

# Lyme disease

From the public healthcare guide 11 April 2016 See <http://www.1177.se/Skane/Fakta-och-rad/Sjukdomar/Borreliainfektion/>

## General information

Lyme disease or Lyme borreliosis is an infectious disease caused by borrelia bacteria. The most common symptom is a characteristic rash. The disease is spread by ticks and is prevalent in large parts of Sweden. You usually do not get infected if you immediately remove the tick. Lyme disease is treated with antibiotics. If you do not get treatment, the infection can spread to the nervous system and the joints. In that case, it can take longer to recover.

There is no vaccine against Lyme disease as yet.

You can try to protect yourself against [tick bites](#) by wearing long trousers, long-sleeved tops and boots when you are out in nature.

## Symptoms

Common signs of infection with Lyme disease are

- tiredness
- headache
- pain in muscles and joints
- a rash which is larger than five centimetres in diameter.

You may not notice that you have been bitten by a tick, but only discover symptoms that could indicate Lyme disease.

### A skin rash larger than five centimetres

The most common symptom is a rash with a diameter of more than five centimetres in the spot where you were bitten by a tick. Around half of those infected get this rash. The skin may also feel numb and itchy. The rash usually comes one to four weeks after you have been bitten.

This characteristic rash, known as erythema migrans, becomes larger over time. It may pale at the centre, which makes the rash gradually become ring-shaped. The rash may also be evenly red, which is more common in women. It may also be oval or irregular in shape.

The rash is not to be confused with the minor redness that you may experience directly after being bitten by a tick. That redness is a reaction to the bite and usually disappears after a few days. It is usually not a sign of infection with Lyme disease.

### You may have several rashes

You may get more than one rash on your body. These are known as multiple erythema migrans. If you do, you usually get a fever at the same time. You may have other kinds of skin reactions, such as weeping sores or rashes with blisters.

### Lyme disease can spread to the joints and nervous system

Lyme disease infection that is left untreated with antibiotics can spread to the joints and the nervous system.

In that case, you may experience symptoms such as

- headache
- fever around 38 degrees
- joint pain in the neck, arms, back and legs
- weight loss
- temporary facial paralysis.

In exceptional cases, the heart and eyes may also be affected.

### **Joints can become inflamed**

Joint and muscle pain are common in cases of Lyme disease. The disease can also cause a form of joint inflammation, known as Lyme arthritis. In that case, one or several joints become swollen. The knee joints often swell up. The swelling lasts between a few days and a couple of weeks. It usually disappears by itself, but can return several times at long intervals. Even once the swelling has subsided, you may have pain in the muscles and joints.

### **The nervous system may be affected**

In fewer than one in ten cases, Lyme disease will affect the nervous system. This is known as neuroborreliosis or Lyme neuroborreliosis (LNB) and is more common in children than in adults.

The symptoms often appear between one and two months after the tick bite. Sometimes it takes up to six months. Usually, you first get the typical rash, but many people get no skin changes before getting the other symptoms. Adults more often get severe pain in their arms, legs or back. In children, the symptoms are less distinct.

Both adults and children may experience temporary paralysis of part of their face.

### **Differences between women and men**

Lyme disease is more common among women than men, above all in older middle age. It is also more common for women to have recurrent bouts of Lyme disease. The reason is probably differences in the ability of the immune systems of women and men to combat the borrelia bacteria.

### **When should I get professional help?**

Usually, you do not need to get professional help if you have been bitten by a tick. Pay attention to whether the skin around the bite area becomes red after a few days or weeks. Also notice whether the rash gradually gets bigger.

Contact a primary healthcare centre if you have a skin change which is larger than five centimetres in diameter at the spot where you were previously bitten by a tick. Remember that you may have been bitten by a tick without noticing it.

If you get a severe headache or symptoms of paralysis, you are to get professional help immediately from a primary healthcare centre or emergency room.

