

A close-up photograph of a woman with long, wavy brown hair, wearing a dark blue winter hat with a thick, grey fur trim. She is blowing a small amount of snow from her gloved hands towards the camera. The background is a soft, out-of-focus white, suggesting a snowy environment. The overall mood is cold and serene.

TRAVEL GUIDE FOR VISITORS IN WINTER CLIMATE

THE ASSOCIATION OF THE HAPPY FRIENDS OF THE DARK AND THE COLD
JARKKO ENQVIST AND LARS WESTERLUND
IN ASSOCIATION WITH FINNISH INSTITUTE OF OCCUPATIONAL HEALTH



Foreword

This travel guide has been produced with the help of EU support from Leader Skellefteå Älvdal. A publication produced by the Finnish Institute of Occupational Health has been used as a basis.

Our travel guide is intended to be a tool when planning for tourism in the subarctic climate during the winter.

This climate offers great opportunities for recreation and exercise. From just being, to more physically demanding activities. To listen to the silence or to the mysterious sound of reindeer when moving. Marvel at the northern lights or experience the mystique when the ice cracks.

As a visitor, you can get a deeper feeling of the cold and the darkness by preparing well for your stay.

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The association for the happy friends of Dark and Cold
www.darkandcold.com www.coolastecentrum.com

Staying in the winter climate

The winter season is an exotic period for visitors because then you either only see the sun for a few hours or it does not rise above the horizon at all. This time is called polar night and in the northernmost part of Sweden the sun is below the horizon for about two months - from November to the end of January. The closer you get to the Arctic Circle, the longer the time when the sun does not rise above the horizon. This time is not totally dark but there is light in the darkness. The white snow makes everything brighter because the moon and stars reflect light. The further into the spring you get, the brighter it becomes, and the difference can even be experienced daily.

Ten pieces of advice for a better life in the dark season

The dark season can be stressful for the soul. When our vitamin D level drops in the body, we get tired, and it is not so nice to meet others when we are tired and down. We easily take the chance to just lie on the sofa. It's important to just be, but you don't get more energy by resting into shape.

Eating habits

1. Eat fibre-rich colourful food, vegetables with colour for vitamins. See also point 3.
2. Eat regularly so that you maintain an even blood sugar level.
3. Make sure you get enough vitamin D, which unfortunately you don't get only through fruit and vegetables. Foods that contain vitamin D are primarily fish, such as salmon, herring, mackerel, and tilapia. Dairy products, margarine and cooking fat mixtures if they are fortified with vitamin D. Eggs and meat also contain some vitamin D. But don't forget the vegetables.
4. Check the body's iron stores. Make sure you are not iron deficient. Iron is mainly found in offal and blood foods such as liver and blood pudding. It is also found in meat, fish, eggs. Plant foods that are relatively high in iron are legumes, such as beans, lentils, peas, tofu, and tempeh. Nuts, seeds, buckwheat, dried fruit, and green leafy vegetables



are characterized by an unusually high iron content.

Daily

5. Give yourself time for relaxation and sleep.
6. Reduce alcohol and caffeine consumption that disrupts sleep.
7. Make sure that the workload, especially during the first dark time in autumn, does not become too great. Keep stress under control.

Training

8. Train your muscles regularly, you don't have to go to the gym, it's enough to get small regular exercise habits that you do during the day. Don't sit still, get up for a while, get fruit, check what the neighbour is doing or exercise the muscles in some other way throughout the day, chill out in the evening by tensing the muscles from head to toes, one muscle group at a time, tense and relax, take the next muscle group tense, and relax. You then get better sleep, exercise all muscle groups, and relax all tense muscles.
9. **Be social**, meet and talk to people, participate in association activities, get off the couch.
10. **IMPORTANT:** go outside every day during the short daylight hours. Make the most of the light because nature then increases your vitamin D supply. Even a short stay in daylight gives you more power.



PHOTO: NOEL BAUZA

Northern Lights

During the clear winter nights, you can sometimes see the northern lights in the Nordic subarctic sky. The northern lights occur at an altitude of over 100 kilometres when the high-energy particles of the solar winds hit the earth's atmosphere. The northern lights can be colourful with a mixture of green and

blue hues, but the most common are beautiful green undulating waves dancing in the sky. Since there are no city lights in many places up in northern Sweden, you can see both the northern lights and the stars very clearly during the dark season. They are best seen by staying in nature and there are even companies that arrange Northern Lights safaris.

The cold affects us in many ways

Humans cool down quickly in the winter cold if you stand still or do not have good enough clothing.

First, skin and extremities, such as feet and hands, cool down. The skin gets goose-bumps, and you can start shivering. Severe prolonged shivering is due to the muscles warming up. Through shivering, the muscles create heat that requires energy. Therefore, it is good to bring fluids and energy sources such as chocolate or nuts.

Face, fingers, and feet are usually the first to cool down. Wet fingers cool down quickly in the cold air, much faster than if they are dry. Therefore, dry your hands if you have got snow on them.

Depending on the skin temperature, the experience of cooling down may feel neutral,

chilly, or cold. People experience the cooling down very individually and it is therefore important to pay attention to the reactions of fellow travellers even if you are not feeling cold yourself.

If the temperature of the skin drops sharply, you experience pain and sensation disappears completely, you should immediately warm up the body part and get the blood circulation in the cooled area going. Short-term pain from the cold is not dangerous, it disappears as you warm up again. Prolonged stay in the cold, on the other hand, can lead to the whole body being cooled down, which is called hypothermia. By actively moving the body, the risk of cooling down is reduced. If the cold becomes uncomfortable, you should look for a warmer place, such as the heat of the campfire or move indoors.

How to treat frostbite

Information from Lloyds Pharmacy

The most important thing in case of frostbite is to seek shelter and get into warmth. Gently warm the frozen areas of skin by covering them with clothing or holding them against warm skin, but do not rub. Also, be careful with high heat so that you don't burn the skin because the skin in the frozen parts may have reduced sensation. Frozen hands can be warmed in lukewarm, but not hot, water. The injured body part should be kept elevated for the first few hours after the injury to avoid or reduce swelling. Please drink something warm.

You should not do this for first-degree frostbite:

- If you use water that is warmer than 39 °C, it can cause more pain during the heating.
- If you use water that is warmer than 50 °C, you can worsen the damage and worsen the prognosis.
- Rubbing snow on the injured area worsens the condition.
- Heating with warm, dry air, such as from an open fire or hair dryer, dries out the damaged area. It is also difficult to control the temperature.

See a doctor if the numbness in the affected areas does not subside and avoid exposing the injured area to further cold.

Children and the elderly

Children are more easily affected by frostbite than adults and should not stay outdoors for long periods in extreme cold. Children's skin is thinner than adults' and is most easily protected with clothing and an oily moisturizer. Bring extra, dry clothes for children, especially mittens and socks are important. Eat and drink properly.

