

# Background

## Why should you be concerned about Fifth Disease or Parvovirus B19?

**Fifth disease**, a viral illness caused by Parvovirus B19, can often be diagnosed by observing the characteristic “slapped-cheek” rash, flu-like symptoms and arthralgia (joint pains) associated with the disease. In some cases of exposure however, symptoms are not evident and a blood test should be performed to determine whether exposure and infection have occurred. High-risk groups to this disease are pregnant women and immuno-compromised patients (a weak immune system). If you are not immune to infection and become exposed or infected during pregnancy, this virus can potentially harm your unborn child. You can be tested for your **fifth disease** immune status and if required, your physician can take appropriate steps to protect your pregnancy.

It is estimated that approximately 3000 fetal deaths are the result of Parvovirus B19 infection annually in the EU. A similar rate can be expected for North America<sup>1</sup>.

## What is “Fifth Disease” or Parvovirus B19 ?

**Fifth disease**, also known as erythema infectiosum, is a viral illness caused by human Parvovirus B19. The term “fifth disease” refers to the fifth of the 6 rash-associated diseases of childhood.

Parvovirus B19 commonly infects children and typically causes a mild rash that may resemble a “slapped-cheek”. Other symptoms that can occur include joint pain (arthralgia that is more severe in women than men), fever and general flu-like symptoms. **Fifth disease** does not have any lasting effects in healthy children and adults. However if contracted when pregnant or immuno-compromised (a weak immune system), complications may arise.



## Who is at risk?

In general, **fifth disease** infection is symptomatically mild in healthy individuals and indeed is often asymptomatic. Although **fifth disease** infects mostly children, they are the most non-immune group, 50-60% of adults are immune as they have been exposed to the virus in their youth. This leaves 40-50% of women susceptible to acquiring B19 infection. Non-immune mothers with children at school, teachers, day-care workers and health professionals have the highest risk of exposure to **fifth disease**. Your immune status can be assessed by a simple blood test.

The estimated risk of transplacental infection among non-immune women who are infected with **fifth disease** during pregnancy is 30% with up to a 10% risk of fetal loss<sup>2</sup>. However in a recent study, fetal death occurred in 11% of non-immune women infected within the first 20 weeks of gestation<sup>3</sup>.

## How can Fifth Disease affect your pregnancy?

**Fifth disease** in children and healthy adults is a common illness that does not have any lasting effects. However, if contracted during pregnancy, **fifth disease** may cause complications to the health of the fetus. **Fifth disease** can cause fetal anemia i.e. if the baby's blood count becomes too low, resulting in intrauterine death. Fortunately, this tragic outcome can be circumvented with a correct and prompt diagnosis and treatment.

Mothers who are immune to **fifth disease** need not worry.

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## How is the virus transmitted?

**Fifth disease** is commonly transmitted among humans via respiratory secretions (coughing and sneezing) and hand-to-mouth contact. **Fifth disease** outbreaks are most prevalent in the springtime/early summer. Epidemic occurs approximately every 3 years and the risk of infection is highest in epidemic years. During outbreaks, there is a 50% chance of transmission if a family member is infected and a 25% chance in a school setting<sup>4</sup>.

## How will you know if you have the disease?

Ten days to two weeks after infection a red, "slapped cheek" rash appears in many patients. A patient is no longer infectious after the onset of the rash. In women severe joint pain may often be a symptom.

## How is Fifth Disease diagnosed?

Often a clinician can diagnose **fifth disease** by observing the characteristic "slapped-cheek" rash. In some cases, however, where symptoms are not evident; a blood test must be carried out. When your sample of blood arrives in the laboratory, testing is carried out for specific antibodies that your body produces in response to **fifth disease**. If immunoglobulin M (IgM) antibody to Parvovirus B19 is detected, the test result shows that you have had or currently have a recent infection. If immunoglobulin G (IgG) antibodies are present, immunity to **fifth disease** is indicated. If IgG and IgM antibodies are absent, you are at risk of picking up the infection.

## What should you do if you are pregnant and you believe you have been exposed to the virus?

The American College of Gynecologists and Obstetricians (ACOG) recommends that pregnant women who believe they have been exposed should "have serological screening performed to determine if they are at risk for seroconversion"<sup>5</sup>.

Simple FDA cleared blood tests are available through your physician.

Ask your doctor for the test when you become pregnant as a part of your first prenatal screen.

If a test shows that a pregnant woman is not immune and has been exposed to the virus, ACOG guidelines recommend that weekly ultrasounds be carried out for at least 10 weeks to determine the presence of hydrops fetalis. Infected fetuses can be treated by intra-uterine transfusion<sup>5</sup>.

Until an approved, effective vaccine is available, knowledge of your immune status allows you and your physician to avoid occasions of exposure where possible (i.e. school outbreaks), and to monitor your pregnancy and initiate treatment of your unborn baby should it be warranted.

For further information, check out :

[www.fifthdisease.org](http://www.fifthdisease.org)

## REFERENCES

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