

# DANGER: TICKS



Protection  
against ticks  
and tick-borne  
diseases



# Humans and ticks are active

## Lying in wait from March to November

Ticks are found throughout the year, but are most common in spring and autumn.



Do you like spending time outdoors?



Do you work in your garden?



Do you enjoy being near water?

## Tick habitat

Ticks generally prefer living in moderately moist places:

- **Deciduous and mixed forests with lush undergrowth (grasses, bushes, shrubs)**
- **Edges of forests, forest clearings and forest paths, hedges and meadows with tall grass or bushes, and lake shores**

# Ticks transmit pathogens

## Diseases which may be transmitted to humans

The two main diseases which may be transmitted to humans are **Lyme disease** and **tick-borne encephalitis (TBE)**.

5% to 30% (even up to 50% in some places) of ticks in Switzerland are carriers of *Borrelia* and about 0.5% are carriers of the TBE virus. Transmission of Lyme disease occurs when a tick sucks blood for just 12 to 24 hours. TBE viruses are present in the salivary glands of ticks and are immediately transmitted to humans during a tick bite.

	Lyme disease	TBE
Pathogen	Bacterium	Virus
Incubation period	Days to weeks	2–28 days
Prevention/vaccination	Vaccination not possible	Vaccination
Treatment	Antibiotics	None
Annual number of cases in in Switzerland	8,000 to more than 15,000 (may vary in some years)	200 to 400 (may vary in some years)

# Tick bite risk map

## Switzerland


**All of Switzerland up to an altitude of about 2,000 metres above sea level is endemic for ticks.**

**There is a risk of TBE all across Switzerland,**  
except in the canton of Ticino.

There is a **risk of** contracting **Lyme disease**  
wherever there is a **risk of tick bites**.



 Moderate to high risk

 Low to no risk

### **Simplified representation of the “Tick bite model” map:**

This map of Switzerland depicts areas of moderate to high (orange) or low (blue) probability of being bitten by a tick. Please go to [map.geo.admin.ch](http://map.geo.admin.ch) for the FOPH’s detailed “Tick bite model” map.



# Tick bite risk map

## Abroad

**TBE is also very common outside Switzerland, from Eastern Europe to Japan.**

There is a distinction between three virus subtypes (European, Siberian, and Far Eastern). As far as we currently know, the European subtype circulates in Switzerland.



**Lyme disease is most common in the Northern Hemisphere.**

The Lyme disease infection predominantly affects North America, Europe, and Asia. In the Northern Hemisphere, the disease is the most common infection transmitted by ticks.

# Lyme disease

## Symptoms and course of disease

Lyme disease is a bacterial disease which may affect any organ in the body. It gives rise to a wide range of symptoms with infection generally progressing through three stages.

### Stage 1 *(1 to 30 days after a tick bite)*

Redness of the skin, known as erythema migrans, may develop around the bite. However, this only occurs in about half of patients. The redness spreads for a few days and then disappears on its own. Flu-like symptoms may also be present during this phase. Seek medical advice if skin redness occurs around the bite, or if headaches, joint pain or flu-like symptoms occur.



### Stage 2 *(several weeks to several months after the bite)*

Back and neck pain or facial paralysis may occur. Joint pain may also occur during this phase, with symptoms relating to the heart or eyes occurring more rarely.

### Stage 3 *(several years after the tick bite)*

Skin changes, joint problems, as well as gait disorders and bladder dysfunction may occur. Most *Borrelia* infections are asymptomatic and only about 5% of all tick bites result in Lyme disease.

Lyme disease may be treated with  
**early administration of antibiotics.**

# TBE, a viral disease

## Symptoms and course of disease

TBE (tick-borne encephalitis) is a viral infection which may affect the central nervous system and usually occurs in two stages.

### Stage 1 *(one to two weeks after the tick bite)*

Flu-like symptoms develop in patients with symptomatic infections, such as fever, fatigue, headache and aching muscles. This stage ends in most cases with the symptoms disappearing spontaneously. Seek medical advice if skin redness occurs around the bite, or if headaches, joint pain or flu-like symptoms occur.

### Stage 2 *(several weeks after the bite)*

About 10% of infected people develop a second phase of the disease after an asymptomatic interval which affects the central nervous system. The symptoms of this inflammatory disease of the brain's outer membrane and/or of the brain itself include fever, headache, back and neck pain, impaired consciousness and paralysis. The spinal cord may also be affected in severe cases and some residual damage may remain.

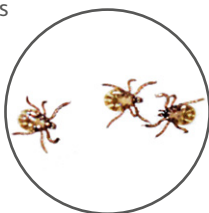


There is **no specific treatment for TBE** but **vaccination may provide protection** against the disease.

