

Working at the Norunda research station – workplace introduction for distribution to people working temporarily at the research station

Norunda is a unit within Lund University's Centre for Environmental and Climate Research, CEC.

Responsibility issues

All employees, on their own initiative, are to address shortcomings in the work environment and, if they lack sufficient authority to do so, they are to notify their line manager of the problem. The coordinator is responsible for ensuring that work is conducted in compliance with existing regulations. Furthermore, all employees and visitors have an obligation to find out about and follow the instructions provided and to contribute to ensuring work environment safety. They are to notify the coordinator, work environment manager or health and safety representative immediately if they discover shortcomings in the work environment.

By working preventively on safety issues, accidents can be avoided!

Employees based at Norunda:

Employee and coordinator	Research engineer Anders Båth, tel. +46 703932468
Employee and deputy coordinator	Research engineer Irene Lehner, tel. +46 725778778

Employees with links to Norunda:

CEC work environment manager	Director Henrik Smith, CEC, tel. +46 46 222 9379
Work environment issues for Norunda	The director has delegated work environment duties to professor Erik Swietlicki, responsible for infrastructure strategies at the CEC. Tel. +46 46 222 96 80
SPI (Station Principal Investigator)	Meelis Mölder, Lund University, tel. +46 46-222 0378
Health and safety representative	Finance officer Åsa-Katrin Erlandsson, Centre for Environmental and Climate Research, Lund University, tel. +46 46-222 0181

SOS Emergency number for accidents, fire	Call 112
Poisons information	010 456 67 00
Healthcare advice	Call 1177
Police (non-emergency)	114 14
Rescue services in Uppsala	https://www.uppsala.se/brandforsvaret

Safety policy

Work	Only carry out work for which you have the relevant training, instructions and information.
Measurements	Once the visiting researcher has been shown the measurement location, the visitor installs the equipment and begins the work. The permanent staff is then to be informed about how the measurement works and about any necessary care, supervision and maintenance.
Procedures when working alone	Staff working alone must have a working mobile phone connection. Avoid working alone on risky assignments. Always bring a first aid kit.
Safety and protection equipment	Safety equipment is always to be used where required. The permanent staff have climbing equipment (Anders, Irene and Meelis). They will lend equipment to visitors as needed. Protective eye shields are available.
Tools, machines	Great precaution is to be taken when using sharp tools and machines. Chainsaws are only to be used by those with the appropriate training and safety equipment.
Chemicals	In some cases, visiting researchers may work with chemicals. Regulations on the use of chemicals are to be applied, according to instructions from the coordinator.
Mastwork	Those who do mast work must have undergone specific climbing training and have a health certificate for height work. The coordinator checks these requirements. No climbing is to take place at dusk or in the dark. Mast work is not to be carried out alone. The work colleague on the ground must be authorised for height work in case immediate rescue of an injured climber is required.
Driving	Vehicles used for work purposes are always to be kept in good working order.
First aid equipment	Located in the green shed, to the left by the door, and in the kitchen of the office building. There is also a smaller first aid kit in the office building, which you can take with you on fieldwork, and one in the car.
Fire safety	There are smoke alarms in all the rooms. Everyone must be aware of the location of the fire extinguishers. Fire extinguishers are placed by the door of the green shed and by the door of the office building, as well as in the two bedrooms with separate entrances. Emergency vehicles will arrive at the mast or at the turning area, whichever is closest.
Computers	The network is free, completely open and with no password, WiFi. However there is no “visitors’ computer”, everyone is expected to bring their own computer.
Overnight stays	Visitors staying overnight are to be informed about fire safety on the property.

<p>Risk of infection and poisoning from animals</p>	<p>Ticks can cause Lyme disease, TBE infection and other diseases. Check your skin and remove ticks. Also see APPENDIX.</p> <p>If you are bitten by a viper, you must get emergency medical care. The closest hospital is in Uppsala. Get someone to go with you, do not drive yourself. See APPENDIX.</p> <p>Wasp stings see APPENDIX.</p> <p>Sensitive people should bring medication against allergic reactions. Inform the coordinator and your fellow workers if you are hypersensitive.</p>
<p>Encounters with large animals</p>	<p>There are bears in the area. The APPENDIX contains information on what to do if you meet a bear.</p>
<p>Waste management</p>	<p>Waste is to be placed in the rubbish bag, to be emptied into the waste container at the first barrier. Sorted recyclable waste goes into the blue container outside the office.</p>
<p>Accidents Incidents</p>	<p>Are to be reported immediately to the coordinator, Anders Båth. He is responsible for ensuring that the damage/incident report is immediately passed on within Lund University.</p> <p>If an incident has resulted in a close call, this is also to be reported to the coordinator to prevent accidents in the future. Incident reports are also to be passed on within Lund University.</p>
<p>Defibrillator</p>	<p>There is a defibrillator in the green shed. The permanent staff are trained to use it.</p>
<p>The last person to leave for the day</p>	<p>Check that all buildings and barriers are locked.</p> <p>If a visitor is the last to leave Norunda for the day and is not expected back shortly, the visitor must agree with the permanent staff as to where the key is to be returned.</p>
<p>APPENDIX Information about what to do in case of -Lyme disease and TBE -viper bite -wasp stings, bee stings -encounter with wild animals</p>	

