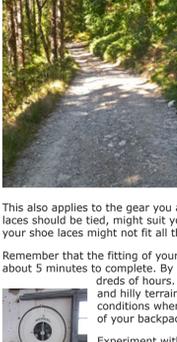


## Preparations for a Long Distance Walk

If you are an experienced walker you can probably skip this section. In case you starting your walking career in this section you will find my own experiential interpretation of the experience of other long distance walkers and the information provided by some of the manufacturers of hiking gear.

Little of this information is scientifically proven (most information on hiking is based on expert opinion) and using this information is at your own risk. The information you find here is not intended to prepare you for hiking in mountainous terrain.



Walking a long distance trail is a pleasure. You are out on a holiday, in the open air, seeing beautiful scenery, meeting other people. And it is healthy too. But this does not automatically mean that it will be a pleasant trip. If your trip becomes a pleasant trip depends on many circumstances. A few examples: Is your physical condition good enough for chosen trail and is the trail easy to follow? Are you walking in the right season? Are you carrying the right stuff for the circumstances on the trail. Is your pack not too heavy. How do your feet feel after walking the whole day. Do you take enough rests during the day.

When walking with another person, can this person keep up with you or the other way around and is he/she pleasant company. Are you carrying the right clothing for the climate. This section of the website is about how to make your walk a pleasant trip: proper preparation.

The main message I want to make clear to you, is that preparation and gear wise, no walking trip is the same. The preparation and gear to take along depends on You, the Trail, the climate, the time of the year, the kind of accommodation you are using, facilities along the Trail, etc, etc. Even when preparing for the same Trail but in different seasons, you will find that you have to carry other items for each trip.

This also applies to the gear you are carrying: the way the seller in the shoe shop thinks your shoe laces should be tied, might suit your foot for 100 %, or just his own feet. And the way you regularly tie your shoe laces might not fit all the situations you find yourself in.

Remember that the fitting of your backpack was probably done when it was almost empty and took about 5 minutes to complete. By the time this backpack is worn out, you will have carried it for hundreds of hours. At times almost empty, at times almost to heavy to bear. Over flat and hilly terrain, on paved roads and narrow mountain tracks. Changes are that the conditions when fitting your back pack will only represent a few hours of the lifetime of your backpack.

Experiment with your gear to make it more suitable for your situation and more comfortable. Adjust and experiment and adapt your gear to your body and your circumstances to the particular situation you are in.

Gear wise there are many items to carry. However, when preparing for a trip, the most important item to have is a SCALE!! Weight, or the lack of it, will determine much of your comfort during your walk. So when choosing items for your equipment, try to use an important factor; carrying a tent of 1.5 is instead of 2.3 kilogram in and results in a sleeping bag of 1.4 instead of 2 kilogram already saves 1.3 kilogram and that are just 2 items.

## Physical condition

Walking is a physical activity. Walking for about 20-25 kilometers a day is not like shopping or going to the mailbox to post a letter. While walking on a Trail, you have to keep your body upright for at least 6 hours. This is different than sitting behind a desk all day. But walking is not only about using muscles, it also involves your metabolic system; a well trained body can transport more oxygen to the muscles so you do not get muscle pain and a trained muscle is more energy efficient.

Walking for about 6 hours a day without any preparation is not pleasant. So unless you are a practicing nurse or have another profession, sport or activity which involves walking a lot, prepare your body for a long distance walk. Start with this preparation a few months before your trip and start slowly with integrating walking into your system. Instead of taking the car for short distances, walk and preferably take a daily walk of about one hour. It is better to start with frequent short walks during the week than one 20 kilometer walk each weekend.

Once you have integrated walking into your system, build up the distance and time spent walking. If possible, integrate walking up and downhill into your walks and use stairs whenever possible. At the end of your preparation, at least once walk the whole distance you are intending to walk daily during your trip. This way you get a feeling for what is walking. Preferably you go on a weekend trip with all your gear.

