



## **Multiple Gestation**

**The rate of twin births increased 76%  
between 1980 and 2009**

**Multifetal gestations  
are associated with  
increased risk of  
fetal and infant  
morbidity and  
mortality**

**There is an  
approximate  
fivefold increased  
risk of stillbirth**

**Sevenfold increased  
risk of neonatal  
death (R/T  
complications of  
prematurity)**

**Women with  
multifetal gestations  
are six times more  
likely to give birth  
preterm**

**13 times more likely  
to give birth before  
32 weeks of  
gestation than  
women with  
singleton gestations**

# Medical complications are more common in women with multifetal gestations

**Hyperemesis**

**HTN & Pre-eclampsia**

**Gestational diabetes**

**Anemia**

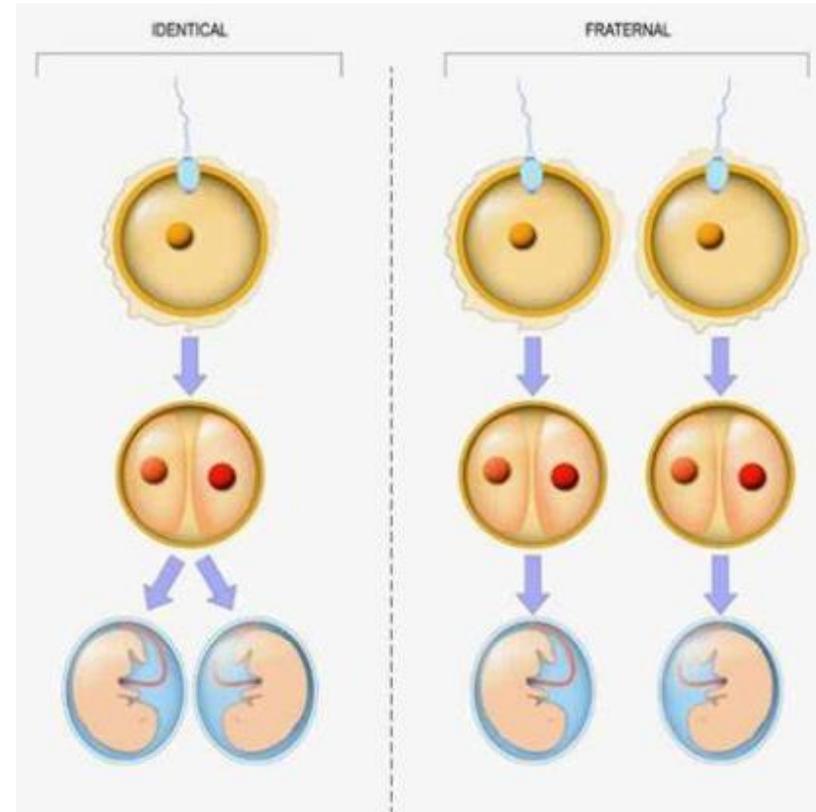
