What is Rh negative and what does it mean?
Everyone has different types of proteins on their red blood cells. One set of proteins are type A or B. If you have A proteins on your red blood cells, your blood type is A. If you have B proteins, your blood type is B. If you have both, your blood type is AB. If you have neither type A or B proteins on your red blood cells, your blood type is O.

The Rh protein, officially called the Rhesus protein, is a different protein that may or may not be on your red blood cells. If you have the Rh protein on your blood cells, you are said to be Rh positive (Rh+). If you do not have Rh proteins on your blood cells, you are said to be Rh negative (Rh-).

Combined, these proteins determine your blood type whether A+, A-, B+, B-, AB+, AB-, O+, or O-. While the majority of the population is Rh+, fifteen percent are Rh- and that may present possible problems during your pregnancy if your partner is Rh+. Seventeen percent of all Rh- mothers will become sensitized with their first Rh+ baby, meaning the mother will develop antibodies needed to destroy the foreign blood. Ninety percent of these cases occur at the time of birth, while the other ten percent occur during the prenatal period.

What if the father of my child is Rh negative?
If he is rhesus negative, then all of children of the two will also be rhesus negative. If he is rhesus positive and found to be heterozygous, there is a chance the baby will be rhesus negative, but if he is homozygous rhesus positive than all of the couple’s babies will be rhesus positive. It is never suggested that when the baby is determined to be rhesus negative that mom receive RhoGAM, so we aren’t clear why the option for determining the father’s blood type is not routinely offered. It would potentially mean that 40% fewer women are candidates for RhoGAM. However, from a public health perspective, there is real concern that the alleged father is not the father after all, so rather than be falsely reassured of a negative rhesus status or create a very awkward situation during the inquiry, RhoGAM is without question recommended for all pregnant women with negative rhesus.

How does the mixing of blood occur?
Fetal blood can enter the mother in several ways, such as a wrongly typed transfusion, through a miscarriage or abortion, a placental leak, by an accident which may cause slight abruptions, during an invasive procedure such as amniocentesis, during a rough procedure such as an external version (turning a breech) or after the birth when the placenta detaches from the uterus.

Why is this dangerous?
If the mother is sensitized during her pregnancy it can be life threatening to the baby. Maternal antibodies may cross the placenta and attack the baby’s own blood cells thus causing Hemolytic Disease. As the red blood cells are destroyed, their product, bilirubin, is released, processed in the liver and discharged by the kidneys. High bilirubin causes jaundice in newborns, but the fetal liver is too immature to handle the excess processing which in turn can lead to heart failure in the baby and possibly death. An infant suffering from Hemolytic Disease may also have permanent brain damage which may lead to mental retardation, hearing loss or cerebral palsy. Once sensitized, the immune response worsens with each subsequent incompatible pregnancy.

What will RhoGAM do?

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A shot of RhoGAM will be recommended if an Rh- mother gives birth to an Rh+ baby. RhoGAM is thought to destroy any fetal cells that have entered the mother’s body before the mother makes antibodies of her own thus keeping her unsensitized. The shot is given in the buttocks prenatally at 28 weeks and/or within 72 hours after the birth.

It should be understood that where controversy surrounds RhoGAM, it does not seem to surround the fact that RhoGAM is effective in preventing rhesus isoimmunization. The question is more, are there other factors that increase the risk of isoimmunization? Meaning, from a public health perspective, the literature seems clear that the population of women who are rhesus negative do in fact, benefit from administration of anti-D, or RhoGAM; however, what we aren’t able to do is extrapolate that information to individual woman. More than 90% will not require the anti-D and no research has asked why. Is this a variable we could discern? This research was quickly passed over however, in search of determining the proper dose of RhoGAM to be administered to all women.

What concerns about RhoGAM should I consider?
There are many unanswered questions about receiving RhoGAM prenatally; however, it is one of the more successful interventions in maternal and child health in our lifetime. There is about a 35-40% chance that your child will also be Rh- negative and negate the need for RhoGAM although this will not be known until after the birth.

RhoGAM administration may cause heat at the injection site, a low grade fever, constricting pain in the chest or low back, or flushing in the face. Rarely, anaphylaxis can occur. RhoGAM is created by pharmaceutical companies which utilize mercury-based preservatives as well, which may pose issues with toxicity.

It should also be understood that RhoGAM is a blood product, which means blood-borne infections are a potential risk. A report out of Ireland in 1995, found 3,000 women contracted hepatitis C from a pool of blood used to create anti-D. HIV has also been transmitted through anti-D, which was reported in 1989. These viruses are screened for today, and are understood to be eliminated in the purification process, but the concern remains that yet unknown viruses may be identified which are not. The absolute risk of transmission of viral or other infectious material in blood products is unquantifiable because of the possibility of as yet undiscovered pathogens.