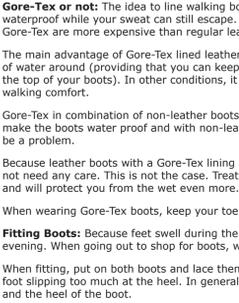
When on the Trail, make use of the whole day. Walking from 10.00 o'clock to 16.00 o'clock is very different from walking from 8.00 o'clock to 18.00 o'clock. In the last case you have about 6 hours extra to enjoy the scenery, take a rest, take a long break for lunch, etc. Plan shorter distances in the beginning of your trip. This way you will get used to walking, which takes about 3 to 4 days. And after about 3 to 4 days you will notice that the walking becomes (even) more pleasant and you go uphill more easily.

When new to walking, take frequent rests and enjoy the scenery; when on more or less level ground, take a rest (about 10 minutes) after each hour walking. When going uphill, take this rest after each half an hour! Take a long rest in the middle of the day. When the sun is shining, take your rest in the shadow! While sitting down, your body is still generating heat, but is cooled less by wind.

Resting on a hot day, this not only means resting your muscles but also cooling your body. Do not worry about that nice sun, they will get you, even when the sun is not shining.

## Boots (and Blisters)

The main reason to put Boots this high on the list is because what goes for preparing your preparation condition for a long distance walking trip, also applies for preparing your boots and feet/legs for a long marriage. It takes time. Walking for about 6 hours a day in new boots without any preparation can be very unpleasant.



**What kind of boots:** There are different types of walking boots. Some companies use the A-B-C-D rating. This rating indicates the kind of the terrain boots are designed for:

**Class A:** designed for daily use, walking on unpaved roads

**Class A/B:** designed for easy walks in more hilly terrain and unpaved roads, wide tracks

**Class B:** designed to be used for more mountainous terrain and more demanding tracks

**Class B/C:** designed for mountainous terrain and narrow/bad tracks

**Class C:** designed for walks in high mountains, some can be used with crampons

**Class D:** designed for more extreme mountain trips, can be used with crampons

But there are alternatives to the regular walking boots; running shoes for running on unpaved tracks are light and well ventilated and the same applies for hiking sandals. But both have the disadvantage of not being waterproof.

In this website and the books published by Walking Trails, the class of boots needed, run from Class A to B and rarely into class B/C.

The class of boots to choose depends not only on the kind of terrain it is intended for. It also depends on how experienced you are in walking long distance Trails and how heavy the pack is that you are carrying. When rarely going on a walking trip, changes are that your feet will need more support and also when carrying a heavy backpack your feet need more support than carrying a light backpack.

Choosing a higher class boot has the advantage that you are more flexible in the kind of terrain you can walk in. In case you only walk in terrain that is suitable for a lighter class of boots, choosing a higher class boot has the disadvantage that these boots are usually more expensive and heavier (the difference between a light A/B class and a heavy B/C class can be more than 250 grams per boot) and take more time to break in.

When arriving at your accommodation it is a good practice not to use your walking boots indoors; it messes up the interior. You need to carry additional footwear that does not mess up the interior and does not take too much space in your backpack. My advice is to carry hiking sandals for this purpose. Since hiking sandals are proper walking gear, they have the advantage that they can also be used in case you have problems with your boots or want to give your feet a rest (and are great casual footwear at home!).

**Gore-Tex or not:** Your idea to still walking boots with a Gore-Tex lining makes sense; it makes a boot waterproof while the sweat can line escape. But the situation is not as simple as that. Boots lined with Gore-Tex are more expensive than regular leather boots and tend to be warmer during warm weather.

The main advantage of Gore-Tex lined leather boots is that they keep your feet dry when there is a lot of water around (providing that you can keep the water (rain or to deep a stream) from entering at the top of your boots). In other conditions, it is the questionable if a Gore-Tex lining will improve your walking comfort.

Gore-Tex in combination of non-leather boots is another matter; here the Gore-Tex is often needed to make the boots water proof and with non-leather boots the warming up of the boots does not seem to be a problem.

