks of pregnancy to check for any birth defects or issues with the baby's development.

GLOSSARY

Biometry

The process of measuring the baby's growth, size, and development during pregnancy, including measurements like the baby's head size and limb length.

Chorionicity

Refers to whether a twin pregnancy has one placenta or two. Twins with separate placentas are called dichorionic, while twins sharing one placenta are monochorionic.

Combined Test

A screening test performed early in pregnancy (usually between 11 and 14 weeks) to assess the risk of certain conditions, including Down's syndrome, by combining a blood test and ultrasound measurement of nuchal translucency.

CRL

Crown-Rump Length

The measurement from the top of the baby's head to its bottom (rump) used in early pregnancy to estimate how far along the pregnancy is.

CVS

Chorionic Villus Sampling

A test that takes a small sample of tissue from the placenta to check for genetic conditions like Down syndrome. Typically done between 11 and 14 weeks of pregnancy.

Dichorionic

A type of twin pregnancy where each baby has its own placenta. This is generally considered lower risk compared to pregnancies where the babies share one placenta.

Dizygotic

A type of twin pregnancy where two separate eggs are fertilized by two separate sperm. These twins are also called fraternal twins.

Donor twin

The twin in a monochorionic (shared placenta) pregnancy that receives too little blood flow due to abnormal blood vessel connections in the placenta.

DVP

Deepest Vertical Pocket

A measurement of the amount of amniotic fluid around the baby. This helps assess the baby's health and development during ultrasound scans.

EFW

Estimated Fetal Weight

An estimate of how much the baby weighs, calculated from ultrasound measurements. This is important for tracking the baby's growth.

FGR

Fetal Growth Restriction

A condition where the baby is not growing as expected. It could indicate potential issues with the placenta or other pregnancy complications.

Fetal Doppler

An ultrasound test used to measure the blood flow in the baby's umbilical cord and brain, ensuring the baby is getting enough oxygen and nutrients.

Gestational Age

The amount of time the pregnancy has lasted, usually measured from the first day of the last menstrual period. It's expressed in weeks and days.

Growth Discordance

When one twin grows more than the other in a twin pregnancy. This can be a sign of problems with the placental blood flow.

Inter-Twin Membrane

The membrane that separates the two babies in a multiple pregnancy. It can help determine chorionicity and whether the twins share a placenta.

Lambda Sign

An ultrasound sign that indicates a dichorionic pregnancy, where the twins have separate placentas. It appears as a protrusion of the chorion (outer membrane) between the two sacs. (*See T Sign*)

MCA

Middle Cerebral Artery

An artery in the brain. In some twin pregnancies, doctors monitor blood flow through this artery to check for conditions such as Twin Anaemia Polycythaemia Sequence (TAPS).

MCA PSV

Middle Cerebral Artery Peak Systolic Velocity

A measurement of the blood flow speed in the middle cerebral artery. It helps detect problems like TAPS in monochorionic twin pregnancies.

Monochorionic

A type of twin pregnancy where both babies share one placenta. This kind of pregnancy requires more frequent monitoring to check for potential complications like TTTS (Twin-to-Twin Transfusion Syndrome) or TAPS.

Monozygotic

A type of twin pregnancy where one egg is fertilized by one sperm and then splits to form two embryos. These twins are identical and share the same genetic material. These twins can be monochorionic or dichorionic.

MRI

Magnetic Resonance Imaging

A medical imaging technique that uses strong magnetic fields and radio waves to create detailed images of the inside of the body. MRI is often used to examine organs and tissues and is particularly helpful for visualizing the brain, spinal cord, muscles, and joints. In pregnancy, it may be used to assess the development of the babies, the placenta, or any complications that might arise, especially when ultrasound is not sufficient.

NIPT

Non-Invasive Prenatal Testing

A blood test that analyses the baby's DNA to screen for genetic conditions, such as Down syndrome, early in pregnancy. It's a non-invasive method, meaning it doesn't pose any risk to the baby.

