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Introduction

For too long, the term "survivalist" has called to mind paranoid separatists or white supremacists who give up the conveniences of modern society, drop out of the government's databases and live in one-room backwoods cabins like the Unabomber.

Well, Captain Dave and the good folks at the **Survival Center** know survivalists are much more likely to be Floridians buying hurricane shutters a few months before the next hurricane season, Californians preparing a three-day cache of food and water in case the next big one rocks their town or a Minnesota resident who keeps a few blankets, a pair of old boots, warm socks and a few candy bars in the car during winter. This isn't paranoia, it's just good planning. Like carrying a spare tire, even if you never need it.



But there are plenty of online resources for people who just want to prepare a three-day kit. Captain Dave's Survival Guide is designed to take you to the next level. Because in a true emergency, three days may not be long enough. We want you to be mentally, physically and financially prepared for any emergency on *any* scale.

- We define *survival* as emerging from a natural or manmade disaster in a better position than the average person. In other words, you get to keep on keeping on, while others may not.

Some Common Terms

- *Preparedness* means making preparations before disaster strikes to improve your chances of survival. Surely you remember the old saw about closing the barn door...
- *Survivalists* have a self-reliant bent and choose to prepare on their own or in a small group rather than rely on the government to help them survive.

So, how can you prepare to survive? What can you do to prepare, to become a "survivalist?" The Survival Center has developed this eight step program to help you get started. While designed as a guide for the new survivalist, it has plenty of information for the hard-core preparedness expert as well.

A warning: Captain Dave's Survival Guide contains some lengthy chapters (although we've kept graphics to a minimum to speed loading and designed each page so the text loads first). You may wish to save each chapter or print it out for reading at your leisure. And remember, in many emergencies, your computer will be inaccessible, so a hard copy of any chapters you find especially helpful isn't a bad thing to have on hand.

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SURVIVAL Guide

Chapter 1: OK, But What Do I Prepare For?

- [Questions to Ask Yourself](#)

Before you can prepare, you must determine what you are preparing to survive and how each disaster threatens you, your safety and survival. That will give you the parameters necessary for the following steps.

This initial exercise isn't tough, it only takes a few minutes of thought. We suggest you jot notes or switch into your word processor while you work.

But first, it's important to realize that you cannot prepare for everything -- only the army tries to do that, and we've yet to meet anyone with their resources. Captain Dave suggests you prepare only for those potential disasters that are likely to occur within the next five years. Sure, you may wait seven years for the next earthquake, but remember the survivalists creed: *better safe than sorry*.



What's going to happen in the next five years? If we knew, our web page would look different. You'll have to extrapolate, evaluate trends, read the newspaper, conduct your own research. At the very least, take a few minutes and consider your location. Pull out a map and look what's within a two-mile, five-mile 10-mile and 25-mile radius of your home and place of work. Put on your pessimist hat and consider what might go wrong that could directly impact you. Decide if that's something you want to prepare for (see questions one and two, below).

For example, if you live a "safe" distance outside of a flood plain, your house might still gets flooded in the 100-year flood, should you prepare for it? We would, but it's your call. It's your ass on the line, so you have to decide.



That nuclear plant 20 miles away has an excellent safety record. Should a nuclear disaster be on your list? Again, you make the call.

Are you worried about a meteorite crashing into your house? Well, it has happened, but it's probably not worth preparing for.

Finally, if you've been afraid of something since you were a child -- whether it's a raging fire or nuclear war -- prepare for it. At the very least, you'll sleep better at nights knowing you have done all you can.

Here are some questions to ask yourself:

1. *What natural disasters or extreme conditions am I (we) likely to face in the next five years?*

Make a list and rank them in order of most to least likely to impact you. You can review our [list](#) of possible natural disasters if you need to.

Your list might look like this:

- Heavy thunder storms
- Severe winter weather
- Nearby flash flooding

2. *What other disasters or emergency situations might I face?*

Add to your list the man-made or other disasters that you might face in the next five years (again, you can refer to [our list](#), if necessary).

Let's say you have added these categories:

- Toxic material emission/spill (from a train derailment)
- Riot or other civil disorder
- Nuclear plant problems
- Terrorism

3. *What are the ramifications of each item on my list.*

Now, take your list and create a second column (bet those of you using a word

processor are wishing we'd told you this before, huh?). Put the ramifications of each disaster in the second column. What do we mean by ramification? How the disaster or emergency situation could affect you. Think this one through very carefully, as everyone's situation is different. For example, families with children have different concerns than those without or singles.

Finally, note if the ramifications could require evacuation (our [next](#) topic).

To keep using our example results in a table like this:

Potential Disaster

Ramifications

Thunder storm with electrical outage for 2 (average) to 48 hours (severe)

- Food spoilage possible
- Lack of air conditioning/furnace
- Damage to house or car from nearby trees
- Possible local flooding (see below)
- Local transportation impaired by fallen trees, wires
- Lightning damage/fire potential

Severe winter weather

- Electrical outage for 4 (average) to 72 hours (severe) would affect furnace operation
- Exposure problems
- Frozen pipes
- Disruption of travel, transportation
- Self or family members possibly stranded away from home
- Possible food shortages and empty shelves at local markets

Nearby flash flooding

- Local transportation disrupted
- Danger while traveling in car or by foot
- Possible loss of some utilities

Nearby train derailment

- Possible leak or spill of chemicals
- Short-term exposure problem
- Long-term cancer concerns
- Evacuation may be necessary

Riot or other civil disorder

- Disruption of commute (ala Los Angeles)
- Stranded in car or office while family is at home and/or school
- Danger of riot spreading to my neighborhood
- Danger of local kids/low lives taking advantage of situation
- Attack or threat to personal safety
- Looting and rampaging by otherwise lawful citizens
- Fire with potentially no response by authorities
- Police are overwhelmed, cannot protect law-abiding citizens

Nuclear plant problems

- Reactor vessel damage could result in release of radioactive chemicals to atmosphere
- Evacuation necessary

Terrorism

- Threat to safety at work and during business travel
- Disruption of commerce, travel
- Less personal freedom, privacy as a result of government reaction to terrorism

Once you've created a chart like the one above, you know what situations you are most likely to face and can prepare your survival plan. For next steps, go on to [Chapter 2](#).

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Possible Disasters

Think nothing can happen to you? Well, Teflon man, take a look at these potential disasters and think again:

Natural Disasters

Weather-related

- Hurricanes
- Tornadoes
- Heavy thunder storms
- Flash flooding
- Flooding
- Mud/rock slides
- High winds
- Hail
- Severe winter weather
- Avalanche
- Extreme high heat
- Drought
- Wildfire

Non Weather-related

- Earthquake
- Volcano eruption
- Tidal wave/Tsunami

Man-made Disasters

- War (conventional, biological, chemical or nuclear)
- Toxic material emission/spill (from a train or nearby plant)

- Riot or other civil disorder
- Nuclear plant melt down or other nuclear disaster
- Terrorism
- Fire
- Government action against you
- Stock market crash
- Severe depression

Other

- Plague or disease outbreak
- Comet strike or giant meteor
- Alien invasion

Personal Emergencies

- Kidnapping
- Mugging, robbery or other criminal attack
- Random acts of violence against yourself or a family member
- Unemployment/financial disaster
- Death in family
- Home destroyed by fire

Did we leave something out? Send us your [suggestions](#) and we'll add them (all calamities must apply or potentially apply to a significant portion of the population to be included on this list).

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Chapter 2: Bug out or Batten Down?

- [Should you Stay or Go?](#)
- [The Evacuation Plan](#)
- [Where to Go](#)
 - [The Ultimate Survival Retreat](#)
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Should you Stay or Go?

Based on the previous section, you should have a good idea of the potential survival situations you might be facing. Now the question is whether to stay and face them or move to another -- hopefully safer -- location.

We all have a strong desire to protect what's ours. Regardless of whether you own the largest house in the neighborhood or rent a ramshackle shack, home is where the heart is, not to mention all the rest of your stuff! And Captain Dave knows you've worked long and hard to accumulate that stuff, so abandoning it and running for safety may stick in your craw.

Thankfully, there are times when saying at home makes the most sense. If you can wait out the storm, ignore the heavy snow, batten down the hatches against civil unrest or otherwise stay at home during an emergency situation without endangering yourself, it may be your best bet. There are many advantages to staying home in a survival situation, if you can safely do so:

- The food in your refrigerator and pantry can supplement your survival stash (see the next chapter).
- If you lose power, you can quickly cook much of your food and monitor the temperature of your freezer (frozen food will usually keep at least 24 hours).
- You'll have more time to improve your home's chances of survival (move items to

high ground, put plywood over windows, etc.)

- It offers shelter against most elements.
- You'll have access to all your clothing, bedding and other comforts.
- You won't suffer from boredom as much as you might in a shelter.
- You can protect your stuff from looters.

Of course, there's a downside as well:

- You could be putting yourself in unnecessary, life-threatening danger. (The fire, flood, hurricane, riot, etc. might be worse than anticipated. We've all seen TV coverage of people clinging to their roofs as the house washes down stream.)
- If you decided to evacuate later, it may be too late.
- Without heat, electricity, hot water or other services, home just isn't the same.
- There is no sense of community, unless other neighbors or members of your local survival group stay home, too. You may feel cut off and alone.
- If a mandatory evacuation has been ordered, you may be prosecuted by local authorities (although this rarely happens).

No matter how much you wish to stay at home, there are times when evacuation is the only choice. These include a nuclear, chemical or biological event as well as any impending disaster that is likely to destroy your home. For example:

- If the warning sirens on that nearby chemical plant go off at 3 a.m., you have no choice but to don your gas masks, grab your bug out bag and drive the opposite direction as quickly as possible.
- If you're beach-front home is directly in the path of a Force 3 hurricane, staying put might show a surplus of guts, but deficit of brains.
- Likewise the time you spend, garden hose in hand, trying to fend off a raging fire that has already burnt out six neighbors might be better spent salvaging your valuables and items with sentimental value.

So, if the survival situations you outlined in the previous section shows several emergency situations requiring evacuation, you'll need to put together a plan:

The Evacuation Plan

There are several important elements to your evacuation plan:

- Where to go
- How to get there
- What to bring with you

Where to Go

Sure, you can head to the nearest shelter, but if sitting on cots at the local high school gymnasium or National Guard Armory was your first choice, you probably wouldn't be reading this.

You need a safe house or survival retreat in a location where the current crisis will not threaten you. The easiest way to set up a safe house is to coordinate with a friend or family member located between 100 and 150 miles away, preferably in a different setting. For example:

- If you're in the inner city, they should be in a rural area or at least a smaller town, preferably not the suburbs of your city
- If you're near the coast, they should be inland
- If you're near a flood plain, the safe house should be on higher ground.

Following these guidelines, you can be relatively sure of several things:

- Whatever disaster you are facing should *not* affect them, and vice versa. This allows you to trade off, so when they are facing a survival situation, your home can be their safe house.
- You'll be running towards something, not just away from danger.
- You can get there on one tank of gas, even if there is a great deal of traffic (During the Hurricane Opal evacuation in 1995, it was not unusual for a 100 mile trip on the interstate to take four hours).
- You won't be turned away at the inn (Hotel rooms are quickly filled, and often at inflated prices).

If you plan in advance, you can leave a few changes of old clothes, a toiletries kit, necessary prescription drugs, ammunition, some MREs or anything else you might need at the safe house. This will make your evacuation easier.



While many will find that a friend or relative's house is the easiest and most cost-effective safe house, the ultimate safe house or survival retreat would be a second residence located in a very rural location. During normal times, this survival retreat can double as your vacation home, hunting lodge or weekend getaway destination. But when the flag goes up, you can evacuate to a safe house fully stocked with everything you need for self sufficiency.

Captain Dave's **ultimate survival retreat** would be:

- Well off the beaten track, ideally reachable by a single dirt road. This seclusion will offer you a good bit of protection. For example, you can cut a large tree down across the road to help eliminate unwanted guests.
- Not too ostentatious, so that it doesn't draw a lot of talk from locals and become a target for vandalism. Nothing wrong with a solid one-room cabin with a sleeping loft.
- Near a spring, well, stream or other natural source of water.
- Equipped with at least one fireplace or wood stove for cooking and heat.
- Within 10 to 20 miles of a village or small town where you can go (by foot, if necessary) for additional supplies, news and other contact with the outside world, should the emergency stretch into months or longer.
- Have enough arable land for growing your own vegetables and other crops.
- Near a natural, easily harvestable food source (usually wildlife for hunting or fishing).
- Provisioned with enough food to keep your family safe for at least three months, preferably a year.
- Provisioned with tools necessary for long-term self sufficiency, should it become necessary.
- Stocked with enough weapons and ammunition to defend it from small groups of marauding invaders, should it come to that.

If you are worried about **caching goods** in a unattended house, where they could be stolen, you can [cache](#) a supply nearby. While most caches are buried in hidden locations, a simple solution to this dilemma is to rent a commercial storage unit in a town close to your retreat. This has several advantages:

- As long as you have access to the facility 24 hours a day (one of those outside storage areas where you use your own lock is best) you can get to your supplies when necessary.
- It will be much easier to make a few trips to and from the nearby storage facility and your safe house than carry everything with you from home.
- It's easier to check on the status and add materials to this type of cache than one buried in a secluded location.
- In a worst case scenario, you can hoof it to the storage area, spend the night inside and hike back the next day with a full backpack.

Of course, for the ultimate protection, a buried or other hidden cache is hard to beat. The is especially true for the long-term storage of ammunition and weapons that are or may one day be considered illegal. [Here are some specifics](#) on establishing this type of a cache.

How to Get to Your Safe House

Whichever option you've chosen for your safe house, the best way to get there is by car. It's convenient (most of us have them), offers some protection, is relatively fast and allows us to carry much more gear than on foot or bicycle.

Of course, there's nothing wrong with taking a train to a safe house in a nearby city. Captain Dave is partial to boats, and even a bus beats walking, but for most, the car is our escape vehicle of choice.

While everyone chooses a car that fits their lifestyle and budget, a large four-wheel drive vehicle is the best bet for evacuating to your safe house. The bigger, heavier the vehicle is, the better. Not only do larger vehicles have greater ground clearance and the ability to ford higher waterways, they offer the most protection and carry the most gear. They also offer you and your passengers better protection in a fender-bender. When the entire city seems to be running from an impending disaster, you don't want to be stuck on the side of the road because of minor accident.



Four-wheel drive is critical if you need to go off-road to avoid accidents, road blocks or other evacuation-related snafus.

So, since an army surplus army truck is probably out of the question, a large four-wheel drive pick-up with a cap may be the best bug out vehicle available. But the fact is, whatever vehicle (or vehicles) you have at hand is the best bet.

And the old saw about never letting your car's gas tank get below half makes a lot of sense. Captain Dave also recommends keeping a couple of five gallon tanks of gas on hand "for emergencies." Even if you use it to fill your tank, carry it with you (strapped to the roof, perhaps) because you never know when you might find more. If you are very serious, you can have a second tank installed in your truck.

And while we're on the subject of cars, make sure your is in good mechanical condition.

Taking the High Road

One of the most critical factors is route planning. You should have memorized several routes to your safe house or survival retreat and have maps on hand so you can identify

alternate routes around accidents or other problem areas. The routes should include:

The fastest, most direct route.

This will be your first choice when you are getting out early, before the crowds. If you're smart enough to beat the rush, predict an upcoming disruption, or just feel like being far away from any federal buildings on every April 19, you can take your main route.

A back road route.

This may be your best bet when the interstates are clogged with lines of cars all trying to leave "ground zero." Sure, it would normally take longer, but in this situation, it may be your best bet.

An indirect route.

There may be a time when you need to get away, but don't want anyone to know where you're going. There may come a day when it make sense to go north 200 miles out of your way to end up 150 miles east of your destination. This is also the route to choose if you have reason to believe you may be followed.

What to Bring With You

Captain Dave keeps a bug-out bag in the closet. A bug-out bag is the first -- and possibly only -- thing you grab when you're bailing out. When the fire alarm is going off, for example, grab the kids, the bug-out bags and get out.

Bags, you say? Yes, bags. Each member of the family should have his or her own bug out bag.

What should you include in your bug-out bag? Ask 100 people, and you'll get 100 answers, but here's what Captain Dave suggests:



Must Haves

Nice to Have

At least \$500 in cash, including plenty of small bills for incidentals and change for phone calls. (When the power is out, many stores can't use their cash registers and insist on either exact change or to the closest dollar.)

Spare or duplicate credit cards with plenty of credit available.

A few spare checks and anything that could be used for ID if you do not have your wallet with you.

A spare set of keys, including car, house, safe-house/survival retreat, storage facility, safe deposit box, etc.

A change of clothes, preferably durable heavy-weight clothes that can stand up to abuse.

A pair of old, comfortable, already-broken-in shoes that still have some good miles left in them.

At least a quart of water per person.

A few MREs or other easily transportable food items, including some quick snack foods.

Prescription or over-the-counter drugs you rely on.

Traveler checks. Gold or silver coins. Dimes, quarters and half-dollars minted before 1965 contain 90 percent silver. A gold Maple Leaf or other large coin may be too big for day-to-day transactions, but smaller gold coins are available.

A bank card for local and national ATMs. (This assumes the electricity is not out.)

A duplicate drivers license.

You can stash a spare set in your vehicle for emergencies.

A season-appropriate jacket and other outer gear, such as gloves and hat. Clothes suitable for layering (T-shirt, flannel shirt, etc.).

A couple pairs of extra socks and at least one change of underwear.

Juice boxes or pouches.

Unfilled prescriptions you can take to a pharmacy anywhere to be filled.

A spare pair of eyeglasses (perhaps your old prescription) and/or contacts and solutions.

A duplicate of your standard ophthalmic eye-wear and/or a few pairs of daily or extended-wear contacts.

A basic first aid kit, including bandages, an ace-type bandage, aspirin or other analgesic, first-aid cream, alcohol pads, etc.

A more advanced first aid kit, including sutures, antibiotics, pain killers, etc.

A phone book listing all important numbers, including friends, family, neighbors, work, school, doctor, insurance, etc.

A cellular phone and/or CB radio.

A good work knife and/or Swiss army-type knife.

A Leatherman survival tool.

For those so inclined, a basic pistol, such as a revolver chambered for .357 or .38 special, and at least 50 rounds of ammunition.

Loaded speedloaders or magazines and a comfortable belt and holster.

Now that you know where to go, how to get there and what to bring when you leave in a hurry, you can take a look at long-term survival planning. The next chapter covers the three basics of any survival plan: Water, food and shelter.