**Hemorrhage**

**Cesarean delivery**

**PPROM**

**Preterm Birth**

# How do twins happen??



# Monozygotic Twins

Identical Twins

Have exactly the same genetic information

One egg is fertilized & then splits into two

Always the same sex

One or two placentas

One or two chorions

One or two amnions

## Dizygotic Twins

Fraternal Twins

No more alike than siblings

Have unique genetic information

Two eggs are fertilized by two sperm

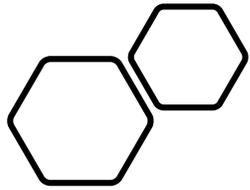
May be the same or different sex

Two implantations

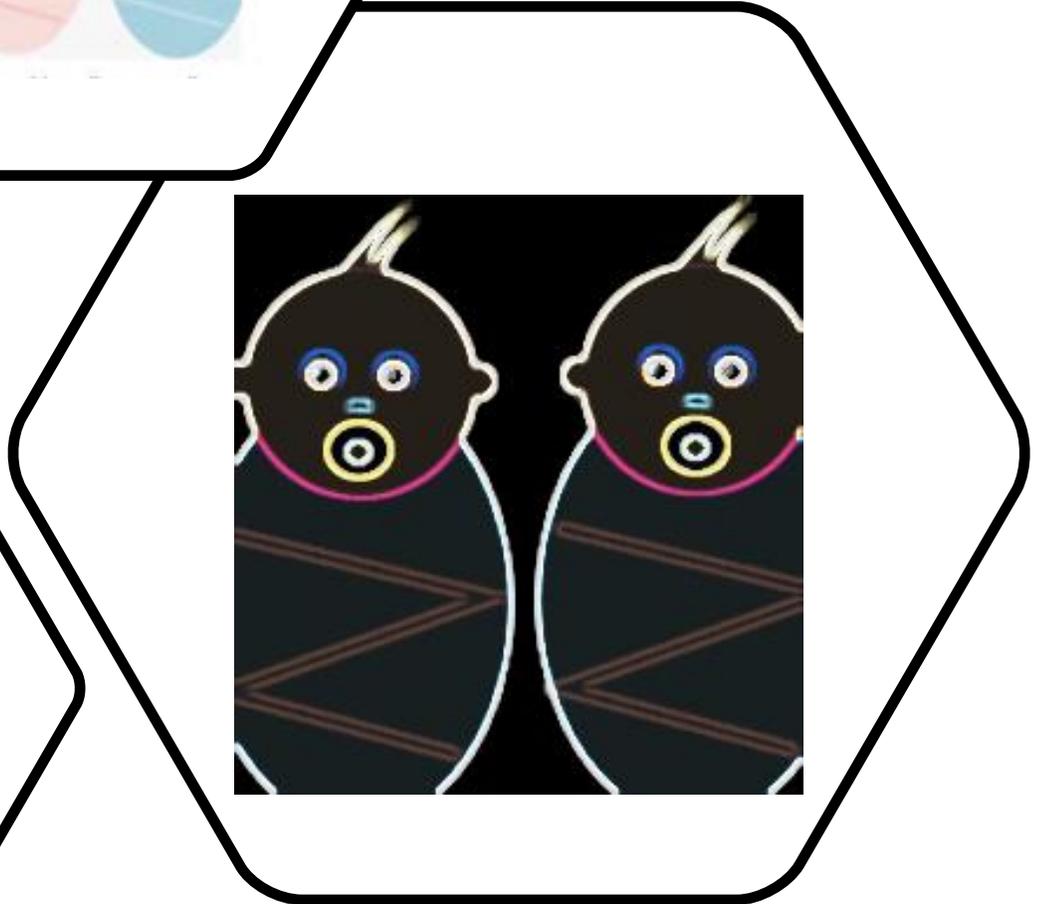
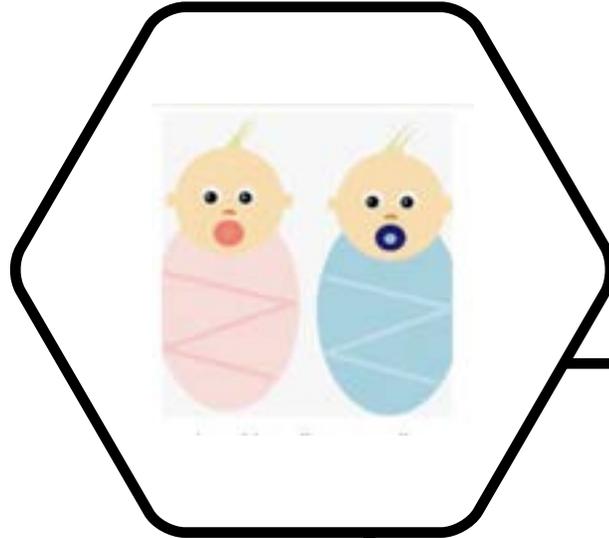
Two placentas

Two chorions (may be fused)