You can get [medical attention](#) at any primary healthcare centre or open specialist clinic in the country. You can also have a regular GP at your primary healthcare centre.

You can always call for advice from the [healthcare advisory service by dialling 1177](#).

### **How borrelia infects you**

You can get Lyme disease if you are [bitten by a tick](#) that is a carrier of borrelia bacteria. Ticks suck the blood of birds, mammals and humans and can thereby become infected with various agents. Then they pass on the infection to the next host from which they suck blood.

If you get infected, usually at least one day passes between the tick attaching itself to you and the borrelia bacteria being transferred to you. Promptly remove ticks to reduce the risk of infection.

### **Lyme disease occurs almost all over Sweden**

Lyme disease is generally prevalent over large parts of the northern hemisphere. The disease occurs in the whole of Sweden, except for the inner parts of Norrland. The risk of infection is highest in coastal areas, in particular in the south-eastern parts of southern and central Sweden. Up to one third of ticks can be carriers of borrelia bacteria. At least 10 000 people get Lyme disease in Sweden every year. The likelihood of getting infected if you are bitten by a tick is less than one in a hundred.

Ticks are active when the temperature is above 4–5 degrees. This usually means a season running from early March to late November. The borrelia-carrying tick shows a clear trend towards spreading northwards in Sweden, probably because of climate factors.

### **How can I protect myself against Lyme disease?**

You can try to avoid getting bitten by ticks, by wearing boots, long trousers, and long-sleeved sweaters in areas where ticks are prevalent. Dark clothes have shown to attract fewer ticks, but the ticks can be easier to spot on light-coloured clothing. Unfortunately, mosquito repellents do not provide reliable protection against tick bites.

You can get infected more than once.

### **You cannot get vaccinated against Lyme disease**

There is no vaccine against Lyme disease, although research is underway in Sweden, among other countries. However, there is a [vaccine against TBE](#), which is also passed on through tick bites.

### **Treatment**

The early form of Lyme disease, which produces the typical skin infection, is treated with penicillin. You will be given the medicine in tablet form. The treatment prevents the disease from spreading in the body. Most patients recover fully after treatment.

### **It can take time to recover from Lyme disease**

If the infection has spread, you will be given a different type of [antibiotics](#), also in tablet form. When the treatment is started late, it can take longer for the body to recover fully. It can sometimes take many months for all the residual symptoms to disappear, despite the borrelia infection itself being cured.

**Long treatment does not produce any effect**

You do not recover more quickly from getting longer treatment with antibiotics besides the first course. However, long term treatment with antibiotics may cause side-effects.

# TBE

From the public healthcare guide 9 June 2016. See <http://www.1177.se/Skane/Fakta-och-rad/Sjukdomar/TBE/>

TBE (tick-borne encephalitis) is a viral disease spread by ticks which can cause inflammation in the brain or in its surrounding membrane. Most people who get infected have mild symptoms and recover after about a week, but up to one third will suffer from encephalitis or meningitis.

The virus is mainly prevalent in the coastal areas of the counties of Stockholm, Södermanland and Uppsala. However, over the last decade, increasing numbers of people have been infected and the geographical extension of the TBE virus has grown. Around 200 people become ill from TBE every year.

You can protect yourself from the disease by getting [vaccinated](#). The vaccination is given to children from the age of 1 year.

## **The risk of infection is low**

Even in the risk areas, few ticks, around two per cent at most, carry the virus. So the risk of getting infected from a few individual tick bites is slim.

Since the early 2000s, the number of reported cases of TBE has more than doubled. Cases of the disease also occur outside the traditional risk areas. This indicates an increased extension, and to monitor the spread of the disease, the treating physician reports all cases of TBE to the [Public Health Agency of Sweden](#).

## **Symptoms**

It often takes between four and ten days from infection to signs of the disease, but it can take up to a month.