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SURVIVAL Guide

Caching Your Goods

Of concern to many survivalists is long term storage of supplies in a safe location protected from both accidental exposure and those aggressively searching for your stash. For this reason, creating a cache (rhymes with stash) of items you believe you will need in a survival situation is a good plan for any serious survivalist.

Captain Dave found creating a cache on a boat is difficult, with the best option being a variation of the 18th century pirate's buried treasure. For most land-bound survivalists, however, creating a cache of emergency goods is less of a challenge, as you will see below:



- [Basic caches](#)
 - [What to cache](#)
 - [On-site vs. off-site](#)
- [Hidden caches](#)
 - [What to cache](#)
 - [Where/how to create a cache](#)
 - [Locating/recovering your goods](#)

There are two types of caches:

Basic Caches

These caches can be in a closet, basement, local storage company or other, relatively easy-to-access location. They are normally protected by locks or other traditional security measures and some discretion on your part (you know -- keeping your mouth shut.) The basic stash should include all your survival items (covered in chapters three, four and five). Because these caches are accessible, you can rotate items in and out as necessary.

Basic caches can simply be food, water and other necessities on shelves, in boxes and bags

or in cupboards set aside just for that purpose. A lock on the door can keep family members from rifling supplies (when the portable stereo needs batteries, for example) and nosy neighbors or guests from uncovering your preparedness stash.

On-site caches in basements or closets (for those areas such as Florida, where basements are as rare as snowballs in April) are convenient, available in most emergencies and facilitate adding new items and rotating out canned goods, water and other perishables.

Off-site caches, as discussed briefly in [Chapter Two](#), allow you to stash items near your survival retreat. Should you choose a commercial mini-storage unit near your residence, it gives you more room for goods than you might have at home. In this manner, you could keep two weeks worth of food at home, and store several months worth or more in a rented storage unit.

The danger inherent in off-site storage is that you will not be able to protect your stash from marauders (should our system of law and order break down) or natural disasters, such as an earthquake. You must also consider transportation concerns. How easy will it be to reach the 20 cases of MREs you have squirreled away in that storage unit 15 miles outside of town? If the disaster is of such a magnitude that you need them, can you get to them?

Hidden Caches

Like buried treasure, these caches are protected from discovery by burial, creating secret compartments in walls and floors, etc. To preserve the secrecy, you shouldn't visit these caches more than annually, so there is little or no opportunity for adding or removing items. This means items stored in hidden cache must be suitable for long-term storage, possibly 10 or more years.

One of the key benefits of a hidden cache is that you can store items that may be -- or may become -- illegal to own. You may not wish to give up your fully automatic weapon or that high-capacity assault rifle, but future legislation may be such that you don't want to be caught with it in your home. While Captain Dave does not advocate the breaking of laws, he is a staunch supporter of the Second Amendment and an individual's right to own a gun, even one with a magazine capacity that exceeds most gun control advocate's IQ.

Coincidentally guns and ammunition are one of the most popular items to be stored in a hidden cache. And why not, when imported SKS rifles can be had for not much more than \$100? When specially prepared for long term storage (usually packed in cosmoline or grease) guns can and have been successfully stored for decades. Ammo should be packed in sealed surplus military ammo boxes or sealed in tins. A dab a sealant around the primer is a good idea for those who reload. You can further increase the seal of steel ammo cans

by spray painting the sealed can with primer and or paint. If you use colors, these can serve to identify food, ammo and first aid supplies so when you dig them up, you can grab what you really need.

Other items for long-term storage include gold and silver. It is commonly held that paper money will have little or no value after a cataclysmic disaster (plague, revolution, nuclear event, etc.) but that silver and gold will always have some value. Other items with a possible barter value, such as knives or hand tools, may also be stored.

Evaluate your personal needs, cache location and long term survival plan to determine what you need to store. Perhaps a good knife, hatchet, frying pan and tin cup are your choices. Maybe a box of fish hooks, lead sinkers and line is on your list. Use the information presented in this guide to develop your list, but keep in mind that not everything is suitable for long-term storage.

Creating Your Cache

The ideal cache is one that is buried off the beaten path in a location you can remember. There are a number of items sold today specifically for burial. These include sonar buoy tubes and PVC pipes six or more inches in diameter. But it is also possible to build your own storage device out of plywood or other lumber. The tubular design is intended to be buried in a vertical position, to minimize the signature should someone with a metal detector try to locate it, but manually digging a hole two feet in diameter and eight feet deep is easier said than done.

There's nothing wrong with a cube or rectangular box built out of 2x4s and treated plywood. Of course, the box must be strong enough to keep the walls from collapsing, as well as supporting the weight of at least 18 inches of dirt on top. Because a plywood box -- even one lined with plastic -- will not prevent moisture from penetrating, items inside the box must be stored in sealed ammo boxes, plastic buckets or other waterproof containers.

Once you have built your box or purchased your tube, assembled and packed your items for long-term storage, you will need to transport everything to the cache location. While you may be able to make most of the trip by car, you will probably have to trek everything to the site on foot, perhaps under the guise of a backpacking trip (if you are caching your material on public land). Of course, if you have your own retreat, the entire process becomes much simpler. While many would recommend digging your cache in the middle of night, if you pick a secluded enough site, this may not be necessary. Clever camouflage or misdirection can be used to allow you to bury your material without attracting undue attention.

For long term, secret storage, caches should be buried in secluded areas, on ground high enough to avoid flooding, in open areas where tree roots won't be an immediate problem. If you are choosing to bury your goods near your retreat, pick an area where there are metal scrap or junk around that would hide a your stash from a metal detector or an area scan. They have radar and sonar that can identify buried minerals.

If you are using tubes or caches with limited capacity and need multiple caches to accommodate all your goods, bury them in a geometrical pattern. If your caches are buried in a line, 50 feet apart, or a square, finding one cache will allow you to quickly locate the others.

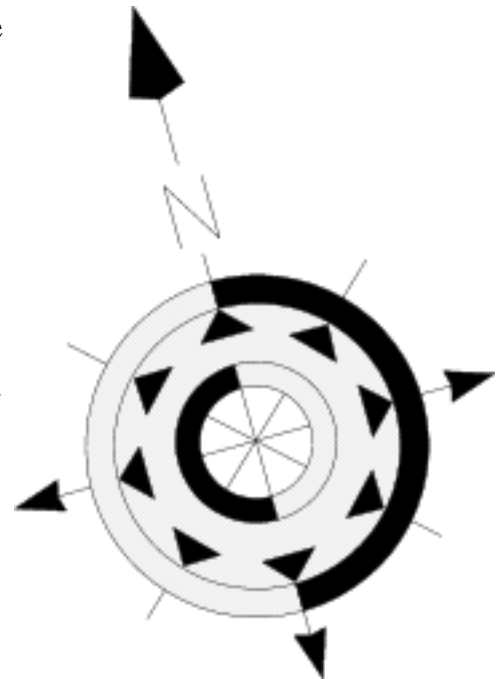
Finding Your Cache

There's nothing worse than realizing you can't remember the exact location of your cache, filled with more than \$1,500 worth of supplies.

To prevent your cache becoming a brain twister for future archaeologists, you must not only pick your spots very carefully, but draw or mark a map of the location. While you should obviously memorize the location, storing partial directions in your home survival stash is not a bad idea. Unless you are hiding contraband, a complete map should be stored in your safe deposit box. This will allow your family or loved ones to benefit from your advanced planning (or at least recover your goods) should you meet an untimely demise.

While Captain Dave recommends marking a tree or bolder in the areas, painted blazes on trees are likely to attract unwanted attention, and can fade over the years. Carving a set of fictitious initials on a tree, however, will help you confirm you are in the correct location without giving away the store.

To test your ability to find your cache, return to the site two years after burying it and try to locate your loot. You don't need to dig it up, just dig enough to confirm you are in the correct spot.



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Chapter 3: Preparing Your Basic Survival Stash

- Food Storage
- Water Storage and Purification
- Survival Shelters

If you've given any thought to survival, you know the big three -- food, water and shelter -- are the foundation of any long-term survival plan. If you prepare to provide these three items for yourself and loved ones, you're farther ahead than probably 90 percent of the public.

Many would say water is the most important of the three, but we'll address them in the order above: Food, water and shelter.

Food Storage

You may be able to survive a few weeks or even a month without food, but why would you want to? Without food, you will become weak, susceptible to illnesses, dizzy and unable to perform survival-related tasks. Sure, water may be more critical to short-term survival, but it's much easier for even the unskilled survivalist to find water in the wild (the safety and purity of the water is another story, but we'll tackle that next).

This section will deal with several key areas:

- How much food do you need?
 - Why so much food?
 - Using and storing traditional, commercial foods

- Rotating foods
 - Baking items
- Special "survivalist" foods
- Home-made survival foods
- Hunting and gathering in the wild

How Much Food do you Need?

Here's the short answer: You can never have too much food stored away for hard times.

How much is the minimum for you and your potential survival situation is an answer you'll have to come up with after reviewing the table you developed in [Chapter 1](#). (You did do that exercise, didn't you?)

Will three days of food be enough, as many suggest? Or do you need a year's worth? Captain Dave can't tell you what's best in your situation, but he suggests that two weeks or more is the *minimum* for anyone in any potential survival situation. One to three months? Now you're talking. A year? Let's hope you never need it. A year may be excessive for most, but hey, better safe than sorry (have you heard that one before?) If you're wondering how you can afford a month's worth of food, see [Chapter 7](#).

Why should you stock up on so much food if the worst you're planning to prepare for is a heavy winter storm? Several reasons:

- It may take a while for store shelves to be replenished. Think back to the heavy storms that hit the East Coast in the winter of 1995-96. 30 inches in cities such as Washington, D.C., and Philadelphia shut the city down for more than a week. And the trucks carrying supplies were stranded on the side of an interstate highway somewhere in the midwest.
- You may be asked to feed friends or neighbors. Think how you'd feel if on the sixth day of the storm you and your family were enjoying a delicious, rich, beef stew while poor old Mrs. Frugal next door was down to a used tea bag and the bread crusts she usually gives the birds? Or what if friends were visiting for the weekend and unable to return home because of the inclement weather, earthquake or other emergency?
- Food rarely goes down in price. What you buy now will be an investment in the future. If you shop carefully over time ([see Chapter 7](#)), you can lay in stores of goods on sale or at warehouse club prices.

- You will be protected from price gouging. Do you really think the last load of milk and bread into the store before the storm hits will be discounted? Shelves are often cleared out right before a blizzard or hurricane is set to hit. And food isn't the only item likely to be in short supply; one grocery chain reported that when storm warnings went out, they sold more rolls of toilet paper than there were people in the city. Batteries, bottled water, candles and other staples are also going to be in short supply (see the next chapter for more on non-food survival items).
- You will be prepared for a crippling blow to our food supply system. As I write this, many are predicting our food supply is tottering on its last legs. Whether its a drought (like we saw in 1996 in Texas and Oklahoma), a wheat blight, the destruction of traditional honey bees necessary for crop fertilization or simply the world's exploding population, they will tell you our food system is falling apart. Captain Dave will let you make up your own mind, but wouldn't a few hundred pounds of red winter wheat and other grains sealed in 5 gallon buckets make you feel better?

Let's say you decide to start small and plan to stock up a week's worth of food for your family. While the "survivalist" foods such as MRE's are a great supplement, you should be able to get by for this short a time (a week or two) on the traditional, commercial foods in your larder.

This existing food reserve should not include food in your refrigerator or freezer because you cannot count on those items remaining edible for more than a day (fridge) or three (freezer), at most. So half a cow or deer in the freezer is great, but you may have to cook, smoke and/or can it on short notice, should the power be out for a long time.

A quick examination of your cupboards and cabinets will tell you how much you need to add to ensure you have enough food for a week. If you have a few packages of pasta, some cans of vegetables, a box of crackers and a jar of peanut butter, you're halfway there. But if you have a habit of dropping by the deli every time you're hungry, or shopping for the evening meal on your way home from work (as many single, urban dwellers do), you'll need to change your habits and stock up.

A detailed list of suggestions and food storage information is available in the [Food Storage FAQ](#) but you should generally buy canned (including items in jars) or dried foods. Review our list of commercial food items and their suggested storage times when making up your personal list but keep in mind your family's eating habits, likes and dislikes. Also, remember that you may not have access to a microwave and other modern conveniences, so pick food items and packaging that can be prepared on a single burner of a camp stove or even over an open fire.

Rotation Systems

The main difference between the commercially prepared foods you buy in the grocery store and the specially prepared "survival" foods is the shelf storage. You can't store grocery store items for five to ten years, as you can with specially freeze-dried or sealed foods packed in nitrogen or vacuum sealed. As a result, if you go with a larder full of grocery items, you can't develop your food stash and walk away. You need to rotate your stock, either on an ongoing basis or every two to three months. This will ensure you have fresh food (if you can consider canned and dry food "fresh") and do not waste your food and money.

There are many systems for rotating your stock:

- Captain Dave finds the easiest is to put newly purchase foods at the rear of the shelf, thus ensuring the oldest food, which will have made it's way to the front, will be consumed first.
- You can also number food packages with consecutive numbers (a "one" the first time you bring home spaghetti sauce, a "two" the next, etc.) and eat those with the lowest number first.
- If you store your survival stash in a special location, you'll need to physically remove and replace 20 to 25 percent of it every two months (thus ensuring nothing sits for more than eight or 10 months). The materials you remove should be placed in your kitchen for immediate consumption.

As a general rule, traditional canned foods should be consumed within a year. For cans with expiration dates, such as Campbell's soups, you may find you have 18 months or two years before they expire. But for cans without a date, or with a code that consumers can't translate, mark them with the date purchased and make sure you eat them before a year passes.

Generally, canned foods will not "go bad" over time, unless the can is punctured. But the food will loose its taste, the texture will deteriorate, and the nutritional value drops significantly over time.

If you find you have a case of canned peas, for example, that are nine or 10 months old, simply donate the to a soup kitchen, Boy Scout food drive or similar charity. This will keep them from being wasted and give you a tax deductible donation.

Baking

Simple raw materials for baking, such as flour, sugar, baking powder, baking soda, oil and shortening, can be assets in a survival situation. With these staple items, you can make everything from pancakes or rolls to breading fresh fish.

For those looking for a simpler answer, mixes for muffins, corn bread and pancakes mean you do not need to add eggs or measure ingredients. These ready-made or pre-mixed ingredients can be a boon. Of course, you may need a Dutch oven or griddle for that stove or fireplace.

For long-term survival storage, honey stores for years and can replace sugar in recipes. Rather than storing flour or meal, purchase the raw grain and a hand mill. Then you can mill your own flour whenever necessary. Red winter wheat, golden wheat, corn and other grains can be purchased in 45-pound lots packed in nitrogen-packed bags and shipped in large plastic pails.

Survival Foods

Storing two to four weeks of "commercial" food isn't too difficult. But when you get beyond that, you really need to look at specialized foods prepared specifically for long-term storage. These generally fall into several categories:

- Vacuum-packed dried and freeze-dried foods
- Nitrogen packed grains and legumes
- Specially prepared and sealed foods such as MRE's (Meals, Ready-to-Eat) with a five-to-ten year shelf life

All offer one main advantage: long storage life. Some, such as MRE's and packages sold to backpackers, are complete meals. This is handy and convenient, but they tend to be expensive on a per-meal basis. Others, such as #10 cans (about a gallon) of dried items, are usually ingredients which can be used to prepare a full meal. These ingredients include everything from macaroni elbows or carrot slices to powdered milk or butter flavor. Your best bet is a combination of both full-meal entrees and bulk items.

As the name implies, MRE's are ideal for a quick, nutritious, easy-to-prepare meal. They are convenient to carry in the car, on a trip or on a hike. They have very long shelf lives (which can be extended by placing a case or two in your spare refrigerator). On the downside, they are very expensive on a per-meal basis and they do not provide as much roughage as you need. (This can lead to digestive problems if you plan to live on them for more than a week or two.)

Large canned goods, on the other hand, are difficult to transport. But if you're stocking up

your survival retreat ([see chapter 2](#)) or planning to batten down the hatches and stay at home, the large canned goods are easy to store and can keep you well-fed for months. While individual cans can be purchased, most popular are sets of multiple items. These are designed to provide a specific number of calories per day (they'll recommend 1,800 per day, but you'll probably want more) for a set period of time, often three months, six months or a year. Remember, however, if you have four people in your family or survival group, purchasing a one-year supply of food will only equate to three months worth for the family.

Captain Dave recommends [purchasing](#) the largest set of these canned, dried foods your budget can handle. Then supplement the set with items tailored to you and your family or survival group. Also, MREs and MRE entrees are excellent supplements, because prepared sets of #10 cans are primarily vegetables, pasta and grains, while MRE entrees are usually meat-based.

You may also want to add a few special items, such as hard candy or deserts, to reward yourself or for quick energy. That's one area where MREs and MRE deserts can be a great supplemental item. It's pretty tough to store pound cake or brownies for several years, but the MRE makers have managed it. They also offer crackers and peanut butter, bread and some great side dishes.

While we're on the topic of supplements, don't forget to add vitamins and mineral supplements. Fruits, green vegetables and other items rich in vitamin C and other nutrients may be scarce, so a good multi-vitamin is well worth the space it takes up in your stash.

NOTE: Since the guide was written, Captain Dave has started selling long-term survival foods and other related supplies. If you are interested, please visit our [Survival Shop](#).

Home Made Survival Foods

There's nothing like a cellar full of canned goods you grew and put up. From spaghetti sauce to your own jam, canning goods is a tradition that will come in mighty handy in a survival situation.

But Captain Dave doesn't pretend to be an expert. Whenever you're dealing with canning fruits, vegetables or meats, its important to follow the latest specifics from the true experts. (OK, so maybe government isn't all bad.) See our list of links for canners and others looking to preserve food.

You can also dry, vacuum-pack and otherwise prepare food for storage. Vacuum pumps are available commercially or can be constructed in your own home. You can use them to

seal dried food in mason jars and other containers.

When packing foods for storage, you want to eliminate oxygen (which is why a vacuum is so good). Bugs, such as weevils, and other organisms that can destroy your food need the oxygen to live, just as we do. That's why commercial companies who prepare survival food pack grains, cereals, pasta, beans and other food in nitrogen-filled containers. You can accomplish a similar packaging yourself by using dried ice.