Because leather boots with a Gore-Tex lining are waterproof, people tend to think that the leather does not need any care. This is not the case. Treating the leather will improve the live span of the leather and will protect you from the wet, even more.

When wearing Gore-Tex boots, keep your toe nails in check so they do not damage the Gore-Tex lining.

**Fitting Boots:** Because feet swell during the day, the best time to buy boots is in the afternoon or evening, when going out to shop for boots, wear the same socks that you wear while walking.

When fitting, put on both boots and lace them. You should be able to wiggle your toes without your foot slipping too much at the heel. In general you should be able to squeeze a finger between your foot and the heel of the boot.

Walk around the shop to feel if the boots are comfortable, length wise, width wise and is there enough height for your toes to move around.

When female walkers buy their first pair of boots, they run the risk of buying to small a boot. When you are walking in fashionable shoes most of the time, walking boots looks colossal and the smallest size boot should be big enough! This can be painful and might ruin a holiday. So when you are not sure that the colossal boot on your foot is really comfortable, try on the next, bigger size.

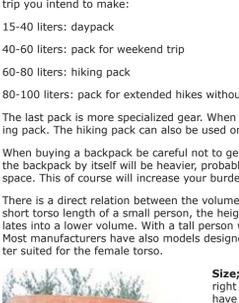
**After buying:** Wear new boots around the house so your feet will get used to them. During this time figure out if you have a pair of boots that you really need some breaking in. If it becomes obvious that you have bought a pair of boots that do not fit, at this time you can usually go back to the shop and get another pair. Once you used them outside, this fitting ends.

When you are certain that you have bought a well fitting pair of boots, break them in further (actually breaking in a pair of boots usually means getting your feet used to the new boots).

Experiment how tight the laces should be. When buying the boots the laces were probably very tight. When walking a whole day this might be too tight. I have met many people, who try to break in their boots by loosening the laces solved many of their problems. So experiment how tight the laces should be for your comfort.

When going downhill or uphill for some distance, it might be comfortable to tie your bootlaces accordingly; when going downhill, lean your leg backward somewhat and then tie your laces. When going uphill, lean your leg forward.

**Blisters:** The main cause of blisters is the boot rubbing on your skin. But this is only part of the truth. When not walking on a long distance walking Trail, most people do not develop blisters. So walking that long distance has something to do with it and probably is the main reason you develop blisters.



Walking a long distance Trail involves walking all day for many days, walking in heavier footwear than usual, your feet sweat more, perhaps walking in wet conditions and carrying a pack. This means that you are taking care of blisters you are taking care of symptoms and not taking away the cause of the problem! Which you don't want any way since it means that you should stop. This you don't want to do because during the last few months you have been looking forward to walk this beautiful Trail and you want to finish it.

Realize that when a blister develops, because of the underlying problem, it is very difficult for the skin to heal on a multi day walking trip. The body needs to get an opportunity to heal the blister. This also means that when trouble develops, like a painful spot or chaffing, attend to it right away; during a walk an unattended blister can take weeks to heal.

## Preventing blisters and early remedies; treating the symptoms:

Prepare your skin to this rubbing, so break in your boot/feet. Use hiking socks that take up some of the friction by its thicker material. Use thin inner socks that will wick sweat away from the skin but also provide a layer for your boot to rub on, instead of your skin.

When realizing a part of your feet is rubbed on and getting sore, protect this area with surgical tape. People also use Duct tape for this, but prevent direct contact between the glue and damaged skin (Duct tape has not been tested for use on humans)

Alternate between wearing your boots and your hiking sandals, but only if this improves the situation; if you get blisters or sore feet from your boots and walking sandals, this will make the situation worse.

Keep your toenails in check; prevent them from cutting into the neighboring toe. And filing your toenails will do a tonal job than clipping them.