Two amnions



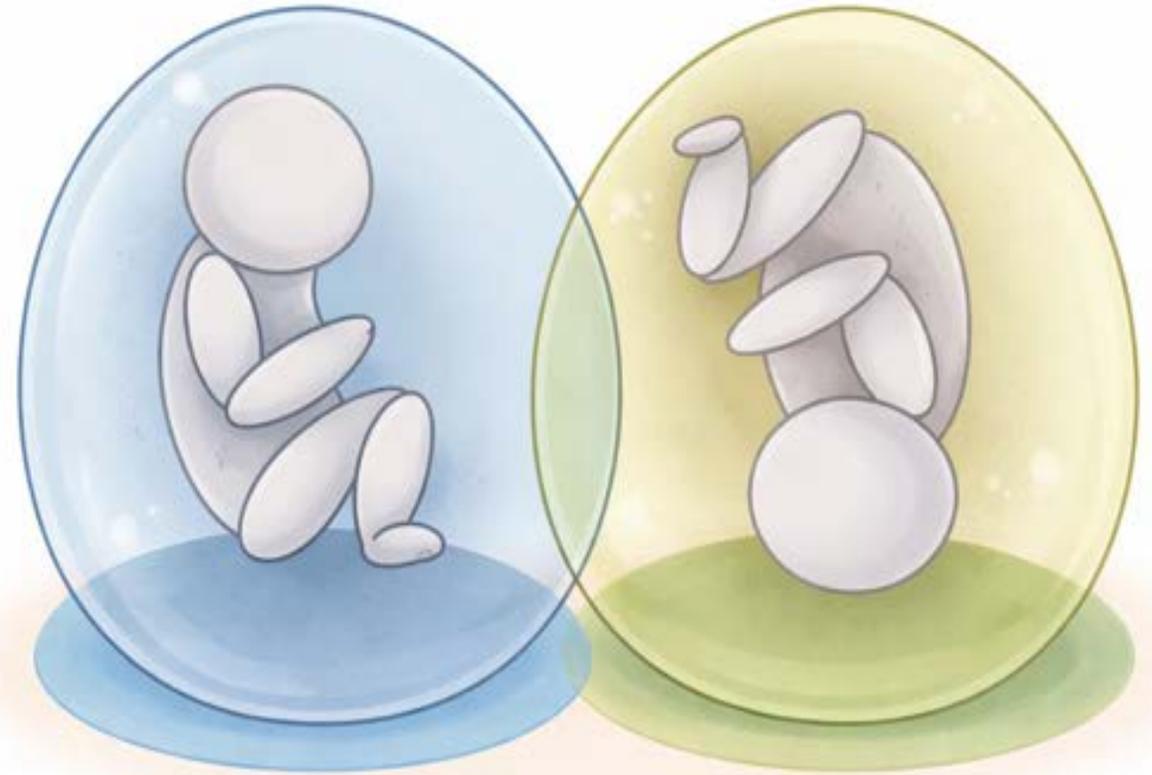
# Three Types of Twins



# **Diamniotic/ Dichorionic Twins**

- **Two chorions**
- **Two amniotic sacs.**
- **Two placenta's**
- **Can be fraternal or identical**

**Think of this as: two bedroom house with two bathrooms**

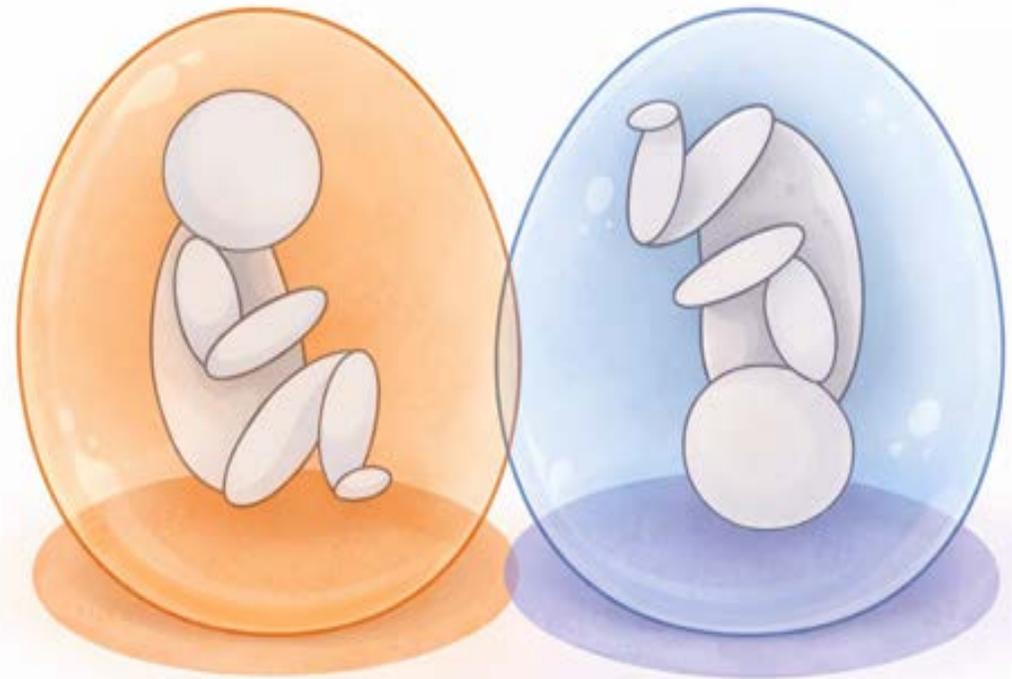


# **Monochorionic/ Diamniotic Twins**

- **Twins who share a chorion**
- **Have separate amniotic sacs.**
- **They share one placenta**
- **Are identical**

