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During pregnancy, you will have a blood test to find out your blood type and whether your blood has the Rh factor. If your blood lacks the Rh factor, it is called Rh negative. If it has the Rh factor, it is called Rh positive. More people are Rh positive. Problems can arise when the fetus's blood has the Rh factor and the mother's blood does not. These problems can be prevented with early treatment. This pamphlet will explain:

- What is the Rh factor
- How problems may occur
- What treatment is needed

What Is the Rh Factor?

Just as there are different major blood groups, such as type A and type B blood, there also is an Rh factor. The Rh factor is the type of protein found on the red blood cells. Most people have the Rh factor—they are Rh positive. Others do not have the Rh factor—they are Rh negative. A simple blood test can tell whether you are Rh positive or Rh negative.

To protect against Rh sensitization, all pregnant women should have a blood test at an early stage of pregnancy.

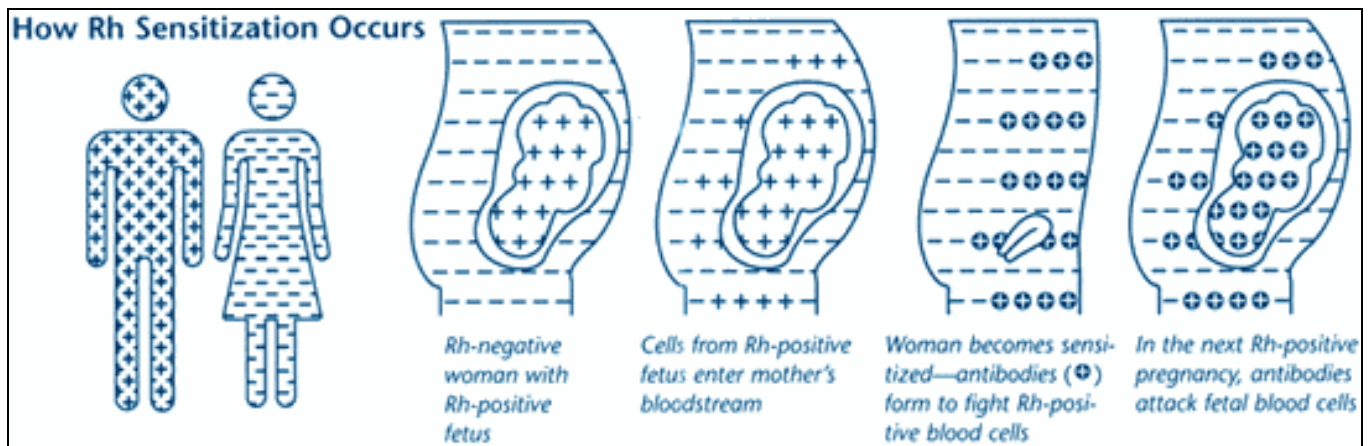
The Rh factor does not affect a person's general health. However, it can cause problems during pregnancy. In most cases, these problems can be prevented by taking a special medication.

When Does the Rh Factor Cause Problems?

The Rh factor causes problems when an Rh–negative person's blood comes in contact with Rh–positive blood. If this happens, the person with Rh–negative blood may become sensitized. This means he or she produces **antibodies** that fight the Rh factor as if it were a harmful substance.

An Rh–negative woman can become sensitized if she is pregnant with an Rh–positive fetus. If a pregnant woman is Rh negative, her fetus can be Rh positive only if the father is Rh positive.

If both the mother and father are Rh negative, there is no chance the fetus will be Rh positive and no risk to the mother that she will be sensitized. If the mother is Rh positive and the father is Rh negative, the sensitization does not occur.



During pregnancy, the woman and fetus do not share blood systems. However, a small amount of blood from the fetus can cross the **placenta** into the woman's system. When this happens, a small number of pregnant women with Rh-negative blood who carry an Rh-positive fetus will react as if they were allergic to the fetus. These Rh-negative women become sensitized and make antibodies that attack the blood of the Rh-positive fetus. When this happens, the antibodies break down the fetal red blood cells. This causes **anemia**, which can lead to a serious illness, brain damage, or even death of the fetus or newborn.

Once formed, these antibodies do not go away. In a first pregnancy with an Rh-positive fetus, the baby often is born before the woman's body develops many antibodies, so there may be no serious problems.

In a second pregnancy with an Rh-positive fetus, these antibodies are more likely to cause anemia in the fetus. In most cases, the condition becomes worse in later pregnancies.

A woman can be sensitized any time the Rh-positive blood mixes with her blood. This can occur if an Rh-negative woman has once had:

- A **miscarriage**
- An **induced abortion**
- An **ectopic pregnancy**
- A blood **transfusion**
- **Amniocentesis**
- **Chorionic villus sampling (CVS)**
- Bleeding during pregnancy

With any of these instances, small amounts of blood can mix with that of the mother, causing her to become sensitized.