Very young children are sensitive to cold and should not be outside for any length of time in temperatures below minus ten degrees. Children should also not sleep outside or exercise outside when it is colder than minus



PHOTO: IZKES/ISTOCK

ten degrees. Children and the elderly are more vulnerable to hypothermia than healthy adults, as these people do not regulate body heat as well. Older people may also have reduced sensitivity to cold. Young children don't have the same ability to tell if they're having trouble with the cold that adults do, so it's important to keep an eye on them when they're out in cold weather.

The lungs

Cooling can stimulate receptors in the airways and cause parts of the airways to contract, making it harder to breathe. Those with asthma or other lung diseases should therefore exercise caution in the cold. However, it is individual how big a problem a person has with cold, and it is therefore important to be careful with medication and to be aware of breathing difficulties during the winter months.

The immune system

Research shows that cold can have an effect on how often we get sick. A likely explanation



PHOTO: TERO VESALAINEN

for this is that cold affects blood flow, which means that, for example, fewer immune cells are sent to the nose to defend the body against viruses. So, you don't get sick from the cold itself, but you become more vulnerable to infections if you are cold.

The fact that colds, flu, and some other viral diseases are more widespread during the winter months is hardly due to the cold itself, but rather it is a matter of us spending more time indoors and having closer contact with each other so that the risk of infection increases.

Training in severe cold

During activity and movement, you breathe faster, which means a rapid loss of heat in the airways. The airways therefore become extra exposed when training in the cold. If you still want to exercise outdoors when it's cold, there are a couple of things to think about.

Train at a calmer tempo, avoid anything too intense. Those with sensitive airways may find that exercise in the cold contributes to asthmatic reactions. One way to avoid this can be to cover the mouth and nose with a buff or scarf, but be aware that moisture from the mouth and nose can cause textiles in front of the face to freeze.

Healthy adults can exercise outdoors in cold weather, while people with asthma, COPD, or

other known respiratory problems should be cautious about exercising outdoors in cold weather. Heat loss is greater when it is cold, this puts demands on clothing, especially if there is a risk of hypothermia. The body gets chilled quickly in wet and sweaty clothes, so be sure to bring a change of clothes.

Cooling/hypothermia

Hypothermia (cooling down) is determined by measuring the body's core temperature. Below 35 degrees is considered hypothermia and can prove to be of varying severity. The body is equipped with functions that help maintain a normal body temperature, but in situations where the body loses more heat than it produces, especially in wet and cold situations, the core temperature can drop.

Severe hypothermia can be life-threatening and can occur in association with alcohol or accidents involving snow or cold water. A chilled person often loses the ability to think clearly, so the seriousness of the situation and the need for help are often unclear to the sufferer.

First aid for hypothermia

The most important thing is to get the person out of the cold. If you are outdoors, it is not advisable to remove any wet clothes from the affected person, but rather try to dress the chilled person further, especially the head. Always call for medical help (ambulance) in



case of severe hypothermia. Sharing body heat with the chilled person and offering hot drinks are other alternative rewarming methods. Don't warm up the arms and legs too quickly, then the cold blood is forced back to the heart and lungs and further lowers the core temperature.

Watch out for cold metal surfaces

Fingers and hands cool down quickly when touching cold metal surfaces or holding gadgets, such as tools. Touching metal surfaces can quickly lead to frostbite. Below -5 Celsius, moist skin can stick to the cold metal.

You should also not lick cold metal since you are then guaranteed to get your tongue stuck. The tongue loosens if you breathe against the metal and warm it up, or rinse with warm water against the tongue and the metal.

Frostbite

Low temperatures or cold winds can quickly cause frostbite on the face or ears. Frostbite is first noticed as a white area on the skin. It is important to check the face of your fellow travellers quite often to detect the onset of frostbite.

First aid for such an injury is to warm the frozen part with a warm palm. Once you have warmed up, the skin should not be subjected to frostbite again because there is a risk of the damage worsening. If the frostbitten part

is large or a cold blister has appeared, you should consult a doctor.

No ointments or creams will protect the skin from frostbite. If you want to use face cream, it should be applied to the skin at least 30 minutes before going out.

You get easily chilled

- From the wind, which for example also occurs when snowmobiling, and excursions with dog sleds.
- If clothes get wet due to sweat or external moisture.
- When touching cold surfaces, such as metal.
- From standing still and inactivity.

Maintaining warmth, warming up and being active in the cold

Appropriate clothing greatly reduces the risk of cooling down and by moving, you warm up if the clothing is not warm enough. Driving a snowmobile or walking, produces three times more heat than sitting still and during a snowshoe walk, the body produces four times more heat than sitting still.

You should take frequent breaks when staying in the cold, remember to drink non-alcoholic liquids and eat snacks even if you do not feel hungry. It is advisable to bring a liquid that is approximately +25 Celsius. As a snack, you can, for example, eat chocolate,

sandwiches, raisins, or nuts, if the tour operator does not offer food during the trip. Eating a snack is important, not only to replace the extra energy that the muscles use in the cold, but also for the brain to maintain its ability to concentrate.

We have different tolerance levels to cold

Some people tolerate the cold better than others. A well-trained person is able to move more and produces more heat for the body. A person accustomed to cold does not fre-

eze as easily as one who is not. Size matters, small, thin people freeze more easily, and older people are more sensitive to the cold.

Certain diseases such as diabetes, various heart conditions and asthma reduce cold tolerance.

Medication can change the metabolism and thereby also one's resistance to cold. On average, a person adapts to the cold after two weeks and the ability of the hands to tolerate the cold adapts already after just a few days.

Clothing for visits in cold climates

Check weather forecasts and select clothing according to the coldest part of the day. Also listen to the locals regarding the weather. Warming effectiveness is greatly reduced if your clothing gets wet because of perspiration or moisture from outside. You can vary the amount of clothing depending on activities to reduce sweating.

Attire during breaks

During breaks, you can add an extra layer of clothing from the backpack, for example a warming intermediate layer or an extra jacket.

The Inuit's traditional attire is adapted to work both during movement and during breaks. It is well ventilated during movement and when sitting still, the clothes are more enclosed to retain heat.

Effective clothing against cold

Functional winter clothing consists of variable layers. If you have too little clothing, your body cools down quickly and if you have too much clothing and are active, sweat can soak up the entire outfit.

Talk to the guide about suitable clothing for the weather and the current activity. Children

are more sensitive to the cold than adults and it is the adults' responsibility to ensure that children are appropriately dressed.

By dressing layer by layer, you can vary the number of garments depending on activity and temperature. Remember that clean base layers and middle layers are warmer than dirty ones. Dirt clogs the structure of the textile and prevents the migration of moisture from the body.

Base layer

Underwear or base layer keeps the skin dry and warm. Underwear moves moisture from skin to outer clothing layers. Suitable materials are polyester, polypropylene, wool and silk and various double layer materials. The skin feels dry if you use materials that let through and transport moisture away from the body. Do not use cotton in the cold climate as it has a cooling effect.

Middle layer

Intermediate layers regulate the cooling insulation depending on the weather, cold or activity. Good intermediate layer clothing is wool, fleece, and faux fur. As an intermediate layer, you can, depending on the cold and wind, have one to three layers.



