



## Informed Choice For Rh Immunoglobulin Administration

### What is Rh factor?

Red blood cells are covered with many kinds of proteins and the combination of proteins, or “factors”, determines that person’s blood type. The presence of these proteins is determined by the genetic makeup of that person and different combinations produce the “A”, “B”, “AB” and “O” blood types. When a person receives blood, it is very important that the blood types match so that the person’s body does not attack the donated blood.

In addition to the proteins that determine the ABO blood type, a person can have a protein called Rhesus, or “Rh” for short. People with these proteins on their red blood cells have the Rh+ blood type and those who don’t have the Rh- blood type.

### Does it matter if a mother is Rh+ or Rh-?

It is important for a mother to know what her Rh factor is because Rh+ and Rh- are two different blood types and there is the possibility of maternal and fetal blood mixing during pregnancy or birth. Just as a person with Type A blood cannot receive Type B blood, an Rh- person will make antibodies to Rh+ blood if the two blood types were to mix because the Rh proteins are foreign to the Rh- person. An incompatibility reaction only occurs when an Rh- person receives Rh+ blood. An Rh+ person is not at risk if she receives either type of blood, because her immune system recognizes the Rh+ as her own and Rh- blood has none of these foreign proteins.

If a mother with Rh- blood gets some of her baby’s Rh+ blood mixed into her bloodstream, the mother’s immune system will start making antibodies (the particles that attack foreign material) to the baby’s Rh+ blood. Some of these antibodies can cross the placenta into the baby and start attacking the baby’s blood cells. Therefore, the current pregnancy may be affected and the baby may be born with serious problems. The mother’s body will continue making antibodies to Rh+ blood after she has been “sensitized” like this. Usually this happens at birth, and it is the next pregnancy with an Rh+ baby that is affected. In this case, the damage to the second baby happens in utero and will continue after birth. This is called isoimmunization, and this kind of sensitizing occurs in approximately 10% of first pregnancies to Rh- mothers with Rh+ babies who do not take prophylactic treatment (RhoGam).

An Rh+ baby born to a mother who is Rh- got its blood type from the father. If a woman continues having babies with the same father, all her babies will be Rh+. If, during pregnancy and birth, there is no mixing of maternal and fetal blood, then there can be no damage to the current baby or future babies.

### 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 can happen at the time of an abdominal injury (such as a car crash), a miscarriage, an abortion, or a hemorrhage at the site of the placenta before or during birth. Births where episiotomies, forceps or C-sections are used have a greater risk of blood mixing than do uncomplicated vaginal births.

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. The baby’s cord blood can be tested to see if any detectable mixing has occurred prior to birth.

### Risks to the baby and mother?

The antibodies can destroy the baby’s red blood cells causing fetal anemia, fetal hydrops, or death of the fetus or newborn. Anemia occurs because the baby’s red blood cells have been attacked. Hydrops fetalis, the most severe form of hemolytic disease, causes immature red blood cells to be

made by the baby because its bone marrow has been damaged. The greatest risk is to the next Rh+ baby born to an Rh- mother who has already been sensitized (she has antibodies to Rh+ blood) by a previous baby. A mother does not suffer any health problems because of the antibodies. Also, if a mother is Rh+, there is no risk to the baby whether it is Rh+ or Rh-. 75-80% of American women are Rh+.

**Prevention?**

It is currently recommended that all Rh- mothers be given two injections of anti-D immunoglobulin (the most common brand is called RhoGam) into her muscle that will prevent her immune system from making antibodies (the particles that attack foreign material). The first dose is given when she is 28 weeks pregnant and the second at the time of birth or at 40 weeks, whichever comes first. If she has a car accident, a miscarriage, or another kind of "sensitizing event", it is recommended that she receive another injection. If testing shows that the newborn is also Rh-, no second dose is indicated.

**Risks from the treatment?**

Treatment with RhIG requires an injection into the muscle; this may cause some discomfort or bruising where the needle goes in. Allergic response to Rhlg is extremely rare but there is never a 0% risk. RhIG is made from the purified blood of donors who are Rh+. The donated blood is purified of all known viruses or diseases but there is always a risk of infection when using a blood product. Some people also consider it to be risky to mix the donated blood in big batches because problems cannot be traced to one person or institution.

**Alternatives?**

There has been no research to show that there is an alternative to RhIG. However, some women feel that blood products are not a safe choice for themselves or that they do not need RhIG shots. We recommend that these women take nutritional measures to decrease their body's overall risk of both blood exposure and hyper-activation of immune responses, such as supplementation with citrus bioflavonoids, chlorophyll, probiotics, omega-3 and vitamin D as well as excellent general nutrition. Each woman should be able to decide for herself what treatment she will receive.

Licensed midwives are able to procure and administer anti-RhIG to their clients who are Rh-. There is an additional fee to the client for the medication and its administration.

I have had the opportunity to review this information, ask questions and have them answered to my satisfaction, and I choose the following:

\_\_\_\_\_ I wish to receive anti-RhIG at 28 weeks

\_\_\_\_\_ I do not wish to receive anti-RhIG at 28 weeks

\_\_\_\_\_ I wish to receive anti-RhIG postpartum

\_\_\_\_\_ I do not wish to receive anti-RhIG postpartum

Client signature \_\_\_\_\_ Date \_\_\_\_\_

Midwife signature \_\_\_\_\_ Date \_\_\_\_\_