SURVIVAL MEDICAL HANDBOOK

A Complete Beginners Guide to Prepare for Any Emergency When You Are Off Grid Includes First Aid and Natural Remedies

Bradley Stone

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BRADLEY STONE

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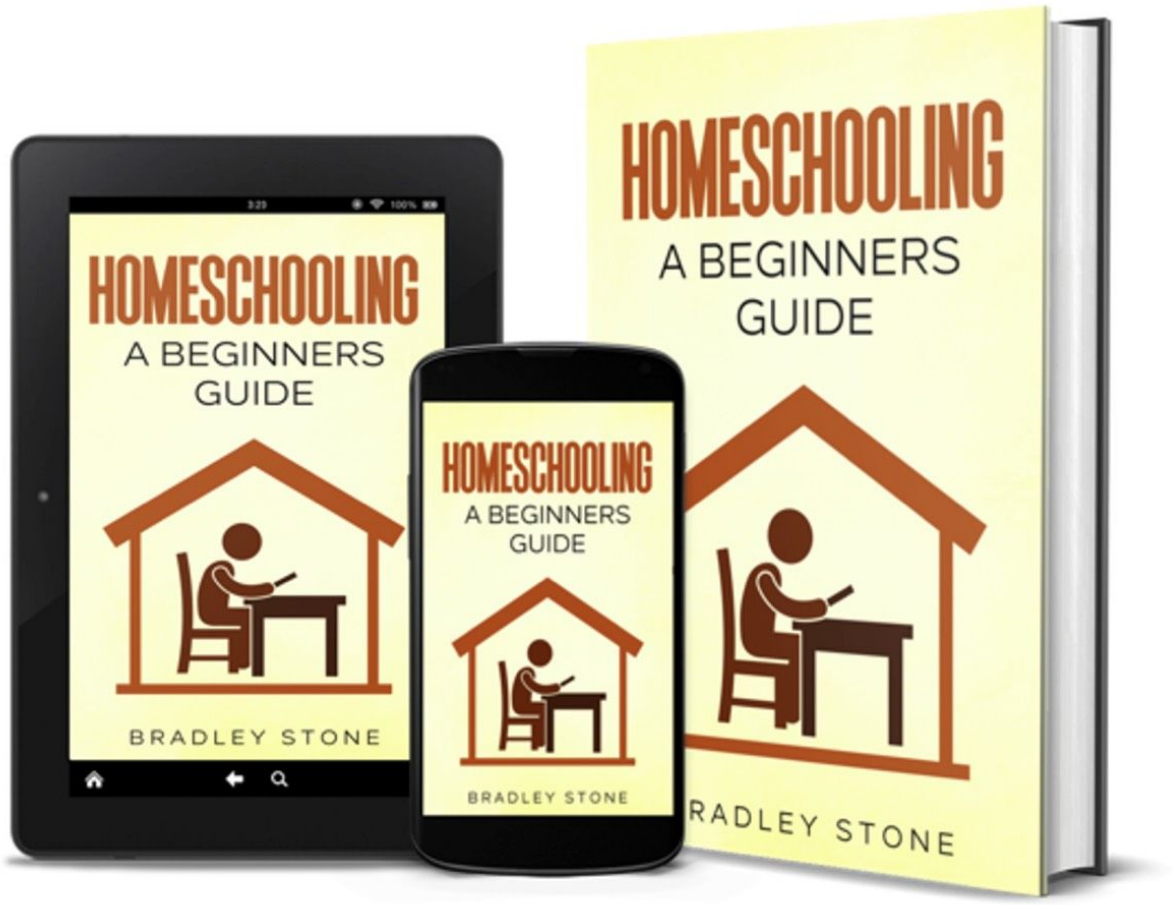

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INTRODUCTION

> *"Wherever the art of Medicine is loved, there is also a love of Humanity."*
>
> — HIPPOCRATES

The ancient words of Hippocrates raise something fundamental to the human condition. If we love and care for ourselves as a species, we must practice medicine. We need to know how to mend injuries and heal illnesses to perpetuate our species. If we love humans, we must also love the practices that ensure survival. You can take this to a much smaller level if you prefer: *if I love my companions, I want to know how to fix something wrong to preserve their well-being or possibly even their lives.* Knowing what to do when an emergency arises could make the difference between life and death – especially in a situation where outside help is not close at hand.

Did you know that around 120 to 140 people die in National Parks every year?[1]

That's pretty low considering how many visitors the National Parks get, but it's still something to take seriously. People at National Parks tend to be camping or even just

hiking, rather than living off the grid, and this figure alone indicates just how dangerous being out and about, some distance from other people and the safety of society, can be. You need to be prepared if you're going to walk away from the net of security that our social living offers.

Going off the grid is a unique and incomparable life experience. It takes you out of the hustle of daily life, makes you self-sufficient, pushes you to take a new perspective, and changes how you operate. It can be a life-altering thing to do and may work wonders for stress problems and mental health issues – but it comes with a serious caveat. At times, you will be a long way from help, and you will need to know how to handle issues when they arise.

If that makes you apprehensive, you aren't alone, and you are reasonable. Apprehension means that you recognize some of the dangers you are likely to face in choosing to be somewhere challenging for emergency services to reach. Apprehension means you're more likely to be prepared for emergencies and better able to handle them. Apprehension means that you recognize your limitations and take steps to overcome them.

Most people today are not self-sufficient enough in healthcare issues for the simple reason that we rarely need to be. We have excellent doctors and hospitals to take care of everything from broken bones to infections and diseases. We don't need to learn how to patch ourselves up, treat burns, stitch wounds, or handle food poisoning because we have highly competent, specially trained people who can do it for us in modern society.

However, when you're off the grid, you may be many miles from help, stuck on your own or with an injured second party. If you don't know what to do, the outcome can be

devastating. It is crucial to educate yourself, take first aid courses, recognize the signs of major health complications, and know how to treat injuries. Often, this will be a stop-gap until you can seek proper medical care, but the stop-gap could mean the difference between life and death. Take it seriously and protect yourself and others you are with by learning what to do when the worst happens, and someone is injured or ill. This is the only responsible way to approach spending significant periods off the grid, and it's as crucial as other safety precautions that you might take.

I take this subject seriously because I know just how critical it can be. A childhood friend of mine lost her mother when a camping trip went wrong, and they were too far to get help for a bad asthma attack. It was a devastating tragedy that changed the trajectory of her life. With more preparation and understanding, things could have been different. I hope that this book will make it different for some of its readers, empowering them to take control and protect themselves and their companions when they do not have access to emergency services.

This book will teach you how to prepare for medical care off the grid. It's not a substitute for proper medical care from a doctor or other trained professional. It is intended to help you prepare yourself for accidents, deal with dangerous situations, and detect when an illness requires proper medical intervention. My goal is to help you make your off-grid world – where you do not have access to a doctor or emergency services – safer and build your confidence and competence when dealing with emergencies and minor injuries that can be treated at home. Don't use this to replace proper medical care, and always seek help from professionals as soon as this becomes a viable option, especially if the injuries are severe.

An injured or sick person would always be taken directly to a hospital or a medical practitioner in an ideal world. However, if you are going to spend time in the wilds, away from society, you need to face the reality that you will not have these resources at your fingertips, and non-ideal solutions must be turned to. Having a good foundation to work from, awareness of the dangers you may face, and information about how to treat common injuries and diseases should help you and your companions stay safe when you're not able to call on professionals.

It's a good idea to take some first aid courses in conjunction with reading this book so that you can learn more about the proper techniques and get guidance from professionals before you go off the grid. You will learn a lot from practicing firsthand, asking questions of medical experts, and observing techniques being demonstrated. You can then use this book to better understand medical care in general. Refer to it when you need reminders, reassurance, or assistance on any of the areas covered – or not covered – by the training that you have undertaken.

We're going to look at the entire gamut of illnesses and injuries that you and your companions might encounter while traveling off the grid so that you are prepared for as many situations as possible.

The topics will cover what supplies you should carry and how to use them. Some of the top techniques you should learn before going off the grid are common health issues at play, dealing with their symptoms, and handling minor emergencies that might occur, such as toothaches, nosebleeds, sprains, constipation, etc. and infections. Afterward, we will move on to major emergencies such as electrocution, heatstroke, poisoning, severed fingers, burns, broken bones, shock, and pregnancy. Finally, we will touch on the natural remedies you may wish to stock in

your first aid kit, how to make your hand sanitizer, and some other natural healing recipes.

My goal is to make you as prepared as possible so that when an emergency arises, you have the tools to stay level-headed and deal with it to the best of your ability. An off-grid emergency is never something you want to handle, but the fundamental reality is that these things happen, and you can either be prepared and do your best or be unprepared and powerless. It is imperative to take responsibility for yourself and your companions' health and safety and learn the tenets of how to deal with emergencies when you are off the grid.

We're going to start by looking at how you should begin preparing to go off the grid, what supplies you will need, where you should keep these supplies, and how to get organized. We'll also touch on designating responsibility, recognizing your dependents, and undertaking relevant training for the situation you are going into.

1

PREPARING TO GO OFF-GRID

> *“Medicine heals doubt as well as diseases.”*
>
> — KARL MARX

UNDERSTANDING WHAT FIRST AID IS BEFORE YOU GO OFF THE GRID

Before looking at anything else, it is worth getting to grips with what first aid is.

First aid is generally defined as assistance given immediately upon detection of an injury or illness. It aims to prevent loss of life, reduce the risk of the condition getting worse, or – ideally – restore the body to health. First aid is often followed up by proper medical care, but as the name suggests, it is the first help when a problem arises.

When you’re at home in a typical setting, first responders usually provide first aid for anything serious. However, most people have applied first aid to themselves and others in some situations. For example, if you have ever stuck a band-aid on your child’s knee, you have performed first aid.

Your goal is to reduce the risk of the injury getting worse and give it a chance to heal without dirt getting into the wound.

Of course, performing first aid in an off-grid situation can be relatively more severe. You may find yourself splinting broken bones, dealing with major trauma to eyes or other crucial organs, dealing with choking or performing CPR.

Nevertheless, it's essential to be clear about your goal with your medical intervention. You are ultimately trying to prevent the condition from getting worse and allowing the body to recover if it can. First aid is not about long-term treatment; it is just about halting the issue as much as possible so that the body can try to recover or the person can be transported to a medical facility.

Being clear on this is important. Your first aid training does not mean you can stay off the grid and ignore major injuries or illnesses. You may need to return to society if something happens, although some minor injuries can be left to heal alone if they are given the correct treatment. Recognize this before you set out on your venture, and keep it in mind if ever a situation occurs. It's better to seek proper treatment when in doubt than to patch it up and hope for the best.

EXPLAIN FIRST AID TO YOUR COMPANIONS

Depending on who you are traveling with, you need to make sure that they recognize this definition and have a clear understanding of first aid's purpose; This is probably more important if you are traveling with adults than with children.

Make health and safety everyone's responsibility while traveling. Having one person trained in first aid is a good

start, but if something happens and nobody else has the relevant training, the party is not safe. You need to ensure that at least two people in a group can perform basic first aid.

Preferably, every group member will have at least some understanding of dealing with injuries; This reduces the risk if someone gets separated and injured when the rest of the party isn't available to help.

It's also crucial to ensure everyone knows where the first aid kit is, everyone can access it, and at least most people know how to use some of the items. Although it's tempting to designate one group member as your "doctor," and some people are only too happy to assume this vital role, this isn't a safe or responsible approach. If everyone can take care of each other, you are much more likely to overcome problems when they arise.

Before leaving, every group member should be clear about this, even older children.

Young children may not be able to administer first aid, but it is still worth ensuring that they know where the first aid kit is kept and how they can access it (although be safe about keeping medications out of the reach of very young children).

Having everyone on board with the first aid discussion is a great way to start your trip out with safety at the forefront of everyone's minds.

GET THE FIRST AID KIT READY

Once you have started talking about safety, getting the first aid kit ready is the next priority. The contents of the kit will vary according to where you are going and who you are

traveling with, so do not just buy a ready-made kit. Think about every party member and their needs. Take any allergies into account and do not buy medication that people cannot use. Think hard about any existing conditions that could make your group members more vulnerable.

You should prepare a kit with input from all of your group members. Every individual should carry the bare essentials, such as band-aids, pain relief, alcohol wipes, and antihistamines, but create an overall larger kit.

We will cover what to put in the larger kit shortly, but it's a good idea to sit and take stock of your kit before every trip you make (or on a schedule if you are in a constantly off-grid situation – perhaps once a month). Think about what you have used, what needs replacing, and what might be going out of date.

Being organized about your first aid and always having a kit ready is crucial when you don't have access to emergency services. Stock up on supplies regularly and always note when you have used something or are getting low on it.

You may also want to consider making up some smaller kits as well as your main ones. These might be distributed among your group members to be stored in personal bags or carried with you when you're away from your off-grid living setup. For example, if you are hiking regularly, it's wise to have a small first aid kit available with the basics, just in case.

MEDICAL SUPPLIES AND WHAT TO CARRY

So, what should a kit contain? Although the kits will vary, almost all kits should include items intended for treating:

- Wounds
- Burns
- Allergies
- Infections
- Illnesses
- Pain

Kits should also contain extras relating to prescription medication if anyone in your group takes it; This means if you get stuck somewhere, they will have more leeway before running out of medication. Many doctors will fill additional prescriptions if you are traveling.

Wounds:

- Sterile gauze dressings in a variety of sizes
- Band-aids
- Distilled water
- Safety pins
- Bandages
- Scissors
- Bandage scissors (these are curved so you can more easily cut bandages when they are in place against the patient’s skin)
- Tweezers
- Sterile dressings for eyes
- Eyewash
- Chemical ice bags
- Duct tape (this can be used to close wounds in an extreme emergency, although it is not suitable for everyday medical use)
- Butterfly sutures
- Splints
- A sling
- Sutures
- Sterile needles

Burns:

- Lavender oil
- Aloe vera gel
- Sunblock
- Burn creams
- Burn dressings

Allergies:

- Cream to relieve rashes
- Cream to relieve bites and stings
- Anti-allergy medication (even if you do not think anyone in your group suffers from allergies, carry an antihistamine cream of some description; allergies can kill people fast and with little warning)
- An EpiPen or Epinephrine (crucial if anyone has a known allergy)

Infections:

- Antibiotic cream (if you can get it)
- Antiseptic (e.g., Isopropyl Alcohol, Peroxide)
- Alcohol-free wipes
- Disposable gloves

Illnesses:

- Over-the-counter medicines for any existing conditions (e.g., if someone needs cream to treat conditions such as athlete’s foot, this should be contained in your first aid kit)
- A digital thermometer
- A cold compress

Pain:

- Pain relief (make sure you have some that are suitable for children if there are any children in your party)
- Aspirin (this can be used as pain relief but is also helpful if someone has a heart attack)

It is also a good idea to include the following items:

- Cotton swabs
- Cotton balls
- A flashlight
- Matches
- Medical cups
- Soap
- A syringe
- A CPR face shield with a high-efficiency particulate air (HEPA) filter
- Clean, absorbent cloths
- Some clean spoons
- A survival blanket
- An emergency dental kit (this can be purchased as a set kit)
- A manual and some basic first aid instructions for using the equipment and performing first aid techniques
- A cellphone that has a charged battery so you can contact emergency services

This might seem like an extensive list, but it covers most of the basics you are likely to need. You may feel that some items are unnecessary, and there are very likely to be things you want to add based on the location you are going to. Build your kit with care, and remember that it is much

better to be overstocked than to risk running out of something.

Always carry enough supplies for every individual and assume the worst. Most items in a first aid kit can be kept long without needing replacement, although you should make sure medication is within date. Once you have built your basic kit, it should last you for years (unless an emergency arises). Restock it before every trip and make sure nothing has expired.

STORE THE FIRST AID KIT IN A SUITABLE PLACE

It's imperative to think about where you will stow the first aid kit when off the grid, making it easier to move around if you use tents or RVs. Still, whatever situation you're in, you need to ensure that your first aid kit is accessible and everyone knows where it is stored.

You also need to make sure that it is out of reach of young children, especially if it contains medication or sharp tools, but within reach of older children who may need to access the kit. Furthermore, the kit should be protected from both damp and temperature extremes, so it is a good idea to keep it in an insulated, sealed box if you are sleeping in tents.

If you sleep in a tent, but your vehicle is easily accessible, it is often best to keep the first aid kit in your vehicle. It will be kept drier and warmer, and it is easier to prevent it from getting lost. Tents can end up cluttered and messy, especially where children are involved, and you do not want to be searching for a first aid kit under piles of clothing and bedding because someone has moved it and there's an emergency.

Have a dedicated, clearly marked box only used for the first aid items. This can be placed in a cupboard, glove compartment, or any other storage spot available, but it should always be kept in a dedicated place. Put it back after you have used it, as soon as possible to increase the chances of people quickly locating it in an emergency.

