



## Rh Immunoglobulin Administration

### What is Rh factor?

Red blood cells are covered with many kinds of proteins, or “factors”, which are determined by the genetic makeup of that person. The different combinations produce the blood types, the most commonly known are: “A”, “B”, “AB” and “O”. In addition to the proteins that determine the ABO blood type, the Rhesus protein (or “Rh” for short) may also be present. People with these proteins on their red blood cells have the Rh+ blood type, and those who don’t have the proteins have the Rh- blood type. These proteins in combination give the blood types most commonly known, e.g., A+, B-, AB+, O+, O-, etc.

Approximately 20% of the American population is Rh-.

It is important that all proteins match when receiving donated blood or the recipient’s body will reject the donated blood. This is because an incorrect blood type is recognized as foreign and it is attacked. An Rh+ person can receive either Rh+ or Rh- blood, but an Rh- person can only receive Rh- blood.

### Why does Rh factor matter in pregnancy?

It is important for a mother to know what her Rh factor is because it is part of her blood type. Just as a person with Type A blood cannot receive Type B blood because the body recognizes it as foreign and attacks, a person with no Rhesus proteins (i.e. Rh-) will make antibodies to Rh+ blood if the two blood types were to mix.

During pregnancy, an Rh- mother can become “sensitized” to her baby’s Rh+ blood. This means that some of the baby’s blood has crossed the placenta into the maternal bloodstream causing her immune system to begin making antibodies (the particles that destroy foreign material). These antibodies attack the baby’s Rh+ blood when they cross the placenta and enter the baby’s body. They will remain and attack during any successive pregnancies, during which those future babies are at greater risk.

The result is that the baby’s red blood cells do not develop normally, causing problems with oxygen delivery and physical development. Sometimes a baby can be born relatively unaffected, sometimes he is born prematurely with the need for a blood transfusion, and sometimes the pregnancy is miscarried. This is called hemolytic disease of the newborn (“heme” = red blood cells, “lysis” = breaking open). Its severity generally increases with each successive pregnancy because the mother’s body will continue making antibodies to Rh+ blood after she has been sensitized.

### How does blood mixing occur?

During pregnancy and childbirth, it is fairly common to have some of the baby’s blood leak into the mother’s bloodstream. This most commonly happens during birth but it can happen at the time of an abdominal injury (such as a car crash), a miscarriage or abortion, some first-trimester spotting, or an amniocentesis. Births where episiotomies, forceps or C-sections are used have a greater risk of blood mixing than do uncomplicated vaginal births using gentle birth techniques. It is thought that even as little as 1 ml of fetal blood can cause the sensitization of the mother, though the exact amount is unknown.

## Prevention?

Today's standard for preventing sensitization of the mother and hemolytic disease of the newborn is pharmacological. The current standard of care recommends that all Rh- mothers be given an injection of anti-D immunoglobulin (often called Rhogam) at 28-30 weeks and just after birth. Rhogam acts to "hide" the Rh+ baby blood from the mother's immune system, thus preventing production of maternal antibodies.

## Alternatives and risks?

There has been no conclusive research to show that there is an effective alternative to Rhogam. However, some women feel that Rhogam, as a blood product, is not a safe choice or that they are unwilling to expose the fetus to it. (We advise that these mothers give extra attention to diet and nutrition to provide maximum capillary wall integrity to reduce bleeding risks. We are happy to discuss this individually.) Rhogam is made from antibodies in the purified blood of many donors who are Rh+ and contains preservatives. There is always a risk of infection when using a blood product and problems are hard to trace in the large batches of blood from many donors. Rhogam is expensive at about \$200 each shot, but is covered by all insurances.

Paternal blood typing can be done to confirm whether the mother needs Rhogam (an Rh- father and mother will only produce an Rh- baby, so in that situation there is no reason to give Rhogam). Whether a mother desires a prenatal dose, only the larger postpartum dose, both, or neither, we will test the baby's cord blood at birth to see if there is even a risk of sensitization occurring. The blood type test kit for father and/or baby is only a \$10 cost to client, far less than the cost of an unnecessary shot.

Gentle birth reduces the risk of fetal blood meeting the maternal bloodstream. Primarily, this means allowing the physiological birth of the placenta to take place. This includes: delayed cord clamping, gentle assessment of the uterus, use of maternal position and gravity to expel the placenta, and avoiding traction on the umbilical cord to hurry the birth of the placenta.

Neither Rhogam nor alternative therapy can guarantee that sensitization will not occur. Each woman should be able to decide for herself what treatment she will receive.

## Where do I get Rhogam?

Licensed midwives are able to carry Rhogam and administer it to our clients prenatally and at the birth. However, the cost of the drug prohibits us from stocking it so we buy it from the pharmacy when needed and require pre-payment by the client. Your insurance will then be billed; expect incomplete reimbursement from them. Rhogam can also be ordered by the LM and administered at a local hospital. Your insurance will be billed directly by the hospital.

## **By selecting and initialing your options on the Informed Choice Checklist for this document you agree that:**

*I have had the opportunity to review this information, ask questions and have them answered to my satisfaction, and I know that I can change my mind at any time and request a different course of treatment. I choose the following (please note your selections here for your own records to match those in your midwives' chart);*

\_\_\_\_\_ N/A; I am Rh positive, or my husband is also Rh negative, so no Rhogam is indicated

\_\_\_\_\_ I am Rh negative, but I chose to decline Rhogam

\_\_\_\_\_ I wish to receive Rhogam at;  28 weeks and/or  birth