## Preventing blisters and early remedies; taking care of the problem

Take longer rests during the day

If possible walk shorter distances each day

If walking for a long period, take a rest day once a week

## Taking care of blisters:

If a blister does not trouble you, leave it alone but try to prevent it getting worse.

When a blister causes trouble because of the amount of fluid it contains, lance it. I use a safety pin for this purpose; it is bigger than a needle so it makes a bigger hole that will drain well.

It is not as sharp as a needle so there is little chance to puncture the skin underneath the blister. Before lancing, I clean it with betadine, which I also apply on the blister. After lancing, I again disinfect the blister with betadine and if possible, cover it with band aid.

If on a suitable place, I put comed or an equivalent product on the blister, it protects the open skin of the blister and takes up some of the pressure.

Blisters underneath the skin and underneath the foot can be very awkward, sometimes they can be drained but often they are located to deep and have to be taken care of.

## Clothing

Clothing for a long distance walking Trail is a compromise between weight, comfort and the situation on the Trail. For when you on a long day walk, you have to carry a clean set of clothing for each walking day, but this will get a bit heavy when on a 10 day walk. The clothing you can be different on each walking trip and should reflect the circumstances on the Trail, the climate and your personal needs.

**Some basics:** You might already have heard this, but while walking, use the Three layer system. The Three layer system consists of a base layer, an insulation layer and an outer shell. While it is commonly used for the torso, it can be used on the whole body.

**Base Layer/Thermal Underwear:** The base layer consists of underwear which does not retain sweat, but transports it away from the skin. This way the skin remains dry and you do not get cold from sweat evaporating.

**Insulation Layer:** The insulation layer is worn on top of the base layer and its main purpose is to keep you warm and also to transport moisture to the outer layer. Usually the insulation layer is made of a fleece material.

**Outer Layer or Hard Shell:** This is the outside layer that will protect you from wind, rain and snow. It is also capable to transport your sweat to the outside world.

**Soft Shell:** A soft shell combines the insulation layer and the outer layer. Depending on the product it is more or less wind proof, more or less water-repellent and made of breathing material. Soft shells are made of flexible materials and were first used for sports where the combination a regular insulation and outer layer would hinder the movement of the user. When you do not expect much rain or cold during your walk, a soft shell can replace the insulation and outer layer.

When walking in an area or during a season where you can expect a worsening of the weather, supplement the soft shell with a proper Outer Shell.

**Shorts and Rain Pants:** Most walking pants are more or less water-repellent, but during a heavy rain, your legs are more likely to get wet. In most weather conditions it is more comfortable to have wet legs than wet trousers and wearing shorts in those conditions is a good option. When it is colder and raining, your legs will get to cold and it is advisable to wear rain pants.

**Warm weather:** The three layer system is optimized for protection against the elements and not optimized for warm weather. When expecting warm weather it is likely that you will prefer to wear a loose fitting shirt or T-shirt with short sleeves. Avoid cotton since it will absorb sweat and then keeps wet instead of wicking it to the outside world.

**Hats and gloves:** For protection against the sun, wearing a hat is essential and some hats are also comfortable when it is raining. When there is a change of a cold spell, take a beanie; you lose a lot of heat when not wearing one in cold weather.

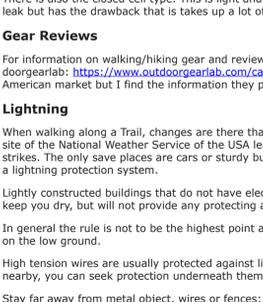
Gloves are essential when walking in cold weather and make a lot of difference comfort wise. But caught out by the weather, you can improvise by putting socks on your hands.

**Selecting what clothing to take:** When preparing for a long distance walk, consider the season you are walking in. Take into account the general climate conditions of the region, the chances of rapid deterioration of the weather and the situation of the Trail (low level or mountainous / open or forest). And when walking in early spring or late fall be prepared for cold weather.

