

## Fifth Disease (erythema infectiosum, parvovirus B19 infections)

*Disease Fact Sheet Series*

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### **What is fifth disease?**

Fifth disease is a viral infection caused by human parvovirus B19. Fifth disease is not a reportable disease in Wisconsin. In most instances, fifth disease is a relatively mild, self-limited rash illness of childhood; recent studies indicate, however, that infection with parvovirus B19 in rare instances can lead to serious complications.

### **Who gets fifth disease?**

Anyone can become infected with the virus which causes fifth disease, but the disease is most often recognized in elementary school-aged children. Occurrence of parvovirus B19 infection is worldwide and can occur throughout the year in all age groups as either sporadic cases or as clusters of cases of fifth disease.

### **What are the symptoms of fifth disease and when do they appear?**

Four to fourteen days after exposure to the virus, an individual may experience low grade fever and tiredness. This is often followed by a distinctive facial rash often referred to as "slapped cheeks". The facial rash may then progress to a lace-like rash on the trunk, legs, and arms; this rash tends to fade and reappear with changes in temperature, sunlight, and emotional stress.

Approximately 20 percent of infected children and adults do not have any symptoms. Some adults do not develop rash but may complain of painful and swollen joints.

### **How is fifth disease spread?**

The virus is spread by exposure to airborne droplets from the nose and throat of infected individuals. Approximately 50 percent of susceptible (have not been previously infected) household contacts of a case of fifth disease will become infected. In school outbreaks of fifth disease, about 30 percent of susceptible staff and as many as 60 percent of susceptible children will become infected with the virus.

### **When and for how long is a person able to spread fifth disease?**

Persons with fifth disease usually spread the virus during the week before the appearance of their rash. By the time their rash is evident, the individual is no longer spreading the virus.

### **How is fifth disease diagnosed?**

In most cases, fifth disease is diagnosed based on the appearance of the characteristic rash. In addition, a specific blood test (which is not widely available) can confirm the diagnosis; this blood test is available through your local public health agency for those individuals who are at risk of serious consequences (severe anemia or miscarriage) if infected with B19 virus.

### **Does past infection with the virus make a person immune?**

It is thought that persons who have previously been infected acquire long-term or lifelong immunity. Studies have shown that approximately 50 percent of adults may be immune to parvovirus B19.

(Over)

**What are the complications associated with fifth disease?**

While most individuals infected with parvovirus B19 virus will experience a mild, self-limited infection, newly emerging information suggests that some individuals may be at increased risk if they become infected with this virus. While most women infected during pregnancy will not be affected, limited studies have shown that parvovirus B19 may infect the fetus and increase the risk of miscarriage within the first 20 weeks of pregnancy. In individuals with impaired immune function (eg. leukemia or cancer) or with chronic red blood cell disorders, such as sickle-cell disease, infection may result in severe anemia.

Persons who are exposed to parovirus B19 and are either pregnant or have an impaired immune function or a chronic red blood cell disorder should consult with their physician.

**Where can I call for additional information regarding fifth disease during pregnancy? How can I arrange to have a blood test done if I am pregnant and have been exposed to a case of fifth disease?**

In addition to your physician, further information about fifth disease and arrangements for blood testing can be obtained from your local public health department.

**What is the treatment for fifth disease?**

At this time there is no specific treatment beyond the supportive blood transfusions which are sometimes necessary for those with impaired immune function or chronic red blood cell disorders.

**Is there a vaccine against the virus which causes fifth disease?**

There is currently no vaccine to prevent infection with this virus.

**What can be done to prevent the spread of fifth disease?**

Measures to effectively control fifth disease have not been developed yet. When outbreaks of fifth disease occur in a school or community, options for preventing transmission are limited. Because the risk of transmitting B19 virus to others is greatest before signs and symptoms develop, transmission cannot be prevented by identifying and excluding symptomatic individuals. Individuals with fifth disease should not be excluded from schools or daycare centers unless they have a fever. When their fever subsides and they feel well, they can return to school and daycare. Good handwashing may be a practical and effective method to reduce spread of virus in schools or daycare centers where there are known cases.

**Should pregnant women and employees or children who have chronic hemolytic anemias or immunodeficiency be excluded from settings where there are known cases of fifth disease?**

Routine exclusion is not recommended for the following reasons: 1)many women of childbearing age are immune and 90 percent of maternal infections do not result in adverse fetal outcome; 2)outbreaks of fifth disease often persist for many months in a community and thus there are many settings besides schools or daycare centers where an individual may be exposed to the virus; 3)parvovirus B19 infection can occur in the absence of apparent outbreaks from exposure to sporadic cases; 4)risk to individuals with impaired immune function or red blood cell metabolism defect is minimal if the individual is managed appropriately by a physician.

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