You may wish to put some silica gel packets inside your first aid kit to absorb any moisture. Although most medical supplies are sealed to keep them sterile, this is an extra precaution that is easy to take and will help to ensure that your stores last well.

If you need to relocate the first aid kit at any point, inform everyone, including children, that it has been moved. You should also consider putting a sticker in the old place or somewhere else in your vehicle that lists the new location, allowing people to grab it quickly even if they have forgotten about the change or don’t know where the kit is stored.

HOW TO DISINFECT MEDICAL SUPPLIES

There will be times when you need sterile medical supplies that are not inherently sterile. When you take a sealed gauze out of its packaging, it should be sterile, but your tools – scissors, tweezers, needles – need to be sterilized by you before and after every use. Identify these tools and remember to sterilize them before you start dealing with an injury.

Tools that have not been sterilized can be dangerous. They will introduce infection into the wound and potentially even into the bloodstream, which could cause severe illness. Infections can kill a person in just a few days; ergo, disinfecting medical supplies will be crucial.

You should note that clean tools are not the same as sterile tools. A clean tool is free from dirt and surface residue, whereas a sterile tool is completely free from microbes. Sterile tools massively reduce the risk of infection, whereas clean tools only mitigate it to a degree.

In most hospital settings, tools are sterilized using modern equipment to ensure they are free from bacteria. However, you will not have access to these tools in your off-grid environment, which means that you need to learn how to sterilize your tools safely and reliably yourself.

There are various safe methods for sterilizing tools when you don't have access to machinery; I'll run through each of them, and you can choose which method(s) seem most applicable to your situation.

Method One: Soaking In Bleach

You can soak your instruments in bleach for up to 30 minutes to sterilize them, but you must remove them at this point. If you continue soaking them past the 30-minute mark, there is a risk of rust occurring.

Once the tool is sterile, remove it from the bleach solution and rinse it with sterile water. Do not rinse it with normal water, or the sterilization will be undone.

If you don't have bleach, isopropyl alcohol will also serve the same purpose. Again, soak the tools for 30 minutes to ensure that they are indeed sterilized.

Method Two: Boil The Instruments

Place your tools in water that is gently bubbling and simmer them for 30 minutes to ensure that the bacteria is killed; This is a generally reliable method, although not 100% effective. It may be the easiest to achieve in an off-

grid situation, assuming you have access to heat and water but no alcohol or bleach.

You should sterilize tools in their “open” position if they have one (such as scissors), as this ensures that the sterilization is effective. Closed instruments may not be truly sterilized.

Method Three: Sterilize In The Oven

If you have access to an oven, wrap your tools in aluminum foil and place them in the cold oven. Heat the oven to 400 degrees F, and then allow the instruments to bake for 30 minutes. Make sure you protect your hands while removing them.

This method is preferable in that it should not cause rusting of the tools, but many off-grid situations will not have access to an oven, so you may find that it isn’t a feasible option.

You might be concerned that none of these methods lends themselves to swift sterilization. There is rarely a need to sterilize tools so urgently that you cannot leave time to sterilize them properly. Sterilization is crucial, especially when dealing with open wounds because introducing bacteria and microorganisms to the bloodstream could be fatal in some cases. Do not skip over this step; sterilize tools before you use them.

DETERMINING RESPONSIBILITY AND LENGTH OF RESPONSIBILITY

This is particularly important if you are traveling with a group of adults. You should discuss what first aid responsibilities there are and who will be responsible for what. I mentioned earlier that you shouldn’t have a single

“first aider” for the trip peradventure something happens to them, but it is a good idea to list the responsibilities and work out who to delegate them to. It keeps things organized, prevents work from being done twice, and ensures nothing gets missed.

For example, one of the responsibilities might be to check the medical kit is adequately stocked once per month. You might give this responsibility to one group member for the trip or share it among group members. Have a schedule drawn up, set reminders, and ensure everyone knows what they should be doing and when, which reduces the risk of errors and ensures that tasks are done.

You might designate one person to be in charge of ensuring medication is not expired or picking up supplies when in town. Another person’s responsibility might be to assess the kit and update stock lists. A third’s might involve running through the basics of first aid techniques once a month so that everyone stays up to date on how to do these things.

It’s also a good idea to spread responsibilities around, so one person is not overwhelmed, which is a common risk in big groups. It’s easier to note so-and-so handles the first aid kit, but doing this has two issues. Firstly, it puts a lot of pressure on one person, who may not like this. You can’t trust that they will speak up if it gets too much, or they would rather not do it.

Secondly, it means you are dependent on that person. If they stop doing it, don’t take it seriously, or make mistakes, the whole group will suffer as a result. It is much better to spread responsibility and regularly rotate who is doing what. This brings in oversight, ensures tasks are being completed, and reduces pressure and monotony, leading to mistakes.

Encourage discussion among the group members about responsibilities and ask people to be upfront if they have issues. If one group member is slacking, the others should raise it and ask what's going on. It's important not to be confrontational but to find out why that person isn't doing their share and how you can support them in doing it next time.

It may not seem worth spreading responsibility around small family units, but discussing duty and scheduling is still a good idea. *Which parent is in charge of ensuring the first aid kit is stocked? Who deals with handing out medications? If a child in the group needs regular medication, who is providing that and ensuring it is taken as it should be? Who is a dependent, and who is a caregiver?* Think about older children, and communicate with them about what they can and should do if an emergency arises when an adult isn't immediately available.

Having a conversation about these things massively reduces the risk of errors and makes it much easier to keep first aid straightforward and to operate smoothly.

IDENTIFYING LIKELY SCENARIOS

Part of the problem with emergencies is that they are, almost invariably, unexpected. You don't know what you need to prepare for, which means it's pretty impossible to anticipate. However, that doesn't mean you should blindly head off the grid without taking the time to think first.

Take some time to consider the situation you are entering and the terrain and challenges you are likely to encounter. If you are staying near water, think about handling any swimming incidents and keeping each other safe on or near

the water. If you are going to be in hilly terrain, think about dealing with falls, sprains, and broken bones. If you are getting close to wildlife, find out what creatures you might encounter, how they might be dangerous, and how you can counteract that danger or deal with stings, bites, or major injuries.

Think about the risks associated with hot and cold weather, lack of power, food storage, water safety, and everything else that may come up when you are away from civilization.

Let’s look at some examples.

You are staying near a river with two children under ten. You have had discussions about water safety, and both children can swim and are aware of the dangers of currents. Despite these precautions, you should still:

- Learn how to perform CPR
- Learn the common signs of drowning (because many people mistakenly believe that the over-dramatized film version of drowning is what true drowning looks like)
- Learn how to treat hypothermia
- Learn how to treat hyperventilating

You may decide that other first-aid preparation is also necessary, but this will cover many basics when you are around water. Consider also determining whether you are likely to encounter dangerous creatures and how these can be dealt with.

Alternatively, imagine that you are hiking with a group of other adults. You have agreed on safety procedures such as not going off alone and carrying basic medical supplies. You might also:

- Get some practice splinting a broken bone
- Learn how to treat hypothermia
- Carry emergency supplies for heatstroke
- Do some reading about insect or snake bites and learn how to identify common insects for that area, including what reactions their bites can cause and how they can be treated

You can perform a similar risk analysis for any situation you are going into. Think about the common dangers, the injuries that result from these dangers, and how you can address and deal with these injuries.

It may help do this with other adults and even older children in your group. If everyone can recognize and assess dangers before going to an area, there is a reduced risk of accidents occurring in the first place. There is also a much higher chance of the accident being dealt with correctly if it cannot be averted, but everyone has a clear idea of how to respond.

You should have a written risk analysis and the protocol following an injury. The more scenarios you can plan for, the more likely you are to:

- Have the relevant supplies to deal with the injury
- Know how to deal with the injury (e.g., having CPR training)
- Stay calm in the face of the injury
- Successfully treat the injury

These things will make your first aid more effective and reduce the risks you face. Be proactive and constantly analyze the potential issues you may address, particularly when you move to a new area and new risks need to be factored into your behavior and first aid kit.

WHAT TRAINING SHOULD YOU UNDERTAKE BEFORE YOU LEAVE?

The kinds of training that you should take will depend, to some degree, on where you are going and what you are likely to be doing. It's always good to do more than you need, rather than less – the training may come in handy later, even if it is unlikely to affect this particular trip.

You should consider doing:

- Wilderness first aid: this should be a top consideration for anyone going off the grid. It explicitly handles how to help someone in an emergency where professional assistance may be slow to arrive.
- Emergency first aid: this will center on life-threatening injuries and generally addresses breathing issues, circulatory issues, etc. It's possible to do this course for both children and adults.
- Basic first aid: this will cover the standards, such as applying bandages, dressing wounds, treating minor injuries, etc. It will also often deal with head injuries, spinal injuries, medical emergencies, and poisoning.
- Marine first aid is likely to be helpful if you are working near or in water, where you need to recognize the symptoms of drowning quickly and reliably and deal with the outcome.
- Emergency child care first aid: if you are traveling with children, it's crucial to familiarize yourself with the different approaches needed to provide first aid to them. Common issues like child choking, wound care, etc., will be covered.

- Standard child care first aid: this will cover similar to the above, but emphasizes less on emergencies. It will also touch on child illnesses, head injuries, safety awareness, wound care, etc.
- Mental health first aid: this may not seem like a priority, but in an off-grid situation where nobody else is available to help, you may find yourself coping with panic attacks, suicidal thoughts, substance abuse, anxiety, and more. Learning how to handle these things is crucial and very often overlooked.
- Pet first aid: if you are traveling with animals, bear in mind that you may be a long way from the nearest emergency vet, and animals can suffer from accidents and illnesses just as quickly as people can. This kind of course usually covers illnesses, pet CPR, injuries, etc.

You may not need to do all of these, and indeed, this number of courses could be prohibitively expensive. However, it is worth bearing in mind that they all exist and assessing which are the most likely to be useful in your situation. If you cannot afford to do courses in everything you would like to cover, consider learning about each relevant section online and talking to others in your group about them.

If you are traveling with other adults and it's not feasible to have everyone trained in every area, consider diversifying so that everyone brings something new to the party. It is a good idea for everyone to understand the basics, but you may then be able to train each other or increase the number of situations that your group is equipped to cover. Ideally, individuals all want to be competent in as many areas as possible, but where this isn't feasible, spread skills among your group and teach each other where you can.

Remember that there are many free resources online and if you can’t afford to attend courses in person, watching videos, reading books, and sharing skills is the next best option.

SUMMARY

In this chapter, we’ve covered:

- What first aid involves and what the purpose of first aid is
- How to talk about this with your companions and make sure that everyone is on the same page before you set out on a journey together
- How to prepare your first aid kit and work out what to carry with you, with a comprehensive list for creating a basic first aid kit that you can build on
- Where to keep your first aid kit and how to store it
- Tips for disinfecting and sterilizing tools
- Information on how to delegate responsibility
- Suggestions for how to identify and prepare for likely scenarios that you may face off the grid
- What kinds of training you may wish to undertake before you set out on your journey, and how to diversify the overall skills available within your group

In the following chapter, we will look at some top first aid techniques, including CPR, mouth to mouth and mouth to nose; the recovery position; and the Heimlich maneuver. We’ll also look at accurately taking a pulse and creating splints and slings to support injuries properly. Finally, we’ll look at wound closure, exploring when wounds need to be closed and when they should be left open, bandages and gauze, and the basics of sutures and staples.

2

USEFUL TECHNIQUES TO LEARN

“The aim of medicine is to prevent disease and prolong life; the ideal of medicine is to eliminate the need of a physician.”

— WILLIAM J. MAYO

In this chapter, we will start looking at some of the practical applications of first aid and some of the basic techniques that you may benefit from knowing how to perform. It’s an excellent idea to get some hands-on experience with these techniques and read about them; this will help you ensure that you are doing it right and improve your ability to perform the technique.

Remember that you will often be providing first aid in a stressful situation, and it is crucial not to panic. Although you will need to act promptly, take enough time to gather yourself and ensure that you are doing things right. Don’t just launch into a technique with half an idea of how it is done unless the emergency is so dire that you think any action is better than nothing, and the patient is at risk of losing their life if you don’t do something.

If possible, practice with your group members and give each other feedback on these techniques. If you can

practice with a medical professional, too, take this opportunity. The more confident you are in your abilities to perform a technique, the more likely you are to do it well under pressure and not to panic and forget everything.

Even if you become very confident with these techniques, you may still find it beneficial to have a few basic, printed instruction sheets (preferably with pictures) stored in your first aid box. This can bolster your confidence when the real emergency arises or may help someone not trained in first aid perform the maneuver if they don't have guidance from an expert. There are plenty of graphics online for performing such maneuvers; use some simple ones and place them in your first aid kit.

Now, let's look at how to perform some first aid!

HOW TO PERFORM CPR

Before we start, it is vital to note that CPR is to be used during a breathing or cardiac emergency, and it is among the more intricate first aid maneuvers to perform. It can damage the person's ribs and should only be used when necessary.

Suppose a situation is dire enough to need CPR. In that case, you should also look for emergency services to the patient as soon as possible, even if it may be challenging.

The first advised step of CPR is always to call 9-1-1 or get someone else to do this. If you are not currently somewhere that emergency services can reach you, you should still get in touch with them, as CPR is often required consistently until an ambulance arrives.

CPR For Adults

The advice varies depending on whether you have undertaken formal CPR training or not. If you are not familiar with CPR, it is always better to attempt it than do nothing, but you may wish to stick to chest compressions. We will provide the complete method below.

Before performing CPR, check that the area is safe and see whether the person is conscious. Tap or shake the patient's shoulder and loudly ask if they are okay. If the person does not respond, begin CPR.

1. Roll the patient onto their back on a firm surface and ensure that the airway is unobstructed.
2. Begin the C-A-B approach. This stands for Compressions, Airway, Breathing. Compressions are intended to restore blood flow, and this is where you should begin.
3. Kneel next to the patient's shoulders and place the heel of one hand over the person's chest, between their breasts.
4. Place your other hand on top of the first hand and then lean so that your elbows are straight and your shoulders are directly above your hands.
5. Press down hard, compressing the chest to at least 2 inches down, but not further than 2.4 inches. Use your body weight to press, rather than just your arms.
6. Allow the chest to spring back, and then push down hard again. You should aim to push at a rate between 100 and 120 compressions per minute; this is surprisingly fast. It is a good idea to practice this to find the rhythm.
7. Continue doing this until help arrives. If you are trained in CPR, you can move on to the following steps, Airway and Breathing. If not, stick with compressions only.

8. Airway: start by opening the airway once you have performed 30 compressions. You should do this by placing your palm on the person's forehead to tip their head back and then gently lifting their chin with your hand. This method will be demonstrated in first aid training. It opens the airway and ensures that the person can breathe.
9. Breathing: you can breathe for the other person if you have been trained how. We will cover mouth to mouth and mouth to nose in the following section. This should ideally be done using an appropriate CPR filter but can be done without in emergencies.

CPR For Children Between 1 and 12 Years Old

It is crucial to understand that CPR for children is similar but not the same process. When tilting the child's head back, be careful not to go too far, as children have more delicate airways than adults do.

You could seriously injure a child, especially a young child, if you use the full force of your body weight to administer compressions, so be careful. The chest should be compressed to about 1.5 inches to 2 inches (generally 2, but less for young children), and you will not need as much force to achieve this. Some CPR professionals will recommend just using one hand rather than two.

This advice applies to children up to 12 or those that weigh less than 121 pounds.[1]

CPR For Babies Under 1 Year

If you are traveling with an infant, it is advisable to take a special CPR course. Babies are considerably more delicate than adults or even young children, and there is an increased risk of doing damage by performing CPR.

Start by checking that the baby is unresponsive by tapping the soles of its feet and shouting nearby (not directly in its ear). If it is not breathing, tilt the infant's head a short way back to look like it is sniffing the air. Next, place two fingers in the center of its chest and begin compressions to about an inch and a half deep. Do not put too much force on the baby's chest.

It should be noted that performing CPR takes priority over calling emergency services for babies and children, especially if you are far from help. Both children and babies have higher resilience and a greater chance of survival if CPR is begun immediately, so don't hesitate before you start. If someone else is available, have them call the emergency service line. If not, contact them when able.

HOW TO PERFORM MOUTH TO MOUTH, MOUTH TO NOSE

It is essential to have proper training before performing the mouth-to-mouth or mouth-to-nose aspect of CPR, as there is a greater risk of doing damage if you are untrained in this area. If you cannot afford training, stick to doing compressions in the event of an emergency, and do not risk mouth to mouth, especially with a child or baby, which is likely to be more vulnerable.

However, if you have had the training and are simply rusty or would like a written reference, you will find the steps below.

The same method is used for mouth to nose, but it is better to do mouth to mouth unless the individual's mouth has been injured. If possible, use a specifically designed filter for this part of CPR.