NT

Nuchal Translucency

A fluid-filled space at the back of the baby's neck that can be measured during the first trimester ultrasound. Increased thickness may indicate a higher risk of certain genetic conditions, such as Down syndrome.

Placenta

The organ that develops in the womb during pregnancy. It provides nutrients and oxygen to the baby and removes waste products from the baby's blood.

Placental Sharing

A term that refers to whether twins share one placenta (monochorionic) or have separate placentas (dichorionic). Shared placental blood flow can cause complications in monochorionic pregnancies.

Pump twin

The twin that has a fully functioning heart and circulates blood to the acardiac twin through abnormal vascular connections in the placenta. The pump twin often carries the additional burden of supporting the acardiac twin's circulation, which can lead to complications such as heart strain or failure in the pump twin. *(See Acardiac Twin)*

Recipient twin

The twin in a monochorionic pregnancy that receives an excessive amount of blood due to abnormal blood vessel connections in the shared placenta.

Routine Ultrasound

Regular ultrasound scans performed during pregnancy to monitor the health of the baby and detect any complications.

sFGR

Selective Fetal Growth Restriction

When one twin in a multiple pregnancy grows slower than the other due to uneven placental blood supply. This can require closer monitoring to ensure both babies are developing properly.

Selective Reduction

A procedure to reduce the number of babies in a multiple pregnancy, typically when there are serious health concerns, such as a high risk of complications.

Selective Feticide

The process of terminating one or more babies in a multiple pregnancy for medical reasons, often to ensure the health and safety of the remaining babies or the parent.

TAPS

Twin Anemia Polycythemia Sequence

A condition that can occur in monochorionic twin pregnancies where one twin has too few red blood cells (anemia) and the other has too many (polycythemia), caused by tiny connections in the placenta. Early detection and treatment are essential.

T Sign

An ultrasound sign that indicates a monochorionic pregnancy, where the twins share one placenta. It appears as a thin line between the two sacs. *(See lambda sign)*

TTTS

Twin-to-Twin Transfusion Syndrome

A serious condition in monochorionic twin pregnancies where one twin receives too much blood and the other receives too little through large connections in the placenta, causing fluid imbalances. Early detection and management are crucial for better outcomes.

UA

Umbilical Artery

Blood vessels in the umbilical cord that carry oxygen and nutrients from the placenta to the baby. Monitoring these helps ensure the baby is getting enough blood flow and nutrients.

UA-PI

Umbilical Artery Pulsatility Index

A measurement used to assess the blood flow in the umbilical arteries, important for understanding how well the baby is receiving oxygen and nutrients.

Ultrasound Monitoring Pathway

A recommended schedule of ultrasound scans for monitoring the health of the baby, especially in multiple pregnancies, to detect any complications early.