Simply take the 10 pounds of noodles (or 25 pounds of rice or other dried food) you picked up from the warehouse and put them in an appropriately sized plastic bucket with a lid that can create a good seal. The add several chunks of dried ice. As it sublimates, your bucket will fill with carbon dioxide, which will displace all or most of the oxygen (since carbon dioxide is heavier, the oxygen should rise to the top and out of the bucket). Place the lid on the bucket, but don't seal it all the way until you think the dry ice has completely turned to gas. This is a fine line, since you want to seal it before oxygen starts leaking back into the bucket. Remember, as soon as you open the bucket, whoosh! the air will rush back in.

Hunting and Gathering in the Wild

Image this scenario:

A small nuclear conflict erupts in the Middle East destroying several countries and much of the world's oil supply. Airbursts knock out more than half of the world's satellite communications systems. Due to favorable weather conditions and plain dumb luck, fall-out over the United States is not life threatening -- as it is in part of Europe, Japan and the Far East -- and the EMP damage to our electronic systems is minimal. However life as we know it is disrupted as fuel prices reach \$10 and then \$20 per gallon.

Fruits and vegetables grown in Florida and California can't reach markets in other states. Corn and wheat crops are abundant, but farmers don't have the fuel to run harvesters. And those that do, fill their silos, but the grain can't reach the market. Store shelves are emptied in two days of panicked buying that sees a five-pound bag of flour go from \$1.69 to \$8.99.

The economy goes into a tailspin, and inflation reaches 300 percent in the first two weeks. You're lucky you still have a job, but you wonder how on earth you'll get there without the car.

The president tries to regain control of the country, by releasing stocks of food and oil, but it's just a drop in the bucket. In a measure of how bad things have become, he declares marshal law and nationalizes all oil,

refineries and oil reserves. Suddenly, Uncle Sam is the only gas station on the block, and they're not pumping for anybody, no matter how much silver you cross their palms with. Riots break out in seventeen major cities and the national guard has to be called out. LA burns (again) as does Philadelphia. There's a national curfew and trouble makers are hauled off to camps. 60 Minutes runs a story on these concentration camps, which nobody ever admitted were in existence, but they experience technical difficulties and the broadcast is cut off in the middle of the story. FEMA becomes a four letter word.

Suddenly, the two weeks of food in your larder looks frighteningly small. You wish you had more room on your credit card, but then, smart merchants are only accepting cash. You can't wait for the few tomato plants and cucumbers you have growing in the back yard to bear. But you know it won't be enough. Winter is coming, and the papers say the utilities can't guarantee there will be enough gas or electric to heat peoples' homes.

Maybe it's time to look to nature to help feed you. That's great if you are a farmer or have five or more acres of tillable land. But if not, or if it's too late to plant crops, that means a return to hunting, trapping and gathering.

If you can identify wild plants that can supplement your existing diet, good for you. If not, better go out and buy a few guide books right away. Get ones with pictures, you'll need them. Just hope everyone else doesn't have the same idea, or berry bushes and apple trees will be stripped clean in seconds.

Captain Dave has eaten all sorts of wild plants, from salad greens he probably would have tromped over on any other day to wild mushrooms to the heads of milkweeds (properly prepared, of course). Its not his first choice, but its better than tightening the belt.

Captain Dave supports hunting as a great American past time, an important tool in game management and a terrific source to supplement your traditional menu during these good times. But will it be enough to put food on the table during a survival situation? Don't count on it.

If you're a hunter, you know how crowded it usually is on opening day. Could you imagine what the local patch of forest would be like if everyone's dinner depended on hunting? How quickly would we strip this continent of all edible game? Planning on fishing? So are all your neighbors.

There are some areas of the country where the ratio of people to wildlife will still support sustenance hunting. But for most of us, that's not the case. You may be able to supplement

your food supply with some game, but don't count on it.

What does Captain Dave recommend you do if the above scenario comes to play?

- At the first hint of trouble and rising prices, visit the local food warehouse and grocery stores and buy as much as you can afford. Get the 50 pound bags of rice and the 25 pound bags of flour. Use your credit cards and part of your emergency cash stash, if necessary.
- Hunker down at home and protect what is yours.
- Keep a low profile and avoid contact with others, except fellow members of your survival group. Avoid trouble and confrontations.
- Hope that within six months the country will have recovered or at least stabilized. If not, the population will probably be a lot smaller when winter is over.

Food Storage and Preservation Links

Food Storage FAQ

This tome is a complete guide to storing food for survival needs. It is much more in depth than the above information. Available in both html for on-screen viewing or as a downloadable file.

Rec.Food.Preserving and Rec.Food.Preserving FAQ

The place to ask questions and learn more about home-preserved foods. According to their charter: Rec.food.preserving is a newsgroup devoted to the discussion of recipes, equipment, and techniques of food preservation. Current food preservation techniques that rightly should be discussed in this forum include canning, freezing, dehydration, pickling, smoking, salting, distilling, and potting. Foodstuffs are defined as produce (both fruits and vegetables), meat, fish, dairy products, culinary and medicinal herbs. Discussions should be limited to home-grown or home-preserved foods.

Here are a few more. The site's name generally says it all:

Home Canning Tips

Captain Dave's Survival Shop

[Grain Supply Update... By Geri Guidetti](#)

[Walton Feed's Self Reliance Pages](#)

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**Water Barrels, Pumps and Filters
Buy them at Captain Dave's Survival Shop**

[Visit Captain Dave's Survival Shop](#)



Water Storage and Purification

As mentioned previously, water is probably the most necessary element for human life, with the exception of oxygen.

When planning your water resources for survival you need to deal with three areas:

- [Storing water](#)
- [Finding or obtaining water](#)
- [Purifying water](#)

Storing Water

For your in-home cache or survival retreat stash, you should count on two gallons of water per-person per-day. While this is more water than necessary to survive (except in hot climates or after strenuous exertion) it ensures water is available for hygiene and cooking as well as drinking.

Captain Dave's personal in-home stash has enough water for a week, and he lives near a stream in an area where it rains frequently!

Commercial gallon bottles of filtered/purified spring water often carry expiration dates two years after the bottling date. A good rotation program is necessary to ensure your supply of water remains fresh and drinkable (see the [previous section on food](#) for information on rotation). Captain Dave purchases cases of six one-gallon jugs, which frequently go on sale for just under 50 cents per gallon. The heavy-duty cardboard boxes stack easily and protect the jugs from rupturing.

If you prefer to store your own water, don't use milk cartons.; it's practically impossible to remove the milk residue (ugh!). Bleach bottles are recommended by others, and although Captain Dave has never used this method, and apparently bleach manufacturers don't recommend it.

If you have a spare refrigerator in the basement or the garage, use PET water bottles (the kind soda or liters of water come in) to fill any available freezer space. In addition to providing you with fresh, easily transportable drinking water, the ice can be used to cool food in the refrigerator in the event of a power failure. Captain Dave has found that these bottles, which are clear and have screw-on caps like soda bottles, will withstand many freeze-thaw cycles without bursting or leaking. (The bottom may distort when frozen, but this isn't a big problem.) For self-storage of large amounts of water, you're probably better off with containers of at least 5 gallons. Food-grade plastic storage containers are available commercially in sizes from five gallons to 250 or more. Containers with handles and spouts are usually five to seven gallons, which will weigh between 40 and 56 pounds. Get too far beyond that and you'll have great difficulty moving a full tank.

15 gallon and 30 gallon containers used for food service -- such as delivery of syrups to soda bottlers and other manufacturers -- are often available on the surplus market. After proper cleaning, these are ideal for water storage -- as long as a tight seal can be maintained. 55 gallon drums and larger tanks are also useful for long-term storage. But make sure you have a good pump on hand!

Solutions designed to be added to water to prepare it for long-term storage are commercially available. Bleach can also be used to treat tap water from municipal sources. Added at a rate of about 1 teaspoon per 10 gallons, bleach can ensure the water will remain drinkable. Captain Dave recommends rotating the water in storage tanks every year.

Once you're in a survival situation where there is a limited amount of water, conservation is an important consideration. While drinking water is critical, water is also necessary for rehydrating and cooking dried foods. Water from boiling pasta, cooking vegetables and similar sources can and should be retained and drunk, after it has cooled. Canned vegetables also contain liquid that can be consumed.

To preserve water, save water from washing your hands, clothes and dishes to flush toilets.

Short Term Storage

People who have electric pumps drawing water from their well have learned the lesson of filling up all available pots and pans when a thunderstorm is brewing. What would you do if you knew your water supply would be disrupted in an hour?

Here are a few options in addition to filling the pots and pans:

- The simplest option is to put two or three heavy-duty plastic trash bags (avoid those with post-consumer recycled content) inside each other. Then fill the inner bag with water. You can even use the trash can to give structure to the bag. (A good argument for keeping your trash can fairly clean!)
- Fill your bath tub almost to the top. While you probably won't want to drink this water, it can be used to flush toilets, wash your hands, etc.

If you are at home, a fair amount of water will be stored in your water pipes and related system.

To get access to this water, first close the valve to the outside as soon as possible. This will prevent the water from running out as pressure to the entire system drops and prevent contaminated water from entering your house.

Then open a faucet on the top floor. This will let air into the system so a vacuum doesn't hold the water in. Next, you can open a faucet in the basement. Gravity should allow the water in your pipes to run out the open faucet. You can repeat this procedure for both hot and cold systems.

Your hot water heater will also have plenty of water inside it. You can access this water from the valve on the bottom. Again, you may need to open a faucet somewhere else in the house to ensure a smooth flow of water. Sediment often collects in the bottom of a hot water heater. While a good maintenance program can prevent this, it should not be dangerous. Simply allow any stirred up dirt to again drift to the bottom.

Finding or Obtaining Water

There are certain climates and geographic locations where finding water will either be extremely easy or nearly impossible. You'll have to take your location into account when you read the following. Captain Dave's best suggestion: Buy a guide book tailored for your location, be it desert, jungle, arctic or temperate.

Wherever you live, your best bet for finding a source of water is to scout out suitable locations and stock up necessary equipment before an emergency befalls you. With proper preparedness, you should know not only the location of the nearest streams, springs or other water source but specific locations where it would be easy to fill a container and the safest way to get it home.

Preparedness also means having at hand an easily installable system for collecting rain

water. This can range from large tarps or sheets of plastic to a system for collecting water run off from your roof or gutters.

Once you have identified a source of water, you need to have bottles or other containers ready to transport it or store it.

Purification

And while you may think any water will do in a pinch, water that is not purified may make you sick, possibly even killing you. In a survival situation, with little or no medical attention available, you need to remain as healthy as possible. And a bad case of the runs is terribly uncomfortable in the best of times!

Boiling water is the best method for purifying running water you gather from natural sources. It doesn't require any chemicals, or expensive equipment -- all you need is a large pot and a good fire or similar heat source. Plus, a rolling boil for 20 or 30 minutes should kill common bacteria such as *guardia* and *cryptosporidium*. One should consider that boiling water will not remove foreign contaminants such as radiation or heavy metals.

Outside of boiling, commercial purification/filter devices made by companies such as PUR or Katadyn are the best choices. They range in size from small pump filters designed for backpackers to large filters designed for entire camps. Probably the best filtering devices for survival retreats are the model where you pour water into the top and allow it to slowly seep through the media into a reservoir on the bottom. No pumping is required.

On the down side, most such filtering devices are expensive and have a limited capacity. Filters are good for anywhere from 200 liters to thousands of gallons, depending on the filter size and mechanism. Some filters used fiberglass and activated charcoal. Others use impregnated resin or even ceramic elements.

Chemical additives are another, often less suitable option. The water purification pills sold to hikers and campers have a limited shelf life, especially once the bottle has been opened. Captain Dave considers these good for the car's emergency kit, as long as they are frequently replaced.

Pour-through filtering systems can be made in an emergency. Here's one example that will remove many contaminants:

1. Take a five or seven gallon pail (a 55-gallon drum can also be used for a larger scale system) and drill or punch a series of small holes on the bottom.

2. Place several layers of cloth on the bottom of the bucket, this can be anything from denim to an old table cloth.
3. Add a thick layer of sand (preferred) or loose dirt. This will be the main filtering element, so you should add at least half of the pail's depth.
4. Add another few layers of cloth, weighted down with a few larger rocks.
5. Your home-made filter should be several inches below the top of the bucket.
6. Place another bucket or other collection device under the holes you punched on the bottom.
7. Pour collected or gathered water into the top of your new filter system. As gravity works its magic, the water will filter through the media and drip out the bottom, into your collection device. If the water is cloudy or full of sediment, simply let it drop to the bottom and draw the cleaner water off the top of your collection device with a straw or tube.

(If you have a stash of activated charcoal, possibly acquired from an aquarium dealer, you can put a layer inside this filter. Place a layer of cloth above and especially below the charcoal. This will remove other contaminants and reduce any unpleasant smell or taste.)

While this system may not be the best purification method, it has been successfully used in the past. For rain water or water gathered from what appear to be relatively clean sources of running water, the system should work fine. If you have no water source but a contaminated puddle, oily highway runoff or similar polluted source, the filter may be better than nothing, but it's not a great option.

Once the system has been established and works, you must remember to change the sand or dirt regularly.

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Shelter

Frequently, when we think of shelter, we think of either our home or emergency protection -- such as a lean-to constructed out of cut branches -- from winter weather.

While that is covered here, there is much more to this critical topic than emergency or cold-weather survival. Most of us are much more likely to be snow-bound on a highway than in the forest -- or left without a roof over our heads due to a hurricane or earthquake, than abandoned in the wilderness far from civilization. This chapter does not yet include information on how to build permanent or semi-permanent shelters in the wilderness (no teepees or birch-bark houses).

For the purposes of this chapter, Captain Dave considers "shelter" to be everything from the clothes on your back to the building you live in.

Here's a short table of contents:

- [Getting by at Home](#)
 - [Your home as shelter](#)
 - [Hurricanes](#)
 - [Tornadoes](#)
 - [Earthquakes](#)
 - [Winter storms](#)
 - [Floods](#)
 - [Looters](#)
 - [Tents](#)
 - [Other buildings](#)
- [On The Road](#)
 - [Your Car as Shelter](#)
- [Winter Survival](#)
- [Emergency Shelters](#)

Getting by at Home

In many survival situations, shelter may be as near as your home. If you don't need to evacuate ([see chapter 2](#)), you may be better off at home, even if the power is off or the storm threatening. Remember, your bug-out bag has the bare essentials, your survival stash at home should have enough food and water for weeks or even months.



If you are at home or in the vicinity during a natural or man-made disaster, your first course of action must be to determine where you will be safest. If you decide not to evacuate, you must then set about making your current residence as safe as possible. In many cases, this will mean moving into the basement or another protected part of the house. In an apartment or condominium, your best bet will probably be an interior room without windows, or even the basement of the apartment complex.

You can get the latest [weather reports](#) from CNN or check out their [storm center](#).

Hurricanes

Hurricanes are one of the few disasters for which you can anticipate some warning. If your home is near the shore and the rising surf is threatening, or you appear to be in the direct course of the hurricane, you may be better off evacuating to higher ground. Whether or not you choose to evacuate, tremendous structural damage can be caused by objects hurled through windows. Once a window is open, the power of the hurricane can actually blow the roof off the top of the structure!

To protect yourself and your property, windows should be covered with plywood or commercial hurricane shutters. Captain Dave recommends ClearShield hurricane shutters, which are made from tough clear polycarbonate and allow light to enter the window, unlike their steel and aluminum counterparts. Garage doors should also be reinforced and the door between the garage and the house itself should be locked and secured.

Hurricanes cause damage in multiple ways: high winds, flooding, downed trees and utility poles and storm surges. The farther in-land your location, the less power the hurricane will have by the time it reaches you, so pick your location carefully.

If you decided to stay in your home, you should pick an interior room with no windows. If you plan far enough in advance, you can reinforce the room with 2x6 boards or otherwise construct a cage to protect you from fallen trees, caved-in walls or other storm damage.

Move whatever survival supplies you will need into the room, especially a battery powered light and radio.

Tornadoes

While tornadoes cannot be predicted as early as hurricanes, current weather forecasting technology will often tell us when atmospheric conditions are right for their formation. By sticking around the homestead during a tornado watch, you can help protect yourself from the tremendous damage twisters can cause.

A direct hit from a funnel cloud can turn a wooden home into a pile of chopsticks, toss a minivan around like a tumbleweed and knock trees down faster than Paul Bunyon. So if you live in a tornado-prone area, you might be wise to invest in an underground shelter, ala the Wizard of Oz. (You can use it as a root cellar or nuclear survival shelter as well.)

If you live in an area not known for tornadoes, but suddenly one is baring down on you, your next-best bet is the basement, preferably in the corner closest to the direction of the tornado.

If you are driving around and a tornado is looming, park under an underpass and run up as high as you can under it. If caught out in the open, head for the lowest ground possible, even a drainage ditch is better than nothing.

Earthquakes

The old advice of standing in a doorway or hiding in the closet or under a table is better than running around panic-stricken, and it may just save your life. If you live in an earthquake prone area, prepare for it by ensuring your home meets current building standards and you have plenty of food and water stashed away.

If you live through the few minutes of the earthquake, and your house hasn't collapsed, the greater damage may be yet to come. Broken gas lines can cause fires and your house may be condemned, leaving you homeless. Plan for such contingencies by having a plastic (non-sparking) wrench available to turn off your gas main and including a good three-day pack including a tent.

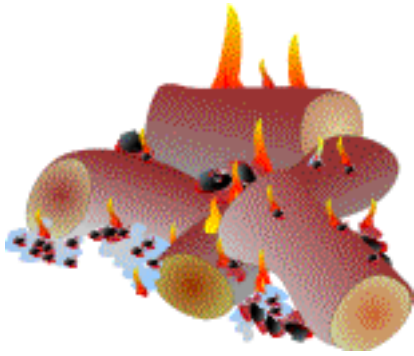
Winter Storms

While people do die in their homes due to bitter winter weather, these deaths are often caused by kerosene heaters or other sources of heat. Fire is a danger with any secondary heat source, including wood stoves, fireplaces, kerosene, propane and electric heaters, but

they can be managed to reduce fire hazards. Carbon monoxide poisoning is also a concern which must be considered when using untraditional heat sources, such as gathering around the gas oven and opening the door.

(Captain Dave once had a stupid roommate from deep south who apparently didn't know how to turn up a thermostat. One cold day he used the oven to heat the house, so don't think it can't happen! He also didn't know you had to open the flue before lighting the fire, but that's another story.)