Mouth To Mouth For Adults

1. Open the airway using the head-tilt, chin-lift method after performing 30 compressions.
2. Pinch the patient's nostrils shut if you are performing mouth to mouth. Cover the patient's mouth with yours, sealing your lips together to prevent any air from escaping.
3. Give one rescue breath, lasting for one second, and watch to see if the patient's chest rises as you do so. If it does, give a second breath, lasting one second.
4. If the chest does not rise, repeat the maneuver to open the airway and give the second breath. Do not give a third breath.
5. Resume chest compressions.

A complete cycle is considered 30 compressions followed by 2 rescue breaths. Keep cycling until help arrives or the patient begins to move. If the patient moves before help arrives, you should still ensure that they are seen by medical professionals as soon as possible. Keep them lying still and stay with them.

It is important not to breathe too hard or too often. Stick to 2 one-second breaths per cycle.

Mouth To Mouth For Children

The same method applies, but you must be particularly gentle with children. Their airways are more fragile, and you need to ensure that the head is not tipped back too far. Breathe gently and keep cycling breaths with compressions. You should still do 30 compressions for every 2 rescue breaths.

Mouth To Mouth For Babies

Again, the same method applies, but a baby will require even more care. Tilt the head only a little way, and be very

gentle when providing the rescue breaths. Simply puff up your cheeks and blow into the child's mouth, rather than breathing with the full force of your lungs.

Keep the rate of compressions the same: 2 breaths for every 30 compressions.

HOW TO PUT SOMEONE INTO THE RECOVERY POSITION

Learning how to put someone into a recovery position is a crucial aspect of first aid, and it is one of the first things you should look at. A person who is unconscious but breathing and not in a life-threatening situation should be placed in recovery. This ensures that the airway is kept clear and open, so there's no risk of fluid or vomit choking the individual.

Note that the recovery position should never be used if there is a risk that the person has a spinal injury. If you suspect you are dealing with a spinal injury, do not move the person, but if you need to open the airway, put your hands on either side of the head to support it and gently lift the jaw. Do not jolt or reposition the neck. People with spinal injuries should not be moved except by emergency services. If this has occurred while you are far from help, keep the patient warm and stay with them, but do not attempt to move them or allow them to move.

Follow the below steps to put someone in the recovery position:

1. Check that the area is secure and there are no immediate threats to safety.
2. Roll the person onto their back on a flat surface and kneel beside them.

3. Take the arm nearest to you and extend it out away from their body until it is at a right angle. Their palm should be left facing upward.
4. Lean across them and take their other arm. Guide it across their body and place the back of that hand against the cheek closest to you, and hold it there with one of your hands. Their arm will be resting across their chest. If it is their right arm, their hand should be touching the left cheek, and vice versa.
5. Use your free hand to take the person's knee on the far side of their body and draw this up to a right angle.
6. Gently tug on the bent knee so that the person rolls over onto their side. Their bent arm will now support their head so that it doesn't flop, and the extended arm will prevent them from rolling further. Check that the bent leg remains at a right angle to the body to offer more stability.
7. Gently tip the person's head back slightly and lift the chin to open the airway. Check there are no obstructions and that the person is still breathing.
8. Remain with the person until you can deal with whatever has caused them to pass out. You may need to call for help from other members of your group or inform emergency services. Ensure that the person stays warm and do not leave them unattended.

HOW TO PERFORM THE HEIMLICH MANEUVER

Choking is a danger that people face everywhere, so it's one you'll need to account for no matter where you are going off the grid. It is also where a quick reaction and a correctly performed maneuver can mean the difference between life and death. There is rarely time to call

emergency services or even another person (although if multiple people are on hand to help, someone should contact emergency services while others assist the patient). Choking is a particular hazard for young children, who often put small objects in their mouths, but anyone can choke. You should learn the signs of choking before you travel. These include:

- Lips and nails turning blue
- Flushed skin turning pale or blue
- Squeaky noises when attempting to breathe
- Scrabbling at the throat
- Inability to speak
- Passing out

If you are dealing with an adult, encourage them to keep coughing if they can do so. This may dislodge the object. If not, you should perform the five-and-five maneuver, an updated version of the Heimlich maneuver, including other steps.

It can be done as follows:

1. Get the patient standing up and step behind them.
2. Lean the patient forward and wrap your arm around their chest. The upper body should be parallel with the ground.
3. Strike the heel of your hand against the patient's back between their shoulder blades five times.
4. Place your arms around the patient's waist and make a fist with one of your hands, the thumb resting against the patient's navel. Take the fist in your other hand and push it both inward and upward against the patient's abdomen, as though trying to

lift the patient off the ground. Do this five times sharply.
5. Repeat steps 3 and 4 until the blockage is dislodged and the patient can breathe again.

If you are not familiar with the back thrusts, it is possible to just perform the Heimlich maneuver. However, the two methods used together may prove more effective.

If your patient cannot stand alone, straddle their waist and follow the abovementioned method.

Heimlich For Yourself

If you are choking and unable to get help, you can employ a similar technique:

1. Place a fist above your navel.
2. Grip your fist with the other hand and bend over a hard surface like a chair.
3. Shove your fist inward and upward sharply.

Heimlich For Pregnant Women

There’s a much greater risk of harming a pregnant woman using the usual method, so instead:

1. Place your hands higher up, at the base of the breastbone, rather than the navel.
2. Perform the same abdominal thrusts described above. Be cautious of the woman’s stomach.
3. Repeat until the blockage is dislodged.

Heimlich For Children

You can use the same method given above for children old enough to stand but kneel behind them. Most people

recommend using abdominal thrusts only for children as there is less risk of damaging internal organs.

Heimlich For Babies

Follow the below method when dealing with a baby choking:

1. Sit down, rest your forearm on your thigh, and rest the infant across it face down. Support the head and neck with one hand, and lower the head below the infant's body.
2. Gently but firmly strike the infant's back five times using the heel of your hand. Be careful not to strike the infant's head.
3. Turn the infant over to face up but keep the head lower than the body. Press two fingers against the infant's breastbone and compress it five times to about 1.5 inches in quick succession. Let the chest rise in between each compression.
4. Keep repeating until the blockage is dislodged.

In all cases, if you are not successful in dislodging the blockage or if the person loses consciousness, you should move on to CPR until emergency help can reach you.

HOW TO TAKE SOMEBODY'S PULSE

Taking a person's pulse is suitable in many medical situations, and it is a skill that you should practice. The rate of someone's pulse will help you to determine how well that person's heart is working. Changes to the pulse can indicate a range of issues, although it's important to note that a pulse also naturally varies according to the person's rate of exercise.

There are two ways to measure a person's pulse: you can put your fingers on their wrist or neck.

Measuring On The Wrist

1. Hold the person's arm up straight and face their palm upward.
2. Put your first and second finger on the wrist, near the base of the patient's thumb.
3. Use a clock that will count the seconds to determine how many beats you can feel in one minute (you can count 30 seconds and multiply by 2 if this is easier).

Measuring On The Neck

1. Put your first and second finger on the side of the neck, just next to the windpipe (the soft hollow area)
2. Again use a clock that will count the seconds to count how many beats you can feel per minute.

If you cannot find someone's pulse, move your fingers around and press a little harder. It is hard to detect a pulse in some people. Most adults have a resting heart rate of 60 to 100 beats in a minute, although this varies depending on several factors, including medication, stress, age, fitness, etc.

It's a good idea to measure the resting heart rate of your various group members so that you know what their pulse rate should be and whether it is normal. Keep a log of this in your first aid kit, and discuss any abnormalities that you expect to see (e.g., if someone has a heart condition or takes medication that would alter their pulse) so that everyone is aware of this.

An irregular pulse can signify many different things, but knowing how to measure it is the first step. Be aware that a person's pulse is likely to be made less regular and significantly faster when they exercise.

MAKING SUPPORTIVE SPLINTS AND SLINGS

There will be times when you need to support an injury, and creating a splint or sling correctly can make a big difference to the injured party. Splints and slings are intended to stabilize injuries, support the limb, and reduce the risk of further injury. You may often need both together, although sometimes an injury will only call for one or the other.

Often, these will be followed up with proper medical care when possible. For example, you may splint a broken arm until the patient can be got to a hospital, but you shouldn't neglect to take them to a hospital afterward, even if their pain levels are tolerable. Without x-rays and assessment by a trained medical professional, it's impossible to know if the bones are straight and in an excellent position to heal. It's also impossible to know if you are dealing with a break, a fracture, or just a bad sprain. Make sure you attend a hospital as soon as is feasible, no matter how good your splints and slings are.

How To Make A Splint

Splints are usually intended to stabilize broken bones and help with severe sprains. Their purpose is to immobilize the joint to reduce movement and provide support. You can splint many parts of the body, but commonly, you will be splinting a wrist, arm, ankle, or another joint to stop it from moving.

You can often find the materials needed for a splint in the environment, but you should also have equipment in your first aid kit. You will need:

- A strong stick
- A plank
- A towel
- A newspaper

You will usually attempt to immobilize the injury by splinting from above it to below. For example, an injured wrist can be splinted by running a stick from the elbow to the hand; the stick immobilizes the wrist and prevents the injury from being jostled.

Let’s look at how to make a splint. Before you start, it’s worth noting that you should not attempt to realign the injury if it looks crooked; you may cause grave damage by moving broken bones around. A hospital will set an injury later; all you aim to do is immobilize it to reduce the risk of further damage and minimize the pain. You should follow the steps below:

1. Deal with any bleeding. A splint should not be applied over a bleeding wound, as it is not intended to be sterile, prevent bleeding, or soak up blood. Put pressure on the wound until the blood stops, and apply disinfectant and gauze if necessary.
2. Pad the injury. You can do this using cotton balls, bandages, cloth, or even a towel or newspaper if necessary.
3. Place the splint in position. It should run from an uninjured joint to another uninjured joint if possible. You can splint the forearm by getting a longer stick than the forearm and splinting from the wrist to the

elbow. Some joints are tougher to splint than others but do your best to immobilize the injury.
4. Tie or tape the splint in place. Do not put ties or tape around the injury site; apply them at the uninjured spots to provide support. Ties should be firm, so the splint is held close to the body, but not enough to risk cutting off circulation.
5. Keep watching for reduced circulation. As an injury swells, it is easy for a splint to become too tight. If any areas become pale, tinged with blue, or notably swollen, loosen the ties. A faint pulse is a further sign that the knots are too tight. Similarly, if the patient says it is painful, try loosening them slightly.
6. Encourage the injured person to lie down or sit down while the shock passes, especially if they feel faint. Elevate the legs slightly and tilt their head below the level of their heart if possible. Wait until they feel better before you try to move them, or there is a risk of them passing out.

Keep checking on the splint regularly until a doctor has assessed the person. If it becomes tight, loosen it to avoid circulatory issues.

DEALING WITH WOUNDS

You may find yourself dealing directly with open wounds at times, so you need to know how to handle them. Of course, wounds can vary massively in severity and how they are dealt with, so let’s explore what kinds of wounds you might have to handle, the equipment you might need, and the approach to take.

Minor Wounds

Minor wounds is a term that generally covers small gashes, shallow scratches, and general scrapes and bruises. Most minor wounds do not need a lot of intervention as they will heal independently.

Your first step will generally be to clean the wound. If possible, immerse the injury in warm, soapy water, but don’t put soap directly on the cut. Use a soft cloth to rub away any dirt and allow any stubborn dirt to soak away. If necessary, sterile tweezers can remove fragments of dirt that remain.

Once the injury is clean, assess whether it needs to be covered or left open. There are advantages to both.

An uncovered wound will often heal more quickly because it will stay dry. Many minor wounds can be left open, but they should be covered if they are in an area that is likely to get rubbed (by tools, by clothes, etc.) or if the injured person is working in a dirty environment.

A covered wound will heal more slowly but will be protected and kept clean. You can often cover an injury with gauze and medical tape or even just a band-aid which should be changed regularly to ensure it is clean. If the wound is wet when you change the bandage, allow it to dry a little before cleaning it and applying a new dressing. This reduces the risk of infection.

Once the wound has begun to heal, remove the bandage to speed up the healing process.

In terms of treating pain, most minor wounds will not require you to administer painkillers, but over-the-counter ones can be taken if the injured person is uncomfortable. Analgesics such as aspirin and ibuprofen can reduce inflammation, so use these when necessary.

Major Wounds

Major wounds are much more severe injuries, and you will often need to combine your in-the-moment first aid with a trip to a hospital later to ensure that the injury heals correctly. However, knowing what to do in the heat of the moment is still crucial. Let's look at the steps for handling major wounds.

Step One: Identify The Kind Of Bleeding

You should quickly check what kind of bleeding is occurring, as this will help you determine how major the injury is. Arterial bleeding from a damaged artery will usually be fast and bright red. It will come in spurts in time with the person's pulse. This kind of bleeding needs to be addressed quickly, as it may be severe.

Venous bleeding occurs when a vein is punctured and is notably slower. The blood is usually darker and flows consistently rather than in spurts. Again, you need to act quickly, even if the blood doesn't seem to be flowing fast.

Capillary bleeding, the last kind, is minor and comes from the surface skin (e.g., a grazed knee). It will be bright red but only appear in small amounts, and it isn't threatening.

Step Two: Applying Pressure

In most cases, you need to stem the bleeding before doing anything else. Bleeding helps to flush dirt out of a wound, but a lot of bleeding can be dangerous, and you can't patch a wound that is bleeding heavily.

You need to stop the bleeding by applying a clean, absorbent pad. A scrap of cloth, some tissue, or some gauze will work for this, but don't use anything dirty. Place the cloth against the wound, and then apply gentle pressure to it, even if this is painful for the injured person.

If the blood continues and soaks through the cloth, simply add another piece of absorbent, clean material and keep applying pressure until the blood stops. If practical, lifting the injury site above the level of the patient’s heart will also reduce the bleeding. Don’t be tempted to release the pressure to check if the injury is still bleeding until at least a few minutes of pressure have been applied, giving the blood time to clot.

Bleeding should stop in ten to fifteen minutes for most wounds. It is likely to be severe if it doesn't, and you should plan for a hospital trip when possible. Keep applying pressure until the bleeding stops.

Step Three: Closing The Wound

Next, you will need to clean and close the wound. Do not close a wound that has not been cleaned, as this invites infection. Always ensure wounds have been thoroughly cleaned and all dirt has been removed. Use sterile tweezers if you cannot get the dirt out by washing. Make sure you clean your own hands regularly throughout the procedure. Pat the wound dry (do not rub) once you are ready to close it.

How you close the wound will depend on the supplies you have on hand and the kind of injury you are dealing with. Your options include:

- Gauze and tape
- Glue
- Butterfly bandages
- Sutures
- Staples

Most wounds will be closed using gauze and bandages, but you may need to use stitches if the wound is deeper or

longer than 0.5 inches, if it’s gaping open, or if any fatty tissue, muscle, or bone has been exposed. Cuts on the face, hands, or genitals are more likely to need stitches, as do cuts on a joint.

In these instances, you can also use staples, but note that you cannot use a paper stapler to heal an injury; you will need the proper equipment. We will look at all of these methods below.

Using Gauze And Tape For Wound Closure

Gauze is suitable for many wounds because it can be cut to size. However, it will not hold the skin closed, so it may not work for gaping wounds.

To apply gauze and tape to a wound, you will usually cut some clean gauze to a size that is a bit bigger than the wound. The gauze cushions the wound and prevents the tape from sticking to it and doing more damage. Place it over the wound, making sure the injury is fully covered, and then tear off strips of medical tape and use them to hold the gauze in place.

The gauze should be taped firmly but not tightly over the wound. The tape should not be pulling on the patient’s skin but should form a close bond against it. Once this has been done, check that the patient can move without the tape pulling free.

Using Glue For Wound Closure

You may wish to use skin glue (which is **not** the same as ordinary glue). It is suitable for wounds less than 2 inches long and not deep. Glue isn't ideal if the edges cannot be pulled together easily. In general, glue is better for minor wounds.

It is a good idea to avoid touching the glue for 24 hours after it has been applied and keep it dry. It should peel off in around 5-10 days. Avoid working in dirty environments if skin glue has been applied, and don't use any lotions, band-aids, etc., on the glued area.

Using Butterfly Bandages For Wound Closure

If you don't feel that gauze or glue will work, look at applying a butterfly bandage instead. This involves using adhesive strips to pull a wound closed, and it should only be used on shallow wounds that are less than 0.5 inches long. You will be using strips of medical tape to pull the wound shut, with about 1/8th of an inch between each strip. Butterfly stitch usually involves several pieces of tape crossing the injury, with other elements at right-angles to hold the tape in place.

You can find images online that will show you how to perform butterfly stitching, and you can practice this with members of your group if you are unsure.