**Think of this as: two bedroom house with one bathroom**

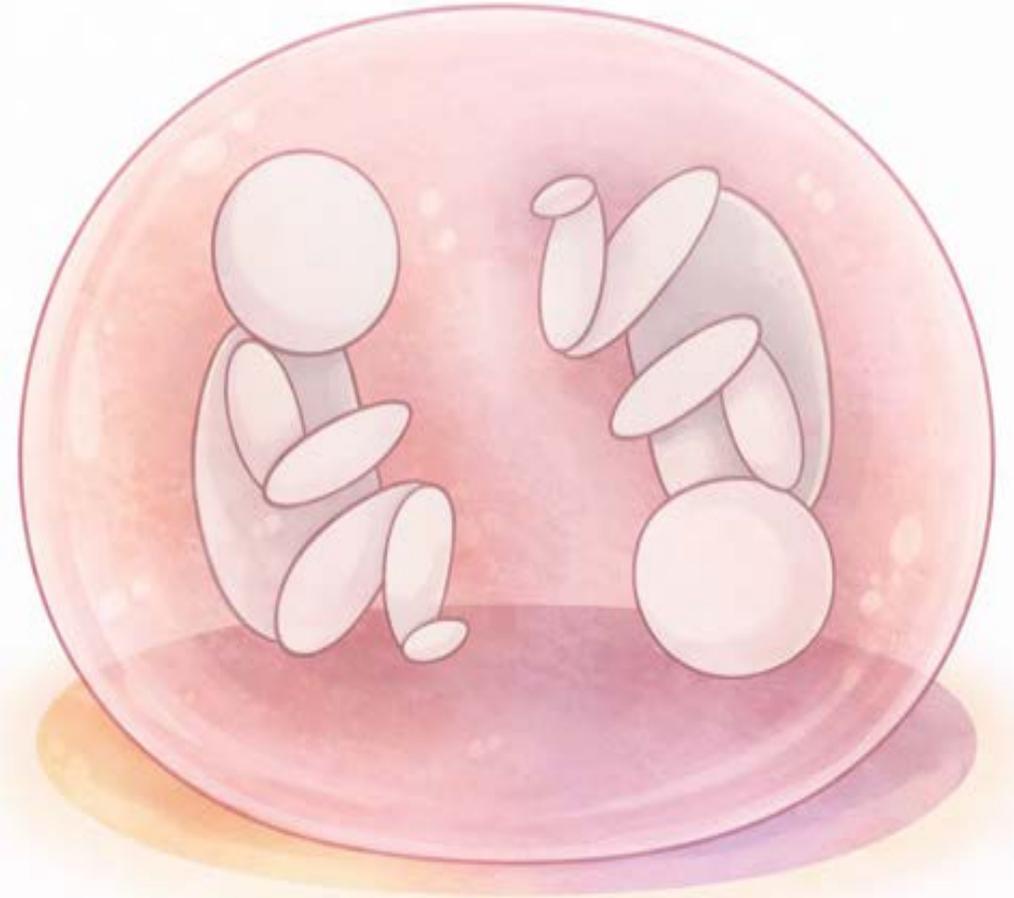
**Diamniotic  
Two sacs**



# **Monochorionic/ Monoamniotic Twins**

**Think of this as: one bedroom  
house with one bathroom that is  
Shared by two people**

**Twins who share:**  
-one chorion  
-one amniotic sac  
-one placenta  
**Are identical**



# **Monochorionic twins have a higher frequency of fetal and neonatal mortality**

**This type of twinning is at particularly high risk, with the historic perinatal mortality quoted at up to 80%**

**↑↑ morbidities (ex: fetal and congenital anomalies, prematurity, and fetal growth restriction)**

**What is the most common problem associated with mono/mono twins??**



# **Fetal complications associated with mono/mono twins**

**Cord  
Entanglement**

**Twin - twin  
Transfusion  
Syndrome**

**Single fetal  
death**

**Fetal Growth  
Restriction**

# Twin-twin Transfusion Syndrome

**Occurs in 10-15% of  
Monochorionic  
twins**

**Results from  
unbalanced blood  
flow through  
vascular  
communications  
of the placenta**

**Perinatal  
mortality is 60-100%  
for both twins if  
untreated**

# What is Twin-to-Twin Transfusion Syndrome??

**Recipient twin (usually the larger)  
Hypervolemic w/ polyhydramnios, ↑  
preload**

**Donor twin (usually the smaller) may  
have growth restriction w/  
oligohydramnios r/t poor renal  
perfusion from hypovolemia &  
vasoconstriction**