Another danger is freezing to death if the power fails. People often think they will be OK because they have a gas or oil furnace. This is a fallacy, because the gas furnace needs an electric fan to move warm air throughout your house while even the oil furnace probably has an electric starter and/or fuel pump.



A secondary source of heat is important, and wood stoves are probably the most efficient. While fire places send much of the heat up the chimney they share with wood stoves the conveniences of being able to find fuel all around you, from books to furniture. (Let's face it, most of have too much junk in our houses anyway.) You can also cook over them in a pinch, and when the blizzard is howling around your house, a cup of hot chocolate tastes twice as good and restores the spirits.

Kerosene and propane heaters can also crank out the BTUs in an emergency but probably require ventilation (check the manufacturer's literature for specifics).

A key to keeping warm with these back-up heat sources is not to try to heat the entire house. Gather everything you think you might need into a single room and close the room off. Use any blankets you can spare over windows and doors, if necessary to reduce drafts. Gather together under your comforters and share your body heat.

Floods

The best way to prevent damage from flooding is to move before one occurs. Seriously, don't live on a flood plain unless you have no choice. If you learned anything in the last decade, it should be floods can and do occur in low-lying areas previously thought safe. Rivers and streams rise to record levels, levees break, and there's just too much concrete for the ground to absorb all that rain.

If you're stuck in a flood, follow your instincts and move to the highest ground possible. Exercise caution when traveling because it doesn't take much water to float a car or pick up

truck.

Looters

After a disaster, you may have to protect your home and belongings from looters. Sure, they'll probably march out the National Guard, but like the police, they can't be everywhere all the time. Just as you are assuming responsibility for your survival by reading this guide, you'll need to assume responsibility for protecting yourself from human predators.

Remember the "looters will be shot" signs after Hurricane Andrew? Makes you want to add spray paint to your survival-stash, doesn't it? How many houses posting signs like that were looted? Sometimes just the threat or presence of a visible weapon will be all you need. At other times, you may have to make the ultimate survival decision and weigh the value of your life, or the life of your loved ones, against that of a criminal. It's your decision, and you have to live with the results, but Captain Dave believes in judicious use of lethal force to meet and repel a grave threat to yourself.

Tents and Trailers

If your house is uninhabitable or condemned, you can pitch a tent in the back yard. This allows you to stay in close proximity to your survival stash and be available to protect your belongings. You'll also have access to clothes, pots and pans and all sorts of other stuff you'll realize you need only after an actual disaster strikes.

A step up from a tent (in both creature comforts and budget) is a trailer or RV. Pop the top on your trailer and you've got all the comforts of home. An RV will allow you all not only comfort, but mobility, which is great if you decided to evacuate in the case of a flood or hurricane. With a well-stocked camper or RV, you'll have beds with mattresses, a propane stove, food, cooking utensils, water hookup, etc.

Other Buildings

When bad weather or another disaster strikes, home isn't the only option. Think of those folks working on Wilshire Blvd. in LA during the riots. Were they better off running to their cars and trying to drive through the riot or staying right there on the 18th floor, high above the riots? Certainly Captain Dave would want to have been at home protecting his family, but you need to weigh the benefits versus the risk. (That's one reason survival planing should involve the entire family.)

In many offices, you'll have a water cooler, vending machines, microwave, coffee maker,

TV and phone service. Plus, power lines are underground, so they're protected from both the elements and rioters.

In a large building, you can count on a security force who will probably be smart enough to lock the doors and take some action to prevent access to the building by a crowd. If you think the building is being overrun by rioters, pull the fire alarm. This will result in all the elevators being recalled to the lobby and they won't run again until they are reset.

On your floor or in your suite, bar the door, check your personal weapon and, if there are enough people present, assign some people to stand guard. If you are alone on the floor, or there are invaders in the building, look for a good hiding place. Captain Dave's favorite: hiding in the crawl space above a drop ceiling.

Shopping centers, fast food restaurants and other public buildings also may offer some protection in natural disasters, but they could be targets for looting, so you will want to avoid them. And while you may be buddies with the guy at the local gun store, his place will be on top of the list for gangs to loot, followed by electronics and furniture stores.

In a severe survival situation, you got to look out for number one. So if you're trying to get out of the city in an emergency and your car breaks down, who's going to blame you for breaking into that empty house and seeking shelter? In a life-or-death situation, property crimes will be the least of your worries (and if caught, you can hope for a sympathetic jury).

Getting By on the Road

Anyone who spends a great deal of time in their car must face the possibility that they will be stranded in their vehicle during an emergency. Whether you're five or 500 miles from home, stuck in a snow bank or stranded by a flash flood or terrorist action, you may need to survive on just what you have in the vehicle. That's why a survival kit for your car is critical.



If you are stranded with only the car and the contents of your pockets, you'll be glad to have your survival kit in the vehicle. While the [Big List](#) includes plenty of suggestions, Captain Dave's kit includes the following:

- Cellular phone for emergency communication (includes cigarette lighter charger)
- Detailed map of the local and general map of the broader region
- Pepper spray

- Loaded magazine for handgun and an extra box of ammo
- Four bottles of water (bottles can freeze and thaw without leaking)
- Juice packs (also can freeze/thaw)
- Two MREs
- Granola bars
- Packets of peanut butter and crackers
- Pouches of nuts and dried fruit
- Chocolate bars
- Hard candy
- Towelettes
- Diapers and wipes
- Tools, including jack and spare tire
- Flares
- Tow strap
- Jumper cables
- Spare tire in a can
- Folding military surplus shovel
- Tie-down straps
- Broken-in sneakers
- Blanket
- Space blanket
- Hand heater packets
- Light sticks
- Waterproof matches
- Hexane (fuel) blocks
- Magnesium fire starter
- Metal canteen cup for cooking/boiling water/melting snow
- Basic first-aid kit

In the winter, this stash is supplemented with the following:

- Additional blanket
- Snowmobile suit
- Old pair of boots
- Heavy wool socks
- Hat, gloves and face mask
- Windshield washer fluid

All of this is stored in the center console, glove compartment, spare tire compartment and a metal tool box. This gear is supplemented by the survival gear Captain Dave carries on his person pretty much all the time, including a knife (or two) and gun (or two).

When traveling with family members or other people, additional supplies are added as

appropriate. For example, if embarking on a long trip in the winter, a sleeping bag and other supplies would be added. In the summer, more water would be carried.

Your car as Shelter

If you are stranded in the wilderness -- or even on the side of the road -- in a snowstorm or accident, you'll probably need all this and more.

In the bitter cold, you must utilize your resources sparingly. While a car will cut the wind, your body alone cannot heat the interior. (Just wait for someone on a winter day in a parking lot without the car running and you'll come to the same conclusion. Sitting in a car, you get cold quickly.) For the long term, you may be better off in a carefully constructed shelter. If you can reasonably expect rescue the next day, you can run your engine 10 minutes out of every hour for heat, as long as you make sure the exhaust pipe is not blocked by snow.

If you are planning to stay in your vehicle for the night (or any amount of time over an hour or so), put on the warmest clothes possible and cover up with the blankets. Sit sideways so you place your feet on the seat, because the foam cushion will offer some insulation and the coldest area of the vehicle will be the foot wells. Place something behind you so your head is not in direct contact with the cold window. If you have enough blankets/materials, try to section off the back of the car so you only have to heat the front seat area.

Or, you can lie down on the back seat (or front, if it's a bench seat), draping blankets over the seat to form a tiny triangular tent. Practice good winter survival by not exerting yourself to the point where you sweat -- you'll get much colder if you are damp. And do not eat snow, you should melt it first. (It's actually easier to melt ice than snow, believe it or not).

If you decided to light a fire to keep warm, light one outside of your car, not in it. See the section on outdoor survival or fire making for more specifics.

In the desert or in hot weather, you will be better off in the shade of the car — even under it — than inside it. At night, temperatures will drop and you'll probably want to be back inside the car using some of the techniques described above to keep warm.

Whatever the temperature or climate, communication is critical for calling for rescue. At minimum, put something on your antenna or display a sign calling for help. A cell phone is the best bet, although it won't work in some rural areas. (A CB radio is your next best choice.) A common flare can also help if you believe a helicopter or search plane is in the area. If searchers are on foot, snow mobile or vehicle, three shots from your gun is an

international signal similar to S.O.S.

In January 1997, searchers in North Dakota used an F-16 jet with a infrared sensing device to look for a missing woman stranded in her car. While they eventually located her by the signal from her cell phone, think how well a flare would have showed up on the infrared screen. (For the record, more than 20 people were killed in this deep freeze, including two less-well-prepared people who froze in their vehicles.)

Winter Survival Guidelines

There are many items critical to surviving in cold temperatures. Here are a few basics:

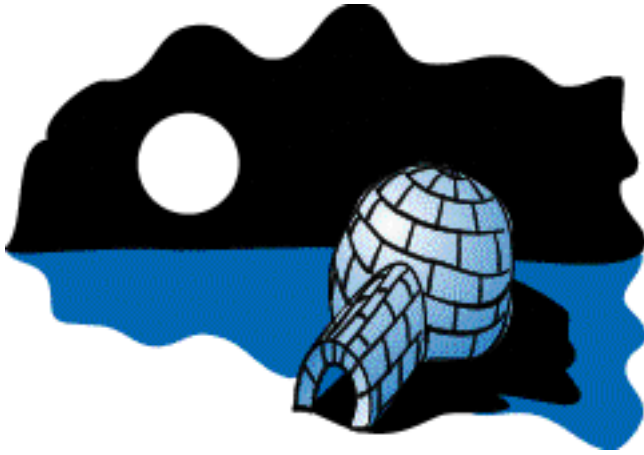
- Protect yourself from the wind, it can suck the heat out of your body faster than you can replace it.
- If your clothes are not warm enough, add insulation. Newspaper is a great wind breaker and insulator. It works in everything from your shoes to shirt. Dried grass and even leaves will also work (avoid damp leaves, obviously).
- Try not to sweat, since this can cause excessive chilling when you stop. Remove a glove, unzip a few inches or expose part of your ear to cool off if you start to sweat.
- Do not sleep directly on the ground. The frozen ground cools you faster than the air, so pile branches, pine needles and/or a ground cloth under you.
- Do not eat snow or suck ice to get water, it will lower your body temperature too fast. You do need plenty of liquids, however, so melt the ice and snow over a fire.
- Eat plenty of food, if available, since your body will need energy to generate heat. Large meals will make you cold the following half hour, so nibble regularly rather than "sitting down" for a large meal.



Winter Shelters

In the snow, your most basic shelter can be found at the base of a pine tree. Lie down or sit with the wind at your back, and your back against the tree trunk. Pile plenty of branches under you to insulate you from the ground. Build up a wall of branches and snow around

you, if possible.



Even if there is no snow, the base of a pine tree with drooping boughs close to the ground can be a fairly sheltered location. You can also add other branches to improve your position, cut the wind, etc.

In deep snow, you can dig a cave into a drift. You can also dig a deep trench and cover the top with branches and then snow. In either situation, dig a trench on the low end of the shelter where water (melting snow) can

accumulate. You don't want to end up lying in a puddle. Remember, as long as you stay dry and are wearing warm clothes, snow can insulate you from the even-colder air and block the wind. A snow cave can asphyxiate you, so be sure you have proper ventilation.

Speaking of caves, if you can find a small, uninhabited one, you're in luck. Caves offer protection against the wind, snow and rain and you can light a nice big fire just inside the entrance. Caves are also nice and defensible,

If you can't find a cave, look for an overhang/slanting cliff wall, it will offer you some protection from the wind and snow/rain. You can build a large fire in this scenario, something that isn't practical in the small snow caves.

If no wall is available, you can build one out of blocks of compacted snow, laying them out like bricks. Don't just make a straight wall, curve it so it offers even greater protection. If you're stuck for days, you can build an igloo by moving each layer of bricks in a few inches or so as you get near the top.

Another shelter can be built by bracing a fallen sapling or limb in the notch of a tree and piling branches against it at an angle. (Think of this lean-to as a tent, with the sapling as a ridge pole and the branches on the side as the tent sides.) Choose branches with plenty of leaves or needles, as these will catch the snow and stop the wind.

Remember, these home-made shelters should not be large. You should be able to lie down in one and move slightly without knocking it over. But the bigger the space, the bigger the area you'll need to warm.

Finally, Captain Dave has read that you can build a huge pile of leaves and then borrow into the middle of it, but he can't vouch for this method.

Another untried method is to make a pile of branches and cover it with mounds of snow, packed tightly into place. Then remove most of the inside branches to make room for yourself. Will this method work? Let Captain Dave know if you've tried it.

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**\$2,400 will Feed a Family of Four for a Year
At Captain Dave's Survival Shop**

[Visit Captain Dave's Survival Shop](#)



How Can I Afford All This?

The truth is, not many of us can afford to go out and spend thousands of dollars on survival equipment. Forget about the fully-stocked hideaway and the loaded four-wheel drive you need to get there, how can you afford a good solid stash of food?



But even if you had all the money necessary, you can't buy everything you need, learn everything you'll have to know and prepare for "the big one" in a day, a week, or even a year. Preparedness is a lifetime journey, and your mental attitude is a key component. The best approach is to start small and build your resources. As time passes, re-evaluate and add to your plan, your stash, your skills and abilities. (See [chapter 4](#) for more information)

Buying Smart

After shelter, food and transportation are frequently the largest expense a family faces. Buying a few extra months of food can be a burden. But by shopping wisely and adding to your food stash over time, you can make this less expensive.

OK, the following may not be news to you, so if you feel you're doing a pretty good job of buying groceries inexpensively, feel free to skip it. But I figure everyone may gain a kernel of knowledge, so it's your call:

One of the best resources for large quantities of food is warehouse club stores, such as Sam's, and food co-ops. You can also purchase grain and other supplies from farm supply stores and wholesalers. This may take some searching out, but can be worth while if you

want to buy bushels of grain to preserve yourself.

Warehouse Club

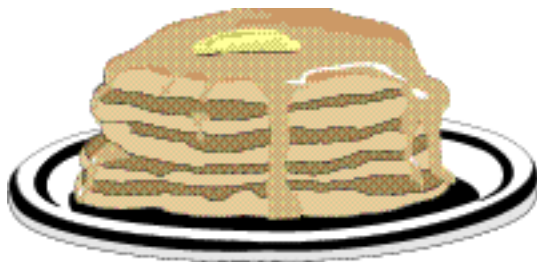
In Captain Dave's experience, warehouse club stores generally offer large sizes of items that can be used for survival. While it is sometimes possible to get better buys on some items when they go on sale at the grocery store, you have to shop carefully and watch the circulars to catch them. At the warehouse club, prices are constant and sizes large.

In addition to the survival-related foods you can acquire here, you may save enough money by buying at the club stores to afford some of those 45-pound kegs of red winter wheat you've been admiring in the catalog. Just be careful and don't buy so much it spoils, or your savings will evaporate.

Some purchases Captain Dave has made for his stash include:

- 25- and 50-pound bags of rice. A staple in many countries, it could be yours during the bad times. Rice is one of the few foods that no one has allergies to, plus it is an excellent source of nutrients. And let's face it, most of us don't live where we can grow rice. Check out the [Food Storage FAQ](#) for information on how to preserve rice.

- 25-pound bags of flour. Although grains are better to store than flour, this is fine if you do a lot of baking already. You can bake your way through the bag and always have some ready in an emergency.



- 5-pound bags of complete pancake mix. These are great because all the ingredients are ready to go, just add water (Make sure you get complete, you don't want the kind where you have to add eggs.) Muffins and other mixes are also available, but it's a lot easier to cook pancakes over an open fire or camp stove than muffins!

- Number 10 cans of powdered potato flakes. OK, so they don't taste as good as the real thing, but they store a lot longer and whip up fast. And if you want, you can still pick up the 50 pound bag of potatoes. I've seen these for \$5 at flea markets and such. But the powdered stuff won't grow eyes.

- 5-pound bags of elbow macaroni and spiral noodles. These are a staple around here, so we always keep a couple bags on hand. Much cheaper buying them in bulk than the tiny boxes on grocery store shelves.
- 5-pound canisters of peanut butter. A favorite for kids and adults, plus you don't need refrigeration. Don't keep 'em forever or they could go rancid, but a good product to rotate in your every-day pantry. Add some crackers to your stash, too.
- Number 10 cans of canned vegetables or beans. I really don't look forward to the day I have to sit down and eat nothing but canned peas or corn or whatever. But they are generally much cheaper than the small grocery-store cans, which would barely make a meal for one person. They won't keep as long as freeze-dried veggies packed in nitrogen, but they're good for feeding yourself and the hungry neighbors. To ensure rotation, use these for summer picnics or donate them to the homeless shelter every year or so.
- Number 10 cans of chili. We all know beans are a good source of protein, and a hot bowl of chili, which usually combines meat and beans, will keep you working for many hours.
- Six-packs of canned goods, including pasta, vegetables, meats. You may grimace to think you'll be living on canned Beefaroni or Spam, but there just aren't that many canned meats, and they're a heck of a lot cheaper than MRE's. Some of the pasta-products come in larger cans, too.
- Large boxes of powdered milk (makes 20-quarts). These' won't last too long (see the [Food Storage FAQ](#) section on powdered milk), but if you are buying powdered milk, you can realize substantial savings over grocery store prices. A good item to keep in your spare refrigerator.
- 120 13-gallon trash bags. I could probably come up with a whole web page dedicated to 1001 uses for plastic bags. But you'll just have to use your imagination. From storing water to lining your emergency potty, you'll need them.
- Pouch noodles. I swear ten years ago these were available only in backpacking stores, but now Lipton and others make them for the time-challenged family. Just add water, boil and voila: pasta Alfredo, shells in creamy garlic sauce or garden rotini. These are small sizes and this is one product where you can definitely get a better buy during a sale at the grocery store.



- Pouch and box drinks. These are great for bug-out packs and survival stashes that could be subject to freezing and thawing. My experience has shown the pouches will freeze and thaw throughout a winter stored in the car, but try it yourself in the freezer before you take my word on it. Every brand could be different.
- For those with a large freezer or a large family, 5-pound blocks of cheese, 10-pound packages of frozen hamburgers and large quantities of frozen vegetables are often good buys. If the you-know-what hits the fan, you'll just have to eat a lot of hamburgers for the first day or two.
- Paper products, cleaning supplies, candy and personal care products are also available in large quantities at reasonable prices.

OK, so what's the down side, you ask? Usually, warehouse stores offer one brand, so you may not get the exact product you want.