From these considerations, determine what kind of clothing you will need. For instance when walking in a mountainous area in midsummer, you most likely need a summer outfit. But because of the mountainous terrain, especially above the tree line, the weather can change drastically and for safety's sake your outfit should also be able to cope with storm or winter like conditions.

Like adjusting the heating in the house it should be possible to adjust the clothing to your needs for that moment. This is possible with the three layer system when you select your outfit in such a way that it is flexible and supplementary. For instance a thin short sleeved and a thin long sleeved base layer offers more flexibility than one thick long sleeved base layer.

When arriving at your accommodation for the night, it is a good practice to have a separate set of clothing to change into. In principle do not mix these 'evening' clothing with your walking clothing (your fleece and outer layer expected). This way you always have a dry set to wear and there is nothing nicer at the end of a lousy and rainy day to change into dry clothing. Getting into the damp or wet walking clothing next morning is another matter, but changes are dry clothing would be wet in a few hours anyway.



However, it is practical to choose items for your 'evening' clothing that can supplement your walking outfit, for instance a long sleeved shirt to supplement your insulation layer when it gets really cold, or a short sleeved shirt for the unexpected warm spell.

**Color of your clothing:** The clothing you wear, determines if you are visible for others. Safety wise it is preferable to wear clothing that will make you easy to spot. In case you have an accident you are easier to find and there is little chance that a trigger happy hunter mistakes you for wildlife. Colors like dark blue, black, brown, etc are to be avoided because they tend to blend into the background, especially in low light conditions.

**Ladies:** Over the years I have heard a lot of male comments on the amount of underwear carried by female walkers. What these guys appear to forget is that their state of the art equipment needed for their manhood (GPS, handheld computer, multiple lenses for the camera, mobile phone, multi tool knife and so much light weight equipment that it weighs a ton) is far heavier than a couple of underpants. So ladies, go for it.

## Backpack

A backpack is an essential item for your walking expedition. It contains and protects your gear. Filled it weighs somewhere between 12 and the heaviest, so it is quite a burden and you want it to be comfortable. Actually the backpack is most likely the heaviest item of your luggage, weighing between 2.5 and 3.5 kilos.

Size; how many liters: Backpacks come in different sizes. Which size to take depends on the kind of trip you intend to make:

15-40 liters: daypack

40-60 liters: pack for weekend trip

60-80 liters: hiking pack

80-100 liters: pack for extended hikes without much possibility to obtain supplies

The last pack is more specialized gear. When you go walking often you will need a day pack and a hiking pack. The hiking pack can also be used on a weekend trip.

When buying a backpack be careful not to get a getting a bigger backpack than you actually need; the backpack by itself will be heavier, probably more costly and the temptation will be fill all that extra space. This of course will increase your burden.

There is a direct relation between the volume of a backpack and the size of the wearer. Because of the short torso length of a small person, the height of his/her backpack will also be shorter which translates into a lower volume. With a tall person with a long torso this translates into a higher volume. Most manufacturers have also models designed for females; wider hip support and shoulder straps better suited for the female torso.



**Size:** fitting: A backpack is like a garment; it has to be of the right size and it must be comfortable to wear. Most backpacks have a carrying system (with fancy names) that can be adapted to the body of the user. These systems have their limits so additionally, some manufacturers have also different sizes of backpacks so even the small and larger walkers can find a fitting backpack.

When walking on a long distance Trail you will be carrying something between 12 - 20 kilos. When fitting a backpack, make sure that there is at least 10 kilograms in it, so it represents the carrying system. Before buying a backpack, take your time to find the best basic 'setting' for the carrying systems of the packs you want to choose from.

**External or Internal Frame:** Backpacks with an external frame are still available, but nowadays not so popular and sometimes hard to get. For the purpose of carrying a heavy load these are great backpacks that have the advantage that they are well ventilated and because most are front loaded and have some pockets on the side, very easy to pack.

The downside is that these packs are usually somewhat top-heavy and because their total size, are prone to get stuck in bushes and awkward to use in public transport. The pros and cons I switch sides with a backpack with an internal frame. In general the backpack with an internal frame is more compact and practical.