TO BE COMPLETED BY THE VISITOR AND KEPT BY THE COORDINATOR

I, the visitor, have read this information	I have ensured that the visitor has received the workplace information
Date	Date
Signature	Signature
Name in print	Name in print
Mobile tel.	
Visitor's next of kin, name	
Mobile tel. next of kin	
Relationship	
<input type="checkbox"/> I am hypersensitive/have an illness about which I have informed the coordinator <input type="checkbox"/> I am not hypersensitive to anything/I have no illness that I need to report	

Encounters with wild animals

There are elk, deer and wild boar in the woods around Norunda, and sightings of wolves, lynx and even bears are sometimes reported in the area. Below are some tips and advice about how to act if you encounter one of these animals.

In general, it is advisable not to impose your presence on animals.

Elk

It is very unusual for elk to behave aggressively and, as long as they are not doing so, they are no danger at all, but you should not try to approach them to pet them. Make the elk aware of your location, sing or speak in a conversational tone, and it will wander away. If you notice the elk starting to approach you, do not stress it unnecessarily but give it a possible escape route, and try to calmly leave the area. An aggressive elk preparing to attack will lower its head, flatten its ears and raise its hackles. If this happens, you should try to get out of the way. If the elk attacks, try to take shelter behind something, such as a tree.

Wild boar

Wild boar prefer to avoid human contact and run in the opposite direction if they notice your approach, so don't creep silently through the woods. If you suddenly appear without warning, the wild boar could behave differently. As wild boar have poor eyesight and navigate using their sense of smell, they want to get closer to find out what you are and whether you are a danger. Unfortunately, they rush forwards and then stand sniffing and grunting to try and catch wind of you. We humans usually perceive this situation as threatening. If you then run away, the wild boar will follow, because it is still trying to understand what you are and whether or not you represent a danger.

Therefore, if you come across a wild boar, you should shout and shoo it away. Then it will leave. If you are unfortunate enough to find yourself between a sow and her piglets, the sow may feign attack but this is usually only a manoeuvre to scare you off.

Bear

If you want to avoid meeting any bears, make regular noises when walking alone in the woods. Sing from time to time, or talk to yourself. Or turn on the radio on your mobile phone. If there are any bears nearby, they will retreat and possibly observe you with curiosity from a safe distance. These animals have an excellent sense of smell and hearing and most encounters with bears are ones that we are not aware of.

If you do come across a bear, don't run away. The bear is significantly faster than you are. Don't try climbing a tree or suchlike either, as bears are better climbers than humans. Try to be as obvious as possible, turning away from the encounter and retreating slowly the way you came. If the bear rises up on its hind legs, it is a good sign. It is standing up to see and get wind of what is going on and to understand what you are. It is not preparing to attack. If the bear follows you, you can drop some of your belongings on the ground. This usually results in the bear stopping at length to sniff the items. If the bear attacks, you should play dead. Lie down on the ground in the foetal position and protect your head and neck with your hands and arms. A bear attack usually ends with the bear going away once it has shown you who's boss.

Wolf

It is very unusual to catch sight of a wolf – even in wolf territory. But if you do meet a wolf and it becomes aware of you, it will usually saunter off in a leisurely manner. If it does not leave and you experience the situation as unpleasant, bear the following in mind:

Walk slowly and loudly away. Sing, talk or shout loudly (no shrill screaming). Do not run, as this can trigger the animal's hunting instincts, as well as increasing the risk of you stumbling which could result in an attack. If the wolf follows you – stop and appear big and dangerous by holding your arms and backpack or suchlike aloft. It is better to take a couple of steps towards the wolf than away from it. If the wolf attacks anyway, do not play dead but hit and kick as hard as you can.

The presence of a dog can encourage wolves to overcome some of their shyness around humans. In certain cases, they may approach to within a few metres of a human. If you meet a wolf when you are out with your dog, the same rules apply as for other wolf encounters.

Lynx

The lynx is not a dangerous animal for humans, and there is no credible documented case of a wild lynx attacking and injuring a human.

If a lynx should follow you, act as recommended for encounters with wolves.

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.