Canned Foods

Let me digress a moment for a comment about canned goods. Traditional canned goods aren't the best for survival because they lose their food value over time. But Captain Dave thinks they have a lot going for them nonetheless. They are cheaper and easier to obtain than specialty foods such as MRE's or freeze-dried foods. They also can be heated in their cans. Remove the lid (You didn't forget to pack a couple of can openers, did you?) and plop them carefully on the burner or stove, and the can becomes an instant pan. Also, you can drink the juice off vegetables to preserve your water reserves (as long as it isn't too salty). Plus, you can get a wide variety of foods, and cans are a lot tougher than glass.

So let's say you get an inside scoop that North Korea is going to invade South Korea in the next two days and you are worried about the use of nuclear weapons in such a scenario. You decide to high tail it off to your shelter before it's too late. Do you call the 800 number and order a dozen cases of MREs and wait for the UPS man to show, or do you hightail it to the store and clean all the canned goods off the shelf? If you have a survival stash which already includes survival-type foods, these canned goods will be a nice addition and provide some much needed variety. Don't forget canned fruits and vegetables.

Discount Groceries

Somewhere between the traditional supermarket and the Warehouse club lie discount grocers. This could be the "Super Kmart" that carries groceries as well as just about anything else you need. There are also Food4Less and similar stores that are a bit like warehouse clubs, only they don't carry anything except food. Becoming a careful consumer

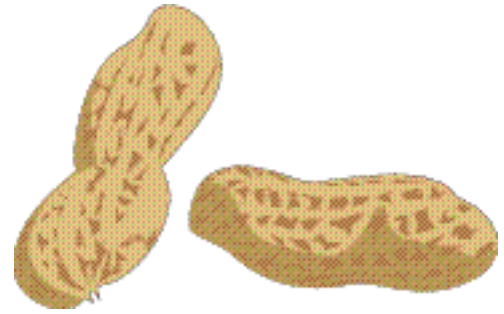
and a survival-shopper may require visit to all three types of stores over time.

Food Co-ops and Farmers Markets

Food co-ops can be found in the yellow pages. While some require you to work, most allow you to purchase as non-working members at a slightly higher price than the participants. Others require that you order in advance so you can share in their volume purchasing

Food co-ops often make large purchases of fresh vegetables, nuts, grains and similar supplies. Many times, these are organically-grown, so you are benefitting health-wise as well as financially.

Some farmers markets are seasonal, usually around only during the growing season or only on Saturdays, but others are permanent. If you put up canned goods, there's nowhere better to make large purchases of fresh fruit and vegetables. Whether you're looking for tomatoes or peaches, this is the next best thing to growing your own.



Chapter 8 has not yet been completed. Please check back in a month.

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Beyond the Basics

- [Seven Steps for Survival Success](#)
- [Additional Steps](#)
- [The Importance of Rehearsal](#)
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Seven Steps for Survival Success

Everyone's survival situation is different, so use these steps as a suggestion and modify them to fit your specific needs. The key is to never stop preparing. Start small and build until you consider preparedness and survival whenever you make your major decisions. Captain Dave's Survival Guide is intended as a map to guide you in this journey. Not surprisingly, the steps below follow the guide:

- Step 1: Identify the most severe threats likely to affect you, so that you can prepare for them first. (This is spelled out in [Chapter One](#).) Think of it as knowing your enemy.
- Step 2: Make evacuation plans and prepare a bugout kit for yourself and each member of your family. Not coincidentally, this is covered in [Chapter Two](#) of Captain Dave's Survival Guide.
- Step 3: Prepare a permanent survival kit for your car. This will serve you well if you need to bug out or if you are caught away from your home. There's an example of an automotive kit in [Chapter Three](#) under shelter.
- Step 4: Start building your food and water stash at home. (Food storage is discussed in depth in both the [food storage FAQ](#) and in the [food section of this guide](#). Techniques for saving money while buying food are covered below).
- Step 5: Start acquiring survival tools. These could be anything from a plastic

wrench to turn off the gas to a chainsaw. A [list of tools](#) is provided as a resource for you.

- Step 6: Start expanding your knowledge base through reading and taking courses. Build a survival library. You should review our list of [survival links](#) for online resources and visit [Captain Dave's Book Shelf](#) for some good reading.
- Step 7: When you make large purchases, such as your car and home, consider its application for survival and preparedness reasons. This means avoid hurricane prone areas and stay well away from the fault line.

Additional Steps

You should be adding to your survival skills or supplies every week. Sound hard? It doesn't have to be. It could be as simple as adding a few purchases during your weekly shopping trip. Or it could mean picking up a new magazine at the newsstand. Or you could rent or buying a book or video on a survival-related subject.

Your best weapon is your mind, and reading and practicing will help polish and improve your survival skills. Some skills, such as identifying and gathering foods in the wild, are obviously and directly survival-related. Others, such as learning to weld or repair small engines, may be more of a stretch. But who's to say your future survival situation might not require someone who can weld a water-storage tank or repair a generator?

Rehearsal

Planning is important, but rehearsal is when you will test your plan and identify flaws. Rehearsal is simply pretending you are in a survival situation and acting accordingly. Here are some survival examples to try:

- Try living for a weekend without electricity. You can do this the real way by shutting of the breaker (to prevent cheating) or the easy way by just "pretending." If you do the latter, you should fine each other for violating the rules. The exercise will teach you that boiling water over a camp stove or a fire in the back yard just to make you're morning coffee can really wreck your normal morning routine. But hopefully the experience will also help you identify missing supplies, bad ideas and develop a new, stronger plan.
- Try to evacuate your family to another location (anywhere from a friend or relatives to a motel 100 miles away). Give yourselves 20 minutes to pack. Once you've reached your destination make a list of everything you forgot and then add it to

your bug out bag. Once you've settled in at your destination, take a minute to think how you would feel if everything you left behind was destroyed by a fire or if everything below the second floor was damaged or destroyed by a flood. Revise your storage and survival plans accordingly.

- Go for a drive one Saturday in the fall. Pull over in a remote area (if it's safe) and spend the night there with only the supplies on hand in your car.
- Try eating only your survival foods for a weekend or even a week. This is a good one if you're ready to rotate out some of your food. It also has the added benefit of letting you identify any dishes you can't stand or to realize you need to add some spices and a cook book to your stash.

Developing a Survival Mindset

Being mentally prepared is a key to successful survival. Just as athletes can improve their performance by mentally reviewing their actions before the big game, you can improve your performance in a survival situation by reviewing your options and plans before you need them. Play scenarios through your head and rehearse your options and actions. For example:

- If you are stuck in traffic, imagine what you would do if a large earthquake struck. Where would you go? What would you do? (If you're not in an earthquake-prone area, think what you would do if you saw a huge funnel cloud heading towards you.)
- In your work place, think what you would do if an ex-employee returned to work one day a bit drunk and verbally abusive. You know he owns guns, but you don't see one on him. How do you react?
- If you're traveling out of town or in any unfamiliar area, think about what you would do if you were stranded due to a breakdown or if the area was suddenly hit by a flash flood. What would you do to increase your chance of survival?
- You're in a convenience store picking up milk and as you turn around from the cooler, you see a man holding a gun on the cashier. What do you do?

(Maybe I am being cynical, but by expecting the worse, I am never disappointed and occasionally receive a pleasant surprise. After all, we're not practicing how to survive winning the lottery or getting a promotion and a big raise at work.)

Survival Awareness

Part of developing a survival mindset is being aware of your situation. The military developed a set of color codes which Col. Jeff Cooper (a respected firearms trainer) adapted for personal "street" survival by those who carry a firearm. Captain Dave has adapted and modified those again to pertain to survival in the broader sense:

Condition White An individual in Condition White is totally unaware that the world is an unpredictable (at best) place and that they could be put in danger by a man-made or natural disaster with little or no warning. They suffer from the misguided belief that the government will protect them and keep them safe.

Condition Yellow An individual in Condition Yellow has accepted responsibility for his or her personal survival. They have admitted that the veneer of civilization can be wiped away, catapulting us back to an era where our modern conveniences don't work. They realize that the police cannot protect them before a crime has been committed. They realize that while mankind can harness some of nature's powers, and predict some of her behavior, it cannot stand against her fury.

This individual has started making preparations to protect themselves and their loved ones from potential disasters. They monitor the news for weather-related danger or potential civil unrest. By reading this far into Captain Dave's Survival Guide, you are probably in condition Yellow.

Condition Orange You are in Condition Orange when you realize a dangerous event is on the horizon and looming closer. It could be a hurricane heading towards you, an impending snow storm or a gang of youths crossing the street on a course ready to intercept you. In condition Orange, you are preparing to survive an impending situation. This could mean filling improvised water tanks or bringing extra fire wood into the house to dry. It could be loading the car in preparation to evacuate or hanging hurricane shutters.

(Note, in some emergencies -- like an earthquake or terrorist bombing -- you may go straight from Condition Yellow to Condition Red or Black.)

Condition Red You are in a survival situation and the dangerous event is there NOW. This means the bullets are flying, or the water is rising or the wind is howling, the electricity is out and the snow is piling up. You're most important priority is to ride out the moment, to survive the immediate event. This probably means taking shelter or running or, depending on the situation, fighting back.

Condition Black In Captain Dave's version of the color code, Condition Black is after the catastrophic event, but before the situation has returned to normalcy. You still are depending on your survival stash and skills to survive, but the danger is longer term, not immediate.

Examples of condition black could be the earthquake that is over, but you can't return to your home. Or the river has crested, but it will be days before your can return home and longer before you are cleaned out. Or the riots have died down, but you dare not leave your house or neighborhood. Or the snow has stopped but the electricity has not been restored, and it will be a few days before the plows dig you out.

Think about your worst-case scenario and determine how long you might have to survive in condition black. Remember that in a catastrophic event, such as nuclear war, a terrible plague, a comet strike or an alien invasion (people have been e-mailing me asking me why I haven't addressed the latter two) "normalcy" may only be in your memory.

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Hunting: Is it moral?

If you disapprove of hunters, or think killing animals is wrong, we ask you to re-evaluate your stance. Hunting today in the United States is a carefully managed exercise that benefits both the hunters and the hunted. Sure, it might be great to turn the clock back a few centuries to where man's impact on wildlife was minimal -- and game management meant managing to bring home dinner -- but that's just not possible.

American sportsmen have contributed more than \$19 billion dollars to habitat improvement and wildlife conservation, and it was sportsmen who helped bring turkey, deer, antelope and other species back to their current abundance.

Next time you enjoy a hike through a state forest or game land, remember that the hunting licenses sold in your state make it possible to preserve that wilderness for all to enjoy.

But enough lecturing. You're entitled to your opinion. Should you wish to learn more, try [this site](#).

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Protecting Your Stuff

If luck or planning lets you live through the immediate disaster -- the hurricane passes, the earthquake dies down or the riots are quelled -- you are faced with the longer task of living through the aftermath. All the topics we've dealt with earlier -- food, water, shelter and emergency medicine -- are critical. But you have to hang on to all four to survive, and many of those who are less-prepared may envy your stash and wish to make it their own. See the [scenario](#) we put together for an example.

You need to protect yourself both from those who see the situation as an opportunity to cash in and those who are so desperate they have no way to survive except by taking your stuff. You will run into the first (criminals) early in a long-term survival situation. The second will be a later phenomenon, after their meager supplies have petered out and the hand of government is nowhere to be found.

There are several steps you can take to protect yourself from these and others who threaten your survival:

- Keep a low profile. The fewer people who know you have a huge stash of food and water, the less who will turn to you. This also means don't flaunt it and create resentment. Don't be boiling beef stew in the afternoon over a backyard fire when others are starving and not expect trouble. Instead, use a camp stove in your fireplace late at night.
- Do not seek to profiteer from your advanced planning. This will result in resentment and possible retribution. If you have a surplus and wish to part with some goods, you will earn friends by giving it away or selling it at cost. If you sell it at ridiculously high prices, you'll earn nothing but hate and resentment. (Frankly, Captain Dave feels your better off keeping or using surplus items for trade.)
- After disaster strikes, post signs saying looters will be shot. Like an alarm sign, this won't deter someone who seriously wants what you have, but it may send potential thieves and looters to easier targets. During "normal" times, there is an unfortunate liability associated with displaying "Protected by Smith & Wesson" bumper stickers and wearing T-shirts that boldly proclaim "I don't dial 911, I call on .357." In the

potentially lawless aftermath of a disaster, Captain Dave believes the benefit of such a sign will outweigh the liability.

If you are threatened by looters or other criminals, you probably only have two choices: Turn tail and run or display a firearm you are prepared to use. This latter technique served Korean merchants well in the L.A. Riots. If you choose to include weapons as part of your survival stash (a move Captain Dave encourages) you *must* have the will and the skill to use them successfully. Otherwise, you'd probably have been better off taking option one and hightailing it out of there, giving up your stash but hopefully saving your life.



Your Survival Weapons

Choosing the best survival weapons will depend on your needs. Do you wish to protect yourself from a single intruder or a large group? Will you be engaging targets at close or long range? Do you wish to hunt as well?

Your answer may be "all of the above," which is why Captain Dave recommends the following survival weapons:

- One or two pistols for every adult or adolescent capable of using it. Should be at least .38/9mm caliber or larger.
- A 12 gauge shotgun for all large adults. 20 gauge for smaller-statured adults. Either semi-auto or pump, the higher capacity the better. Stock both bird shot, buck loads and slugs.



- A semi-automatic battle rifle, such as a AR-15, FAL, H&K, AK-47, SKS or Ruger mini 14. At least one for every two adults capable of firing it. An AR-15 is

preferred because it has ammo and parts interchangeability with our country's standard issue weapon.

- A large scope-equipped rifle capable of engaging man-sized targets 400 yards or more.
- Stock up on high-capacity magazines and ammunition as well. Captain Dave recommends a minimum of 10 high-capacity magazines and 1,000 rounds for your "battle" rifles. Additional ammunition is a good idea. If you do not need to use it, it can be an excellent barter item.

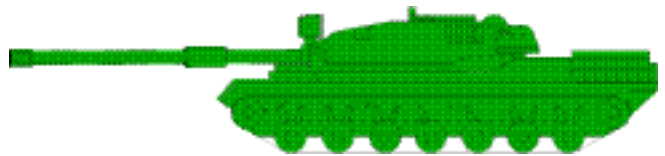
This is a good firearms stash that, used properly, can help you protect yourself in many situations. You will be able to carry the pistols concealed if you are not expecting imminent trouble but wish to be prepared. The shotguns are excellent close-quarter combat weapons, ideal for defending your home. The .223 rifles are not only intimidating, they are able to sustain a high level of suppressing fire and provide both offensive and defensive fire. The large hunting or sniping rifle (in 30-06, .308, 7mm or a similar caliber) is good for hunting and reaching out and touching someone.

Suppose you only have a pistol and a .22 rifle. Well, you're better off than many. There's a good bit of truth to clichés like "better a hit with a .22 than a miss with a .45." Hopefully, just the visible presence of a firearm will be enough to quell any problems.

Heavy Weapons

Owning fully automatic weapons and other "weapons of destruction" such as grenades and rockets is illegal for the average citizen. While you may be able to obtain a class III firearms license, the process is difficult and the weapons expensive. That means most of us will need to rely on home made weapons.

Captain Dave recommends Molotov cocktails, which can be made by mixing gasoline with detergent. He does not recommend experimenting with home made explosives.



For those interested, [TEOTWAWKI](#), a survival novel, discusses ways to take out tanks and other heavy vehicles.



Survival Tools

This list could easily run into the thousands of items, but here are a few you should think about having around the house and/or the retreat. These are for the survival situation when TEOTWAWKI (the end of the world as we know it) occurs rapidly, leaving you without the modern conveniences, little or no resources outside of what you have at hand, and a government that cares more about taking care of itself than caring for you and the thousands of other refugees.

As a general rule, avoid products that require batteries, or use consumables such as gasoline and propane, unless you have large storage tanks for fuel. If you can, look for radios and flashlights that can be powered by hand or contain rechargeable batteries and a self-contained solar panel.

Spend your money wisely, as the hundreds or thousands you spend on a night vision devices could buy you months worth of food.

Note, this is not intended as your bugout bag, automotive survival stash or 72 hour kit. But these are tools you may not have on hand that could be very useful in a survival situation.

- **Chain saw (with spare gas and oil)**

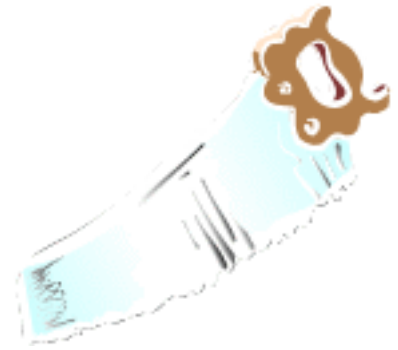
Great for clearing storm damage, rescuing others or cutting down a tree to block easy access to your house, neighborhood or retreat.

- **Axe and/or Hatchet**

If you need to chop some fire wood, split some small logs or clear away some brush, an axe is a good second to the chain saw. Hatchets are great for making kindling and kids can use them, too.

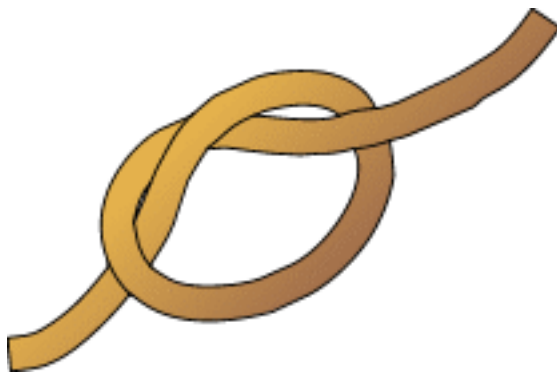
- **A Hand Saw**

If you don't have a chain saw, you can still cut through a pretty good sized log with a large hand saw. Get one with large teeth made for cutting logs, not mitering corners. This will be much more efficient for cutting logs than an axe.



- **Shovel**

You never know when you might need to dig a hole, and it's tough without tools. If you need to build a latrine, it will be a lot easier with a shovel than the survival knife on your belt. Same for a improvised nuclear shelter. Captain Dave keeps a folding shovel in his car, just in case. If you live where the soil is especially rocky, a pick and/or pry bar would be good additions to the list.



- **Rope**

Thick, thin or in between, there are 101 uses for rope and twine. From an improvised line for drying flooded or rain-drenched items to lashing items to the roof of your bug-out vehicle, you should keep a few different kinds on hand.

