

The Rh Factor

How It Can Affect Your Pregnancy

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What is the Rh factor?

The **Rh factor** is a protein that can be found on the surface of red blood cells. If your blood cells have this protein, you are Rh positive. If your blood cells do not have this protein, you are Rh negative.

How does a person get the Rh factor?

The Rh factor is inherited, meaning it is passed from parent to child through **genes**. The **fetus** can inherit the Rh factor from the father or the mother.

Can the Rh factor cause problems during pregnancy?

Yes. During pregnancy, problems can occur if you are Rh negative and your fetus is Rh positive. When a woman is Rh negative and her fetus is Rh positive, it is called Rh incompatibility.

What happens if there is Rh incompatibility during pregnancy?

If the blood of an Rh-positive fetus gets into the bloodstream of an Rh-negative woman, her body will understand it is not her blood and will fight it by making anti-Rh **antibodies**. These antibodies can cross the **placenta** and try to destroy the fetus's blood. This reaction can lead to serious health problems and even death in a fetus or newborn.

How can my fetus's blood get into my bloodstream?

During pregnancy, a woman and her fetus usually do not share blood. But sometimes a small amount of blood from the fetus can mix with the woman's blood. This can happen during labor and birth. It also can occur with any of the following:

- **Amniocentesis** or **chorionic villus sampling (CVS)**
- Bleeding during pregnancy

- Attempts before labor to manually turn a fetus from a **breech presentation**
- Trauma to the abdomen during pregnancy

How can Rh problems affect the fetus during pregnancy?

Rh incompatibility can lead to a type of **anemia** in the fetus in which 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. In some cases, the fetus can die from anemia.

Can the Rh factor cause problems during my first pregnancy?

Health problems usually do not occur during an Rh-negative woman's first pregnancy with an Rh-positive fetus because her body does not have a chance to develop a lot of antibodies. But if preventive treatment is not given during the first pregnancy and the woman later gets pregnant with an Rh-positive fetus, she can make more antibodies. More antibodies put a future fetus at risk.

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

An Rh-negative woman can make antibodies after a **miscarriage**, **ectopic pregnancy**, or **induced abortion**. If an Rh-negative woman gets pregnant after one of these events and has not received treatment, a future fetus may be at risk of problems if it is Rh positive.

How can I learn if I am Rh negative?

A simple blood test can find out your blood type and Rh status. A blood sample can be taken in the office of your **obstetrician–gynecologist (ob-gyn)** or other health care professional. This sample usually is taken during the first prenatal visit. Another blood test, called an antibody screen, can show if an Rh-negative woman has made antibodies to Rh-positive blood.

Can Rh problems be prevented?

Yes. The goal of preventive treatment is to stop an Rh-negative woman from making Rh antibodies in the first place. This is done by finding out if you are Rh negative early in pregnancy (or before pregnancy) and, if necessary, giving you a medication to prevent antibodies from forming.

What medication prevents Rh problems?

When an Rh-negative woman has not already made antibodies, a medication called **Rh immunoglobulin (Rhlg)** can be given. Rhlg stops the body from making antibodies, which can prevent severe fetal anemia in a future pregnancy.

When is Rhlg given?

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

- At around week 28 of pregnancy
- Within 72 hours after the birth of an Rh-positive baby

A dose of Rhlg also may be needed

- after an ectopic pregnancy or a first-trimester miscarriage or abortion
- after invasive procedures, such as amniocentesis, CVS, fetal blood sampling, or fetal surgery

Additionally, you may be given Rhlg if you have had

- bleeding during pregnancy
- trauma to the abdomen during pregnancy
- attempts to manually turn a fetus from a breech presentation

What if I have already made antibodies and my fetus is Rh positive?

In this case, the well-being of the fetus will be checked during the pregnancy. If tests show that the fetus has severe anemia, early delivery (before 37 weeks of pregnancy) may be necessary. Another option may be to give a blood transfusion through the **umbilical cord** while the fetus is still in the woman's **uterus**. If the anemia is mild, the baby may be delivered at the normal time. After delivery, the baby may need a blood transfusion to replace 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.

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

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 stage of prenatal development that starts 8 weeks after fertilization and lasts 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 from parent to child.

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

Miscarriage: Loss of a pregnancy.

Obstetrician–Gynecologist (Ob-Gyn): A physician with special skills, training, and education in women's health.

Oxygen: A gas that is necessary to sustain life.

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.

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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