Using Sutures For Wound Closure

If you are going to be applying sutures, you need a sterile environment, and you should give the patient some pain relief. Sterilize all tools before using them. If possible, use a proper suturing kit, as regular needles are not designed for this. Note that you should only apply sutures if you can't see a doctor within 12-24 hours, as they can be dangerous if incorrectly used and may leave a nasty scar even in best-case scenarios.

A suture kit should contain:

- A needle driver
- Tissue forceps
- Scissors

- A sterile needle
- Thread

There are many techniques for suturing wounds, and it is an excellent idea to get training on suturing if you expect to need it, so you have hands-on experience. If possible, get the patient to a medical facility for proper stitches, but otherwise, here is a simple method for sutures:

1. Clean the wound and your hands, make sure that all equipment has been sterilized, and then put on clean disposable gloves.
2. Grab the needle with the needle driver, and check that the needle clamp has locked into place. Get the threads ready.
3. Apply the tissue forceps to expose the part of the wound you will work on. Get the edges of the wound as close to being in line as possible.
4. Angle the needle at 90 degrees, a little to the right of the wound, so that it is against uninjured flesh.
5. Push the needle to just above the layer of fat, but not deeper. Twist your hand clockwise to bring the needle out on the other side of the wound. It should be directly across from the entry point.
6. When the needle is free, unlock the driver, attach it to the tip of the needle, and pull until you have about 2 inches of thread left at the entry point, on the side of the wound you started on. You should now have a piece of thread embedded beneath the skin.
7. Release the needle, and then use your left hand to wrap the thread on the left side of the needle around the tip of the needle holder three times. Go clockwise.
8. Open the needle holder a short way and pick up the 2 inches of thread on the right-hand side of the

wound.

9. Use your left hand to pull on the long piece of thread, sliding it off the needle holder which will create a “first throw,” an overhand knot with two loops in it. Gently tighten it to pull the edges of the wound together, but not so much that they pucker or overlap. You want the knot to be lying flat at the edge of the wound, not touching the injury site.
10. Use your left hand to wrap the long end of the thread around the needle holder clockwise. Again, open the needle holder to grab the short end of the thread, and use your left hand to pull the long end off the needle driver and create a “second throw.” Gently tighten as before.
11. Repeat the above step for a third time, creating a “third throw,” but this time, wrap the suture counter-clockwise, not clockwise, which will prevent any risk of the knot slipping.
12. Cut the thread, move a quarter of an inch further down the wound, and repeat this process. Continue until the wound is closed. All knots should be on the same side of the wound.

This is known as a simple interrupted suture, and it’s the most basic method, although there are many others. Stitches should almost always be covered in an antibiotic ointment and gauze, and both should be reapplied daily.

Non-dissolving stitches can be cut out once the wound has healed, which usually takes a week for head or neck injuries, and up to two weeks for other injuries, depending on the severity.

Using Staples For Wound Closure

Staples again should only be considered if medical help is more than one or two days away. They are suitable for

wounds on the scalp, torso, legs, and arms. Such wounds must have straight edges.

Sutures are generally better, but staples often treat head injuries. If possible, apply anesthetic or provide painkillers before starting, or the patient may go into shock.

1. Line up the edges of the wound and place the stapler against the surface of the skin. Put the center marker over the center of the wound.
2. Gently squeeze the stapler handle so that a staple is applied.
3. Move a little less than 0.5 inches from the first staple, and apply another. Keep working until the wound is closed.

Staples should almost always be covered in an antibiotic ointment and gauze, both reapplied daily. Where possible, pass staple removal to a trained professional. Stapler removal tools can also be used.

SUMMARY

In this chapter, we've covered:

- How to perform CPR for adults, children, and infants, including the basics of mouth to mouth resuscitation
- How to put someone in the recovery position
- How to perform the Heimlich maneuver and the five-and-five method
- How to take a pulse
- How to make splints and slings
- How to handle minor and major wounds, and the different closure techniques that can be used

In the following chapter, we will be looking at medical conditions and how you should prepare for these before traveling. We'll cover things like allergies, asthma, seizures, diabetes, and anemia, so you know what supplies you need and what training you should take if anyone in your party suffers from these issues.

3

PREEXISTING, CHRONIC, AND PERMANENT MEDICAL CONDITIONS

“Therefore, in medicine, we ought to know the causes of sickness and health.”

— IBN SINA (AVICENNA)

Being prepared is vital when it comes to emergencies. You cannot prepare for many because they are so unexpected. Still, when it comes to preexisting and permanent health conditions, preparation is both possible and crucial – and it’s your best friend in these scenarios. Let’s look at some of the foremost issues that you might need to be prepared for and ensure that you are as well equipped as possible to handle them.

HEART ATTACKS AND CHEST PAIN

A heart attack is an instance in which the immediatec care, without medical help, can be crucial. This is particularly true if you are off the grid and far from assistance. Immediate care can change how much muscle dies, which has a massive impact on short-term and long-term outcomes.

Heart attack symptoms include:

- Chest pains or discomfort (the commonest symptom)
- Shortness of breath
- Nausea/vomiting
- Lethargy/exhaustion
- Cold sweats
- Faintness
- Pain in one or both arms, the back, neck, stomach, jaw, or shoulders

In general, chest pain/discomfort will be experienced by both men and women, but the other symptoms are more commonly found among women.

If someone has a heart attack, you should call emergency services as soon as possible.

Give them an aspirin to chew on, as this will reduce the risk of blood clotting.

Suppose the person has a history of heart attacks and has been prescribed nitroglycerin in the past. In that case, you should ensure availability in the first aid kit and administer this according to instructions. However, do not give nitroglycerin if it hasn’t been prescribed by a doctor, as it could be harmful.

If the person falls unconscious, begin CPR. Continue CPR until the person regains consciousness or help arrives. If you cannot contact emergency services, treat the heart attack as best you can, and prioritize getting the person to a hospital when this becomes possible. The extent of the damage will need to be analyzed and care provided, which will be done in a medical facility.

STROKES

Strokes also depend upon very swift responses – every second counts when a person has a stroke. Call emergency services as soon as possible because treatment will be undertaken in a hospital setting. The longer a stroke goes untreated, the more dangerous it can be, so do not wait, even if you are a long way from help. Many stroke treatments must be given within hours of the stroke occurring but prioritise getting in touch even if it takes longer than this for emergency services to reach you.

However, there are other things that you can do to help with a stroke when you are a long way from help. Let's look at how to spot a stroke and then move on to treatment. The best way to remember the symptoms of a stroke is the acronym FAST, which stands for:

- Face: is the face numb or drooping?
- Arms: can the patient raise both arms above their head equally, or is one weaker than the other?
- Speech: can the patient talk clearly, or are they slurring their words?
- Time: call for help promptly

Other symptoms can include:

- Headaches
- Dizziness
- Lightheadedness
- Tingling, weakness, numbness on one side of the body
- Loss of bowel or bladder control
- Blurred vision, particularly in one eye
- Loss of consciousness

- Loss of balance

Note that these symptoms can disappear in only a matter of minutes. You should not ignore them just because they resolve themselves; the patient still needs to see a doctor.

Next, what should you do if you think someone has had a stroke? Firstly, do not give the person food, drink, or aspirin, as these could be dangerous for certain types of strokes (and you won't be able to tell which is which by looking).

Put the patient in a comfortable position, lying on one side with their head slightly raised incase they throw up. Talk to them calmly and reassuringly, and keep them warm. Avoid moving them, especially if they are experiencing weakness. If possible, note the time the symptoms started, as this can help doctors determine the proper course of treatment.

If the patient stops breathing, perform CPR until the patient regains consciousness or help arrives.

SEIZURES

Seizures are also serious emergencies, and you should know if anyone in your group is predisposed to seizures. Talk to them about the condition, any triggers, and what to do to help, as advice may vary between different people. Many seizures do not constitute an emergency, but you still need to know how to react, protect the patient, and when you need emergency services.

There are two main kinds of seizures: focal onset seizures and generalized seizures.

Focal onset seizures start in one part of the brain, and the patient may experience involuntary movement/twitching.

As the seizure progresses, the patient is likely to zone out and become unaware, and they will not remember anything afterward.

Generalized seizures start in multiple parts of the brain, and the patient will usually be unaware when they are occurring. These are the more common kinds of seizures and encompass several well-known ones, including tonic-clonic seizures and grand mal seizures. These tend to be more dramatic, frightening, and more serious.

Often, they will follow approximately this pattern:

- The patient becomes unresponsive to external stimuli and sometimes will collapse.
- Their muscles clench for a few seconds (tonic phase)
- They start to jerk convulsively for seconds or even minutes (clonic phase)
- They regain consciousness but may be disorientated or confused for a while

What you need to do depends on the situation and the severity of the seizure, which is why it’s a good idea to talk to any party members that suffer from seizures. Make sure everyone in the group knows how to respond. Usually, you will need to:

- Time the seizure’s length from start to finish
- Roll the person onto their side if possible (this keeps the airway clear)
- Keep everyone out of the way
- Keep hard or sharp objects far from the patient

Don’t try to put anything in the patient’s mouth, and don’t try to hold onto them. Allow them to thrash and make the area safe as far as possible.

If a seizure lasts for more than 5 minutes, call emergency services as it is becoming dangerous, and there is little else that you can do. Seizure activity should be discussed with a doctor when this becomes feasible.

SEVERE ALLERGIC REACTION/ANAPHYLAXIS

Like seizures, allergies should be discussed before the trip begins, and procedures agreed upon. Known allergens, as far as possible, should not be kept in the off-grid setting or should be kept in sealed, clearly labeled containers to reduce the risk of an allergic reaction occurring. If a person is allergic to certain animal stings, e.g., wasps, avoid situations that are more likely to be encountered. Make sure allergy information is shared widely, and everyone knows how to recognize an allergic reaction and what to do if one occurs.

The symptoms of a severe allergic reaction usually include:

- Swelling (of the tongue or other body parts)
- Pallid skin
- Floppiness
- Abdominal pain
- Vomiting
- Persistent, wheezing cough
- Difficulty breathing/noisy breathing
- Tightness of the throat or swollen throat
- Difficulty talking
- Dizziness
- Collapse

If a member of your group is having a severe allergic reaction, you should

1. Lie them down flat on their back.
2. Give them an adrenaline injector (make sure that your first aid kit contains at least one of these if anyone in the group has an allergy).
3. Call emergency services as soon as possible.
4. Give further adrenaline if symptoms are not improving within 5 minutes.

If the patient also has asthma, you should provide them with their inhaler, but only after the adrenaline injector. The asthma reliever puffer may be offered once the adrenaline has been given.

If a patient has a severe allergic reaction, but the adrenaline solves the issue, it is still good to see a doctor following the incident when this becomes possible. The adrenaline injector must also be replaced as soon as possible to avoid a situation in which adrenaline is not available during an allergic reaction.

Ensure that everyone in the group understands how to use an adrenaline injector and knows where this is kept.

ASTHMA

Similarly, anyone in the group who suffers from asthma should discuss this with other members and clarify their standard approach to attacks, how severe their asthma usually is, and what approach they would like others to take. Prompt this discussion if the person does not initiate it themselves; it’s critical to have everyone on the same page about dealing with an attack.

Asthma usually comes with the following symptoms:

- Coughing and wheezing

- Difficulty breathing (this may be minor or major, but could increase in severity if the attack gets worse)
- Difficulty talking clearly
- Difficulty standing or walking
- Skin tugging at the base of the neck or between the ribs

In very severe cases, asthma may also result in:

- Lips turning blue
- Confusion
- Exhaustion
- Inability to speak more than a word or two in one breath
- Collapsing
- Little relief is given by the inhaler
- Gasping

If you see symptoms from either of these categories occurring, you need to act quickly, so let’s look at what you should do.

1. Get the person to sit upright and loosen any constrictive clothing.
2. Talk to them calmly and reassuringly, as panic will worsen the symptoms. It is easy to panic when faced with an asthma attack, but the calmer you can be, the better the patient will handle the attack.
3. Give the patient 4 puffs from their inhaler. You can do this with or without a spacer (step 4 and step 5), but using a spacer is preferable.
4. To use a spacer, remove the cap and shake the inhaler thoroughly. Insert the inhaler into the spacer, get the patient to breathe out as much as possible, and place their mouth around the spacer’s

mouthpiece, sealing it. Press the inhaler once so that one puff is put into the spacer. Get the patient to breathe in slowly through their mouth and then hold their breath for 10 seconds. Repeat this 4 times so that they have inhaled 4 puffs.

5. If you don’t have a spacer available, 4 puffs from the inhaler will do instead. Remove the cap and shake well, and then get the person to breathe out completely and seal their lips around the mouthpiece. Get them to breathe in slowly and press down once. They should breathe in for up to 7 seconds and then hold their breath for 10 seconds. Wait for about 1 minute before giving the next puff, and apply 4 puffs total.
6. Wait for 4 minutes to see if the breathing situation has improved. If not, give another 4 puffs.
7. If there is still no improvement, give 4-8 puffs every 20 minutes until you get emergency help. If help does not come within 4 hours, lower the dose to give 4-8 puffs when needed every 1-4 hours.
8. Do not leave the person alone or let them fall asleep. A bad asthma attack can change symptoms, and even the cessation of wheezing does not mean they can be left unattended. When possible, they should visit an emergency room to be assessed and receive treatment for the attack.
9. In some cases, the patient may need to stay in hospital following a bad attack, so do not leave them unattended or neglect to get medical aid when you can.

If the patient has been given different advice on using their inhaler, make sure that this supersedes the advice offered here; This is the standard procedure, but recommendations might vary.

A few early warning signals may (but will not always) precede an attack, so look out for these. You might see:

- Frequent cough at night
- Runny nose, congestion, sore throat
- Grumpiness, tiredness, moodiness
- Weakness or breathlessness when doing light exercise
- Shortness of breath

Be aware of these warning signs and prepared to step in if an attack should occur. Make sure everyone in the team is familiar with how to use an inhaler and that the first aid kit is stocked with a spare inhaler and any that the asthmatic party (or parties) has available.

HEART PALPITATIONS

Heart palpitations can be alarming for anyone who suffers from them and other people close to the patient. Not all heart palpitations signify something serious, but it’s still important to know how to handle them when you are far from help and can’t access a doctor.

Consistent heart palpitations should prompt you to seek proper medical care when able, as they could be a sign of a health problem, and they may get worse. However, when you are off the grid, there are a few techniques that the patient can employ to reduce the risk of heart palpitations.

Heart palpitations can be caused by:

- Caffeine
- Anemia
- Dehydration

- Nicotine
- Alcohol
- Low levels of potassium or sugar in the blood
- Exercise
- Low levels of carbon dioxide or oxygen in the blood
- Some kinds of medicine (e.g., cough medicine)
- Fever
- Blood loss
- Stress, panic, anxiety

If you see these symptoms, there are a few things that you can do to mitigate them. Many of these are long-term strategies, not an overnight cure.

One: Drink Plenty

Sometimes, dehydration causes heart palpitations, so the patient should drink sufficient amounts of water throughout the day, particularly for patients who notice dark yellow urine; This is because dehydration thickens your blood, making it harder for it to move through your veins, which can increase the rate of your pulse and may cause palpitations.

Two: Regulating Stress

Techniques such as deep breathing, yoga, and meditation may reduce the appearance of heart palpitations at times. Patients should keep their stress levels low, get enough sleep, and avoid stressful situations if they suffer from heart problems.

Exercise may also help regulate stress, but it’s a good idea for patients to consult with their doctor before taking up a regular exercise routine, especially if they are out of shape.

Three: Avoid Certain Foods

Heart palpitations are often associated with spicy and rich foods, so it is best to avoid these where possible. Consider also cutting out caffeine, alcohol, and cigarettes.

Four: Breathe Deeply

Sometimes, deep breathing can help to regulate the heartbeat. It will encourage the body to relax. You can also try the Valsalva maneuver, which involves pinching your nose shut and trying to blow air through the sealed nose. Do not blow hard. Try these techniques for at least several minutes.

Five: Splash Your Face With Cold Water

Sometimes, splashing the face with cold water is sufficient to stimulate a nerve that manages your heart rate. This is known as the vagus nerve, and stimulation can be done at home, but it’s worth discussing it with a doctor before you try this. A cold shower or an ice pack on the face for about 20 seconds may have the same result.

If a person is suffering from severe palpitations or showing other symptoms, try to get them to a hospital. It is not easy to diagnose the cause of heart palpitations, and it may not be possible to treat them without proper medical equipment anyway.

HYPERGLYCEMIA

Hyperglycemia is a condition that affects people who have diabetes, and if treatment is not administered when it occurs, it can lead to grave complications. If there are any diabetics in your party, you should discuss this before traveling. They should make you aware of the symptoms and the treatments and how they handle this.