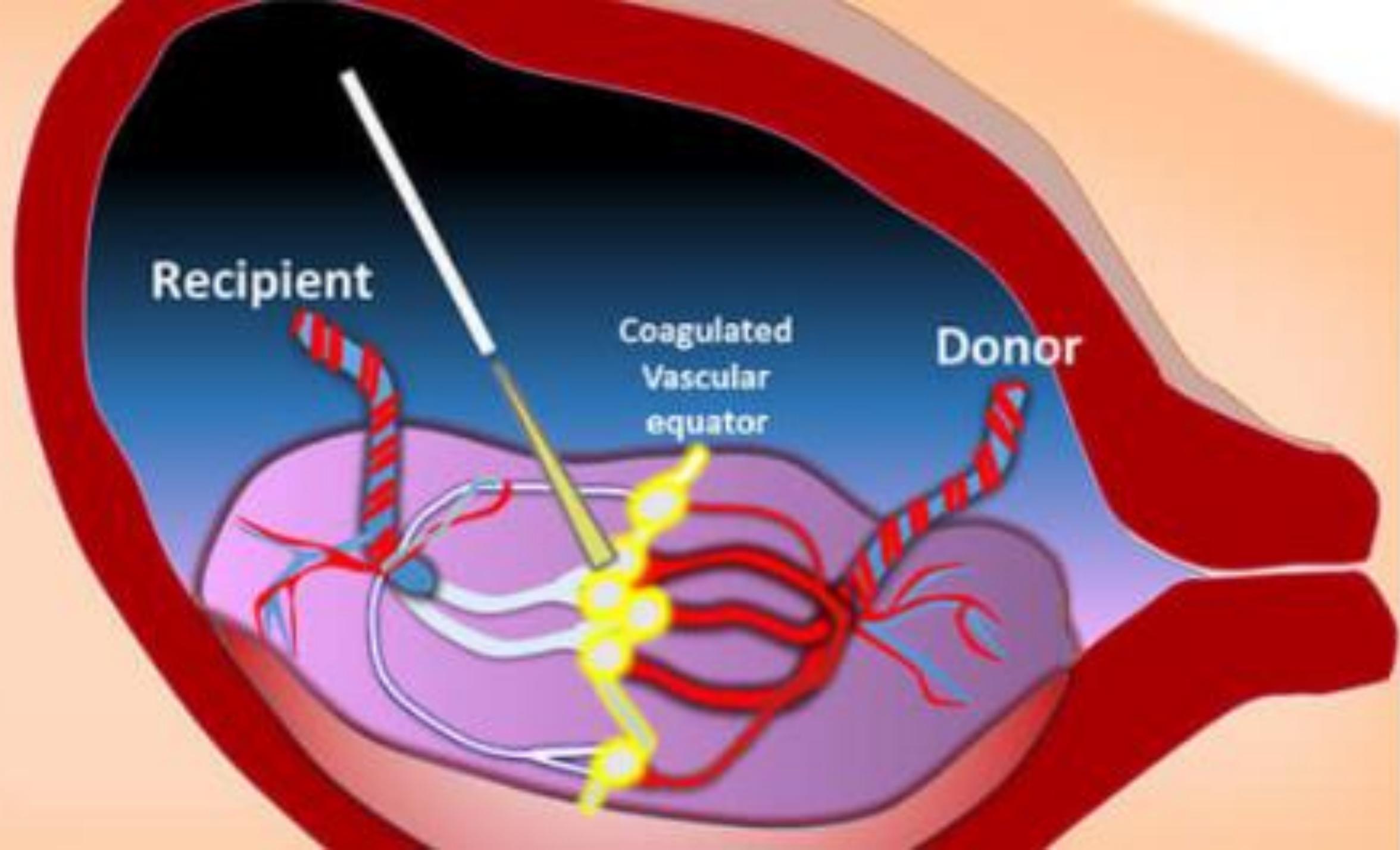
# How can TTTS be treated??

## Amnioreduction

- **Removal of large volumes of amniotic fluid**

## Laser Coagulation

- **Surgical technique to interrupt the inter-twin vascular anastomoses involved in TTTS**





# What are Discordinate Twins??

**Defined as a 20% difference in EFW between the larger and smaller twin**

**The ratio is calculated by determining the difference in the EFW between the two fetuses, divided by the weight of the larger fetus**