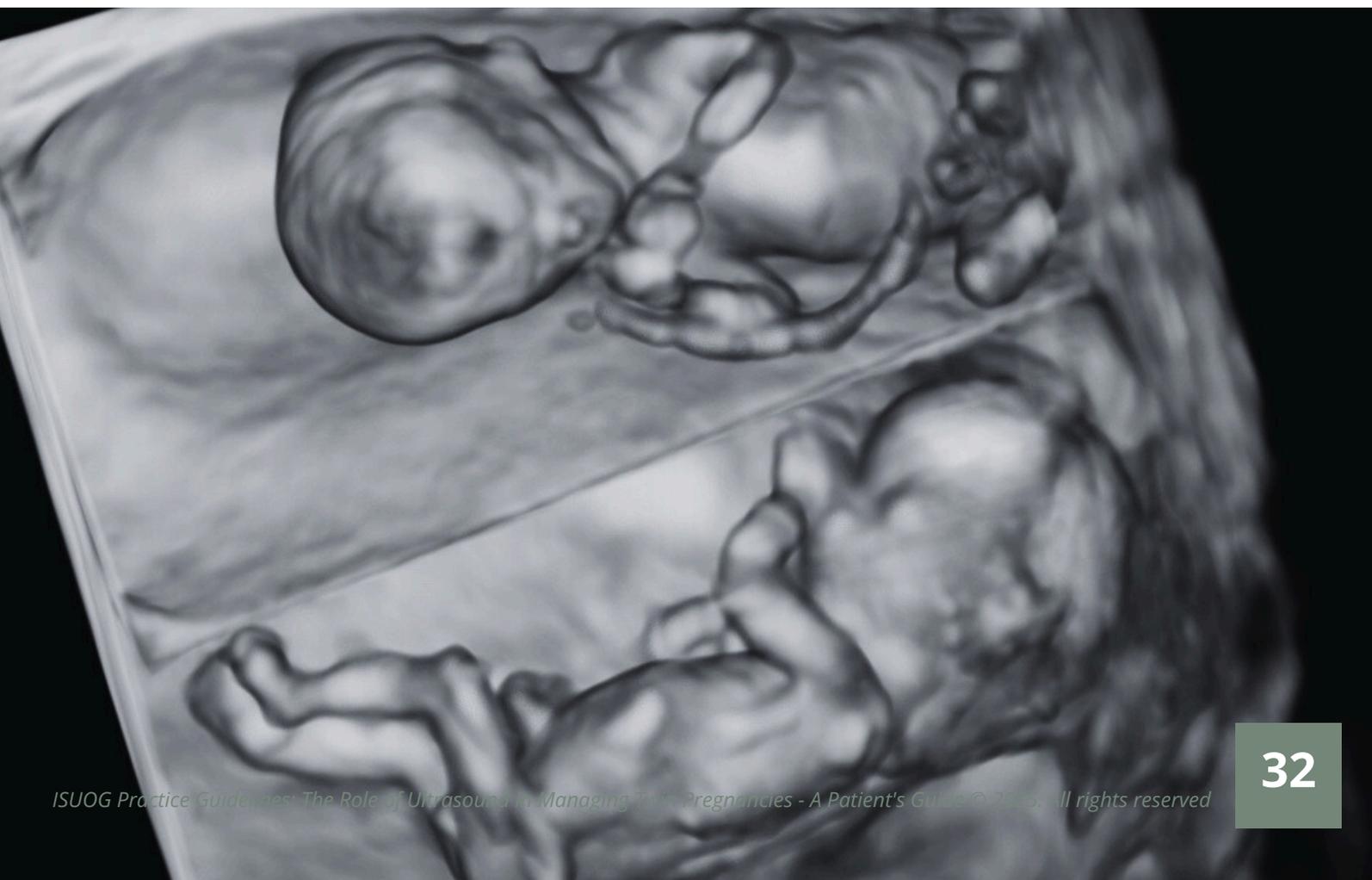
Tertiary Centre

A specialized healthcare facility that provides advanced care and treatment for high-risk pregnancies, including multiple pregnancies and complex complications.

Twin Birth Charts

A tool that provides data on the typical growth and development of twins during pregnancy. It helps healthcare providers monitor the babies' growth and adjust care if needed.

[Dichorionic Twins](#) [Monochorionic Twins](#)



FURTHER RESOURCES



TAPS Support

TAPS Support

The TAPS Support Foundation is a not-for-profit organization run entirely by volunteers. Its mission is to support research into Twin Anemia Polycythemia Sequence (TAPS) and related conditions, as well as to support patients diagnosed with these diseases. The foundation is committed to raising awareness of TAPS through various initiatives, including fundraising for research, connecting families affected by the condition, and sharing the latest findings. TAPS Support brings together a unique group of families, researchers, and healthcare providers, working as a team to bridge the gap between research and patients. By doing so, they aim to ensure that TAPS research continues, and that families receive support and connection through shared experiences. The TAPS Support Foundation is dedicated to creating a community where no family feels alone in their diagnosis, despite the rarity of TAPS. <https://www.tapssupport.com/>