Early signs include increased thirst, headaches, fatigue, blurry vision, and frequent urination. However, many people will only notice this issue later, when toxic acids have started to build up in the patient's urine and blood. At this stage, symptoms often include:

- Weakness
- Confusion
- Abdominal pain
- Breathing difficulty
- Vomiting
- Nausea
- Dry mouth
- Breath that smells fruity

Sometimes, hyperglycemia can lead to a coma, and in the long term, it can damage many vital organs in the body, including the heart, eyes, kidneys, and nerves. Hyperglycemia will often result from the patient taking too little medication, overeating, exercising unusually, or going through emotional or physical stress. In most cases, hyperglycemia develops slowly and may not require first aid (but it definitely needs to be treated, so arrange to visit a doctor or hospital when possible).

You should treat hyperglycemia by:

1. Giving the patient a small amount of sugar (although hyperglycemia means that there is too much sugar in the blood, the body isn't accessing it effectively, and a small amount more will not hurt. It will rule out the issue of having too little sugar).
2. Reassure the patient and calmly speak to them. They will usually begin to recover.

3. If the condition does not improve or the person falls unconscious, you will need to contact emergency services.

In most cases, prevention will be better than cure for hyperglycemia, so the patient should follow their doctor's diet and exercise.

HYPOGLYCEMIA

Hypoglycemia occurs when the patient's insulin level gets too high for the amount of sugar that the patient has in their blood at the time. If the patient misses a meal or snack, throws up, takes too much medication, or exercises more than usual, it could lead to hyperglycemia. The brain will struggle to operate because the patient will not have enough sugar, leading to insulin shock.

In general, most diabetic emergencies are caused by hypoglycemia, and you should familiarize yourself with the symptoms and the steps for treating it. Hypoglycemia may result in:

- Seizures
- Cool skin
- Sweatiness
- Lack of responsiveness
- Irritability, aggression, or confusion
- Pallor
- Slurred speech, difficulty walking, and other apparently drunken behavior
- Panting
- Looking unwell
- Feeling unwell

Take any of these symptoms seriously and encourage the patient to take action or help them to do so. Because hypoglycemia can cause confusion, it is essential to step in, as, in some instances, the patient may not realize that they are ill or how to deal with it. You can help someone by:

1. Encouraging them to sit down.
2. Give them a sugary drink or glucose sweets.
3. Wait until they feel a little better, and then provide other high-sugar foods, such as jelly sandwiches, to keep their blood sugar levels up.
4. Wait to see if they improve. If they do not improve within 10 minutes or they get worse, call emergency services. A severe attack can be fatal if treatment isn’t received. Severe hypoglycemia may be treated using intravenous glucose or glucagon injections, and these are not things that you will have access to off the grid

Note that even if the patient improves rapidly, they should still get checked over by a doctor as soon as they can. Insulin will still be active in the bloodstream, and patients need to get their levels assessed to check they are returning to normal. This is particularly true at night, as the patient’s blood sugar levels will drop while asleep, and they may fall unconscious.

When treating both hyperglycemia and hypoglycemia, it's vital to choose fast-acting carbohydrate snacks to start. Fruit juice, honey, and sweet candy are good options. Stock some candy in your first aid box if you are traveling with a diabetic, and ensure that this is not used except for medicinal purposes. Avoid foods with protein or fat.

You should also encourage the patient to measure their blood sugar levels if they can do so. If these remain under

70 mg/dL 15 minutes after they have eaten the candy, get them to eat another 15-20 grams of fast-acting carbs. Continue doing this until the blood sugar level rises above 70 mg/dL.

HYPERTENSION

Many people in today's world suffer from hypertension, and there are multiple possible causes. A few triggers for hypertension include lack of physical activity, stress, and a salty diet.

Many people with hypertension will also be on medication from their doctors to solve the problem, but some will not know in advance and can suffer from hypertension when you are far from help. Therefore, it is crucial to understand how to address this issue and recognize it when it occurs.

You may be suffering from hypertension if you get:

- A sudden, severe headache
- Fatigue
- Breathing difficulty
- Chest pains
- Vision problems
- Heart palpitations
- Confusion

If a member of your group starts displaying these symptoms and you cannot get them to a hospital, there are quite a few things that you should do. It's important to note that hypertension can occur with no symptoms, so make sure you know if any of your group members are at risk of this before traveling together.

Let's explore how to combat hypertension.

Stay Calm

Like many medical situations, calmness of the patient and the person delivering first aid can make a big difference. Encourage the patient to take a deep breath, hold it, and release it. Repeat this until their breathing is regulated and calm, which should help to reduce blood pressure.

Eat Dark Chocolate

A piece of dark chocolate will encourage the patient's body to release the endorphins they need to calm down. Keep a small block of dark chocolate in the first aid kit for emergencies.

Provide Blood Pressure Medication If Possible

If a member of your group is at risk of hypertension, they should discuss this with their doctor before going off the grid. The doctor may prescribe some medication, which should be taken as instructed to reduce the patient's blood pressure.

Avoid Stress

Stress is known to elevate blood pressure, and the more a patient is stressed, the higher their blood pressure is likely to be. Often, high blood pressure results from many contributing factors, so reducing each of these factors will help. Encourage the patient to avoid stressful situations and take a more laid-back approach to life. This may involve techniques such as meditation, deep breathing, or possibly adult coloring books; these will all aid relaxation.

Reduce Salt Intake

Eating a lot of salt increases blood pressure for some individuals because it causes the body to retain fluids.

Ideally, you shouldn’t eat much more than half a teaspoon of salt per day.

The patient should aim to stop adding salt to their foods and use spices or herbs for flavoring instead. Where possible, opting for low-sodium foods may also be a beneficial approach to take.

Exercise

It is likely no surprise that exercising is a significant aspect of reducing hypertension, and it’s recommended to do between 30 and 60 minutes of exercise per day if possible. However, patients should speak to their doctor about this first to develop a safe exercise routine.

Exercise could involve swimming, jogging, hiking, or just walking. You don’t need access to a gym or fancy sporting equipment to get into shape. Try to make sure at least some of the exercise is challenging, but do anything that feels good.

Cut Out Alcohol And Cigarettes

Both alcohol and cigarettes may contribute to hypertension, and patients should cut back or entirely give these things up.

Cigarettes raise blood pressure when they are smoked. This often only lasts for a few minutes per cigarette, but heavy smokers will find that their blood pressure level can stay high for hours after a cigarette. Entirely cutting out cigarettes is a great way to control blood pressure.

Similarly, alcohol can be dangerous if drunk in more than very moderate quantities. A small glass of wine will not be harmful, but consuming large amounts of alcohol can be. It may also reduce the effectiveness of medication intended to combat high blood pressure.

In general, men can drink two alcoholic drinks per day, but women should only drink one. Exercising control of alcohol and cigarettes can considerably impact the patient's blood pressure.

Drink Chamomile Tea

Chamomile tea is often heralded as a calming substance, and you may find it is beneficial to someone suffering from hypertension. Brew a cup of this tea, sit the patient down, and talk to them while they get calm.

If the person used cigarettes as part of their calm-down routine, help them trial other options, so they don't feel powerless and out of control.

DIABETES

We've covered first aid diabetic emergencies in hyperglycemia and hypoglycemia above. Still, it's also worth learning what you can about this health condition, as it is prevalent nowadays, and you are likely to encounter someone who has it at some point.

Type 2 diabetes is a disease that means the body either does not produce enough insulin or cannot effectively use the insulin it produces, which can cause elevated blood sugar levels.

Type 2 diabetes is generally managed by using an insulin pump and monitoring blood sugar levels using a glucometer so patients can regulate what they eat according to their current sugar levels.

People with type 2 diabetes often need to ensure that they eat regular, controlled portions and exercise in regular, controlled ways. This must be considered if you often plan activities or if your off-grid situation requires physical labor

at times (e.g. gathering wood, taking down/putting up tents, farming, carrying grocery bags, etc.).

Talk to the patient about how they manage their diabetes and support them.

Many people who have diabetes need to check their blood sugar levels regularly. You may not need to be involved with this, but it's worth understanding the process. They also need to regulate their meals carefully, which needs to be understood and respected if your group has shared cooking duties. Not meeting their food needs can be dangerous.

THYROID ISSUES

Hypothyroidism occurs when the patient's thyroid gland is underactive and not producing sufficient hormones to keep the body running normally. This can lead to many symptoms, including:

- Depression
- Fatigue
- Abnormal menstrual cycles
- Increased cholesterol
- Dry skin
- Constipation
- Difficulty losing weight
- Decreased libido
- Swollen legs
- Irritability
- Cramps, aches, and pains
- Sleepiness
- Slow heartbeat
- Sensitivity to cold

Hyperthyroidism can also be an issue, with a thyroid that is over-producing hormones. It can cause:

- Increased appetite
- Anxiety or irritation
- Heart palpitations
- Rapid heartbeat
- Weight loss
- Difficulty sleeping
- Sensitivity to heat
- Trembling
- Fatigue
- Sweating

Usually, a person suffering from either of these conditions will have medication that they can take to keep themselves functioning. However, you should recognize the signs and symptoms and familiarize yourself with the medicine they take.

Some supplements can improve thyroid health, such as vitamin B and probiotics, but it is good for the patient to talk to their doctor before making dietary changes.

ANEMIA

Finally, anemia is a condition that involves having a deficient number of red blood cells. A patient with anemia will have low hemoglobin levels, making it more difficult for oxygen to travel around their body. It can lead to fatigue and shortness of breath because the different parts of the body won’t be given the correct supply of oxygen.

It is a common condition, and many women suffer from it due to their periods. There are numerous kinds of anemia, which can be very mild or more severe. Symptoms often

include a fast heartbeat, headaches, dizziness, cold extremities, weakness, joint pain, and pale skin.

Anemia has many different causes, and the treatment will vary. The patient needs the type of anemia to be diagnosed by a doctor before a course of treatment can be chosen. The below options for treating anemia at home should be checked with a doctor first if possible:

- Eating more green vegetables to boost the amount of iron in the blood.
- Eating sesame seeds to boost iron intake.
- Increasing the intake of vitamin C, as this is crucial to helping your body absorb iron.

If the patient feels faint, get them to lie down and raise their legs above their head until the dizziness passes. They can then take an iron supplement, preferably with a glass of orange juice to boost their vitamin C levels.

Be aware if anyone in your party suffers from anemia, and talk to them about handling it, which increases the chances of addressing it appropriately if it gets out of control.

SUMMARY

In this chapter, we've covered advice on what the following conditions result in, and how you should be prepared to deal with them if an emergency should arise:

- Heart attacks
- Seizures
- Severe allergic reactions
- Asthma
- Heart palpitations

- Hyperglycemia
- Hypoglycemia
- Hypertension
- Diabetes
- Thyroid issues
- Anemia

The following chapter will address minor emergencies that you might encounter while off the grid. We're going to look at dental issues, eye trauma, insect bites and stings, sprains, and a whole lot more so you know how to address minor issues promptly and efficiently and prevent them from escalating.

4

MILD EMERGENCIES

“Emergency preparedness is a team sport.”

— ERIC WHITAKER

A mild emergency might not seem like something you need to be overly concerned with preparing for, but that isn’t the case at all. “Mild” doesn’t mean unimportant in this context.

A mild emergency can be intense and painful. Instead, “mild” simply refers to emergencies that are not (usually) life-threatening. However, you still need to know how to handle them.

In this chapter, we will cover all sorts of issues that you may encounter that are usually relatively minor but which can develop into something major if you do not know how to deal with the problem. You should find everything you need here, from teeth problems to fainting to infections.

DENTAL PROBLEMS

So many things can go wrong with a person's teeth that we now have dedicated doctors assigned purely to their care and treatment – dentists. However, when you're off the grid, you need to be your own dentist to a degree, and it's essential not to overlook oral issues because they can be exceptionally painful and miserable if not treated. Being prepared is crucial.

There are a lot of dental issues that can arise, so let's look at them below.

Dental Hygiene

Ensure that everyone in your party understands good dental hygiene, as this can go a long way to combating dental issues. Each member should have a toothbrush with a few spares and toothpaste. Flossing is also essential.

Teeth should be brushed twice a day, and flossing should be completed once to prevent issues, including gum disease, rotten teeth, and more. Encourage good dental hygiene as much as possible.

Tooth Decay

Tooth decay will occur quickly if the teeth are not properly maintained. Bacteria will soon build up inside the person's mouth and permanently damage the teeth, leaving tiny holes that infection can get into.

This may be immensely painful and can happen without the person knowing until the infection sets in. The decay will continue if not treated.

Survival Dental Kit

You should have a dedicated dental kit to use off the grid and know how to use it.

This kit ought to contain:

- Headlamp
- Sterile cotton balls
- Dental picks
- Gauze
- Toothache drops
- Clove oil
- Temporary fillings
- Mixing bowls
- Sterile gauze pads
- Sanitizing wipes
- Dental floss
- Painkillers
- Dental wax
- Extraction forceps
- Surgical gloves
- Tweezers
- Dental mirror
- 2 spatulas

Make sure that you have enough supplies in your kit to treat multiple dental emergencies, especially if you plan to be off the grid for some time.

Toothache

Toothaches can be minor or major, but they are close to debilitating at their worst. They can cause headaches and sleep problems, and they will not resolve themselves. The nerves inside the pulp of the tooth are among the most sensitive in the entire body, so toothache has the potential to be worse than almost any other pain.

Toothache is usually caused by tooth decay, a broken tooth, infected gums, a damaged filling, an abscess, tooth removal, or tooth eruption (new teeth coming through). It may be accompanied by throbbing and swelling and the infection draining.

You may be able to treat toothaches with warm salt water, clove oil, cold compresses, and pain medication, but the cause of the issue will also need to be addressed. Some causes, such as tooth removal or tooth eruption, may solve themselves as the skin heals, while others will need treatment.

Fillings

Many adults have fillings, and if a filling comes loose while you are off the grid, this will expose the tooth to re-infection and damage. You will need to learn how to temporarily fill a tooth using the instructions in your kit or by watching videos online. The aim is not to create a perfect filling but to temporarily patch the hole until a dentist can be seen.

Abscesses

Mouth abscesses are extremely painful and occur because of infection. An abscess may look like a pimple. Do not pop it. The patient should brush and floss as much as they can until they visit a dentist. Salt water rinses, clove oil, cold compresses, and garlic can all help deal with an abscesses if visible. Rub or rinse them onto the infection, and see a dentist when possible.

If the infection goes down, the patient should continue using salt to sterilize their mouth and minimize the chance of the infection growing again.

Broken Teeth

Broken teeth can sometimes be repaired. Current advice is to find the broken fragment and store it in milk until it can be reattached. If you have dental cement in your first aid kit, you should use this. The patient should then see a dentist when possible.

Loose Teeth

Good dental hygiene is necessary if a tooth is loose but still attached. Brushing and flossing, gargling with salt water, avoiding sweet drinks or using a straw will all help. Loose teeth can be caused by poor dental hygiene, osteoporosis, injuries, plaque, and more.

In some cases, medication may be prescribed to deal with loose teeth, but it is best to get professional guidance as soon as possible. In the meantime, avoid touching the tooth, brushing it hard, or putting any stress on it.

Knocked-Out Tooth

If a baby tooth has come out, leave it out. If an adult tooth has come out, current advice is to clean it (no more than 10 seconds under cold running water), place it back in the socket if possible, bite on a clean handkerchief, and see a dentist. If the tooth cannot be replaced, put it in milk. The tooth must not be allowed to dry out.

Teeth need to be repositioned in the mouth within 30 minutes if possible. If an emergency dentist cannot be reached within this time, you may be able to splint the tooth yourself, attaching it to the surrounding fixed teeth, but this is far from ideal. The tooth may reattach itself within a couple of months. As soon as it is feasible to see a dentist, do so.

Tooth Removal

Don’t remove a tooth unless it’s necessary. It has exposed nerves if it is constantly hurting, loose, and/or broken. If you think it’s likely that you will need to attempt tooth removal, it’s a good idea to get an experienced dentist to show you how before you travel, if possible.

You will likely need two forceps (one upper universal and one lower universal), an elevator to loosen the tooth, and a probe.

If possible, you should use a local anesthetic (check the patient is not allergic) or provide painkillers. Explain everything you are doing to the patient and know when they are likely to feel pressure.

Make sure you have good working light.

To remove a lower tooth, you will push it down and pull it up, so position your patient on a low stool. To remove an upper tooth, you will push it up and pull down, placing your patient on a high seat.

Make sure your hands and tools are sterile, and use clean gauze to stem the blood. You may need to hold a cold compress to the face to reduce swelling.

Note that you should only remove teeth if you have some experience and as a very last resort. Otherwise, leave the tooth in place and prioritize visiting a dentist.

BITES AND STINGS

Bites and stings are another major hazard of living off the grid, and it’s imperative to take some time to learn about the bites and stings of the creatures you might encounter. Learn how to identify them, keep appropriate treatments in your first aid kit, and ensure you know how to administer them.

The first thing you should do is remove any debris in the wound, whether this is a stinger or hairs (e.g. from a caterpillar). If there is a tick, remove this by using a pair of tweezers without squashing the tick or pulling its head off. When the wound is clear, wash the area with soapy water.