- **Knife**

Captain Dave recommends carrying a knife at all times. But a larger knife is useful for dozens of possible tasks, from whittling a tent stake to cutting a fishing spear. Once you have a general-purpose knife or two, you can add skinning knives, folding knives, etc.

- **Sharpening Stone**

This will help keep you knife, axe, and other bladed implements sharp and ready for use. Add a file for the axe and hatchet.

- **Big Wrench**

It's possible you will need to turn off your gas or water main if your domicile receives serious damage. While special non-sparking wrenches are made specifically for turning off the gas, any wrench will do in a pinch.

- **Cast Iron Frying Pan and Dutch Oven**

A properly treated cast iron frying pan is great for cooking eggs or rodents on a gas stove or over a camp fire. And a Dutch oven will cook everything from stew to bread.

- **Tin Cups, and Plates**

Glass and china products will break, especially in a rough survival environment. Metal products are lighter to carry and can be tossed off the shelf in a quake with no side effects. Plastic is a good alternative, but you cannot heat a plastic cup over an open fire. The enamel products, built for camping, are the nicest available.

- **Hand Powered Grinder/Mill**

If you store buckets of grain, Captain Dave assumes you have thought of this necessity.

- **Bucket**

Whether you need to haul water, or carry vegetables from the garden to the house, a bucket is an item you will be hard pressed to make.

- **Plastic Jugs or other Water Containers**

You may need to carry water from a nearby source, and gallon jugs are easy enough for everyone in the family to carry.

- **Fire Starter**

Once the power goes out, you'll be depending on a fire to cook, boil water, keep warm, etc. You need to make sure you have plenty of different fire starting materials. Lighters and matches are good, but alternatives such as a flint and steel are even better in the long run.



- **Sleeping Bag and/or Blankets**

The value these will provide in keeping warm at night should be self evident.

- **Multiple light sources** A hurricane lantern that burns kerosene is very convenient, more so than a Coleman lantern. Keep flashlights on hand for short term use but stock up on candles. It gets pretty dark when the electricity is out for days or weeks, and they are warm and comforting.

- **Tarp/plastic sheets**

Ideal when you need to keep something dry, create a temporary shelter or rig a catch system to trap rain water.

- **Gun**

Captain Dave has addressed this [elsewhere](#), but you should give serious consideration to owning a gun for self protection. If you take personal survival seriously, you owe it to yourself and your loved ones to explore the benefits of gun

ownership.

- **Bicycle**

After the immediate emergency dies down, you may need to get around your local area, and a bike is an excellent alternative when cars are not practical. Maybe there's a lack of gasoline or downed bridges and overpasses, as we saw after the big California quake. You can carry a bike over broken cement and can cover much more ground than walking. If society breaks down to the extent that you need to use a bike, they will be very expensive. So get one now and use it recreationally.

- **Shortwave Radio**

If the situation is so bad the local radio and TV stations are off the air, you will need a shortwave radio set to hear news from other countries around the world. For local communications, a CB radio and a scanner are nice additions.

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Chapter 5: Survival Medicine

- [First Aid Kits](#)
-
- [Alternative Medicines](#)

Captain Dave is the first to admit he doesn't know how to remove an appendix, and he's a lot better with a fighting knife than a scalpel. But he knows how critical medical care can be in a survival situation. Food, water and shelter may be the first three items on your emergency list, but medical care should be number four.

Whether it's a bomb blast, car crash or natural disaster, medical treatment always seems to be necessary early in an emergency situation - just when it's hardest to come by. But with education, you can provide the first aid you or those close to you need. Captain Dave recommends reading and taking classes (such as those offered by the Red Cross and some EMT programs) on first aid and becoming a first responder.

An entire first aid tutorial with information on how to treat different medical emergencies is [online here](#) at Captain Dave's Survival Center.

For more advanced information, read the [Survival Medical FAQ](#), also online here. This includes specific information on antibiotics, lab tests and several medical kits.

If you don't have the time, at least store a few first aid kits in important locations.

First Aid Kits

There are dozens of commercial first aid kits available from many different suppliers. Captain Dave recommends you have on hand three different types of kits:

- A small, basic kit for you car and bug out bag.
- An intermediate kit for around the home and for traveling.
- An extensive medical kit stored with your survival gear for use when going to a regular doctor or hospital is out of the question.

While kit contents will vary, your basic kit (which most outdoors or camping-type stores should carry) should include at least the following. If you can't buy one with these contents, pick up a few supplies and create your own:



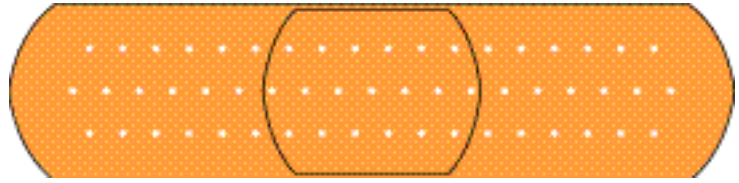
- Bandages
- Antibiotic ointment
- Gauze pads
- Iodine or similar prep pads
- Alcohol prep pads
- Butterfly bandages
- Antibiotic ointment
- Medical adhesive tape
- Aspirin and/or non-aspirin pain relievers

The intermediate kit will include more of each of the above items, plus the following:

- Larger adhesive bandages
- Smelling salts or ammonia inhalants
- Ace-type bandages for strains and sprains
- Several sizes of sterile pads
- Rolls of gauze
- Antiseptic towlets
- Thermometer
- Snake bite poison extractor
- Tweezers
- Safety pins
- Moleskin
- Rubber (latex) gloves
- Burn medication
- Anti-itch treatment
- Sun screen
- Diarrhea medication
- Eye drops
- Basic first aid instructions

Your more advanced medical kit can be expected to include not only the above, but some or all of the following:

- Special bandages, such as conforming, trauma and field dressings
- Rubbing alcohol for sterilization
- Hydrogen peroxide
- Betadine
- Scissors
- Forceps
- Scalpels
- Hemostats
- Sterile sutures, in several sizes
- Wound probe
- Mouth-to-mouth shield
- Instant hot pack
- Instant cold pack
- Prep pads
- Eye pads
- Sponges
- Cotton balls
- Burn treatments
- Dental tools
- Splint materials
- In-depth first aid/surgical guide
- Cold medication
- Decongestant
- Antihistamine
- Colloidal silver



If you can find a sympathetic doctor or have other access to prescription medicines, you should consider stocking up on a few key items:

- Broad spectrum antibiotic
- Antibiotics for sinus infections, strep throat and other common "winter" ailments
- Pain killers

Remember, if you have kids or a special medical problem, add whatever extra items you think are appropriate.

Veterinarian Supplies

We're not worrying about your pet -- although they can be injured in disasters, too -- but using easily-obtainable veterinarian supplies for your own needs, as many survival writers

recommend. While Captain Dave does not endorse this position, it bears mentioning. In a survival situation, does it really matter who or what the prescription was originally written for? Use your own judgment and don't forget to read our [disclaimer!](#)

Alternative Medicines

Captain Dave has seen too much of the world not to believe that there are more ways to treat common ailments than the AMA would have you believe. And should a post-apocalyptic world mean we have to revert to herbs and tree roots, a bit of knowledge about alternate medicines may be helpful. (A list of useful alternative medicine sites is being developed.)

For day-to-day well being, Captain Dave is partial to homeopathic medicine. This approach to healing stimulates your body's natural healing force. You can check the yellow pages for the homeopathic physician near you.

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SURVIVAL Guide

A Survival Scenario

OK, you've gone to all this trouble to stock up on survival goods to keep you and yours safe and sound through whatever disaster or emergency strikes. All this preparation stands you in good stead when the balloon goes up. You have food, water and shelter while most of the sheep are lost without the shepherd.

Then your neighbor is killed by a bunch of marauders who steal everything he has, rape his wife and children and torch his house. The last you see of them, as you peer out the basement window, they are laughing as they drag his 14-year old daughter away, naked, into the night.

You have a sinking feeling in the pit of your stomach. You know they'll be back, and your house will be their target. No one has seen a police man for over a week and the national guard is protecting gas stations in the city, nowhere near your house.



This is *not* the time to realize you should have included a gun or two in your survival supplies. Remember, even if you could get to the gun store and they were open, there's a five day waiting period (Thank you, Mrs. Brady).

This is the time to make sure all your magazines are loaded, all your guns are clean and to set up some rules of engagement with your family.

The Best Tool for the Job

Captain Dave realizes not everyone likes guns. But in a scenario like the one above, they are probably the best chance you have of surviving the next day or week. And that's what this site is all about: Survival, using all the tools at hand. And guns are just that -- tools. Used properly, they can get the job (protecting you and yours) done more efficiently and effectively than you could do without. And misused, they can be dangerous. Just like your car or chain saw.

If you abhor the thought of killing someone to save your own life, if you think having a gun simply means you'll end up getting shot by it or if you believe the right to bear arms granted by the second amendment applies only to the National Guard, not we the people, we have a [page](#) set up for you.



If you're not sure where you stand on this whole gun issue, there's a [page](#) you should read.

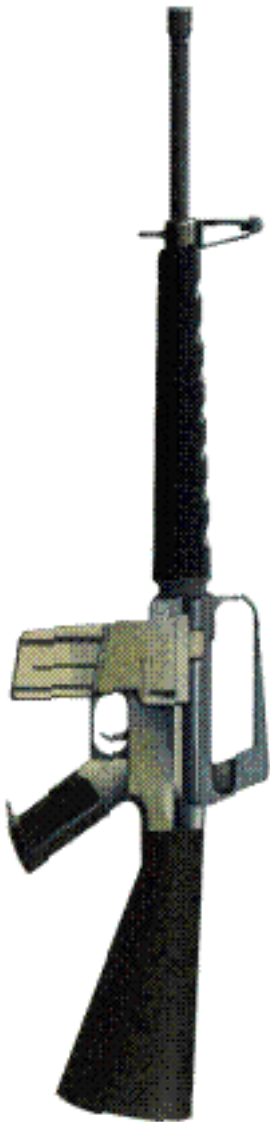
If you are not a gun owner, but you are thinking of buying one, we encourage you to learn to shoot, to handle a gun safely and to practice. We have a [page](#) with some helpful suggestions and starting points for anyone in this position.

If, like Captain Dave you own and shoot guns regularly, we've got a page with some great [gun-related links](#) you might enjoy.

Meanwhile, [back](#) to the specifics about protecting yourself during a survival-situation.

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SURVIVAL Guide



A Note to Gun Control Advocates

Captain Dave tolerates gun control advocates like he tolerates his eccentric uncle Al. There's not much you can do about their affliction but hope it isn't contagious and try to spend as little time with them as possible. Nonetheless, Captain Dave will try to be polite.

If you are serious enough about survival to have gotten this far on this web site, we strongly encourage you to rethink your position on gun control. Guns save the lives of millions of people each year, and the experience of those who made it safely through the L.A. Riots because they were armed with assault rifles should show you their value in a survival situation.

OK, you may not wish to carry a gun every day. You may not want to keep one loaded by the bed. But please do not infringe our rights to do so. Take a stand for freedom, for independence and for refusing to be victimized. When that drug-starved parolee kicks down your front door, you'll know why Captain Dave is always armed!

Here are Captain Dave's other Gun Links:

- You're beginning to convince me, [please tell me more](#)
- I want to learn about gun safety and purchasing a firearm
- [Gun links](#)
- You will never convince me, I think all guns should be [outlawed](#).



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Guns and Survival

Guns have an important role for protecting yourself and family or survival group during and after an emergency. But they also can help you protect yourself every day. Consider these scenarios:

- It's 2:47 a.m. You hear someone breaking into your house and dial 911. How long would it take for the police to respond? Do you think you and your family will survive if this criminal has murderous intent? Do you think begging for mercy will keep you safe? [Here's how you can protect yourself.](#)
- If you were at work and a disgruntled worker returned with a gun in each hand, would you be able to stop his rampage? [Here's what you can do.](#)
- You take a wrong exit on the interstate and suddenly realize you are in a bad neighborhood. You start to turn around but an old beat-up Chevy boxes you in. Six youths wearing gang colors jump out and surround your car. Will your pepper spray be enough? [Here's an alternative.](#)

As you can see, the six "Ps" apply here: proper planning prevents piss poor performance. Think ahead and take some steps to protect yourself. More likely than no, a firearm will be an important part of that protection.

If you are still not convinced, here are some links that may help you learn more:

[Crime, Deterrence, and Right-to-Carry Concealed Handguns](#)

This scholarly, research-based article by John R. Lott, Olin Fellow in Law and Economics at the University of Chicago Law School and David B. Mustard, graduate student at the Department of Economics, was released on July 26, 1996, and has generated much attention in the media.

The article will appear in the January 1997 issue of the Journal of Legal Studies, but the authors have made it available over the World Wide Web as a courtesy.

[The Second Amendment Foundation](#)

SAF is dedicated to promoting a better understanding about our Constitutional heritage to privately own and possess firearms. This site includes useful reports and informative editorials from select gun magazines.

[Citizens Committee for the Right to Keep and Bear Arms](#)

This site contains valuable information regarding the Right to Keep and Bear Arms including current and proposed legislation, books regarding the second amendment, and hundreds of articles.

[National Rifle Association](#)

The premiere association for the current or prospective gun owner, the NRA site covers everything from Second Amendment issues and legislation to training, education and competition.

[Taking Aim at Gun Control](#)

Another study/article from the Heartland institute that dispels myths about gun control.

[Crimestrike](#), a division of the National Rifle Association

Crimestrike deals with guns, criminals and the criminal justice system. An interesting page if you are interested in the failures of our justice system and how many criminals are quickly back on the streets.

[ABCDEFGF](#) (A Basic Citizens Definitive Electronic Freedom Guide

An interesting article that answers the question "Will I be safer if guns are banned?"

[Shooters Links: RKBA](#)

A comprehensive list of political and right to keep and bear arms sites. Includes all of the above and dozens of others.

- [Gun links.](#)

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Gun Related Links

Associations

[The National Rifle Association](#)

If you own a gun or support gun ownership, consider membership is imperative. The NRA provides a wide host of services, from hunter education and personal protection training to lobbying and legislation. The site provides regular updates on legislation threatening our rights as well as other gun-related news.

[USPSA - United States Practical Shooting Association](#)

If you want to test your pistol skills against others in an exciting match format, then IPSC shooting is your game and membership in the USPSA, which is the United State's IPSC organization, is the association for you. IPSC matches are held at clubs around the country, and the USPSA is the governing body

Second Amendment/Gun Rights

[Crime, Deterrence, and Right-to-Carry Concealed Handguns](#)

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Gun Manufacturers and Distributors

[Glock](#)

Glocks are Captain Dave's favorite guns, and one of these "plastic" wonder guns is usually within arms reach. Glock's are available in 9 and 10 mm, .40 and 45 caliber in a range of sizes. Unfortunately, the site is nowhere near as good as the guns themselves.

[Interarms](#)

Interarms imports and sells Star, Rossi, Walther and other weapons. Most are pistols, but there are some rifles as well. Captain Dave's can speak from personal experience regarding Interarms customer service and the quality of Star pistols.

[You want gun-related links? These guy's have 'em!](#)

Billed as "the web encyclopedia of shooting related links", you'll find some 700

links here, plenty to fill your days. Sorted alphabetically and by category."

[Marlin](#)

These traditional lever action rifles helped tame the West. 100 years later, they're just as handy and available in many common pistol calibers.

[Shooters](#)

Want to find a place to shoot, a gun smith or a gun-related web site, then this is THE site. Probably the most comprehensive gun site out there. Has a directory for just about everything."

[American Firearms Industry Home Page](#)

Another large shooting site, with an emphasis on news. Includes a listing of second-amendment letters and political information.

[Century Int'l Arms Main Menu](#)

A large distributor of surplus guns and ammo. Looking for a CZ52, a Mauser or an old .303 British rifle? If so, this is a good place to start.

[Welcome To Taurus Firearms!](#)

Captain Dave's personal experience has proven Taurus guns to be well-made and accurate pistols, both semi-auto and revolvers from .22 to 44 magnum.

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You are destined to be a
VICTIM!



NRA.org

NRA QuickLinks:

- Review your membership online
- Career opportunities at the NRA
- Read NRA monthly publications here

Home Member Services Join/Renew Contribute Politics & Legislation Sign up for Newsletter Contact Us

SEARCH: _____

Visit NRA's Online Shopping



July is Hat Month!

10% Off All Hats
NRAstore.com
Excludes Clearance and Sale Items. Offer Ends July 31, 2004.

Click here for the

NRA

Program Materials Center

ORDER



NOW!



The Second Amendment Primer

and other firearms related publications

Palladium Press

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to get the Best Deals

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NRA's TOP STORIES

Featured Story...



NRA Racing News

Top Stories...

- **NRA Youth Education Summit Awards \$10,000 in Scholarships**
- **Lubbock Friends Event Sets Attendance Record**
- **2004 NRA Youth Wildlife Art Contest**
- **Alert student awarded for Eagle eyes**
- **Fifty-six Deceits in Fahrenheit 9/11**

[more...](#)

NRA IN THE MEDIA

- This week on American Hunter Television:**
- "Alabama Slammer"
- This week on American Rifleman Television:**
- "Guns Of Iraqi Freedom, Part II"
- NRANews To Air on SIRIUS Satellite Radio: Wayne**
- **LaPierre to make landmark announcement**
 - **NRANews.com Live Broadcasts Starting Daily at 2pm**

ILA ACTION ALERTS

- **Mississippi - Order Your Specialized NRA License Plate Today**
- **Washington - Urgent Message for King County NRA Members Attention All Northern Virginia**
- **Shooters: Bull Run Shooting Center Is In Trouble!**
- **Beware of Continued Attempts To Extend the Clinton Gun Ban**

[more...](#)

More NRA News & Information....

Legislation & Politics

- A Bush League NAACP Move
- Analyzing the Second Amendment
- Robber Baron? Meet John Edwards' Sleazy Friend
- Kerry's Take On The Left Coast
- Kerry Campaign's Attack Backfires

[more...](#)

Membership

- Sign up of our Newsletter today!
- Change Your Mailing Address or Magazine ONLINE!
- Charlton Heston Commemorative Rifle
- Sweepstakes
- Membership Benefits & Special Offers
- Member Discount Programs

[more...](#)

Visit NRA's Other Websites



click here to go now



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NRA-ILA

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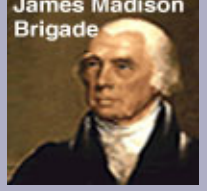
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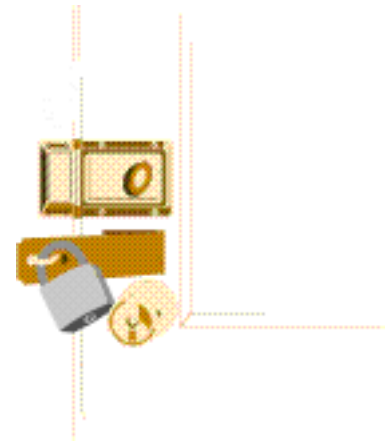
SURVIVAL Guide

When an Intruder is in Your House

With some advance preparation, you should be able to protect yourself in this scenario.

