Prevention of Rh(D) Alloimmunization

Everyone's blood type is one of four major types: A, B, AB, or 0. Each of those blood types is also grouped by the Rh factor, either positive or negative. Most people are Rh positive. If you are Rh negative, it means that your red blood cells have an antigen on them for the Rh factor. Having an antigen on them means that if any Rh positive blood enters your bloodstream, your body will have an immune response to that blood type and attack the blood the same way it attacks viruses or bacteria. If you develop antibodies in your blood to Rh positive blood, you are said to be alloimmunized.

The mother and baby's blood are usually separate, but there is a chance they may mix. During pregnancy or birth, there are events that make the blood more likely to mix:

- Miscarriage
- Abortion
- Ectopic pregnancy
- Partial molar pregnancy
- Chorionic villus sampling
- Amniocentesis or cordocentesis
- Postpartum hemorrhage
- Placental abruption
- Maternal abdominal trauma (like an accident or a fall)
- Manual placental removal

A pregnancy where the mother of the baby is Rh negative and the father is Rh positive needs special care. The baby may be Rh positive or Rh negative. If the baby is positive, your body may produce Rh antibodies after exposure to the baby's red blood cells. Because mixing is most likely to occur during the birth, the antibodies are often not a problem during the first pregnancy. However, if you have a subsequent pregnancy with an Rh positive baby, your Rh antibodies may cross the placenta and attack the baby's red blood cells. The Rh positive baby may then develop Hemolytic Disease of the Newborn (HDN), which can be anywhere from a mild, self-limited disease to severe life-threatening anemia (hydrops fetalis).

How can HDN be prevented?
HDN is prevented by avoiding alloimmunization. The best way to avoid alloimmunization is administering Anti-D immune globulin (commonly known as Rhogam) during late pregnancy and after the birth of the baby. Rhogam prevents the mother's body from developing antibodies to Rh positive blood. The exact mechanism of prevention is not fully understood, but it is thought that the artificial antibodies from the Rhogam "trick" the body into stopping its normal immune response. The antibodies from the Rhogam are temporary, whereas if the mother's body created antibodies they would be a permanent part of her body.

Current practice guidelines recommend one administration of Rhogam early in the third trimester (around 28 weeks) which reduces the incidence of alloimmunization from 2% to 0.1%. After the birth, the baby's blood—type is obtained by collecting a blood sample from the umbilical cord. If the blood-type is negative, no further action is needed. If the baby's blood type is positive, another dose of Rhogam is administered to the mother within 72 hours after the birth.

Are there any risks to the use of Rhogam?
Rhogam is a sterile solution manufactured from human plasma. The process used to prepare it is highly effective at removing viral particles, and the plasma used is tested and found non-reactive (negative) for hepatitis C, HIV, Hepatitis B, and Parvovirus1319.

Outbreaks of hepatitis C related to anti-D immune globulin administration have been reported in Germany and Ireland. These outbreaks were due to viral contamination of the drug, a risk that has been potentially eliminated by the inclusion of solvent detergent treatment and/or filtration during the manufacturing process. Thimerosal, a mercury preservative used to prevent bacterial and fungal contamination, has been used in anti-D globulin products in the past, but the FDA mandated its removal from these products several years ago.

There is no evidence that administering Rhogam results in any significant risk of fetal anemia or short- or long-term harm to the baby's immune system. Serious adverse reactions are rare: from 1990 to 2000, during which time 2.9 million doses of one manufacturer's anti-D immune globulin were given, the manufacturer received only 11 reports of
adverse events possibly related to the drug. Side effects may include soreness, tenderness, warmth, or a rash at the site of the injection. Other mild side effects may include fever, chills, headache, or fatigue.

**Reasons to decline the use of Rhogam:**
If you are certain **without a doubt** that the baby's father is also Rh negative, you may choose to decline the administration of Rhogam. We will need documentation of the baby's father's blood type, from an official medical record or from the Red Cross as in a blood donor card).

Please read the following options carefully, and then sign under the one that you choose. Please note that only the first option is within US practice guidelines, and is the standard of care you would receive in a hospital setting.

---

**Option 1:**
I choose to follow the US Practice Guidelines:

- Antibody screen at the start of prenatal care
- Antibody screen at 28 weeks
- Rhogam injection at 28 weeks
- Draw the baby's blood from the cord after birth and Rhogam injection if baby is Rh+

---

**Print Name**

Signature / Date

---

**Option 2:**
Choose this option if you wish to **decline** the 28 week Rhogam injection. Please note this increases the risk of alloimmunization from .1 to 2%:

- Antibody screen at the start of prenatal care
- Antibody screen at 28 weeks
- **DECLINE** Rhogam injection at 28 weeks
- Draw the baby's blood from the cord after birth and Rhogam injection if baby is Rh+

---

**Print Name**

Signature / Date

---

**Option 3:**
This option **declines all Rhogam**. Choose this option if you are certain without a doubt that the father of the baby is Rh-. Please note we will need medical documentation of that fact to add to your chart.

---

**Print Name**

Signature / Date