Next, get a cold compress or an instant ice pack, and place it against the injury. Hold it on for 10 minutes or more to bring the swelling down. Elevate the affected area if possible, and don't let the patient scratch at it.

Don't add vinegar or bicarbonate of soda, as this isn't likely to help. Over-the-counter painkillers can be taken, along with over-the-counter cream for insect bites or antihistamines.

CHOKING

Choking is a risk wherever you are, so learn the common symptoms and how to perform the Heimlich maneuver and the five-and-five maneuver This is something that every adult party member should do.

EYE TRAUMA

Eye injuries are alarming and need conscientious treatment to reduce the risk of further injury. Get the patient resting comfortably and tell them not to try moving their eyes or head. Ideally, they should keep their eyes closed to reduce the risk of movement and further injury.

Next, cover the eye with a clean eye pad. Do not attempt to remove any debris from the eye, but pad around the socket to reduce pressure. The person then needs to be taken to a hospital as soon as possible.

NOSEBLEEDS

Nosebleeds can be minor or severe, and they are common. It's valuable to know how to handle them. Get the patient to sit up straight and lean forward a little way to reduce

blood pressure in the nasal veins and prevent swallowing the blood.

Get the patient to blow their nose gently and then spray a nasal decongestant if available. They should then pinch their nostrils shut and breathe through their mouth for 10-15 minutes. They can do this for a further 15 minutes if the bleeding continues. Emergency care may be needed if the bleeding lasts for more than 30 minutes.

If the nosebleed results from an injury and there is a risk that the nose is broken, you should try to get the patient to emergency care if possible. Applying ice and cold compresses will help reduce the swelling and pain if you cannot get the patient to a hospital straight away.

After a nosebleed, the patient should avoid bending down or blowing their nose for a few hours.

FAINTING

Fainting has a variety of causes that may require the patient to get checked over by a doctor, but knowing what to do at the moment is crucial. Fainting can cause the patient’s pulse to slow down temporarily and is often caused by reduced blood flow to the brain. Fainting will usually cause a person to fall to the ground and may also be characterized by sweating, cold skin, pallor, and a slow pulse.

You should respond by getting the patient to lie down as soon as possible to reduce the risk of further injuries. Next, check whether they were injured (if they fell when they fainted). Treat any injuries that you find.

Kneel beside the patient and raise their legs. Place their ankles on your shoulders, as this will encourage blood to

flow back to the brain.

If possible, increase the amount of fresh air available and prevent bystanders from crowding around. Allow the patient to rest for a few minutes, and then ask if they feel ready to sit up. If they do, ensure that they move slowly and lie them back down if the faintness recurs. If it doesn't, get them to sit quietly for a while to reduce the risk of a second fall and wait. Ensure there are people ready to catch them when they stand up, and keep an eye on them for the rest of the day.

If the person passes out and remains unresponsive, call emergency services and check that the patient's airway is clear. If they stop breathing, perform CPR.

HEADACHES

Most headaches can be treated by drinking water, taking painkillers, and possibly lying down in a dark, quiet space. Placing a cool, damp cloth on the forehead can further alleviate pain.

Many headaches are either tension headaches or migraine headaches. Tension headaches will not cause nausea and are not usually worsened by activity. Migraine headaches can cause nausea and sensitivity to movement and may also cause other symptoms, such as loss of vision on one side, numbness, tiredness, etc. Migraines may not be helped by standard painkillers but should pass eventually.

If headaches recur regularly, follow a head injury, are extremely bad, or cannot be solved with medication, it's worth seeking medical advice.

FOREIGN OBJECTS IN THE NOSE OR EAR

If something gets stuck somewhere, the apparent course of action is to remove it, but this can sometimes do more harm than good. Let’s explore how to deal with objects getting lodged where they shouldn’t.

Nose

Close the unaffected nostril and gently blow out of the nose to try and dislodge the object. Don’t poke at an object with cotton swabs or tools or try to inhale the object. Try to breathe through the mouth until the object has been removed. If the object can be seen, gently try to get it out with tweezers, but only if the risk of further injury is low.

If the object cannot be easily removed, seek medical care.

Ear

If the object is visible, try to use tweezers to remove it. Don’t poke at it with other tools, as these may push it further in. Grip one edge with the tweezers and gently tug.

Alternatively, tilt the head to one side so gravity pulls the object downward and may dislodge it.

An insect can be removed by pouring warm mineral oil into the ear in some instances but shouldn’t be used for any other objects. Tilt the head so that the afflicted ear faces up and tip a little mineral oil in. Don’t do this if the eardrum may be perforated or if there are ear tubes in place.

Seek medical assistance if you cannot remove the object or if the ear is bleeding or painful.

FEVER

Fevers are a common symptom of many illnesses, so it's essential to know how to treat them. They are the body's attempt at protecting itself, but they can occasionally be dangerous themselves. A fever is a reading over 100 degrees F (taken orally). Usually, the treatment just involves relieving discomfort and promoting rest.

Treat a fever by:

- Encouraging the patient to drink water
- Using a lightweight blanket for chills
- Providing ibuprofen or Tylenol (consult with a doctor first for children under 6 months old)
- Encouraging the patient to rest as much as possible

For babies, you should get medical care as soon as possible. For older children, teenagers, and adults, it's usually okay to wait for a fever out unless the patient has trouble breathing or swallowing, is vomiting a lot, has chest pain or a severe headache, is suffering dehydration, or has a fever but no sweating. If these symptoms arise, consult with a doctor over the phone, or take the patient to the hospital.

Don't try to lower a fever artificially. Cold baths and rubbing alcohol should be avoided. Lightly sponging the forehead with lukewarm water is okay.

SUNBURN

Prevention is notably better than cure when it comes to sunburn, so make sure you have sun lotion suitable for all party members. However, it is easy for sunburn to happen even when careful, especially if you spend a lot of time outdoors. You can further minimize the risks by ensuring that everyone has lightweight, long-sleeved shirts,

appropriate hats, and gauzy scarves that they can use to deflect the sun's rays when necessary.

If a sunburn occurs, you should start by cooling the skin, either with a cool bath or a damp towel. Next, apply an aloe vera lotion or gel or something similar to soothe the inflammation. Encourage the patient to drink water to rehydrate themselves.

Pain relievers can be taken, and the patient should avoid further sun exposure. Covering up is one of the best ways to reduce the risk of sunburn, especially if the patient frequently forgets to apply sun lotion.

Avoid breaking blisters. The area should be cleaned with gentle soap and water when they break and then covered with gauze. Keep the site clean and make sure it is healing well. If a rash begins, contact a doctor for advice.

GASTROENTERITIS

Gastroenteritis is usually not too serious, although it can be unpleasant. It's usually caused by consuming contaminated food or water but can occasionally be a side effect of medication, or a result of eating an allergen. It can last for up to ten days and has the following symptoms:

- Stomach cramps
- Chills
- Fatigue
- Headaches
- General aches
- Diarrhea
- Nausea
- Vomiting
- Low-grade fever (up to 100.8 degrees F)

It’s not usually dangerous save for vulnerable people and can often be prevented by good hand-washing routines. It can be passed from person to person or transferred on surfaces, foods, and water. If a member of the party has it, make sure to implement strict washing routines, avoid sources of water that you don’t know the safety of, and regularly sanitize kitchen areas.

You can help a patient with gastroenteritis by getting them to drink lots of water to avoid dehydration, which is the most dangerous element of this complaint. The patient can take over-the-counter medications for the symptoms and rest as much as possible. They should avoid eating for a while if they feel sick and then choose bland foods that are easy to digest.

If the symptoms get worse or blood appears in the patient’s vomit or diarrhea, the person should see a doctor.

SPRAINS

Sprains are a common injury and can be very painful, even though they are not usually serious. They occur when two ligaments are torn or stretched, and they will often result in a warm, swollen, red area that is difficult to move.

Fortunately, sprains are easy to treat through rest. You should encourage the patient to avoid moving the joint much for 48 hours. Wrap an ice pack in a towel and apply it to the swelling for up to 20 minutes, but no longer; This can be done up to 8 times per day, but make sure you give the skin a break from the cold between each application.

If necessary, a compression bandage can support the injured area for a few days. Painkillers can be taken to ease discomfort.

It is crucial to verify that a sprain is not more serious, so make sure the patient goes for an x-ray if they are still in pain after a week, feel numb or tingling sensations, if the limb looks misshapen, or if there are any signs of infection.

HYPERVENTILATION

Hyperventilation means that the balance of breathing is upset, and the person is exhaling more than they are inhaling. They will quickly run out of carbon dioxide, and this will cause the blood vessels that connect to the brain to narrow.

In severe cases, hyperventilation can lead to the patient passing out. It’s usually a response to stress or a phobia but can occasionally be connected with depression or anger.

If someone in your party is hyperventilating, encourage them to purse their lips as they breathe to help slow the breathing down. They may also find it helps to breathe into their cupped hands or a paper bag. They should try to take belly breaths, not shallow chest breaths, and they may find that it helps to hold their breath for a few seconds.

Other options include breathing through one nostril and then the other in a pattern or walking briskly and breathing through the nose. All of these things may help to calm an attack.

In the long term, stress reduction and relaxation techniques effectively combat hyperventilation. Encourage the patient to exercise, meditate, and follow up with a doctor if they still have serious problems.

CONSTIPATION

An uncomfortable condition which can have many different causes, but it is relatively treatable. A patient who is suffering from constipation should be encouraged to:

- Drink at least 8 glasses of water per day
- Try a little coffee, as this can help with bowel movements (but a lot will cause dehydration)
- Limit high-fat foods
- Exercise regularly
- Eat more fiber
- Massage the abdomen

Some medications cause constipation, but it may also be down to lifestyle choices. It’s better not to treat it with laxatives if other options are available, so try the above. Soft fruit is often helpful, and many people turn to prunes and pears to keep their digestive systems moving.

FOOD POISONING

Food poisoning can be serious and is unfortunately easy to contract when living off the grid, especially if you don’t have access to a fridge or other cold storage. Bacteria such as E. coli and salmonella can quickly spread within food that isn’t stored below 40 degrees F or food that hasn’t been cooked well enough.

The symptoms of food poisoning include:

- Diarrhea
- Vomiting
- Nausea
- Stomach cramps

- A fever

The patient may also suffer from headaches, dehydration, dizziness, aching muscles, etc. Some foods are considered higher risk than others, such as unpasteurized milk, raw eggs, raw/improperly cooked meat, seafood, and fresh produce. Not washing food prep equipment well in between ingredients can also be a problem. For example, if you put raw meat on a chopping board and then use the same board to prep salad, you are at risk of food poisoning.

Cases are more common in the summer when the heat will make food spoil in as little as an hour. A good cleaning and proper food storage routine can massively reduce the risk of food poisoning.

There isn't much you can do to treat food poisoning, but it will usually resolve itself. The patient should rest lots and sip water to reduce the risk of dehydration. They may not wish to eat much for a few days but must drink. When ready to eat again, they can have bland foods with no alcohol, fizzy drinks, or caffeine. The patient should not take anti-diarrhea or anti-nausea medication.

You will rarely need help from professionals for food poisoning unless it comes from eating wild mushrooms or seafood. Call emergency services if the symptoms are not improving after 3 days or if the patient is suffering from extreme pain, bloody diarrhea, a fever, prolonged vomiting, or dehydration. Be aware of the more vulnerable groups (e.g. pregnant women, children, the elderly), and get professional help sooner if the patient is in one of these categories.

DEHYDRATION AND DIARRHEA

Diarrhea is a symptom of many illnesses and complaints, and on its own, it is uncomfortable and unpleasant, particularly in off-grid situations where washing facilities may be limited. However, it brings a much more dangerous issue: dehydration.

Mild dehydration can be treated using first aid techniques. For major dehydration, you should aim to get the patient to a medical facility as soon as possible, as this can be life-threatening. For mild dehydration, try the following:

- Encourage the patient to drink water or other liquids (preferably not caffeine-based). It's best to avoid full-strength fruit juice and other soft drinks, but some liquid is better than none. Get the patient to take small sips.
- Offer an oral rehydration solution if you have any available. These contain liquid, salts, and minerals, replenishing what the body losses due to diarrhea.

Drinking more will not increase diarrhea, so the patient should not be concerned about this. The patient should also eat if they can, replacing lost nutrients. Avoid fatty foods, and opt for fiber-rich ones instead. Foods high in electrolytes, protein, pectin, and potassium will all help.

SKIN RASHES

If a member of your party has a skin rash, take some time to try and identify it and check whether it is an allergic reaction and whether it poses any risk of anaphylaxis. If it does, treat it as an allergic reaction and act accordingly.

If the rash is the result of touching a poisonous plant or insect, use the following steps:

- Clean the rash with soap and warm water for 10+ minutes, using a soft cloth.
- Take a cool bath if possible, and add oatmeal if available, as this is soothing.
- Apply an anti-itching lotion up to four times per day.
- Wash clothes thoroughly in hot water to remove any remnants of the irritant.

The patient should see a doctor if the rash spreads to sensitive areas, shows signs of pus, or becomes more irritated/itchy. Don't cover up or allow the rash to be rubbed or scratched.

INFECTIONS

Cuts and scratches, even minor ones, can get infected, and it's vital to know how to handle an infection. In some cases, minor infections can be treated without antibiotics, but it is good to have some in your first aid kit to deal with more major infections.

A wound is infected if it:

- Becomes more painful than when it was inflicted initially
- Swells
- Turns red and hot at the edges
- Oozes yellow pus
- Becomes itchy

The infection will be localized to begin with but will spread. It can get deep into the tissues and cause sepsis if it is not treated. This medical emergency requires hospitalization: it has many different symptoms but usually involves a high fever, mottled or pale skin, fast breathing, sleepiness, and

abnormally cold skin. If you think a patient has developed sepsis, they must be taken to a hospital as soon as possible.

More minor infections can be treated as follows:

1. Wash the injury site well.
2. Soak the injury in water as hot as the patient can tolerate (without burning their skin). Repeat this step multiple times throughout the day. The patient will likely find that it relieves itching and tension in the wound and makes it more comfortable.

You can then do any of the following:

- Apply over-the-counter antibiotic creams.
- Apply diluted (using a carrier oil) tea tree oil to the site.
- Apply honey to the site.

These will hopefully address the infection. Keep a close eye on it, and if you see a red line traveling away from the injury, get medical help. It is a sign of lymphangitis, which can be severe.

SUMMARY

Summary

In this chapter, we've covered the causes, prevention, and common at-home treatments for the following issues:

- Dental problems of all kinds
- Bites and stings
- Choking
- Eye trauma

- Nosebleeds
- Fainting
- Headaches
- Foreign objects in the nose/ear
- Fever
- Sunburn
- Gastroenteritis
- Sprains
- Hyperventilation
- Constipation
- Food poisoning
- Dehydration and diarrhea
- Skin rashes
- Infections

In the following chapter, we will start looking at how to handle major emergencies and what you should do when you can’t immediately get help for them. Being well-equipped in these situations could be crucial to survival.

5

MAJOR EMERGENCIES

“To appropriately respond to an emergency requires a very clear mind, to coolly analyze what the observations are and how to fix it.”

— BUZZ ALDRIN

In this chapter, we’re going to start looking at some of the more significant emergencies you might face while off the grid. It’s important to remember that where possible, you should contact emergency services or transport the patient to a hospital personally; do this as soon as you can, even if it will take time. Many of these problems cannot be treated at home and will need emergency care; the information below is intended to help address the immediate care and increase the patient’s chances of recovery.

SHOCK

Shock can be life-threatening because it prevents the vital organs in the body from getting enough oxygen. The symptoms of shock include:

- Gasping
- Nausea/vomiting
- Weak pulse
- Gray-blue skin
- Sweating
- Restlessness/aggression
- Unresponsiveness

Shock is usually caused by severe bleeding, loss of bodily fluids, spinal injury, severe allergic reaction, or heart issues.

Start by treating the cause of the injury if possible (stem bleeding, etc.). Lie the patient down and lift their legs to increase blood flow to the vital organs. Loosen tight clothing, and cover them with a blanket. Reassure the patient, stay with them, and make sure they stay responsive. Begin CPR if they stop breathing and wait for help to arrive. The patient should not eat or drink anything.

SMOKE INHALATION

Smoke inhalation needs to be treated seriously, as it can kill. Its symptoms include:

- Chest pains
- Confusion
- Fainting
- Blue/gray skin
- Hoarse breathing/speech
- Headaches
- Shortness of breath
- Coughing

Patients with heart or lung conditions are more in danger of death from smoke inhalation. Try to remove the patient from the area with the smoke if possible, and get them somewhere with fresh air. Check that they are breathing, and perform CPR if not. If you have an inhaler available and the patient is breathing, use the inhaler.