The first signs of infection are vague and general problems such as headache, muscular pain, tiredness and fever. These symptoms only last from a couple of days to a week. By this time, most people have got rid of the infection and have made a full recovery.

However, in around 20–30 per cent of cases, the virus spreads to the brain. New symptoms then usually appear around one week after the first ones have faded. The new symptoms are:

- High fever
- Severe headache
- Vomiting
- Photosensitivity

## **Get professional help**

Contact a public healthcare centre if you get a fever, headache, unusual tiredness or muscle pain some time after a tick bite.

You can always call for [healthcare advice over the phone by dialling 1177](#).

## **Only the symptoms can be treated**

There is currently no way to cure TBE once it has taken hold; the body has to deal with the infection itself. However, you can get treated for the various symptoms that appear. If you get meningitis or encephalitis, you usually, although not always, will need to be treated in hospital. It can take several months to recover. In serious cases of the disease, permanent damage is not unusual.

Once you have had TBE, you are immune to it for the rest of your life.

### **How can I protect myself against TBE?**

You can protect yourself against tick bites, to a certain extent. For example, by

- wearing boots, long trousers and long-sleeved sweaters in areas where ticks are found.
- having dark clothes, as they attract fewer ticks. On the other hand, ticks are easier to spot on light-coloured clothes.

### **Vaccination provides effective protection**

You can get vaccinated against TBE at your basic healthcare centre or at a vaccination clinic. Vaccination is recommended if you are live permanently or have a summer residence in a risk area, or if you often spend time in the woods or in areas with a risk of infection. The TBE vaccination for children can be administered from the age of 1 and generally provides effective protection against the disease in children.

### **Medical tests and examinations**

A blood sample shows whether the body has started to produce antibodies against TBE. If the central nervous system is affected, the patient's spinal fluid will also be tested.

### **Complications and consequences of the disease**

In approximately 20–30 per cent of all those infected, the virus will spread to the brain and the membrane around it. This can affect the central nervous system, disrupting the patient's ability to walk, speak, concentrate and remember. Every tenth patient will get various paralytic symptoms.

TBE sometimes causes death, but the risk is very low in Sweden. In children under the age of seven, the course of the disease is usually milder than that described here.

### **TBE, pregnancy and breast-feeding**

There are no known cases of TBE infection spreading from a mother to a foetus or new-born infant, nor any indications that TBE affects pregnancy or breast-feeding.

All experience indicates that you can be vaccinated against TBE both during pregnancy and while breast-feeding. The vaccination does not constitute a risk for you or for your child.

### **What happens in the body?**

TBE, or tick-borne encephalitis, is caused by a virus spread by ticks. In most infected people, the body's own immune system manages to defeat the virus before it spreads to the brain, so they have no symptoms at all or insignificant ones. Up to one third of all those infected will get symptoms of meningitis or encephalitis.

### **How do you get infected?**

You get infected if you are bitten by a tick that is carrying the virus. Ticks need blood to develop, and they get blood by attaching themselves to birds and mammals. Through blood, the ticks can get infected with various infectious agents and pass them on. The ticks are active when the temperature rises above 4–5 degrees. This usually means a season lasting from early March until late November.

The virus is present in the tick's saliva glands and can rapidly be transferred by a bite. You can therefore get infected with TBE even if you quickly remove the tick.

# Wasp and bee stings

From the healthcare guide 26 September 2016 <http://www.1177.se/Skane/Fakta-och-rad/Sjukdomar/Geting--och-bistick/#>

A wasp or bee sting usually causes an intense and throbbing pain in the area that was stung, shortly followed by local redness and swelling. The area also often stings and itches.

On the first day after the sting, the swelling may increase and the pain may radiate out from the location of the sting. A sting is usually not dangerous, and unless you feel otherwise unwell, you can wait and see if it passes. Only few people get severe [allergic reactions after wasp or bee stings](#).