# Optimal Timing for Delivery With uncomplicated twins

## Dichorionic–diamniotic

- **38 weeks of gestation**

## Monochorionic–diamniotic

- **34 - 37 6/7 weeks of gestation**

## Monochorionic–monoamniotic

- **32–34 weeks of gestation**



## **Monitoring twins**

# Challenges in Monitoring Twins...

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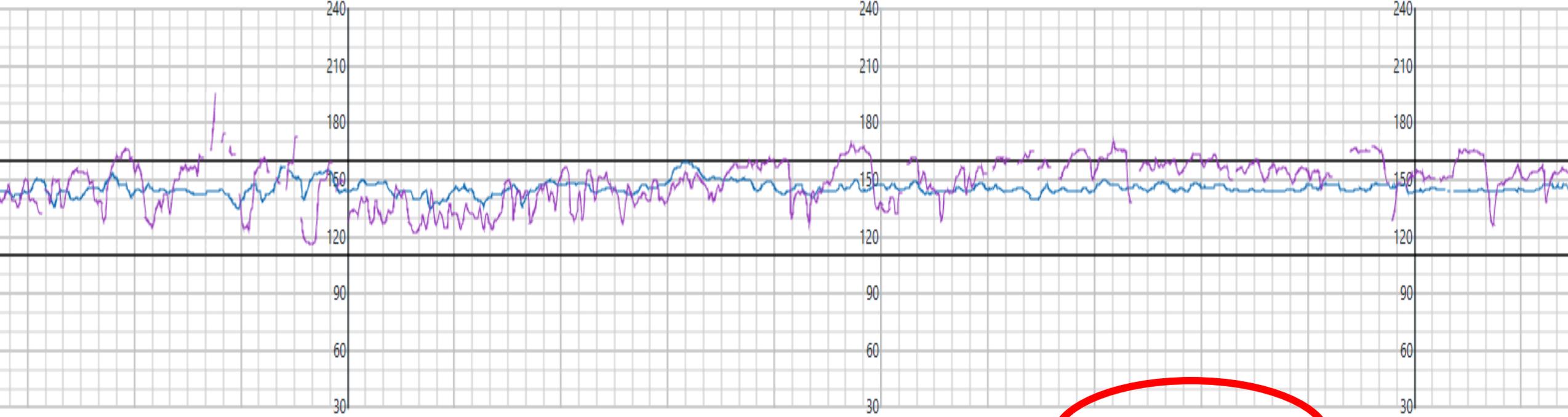
# One of the Biggest Challenges

One twin may be monitored twice and the other twin not at all...

Tools to help with identification

- **Cross-channel verification also known as FHR discrimination technology and heartbeat coincidence**

