Twins can be either fraternal or identical. Most are fraternal twins — each develops from a separate egg and sperm. Fraternal twins each have their own placenta and amniotic sac. Because each twin develops from a different egg and a different sperm, these twins may not look alike. Fraternal twins can be boys, girls, or one of each.

Identical twins are rarer. Identical twins happen when one fertilized egg splits early in pregnancy and develops into two fetuses. Identical twins may share a placenta, but each baby usually has its own amniotic sac. Identical twins are the same sex.

Identical twins who share one placenta and one amniotic sac may be at risk for Twin-to-Twin Transfusion Syndrome, or TTTS. This problem happens in about 15 percent of pregnancies of identical twins.

The single placenta contains blood vessels going from one baby to the other. Blood from the smaller “donor” twin is transferred to the larger “recipient” twin through interconnecting vessels causing an unequal exchange of blood.

The recipient twin is larger and is at risk for heart failure because of receiving too much blood from both the placenta and donor twin. Too much blood forces the heart to work harder.

The donor twin is smaller because of receiving less blood.
As the disease progresses, the donor will produce so little urine that its bladder may not be seen on ultrasound. The amniotic membrane will wrap the twin, known as a “stuck” twin.

**Image 3 Stuck Twin**

**Cause**

The exact cause of TTTS is not known. TTTS is not hereditary or genetic. TTTS is an irregularity of the placenta that occurs randomly. It is congenital, meaning that it happens before your baby is born.

**How TTTS is found**

You may have warning signs of a sudden increase in the size of the uterus including:
- The sensation of rapid growth
- A uterus that measures large for dates
- Abdominal pain or tightness, or uterine contractions
- Sudden increases in body weight

TTTS is usually found by ultrasound done while you are pregnant to learn about the health of your baby. Ultrasound findings that indicate the pregnancy needs to be closely followed by a high-risk obstetrician include:
- A single placenta
- A thin, hard to see, dividing membrane
- Size differences in the twins
- Polyhydraminos (excess amniotic fluid) in the sac of one twin
- Oligohydramnios (decreased to no amniotic fluid) in the sac of the other twin

The severity of TTTS can range from mild to severe. Weekly ultrasound measurements of fluid levels, the function of the fetal hearts and blood flow through the umbilical cords are used to determine how severe the problem is and if treatment is needed.

**Ohio Fetal Medicine Collaborative**

You will continue to receive care from your doctor for routine prenatal care.

If you are referred to the Ohio Fetal Medicine Collaborative (OFMC), you will receive coordinated care from obstetricians who specialize in taking care of pregnancies affected by Twin-to-Twin Transfusion.

A nurse coordinator guides your care from the moment you are referred, and will schedule tests and arrange appointments with specialists based on your needs. The nurse coordinator is available to answer your questions and serves as your single source of information. Your delivery will be at a hospital that has a nursery prepared to care for your twins.

**Care during your pregnancy**

- Bed rest may be suggested as a treatment, but has not been scientifically proven to be beneficial. Often, decreased activity is recommended to prevent early labor.
• There is also no scientific evidence that nutritional supplements such as Ensure or Boost help in the treatment of TTTS, but many patients use them because they do not pose much risk as long as you continue to drink other liquids and eat a healthy diet.

• Amnioreduction removes excess amniotic fluid with a thin needle. This procedure, done during pregnancy, has the lowest risk. Because this approach does not treat the underlying cause of TTTS, excess amniotic fluid may recur, resulting in the need for multiple amnioreductions.

• Laser photocoagulation of the placental vessels uses laser energy to interrupt connecting blood vessels on the surface of the placenta, allowing each fetus to have their individual blood supply. This procedure interrupts the flow of blood from one twin to the other, eliminating the syndrome. This outpatient surgery done during pregnancy is only performed at certain fetal centers in the US, such as The Ohio State University Wexner Medical Center. This procedure has the most risk, but some studies show it is more effective in treating the cause of the disease.

• Septostomy uses a needle to make very small holes in the membrane separating the twins, so the amniotic fluid will equalize. This is the least common treatment, but it has been found to decrease the total number of treatments needed during the pregnancy.

Ongoing care during your pregnancy

Following treatment, weekly ultrasound of these twin pregnancies is recommended until delivery. In addition to the care for Twin-to-Twin Transfusion by a high-risk obstetrician, regular visits to a local obstetrician are needed for routine prenatal care.

Families who are carrying twins with TTTS may face difficult decisions. This disease can change quickly and without warning. Doctors have some ways to measure how the babies are doing, but sometimes the outcomes and timing of upcoming events are unpredictable.

The goal of treatment is to get both babies to an age where they can live outside their mother, or at least 28 weeks, and be cared for in a neonatal intensive care unit (NICU). In the best situation, where the treatments have been effective or the disease is less severe, these pregnancies are delivered by 34 to 36 weeks.

Your doctor will discuss whether a vaginal or cesarean section delivery is best for you and your babies. This may not be decided until just before the delivery.

Care after the birth

After birth, treatment depends on the infants’ gestational age at birth and their specific needs. Typically, issues of prematurity determine how much care the babies will need.

All parents ask if one baby is more at risk than the other, while in the uterus or after birth. The answer is that both are at risk for different reasons. The risks for the recipient baby are related to having too much blood flow and fluid. The donor baby’s risks are from having too little fluid and blood flow.

Follow up

After delivery, you will want to find a local pediatrician to take care of routine checkups and immunizations, and to measure growth, development and nutrition. The nurse coordinator can help if needed.