

## Lifestyle & Culture

# In-depth coverage of Lyme disease



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*Lyme borreliosis*, commonly known as Lyme disease, is a vector-borne disease caused by *Borrelia* bacteria spread by ticks which belong to genus *Ixodes*, commonly known as black-legged ticks or deer ticks. When an infected tick latches onto a human host for a blood meal, it transmits the bacteria, leading to the development of Lyme disease.

An expanding red rash known as erythema migrans (EM) is the most common sign of the infection showing at the site of the tick bite approximately a week after. Typically, the rash is not itchy nor painful. It is estimated that 70-80% of infected individuals develop a rash. Early symptoms also include fever, malaise and headaches. Early diagnosis can be quite challenging. If untreated symptoms can progress and present as joint aches, loss of the ability to move one or both sides of the face, severe headaches together with neck stiffness and heart palpitations. Episodes of joint pain and swelling can manifest months to years after the initial infection. Shooting pain together with tingling in the arms and legs have also been reported. Despite of obtaining appropriate treatment approximately 10-20% of affected individuals complain of joint pains, memory issues and tiredness lasting for at least six months.

### Erythema Migrans (EM)

Typically, this rash emerges within three to 30 days post tick bite. The rash often starts as a small, red bump and gradually expands into a circular or oval-shaped patch, resembling a "bull's-eye" with a red outer ring and a clear centre. It is essential to note that not all cases of Lyme disease present with this characteristic rash, making awareness of other symptoms crucial for early detection.

### Early symptoms

In addition to the Erythema Migrans rash, Lyme disease manifests with various early symptoms. These include:

**Fever and chills:** Individuals affected by Lyme disease experience a fever, often accompanied by chills, indicating an immune response to the infection.

**Headaches and fatigue:** Persistent headaches and unexplained fatigue may be early warning signs of Lyme disease, causing discomfort and affecting daily activities.

**Muscle and joint aches:** Patients encounter muscle and joint aches, which can be mistaken for

flu-like symptoms.

### Advanced symptoms

If left untreated, Lyme disease can progress and lead to more severe symptoms. These involve:

**Facial paralysis:** Some individuals may develop facial paralysis, leading to a drooping appearance on one or both sides of the face.

**Joint pain and swelling:** Lyme disease can cause recurrent episodes of joint pain and swelling, particularly in large joints like the knees.

**Neurological issues:** In advanced cases, neurological symptoms like shooting pains, tingling sensations in the arms and legs and cognitive difficulties may arise.

### Prevention

When moving into tick-infested terrains, the power of proper attire cannot be underestimated. Follow these dressing guidelines to create an effective tick-repellent armour:

**Long sleeves and trousers:** Wear long-sleeved shirts and long trousers, preferably light-coloured to identify ticks easily. Tuck pants into socks or boots to block ticks' access to skin.

**Tick-repellent clothing:** Consider clothing covered in permethrin, an insect repellent that can effectively repel ticks.

### Tick repellents

Use Environmental Protection Agency (EPA)-approved repellents that contain DEET, picaridin or oil of lemon eucalyptus (OLE). Apply them to exposed skin and clothing, following the product's instructions carefully.

### Perform regular tick checks

After outdoor activities, conduct thorough tick checks on yourself, family members and pets. Ticks prefer warm, moist areas like the armpits, groin, scalp and behind the ears. If you spot a tick, remove it carefully with fine-tipped tweezers, grasping it close to the skin's surface and pulling upward with steady, even pressure.

### Avoid tick hotspots

When exploring nature, stick to well-defined trails and avoid brushing against tall grasses and vegetation, where ticks often lie in wait for a passing host. Refrain from sitting directly on the ground and opt for picnic blankets or chairs instead.

### Protect your pets

Ticks can hitch a ride on pets and find their way into our homes. Ensure your furry companions are protected with tick preventatives recommended by your veterinarian.

### Treatment

**Antibiotics:** The primary and most effective approach to treating Lyme disease is using antibiotics. For early-stage Lyme



disease, oral antibiotics are often prescribed for a course of two to four weeks. Commonly used antibiotics include doxycycline, amoxicillin and cefuroxime. These medications aim to eradicate the *Borrelia* bacteria and curb the infection.

### Intravenous (IV) antibiotics for advanced cases

In more severe or advanced cases of Lyme disease, where the infection has spread to the nervous system or caused complications, intravenous (IV) antibiotics may be necessary. IV antibiotics allow for higher concentrations of the medication to reach the bloodstream and the affected areas. The duration of IV antibiotic treatment varies depending on the severity of the disease and the individual's response to therapy.

### Symptomatic relief managing pain and discomfort

During treatment, healthcare professionals may also recommend over-the-counter pain relievers to manage symptoms such as headaches, muscle aches and joint pains. Rest and proper hydration are also essential components of supportive care during Lyme disease treatment.

### Post-treatment Lyme Disease Syndrome (PTLDS)

In some cases, individuals may experience lingering symptoms

after completing antibiotic treatment. This condition is known as Post-Treatment Lyme Disease Syndrome (PTLDS). The exact cause of PTLDS is not fully understood and research is ongoing to better comprehend this phenomenon. Individuals experiencing persistent symptoms should communicate openly with their healthcare providers, who can provide appropriate management and support.

### Natural remedies

**Dietary Support** A balanced and nutritious diet can support overall health during Lyme disease treatment. Focus on consuming a variety of fresh fruits, vegetables, lean proteins and healthy fats. Some individuals may opt for an anti-inflammatory diet to reduce inflammation and aid the healing process.

**Supplements:** Individuals with Lyme disease may take certain supplements to support their immune system and overall well-being. Commonly used supplements include vitamin C, vitamin D, omega-3 fatty acids (fish oil), probiotics and antioxidants.

**Herbal therapies:** People explore herbal therapies as complementary approaches during Lyme disease treatment. Herbal supplements such as *Fallopia japonica* (commonly known as Japanese knotweed), *Uncaria tomentosa* (commonly known as

cat's claw) and *Andrographis paniculata* (commonly known as King of Bitters or kalmegh) have been studied for their potential antimicrobial and immune-supporting properties.

**Mind-Body techniques:** Managing stress and promoting relaxation can be beneficial during Lyme disease treatment. Mind-body techniques like meditation, yoga and tai chi may help reduce stress and support overall well-being.

**Exercise:** Engaging in gentle exercise, as tolerated, can promote physical and mental well-being during Lyme disease treatment. However, it's essential to listen to your body and not overexert yourself, especially if you are experiencing symptoms.

**Rest and sleep:** Adequate rest and quality sleep are essential for the body's healing and recovery processes. Prioritise getting enough rest to support your immune system and overall recovery.

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