Another concern of intrigue is that we haven’t any awareness of how administration of RhoGAM to the mother may affect her future daughter and her reproductive health, or future babies. There is theory that RhoGAM may affect their blood composition, their immune system, or even DNA. There is no concrete evidence in this regard, only intriguing theory. We are only now seeing the first generation of daughters whose mothers were given anti-D in their own pregnancies.

What risks might I assume if I decline RhoGAM?
RhoGAM is thought to provide protection from sensitization for approximately 12 weeks. The possibility of the exchange of blood between the mother and baby before the birth is the primary concern. A few women also develop antibodies to Rh+ blood during pregnancy for no apparent reason, and unforeseeable accidents like a car accident can cause the maternal and fetal blood to mix. One must also be aware that sensitization can not be reversed if a woman refuses routine antenatal anti-D prophylaxis.

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What ways can I minimize my chance of sensitization during pregnancy?
If you decline RhoGAM for any reason, there are a few midwifery tricks of the trade (not evidence-based) that are thought to encourage protection from hemolytic disease; however, these are not proven effective. RhoGAM continues to be the only evidence-based protection at this time.

One of the first and easiest tips of course, is to maintain a healthy diet. This will offer your baby and placenta the best health possible. Whole foods, fresh fruits and vegetables, and seafood are beneficial. Avoid additives, caffeine, and alcohol. Enjoy blood building foods such as beets, cherries, buckwheat, dark leafy greens and sea vegetables during pregnancy.

Drink red raspberry leaf tea during pregnancy. It helps tones the uterus which can help keep blood loss at a minimum. Drinking citrus juice and selecting vitamin C rich foods is also believed to help keep the placenta strong and healthy. Vitamin C may help to strengthen your membranes.

Eliminating fluorinated water and toothpaste is also recommended as fluoride has been shown to interfere with collagen production, which is what assists the placenta in adhering to the uterine wall.

A number of natural substances are thought to strengthen the placenta and confer immune system protection; these include magnesium, iodine, vitamin C, bioflavinoids, red raspberry leaf, elderflower, Echinacea, and garlic. Suggestions include:

- 1 teaspoon of magnesium powder in water daily
- kelp, sea vegetables or mineral supplements daily
- fresh garlic or garlic oil capsules
- 1/2 cup of elderflower infusion daily

There is data to suggest that trauma to the uterus increased risk of transplacental hemorrhage, and fetal to maternal hemorrhage is more likely during instrumental delivery and with cesarean sections than when birth is spontaneous. Rates of fetal to maternal hemorrhage of clinical significance are more than double when the mother endures a cesarean section as opposed to enduring spontaneous birth. Experts have also questioned the risk induction or augmentation may play in isoimmunization as well. There are midwives who also question the risk of ultrasound, particularly when the placenta is implanted on the anterior side of the uterus. The pressure from the inducer may contribute to bruising and bleeding and result in transplacental hemorrhage. There is also concern about coached pushing, intrauterine catheters, episiotomy, epidural anesthesia and fundal pressure.

A natural, intervention free birth is the best for an Rh negative mother wishing to avoid RhoGAM. A completely natural birth gives the lowest risk of maternal and fetal blood mixing. The third stage of labor is possibly the most vital part of labor to keep natural. If at all possible, not interfering with the birth of the placenta is optimal. However, this must be weighed by the need to control maternal hemorrhage.

If this is my last child, can I decline RhoGAM after the birth of my child?
There is no benefit from RhoGAM after the birth of the last child, but far too often do parents state this is true and then later make the decision to have more children, even following permanent sterilization or after assuming they are beyond childbearing age.
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I have read and understand this information and have had an opportunity to ask questions. I am aware of the risks of using/refusing RhoGAM, and am responsible for and have freely chosen to take the following action:

☐ I recognize that if I endure any trauma throughout my pregnancy, including a fall, automobile accident, or direct hit to my abdomen, it is recommended that I receive RhoGAM at that time. Bleeding at any point in my pregnancy is indicative of RhoGAM, including early pregnancy and in the event of miscarriage.

☐ I have chosen to receive RhoGAM in my second trimester and following birth for the prevention of iso-immunization during pregnancy, providing that a blood test to determine if antibodies are present in my blood tests to be negative and my baby’s Rh blood type is positive. I understand that following birth my own blood will be drawn to determine if, and if so how much, fetal blood has entered by own. A small amount of blood will also be taken from my baby’s umbilical cord to determine the same, as well as blood type. Finally, I understand depending on day, time and location of birth, I may also need to take responsibility of transporting these specimens to the nearest laboratory so results will be available for my first visit upon which RhoGAM will be administered if necessary.

☐ I have chosen to receive either just the prenatal RhoGAM dose.

☐ I have chosen to receive only the postpartum RhoGAM dose, and agree to the terms outlined in option one.

☐ I decline RhoGAM and assume sole responsibility for any negative consequences.

Signature of Client __________________________  Date ___  Signature of Clinician __________________________  Date ___

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