## Try to remove the stinger

If you have been stung by a bee, the stinger and its attached venom sac may still be in your skin. In that case, you should try to remove them. The stinger can continue to pump venom into your skin for a minute or so after the sting, even if the insect has gone. The best way to remove the sting is to try and scrape it off with a fingernail or a knife, for example. Get someone to help you if possible.

## Use cold to soothe the pain

Cooling the stung area with an ice cube wrapped in a napkin or towel, or with cold water, often helps to soothe the pain.

## Cream, ointment and gel for itching and stinging

To soothe the itching and stinging, you can also bathe the spot with Alsol spirits (aluminium acetotartrate) or apply Alsol gel. You can also apply cooling balm or a local anaesthetic ointment, Xylocain. Another option is cream or ointment containing hydrocortisone. These remedies can be purchased over the counter at the chemist's.

You must consult a doctor before using Xylocain on children under 18 months and hydrocortisone on children under the age of 2.

## Avoid infection

In order to avoid breaking the skin by scratching, which can lead to infection, you can cover the sting with a plaster.

## Multiple stings

The more stings from bees or wasps you get the more venom you are exposed to, which can lead to a stronger reaction. The number of stings that causes this can vary from one person to another. Children, the elderly and people with cardio-pulmonary disease are usually more sensitive.

## Seek treatment

If the swelling and pain at the sting site become strong and increase after a few days, you should seek treatment.

If you are stung in the mouth or get breathing difficulties, you must go directly to a primary healthcare centre or emergency room.

If you are allergic to bee and wasp stings, a single sting may suffice to give you a strong allergic reaction. Signs of a strong allergic reaction are for example feeling sick, breaking out into a cold sweat, feeling dizzy and very pale. Other symptoms are swelling of the face, lips and throat, hives, coughing, palpitations or breathing difficulties. In that case, you must seek treatment immediately at a primary healthcare centre or emergency room.

You can contact your primary healthcare centre if you have previously had a strong reaction to a wasp or bee sting to discuss whether you should have allergy medicines to hand in case it happens again.

You can always call and get [healthcare advice by dialling 1177](#).

# Viper bites

From the healthcare guide 17 March 2016 <http://www.1177.se/Skane/Fakta-och-rad/Sjukdomar/Huggormsbett/>

## Reactions to viper bites vary a lot

Viper bites usually hurt and appear as two small holes or dots on the skin about 6–9 millimetres apart. It is common for the area around the bite to swell up, and the swelling may spread along the part of the body that has been bitten.

Being bitten by a viper can lead to very different reactions. Just under half of those who are bitten get no symptoms at all, which is because no venom has been injected. Some get only insignificant swelling, whereas others can get very ill. How strong the reaction is depends on the amount of venom that has entered the body and the location of the bite. Children, the elderly and pregnant women are particularly sensitive.

## Call the poisons information centre

As it is difficult to know how severely you will react to a viper bite, you are always to call the *Poisons information centre* by dialling 112 or calling 010-456 67 00 for advice when you have been bitten by a viper.

## Go to hospital

All viper bite victims are to go to the nearest hospital with an emergency room for observation.

If your general state of health is affected by nausea, vomiting, stomach pain, diarrhoea, dizziness, cold sweats, palpitations, swollen lips or breathing difficulties, you are to ring 112 for help with emergency transport to hospital.

If you are unaffected, you are still not to drive to the hospital yourself; ask for help in getting there.

## Before you get to the hospital

Keep still and rest, as the venom spreads faster when you exert yourself.

Keep the bitten limb still, and raised if possible.

Take off all tight-fitting items such as shoes, rings and watch as the area around the bite often swells up.

Leave the site of the bite alone. Do not try to suck out the venom, cool or warm the area or tie anything like a belt or suchlike around the bitten body part. This could make the outcome worse.

## Treatment with viper antivenom

There is a viper antivenom that can effectively halt the course of illness if you have reacted strongly to the bite.