PHOTO: LORRI LANG

Outer garments

In addition to protection against cold, outerwear also provides protection against wind and moisture. Sufficiently loose clothing does not compress different layers of clothing and therefore does not reduce the amount of warming air present in the clothing. It is appropriate to choose an outer jacket that is a size larger than you normally wear.

Good outerwear is moisture-repellent and windproof. Warm lining materials are down, wadding, and faux fur. The wind reduces the thermal insulation capacity of the clothes as it transports heat away from the clothes. Therefore, in windy weather, it is important to tighten and choke sleeves and trouser legs and tighten the waist of the jacket. The jacket may have a hood with a fur edge, which protects against icy winds.

Colourful clothes and reflectors increase others visibility of you in the dark.

Head protection

Protecting the head from the cold is important because most of the heat generated by humans disappears through the head. In addition to the cold, you should also protect your head from wind and moisture. All bare

skin in the ears and face should be protected as these parts are most prone to frostbite. You can use a scarf, hood, face shield, earmuffs, or bandana.

The hands

Protecting your hands is important and the same principle applies as for other clothing, layer on layer. If you have thin base layer gloves under windproof, thicker gloves, you reduce the need to work with just fingers. As an outer layer, mittens protect better than gloves. It is wise to bring dry replacement gloves.

The feet

The feet are best protected with two sock layers. For the base layer you should have a moisture-transporting synthetic fibre sock and as an outer layer a heat-insulating wool sock. Do not use cotton socks in the cold.

Shoes

Winter shoes should be one size larger than summer shoes. The shoes should have a thick sole that prevents heat transfer to the ground, ice or snow and a shoe with high shaft protects the ankle. You can use felt or the corresponding insole to increase the thermal insulation of the sole.



PHOTO: PRAKTIK GUPTA/UNSPLASH

Outsole slip properties

The pattern of the outsole must be at least five millimetres. Soles that are made of soft and porous material do not become hard in the cold and thus they do not become slippery. The material that works best in the cold today is thermoplastic rubber. At a shoemaker, you can also change the sole of your existing shoes for a thermoplastic sole.

In slippery conditions, you can use shoes with built in spikes or anti-slip protection that is attached to the shoe with straps. This is especially important if you walk on icy roads or on ice. When walking indoors or in shops, the anti-slip protection must be removed, or the spike sole protracted so as to not damage indoor floor surfaces.

Safe winter

The best way to protect yourself from accidents is to plan. It is important to check the weather reports, check the itinerary and opportunities to seek protection in the event of a storm. Keep in mind that snowmobiles or quad bikes are heavy if they get stuck or overturn. Steep slopes, long distance, wildlife on the road and high speeds always involve additional risks.

Familiarize yourself in advance with the activity you are going to do

It is important to find out in advance if the activity planned is right for you. Are there beginner groups? How long does it take to complete the activities and what condition is required to complete them? Can you parti-

cipate if you are pregnant or ill or have any physical ailments? These questions can be answered by tour operators and event organisers.

Travel planning

If you are going for a walk or hiking by yourself, or if the itinerary involves overnight stays, it is important to plan and advise when you will arrive at the destination or return to the accommodation so that someone knows where you are in the event of emergency services being needed. You should also consider whether the mobile phone has coverage on your hiking route. Although in principle there is coverage on the entire route, there may be areas without reception, even relatively close



to human settlements. Please have a charged power bank, second battery, which is stored in the heat close to the body, but remember that protect it from sweat.

Weather

Keep track of the weather and weather forecasts at least once a day. If necessary, change the plan and do another activity. In the subarctic climate, where the weather can change in a short time, the tour operator usually has a plan B depending on the prevailing weather conditions. If you are out and encounter severe weather, it is not cowardly to stay in the accommodation until the weather has improved. On the contrary, it is very wise.

Always be foresighted when choosing clothes for the activity or event. Keep in mind that there can be large variations in temperature, wind, snow and darkness. If it is dark and the sky is covered with thick clouds, it will become even darker. Feel free to bring an extra flashlight.

Follow instructions and advice

It is important to follow the rules and advice that are given or that you can read. Do not deviate from the group and or make your

own individual decisions that are not anchored with the others. Ask the guide in advance about how to respond in the event of an emergency. It is important to listen to the guide and ask immediately if you do not understand what is being said. Do not rely on the skills of fellow travellers, as they may have received their information online. The guides are always trained for their assignments.



PHOTO: VEMDALEN.SE

Stay on the map

It is advisable to bring a regular map as a backup in case of electronic failure. You should stick to the map and the planned route. By noticing landmarks, you can tell the rescue service approximately where you are in the event of an accident or rapid change of weather and wind.

Branch specific advices

Snowmobile safari

You can drive a snowmobile or quad bike without license during guided tours. Check with the snowmobile rental company what regulations apply in connection with renting a snowmobile or quad bike..

NEVER DRIVE UNDER THE INFLUENCE OF ALCOHOL OR OTHER DRUGS!

Snowmobile safaris range in length, from a couple of hours to several days. It is important to drive at a speed that makes it possible to stop the scooter within the visible distance. When it snows, in the dark, and when driving on a winding snowmobile trail, you always have limited visibility. One must know how the vehicle's accelerator and brake pedals and other controls should be used. If you are uncertain about the feature, ask the guide.

Remember that stumps, stones, and hollows are hidden in the snow, even though the surface may appear to be soft and smooth.



Protect your face with face masks and eyes with goggles or with the helmet built-in protections, if any. Helmets are mandatory when driving open motor vehicles such as snowmobiles and quad bikes.

The snowmobile usually has heated handles for both the driver and the passenger. Use these as it is possible to get frostbite quite quickly in the sub-zero conditions. Remember the children's clothing and protection in connection with the snowmobile safari. The passenger must wear warmer clothing than the driver. Bring extra clothes and warmers. Sit on a warm surface and use a blanket during stops.

Dresswear	Material and Clothing details
Base layer	Choose moisture-absorbing materials such as wool, silk, or materials with double layers where the inside is a material that transports moisture, for example polyester or polypropylene, and the outside, for example wool.
Middle Layer	Put on 1-3 layers of clothing. For colder temperatures, airy materials such as fleece, wool and faux fur are suitable.
Outer layer	Choose warm windproof padded, or down cover. Snowmobile overalls protect better than 2-layer clothing.
Headgear	Choose base layer beanie under the helmet. Protect your face with face protection, not cream. If you wear an open helmet, wear eye protection glasses. If you wear a full-face helmet, protect your face by using the helmet's visor.
Gloves	Wear at least two layers, first thinner gloves, and top layer thicker mittens.
Sock / Footwear	Wear at least two layers of socks. On the inside layer against the skin thinner sock and on top wool sock or equivalent. Use a warming sole in the shoe. Choose sufficiently spacious shoes with a thick outsole.



Dog and reindeer safari on sled

Dress warmly for the safari. If you are sitting in the sled, wrap a blanket around you and protect your hands and feet from the cold. You can even use a neck scarf as a face shield. When you are in the sled, you need more clothes, because those who are not active during the journey freeze more easily than the driver.