First, you should always have a saferoom in your home. While these can be elaborate vaults, a heavy door and solid lock on the master bedroom is usually sufficient.

Second, you should have good locks on all the doors and windows, and you should not leave them unlocked when you retire for the evening. This will mean the intruder cannot just walk in, but must break in, which should give you some advance warning. A loud dog (of any size) is a great warning mechanism.



There may be a few gung ho readers who will grab their gun and go prowling through the house searching for the intruder, but as anyone who has any training knows, it is much easier to defend a safe room than sweep the house. Here's your best bet:

1. Retreat to the saferoom and lock the door.
2. Call the police. Stay on the line if they let you.
3. Get your gun out and load it (if you don't keep it ready and loaded). Point the gun at the door.
4. If the intruder approaches the door or tries the handle, yell out "I've called the police. I have a gun. If you try to come in here, I'll shoot." This *should* be enough to scare any smart criminal off.
5. Unfortunately, not every criminal is smart -- or maybe the intruder is out to get you. If the intruder persists in pursuing you and kicks at the door or tries to break it down, fire a shot through it. Aim just inside and above the doorknob.
6. If the onslaught continues and/or the intruder actually enters the room, aim the gun and shoot until the intruder no longer presents a threat (i.e. falls to the ground, turns

and runs, etc.)

7. When the police arrive, have them check the house thoroughly.
8. Captain Dave is not an attorney and does not give legal advice (see our [disclaimer](#)), however it is his opinion that in the above situation you would be exonerated because you used lethal force to defend yourself from the threat of death or grave bodily danger. This may be a cliché, but that doesn't make it any less accurate: It is better to be judged by 12 than carried by six.

The scenario is a little different for families with children, or those with house guests, infirm parents or others in the house who do not sleep in the master bedroom. For a family, the best bet is to have one gun-equipped adult guard the stairs or hallway leading toward the bedrooms while the other collects everyone and retreats to the safe room. Don't bother explaining, just grab children and run.



A pistol is ideal for standing guard at the doorway and is easy to store and can be quick to load (with speed loaders or a charged magazine). It allows you to be mobile and is harder to take away from you than a long gun. Unfortunately, it is not the most effective weapon for stopping an assault.

A 12 or 20 gauge shotgun loaded with buck shot is a usually more likely stop an attack with one shot. It is perhaps the ideal weapon for use when barricaded in the safe room. For women or smaller stature adults, the butt of the gun can be braced against a wall or the bed's headboard to prevent recoil (a wooden stock may break, but so what?)

A rifle or carbine may (depending on the caliber) have too much penetration ability for safe use in an urban area (the bullet could pass through your house, endangering others in the neighborhood).

Captain Dave recommends having both a pistol and shotgun in the safe room.

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Going Postal

Unfortunately, this scenario has happened all too often.

It's too late when a past employee or customer "goes postal" (our apologies to the PR folks at the USPS). Businesses should do everything they can to prevent situations from reaching this boiling point. But that's a topic for another web site.

If you are in a work environment or any other crowded area, such as a bus, train, sporting event, department store, mall, etc. and shooting or similar violence breaks out, you need to make a choice.

You can hide and try to save yourself or you can resist. If you resist, you may be the hero of the day. You may also end up on a slab in the morgue. Or in the courtroom ("But Your Honor, I didn't know the skell shooting the suit was an undercover police officer!") So pick your spots carefully. You are not legally obligated to protect others, although you may (perhaps should) feel a moral obligation to do so.

If you can clearly identify the "bad guy" (the crazed pro-lifer blowing away the innocent receptionist for example), you can intervene.

If you feel you are in immediate danger of death or grave bodily harm from someone who has the means to inflict it at hand, then you can react (he threatened to make you all regret your decision to fire him and now he's returned, toting a Mac 10 and yelling for you to come out and face him like a man). If an angry co-worker stands in your door and yells threats, you would be unjustified in shooting him, but perhaps not in escorting him from the premises.

If any individual stands up in a crowded area and starts shooting what appear to be innocent bystanders, or slashing them with a sword or otherwise causing them grave bodily harm, you are on stronger legal ground if you shoot him. But as we said above, you are under no legal obligation to throw yourself in the middle of the situation. Think of those around you. If you are shopping with your two young kids, your immediate obligation should be to get them to safety. Let the other shoppers worry about themselves -- their state of preparedness is not your concern. If you wish to put yourself in the line of fire,

become a law enforcement officer, and at least you'll get paid for it.

For situations like this, you can run up and tackle the offender (as two brave passengers did on the Long Island Rail Road), you can use an improvised weapon (like a chair) or you can shoot him with the concealed weapon you carry to protect yourself and your loved ones. Captain Dave thinks the latter option places you in the least immediate danger. Thankfully, more and more states have concealed carry laws.

Picking the proper concealed firearm is a topic of at least one article every month in the gun press. Check out the local newsstand for yourself. Here are a few guidelines:

Pick a weapon that is reliable and accurate. Remember that you usually get what you pay for and consider this life insurance.

- Don't get too large a weapon that will be difficult to conceal or too heavy to comfortably carry for long periods of time.
- Do balance the above with a caliber that has a good reputation as a stopper. That generally means at least a .38 special or 9 mm, although some would include a 380.
- Invest in good holsters (one is never enough) that suit all your styles of dress.
- Practice, practice, practice. Join a gun club or range and shoot at least monthly. The more proficient you are, the better you will be under pressure.



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Wrong Exit

Unfortunately, there are places in every major city where this could happen. And today's gang members are cold heartless thugs that would as soon beat you to death as look at you. Like the pack animals they are, numbers make them braver and more aggressive. Your key to survival in this situation is avoidance.

- Know where you are going and how to get there.
- Be aware of your surroundings at all times.
- Remember that your car can be a very effective weapon.

Simply put, don't take that exit. If you do, don't stop and don't let another car or cars box you in. Yes, there are neighborhoods where even the bad guys don't stop at red lights in the middle of the night,

There are books and courses on defensive driving techniques that will allow you to use your car to force the other vehicle out of the way. A punk that may pull out his own gun if you flash yours will probably jump out of the way if he thinks your 2,000 pounds of Detroit steel is not planning to swerve.

This scenario has gotten people killed. A weapon and some good proficiency with it may greatly improve your chances of survival, but avoiding the situation all together is your best bet for survival.

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Survival Medical FAQ

Medical FAQ version 2.0

September 1997

by Craig Ellis

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Editor's note: Craig is a New Zealander, so please excuse the unconventional (at least to us here in the U.S.) spellings in this document.

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Thanks to Richard DeCastro, Diana and Alan Hagan and Pat Turner for comments and suggestions.

Any constructive comments and debate are welcome. I welcome correction in any errors of fact. I apologize for any errors of grammar or spelling they are entirely mine. I've tried to avoid detailing specific managements for various conditions as I do not consider this to be an appropriate forum. I will, however, respond to specific questions, with suitable references on request.

Disclaimer: The author, Captain Dave, Captain Dave Inc., the webmaster, host and others associated with this site accept no responsibility for the use or misuse of this information. The practice of medicine is something that should only be practiced by trained professionals. If you start administering medical or surgical treatments without the appropriate skills you will kill

someone. Even in emergency situations, often no action is better than uninformed and untrained action. Any practice of survival medicine should be backed up with appropriate training. This information is offered as my personal opinion and should not be taken to represent a professional opinion or to reflect any views widely held from the medical community.

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1.0 Survival Medicine

What is survival medicine? My definition is: "the practice of medicine in a environment or situation where standard medical care and facilities are unavailable, often by persons with no formal medical training". This includes medical care while trekking in third world countries, deep water ocean sailing, in some cases isolated tramping and trekking in a developed country and of course post-The End Of The World As We Know It (TEOTWAWKI).

The basic assumption is that trained doctors and hospital care will be unavailable for a prolonged period of time and that in addition to providing first aid, definitive medical care and rehabilitation (if required) will need to be provided. Also the basics of personal and public hygiene will also need to be considered.

As is the case with any aspects of preparedness you need to decide what you are preparing for and plan accordingly. For some it will only be a 72 hr crisis; For others it will be a major long term event. Your medical preparations will need to reflect your own risk assessments, in terms of what knowledge and skills you develop and what you store. This FAQ is more slanted to longer term preparedness, but much is applicable to shorter term situations.

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2.0 What do You Need to Know?

The more the better. Keep reading and attend all the courses you can. In addition to an advanced EMT course the following skills are what I feel the person filling the role of "medic", should aim to be able to do:

- Use a medical dictionary and a basic medical textbook.
- Perform basic bandaging and dressings. Clean a wound, debride a burn.
- Use local anesthetic to numb a wound.
- Debride and suture a wound, but also know when not to suture a wound, and leave it open or perform delayed closure.
- Deliver a baby and afterbirth. Suture a tear, manage a post-partum bleed.
- Reduce and immobilize a short and long bone fracture/dislocation.
- Use basic counseling skills.
- Understand basic hygiene and preventive medicine practices.
- Recognize and treat common infections:
 - viral flu
 - pneumonia
 - urinary infection
 - wound or skin infection
 - common STD's
- Recognize and treat common medical and surgical problems:
 - asthma/respiratory distress
 - abdominal pain - renal stones/appendix/biliary stones
 - allergic reactions/anaphylaxis
- Look after some one who is bed bound, e.g. basic nursing care, managing the unconscious patient, catheterisation.
- Use basic dental skills, simple fillings, infections, extractions.
- Insert an IV and understand basic fluid resuscitation.

- Improvise medical equipment and supplies.

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3.0 Training

The most important aspect of survival medicine is to obtain knowledge and the skills related to it. Medicine is dangerous and uninformed decisions and actions will kill people. But, having said that, a lot of medicine is common sense. Anyone with a bit of intelligence, a good anatomy and physiology book, and a good medical text can easily learn the basics. Although, I have to stress: There is no alternative to a trained health care professional; anything else is taking risks. Obviously in survival situation any informed medical care is better than no medical care. Notice I said informed, if you really don't have a clue what you are doing, you will be very dangerous.

3.1 Formal Training

- Professional medical training: One option is undertaking college study in a medical area e.g. Medicine, Nursing, Physicians Assistant, Paramedic, Vet, etc. Obviously this is not an option for many, but it is the ideal situation.
- EMT/Wilderness EMT Course: The much more realistic option. These courses give an basic background in anatomy and physiology, medical terminology and the essentials of emergency medicine. It provides the basis for additional self-directed learning. Most community colleges offer these courses. The basics are well covered in the "first responder" courses, which, although very elementary, provide a good stepping stone to the more advanced courses, while not requiring the same time commitments as full EMT courses.

3.2 Informal Training

There are a variety of options here. Certainly, locally (New Zealand, and I realize the US

may be different) it is possible to gain some experience in an ER. In our emergency department we regularly have a variety of people coming through for practical experience, from army medics, to off-shore island forest service staff, to fishing boat medics. If you can provide a good reason for wanting to gain skills in the emergency room such as "sailing your boat to the South Pacific", then the potential to gain practical experience in suturing, inserting IV's, and burns management is there. Another option is befriending (or recruiting) a health care professional and arranging teaching through them. It is common for doctors to be asked to talk to various groups on different topics, so an invitation to talk to a "tramping club" about pain relief or treating a fracture in the bush would not be seen as unusual.

3.2 Volunteering

Many ambulances and fire services have volunteer sections or are completely run by volunteers. Through these services you may be able to obtain formal EMT training and at the same time gain valuable practical skills and experience, overcome fear of dealing with acutely sick people and also work with some great people.

Organizations such as the Red Cross or Search and Rescue units also offer basic first aid training as well as training in disaster relief and outdoor skills. It is also often possible to arrange "ride alongs" with ambulance and paramedic units, as the 3rd person on the crew.

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4.0 Organization

If you are alone or just a couple then organizing your medical care is relatively straightforward. However the larger the group the more formalized and structured your medical care should be. Someone within your group, ideally with a medical background, should be appointed medic. Their role is to build up their skill and knowledge base to be able to provide medical care to the group. There should also be a certain amount of cross-training to ensure that if the medic is the sick one, there is someone else with some advanced knowledge. The medic should also be responsible for the development and rotation of the medical stores and for issues relating to sanitation and hygiene. In regard to to medical matters and hygiene their decisions should be absolute.

Another important area is that of confidentiality and trust. This is a corner stone of any medical relationship. It may seem an odd thing to mention in regards to a survival situation, but all doctors, nurses, paramedics will tell you without trust you can't practice. You need to trust that what you tell your medic will go no further and personal problems won't become dinner-time conversations. Obviously, this has to be weighed against the "common good" of the group, but unless it would place the group in danger there should be an absolute rule of confidentiality.

Even in a survival situation documentation is important. You should keep a record of every patient you treat. What they complained of, your history and examination, what you diagnosed and how you managed them, a very clear note of any drugs you administer and a description of any surgical procedure you perform should all be recorded. Anyone with an ongoing problem should have a chronological record of their condition and treatment over time recorded. There are two reasons for this. First is that for the ongoing care of the patient, often it is only possible to make a diagnosis by looking over a course of events within retrospect and it is also important to have a record of objective findings to compare, to recognize any changes over time in the patient condition. Second is for legal reasons. If

and when things return to normal it may be important to justify why certain decisions were made. Detailed notes from the time will make this easier. It is also useful to have medical records on members of your group prior to any event, including things such as blood groups and any possible medical problems.

The persisting survival theme of how you deal with the "have not's" when they approach you, applies to medicine as much as to food and other supplies. Obviously complete isolation is one option, but this is unlikely to be that common. How do you deal with the stranger dumped on you with the gunshot wound or pneumonia? It's one thing to give them a meal, but do you give them the last of your IV antibiotics or your one dose of IV anesthetic? You need to have thought about these things. People can often "live of the land" and forage for food, but they can not forage for penicillin. Its also worth realizing that these people may be more likely to be in poor general health and also carriers of infectious diseases. This raises the question of isolation vs community involvement again. One possible option may be to quarantine the refugees for a period before any contact with your group.

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5.0 Reference Books

Good medical reference books are vital. The following is a list in two parts. First are books I think are a really solid starting point for a survival medicine library and then a selection of other useful medical books with varying strengths and weaknesses. What you prefer is to a great extent personal opinion. Most can be obtained from any university book shop, Paladin Press or from Amazon.com. There are titles and authors for all books, but only ISBN's and approximate prices (US\$) for some.

(Editor's note: We have provided a link to Amazon.com which allows you to order any of these books directly from this page. In a few cases, the links provide more information, including the table of contents.)

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5.1 Must haves:

1. [Where There is No Doctor](#). By Werner. Hesperian Foundation 1992 \$17 If you buy no other medical book, you must have this one. This is the must-have of survival medicine; it WILL save lives. Although slanted to the third world (= TEOTW... environment ?) and the tropics, it contains the essential basics of all aspects of medicine.
2. A good medical dictionary.
 - o [Dorland's Illustrated Medical Dictionary](#). By Dorland 1994 \$44.50

- [Mosby's Medical Dictionary](#). By Anderson 1993 \$27.95
- 3. An Anatomy and Physiology reference.
 - [Functional Anatomy and Physiology](#). By Yamamoto. 1996 \$30
 - [Essentials of Anatomy and Physiology](#). By Scancon.
 - An anatomy atlas such as Grays or Grants are also excellent for any do-it-yourself surgery. :-) N.B there are a number of collectors editions of Grays anatomy, you should avoid these if possible and purchase a new edition.
- 4. [Where There is No Dentist](#). By Dickson. Hesperian Foundation 1983, \$9 The only book of its kind. Very good. Dental care is a very under-estimated survival problem.
- 5. An emergency medicine reference
 - [Emergency Care in the Streets](#). By Caroline. 1995. \$49.95

My choice, but both are good books. Textbooks of paramedic care.

 - [Mosby's Paramedic Textbook](#). By Sanders \$48.95
- 6. A drug reference guide
 - In USA - Physicians Desk reference
 - In UK - British National Formulary
 - In Aust - PIMS
 - In NZ - New Ethicals catalogue
- 7. [Ditch Medicine](#). Coffee. Paladin press. \$25 Vital for basic emergency surgical procedures and a stepping stone into more advanced stuff
- 8. A Herbal/Medicinal Plant guide to your area. The basis of most of the modern drugs is in plants and large numbers have potent medicinal properties. Also local indigenous peoples often have books about their traditional medicine. You need to be careful separating out what's useful and what's not, but it may be very valuable in a major long term event.

A good starting point :

- [Medical Botany](#). W.H Lewis; John Wiley and sons. 1977. \$47.96

5.2 General Books

(* = my recommendations)

- [*Oxford Handbook of Clinical Medicine](#). Hope. Oxford University Press. 1995. \$25 Excellent coverage of basic medical principles aimed at the junior doctor level.