How Can Problems Be Prevented?

A simple blood test can identify a woman's blood type and Rh factor. Another blood test, called an antibody screen, can show if an Rh-negative woman has developed antibodies to

Rh-positive blood.

Anemia can be prevented in the fetus if the Rh-negative woman has not yet made antibodies against the Rh factor. ***Rh immunoglobulin (Rhlg)*** is a blood product that can prevent an Rh-negative mother from being sensitized. It prevents her body from responding to Rh-positive blood cells of the fetus.

Rhlg can prevent sensitization in almost all cases. However, it is not helpful if the mother is already sensitized.

If an Rh-negative woman is given Rhlg, it likely will be injected into a muscle of the arm or buttocks. The most common side effects are soreness where the drug was injected or a slight fever. Both side effects usually go away on their own.

When Is Rhlg Used?

During Pregnancy and After Delivery

If a woman with Rh-negative blood has not been sensitized, her doctor may suggest that she receive Rhlg around the 28th week of pregnancy to prevent sensitization for the rest of the pregnancy. This prevents problems in the small number of women who can become sensitized during the last 3 months of pregnancy. Sometimes, when a pregnancy has gone past the due date, a doctor may suggest another dose of Rhlg.

Shortly after birth, if the child has Rh-positive blood, the mother should be given another dose of Rhlg. In almost all cases, this prevents the woman from making antibodies to the Rh-positive blood cells she may have received from her baby before and during delivery. No treatment is needed if the baby is Rh negative.

The treatment is good only for the pregnancy for which it is given. Each pregnancy and delivery of an Rh-positive child requires a repeat dose of Rhlg.

An Rh-negative mother may receive Rhlg after a birth even if she decides to be sterilized (have her fallopian tubes tied and cut to prevent future pregnancies). In this case, treatment may be given for three reasons:

1. The woman may decide later to have the sterilization reversed.
2. There is a slight chance that the sterilization may fail to prevent another pregnancy.
3. The treatment prevents her from developing antibodies in case she ever needs to be given a blood transfusion in the future. The presence of antibodies makes matching blood types for transfusions harder.

Other Reasons Rhlg May Be Given

An Rh-negative woman also should receive treatment after any time the blood of the mother comes in contact with the fetus. This can occur during miscarriage, ectopic pregnancy, or induced abortion. She also should receive it after certain procedures, such as amniocentesis or chorionic villus sampling. This prevents any chance of the woman developing antibodies that would attack a future Rh-positive fetus.

What Happens If Antibodies Develop?

Rh-immunoglobulin treatment does not help a woman who has already developed antibodies. A mother who is Rh-sensitized will be checked during her pregnancy to see if the fetus is at risk.

In some severe cases, a baby with anemia may be delivered early or given blood transfusions while still in the mother's uterus. In less severe cases, the baby may be delivered at the normal time. After delivery, the baby may need a transfusion to replace the blood cells.

Finally...

To protect against Rh sensitization, all pregnant women should have a blood test at an early stage of pregnancy. Rh immunoglobulin should be given to prevent the development of Rh antibodies.

Glossary

Amniocentesis: A procedure in which a needle is used to withdraw and test a small amount of amniotic fluid and cells from the sac surrounding the fetus.

Anemia: Abnormally low levels of blood or red blood cells in the bloodstream. Most cases are caused by iron deficiency, or lack of iron.

Antibodies: Proteins in the blood produced in reaction to foreign substances.

Chorionic Villus Sampling (CVS): A procedure in which a small sample of cells is taken from the placenta and tested.

Ectopic Pregnancy: A pregnancy in which the fertilized egg begins to grow in a place other than inside the uterus, usually in the fallopian tubes.

Induced Abortion: The planned termination of a pregnancy before the fetus can survive outside the uterus.

Miscarriage: Early pregnancy loss.

Placenta: Tissue that provides nourishment to and takes away waste from the fetus.

Rh Immunoglobulin (Rhlg): A substance given to prevent an Rh-negative person's antibody response to Rh-positive blood cells.

Transfusion: Direct injection of blood, plasma, or platelets into the bloodstream.

This Patient Education Pamphlet was developed under the direction of the Committee on Patient Education of the American College of Obstetricians and Gynecologists. Designed as an aid to patients, it sets forth current information and opinions on subjects related to women's health. The average readability level of the series, based on the Fry formula, is grade 6–8. The Suitability Assessment of Materials (SAM) instrument rates the pamphlets as "superior." To ensure the information is current and accurate, the pamphlets are reviewed every 18 months. The information in this pamphlet does not dictate an exclusive course of treatment or procedure to be followed and should not be construed as excluding other acceptable methods of practice. Variations taking into account the needs of the individual patient, resources, and limitations unique to the institution or type of practice may be appropriate.

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ISSN 1074-8601

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