GEFOG Health Foundation

The GEFOG Health Foundation, founded by Professors Asma Khalil and Simon Meagher, is a leading organization in the field of ultrasound diagnostics for obstetrics and gynecology. It serves as a multidisciplinary platform, bringing together professionals from various areas to provide them with access to the latest research, best practices, and training. The foundation is committed to enhancing the expertise of healthcare specialists through thorough research and comprehensive training programs. Its primary goal is to improve the quality of care in obstetrics, gynecology, and ultrasound diagnostics by raising standards and facilitating access to the best international practices. <https://gefoghealthfoundation.org/>



Twin & Multiple Pregnancy Academy

The Twin & Multiple Pregnancy Academy

The Twin & Multiple Pregnancy Academy, led by Asma Khalil and supported by experts in the field, offers specialized webinars and courses focused on multiple pregnancies. These educational resources have proven to be valuable tools for healthcare professionals, covering a wide range of relevant topics.

Research has shown that sharing knowledge and raising awareness are crucial in implementing best practices to reduce adverse outcomes in twin pregnancies. The academy's goal is to address this by providing accessible education through its webinars and courses.

Since its launch in May 2020, the academy has remained dedicated to expanding knowledge on twin and multiple pregnancies. The webinars cover both fundamental and specialized topics, including gestational diabetes, pre-eclampsia, aneuploidy screening, and fetal interventions for monochorionic twins. The content is designed for a wide range of healthcare professionals, including obstetricians and fetal medicine specialists. <https://gefoghealthfoundation.org/twin-multiple-pregnancy-academy/>



ISUOG (International Society of Ultrasound in Obstetrics and Gynecology)

ISUOG is a global charitable organization founded in 1991, focused on advancing ultrasound education and research in obstetrics and gynecology. It aims to improve women's health outcomes by providing high-quality education and promoting effective ultrasound practices. With members in over 140 countries, ISUOG offers educational resources, including a peer-reviewed journal, courses, and events, and works on outreach programs to improve ultrasound access in underserved regions. Its vision is to ensure that every woman has access to competent ultrasound care. <https://www.isuog.org/>

FURTHER RESOURCES



The Skye High Foundation:

The Skye High Foundation was created to support families who have lost a twin, triplet, or other multiple. One of the foundation's special efforts is the purple butterfly cot card, which families can place in their baby's incubator or cot as a way to remember their lost sibling. This card is displayed with a poster in maternity and neonatal units to help others understand the meaning of the purple butterfly. The card gives families a way to share their experience with those around them. The foundation also offers packs that can be sent to families or hospitals, and now provides memorial items to honor lost babies.

<https://www.theskyehighfoundation.com/>



Footprints Baby Loss

Footprints Baby Loss believes that everyone should be treated with respect and dignity. The organization strives to support all individuals within the twin and triplet loss community, including volunteers, employees, and families, regardless of gender, race, culture, age, disability, sexual orientation, social class, religion, or beliefs. The goal is to ensure that everyone involved with Footprints feels welcome and at ease.

The charity was founded by Sharon and Suzie, who are both bereaved parents and created the organization to offer support to others who are grieving the loss of a twin or triplet.

<https://footprintsbabyloss.org/>



The International Council of Multiple Birth Organisations (ICOMBO)

The International Council of Multiple Birth Organisations (ICOMBO) is a voluntary organization dedicated to championing the rights of multiples. The organization works to ensure that the unique needs of multiple birth infants, children, adults, and their families are understood and met.

ICOMBO has developed the Declaration of Rights and Statement of Needs of Twins and Higher Order Multiples, a key document that outlines the essential needs for promoting positive health, well-being, and educational outcomes, while fostering inclusion and ensuring freedom from discrimination. Since its founding in 1980 (formerly as COMBO), ICOMBO has united communities globally with the shared goal of supporting twins, triplets, and other multiples, as well as their families, throughout their lives. <https://icombo.org/>



Fetal Health Foundation

The Fetal Health Foundation was founded by parents who, after experiencing the life-threatening condition Twin to Twin Transfusion Syndrome (TTTS), were able to save their daughters' lives through fetal surgery. This personal journey of hope and resilience has inspired them to help other families facing fetal syndrome diagnoses. The foundation's mission is to support families, fund critical research, raise awareness, and provide leading medical information on fetal syndromes, with the goal of offering hope and saving lives.