Do not go too close to the animals without permission, ask if you can approach them.

Dogs can bite and the reindeer can thrust with their horns. Stay alert at all times for the animals can act completely different from what you were prepared for.

If you drive a dog sled, you produce heat and sweat. Remember this when you have a break, drink fluids, and try not to cool down during the break. When traveling, stay in your place in the line, do not overtake. If you have any questions, ask the guide or the person responsible for the event.

Dresswear	Material and Clothing details
Base layer	Choose moisture-absorbing materials such as wool, silk or materials with double layers where the inside is a material that transports moisture, for example polyester or polypropylene and the outside, for example wool.
Middle Layer	Put on 1-3 layers of clothing. For colder temperatures, airy materials such as fleece, wool and faux fur are suitable.
Outer layer	Choose warm windproof 2-layer padded or down cover or snowmobile overalls. In windy winter weather, use windproof clothing if you do not have to work hard or do things that make you sweaty.
Headgear	Choose a headdress that protects the ears well, a fur hat with ear flaps is very suitable.
Gloves	Wear at least two layers, first thinner gloves, and thicker mittens for the top layer.
Sock / Footwear	Wear at least two layers of socks. On the inside layer against the skin thinner sock and on top wool sock or equivalent. Use a warming sole in the shoe. Choose sufficiently spacious shoes with a thick outsole.



PHOTO: WALTER FREHNER

Skis and snowshoes

When you go with snowshoes or cross-country skis, the body produces a lot of heat. Choose the length and difficulty requirements of the route based on your experience and level of fitness. Remember that if you have never skied or worn snowshoes, it is easy to overestimate your ability.

In sweaty clothes you cool down quickly. For prolonged movement, you should dress to minimize sweating. Lighter clothing is

enough, as long as you are on the move. Choose attire based on weather, cold, length of the trip, time and at what level of physical effort the trip requires. You may feel cold before you start the activities. Choose clothing that is breathable and has ventilation hatches. Bring extra clothes, such as a jacket and fleece or a thicker wool sweater to wear during breaks. Also bring dry replacement gloves. Bring fluids to drink and energy-rich provisions such as nuts or chocolate.

Dresswear

Material and Clothing details

Base layer	Choose a base layer made of polyester, polypropylene, or wool blend.
Middle Layer	Wear clothing that is easy to vary so that you can put on or take off clothes when needed. Choose moisture-transporting air-permeable materials such as fleece and wool blends.
Outer layer	Wear clothing that has an adjustable waist and has a ventilation function. For milder cold, choose garments with wind and moisture-protective membrane. Clothes with membranes keep wind and water out of the body and can at the same time "breathe". When you sweat, the moisture can freeze on the inside of the garments and the garments "breathe" less and become damp on the inside. When the weather is colder, choose clothing without membranes, that "breathe".
Headgear	A beanie is a good choice.
Gloves	Wear ski gloves or mittens.
Sock / Footwear	Base layer put on a sock made of moisture-transporting synthetic material with a wool sock as the top layer. Wear boots that are suitable for snowshoes or skis.

Slalom and snowboard

Wear a helmet! The helmet protects in the event of a fall or collision and protects against head injuries. When snowboarding, use a wrist guard and back plate. The wrist protection provides support for the hand's thin bones and protects against bone fractures. The back plate provides support for the spine against impact in the event of a fall and collision.

When it is very cold, use face protection against cold injuries. If you rent skis or boards, test them first and then give yourself time to get used to the new equipment. Remember that rental items can have different properties than your own. Test bindings and quick stops with rental skis and board. Remember that anyone who comes from behind on the hill is obliged to give way to people in front.



Dresswear	Material and Clothing details
Base layer	Choose body-hugging underwear, either from a completely technical material or from a wool blend. Long-sleeved thermal vest and long-legged thermal pants.
Middle Layer	Use 1-3 intermediate layers depending on the weather.
Outer layer	Wear a shell jacket, coveralls or jacket and trousers with lining to protect you from the wind. Check that the jacket has a place or fastening device for lift passes. Choose jacket with ventilation hatch with zipper at the sleeves and on the side. Tighten the lower edge of the jacket to prevent the direct wind from impacting your body. Choose pants made for downhill skiing. These have a raised back area as wind protection on the spine and space for a boot under the trouser legs.
Headgear	Wear a base layer beanie under the helmet and face protection in cold and windy weather.
Gloves	Use gloves with long sleeves. Good gloves are windproof and have a lining with adjustable sleeves, which enables a good pole grip.
Sock / Footwear	Use a base layer sock made of synthetic material and then a wool sock. Make sure that the boot gives you the support you need for a good downhill ride.



Ice fishing

Walking on ice and ice fishing are pleasures that belong to the subarctic climate. However, the ice is often capricious, especially in autumn and spring. Always ask the tour operator or guide about ice conditions and where the ice is weakest. The ice is weak where there is current, at narrow passages, at bridges and under bridges.

Choose warm and windproof clothing and headgear that covers the ears. The hands freeze easily when ice fishing, so keep in mind that the gloves should be extra warm. Wear shoes with a thick, non-slip sole. It is

easy to get chilled when you sit and ice fish for longer periods on open windy ice. Bring ice picks with you, keep these easily accessible around the neck.

If the ice breaks and you end up in the icy water, keep calm, attach the ice spike to the ice edge and pull yourself up from the water. Remember that the ice held in the direction you came from and pull you up in that direction. You can use the backpack as a buoyancy aid, fasten it with the waist strap around your waist and remember to always pack your belongings in waterproof bags when you go out on the ice.

Dresswear	Material and Clothing details
Base layer	Choose moisture-absorbing materials such as wool, silk or materials with double layers where the inside is material that transports moisture, for example polyester or polypropylene and on the outside, for example, wool.
Middle Layer	Put on 1-3 layers of clothing. For colder temperatures, airy materials such as fleece, wool and faux fur are suitable.
Outer layer	Choose warm windproof 2-layer padded or down cover or snowmobile overalls. In windy winter weather, use windproof clothing if you do not have to work hard or do things that make you sweaty.
Headgear	Choose a headdress that protects the ears well, a fur hat with ear flaps fits very well.
Gloves	Wear at least two layers, first thinner gloves, and top layer thicker mittens.
Sock / Footwear	Wear at least two layers of socks. At the bottom against the skin thinner base layer socks and on top woollen socks or equivalent. Use a warming sole in the shoe. Choose sufficiently spacious shoes with a thick outer sole.

Ice knowledge – given by Hjärtgruppen

For many, it is an allure to go out the ice on a nice winter day. But there is reason to be careful, not least of all in the fall and late spring winter. Never go without ice studs, lifeline, or ice spike on unknown ice and preferably not alone. A lifeline also belongs to the equipment suggested, at least one in the group.

Dangers also lurk when it comes to skiers. Walk or go over the ice at good distances from each other, to spread the load. Loosen the ski bindings! Keep in mind that with skis, ice skates, and snowmobiles of speed you can come a long way out on thin ice before it ruptures.