BURNS

Burns are a risk in almost every off-grid setting, especially if you use open fires, gas cookers, etc. Follow these steps if a burn occurs:

1. Stop the burning process by removing the person from the area, dousing the flames, or smothering them.
2. Remove anything touching the burnt skin (but don’t pull it away if it has stuck).
3. Cool the area using cool or lukewarm water, which should be done for 20 minutes. Don’t put ice, cold water, or greasy substances on the burn.
4. Keep the person warm using a blanket, especially if you are cooling a large area.
5. Cover the burn with plastic wrap in a single layer (do not wrap the limb/burnt area).
6. Give the patient pain relief.

The patient should then go to a hospital unless the burns are minor. Electrical burns and chemical burns should prompt an immediate hospital visit.

CUTS AND WOUNDS

Most cuts and wounds will require pressure and bandaging to stop the blood flow. Refer to the section on Dealing With Wounds in Chapter Two for more information on identifying the different kinds of wounds and what kind of dressings should be applied. You will also find information about stitching and staples there.

The basic approach for sealing a wound is:

1. Remove the patient from danger if necessary.
2. Apply pressure using a clean, absorbent pad. Press the cloth against the wound, and add a second absorbent cloth if it soaks through. Keep doing this until the bleeding stops.
3. If possible, lift the injury site to reduce the bleeding and keep applying pressure for at least a few minutes to allow the blood to clot.
4. If the bleeding doesn’t stop within fifteen minutes, arrange to get the person to a hospital.
5. Once the bleeding stops (if the patient isn’t hospitalized), clean the wound with warm water and remove all dirt and debris. Pat the wound dry.
6. Close the wound using gauze, glue (minor wounds), butterfly bandages (minor wounds), sutures, or staples. The latter two should only be used if help is more than 12-24 hours away, as they can be dangerous if misapplied.
7. Keep regularly inspecting the wound for signs of infection and to make sure it is healing. Get the patient to emergency care when possible unless the wound is minor.

SEVERED FINGER/TOE

The faster emergency care can be sought in this situation, the better, as severing or partial serving may affect the functioning of the hand/foot in the long term. In the short term, the injury should be dealt with as follows:

1. Rinse the injury gently with clean water or a saline solution.
2. Cover the injury with sterile gauze.
3. Elevate the injury above the head if possible to reduce swelling and bleeding.
4. Put gentle pressure on the injury to slow the bleeding.

You should not attempt to remove jewelry.

If the digit has been totally severed, find the missing part and:

1. Rinse it with clean water or a saline solution.
2. Cover it with damp gauze.
3. Put it in a clean bag (waterproofed), and then put that bag in another clean bag, and place them on ice. Take it to the emergency room.

If you are dealing with more than one amputation, put the digits in separate bags. Don’t get the digits wet, but keep them as cool as you can without directly resting them on ice.

You will likely also need to deal with shock if this situation arises. While waiting for the ambulance, get the person to lie down and keep them warm.

HEAD INJURIES

Head injuries can be severe and may result in spinal or neck injuries. If someone in your party has injured their head, you will need to call for help and assess the injury. You should look for:

- Confusion
- Headache
- Dizziness/nausea
- Loss of responsiveness
- Scalp wounds
- Loss of memory

To treat a head injury, get the patient to lie down with their feet elevated and then follow the below steps:

1. Place a towel-wrapped ice pack against the injury to reduce swelling. Keep it there for up to 20 minutes.
2. Assess the patient's alertness level, determining how responsive they are and how confused they are.
3. Treat any wounds by applying clean gauze and gentle pressure.

If the patient is drowsy, vomiting, or confused, they need to see a doctor as soon as possible. If they appear clear and coherent, continue to monitor them and do not leave them unattended for several hours at least. It is best to get all head injuries assessed at a hospital if possible, as internal damage may have been done even if the injury looks minor. If this isn't feasible, keep monitoring the patient for any changes over the next few hours and days.

CONCUSSION

A natural result of some head injuries, concussions are a common type of brain injury. A concussion involves a short-term loss of mental functionality. The symptoms include:

- A brief loss of consciousness following the injury
- Confusion, delayed answers to questions, blank expression
- Short periods of memory loss
- Short-term blurry vision or visual disturbances

You cannot diagnose a concussion off the grid, and a patient that shows these symptoms will need emergency care. In the meantime:

1. Get the patient to lie down with their feet elevated.
2. Apply a cold compress (wrapped ice or a cold, wet towel) to the injury for around 20 minutes. This should be done every two to four hours. Never place ice directly on the injury; it must be wrapped first.
3. Offer painkillers, but do not give the patient non-steroidal anti-inflammatory ones (e.g. aspirin, ibuprofen), as these may cause bleeding.
4. Allow the patient to rest but ensure that someone is with them for the first 48 hours after an injury (if they cannot be taken to the hospital at this time).
5. Don’t let the patient do anything strenuous until they have been assessed and cleared by a doctor.

POISONING

Poisoning is the result of inhaling, swallowing or touching certain substances. The party members most likely to be vulnerable to poisoning are children, who are both more likely to consume things they shouldn’t, and more susceptible to harm because they are smaller. However,

both adults and children can be poisoned, particularly if you take up foraging while off the grid. Always use reliable resources if you are going to forage for food, and never eat something that you cannot identify with 100 percent certainty.

Poisoning symptoms can vary but generally include at least some of the below:

- Vomiting
- Drowsiness
- Confusion
- Burns, swelling, or redness around the mouth
- Breathing difficulties

You should try to identify what has caused the poisoning and keep a sample of the plant, food, or other substance. If it was a packaged product, keep the packaging. Call emergency services, and follow the advice below.

For ingested poison:

1. Remove as much of the poisonous substance from the person's mouth as possible (if it is still there). The person may rinse and spit, but do not let them swallow any of the water they rinse with.
2. If applicable, read the packaging and follow any instructions related to poisoning.
3. If the person is dizzy or drowsy, place them in the recovery position. If they vomit, make sure their airway is clear.
4. Begin CPR if the patient stops breathing.

For inhaled poison:

1. Move the person into fresh air as soon as possible, away from the poisonous substance.
2. Place them in the recovery position and make sure the airway is clear.
3. Begin CPR if the patient stops breathing.

For poison on the skin:

1. Remove contaminated clothing (use gloves to avoid getting poison on your skin).
2. Rinse the skin for up to 20 minutes with lukewarm water.
3. Place them in the recovery position and make sure the airway is clear.
4. Begin CPR if the patient stops breathing.

For poison in the eye:

1. Flush the eye using lukewarm or cool water for 20 minutes or until emergency services arrive.
2. Get the patient to keep their eyes closed after this time while waiting for assistance.

If you believe your child has swallowed a button battery, prioritize going to the hospital even if they seem fine. These batteries can cause internal burning in a concise space of time. Doctors will locate the battery and determine what action to take.

To reduce the risk of poisoning, keep medical supplies out of reach of young children. All medication should be kept in the original packaging so that it is not mixed up, and anything decanted into another bottle must be very clearly marked and labeled. Avoid decanting wherever possible as

information about side effects and drug conflicts may be lost.

HEATSTROKE

Heatstroke can be life-threatening. It may cause damage to vital organs, including the brain. Anyone who works in the heat or is exposed to hot weather for too long can suffer from heatstroke.

The common symptoms of heatstroke include:

- Headaches
- Fainting
- Flushed skin
- Rapid breathing
- Rapid pulse
- Confusion, slurred speech, agitation
- Vomiting
- Nausea
- Heavy sweating or hot skin
- Fever higher than 104 degrees F

You should take action by calling emergency services and immediately seeking ways to cool the person down. You may be able to do this by sitting them in a cold bath, spraying them with a hose, getting them into a cool shower, or sponging them with a wet, cold cloth. Ice packs can be placed in areas with lots of blood flow, including the armpits, the neck, and the groin.

You can also fan the person while misting them with cold water or wet a sheet and cover the person with it. The faster you can cool the person down, the more you will reduce the risk of damage to their brain and other vital organs.

If the person can drink, give them some cool water to help them rehydrate. Avoid caffeine, sugar, or alcohol. Icy drinks may cause cramping and should be avoided too.

Be prepared to perform CPR if necessary.

Get the patient to a hospital when possible, even if the danger has passed, so that the damage can be assessed.

HYPOTHERMIA AND FROSTBITE

On the opposite end of the scale, hypothermia and frostbite are serious risks if you are working in a cold environment, especially with inadequate gear. It is always good to have a supply of warm clothing and survival blankets available when traveling in winter, even if it rarely gets freezing. If your power supply goes down and you do not have access to wood, these could save your life.

Knowing how to treat hypothermia and frostbite is also crucial. We will cover hypothermia first.

Hypothermia

Hypothermia can prevent the patient from thinking clearly, which makes it particularly dangerous, as they may not realize they are getting too cold. All party members should be aware of the risks and the symptoms of hypothermia before working in a cold environment.

Common symptoms of hypothermia include:

- Shivering
- Fumbling
- Confusion
- Exhaustion
- Slurring speech

- Memory loss

You should treat hypothermia as fast as possible. If you suspect someone has hypothermia, get them into a sheltered place and take their temperature. If it is below 95 degrees F, try to call emergency services. Next, follow these steps:

1. Remove the person's clothes if they are wet.
2. Focus on warming up the central parts of the person's body. The chest, groin, neck, and head are the best places to focus on. You can do this by using heat pads, electric blankets, or even skin-to-skin contact.
3. Provide a warm, non-alcoholic drink if the person is conscious and can drink it safely.
4. Keep the person dry and wrap them in a warm blanket. Include their head, as a lot of heat is lost through the head.
5. If the person falls unconscious and stops breathing, perform CPR. You should keep doing this even if the patient does not respond and seems dead. A patient can be resuscitated when emergency services arrive. Keep warming the person up as you perform CPR.
6. If the person wakes up again, keep them warm and do not leave them unattended. They need to be assessed by medical professionals when possible.

Frostbite

Frostbite is an injury caused by exposure to extreme cold. It can cause permanent damage and even amputation. Its symptoms include:

- Loss of color in the affected area

- Loss of feeling in the affected area
- Skin that feels waxy or firm

Frostbite usually affects the toes, fingers, cheeks, chin, nose, and ears. You should treat frostbite in the following way:

1. Get the person to a warm room/shelter. If the frostbite is in the toes/feet, don't let the person walk if this can be avoided, increasing the risk of permanent damage.
2. Put the frostbitten area in warm water. Never use hot water. It should feel comfortable to unaffected body parts. If you don't have warm water, use body heat. Frostbitten fingers can be tucked into a warm armpit or cradled in warm hands.
3. Avoid using heat packs, stoves, lamps, or other extreme heat sources. Because the area is numb, there is a high risk of burning.
4. Keep warming the digits until feeling returns to them. When possible, get the patient checked by professionals.

Note: you should not rub or massage frostbitten digits. This will not help and can cause damage. Do not rub snow onto these areas either, as this will make them colder.

FRACTURES

A fracture can be challenging to diagnose without being able to take an x-ray, but if you see any of the following symptoms, a fracture is quite likely:

- Difficulty moving the limb

- A grating noise
- The sense that the bones are rubbing together
- A limb that appears bent, twisted, or short
- Deformity
- Swelling or bruising
- Signs of shock
- An open wound with the bone sticking out (also known as an “open fracture”)

You should treat fractures in the following way:

1. Cover any open wounds in sterile, absorbent cloths and put pressure around the wound rather than over the break. When the bleeding stops, secure a clean dressing over it.
2. Get the patient to sit quietly and keep still while splinting the injury. Remember, the purpose of splinting is to immobilize the joint (refer to Making Supportive Splints And Slings in Chapter Two).
3. Pad the injury and place the splint in position, making sure that it runs from one uninjured joint to another if possible. Tape the splint in place, being careful not to cut off the circulation.
4. Get the person to lie down, especially if they are shocked or dizzy. Allow them to stay there while the shock passes. The person can take pain relief and use ice to reduce the swelling.
5. Keep monitoring the injury. It may be necessary to loosen the ties if the limb swells. If the fracture is on the arm, creating a sling may make the patient more comfortable and further help to immobilize the injury.

When possible, a fracture should be assessed by a doctor. This is not as much of an emergency as life-threatening

injuries, but it should still be prioritised. If the bones are not in the correct position, the injury will heal poorly and may cause long-term pain. X-rays, setting, and a proper cast may be needed.

BROKEN BONES

A broken bone should be treated the same way as a fractured bone, as they are much the same thing. Follow the above steps to immobilize the injury and get the patient to a hospital when this becomes possible.

ELECTROCUTION

If you think a member of your party is in contact with a live piece of equipment, do not touch them, or the electricity may transfer to you. Turn off the power source, or separate it from the person using an insulating material (e.g. wood) or by using rope to pull their limb away.

When you are sure contact has been broken, perform CPR if the patient has passed out and stopped breathing. Avoid moving them unless it is necessary for safety. Even if the patient seems okay, you should not leave them unattended. Call for help and keep the patient warm.

You can also cover any burns with sterile gauze, but little other first-aid help can be given at the scene.

DROWNING

Be aware that drowning does not usually involve screaming and splashing. It happens quietly and quickly, with the person dipping below and above the surface a few times, often silently. Implement safety procedures whenever your

group is near water and assign someone to watch for anyone struggling. Avoid swimming in adverse conditions.

If you pull someone from the water, you should:

1. Check whether the person is breathing. Tilt their head back and feel for breaths, and if you can't detect any, do the following:
2. Have someone call for help, and then begin CPR. You can refer back to Chapter Two, How To Perform CPR. You should be delivering 30 chest compressions at a rate of about 100-120 per minute.
3. If the person does not respond, tilt their head back and seal your mouth over theirs. Gently pinch their nose and blow into their mouth. Repeat this twice to deliver 2 rescue breaths. Begin a cycle of 30 compressions to 2 breaths until the patient responds or help arrives. If you are not confident delivering rescue breaths, do chest compressions only.
4. If you are treating a child or infant, start with 2 rescue breaths, and give compressions at a rate of about 100 per minute. Continue until the child begins breathing or help arrives.

NATURAL DISASTERS

If you are preparing for a natural disaster while living off the grid, there are a few things that you should consider. Firstly, determine whether you will face droughts, lightning storms, hurricanes, floods, etc. Make a plan for each emergency, and discuss it with the group to know their activities and responsibilities.

If a known disaster is approaching, move to a suitable, government-provided shelter. Make sure all party members have a phone. If you plan to stay at your off-grid location

instead, stock up on supplies well in advance if you cannot access civilization for longer than expected.

Every member of your group should have an emergency bag that they can grab with the basics in it. This should contain some water, non-perishable food, and medical supplies.

Ensure that all group members are involved in planning for emergencies, including children. Set a safe rendezvous that everyone can access, and discuss a backup plan. The key is preparation.

PREGNANCY

Dealing with pregnancy in the group can be particularly challenging when living off the grid. You will need to be particularly vigilant about problems, and it is wise to ensure that you are never more than a few hours from help at the most, in case you need medical intervention.

A pregnant woman should take on less strenuous work, particularly bending and lifting, as the pregnancy progresses. They should also be more vigilant about food poisoning, contaminated water, and staying safe from temperature extremes. They should make sure they are still following up on regular appointments to check that everything is going smoothly, even if this means making long journeys to the nearest city.

If the woman intends to give birth off the grid, this requires a whole new level of preparation and careful consideration before the decision is taken.

SUMMARY

In this chapter, we've covered how you can deal with:

- Shock
- Smoke inhalation
- Burns
- Cuts and wounds
- Severed finger or toe
- Head injuries
- Concussion
- Poisoning
- Heatstroke
- Hypothermia and frostbite
- Fractures
- Broken bones
- Electrocution
- Drowning
- Natural Disasters
- Pregnancy

In the following final chapter, we will look at natural herbal remedies that you can turn to. Many of these have been used for centuries, and while you shouldn't use them to replace modern medicine, they can offer a helping hand in many situations. These remedies are a crucial part of off-grid living for many, and it's essential to familiarize yourself with them. We'll also look at how to store them and make some that you may need.

6

NATURAL REMEDIES FOR EMERGENCIES

“Herbalism was the grounding of flower power. Nature woke us up.”

— DAVID HOFFMAN

Modern medicine has done an indescribable amount of good for the world and its people and should never be underestimated. Its power is extraordinary. However, there is also power in the past remedies, and these are at risk of being forgotten by many. If you want to get in touch with the earth in an off-grid situation, you may wish to turn to natural remedies as a means of healing yourself and others.

Natural remedies are potent and valuable, and you certainly shouldn’t leave them out of your first aid kit or practices if you want to use them. On the other hand, it is critical not to depend too heavily on them or use them when other medicines work better. A harmony between modern medicine and historic remedies will serve you well; use whichever is most suited to your current situation.