**Packing your backpack:** When packing your backpack, realize that it is not waterproof. Most likely it will stand up to fog and a light drizzle, but when it starts to rain, things inside will get wet. There are waterproof hods available that will protect most of your backpack and its contents against the rain. The things I do not want to get wet I protect by putting these items into waterproof containers or bags.

For the sleeping bag I use a compression bag and a wide bag made of tent material. Clothing I double bag. When in wide bags made of waterproof tent material. I use oversize bags because tightly filled bags will turn into round sausages that don't fit efficiently in the backpack. Paper stuff and electronics I put in large Zip-loc bag and then into a bag made of tent material. Over many years this has proved to be a watertight solution.

Food, stove and walking sandals I pack into bags made of tent material. Using these bags has the added advantage that it organizes the content of the backpack. Emptying or filling is easy because there are only about 6 bags, each with its own specific content.

When packing your backpack there are a few things to consider:

- Put the heaviest items low in the pack; this will increase its stability

- Put the items you are likely to use, in the top of the backpack

- Put the items you might need in an emergency, within easy reach

## Food

For a walk to go smoothly, food is essential. First of all, so that you will not be grumpy to your fellow walker which makes live for him/her more pleasant.



The food situation is different from Trail to Trail and depends on the fact if the Trail goes through villages or is away from civilization. It also depends on if you are camping or staying in hotels or pensions and your budget; providing your own meals is far cheaper than going to a restaurant each day.

When going from hotel to hotel for the whole trip, food is not much of a worry; most likely you have breakfast in the hotel and can arrange for a lunch parcel. The same more or less applies for going from pension to pension. Only here you might have find a restaurant in the evening.

When camping or staying in accommodations that do not provide food, the situation changes drastically. If there are no regular shops or restaurants on the way, you have to get and prepare your own meals. And this will add considerably to the food you will carry.

**Amount of food needed:** The amount of food you need on a long distance walking trip depends on the amount of calories you are burning each day. This depends on the length of the trail, whether the distance you walk each day, the weight of your backpack, your own weight and the duration of your walk.

On a long distance walking Trail, carrying a moderate weight pack, walking about 4 kilometers per hour, walking about 24 kilometers each day, for about 10-14 days, on a Trail with moderate differences in height and on a good track, the amount of calories you use is most likely not much different from the daily needs of an active live stile. This is something like 3000 calories for active females and 3500 calories for males. This would require you to eat/carry about 0.6 kilos of (dried) food for each day.

On a trip it can be hard to manage to eat this amount of calories. This is not much of a problem because the fat stored in your body will supplement the amount of calories you eat. This is alright on a trip of about 10-14 days and the end of the trip, while standing on the scales, you will be happy with the kilos you have lost. But this means that you have to be careful when you are underweight; you do not want to lose any more kilos! Or when your trip is of a longer duration; the amount of body fat is limited.

Fat and carbohydrates are the major sources of energy for your muscles; protein is used primarily for building muscles and other processes in the body. You can increase the amount of calories you take each day by eating more fatty food; fat contains 9 calories a gram, protein and carbohydrates 4. This might sound unhealthy but, while on the trip, you are burning this fat and not storing it.

When eating carbohydrates, avoid the simple carbohydrates like sugar, or candy with a high sugar content. When you eat simple carbohydrates before you start your walk in the morning, your body will respond with producing insulin. This will store the simple carbohydrates in the cells, where they are of little use to you. Instead eat snack which contain a high content of complex carbohydrates, like cereals, grains and fruit. These products will release sugar slowly into your body.

Your muscles use calories while walking. Body fat can provide the fat needed. But there is only a small amount of carbohydrates in the body. This is the reason that it is preferable to eat frequently or snack while walking.

**Warm and Cold Weather:** When walking in warm weather you are likely to sweat and lose salt. Drink enough water so your electrolyte balance does not get out of hand. When you do lose salt, this can be in the form of salted peanuts, crisps. Avoid coffee because this can make you urinate more.