Running water can quickly turn "safe" ice into an insidious trap. Therefore, it is important to watch out for inflows, outlets, in sound, and above ground. In addition, of course, all brooks, creeks, streams, and rivers. This is where the water is in motion and forces warmer deep water that can thaw the underside of the ice.

Cracks in the ice are other traps that you should watch out for. Ice in regulated waters is also every reason to be careful.

Being on the ice always requires caution and a knowledge of ice conditions. It is a skill to be able to draw conclusions if the ice is movable by its appearance, structure and from the place where you are. How should you know whether the ice will hold or not? It would be best if there is an experienced person who can explain how to recognize the different ice. Here is a description of "the winter life of the ice" from the first thin ice:

Different kinds of ice

In the autumn, the ice starts to settle, first in thin, weak layers as early as October.

Ice formation can go quickly in calm and cold weather, but if a wind sweeps over the cooled surface, no smooth mirror occurs, but ice is formed. But when the air is ten degrees cold, it can freeze 2½ centimetres of

thick ice a day. Snow prevents the ice from freezing thicker. The water and snow are formed freezing to fragile and weak berth ice. Ice that freezes in wind is more brittle than the ice that is formed in calm weather. The sea ice is more fragile than the lakes' ice. The fixed ice rarely reaches a thickness over 70 centimetres, and this is a common measure in the northernmost, easternmost, and inner waters. South and west, 50 centimetres are a typical average.

There is actually a difference between ice and ice. Everyone knows who studied the ice from the ice formation in late autumn to the last fragile spring ice! All ice is not frozen water in the core. There are many other ice concepts such as Frazil ice - spicules or plates of ice, suspended in water. The particles of ice in the flow are termed frazil ice. Frazil is almost always the first ice formation in rivers. Glaze. A coating of ice, generally clear and smooth but usually containing some air pockets, formed on exposed objects by the freezing of a film of super cooled water deposited by rain, drizzle, fog, or possibly condensed from super cooled water vapor. Grease ice. Ice at that stage of freezing when the crystals have coagulated to form a soupy layer on the surface. Icefoot. A narrow fringe of ice attached to the coast, unmoved by tides and remaining after the fast ice has moved away. Brash ice. Accumulations of floating ice made up of fragments not more than 2 meters across, the wreckage of other forms of ice.

For people used to ice, who rely on their trained eye and the feeling in the pikestaff, it can also go wrong. Henrik Ramsay wrote in the book "I kamp med Östersjöns isar" (In battle with the ice of the Baltic Sea), 1947 the following: The home owner Jöransson became a victim of the ice while he and another drifter were busy pulling the boat by means of a rope in the bow, the weak blue ice broke under him, and before he was able to get up, it shot back and cut his throat so that his head remained on the ice.



PHOTO: MATTHIAS GORENVELD

The durability of ice

The thickness of the ice is no guarantee of its durability, the durability is mostly dependent on the structure of the ice. A clear, transparent, and even core ice (gloss ice) is strongest. In general, such ice should be at least 5 centimetres thick, to support a person. A white, opaque ice is not as strong as core ice and should be at least 10 centimetres thick before it is strong enough.

In flowing places, the ice is always weak. Therefore, it is important to be extremely careful where sewage flows out, near bridges, streams, and river mouths. In narrow straits the ice is generally weakest in the middle, if the shores are the same, because the current is strongest in the middle. If one bank of the river is long-sloping and the other steep, the ice is weaker along the steep side, because the current is stronger there. Cracks weaken the durability, although they do not reach all the way through the ice.

Durability of the core:

- Human, horse, motorcycle 10 cm.
- 1000 kg heavy passenger car 15–20 cm.
- 3000 kg heavy car (with load) 30 cm.

The values apply below -5 C temperature. When the temperature is between -5 and -0 the ice should be at least 10 percent thicker and at temperatures above 0 at least 25 centimetres thicker.

Once you have learned where weak ice is usually found, you can avoid it or carefully check its load bearing capacity. Similarly, you should always stop and check the ice before you go out in an area where the ice changes character. Darker colour usually indicates thinner ice. Lighter colour may indicate less

load-bearing cast ice. Sparse hoarfrost patterns usually indicate that the ice here settled later. If there is snow on the ice, you have to look out for grey cast spots that could be signs of under-deterioration. A small level difference threatens a newly frozen area. Thicker drifts must always be examined, beneath them the ice may be completely melted away.

When you stomp, hit or skate on freshwater core ice, which is barely a decimetre thick, a ringing tone is heard. If the pitch rises, it is a sign that the ice has become thinner. The sea ice's warning signal is a crackling sound that becomes increasingly intense the thinner the ice. Sometimes it is completely silent!

The spring ice is deceptive and difficult to assess sustainability. In addition, it can be weakened very quickly. It should be at least 20 centimetres thick, to be passable.

The ice is weakened on the upper side by the sun and warm spring air, while at the same time they are exposed to severe deterioration on the lower side, where the previously compact ice layer breaks up into increasingly detached columns. This is why water seeps up from a pinhole even before you break through the ice. Other signs that the ice has begun to be affected are that the surface darkens and gets increasingly large pores, which gradually grow into open pits.

Remember to always be vigilant. The ice you went out on may not hold out on your way back. Most of the time, the ice becomes brittle first at the shores and especially in the reeds. In addition, the ice may be covered with snow and its structure and thickness are difficult to determine.

Equipment for ice

- Ice spikes close at hand.
- The pikestaff is good for feeling the ice.
- Lifeline, available on the outside of the pack.
- Change of clothes in waterproof bags.

Ice spikes

As it is possible to walk on the ice, you should always have ice spikes with you. The ice spikes place is definitely not in the backpack. Usually, ice spikes are used that hang from a band around the neck. They are easy to put on, but they are also just as easy to take off.

If one uses ice spikes of a type, which are attached to the overcoat, they are always easily accessible. It is usually said that misfortune does not come with bells around the neck. You don't know in advance when the danger is approaching.

Another variation of ice spikes is the so-called Always Ready Ice Spikes. The basic principle is the same, but they are "stored" in a different place. Since you usually use the same clothes outside, it pays to attach Always Ready ice spikes to them. The best place is on the outside of the sleeve about 10 centimetres from the cuff. There they are neither in the way nor disturbing in any way, but still close at hand. The ice spikes do not have to be large, small light ice spikes are always included imperceptibly. The sleeve of the leisure coat is the most suitable place because they are not uncomfortable or in the way there. In addition, the attachment cord may be short. When the ice spikes are needed, you pull them out with the string.

Buoyancy aid

The writer has a couple of times gone down on weak ice without a buoyancy aid. Both times the upper body was kept on the ice so that the back was kept dry. But still, the buoyancy aid has the following advantages: You don't have to be afraid of sinking in the water, and you don't have to swim or tread water to stay afloat. All movements cool in water. It keeps you afloat should you become chilled, paralyzed, or unconscious.

For skiers and skaters, the backpack is the best buoyancy aid. A normal rucksack, with

a change of clothes in waterproof bags, has considerable buoyancy. The buoyancy aid must also be fastened, preferably with a lifeline belt.