ESSENTIAL OILS

In general, essential oils should not be applied directly to your skin. They are highly concentrated, and while they are usually safe, they can cause adverse reactions. Use a carrier oil. Essential oils should not be ingested, although clove oil can be used for toothaches (there is minimal swallowing here).

It's important to note that there is currently little scientific proof regarding the benefits and effectiveness of the oils. Most information here is based on anecdotal evidence and the history of their use rather than clinical trials.

However, many people find that essential oils have value, and I use them personally in day-to-day life. Many are effective – sometimes even more effective than the modern alternative – and would encourage people to supplement their medical kit with them.

Essential oils that are useful in your medical kit include:

- Lavender oil: this is good for first-degree burns, and it's anti-inflammatory, anti-bacterial, anti-fungal, anti-viral, and may help with pain relief. It is also very calming and may assist in restful sleep.
- Tea tree: this is strongly anti-septic, fights infections, and can soothe respiratory issues if added to a diffuser. It's also used to fight fungal infections and insect bites.
- Chamomile: this is a natural painkiller and anti-inflammatory, and it may help to soothe rashes, stings, and bites.
- Peppermint: this is excellent for treating sore muscles. Some people recommend it for soothing stomach aches and nausea, but it is better not to ingest it (although some claim to be food-safe; use these if consumption is intended). Inhaling it may help to soothe nausea.

- Clove: this is predominantly used for treating toothache but can also be diluted with a carrier oil and rubbed on the skin to treat warts and ringworm.
- Eucalyptus: this is a powerful decongestant when put in a diffuser, and it also serves as an insect repellent. When used with a carrier oil, it can be massaged into sore muscles.
- Sandalwood: this can help to improve focus and reduce nervousness.
- Citronella: this can be used to repel bugs for a couple of hours but has short-lived effects.
- Orange: smelling this may reduce anxiety, but do not put it on the skin when working in sunlight.

HERBAL TEAS

Herbal teas are also great for adding to your first aid kit; they provide a wonderful pick-me-up on cold days and can cure minor ills. Teas to try include:

- Peppermint tea: this is used to treat stomach upsets, nausea, and indigestion. It may also ease some of the symptoms of irritable bowel syndrome. Mint is sometimes used for other pain relief, so placing a cooled tea bag on a bruise may help to ease the swelling. Some people find it can also help with toothache.
- Chamomile tea: this tea is often used to treat sleep problems and may have anti-bacterial and anti-inflammatory properties. It might also be able to reduce premenstrual symptoms.
- Lemon verbena tea: this can give you a boost in fighting off colds and fevers. It may also help with weight loss.

- Rosehip tea: this is thought to fight inflammation, protect against heart disease, and boost the immune system – and some people even say that it can make you look younger!
- Ginger tea: this is another effective anti-nausea drink, and it may even be able to treat stomach ulcers and constipation. It is suitable for motion sickness and can relieve period pain.

STORING NATURAL REMEDIES IN FIRST AID KITS

You need to ensure that your natural remedies are appropriately kept inside the first aid kit. That means checking storage recommendations, padding bottles, and protecting them from breakages. Most herbal medicines should be kept cool and dry, like non-herbal options.

Dry herbs should last for about 12 months if stored correctly, and tea bags may come with a use-by date. Essential oils generally last for at least two years, sometimes upward of a decade, although their potency may decrease as they age.

Ensure that any breakable natural remedies (e.g. essential oils in glass) are wrapped in fabric or another cushioning substance, especially when traveling. Store your first aid kit somewhere away from direct light and heat (not close to a cooker or fire), and make sure it stays dry. This should be enough to protect most herbal remedies.

Regularly check the dates of your herbal remedies. Although many will last for a long time and may be okay to use past their “use-by” date, it is still important to keep replenishing your stock and discard remedies that are very out of date. Many herbs will lose strength as they age, and

you may find that it is better to use them up and replace them with new supplies when you can.

Certain items will be better stored in their plant form. For example, if you wish to use aloe vera gel for sunburns, you can just grow an aloe vera plant (if this is compatible with your off-grid setup). The gel will always be available to you since you can just snap off a stem when you need it. Some other natural remedies can be stored in their neat form, such as honey (mix this with other ingredients when you want it), garlic, coconut oil, and so on. These can be kept in a suitable cupboard rather than the first aid kit since they serve a dual purpose and will take up space and/or turn moldy in the kit.

RECIPES FOR FIRST AID MATERIAL

There are a few different remedies that you may wish to mix when someone in your party is unwell. Let’s look at some of the top options below.

Honey And Garlic For Sore Throats And Coughs

If someone is struggling with a sore throat or persistent cough, a honey and garlic mixture can be perfect. The quantities are not enormously important, so you can alter them to suit your patient’s tastes, but use the recipe below as a guide:

- 0.5 cup of honey
- 2 bulbs of peeled garlic (about 12 cloves)
- A sterile jar

Once your jar is sterile, add the peeled garlic cloves. You can rough the edges up a little with a knife or fork if you

want to speed up the infusion process. Pour the honey over the top, and then allow it to steep.

It will take several days, so it’s a good idea to make this in advance. It should keep for a month or two, possibly longer, especially in the fridge.

The patient can then take a spoonful of honey as cough syrup and may wish to eat a garlic clove or two per day. Both of these ingredients will help to fight bacterial infections.

This remedy shouldn’t be used for children under 1 and a half, who should not be given honey.

Chili Relief For Sore Muscles

Chili can create heat when applied to the skin, which is an excellent way to make a natural heat rub. You will need:

- 1 cup of coconut oil
- 3 tablespoons of cayenne pepper

Mix the two ingredients in a small pan and heat gently until the oil has melted. Stir for five minutes, and then pour into a bowl and allow to cool. This can be massaged onto the affected area. Do not use it on the face or near the eyes, and avoid touching sensitive skin after application. Check that it does not cause a skin reaction before use.

Relieve Sunburn

If you don’t have an aloe vera-based sunburn lotion, you can use the plant directly. Snap a stem off, slice away the outer skin, and mash the gel into a paste. Test first on a small area of the skin to check it doesn’t further the irritation, and then rub it into the rest of the burn. It has a cooling, rehydrating effect.

Repel The Bugs

You can make an effective, all-natural bug repellent by combining many essential oils with a carrier oil and spraying them on your skin. This disguises your scent and makes you smell unpleasant to most biting insects, including mosquitoes, midges, and biting flies.

Citronella is a particularly effective means of deterring biting insects, but you can also use lavender, eucalyptus, clove, or a combination of them all. Don’t apply these oils directly to your skin, and avoid spraying them on your face.

Olbas Inhaler For Earache/Congestion

If your patient has a bad cold and a lot of congestion, it’s well-known that steam can help, so that may be a good idea if a hot shower is available. However, if that isn’t possible or needs something more, a steam inhaler may help.

You will need:

- Olbas oil
- A heatproof bowl
- Some boiling water
- A large towel

Set the bowl on a stable surface and have your patient sit so that they can lean over it. Add boiling water to the bowl and one or two drops of Olbas oil (not more; it will be uncomfortable if made too strong).

Your patient should then lean over the bowl. Drape the towel over the head to touch the table on all sides, trapping the steam. They can then close their eyes and breathe as deeply as feels comfortable.

They may wish to take the towel off for a break now and again to cool down.

If the process is uncomfortable, they should stop. However, this often helps relieve congestion and should help them breathe more easily.

Poison Ivy Reliever

If someone has accidentally walked through or fallen into a patch of poison ivy, they may be suffering. First, they should wash thoroughly to remove any traces of the plant from their skin.

Next, mix up some poison ivy reliever. You will need:

- 3 drops of lavender oil
- 2 drops of peppermint oil
- 3 drops of tea tree oil
- 2 tablespoons of apple cider vinegar
- 2 tablespoons of distilled water
- ½ teaspoon of salt

Stir well until all ingredients are combined, and the salt has dissolved. Use a clean rag to apply the mixture to the rash, and store the mixture in the fridge until the next application. Stir well every time you need it.

DISINFECTANT AND HAND SANITIZERS

You should depend upon soap and water in most circumstances, but when you're off the grid, hand sanitizer might sometimes be the best you can do – and it's certainly better than nothing. You can purchase hand sanitizer from a store, but it's also pretty easy to make your own. There

are a few different options, and below you will find two recipes.

Alcohol-based Hand Sanitizer

You will need:

- 3 tablespoons of high proof grain alcohol (190 proof): this will dry the skin, but strong alcohol is the most reliable way to kill germs, so this is the kind of hand sanitizer that you should be using in most emergencies, where you need to know your hands are clean before treating wounds.
- 4 drops of orange oil
- 5 drops of tea tree oil
- Distilled water
- A suitable bottle (ideally a spray bottle)

Mix all the ingredients except the distilled water thoroughly and be careful about your measurements.

Tip them into your spray bottle, and fill the bottle to ¾ with distilled water. Put the lid on, and shake thoroughly to combine. Shake again before use for around 30 seconds to ensure all the ingredients are combined. To use, spray thoroughly over your hands, and then rub them together until the liquid dries.

Remember, this isn't an alternative to washing your hands, and it should only be used when you need it.

Aloe Vera-based Hand Sanitizer

This hand sanitizer is gentler on the hands, but be aware that it does not contain alcohol, and its disinfectant properties will not be as strong. This should be used for general cleaning, but it's best to use an alcohol-based sanitizer in an emergency.

You will need:

- 4 drops of lavender oil
- 4 drops of tea tree oil
- 8 drops of marjoram oil
- 4 drops of lemon oil
- 8 fl oz of pure aloe vera gel
- 1 teaspoon of melted coconut oil
- A suitable bottle

Stir all the ingredients together thoroughly and make sure they are well combined before adding them to the bottle. It is a good idea to shake the bottle before use.

ALTERNATIVES TO FIRST AID KIT MATERIAL

If you don't have access to all the modern supplies you need or want to lean more heavily on natural medications, there are a few other things you can stock in your first aid kit. Most of these are not suitable for significant injuries but may help make small cuts and minor complaints less painful and encourage swift healing.

Bruises

Arnica is well-known for its ability to fight bruising and muscle aches. It is usually used as a cream, rubbed onto (unbroken) skin. Do not consume the cream or use it for more than a few days at a time. Arnica tablets can be purchased but tend to be too diluted to have limited usefulness.

Witch hazel is another good option for swelling and may be safer to apply if the skin has broken in any areas. It can be purchased as a cream (often including other ingredients such as tea tree) and is very soothing. It's great to have on

hand for minor cuts and bruises. It is also thought to have anti-bacterial properties.

Cuts

For mild cuts that have been adequately cleaned, applying coconut oil to the wound may help stave off infection. It has anti-bacterial and anti-inflammatory properties and can help to seal the wound.

Itches/Rashes

Once you have determined the cause of the rash and washed the skin thoroughly with mild soap and water, there are various soothing treatments that you can apply. Different ones may work for different people, so consider:

- An oat bath. Oats are moisturizing and will rehydrate the skin, relieving discomfort. Oats are a great way to get rid of itchiness.
- Calamine lotion. This has a soothing, cooling effect and has been used for years.
- Cool packs, which can be soothing and rehydrate the skin

Some people recommend aloe vera, but there is little evidence to show this helps with itchiness (except for sunburn), and some people find it makes it worse. Apple cider vinegar may be worth trying, as its anti-fungal and anti-bacterial properties will sometimes help, but it can again exacerbate a problem because of its acidity.

Toothaches

Clove oil has been mentioned as a cure for toothaches because it is one of the few effective remedies. Always keep some of this in your medical kit. It’s best applied by adding some to a cotton ball or tissue and then lightly biting on

this with the affected tooth. It will numb the nerves. You can also use whole cloves, although they have a strong flavor.

Alternatively, try a peppermint tea bag. Biting gently on a warm peppermint tea bag can bring relief if you have a tooth abscess (although you still need to see a dentist urgently). The peppermint has a numbing effect that will ease the pain, and the warmth should help combat the infection. Don’t bite down on a boiling hot tea bag, however.

Saltwater rinses may help, too. Salt is a natural disinfectant and can combat mild infections, especially in an area it can access. Rinsing the mouth with salty water can reduce the risk of infection occurring or help combat one that has started.

Headaches

The first approach to a headache is to identify a clear cause (hunger, dehydration, lack of sleep, etc.) and then address that directly. If not, or if this hasn’t helped, natural remedies may assist. Try the below:

Essential oils, such as lavender or peppermint, may help. Add them to a diffuser, or use a carrier oil and rub them onto the temples. Some people find lavender unpleasant when they have a headache, while others find it immediately soothing. Lavender is thought to be particularly effective for relieving migraine pain.

Ginger tea is also thought to help relieve some kinds of headaches. You may also find chamomile, lavender, or peppermint helpful.

In some cases, caffeinated beverages may ease a headache, as they can relax the blood vessels, reducing tension and

increasing circulation. However, be cautious about using caffeine as this can cause headaches in some people.

Indigestion

If a party member is suffering from indigestion, you can try a few natural cures. However, be aware that what work's for one person may not work for another. Approach natural remedies with caution and listen to your patient's experience before deciding whether to continue treatment.

Apple cider vinegar is one such recipe with great results for some people. A teaspoon mixed into a glass of water may reduce acid reflux.

Bananas may also help, as they are bland and low-acid. The vitamins may stop spasms, but so far, nobody knows whether these fruits prevent acid reflux.

Chewing on liquorice root may help, according to some sources. This has been used for centuries to treat stomach complaints, and it is thought that it may increase the mucous in the esophagus, protecting it from stomach acids. Licorice tea is an alternative. However, be aware that licorice can interfere with some medications, so a doctor should be consulted before a patient takes licorice regularly.

SUMMARY

In this chapter, we've covered many of the natural options for treating minor health complaints and some remedies that you can make yourself at home, including:

- Essential oils
- Herbal teas
- Storing natural remedies in first aid kits

- Recipes for first aid material
- Disinfectant and hand sanitizers
- Alternatives to first aid kit material

CONCLUSION

> *“To keep the body in good health is a duty… otherwise, we shall not be able to keep the mind strong and clear.”*
>
> — BUDDHA

This book has sought to empower you to keep yourself and others safe when traveling off the grid, away from help. Nobody wants to think that they will have to deal with an emergency, but unfortunately, crises arise at the worst possible times, and if you aren’t prepared, you may find that tragedy strikes your group. You owe it to yourself and others to learn how to handle a crisis and care for the human body.

Humans are amazingly resilient and yet also surprisingly fragile. Numerous complaints can strike a person down, and debilitating pain can stem from the most trivial causes. Knowing how to address illnesses and injuries effectively and tackle both the cause and symptoms is crucial for surviving off the grid. You will have to deal with diseases, wounds, broken bones, and the shock that can accompany these, and you’ll need a cool head to do so effectively. There is no room to panic at such times.

We've covered all kinds of situations you might encounter, both minor and major. Whenever you are planning a trip, it's essential to spend some time in advance assessing the dangers you may face, the health conditions of your party members, and the equipment you are likely to need. Think about allergies, pre-existing diseases, the landscape you will be operating in, and the climate you face. Consider worst-case scenarios and how you can ensure that everyone will get through these alive, and how you can equip your party members to deal with disasters.

Remember that the burden of first aid and emergency planning should never fall on one person. All adults (and indeed, children as soon as they are old enough) should take responsibility and know how to deal with at least the basics of first aid. Don't be afraid to talk to children in the group about what to do if something goes wrong; you may not be there to help them, even if you plan to be. A child has a right to know how to address a situation correctly, and even young children can be taught the value and importance of basic first aid.

Make sure that you have plans in place for things like natural disasters, floods, and sudden changes in the weather. Your kit should always include items that will help you survive in extreme cold or extreme heat (depending on where you are located), even if you don't expect to deal with these extremes. Make sure that party members have access to the supplies they will need, and consider including information booklets, diagrams, and what-to-do sheets in the kit so that those who are less well-equipped can still deal with emergencies.

Restock your first aid kit regularly, and constantly reassess whether your approach to first aid is valid and working. It never hurts to run through the basics, especially when someone leaves or joins your group. Everyone should have

standard protocols that they can follow and a good idea of any health conditions that others have (especially allergies) to work with these, not against them.

It’s effortless to brush first aid under the mat and forget about it because we aren’t forced to think about it – until the worst happens, and you’re stuck without essential equipment or know-how because nobody planned adequately. When the emergency services are far away, this is not a situation that you want to be in. Don’t let yourself or the people you travel with fall prey to inaction; be prepared and be equipped. You never know when you will need it.

You should now have a good understanding of the situations you might face and how to prepare yourself for them. This is best combined with hands-on training from professionals, so organize to take some first aid courses (with other group members if possible) as soon as you can. If this isn’t feasible, at least practice the basics using online videos and resources alongside other members of your party. There is a wealth of information out there, and the more understanding you have, the more likely you are to stay calm and respond appropriately in an emergency.

It’s time to get prepared because tomorrow may be too late when it comes to the health and safety of your off grid group.

THANK YOU

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