When walking in cold weather your body needs calories to keep warm, so increase your calorie intake.

**Packing food:** It is practical to make ready to eat packets. For each day make a ration pack with all the food/snacks that you will need in one day. This way you have control over what you take and consume each day. When it is easy to get fresh supplies, take ration packs for only a few days and resupply when you are on the way. Instead eat snack which contain a high content of complex carbohydrates, like cereals, grains and fruit. These products will release sugar slowly into your body.

**What food to carry:** The food will be a major part in the total weight you are carrying; about 600 grams for each day when you are carrying breakfast, lunch, dinner and snacks. For 5 days this will be 3 kilos. So when you start, the heaviest burden will be carried. The positive side is that your load will become lighter with each passing day. But with the carrying of the food comes the carrying of the kitchen; stove, pan, utensils, fuel. This will be at least another kilo to carry.

Muesli with powdered milk is a pleasant breakfast. Consider to have jams instead of a lunch, otherwise take crackers along and use these with cups of peanut butter or snk (pack both very well!). For dinner use a dried meal that is easy to prepare. There are higher quality dried meals available from outdoor stores, but they come at a price. Usually a cheaper alternative can be found in the supermarket; in normal live it also sometimes nice to prepare a meal by only adding boiling water to some dried stuff.

Personally I often use meal replacements bars intended for use in a slimming diet. The way I use these bars does not slim me, but they are good to have for lunch or dinner; they pack a lot of slow releasing energy and have a high nutritional value.

For snacks along the way, get some cheese, (salted) nuts, and dried fruit, a chocolate bar, some packet biscuits. A possible alternative is to get or make a trail mix of nuts, raisins, chopped chocolate. Use your imagination for other items to be added.

When there are shops around, things get easier. You can stock up regular and buy fresh food. Tinned food can be too heavy because of its water content and the tin itself. During warm weather the weight of the water in the tin is not so much of a problem because for the preparation of a dried meal you will have to carry water.

## Sleeping bag

Enjoying your day depends for some part on the sleeping during the previous night. Your sleeping bag will play a major role here. Not carrying a sleeping bag will make you backpack a lot lighter, so the first question when planning a walk is: do I need a sleeping bag or is it not safe to be outside when lightning strikes. The only save places are cars or sturdy building that have plumbing, electricity and preferably a lightning protection system.

Lightly constructed buildings that do not have electricity or plumbing, car ports, sheds and tents might keep you dry, but will not provide any protecting against a lightning strike. Now that is comforting!! In the general rule is not to be the highest point around. For safety in a thunderstorm you have to be on the low ground.

High tension wires are usually protected against lightning so when high tension electricity wires are nearby, you can seek protection underneath them, but stand away from the supporting towers.

Stay far away from metal object, wires or fences; they can conduct the lightning strike over long distances. Keep a distance of about 30 meters between you and your backpack and hiking poles; they contain metal. When hearing a thunderstorm approaching and the time between the flash and the bang is lower than 30 seconds, it is high time to seek protection; thunderstorms can travel fast.

When caught in the open avoid the isolated trees; these are the trees with the highest risk of being struck by lightning. Seek shelter in clumps of shrubs on trees of uniform height, or in ditches, trenches or the low ground. Put on your rain gear and cover your face with feet together. 1.3 hands on ears to minimize acoustic shock from thunder.

When in a group, keep apart by at least 7 meters; it decreases the chance that more members are hit by the same lightning.

When you are not in a car or a sturdy building with plumbing or electricity, the mentioned measures will not make it safe to be in a thunderstorm; it only improves your situation, somewhat. But realize that only a few walkers are struck by lightning each year.

When the thunderstorm has passed, wait another 30 minutes to feel comfortable again.

For more information: [https://www.weather.gov/media/owlw/backcountry\\_lightning.pdf](https://www.weather.gov/media/owlw/backcountry_lightning.pdf)