Printed question marks or intertwining hearts at the top of the tracing

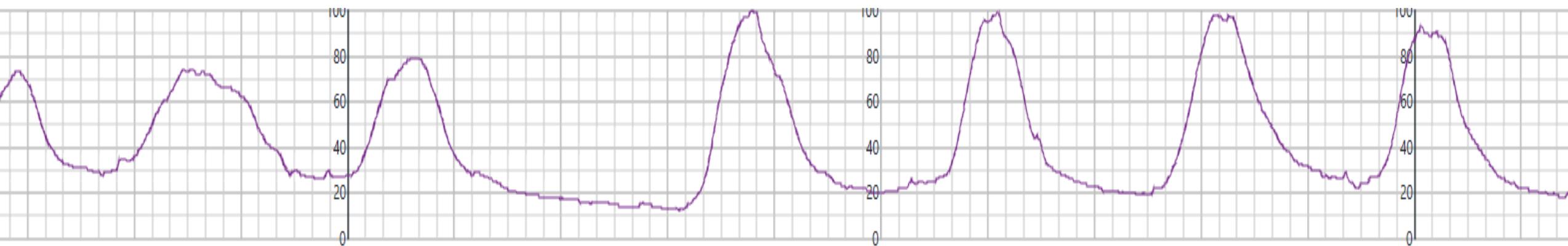


Decrease Pit to 4mu

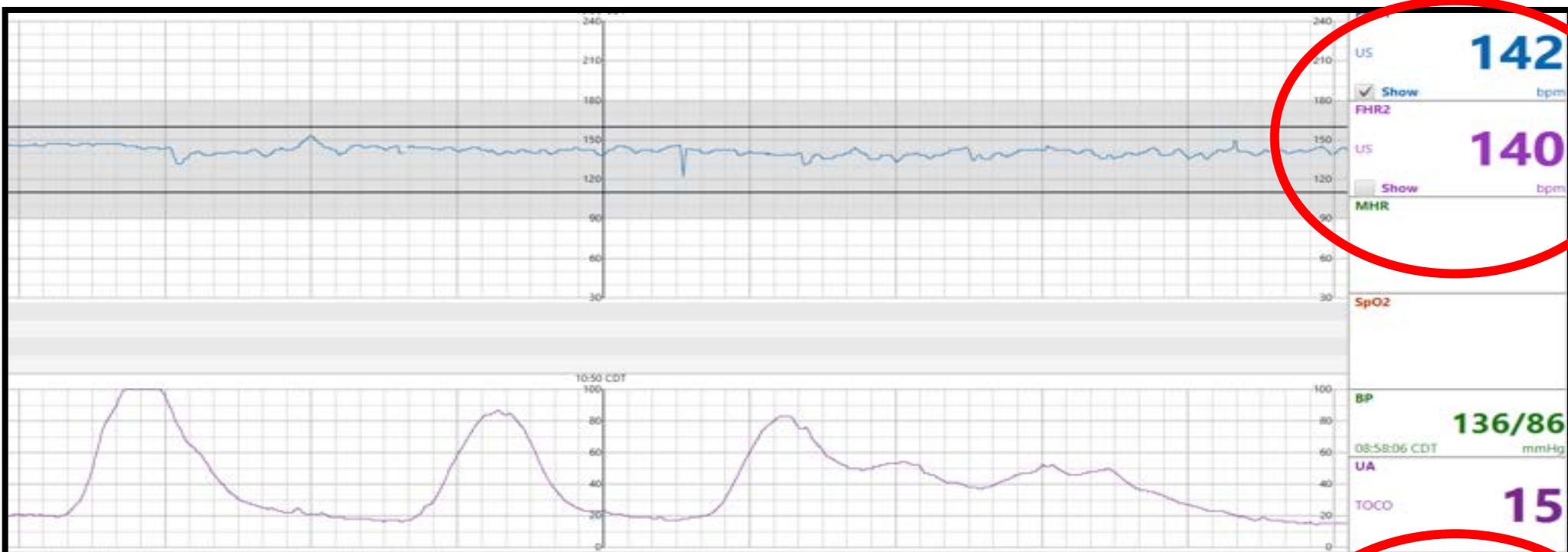
Baby B Offset button on

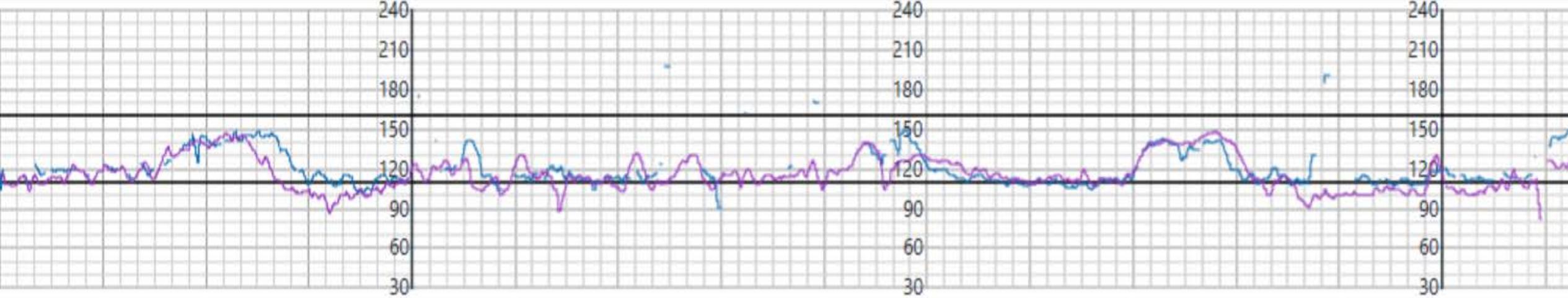
Epidural requested, IV fl...

oxytocin 4 milliunits/min...



