

## **Fifth disease**

**Also known as** Erythema infectiosum, parvovirus B19 infection, fifth disease or “slapped cheek” disease

### **What is erythema infectiosum?**

Erythema infectiosum is usually a harmless childhood viral infection characterised by a classic slapped-cheek appearance or a lacy patterned rash. The infection can be associated with fevers.

### **What causes erythema infectiosum?**

Human parvovirus B19 is a member of the family *Parvoviridae*. The time from contact to clinical signs and symptoms varies between 4 and 14 days.

Transmission is via respiratory secretions, blood products and from a pregnant woman to her foetus.

Approximately 75% of cases occur in children aged 5 to 15 years but any age group can be affected.

Worldwide epidemics of the infection tend to occur in late winter or early spring. One infection gives lifelong immunity. The infection is so common that more than 50% of all adults have been infected by the age of 20.

### **What does erythema infectiosum look like?**

Up to half of those who contract the condition have no signs or symptoms.

Mild symptoms such as low-grade fever, muscle aches and headache may occur 7 to 10 days before the characteristic rash appears. Rose-red spots on the cheeks rapidly come together to form a hot, red, sunburn-like or “slapped-cheek” appearance. Usually, the rash does not affect the areas around the nose, eyes and mouth.

A red bumpy rash may occur 1 to 4 days later on the extremities and to a lesser extent on the trunk. This progresses to a lacy, reticulated pattern. Sometimes spots may appear in the mouth.

The rash typically lasts between 1 and 3 weeks. It may recur with exercise, irritation, stress or the skin overheating from sun exposure or bathing in hot water.

### **What other problems can occur with erythema infectiosum?**

In adults, especially women, polyarthralgia (multiple inflamed joints) is often the main symptom of infection. Small joints of the hands as well as wrists, knees and ankles are most commonly affected. Joint pain may be present without an accompanying rash.

Acute cases are associated with a distinctive syndrome called “papular-purpuric gloves and socks syndrome”. This is characterised by swelling and redness of palms and soles in association with pinpoint purple spots.

Erythema infectiosum can cause a much more serious infection and trigger a range of complications in high-risk groups:

- **People with haemolytic anaemias** such as sickle cell anaemia or thalassaemia infection can develop more severe loss of red blood cells called aplastic crisis.
- **Pregnant women** without immunity (who have not been previously infected with the virus). Foetal B19 infection can range in severity from self-limiting to severe anaemia (hydrops fetalis), spontaneous miscarriage or stillbirth. The greatest susceptibility is associated with

infections acquired in the first half of pregnancy. However, the majority of infants born to B19-infected mothers are delivered without symptoms at full-term. There is no evidence of long-term birth abnormalities.

- **People with a weakened immune system** such as those with leukemia or HIV can experience prolonged and sometime severe symptoms as well as chronic bone marrow failure.

Other conditions associated with or triggered by the condition include:

- Thrombocytopenic purpura
- Hepatitis
- Systemic vasculitis in the form of small vessel vasculitis,
- polyarteritis nodosa or Wegener's granulomatosis
- Neurologic disease
- Chronic fatigue syndrome
- Systemic lupus erythematosus-like illness
- Unilateral laterothoracic exanthema
- Haemophagocytic lymphohistiocytosis

#### **How is erythema infectiosum diagnosed?**

The diagnosis is usually based on the clinical appearance of the rash alone. Blood tests may be needed in cases of doubt or when a pregnant woman has been exposed to the infection.

#### **How is erythema infectiosum treated?**

The classic childhood form of the condition is self-limiting which means that it resolves spontaneously without complications. There is no specific treatment. Affected children may remain at school as the infectious stage occurs before the rash is evident. Often the only intervention needed is to reassure parents of affected children.

It is important that everyone in the same household washes their hands frequently to reduce the chances of the infection spreading.

Symptoms can be relieved by:

- Resting and having plenty of fluids
- Applying an ice-cold flannel on burning hot cheeks
- Oral analgesics (e.g. paracetamol or nonsteroidal anti-inflammatory drugs), antihistamines or anti-itching creams such as calamine lotion.

Pregnant women who may have come into contact with people in the incubation stage or in aplastic crisis should be referred for obstetric follow-up care for possible serologic testing and close foetal monitoring.

Individuals predisposed to aplastic crisis require hospitalisation and are likely to need transfusion and/or intravenous immunoglobulin therapy.

There is no vaccination to prevent the infection.

