



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?**
- **When does the Rh factor cause problems?**
- **How can an Rh-negative woman become sensitized?**
- **When does sensitization occur?**
- **When are women at risk of sensitization?**
- **Is there a test to see if sensitization has occurred?**
- **How can anemia in the fetus of a sensitized woman be prevented?**
- **How is Rhlg administered?**
- **When is Rhlg administered?**
- **How many treatments with Rhlg are needed?**
- **What happens if antibodies develop?**
- **Glossary**

### What is the Rh factor?

The Rh factor is a type of protein found on 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.

### When does the Rh factor cause problems?

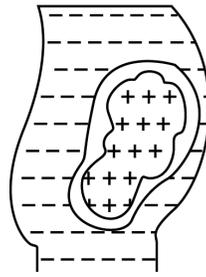
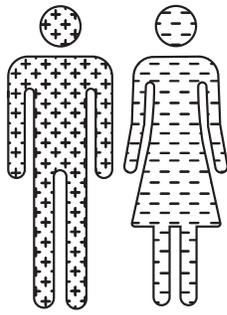
The Rh factor causes problems when an Rh-negative person's blood comes in contact with Rh-positive blood. If this happens, the person with Rh-negative blood may become sensitized. This means he or she produces **antibodies** that fight the Rh factor as if it were a harmful substance. Once formed, these antibodies do not go away.

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 become sensitized and make antibodies against the Rh factor. These antibodies can attack and break down fetal Rh-positive red blood cells. This causes **anemia**, which can lead to a serious illness, brain damage, or even death of the fetus or newborn.

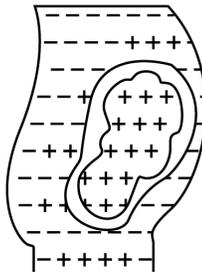
### How can an Rh-negative woman become sensitized?

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, sensitization does not occur.

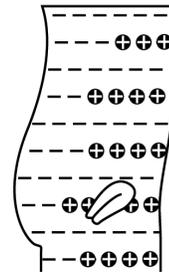
## How Rh Sensitization Occurs



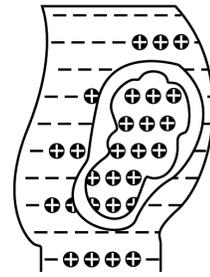
*Rh-negative woman with Rh-positive fetus*



*Cells from Rh-positive fetus enter mother's bloodstream*



*Woman becomes sensitized—antibodies (+) form to fight Rh-positive blood cells*



*In the next Rh-positive pregnancy, antibodies attack fetal blood cells*

## When does sensitization occur?

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.

## When are women at risk of sensitization?

A woman can be sensitized whenever 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.

## Is there a test to see if sensitization has occurred?

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.

## How can anemia in the fetus of a sensitized woman be prevented?

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. However, it is not helpful if the mother is already sensitized.

## How is Rhlg administered?

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 administered?

If a woman with Rh-negative blood has not been sensitized, her health care provider 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, another dose of Rhlg is given.

## How many treatments with Rhlg are needed?

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.

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.

## What happens if antibodies develop?

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.

## 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 waste away 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.

## 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 institution or type of practice, may be appropriate.

Copyright August 2011 by the American College of Obstetricians and Gynecologists. No part of this publication may be reproduced, stored in a retrieval system, posted on the Internet, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without prior written permission from the publisher.