Ice spike

With the help of a spike stick (ice spike) you can check the strength of the ice. In the absence of a pick stick, you can use a couple of meter long arm-length stick. On core ice, it is enough to make a strong hit with the stick approximately one meter in front of the feet. If water does not force water out of the hole, then, the ice is probably holding. If the stick goes through the ice, you go back and look for a new way. With the forged hook of the pickaxe, you can also pull up someone who has fallen into a wake.

If you have to go out on ice with uncertain durability, it pays to connect yourself with a lifeline. It is also the only way to save a person who has been dragged under the ice by the current.

When skiing on the ice, it is best to open the bindings as soon as you start to sense the strength of the ice. Then they come off easily from the feet if possible

Getting out of the ice

If you stumble, do this:

1. Keep calm, the winter clothes mean that it takes about 10-15 minutes before you are affected by the cold water.
2. Call for help (if there are people around).
3. Turn in the direction you came from (that's where the ice used to be).
4. Break weak ice with your fists.
5. Hit the ice spikes (knife, keys, etc.) far up on the ice.
6. Pull your upper body up onto the ice.
7. Roll yourself up on strong ice.
8. Roll around in the snow (some of the moisture is absorbed by the snow), knock the snow off the clothes).
9. Creep just a little to be safe.
10. Rise up first on strong ice.
11. Hurry to a warm place – move around!
12. Wet clothes are not worth taking off until you get to a warm place.

If you don't have ice spikes, throw a wet article of clothing onto the ice. In the cold, it immediately freezes into the ice and gives you a handle to grab onto. Another option is to turn on your back, spread your arms on the ice and try to get support with your feet from the opposite edge of the wake or make swimming movements with your legs to get your back and then your whole body up on the ice.

To save another person, quickly try to get hold of some intermediate piece; a rope, a ski, jackets tied together, or two ski poles connected by the pulleys. Creep closer to the wake, calm the person down, hand them the aid. If the ice holds, the helper can go to the edge of the ice and hold out his pike stick and pull up the companion. But remember, never reach out. You must always be able to let go if the person in distress panics and pulls you into the wake. Use the knife to carve an attachment in the ice so that you don't slide in the wake yourself.

Ice skates

Cross-country skating is a sport that attracts more and more practitioners. Our country offers unique opportunities with its long coast, its archipelagos, and tens of thousands of lakes.

Long-distance enthusiasts like to talk about the wonderful feeling of weightlessness, which they experience on shiny ice surfaces with the wind at their backs. The sport also has the advantage of being suitable for all ages, except possibly the very youngest. Long-distance skating has above all two elements of risk; you can walk through the ice, and you can fall and hurt yourself. Since the skater can come up at quite high speeds (in a tailwind on good ice, 30 km per hour is not unusual), it is easy to hit yourself if you fall. The risk of serious injury is significantly reduced if the most exposed body parts are equipped with protection.

The skater travels long distances and often has to choose the thinner, later laid ice to find snow-free and skiable areas.

"Danger increases with speed", that is to say that speed allows you to get far out on weak

ice before it breaks. Which means that it can be difficult to get back to ice that holds up. Then it can be next to impossible to climb up yourself with only ice spikes. A companion equipped with a rescue line can be the deciding point as how the rescue operation ends.

Ice fishing

For pedestrians, the risk of getting far out on the weak ice is not as great. If it breaks, it is usually not that far back to strong ice.

Fishermen often linger out on the spring ice and then have trouble getting back because the sun and heat cause the ice closest to land to melt during the day. Especially on south-facing beaches. If you go through on such ice, it is usually impossible to get up.

The ice auger, once common in ice fishing, is an excellent tool. As fishermen walked out on the ice, they let it fall with their own weight with each step. The risk of going down becomes minimal. Nowadays, most ice fishermen have switched to using ice drills. Experienced fishermen, however, like to pick out the auger when it's time to go out on the spring ice, or supplement the drill with a pick, when there is a risk of weak ice.

Skiing on ice

For the skiers a people using kicks, speed is not the big problem. Here the danger is that the weight is distributed over a larger area. The skis and kicks spread the weight over a larger surface, which allows you to ride on ice that would break for a walking person.

There is a great risk that you will not notice that you are entering an area with thinner ice. Should the ice break, you may be far away from climbable ice. For the skiers, there is also the added problem of taking off the skis when lying in a wake. Many bindings are almost impossible to untie when lying in a wake.

Snowmobile on ice

The snowmobile is often used on ice, unfortunately with numerous drowning accidents as a result. The snowmobile takes you easily and smoothly onto the ice. Many times, the



PHOTO: FREDRIK BÄCKMAN

ice-covered waterways are the best route, but not always the safest.

The most common cause of snowmobile accidents is driving through ice, and most people who die in snowmobile accidents drown. Remember that all travel on ice is at your own risk! Excellent tracks indicate where the ice is normally safest but are no guarantee that it will last.

The snowmobile has both high speed and a large weight distribution surface. Therefore, it requires thicker ice than what is needed for a skier. Engine noise and vibrations also prevent the driver from hearing ice warning signals. You can therefore get far on weak ice before it breaks

Before you head out:

- Plan the route, feel free to listen to the locals if you are unsure.
- Avoid driving on unknown bodies of water.
- Avoid driving in the dark on unmarked ice roads.
- Remember that previously "safe" crossings can deteriorate, especially on regulated waterways.

- Never drive alone and keep the distance between the snowmobiles.
- Let the long line (approx. 30 meters) with float run behind the snowmobile when traveling on ice. It could be the salvation.
- Keep the light on even during the day.
- Bring helmet and spare clothes.
- Ice spikes should of course be around the neck, not in the toolbox. Bring a buoyancy aid and lifeline.

Walking on ice

How does someone who doesn't know ice know if it is safe or not? It is not enough to state that there are people, perhaps many people out on the ice.

For many, shiny ice is the same as dangerous ice. No thickness is enough for them to feel safe. But as soon as there is a little snow on the ice and a few footprints in the snow, the surface suddenly seems to be considered safe.

You can often see people walking, parents pulling prams on ice that they would never dream of going out on if they could see what was hiding under the snow cover.

Anyone who has experience with ice always carefully tests the surface with an ice pick or ice prod. They know that the ice settles unevenly and that it is constantly changing through the influence of weather and currents. That it can break on the way home, even though it wore on the way out.

When it fails, it always comes as a surprise. After all, nobody ventures out on their own in an area with too weak ice. Therefore, you must always be equipped with ice spikes and buoyancy aids and also be accompanied by at least one adult equipped with a lifeline.

Children on ice

When we go out on ice that is not 100% weight bearing everywhere, we take on a responsibility, our presence can attract others, adults, and children alike. That children should not be alone out on the ice should be a matter of course for everyone. But still, on

several occasions every year, we see how the children play, throw stones and, even worse, "jump" between the ice floes. These life-threatening games often end in disaster.

Children on the ice must be accompanied by at least one adult.

