



The American College of
Obstetricians and Gynecologists



FREQUENTLY ASKED QUESTIONS
FAQ027
PREGNANCY

The Rh Factor: How It Can Affect Your Pregnancy

- [What is the Rh factor?](#)
- [How does a person get the Rh factor?](#)
- [Can the Rh factor cause problems during pregnancy?](#)
- [What happens if there is Rh incompatibility during pregnancy?](#)
- [How does Rh sensitization occur during pregnancy?](#)
- [Do problems usually occur during the pregnancy that causes Rh sensitization?](#)
- [Can I still develop antibodies if my pregnancy is not carried to term?](#)
- [How does Rh sensitization affect the fetus during pregnancy?](#)
- [How can I find out if I have become Rh sensitized?](#)
- [Can Rh sensitization be prevented?](#)
- [Can Rhlg help me if I am already Rh sensitized?](#)
- [When is Rhlg given?](#)
- [What if I am Rh sensitized and my fetus is Rh positive?](#)
- [Glossary](#)

What is the Rh factor?

Just as there are different major blood groups, such as type A and type B, there also is an **Rh factor**. The Rh factor is a protein that can be present on the surface of red blood cells. Most people have the Rh factor—they are Rh positive. Others do not have the Rh factor—they are Rh negative.

How does a person get the Rh factor?

The Rh factor is inherited—passed down through parents' **genes** to their children. If the mother is Rh negative and the father is Rh positive, the **fetus** can inherit the Rh gene from the father and could be either Rh positive or Rh negative. If the mother and father are both Rh negative, the baby also will be Rh negative.

Can the Rh factor cause problems during pregnancy?

The Rh factor can cause problems if you are Rh negative and your fetus is Rh positive. This is called Rh incompatibility. These problems usually do not occur in a first pregnancy, but they can occur in a later pregnancy.

What happens if there is Rh incompatibility during pregnancy?

When an Rh-negative mother's blood comes into contact with blood from her Rh-positive fetus, it causes the Rh-negative mother to make **antibodies** against the Rh factor. These antibodies attack the Rh factor as if it were a harmful substance. A person with Rh-negative blood who makes Rh antibodies is called "Rh sensitized."

How does Rh sensitization occur during pregnancy?

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. This sometimes may happen during pregnancy, labor, and birth. It also can occur if an Rh-negative woman has had any of the following during pregnancy:

- **Amniocentesis**
- **Chorionic villus sampling (CVS)**
- Bleeding during pregnancy
- Manual rotation of a baby in a **breech presentation** before labor
- Blunt trauma to the abdomen during pregnancy

Do problems usually occur during the pregnancy that causes Rh sensitization?

During an Rh-negative woman's first pregnancy with an Rh-positive fetus, serious problems usually do not occur because the baby often is born before the woman's body develops many antibodies. If preventive treatment is not given during the first pregnancy and the woman later becomes pregnant with an Rh-positive fetus, the baby is at risk of Rh disease.

Can I still develop antibodies if my pregnancy is not carried to term?

It also is possible to develop antibodies after a **miscarriage**, an **ectopic pregnancy**, or an **induced abortion**. If an Rh-negative woman becomes pregnant after one of these events, she does not receive treatment, and the fetus is Rh positive, the fetus may be at risk of Rh-related problems.

How does Rh sensitization affect the fetus during pregnancy?

Problems during pregnancy can occur when Rh antibodies from an Rh-sensitized woman cross the placenta and attack the blood of an Rh-positive fetus. The Rh antibodies destroy some of the fetal red blood cells. This causes **hemolytic anemia**, where red blood cells are destroyed faster than the body can replace them.

Red blood cells carry oxygen to all parts of the body. Without enough red blood cells, the fetus will not get enough oxygen. Hemolytic anemia can lead to serious illness. Severe hemolytic anemia may even be fatal to the fetus.

How can I find out if I have become Rh sensitized?

A blood test, called an antibody screen, can show if you have developed antibodies to Rh-positive blood and how many antibodies have been made. If you are Rh negative and there is a possibility that your baby is Rh positive, your health care provider may request this test during your first trimester and again during week 28 of pregnancy.

Can Rh sensitization be prevented?

Yes. If you are Rh negative, you will be given a shot of **Rh immunoglobulin (Rhlg)**. Rhlg is made from donated blood. When given to a nonsensitized Rh-negative person, it targets any Rh-positive cells in the bloodstream and prevents the production of Rh antibodies. When given to an Rh-negative woman who has not yet made antibodies against the Rh factor, Rhlg can prevent fetal hemolytic anemia in a later pregnancy.

Can Rhlg help me if I am already Rh sensitized?

Rhlg is not helpful if you are already Rh sensitized.

When is Rhlg given?

Rhlg is given to Rh-negative women in the following situations:

- At around the 28th week of pregnancy to prevent Rh sensitization for the rest of the pregnancy
- Within 72 hours after the delivery of an Rh-positive infant
- After a miscarriage, abortion, or ectopic pregnancy
- After amniocentesis or chorionic villus sampling

What if I am Rh sensitized and my fetus is Rh positive?

If you are Rh sensitized, you will be monitored during pregnancy to check the condition of your fetus. If tests show that your baby has severe anemia, it may be necessary to deliver your baby early (before 37 weeks of pregnancy) or give a blood **transfusion** while your baby is still in your **uterus** (through the **umbilical cord**). If the anemia is mild, your baby may be delivered at the normal time. After delivery, your baby may need a transfusion to replace the blood cells.

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.

Antibodies: Proteins in the blood produced in reaction to foreign substances, such as bacteria and viruses that cause infection.

Breech Presentation: A position in which the feet or buttocks of the fetus would be born first.

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 one of the fallopian tubes.

Fetus: The developing organism in the uterus from the ninth week of pregnancy until the end of pregnancy.

Genes: Segments of DNA that contain instructions for the development of a person's physical traits and control of the processes in the body. They are the basic units of heredity and can be passed down from parent to offspring.

Hemolytic Anemia: Anemia caused by destruction of red blood cells.

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

Miscarriage: Loss of a pregnancy that occurs before 20 weeks of pregnancy.

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

Rh Factor: A protein that can be present on the surface of red blood cells.

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.

Umbilical Cord: A cord-like structure containing blood vessels that connects the fetus to the placenta.

Uterus: A muscular organ located in the female pelvis that contains and nourishes the developing fetus during pregnancy.

If you have further questions, contact your obstetrician–gynecologist.

FAQ027: Designed as an aid to patients, this document sets forth current information and opinions related to women's health. The information 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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