# Stages of development of a tick

The development of a tick occurs in three stages from the larva through to the nymph and finally to the adult tick.

Each transition requires a blood meal. Ticks are dangerous at all stages of development.



**Six-legged larva**

Size:  
approx. 0.6–1 mm



Blood meal

Nymphs are probably the main vector of transmission of the TBE virus because they are more numerous than adult ticks and are less host-specific.



**Eight-legged nymph**

Size:  
approx. 1–2 mm



Blood meal



**Adult tick**

Size:  
approx. 2.5–4 mm



Blood meal



**Tick fully engorged with blood**

Size:  
approx. 7–8 mm

# Protective **measures**



**Closed clothing which covers as much of the body as possible**



**Closed footwear**



**Tick repellent**



**Avoid contact with low-growing plants**



**Vaccination against TBE**

**Preventive vaccination against TBE** is recommended by the Federal Office of Public Health for all persons aged three years and older who are exposed to ticks in TBE-endemic regions (all of Switzerland apart from the canton of Ticino).

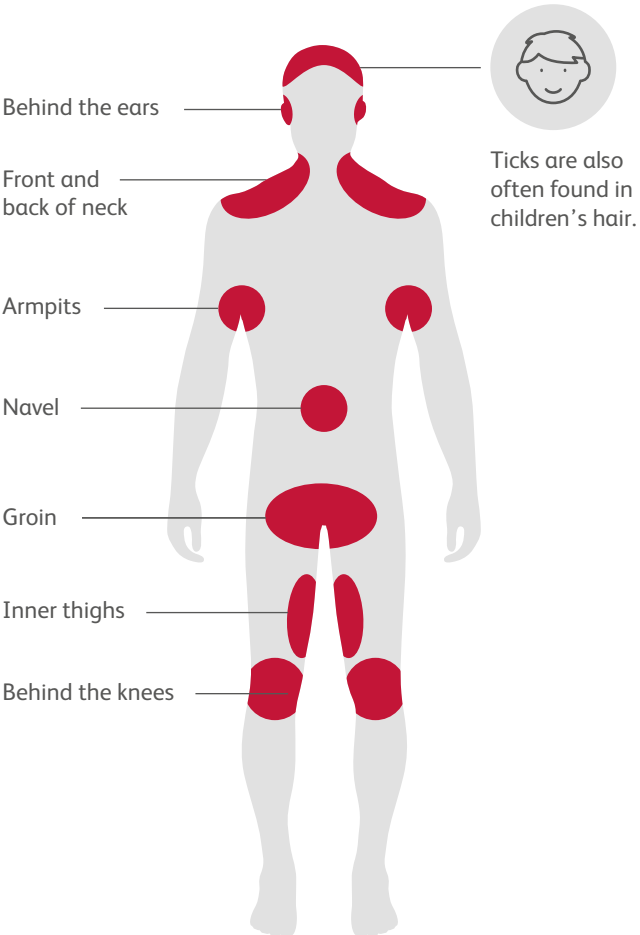
**Vaccination against Lyme disease is currently not available for humans.**

**Every generation is at risk of tick bites in a tick-endemic region – including you.**

# Important – checking for ticks

**Carefully check your entire body and clothing for ticks after spending time outdoors.**

Ticks prefer warm, moist and thin skin such as:



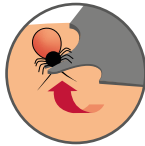
# Removing ticks

## To remove a tick, use:

- Tweezers
- Tick-removal hook
- Tick card
- Tick-removal forceps

## When removing a tick:

- Place the tool close to the skin
- Pull the tick out of the skin vertically in a slow and controlled manner
- Ensure that the tick is not crushed in the process
- Do not apply ointment or oil
- Do not use glue, adhesive or other chemical agents



## After removing a tick:

- Disinfect the puncture site
- Check to ensure that the entire tick has been removed (but do not panic if parts of the tick get left behind in the skin, as these will usually be repelled by the body)
- Dispose of the removed tick
- Make a note of the date (e.g. using the “Tick Prevention” interactive app)
- Keep an eye on the wound
- Seek medical advice in the case of extensive redness or other symptoms

# Get expert advice

Ask your doctor or pharmacist about the best possible ways of preventing tick bites and tick-borne diseases.

You have received this information leaflet from your doctor or pharmacist.

Stamp of the medical practice/pharmacy:

Blank area for stamp of the medical practice/pharmacy.

All images of persons are fictitious and are meant for illustrative purposes only.

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## Further information is available at:



[zecken-stich.ch](https://zecken-stich.ch)



[zeckenliga.ch](https://zeckenliga.ch)

Liga für Zeckenkranke Schweiz  
Ligue suisse des maladies à tiques  
Lega svizzera dei malati vittime delle zecche  
Swiss league for patients with tick-borne diseases



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