Non-swimmer children should wear a life jacket, it has a collar and strong buoyancy on the front, so that it turns an unconscious person to the supine position, so that the face is above the surface of the water. When the children have acquired proper water habits and know how to swim, they should also be given a buoyancy backpack. It is packaged with lightweight, porous garments in plastic bags.

You should also let the children practice with ice spikes and a lifeline before going out on the ice. Then they master the grips better if it gets serious.

If an accident happens

Even an experienced winter traveller can end up in an emergency. The most common accidents are injuries related to snowmobiling, slips and sprains.

In case of emergency

Check what has happened, what damage has occurred and where you are. Ring 112 (Emergency services) for help.

Give first aid based on your ability, do not remove the helmet in the event of a snowmobile accident so as not to aggravate a possible neck or spine injury.

Keep the victims warm with extra clothes and blankets. If you give your own clothes to the injured, keep moving.



Overnight stay and transportation

Spending the night in an igloo

It is possible to spend the night in a snow igloo or in an ice hotel / snow castle. The temperature in these facilities / rooms is around -5 Celsius even when it is -25 Celsius outside. It is not dangerous for your health to spend the night in igloos, ice hotels or snow castles if you are healthy and have appropriate clothing.

The organizer usually provides you with sleeping pads such as reindeer skin and a sleeping bag. At night, wear long-sleeved warm underwear. Also wear gloves, socks, and a hat. Tighten the string that closes the sleeping bag opening at the shoulders. Put on the hood and adjust it so that your breathing is not obstructed and the moisture from breathing does not remain in the sleeping bag. You can reduce your clothing whilst lying in the sleeping bag if it is large enough. A good storage place for outerwear that you are not wearing during the night is inside the sleeping bag at your feet. Bring a hot drink in a thermos.

Overnight stay in cottages by the hiking trail

Around Sweden there are a couple of hundred cottages where you can stay overnight for free. These are in keeping with Right of Public Access law. When planning your trip, you can also plan where to spend the night. Remember to always tell someone where you are heading and leave an itinerary when you are hiking, skiing, or snowmobiling or otherwise moving in the wilderness (for emergency services). In northern Sweden, in the subarctic climate, the wilderness begins around the corner from your accommodation.

Free cottages are for those who ski or come on their own. Here you may not stay more than two nights, preferably one night in the same cottage. Those who travel by motor vehicle usually use the cabins for cooking during the day. In many cases there is wood and a stove for cooking and there may also be pots, cutlery, and plates. You must bring a camping mattress and sleeping bag. Everyone who needs cover has the right to stay in overnight cabins, so make room for those who come after you. Take care of your own garbage.

Mountain stations

There are several mountain stations where you can book accommodation and even meals for a fee. These can only be used by those who have booked a place in advance. Take care of your own garbage.

Those who spend the night in cottages should keep in mind that a sudden change in weather can make it impossible to leave the cottage. Bring extra provisions and an external charging battery, power-bank, for your mobile.

Transport between destinations

Where there are buses between the urban areas, you can take your equipment with you and stow it in the cargo space. The buses are modern and warm. Remember that you do not need to wear warm clothes and shoes on the bus, but you will do after the bus ride. Make sure you do not sweat and wet your clothes if you are going to stay outdoors after the bus ride. Also remember not to be too lightly dressed when waiting for the bus, during the winter there may be delays. Be sure to bring clothes with you for a slightly longer period outdoors.

On the trains you travel comfortably and can bring your equipment, however, find out what to do if you have extra equipment / excess baggage. Train carriages are heated, there are sleeping compartments and, in some cases, even restaurant carriages. Also keep in mind here that it can happen that trains get stuck between stations, so bring clothes with you so that you can manage a stop in the lower temperatures.

Driving in a subarctic environment

It is easy to rent a car in northern Sweden. The rental car offers an opportunity to move freely between interesting destinations. Driving a car here can mean surprises for the unaccustomed driver. Roads can be slippery and snowy. Driving along these roads in these conditions can be tiring, so plan breaks in your route. Wear clothes that are easy to wear and provide mobility while you are driving or sitting in the car. Note that even if the roads are fine and the cars serviced, there

may be an accident, or you may have an engine stop and then there may be long waiting times to get help whilst sitting in a cold car. Therefore, always bring warm clothes and shoes with you in case you need to stay outdoors in connection with an unforeseen event.

Always drive carefully in winter road conditions, even if the surface is not slippery on the stretch you are driving. It can be very slippery just a few meters ahead. The road edges are marked with either reflective sticks or with debris, do not drive the car outside these markings.

If you get stuck and the car tires start to slip, be cautious and try to find a way to get a grip on the ice, such as sand or, in an emergency, use a jacket under the tire to get a better grip. Front-wheel drive cars are understeered, the front then wants to move forward on slippery surfaces. Rear-wheel drive cars are oversteered, and the rear end wants to go forward on the slippery surface. Most cars have electronics with anti-skid or traction functions, four-wheel drive cars react steadier than two-wheel drive. Note that these safety items do not provide complete protection and that if you have unsuitable speed for the conditions, safety devices give you false sense of security and when it breaks away with the car, it happens at a faster speed than if you would have driven without these safety details. Always be careful in winter conditions and do not overestimate your ability. Also, do not overestimate the car's ability to parry your mistakes.

Check for a first aid kit, a pillow, a reflective vest, and a working flashlight in the car.





PHOTO: LARS WESTERLUND

Winter swimming

Tips and advice from the Association for the Happy Friends of the Dark and the Cold about winter swimming in a wake.

We have noticed that the interest in winter swimming has grown during the years we have been operating. Before one takes the plunge, and winter swims, there are usually many questions. Therefore, we have compiled some information about things that may be good to know.

You are also welcome to join our Facebook group "Vinterbad i Skellefteå", information about winter swimming is also available on the website for the Coolest Centre project, where we provide information on research into cold and darkness, among other things. www.coolastecentrum.se

The Swimming Wake

Since November 27, 2016, the association has had its ice swimming wake at Camp Kajutan in Stackgrönnan, which is located approximately 10 kilometres east of Skellefteå. There is a service building with changing rooms, showers, and toilets, separate for men and women, as well as a communal sauna and associated relaxation room.

The swimming wake itself is in the Skellefteälven. At the quay next to Café Kajutan is a solid wooden ladder attached to a floating jetty. When the ladder is not in use, it can be folded up. There is a pump in the water that partially keeps the wake unfrozen. In order to have the opportunity to train before the winter swimming competitions, we usually also saw open the wake up to approximately 3x10 meters. From the changing room to the wake, it is about 40 meters.

During the swimming pool's opening hours, the association's officials are available to inform about winter swimming and to be available as support during the vigil.

The swimming wake is close to where the river flows into the sea and is affected by sea level, which means that the distance to the bottom varies. At the location of the ladder you usually don't sink, but in one direction you can sink when the water level is not too high. There is no strong current in the wake but under certain conditions the current can be felt.

The water usually maintains a temperature between 0.1 and just over 1 plus degree, depending on the air temperature.