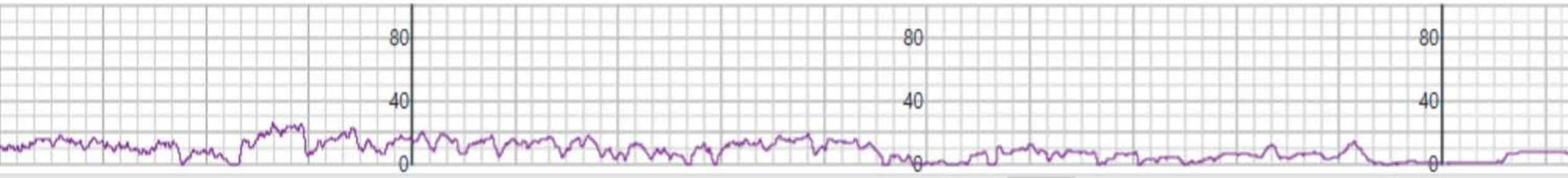
Not Current





BP 100/52, MHR 54

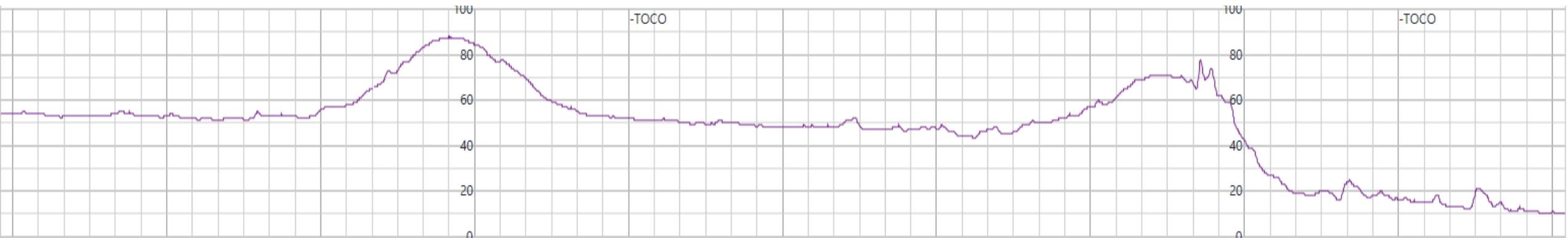
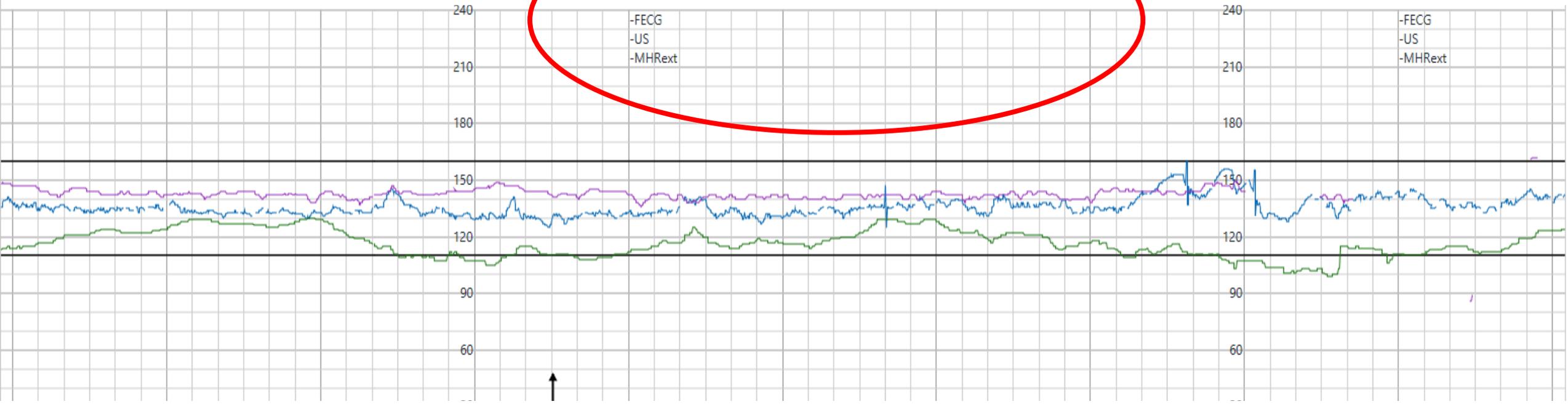
15:50 CST



**What do you notice about this fetal heart rate tracing??**

[Go To](#)

FHR1  FHR2  FHR3  FHR4  FHR5  FHR6  MHR



# Second stage monitoring

## ↑ Risks to 2<sup>nd</sup> twin

**Uterine  
inertia**

**Malpresentation**

**Cord  
Prolapse**

**Abruption**

**Stillbirth**

**Once second twin settles into the pelvis, an amniotomy and application of a spiral electrode can be accomplished if necessary**

**Continue to evaluate uterine activity; watch for uterine inertia, pitocin may be needed**



**Questions??**

# References

- **American College of Obstetricians and Gynecologists (2013; reaffirmed 2022). Definition of Term Pregnancy. ACOG Committee Opinion Number 579. November 2013.**
- **American College of Obstetricians and Gynecologists (2021). Prediction and Prevention of Spontaneous Preterm Birth. ACOG Practice Bulletin Number 234. August 2021.**
- **American College of Obstetricians and Gynecologists (June 2021; reaffirmed 2024, replaces Practice Bulletin 169, Oct. 2016). Multifetal Gestations Twin, Triplet and Higher-order Multifetal Pregnancies. ACOG Practice Bulletin Number 231. June 2021.**
- **Lowdermilk, D. L., Cashion, K., & Alden, K. R., Olshansky, E.F., Perry, S.E. (2024) Chapter 12: Conception and Fetal Development in *Maternity and Women's Health Care* 13<sup>th</sup> ed. St. Louis, MO: Elsevier.**
- **Miller, Miller and Cypher, (2022) Pocket Guide to Fetal Monitoring, A Multidisciplinary Approach 9<sup>th</sup> ed. St. Louis, MO: Elsevier.**
- **Simpson, K. R. & Creehan, P. A. (2021). Chapter 11: Multiple Gestation in *AWHONN Perinatal Nursing* 5<sup>th</sup> ed. Philadelphia, PA: Wolters Kluwer.**