As CEO of the Fetal Hope Foundation, I have gotten unprecedented access to leading research, incredible maternal fetal program surgeons and numerous amazing centers all doing unbelievable work to improve pregnancy outcomes when a distress situation arises. Every year 800,000 pregnancies will develop a fetal distress situation resulting in over 200 losses of our babies on a daily basis. One of the incredible doctors doing something to provide us with hope, especially with Twin-to-Twin Transfusion Syndrome (TTTS) is Dr. Ramen Chmait. Dr. Chmait is the director of Fetal Therapy and Minimally Invasive Fetal Surgery at USC-Children’s Hospital Los Angeles’ Maternal Fetal Health Institute. Dr. Chmait is renowned for being one of the top fetal surgeons in the U.S. Dr. Chmait spoke to us recently about providing some important information regarding multiple pregnancies that we could share with readers of TWINS™ Magazine.

**Fetal Hope Foundation (FHF):** With the increase in twins and multiple pregnancies, what issues should expectant parents of twins and higher order multiples be aware of?

**Dr. Ramen Chmait (RC):** The issues that expectant parents of multiples should understand can be categorized into maternal concerns and fetal concerns. Carrying multiples puts the mother at an increased risk for developing diabetes and high blood pressure (pre eclampsia) near the end of the pregnancy. These are things that the obstetrician can monitor for closely. The mother is also at an increased risk of requiring a cesarean section. The predominant risks to the babies are related to premature birth. This is of particular concern for high-order multiples. Babies that are born very premature often require specialized treatments. So one thing expectant mothers can do is to make sure that the hospital in which they plan to deliver has the ability to care for very premature babies.

**FHF:** What are the different types of multiples, and why is that important?

**RC:** Multiples can be classified into three types according to whether the babies share a common placenta or sac. For the sake of simplicity, let us focus on twins. In general, the more the twins have in common, the higher the risk of potential complications. So, the least risky are twins that have their own placentas and sacs. These are called dichorionic (two-placentas) diamniotic (two-sacs). Monochorionic (one-placenta) diamniotic (two-sacs) twins are at increased risk for pregnancy complications. Monochorionic (one-placenta) monoamniotic (one sac) twins share the same placenta and sac and are at the highest risk for pregnancy complications. It is important to note that the majority of monochorionic twins thrive and are born healthy. However, because these types of twins share the same placenta, they can rarely get into trouble. The common placenta has blood vessels that link the blood supply of each twin together. Because these twins share blood, their lives are linked together. Sometimes there is unbalanced flow of blood from one twin to the other. This is called Twin-to-Twin-Transfusion-Syndrome (TTTS), and can be a life-threatening problem for the twins. Another problem that may occur is that there may be unequal sharing of the common placenta. This can result in poor growth of one twin. This condition is called selective intrauterine growth restriction (SIUGR). In the case of monochorionic monoamniotics in which the twins share the same sac, there is an additional concern that the umbilical cords of the twins can entangle and cause harm to one or both babies. Again, it is important to emphasize that regardless of the type of twins, the majority of the time the babies are born healthy.

**RC:** What type of prenatal care would be recommended for a twin or higher-order multiple pregnancy?

**FHF:** Do we know what causes TTTS?

**RC:** Twin-to-twin transfusion syndrome (TTTS) results from unequal sharing of blood between twins that have a common placenta. One baby, called the donor, disproportionately sends blood across vascular channels in the placenta to the other baby, called the recipient. Eventually the donor baby does not have enough blood volume to support normal development and growth. Because the kidneys do not receive ample blood supply, little urine is produced, causing low amniotic fluid volume in that sac. Meanwhile the recipient baby receives excessive blood volume and can suffer heart failure. This baby tries to deal with the excessive volume by increasing urination, thereby causing increased amniotic fluid in that sac. Without treatment, TTTS results in as high as a 95 percent mortality rate.

**FHF:** Do we know what causes TTTS?

**RC:** TTTS is a sporadic condition. This means that there is nothing the mother or father did to cause TTTS. The chance of recurrence of TTTS in a subsequent pregnancy is exceedingly small.
TH TWINS OR HIGHER-ORDER MULTIPLES

(FHF): Are there risk factors for TTTS that can be identified that would lead a pregnancy to be more closely monitored than another?

(RC): The most important risk factor is monochorionicity (shared placenta). If the twins share the same placenta, then ultrasounds should be performed about every two weeks between 16 and 26 weeks' gestation to monitor for TTTS. TTTS is diagnosed by ultrasound if there is significant amniotic fluid discordance in the sacs. Between ultrasounds, the mother should remain cognizant of the size of her belly. If the womb seems to have enlarged significantly in a short period of time, then it would be advisable to go to the doctor's office to check for TTTS.

(FHF): What do you think has been the greatest advancement with improving TTTS outcomes in the last five or so years?

(RC): There is no doubt that the most important recent advancement in the treatment of TTTS is the laser surgery. Continued refinement of the surgical technique and instruments has resulted in ever improving pregnancy outcomes.

(FHF): TTTS is getting more awareness now, but isn’t SIUGR a real concern for monochorionic (shared placenta) pregnancies?

(RC): Absolutely. Selective intrauterine growth restriction (SIUGR) is diagnosed when a single monochorionic twin measures less than the 10th percentile. This condition is predominantly due to unequal placental share. Severe cases, in which there is critically abnormal umbilical artery blood flow pattern, is associated with an overall poor prognosis. A multicenter study is being conducted in the United States to determine if laser surgery can improve outcomes in this condition as well. Details of this study can be found at www.usfetus.org.

(FHF): Is there anything else you would like to inform TWINS™ Magazine readers about?

(RC): Yes. It is very important to let expectant parents of multiples know that most of the time everything is going to be okay. As long as appointments are kept and medical advice is followed, the chance of a good outcome is high.

Final Note: The Fetal Hope Foundation is committed to improving the outcomes of these situations through education, awareness, direct support and research support. Always feel free to contact us at info@fetalhope.org or go to www.FetalHope.org for more information.

If you have pregnancy or other health questions about your pregnancy, children or your health, please email me your questions at: lonnie@fetalhope.org and your question might be published.

Lonnie Somers, Chairman, CEO & Founder: Mr. Somers and his wife, Michelle, founded the TTTS Race for Hope and the Fetal Hope Foundation based on their own experience with TTTS that nearly took their daughters' lives. Having a passion for running and being a marathoner as well, Mr. Somers organized and developed the TTTS Race for Hope to spread awareness and raise funds. As success of the event and awareness increased, Mr. Somers, along with the board, saw an opportunity to further support fetal syndromes and work directly with the leading fetal centers and medical professionals from around the world. This led to the creation of today's Fetal Hope Foundation.