Equipment:

- Ordinary swimwear that you usually use in an indoor or outdoor swimming pool.
- Bathrobe or large bath towel to protect the body with when going from the changing room, to and from the wake.
- Beanie/woolly hat.
- Shoes that are large and easy to put on even when your feet are wet. Even better are water shoes that you can keep on all the way from the dressing room, down to the wake, and on your way back. Also good are shoes of the "Foppa slippers" (a Swedish type of crocs) which you don't wear in the wake, but which are easy to put on afterwards.
- You can wear neoprene gloves when bathing, but it is not necessary.

Before the ice swim:

- We do not recommend taking a sauna beforehand because it puts a greater strain on the body than if you don't do it. However, you can take a sauna and or shower afterwards.
- Feel free to warm up your body with physical activity just before bathing. That is, take a short brisk walk or do gymnastic movements, for example high jumps.
- Depending on the air temperature, wind, and humidity, it can feel more or less cold when you walk from the dressing room to the wake. One's own daily form also affects.

The ice dip:

- Step down the ladder with your back facing outwards. The ladder has many steps that go far down, which is an advantage because you can then safely go far down at the pace you want.
- Go down the steps until the water is above your waist.
- Take a deep breath, exhale and during the exhalation go down so that the water reaches above the shoulders. The head and face should be above the surface of the water.
- The water is really cold and there can be a struggle between the head and the body. The body says it's cold and you should get up right away, while the head says you've



PHOTO: TIINA ENQVIST

decided to ice swim. Let the head take control of the body and remain with the shoulders under the water for at least ten seconds until you feel the body relax. The experience will be better if you can wait the body out than if you step up when the body is under stress. Some, but far from all, get respiratory spasms which are not dangerous and pass over if you stay in the water.

- You can either stay on the ladder or take a swim in the ice wake.
- When you get up from the wake, be prepared for the fact that you have less sensation in your hands and feet.

Is it dangerous to swim in winter?

There is both past and ongoing research on cold and how we are affected by it. In Finland, winter swimming has a long history and therefore there is a lot of general knowledge among winter swimmers and a lot of research has also been done on the subject.

There is not complete agreement about how good it is to have a winter swim. Of course, we in our association have a positive attitude to winter swimming and think that it makes us both happier and healthier during the cold and dark time.

Research has shown that if you are exposed to cold, the body adapts by producing brown fat in certain places, mostly around the neck, and that it is a useful fat that protects the body.

If you suffer from high blood pressure, you should consult your doctor before you winter swim.

Many people ask if it is dangerous for the heart. Anyone with serious heart problems should probably not expose themselves to things that are strenuous. We have not been able to find evidence that it is dangerous to swim in winter if you are otherwise healthy. However, it may happen that some people get a headache or that you feel more obvious pain in areas where you have problems. However, many people feel that they get less pain from bathing regularly and that the cold also provides temporary relief. It is important to listen to the body's signals.

We think that it is very positive to swim in winter that we hope that more people want to get involved in our association and in other winter swimming associations. Our vision is also that more swimming areas should be created around the country.

Here are a couple of links with information about research on cold:

www.svenska.yle.fi/artikel/2015/01/17/vinterbad-ar-inte-bra-alla

www.fof.se/tidning/2012/10/artikel/kylan-stressar-kroppen-och-det-ar-bra
Projektets hemsida:

www.coolastecentrum.com (constantly updated)



PHOTO: LARS WESTERLUND

Quick facts

This happens when the body cools down during a long stay in cold water or in the cold. Note that during the winter bath the body temperature does not drop significantly.

35 degrees: Chills, poor motor skills and impaired judgement. 10 to 20 minutes.

33 degrees: Severe chills, the hands are useless, and one becomes confused. 20 to 30 minutes

30 degrees: Subsiding chills and severe confusion. Can start already after 20 minutes.

30–28 degrees: Slow pulse and breathing and risk of heart fibrillation. 30 minutes

27–25 degrees: Unconsciousness and risk of death. 35 minutes

Source: The Authority for Community Protection and Preparedness. The WIM HOF method.

Clothing	Materials and details of clothing
Under	Bare skin
Middle layer	Bare skin.
Top layer	Swimsuit. Towel and preferably a warming jacket or dressing gown.
Headwear	Beanie / woolly hat
Gloves	Hands only, alternatively neoprene gloves,
Footwear	Just feet. Neoprene socks and shoes that are easy to put on. Afterwards, shoes that make room for warming socks.



A real cold shower

In winter, there is no problem with experiencing the cold or winter swimming, which have become a very popular health-promoting winter activity.

But summer-time is a problem for the winter swimmer as bathing temperatures become very hot, over 20 degrees. Too warm for winter bathers anyway to reach the little extra kick that cold baths offer. It is not experienced as effective at temperatures between +12 and +18, as the water feels cold but the cold bath effect is absent. However, you can get the same kind of kick by taking cold showers. Most Swedish municipal waters are cold enough to give a good effect.

If you have your own well with cold water, the effect is even greater.

It has been shown through empirical studies that even via cold showers a man gets a very good health effect, and it is addictive just like winter swimming.

Why then should you take a cold shower regularly, preferably every day?

More alert. Taking a cold shower will make you more energetic. A cold shower raises your endorphin levels and gives you a feeling of well-being after the shower.

Your stress level drops. By exposing your body to the stress cold baths give, you raise your stress level.

Metabolism is facilitated and therefore cold showers give you a soothing effect, for example after physical training against lactic acid accumulation. Used, for example, by professional football players.

Resistance is increased. Through cold showers, you get your body used to activating your immune system.

The reticence decreases. Through the reward system that is started, for example an increased amount of dopamine, you become more alert and happier. Blood circulation becomes faster. When your body reacts to cold showers by pumping blood to your internal organs, it strengthens the function of your blood vessels. They get a gym session.



“Just like winter baths, cold showers are addictive

Better sleep. The whole shower helps you to take it a little more calmly and therefore your sleep will be better.

The mental impact. It is very difficult to concentrate on everyday difficulties and difficulties associated with a cold shower. It gives you a few minutes of respite from everyday problems. Very difficult then to think about August Strindberg's influence on later Swedish literature.

In addition, cold showers reduce the function of the sweat glands. You also save money. When you take a cold shower, you won't stay in the shower for a long time and won't waste hot water. But of course, you can wash yourself with warm water just as before.

Disadvantages

There are basically no downsides as long as you don't stay for several minutes. Shower the whole body and not just on one spot.

If you have cardiovascular problems discuss with your doctor before starting cold showers.

How to start the cold shower habit

To get used to cold showers, the same applies as with winter bathing. Decide to take a cold shower. Turn the faucet to cold at once, stand with your back to the cold and it will be easier. Just like with a cold bath, it is easier to face the cold with the back first or for the neck to get the cold shower first. When taking a cold bath you inhale as you descend into the water, you do the same here, inhale step into the cold shower and exhale.

After a while, you will notice that you have become addicted to the cold shower, and you will find it difficult to be without it. Just like winter baths, cold showers are addictive.



The association for the happy friends of Dark and Cold
www.darkandcold.com www.coolastecentrum.com