<https://www.fetalhealthfoundation.org/>

ABOUT THE AUTHORS



Stephanie Ernst

Founder of TAPS Support
Vice-Chair ICOMBO
Parent of MonochorionicTwins
TAPS Nerd, Author and Researcher

Stephanie Ernst is an advocate for families with multiple births, especially those facing complex medical conditions. After her own experience as a parent of TAPS twins, she founded TAPS Support, a charity dedicated to continuing research and supporting families navigating the challenges of multiple births.

She is a passionate advocate for better medical guidelines and practices, working to raise awareness of the unique needs and risks faced by multiple birth families.

In addition to her work on multiple birth advocacy, Stephanie emphasizes the importance of lifelong care for these families, particularly in regard to prematurity and related conditions. She is committed to educating the public, medical professionals, and policymakers about the ongoing needs of families with multiple births and ensuring that all families have access to the specialised care and support they deserve.

As a published author and presenter, She offers her insights and experiences to both the medical and research communities, with the aim to help improve patient care and research outcomes.

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Asma Khalil is a Professor of Fetal Medicine and Lead of the Twin Pregnancy Service. She is the Obstetric Lead at the National Maternity and Perinatal Audit (NMPA). She gained her MD at the University of London in 2008.

Prof. Asma Khalil has published more than 500 peer-reviewed papers, and many published review articles and chapters. She was awarded many research prizes, both at national and international meetings. She was awarded the 2021 FIGO Women's Awards: Recognising Female Obstetricians and Gynaecologists. Her research interests include twin pregnancy, congenital infections, fetal growth restriction and hypertensive disorders in pregnancy.

She had a fellowship with the National Institute of Health and Care Excellence (NICE). She is committed to the implementation of clinical guidelines in practice. She is the Lead author of the ISUOG guideline on the role of ultrasound in twin pregnancies. She also led the guideline team developing the FIGO guideline on twin pregnancies. She was a member of the NICE Guideline Committee updating the Twin and Multiple Pregnancy guidance.

asmakhalil.co.uk / gefoghealthfoundation.org

WHY THIS DOCUMENT?



The data on pregnancy outcomes demonstrate that twins suffer from inequalities in healthcare, with worse outcomes compared to singleton pregnancies. This guidance can offer critical information to those supporting their care. It can raise awareness about the unique experiences of twins and their families, promoting understanding and inclusivity. A well-written guidance can serve as a resource for twin parents and families to connect, share experiences, and build a supportive network.

I passionately believe that every woman in the world should have access to ultrasound, delivered by a competent scan provider, providing effective diagnoses to improve women's and babies' health outcomes. This guidance could provide clarity, support, and empowerment to people navigating the joys and challenges of a twin pregnancy, making it a meaningful and rewarding endeavour. I found this experience personally fulfilling.

I have a real desire to make a difference to people and babies globally, not only those I directly care for. A thoughtfully written guideline can have a long-term positive impact. It may serve as a reference for years, helping countless individuals navigate their unique twin experiences.



The TAPS Support Foundation believes that not all twin pregnancies are the same, and complications associated with monochorionic twins significantly impact families.

This guide to the ISUOG Practice Guidelines on the role of ultrasound in twin pregnancies was created because it aligns closely with our mission to raise awareness about the unique challenges faced by multiple birth families and advocate for better care and outcomes for all twins.

This guide reflects the latest international consensus on screening in multiple pregnancy and provides parents with a clear understanding of the role of ultrasound in diagnosing and managing complications in twin pregnancies, such as Twin Anemia Polycythemia Sequence (TAPS).

It helps bridge the gap between the research community and those directly impacted by these conditions, ensuring families are informed and equipped to make decisions about their care. We believe that by supporting the use of these evidence-based guidelines, we can help create a world where all families with multiple births receive the understanding, support, and care they need.

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For further information on the guidelines, please refer to the published guideline: ISUOG Practice Guidelines: The Role of Ultrasound in Managing Twin Pregnancies.