- [*Oxford Handbook of Clinical Specialties](#). Collier. Oxford University Press. 1993 \$27.95. As above except covers the specialties including OBGYN,

- pediatrics, orthopedics and anesthetics.
- [Current Medical Diagnosis and Treatment](#). Tierney. Lange. 1997 Up-to-date management of common medical problems, requires some advanced knowledge.
 - [Oxford Handbook of Emergency Medicine in General Practice](#). Lawrence. Oxford University Press. 96. \$30 good coverage of the basics of emergency medicine in easy to read format.
 - [Merck Manual Vol. 1: General Medicine](#). Berkow. MSD. 93. \$12. Good reference, but can be complicated and verbose
 - [Merck Manual Vol. 2: Specialties](#). Berkow. MSD. 93. \$15 {Both volumes are also available as a combined text, for about \$25. The entire Merck Manual is available for download from the "Virtual Hospital" site.}
 - [International Medical Guide for Ships](#). W.H.O.
 - *Ships Captains Medical Guide. Her Majesty's Stationary Office. 1983 My personal favorite. I would recommend this book to everyone. It covers the management of most common problems in an excellent format, designed for ships isolated at sea. Also good description of drugs and when to use them. The new 22nd edition is in press. The american equivalent is called " The Ships medicine chest and medical care at sea " and is published by the US office for public health.
 - [Advanced First Aid Afloat](#). Eastman.
 - [Onboard Medical Handbook](#). Gill. \$15
 - [Medical Emergencies at Sea](#). Kessler.
 - [Medicine for Mountaineering](#). Wilkerson. \$15
 - [Wilderness Medical Society: Practice Guidelines for Wilderness Emergency Care](#). Forgery. 1995 \$12.95
 - [*Wilderness Medicine: Management of Wilderness and Environmental Emergencies](#). Ed Auerbach \$179. I recently bought this book, and can strongly recommend it. Given its price I would suggest only those who already have a good basic knowledge consider buying it.
 - [*Book for Midwives : A Manual for Traditional Birth Attendants and Midwives](#). Klein. Hesperian Foundation. ISBN 0942364228 Best book of its kind. Safe childbirth in a low-tech environment with minimal backup.
 - [Maye's Midwifery Textbook](#). Sweet. \$49.95
 - [Survivalist Medicine Chest](#). Benson. Paladin Press. 1983 ISBN 0873642562 \$10. A little dated. Some advice I consider a little suspect, but generally a good book.
 - [Do-It-Yourself Medicine](#). Benson. Paladin Press 1996. ISBN 0873649184 \$20. I have not seen this book, but understand it is the up dated version of Medicine Chest, and addresses some of that books problems. Recommended by many.

- [*US Special Forces Medical Handbook](#). Paladin Press. 1987. Again a little dated, but still an excellent book. Even the new edition is still not completely up to date. But its strengths overcome this. Good coverage all areas including surgery, dentistry and preventive medicine.
- [Wounds and Lacerations - Emergency Care and Closure](#). Trott. Pub Mosby.
- [Emergency War Surgery](#). Bowen. 1994 ISBN 0788102915 \$60 Excellent book but, very technical.
- [*Emergency War Surgery: US revision of Nato Handbook](#). G.P.O 1988 \$50. The do-it-yourself surgery guide. Designed for junior doctors with minimal trauma experience going into a war zone. Starting to be a little dated, but the basics don't change.
- Field Surgery Pocket Book. Her Majesty's Stationary Office. British version of the above. I personally prefer this one to the NATO handbook, but each are equally good.

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6.0 Medical Kits

What you stock up on should be related to what you know how to use and what you can obtain. There are potentially thousands of drugs and different pieces of medical equipment and you can't stock everything.

Fortunately, it is possible to manage 90% of medical problems with only a moderate amount of basic equipment and drugs. Obviously, sometimes the treatment may not be as such high quality as that provided by a proper hospital, but it may be life saving and reduce long term problems. For example, a broken tibia is usually managed by a general anesthetic, an operation for an internal tibial nail, followed by pain relief and physio. But it can be managed by manipulation with analgesia and immobilization with an external splint for 6-8 weeks and as a result the patient may be in pain for a few weeks and have a limp for life, but still have a functioning leg.

Also, appendicitis has been treated with high dose antibiotics when surgery has been unavailable such as on a submarine or in the Antarctic. Although in both cases management is sub-optimal and may have some risk, in a survival situation it can be done and may be successful, with limited medication and equipment.

Obtaining medications can be difficult. The problem is two-fold. First is access and second is cost. Below are some suggestions for legally obtaining medicines for use in a survival medicine situation.

- Talk to your doctor. Be honest explain exactly why and what you want, that you want to be prepared for any disaster and have some important basic meds available, for if medical care isn't freely available. Demonstrate an understanding of what each drug is for and that you know how to safely use it. Most MD's would probably be very supportive. Although, I would suggest that you don't request narcotics the

first time. Then return the meds when they have expired, this will confirm that you are not using them inappropriately.

- Discuss with your MD your plans for a trekking holiday. Most MDs recognize the importance of an adequate medical kit if you are traveling in the 3rd world or doing isolated backpacking. Most would prescribe antibiotics, rehydration fluid, simple pain killers, anti-diarrhoea meds, antibiotic and fungal creams, and if climbing steroids and frusemide for AMS.
- Buy a boat. Australia, New Zealand and the UK, require all boats sailing beyond coastal limits to carry a comprehensive medical kit. This includes antibiotics, strong narcotic analgesia and a variety of other meds. Although not a legal requirement in the US, I imagine most MD's would happily equip an ocean going yacht with a comprehensive medical kit, especially if you can demonstrate a basic medical knowledge. The US Public Health service offers suggested medications and equipment, depending on numbers and expected isolation.
- Prescription medicines are available over the counter in many third world countries. I am unsure of the legalities of purchasing these. I imagine a single course of antibiotics would be unlikely to be a problem, but that large amounts or narcotics would be illegal. (*Editor's Note: Many U.S. residents bring antibiotics and other drugs back from Mexico. While it may be legal to bring back drugs for your personal use, you should consult with your personal legal advisor before facing customs uninformed.*)
- Not for human use. Veterinary meds are widely available and relatively cheap. Several books discuss obtaining them (Benson's books, [see book list](#)), so I won't cover it in detail here. I personally don't recommend this, but obviously for some it is the only viable option.

Generally speaking, most veterinary drugs come from the same batches and factories as the human version, the only difference being in the labeling. This is the case for most common single-component drugs such as antibiotics. If you are going to purchase veterinary medications I strongly suggest only purchasing antibiotics or topical preparations and with the following cautions:

1. Make sure you know exactly what drug you are buying
 2. Avoid preparations which contain combinations of drugs and also obscure drugs for which you can find no identical human preparation
 3. Avoid drug preparations for specific animal conditions for which there is no human equivalent.
 4. Buy drugs which are generically identical to their human counterparts, e.g. Amoxycillin 500mg (Vet) = Amoxycillin 500mg (Human), etc.
- Obtaining general medical supplies is often easier. Basic bandages and stethoscopes, etc. can be bought from any medical supply house. I understand there is no federal law prohibiting the purchase of things like sutures, syringes, needles, IV's etc., but some states can make it difficult.

Try looking in the yellow pages for medical or emergency medical supply houses or veterinary supplies. A number of commercial survival outfitters offer first aid and medical supplies, however I would shop around before purchasing from these as their prices, in my experience, are higher than standard medical suppliers.

The above approaches for obtaining medicines can also be used for obtaining medical equipment if you do have problems. The most important point is to be able to demonstrate an understanding of how to use what you are requesting.

I've included three kits. The first is designed for someone with some limited medical knowledge and a good book. A lot of common problems can be managed with it, minor trauma (cuts and minor fractures), simple infections and medical problems. The second is designed for someone with extensive medical training and should be able to cope with 90% of common medical problems, including some surgery, spinal and regional anesthesia, general anesthesia with ketamine, treating most common infections and medical problems, and moderate trauma. Obviously there is a vast middle ground between the two.

The kits are designed for long-term care rather than to cover short (48 hrs) delays in getting to formal medical care. The third is a reprint of the medical scales for British flagged commercial vessels, to give you an idea of what the "experts" believe is required for isolated intermediate term survival medicine.

NOTE:

1. I've tried to use the international generic names for drugs. However, there are some differences between the British and the US pharmacopoeias and where possible I've tried to include both e.g. Lignocaine (UK & NZ) = Lidocaine (US)
2. I have not included any quantities. This is dependent on what you are planning for and what you can afford. Unfortunately most medications require rotation, with 1-5 year shelf lives, making this a costly exercise, as they are not like food you can rotate into the kitchen
3. Always store a supply of any medicines you take regularly. Blood pressure pills, allergy pills, contraceptive pills, asthma inhalers etc.

Select the kit you wish to see:

- [Small kit](#)
- [Large kit](#)
- [Ocean Kit](#)

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Small Medical Kits

I have tried to include a description of each item and some uses.

- Combat Dressings
- Large gauze dressings
- Small gauze squares
- Roller Bandages elastic + cotton (2in/4in/6in)
- Triangular Bandages
- Band-Aids -assorted sizes and shapes (i.e. finger tips)
- Slick Tape 1 in. (waterproof, plastic/elasticated tape)
- cotton buds (q-tips, cotton tips)
- thermometer (rectal or pacifier for children)
- Chlorhexidine and cetrimide (antiseptic) or Povidone-Iodine
- Antibacterial Soap
- Lignocaine 1% (local anesthetic) (USA = Lidocaine)
- Augmentin (antibiotic) (a broad spectrum antibiotic)
- Acetaminophen (mild analgesic)
- Diclofenac (mod analgesic) (a nonsteroidal anti-inflammatory)
- Oral Rehydration powder
- Loperamide (anti-diarrhoeal)
- Benedryl &/or Claratyne (antihistamines, short + long acting)
- Adrenaline auto injector or Anakit (USA = epinephrine)
- Morphine Sulphate (strong pain killer) if available
- Gamma Benzene Hexachloride (lice/scabies tx)
- Clotrimazole (anti-fungal)
- Contraceptive pills/Condoms
- Paramedic scissors
- Surgical scissors

- Needle holder
- Sm curved clamps
- Tissue forceps
- Scalpel blades
- Emergency Obstetric Kit (includes bulb suction)
- Vicryl 2/0 suture material

Your choice of suture material is up to you. Vicryl is a synthetic dissolvable one, but takes up to 4-6 weeks to dissolve, so I think it is the ideal survival thread. But a variety of non-dissolvable sutures are available which will last forever.

- 5ml syringes
- 20g needles
- Oil of cloves (tooth ache)
- Emergency dental kit (commercial preparation)

A smaller kit for your bug-out bag could be made up from the above. Include some combined dressings, a couple of bandages, Band-Aids, tape, some tylenol, Benedryl and some loperamide.

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Large Kit

This list may seem extreme, but is designed for a well trained person in a worst case scenario. Even though it is a long list, it all packs down. Mine, which has a similar content, packs into two medium size nylon multi-compartment bags and a Plano rigid 747 box. I haven't included descriptions of what specific items are, on the assumption that if you don't know what it is, you shouldn't have it or try to use it.

General

- Large gauze dressings
- Sm gauze squares
- Combat dressings
- Petroleum gauze
- Plastic bags
- Band-Aids - assorted sizes and shapes
- Elastoplast dressing
- Steristrips - assorted sizes
- Tincture of Benzoin
- Roller (elasticated + cotton) bandages (2in/4in/6in)
- Triangular bandages
- Safety pins
- Cotton buds
- Paper tape (1/2 in/1in)
- Slick tape (1/2in/1in)
- Oropharyngeal airways
- Resuscitation face mask with one way valve
- BP cuff
- Stethoscope

- Otoscope
- Sm Torch (flash light)
- Thermometer (rectal for children)
- Heavy duty scissors
- Space blanket
- Air splints (arm/long-leg/short-leg)
- SAM splints
- Plaster of Paris (or fiberglass) roller bandages (4in/6in)
- Multidip. urine test strips
- Pregnancy test kits
- Sterile and unsterile latex gloves
- Scrub Suits
- Fluorescence eye strips
- Eye patches
- Sm eye magnet (for FB's)
- Snake bite kit (for those of you unlucky enough to have them :-))

The Sayer suction kit is recommended. It is slightly more expensive, but I understand more effective in removing venom. I refer you here to the excellent [rec.backcountry FAQ on Snake Bites](#)

IV Kit

- Normal Saline
- Haemaccel or Pentaspan (a colloid resuscitation fluid)
- IV giving sets - maxisets + standard sets
- Blood collection bags + filter giving sets
- Syringes 2/5/10/20 ml
- Needles 20/22/24 g
- IV cannulas 16/20/24g
- Spinal needles 22g
- Leur locks/Heparin locks
- Tourniquet
- Alcohol Wipes

Surgical Kit

- Mayo scissors
- Dissecting forceps
- Sm curved clamps
- Sm straight clamps
- Lg curved clamps
- Scalpel Handle + Blades (size 11,12,15) or disposable scalpels

- Sm Bone Saw
- Lift Out obstetric forceps
- Emergency Obstetric Kit (includes cord clamps, bulb suction etc.)
- Suture Material
 - Vicryl 0/,2/0
 - Chromic 0/,2/0
 - Dermalon 0/, 2/0 Surgical stapler and remover
- Hemilich flutter valve
- Penrose drains
- Foley Urethral Catheters
- Urine Bags
- N-G tubes + spigots

Dental Kit

- Oil of cloves
- Zinc Oxide paste
- Dental mirror
- Sharp probe
- Compactor
- Extraction forceps

Medications

- | | |
|-------------------------------|------------------------|
| ● Povidone - Iodine Prep | antiseptic skin prep |
| ● Alcohol prep | antiseptic skin prep |
| ● Chlorhexidine and cetrimide | antiseptic handwash |
| ● Benalkium Chloride | antirabies skin wash |
| ● Antibacterial Soap | |
| ● Paracetamol oral | mild analgesic |
| ● Aspirin oral | wonder drug |
| ● Diclophenic oral | mod analgesic (nsaid) |
| ● Morphine iv/im/sc | strong analgesic |
| ● Narloxone iv | antagonist to morphine |
| ● Ketamine iv/im | iv anesthetic |
| ● Diazepam iv | hypnotic/sedative |
| ● Atropine iv | pre-med/poison anti |
| ● Lignocaine top/spinal | local anesthetic |

- Metoclopramide iv/im anti-emetic
- Augmentin oral/iv penicillin antibiotic
- Metronidazole oral anaerobic antibiotic
- Cefaclor oral cephalosporin
- Ceftriaxone iv cephalosporin
- Ciprofloxacin oral quinolone antibiotic
- Mebendazole oral antiparasitic
- Clotrimoxazole top anti-fungal
- Adrenaline iv/im (USA = Epinephrine)
- Salbutamol inhaler asthma/anaphylaxis
- Rehydration formula dehydration
- Benedryl &/or Claratyne oral antihistamine (short and long acting)
- OTC Cough suppressant
- Betnesol oral steroid
- Hydrocortisone iv/cream steroid
- Loperamide oral antidiarrhoeal
- Ergometrine &/or Oxytocin im/iv ecobolic for PPH
- Neomycin eye drop antibiotic eye drops
- Pilocaine eye drops local anesthetic
- Starr Otic Drops antibiotic ear drops
- Mupirocin (Bactroban) top topical antibacterial cream
- Gamma Benzene Hexchloride top for scabies and lice
- Water for injection/normal saline for injection
- Oral Contraceptive Pills
- Condoms/Cervical Caps/Diaphragms

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Ocean Kit

British medical scales for ocean going ships, from the Marine safety agency, Merchant Shipping Notice No.M.1607. It is compatible with the medical treatments described in the "Ship's Captain Medical Guide", the new edition (22nd) of which will be published shortly. The amounts suggested are per 10 people.

Drugs

Medicine	Dose	Format	Quantity
Cardiovascular:			
• Adrenaline 1:1000	1ml	amp	5
• Glyceryl trinitrate	0.4mg	inhaler	1
• Frusemide	40mg	tab	20
• Frusemide	10mg/ml	2ml amp	2
• Vitamin K	10mg/ml	1ml amp	1
• Ergometrine	0.5mg.ml	1ml amp	2
• Atenolol	50mg	tab	10
• Aspirin	75mg	tab	25
Gastrointestinal:			
• Cimetidine	400mg	tab	30
• Promethazine	25mg/ml	1ml amp	10
• Prochlorperazine	3mg	tab (buccal)	30
• Glycerol suppository	4gms	supp	6
• Codeine phos	30mg	tab	60
Analgesics:			
• Paracetamol	500mg	tab	100
• Diclofenac sodium	100mg	supp	3
• Morphine sulphate	10mg/ml	1ml amp	10
• Codeine phos as above			

● Hyoscine	0.3mg	tab	20
Nervous:			
● Diazepam	5mg/ml	2ml amp	5
● Diazepam	10mg	tab	20
● Chlorpromazine	25mg	tab	40
● Chlorpromazine	25mg/ml	1ml amp	5
● Hyoscine as above			
● Diazepam rectal	10mg/2.5ml	rectal tube	4
Anti-allergics/Anti-anaphylactics:			
● Astemizole	10mg	tab	30
● Prednisolone	5mg	tab	10
● Hydrocortisone	100mg/2ml	powder for inj	3
Respiratory:			
● Salbutamol	100 microgms	inhaler	1
● Beclometasone	50 microgms	inhaler	1
Anti-infection:			
● Benzylpenicillin	600mg	powder for inj	10
● Ciprofloxacin	500mg	tab	10
● Cefuroxime	750mg	powder for inj	20
● Erythromycin	250mg	tab	40
● Trimethoprim	200mg	tab	30
● Medendazole	100mg	tab	6
● Metronidazole	1gm	supp	12
● Metronidazole	400mg	tab	14
● Doxycycline	100mg	tab	10
● Tetanus vaccine	0.5ml	amp	5
● Tetanus immunoglobulin		amp	1
Rehydration:			
● Oral Rehydration fluid	sachets = 1 L	10	
External preparations:			
● Chlorhexidine and Cetrimide	solution	100mls	
● Neomycin cream	15gm	1	
● Benzoic Acid	6% oint	50gm	1
● Silversalazine cream	1%	50gms	2
● Malathion	0.5% cream	200mls	3
● Zinc ointment	25gms	2	
● Potassium permanganate	crystals	10gm	1
● Hydrocortisone cream	1%	15gm	2
Eye medications:			

● Framycetin sultphate	0.5% ointment	5gm	4
● Betamethasone 0.1%/ Neomycin 0.5%	eyedrops	5mls	1
● Amethocaine eyedrops	0.5%	0.5ml	5
● Pilocarpine eyedrops	0.5%	0.5ml	1
● Fluorescein eye test strips	1%		10

Nose/ear/throat:

● Antibiotic ear drops	5mls		1
● Neomycin/polymixin B/ hydrocortisone ear drops	5ml		1
● Ephedrine nose drops	0.5%	10ml	1
● Chlorhexidine gluconate mouthwash	0.2%	300mls	1

Local anaesthetics:

● Ethylchloride spray	50mg		1
● Lignocaine 1%	20mg/2mls	2ml amp	2
● Oil of cloves	10mls		1
● Lignocaine gel	2%	20g	1

General Medical Supplies**Resuscitation equipment:**

Oxygen giving set - oxygen reservoir	1
● flow meter	1
● pressure regulator	1
● oxygen tubing	1
● 24% face masks	5
● 35% face masks	5
Suction aspirator	1
Laerdal pocket mask	1
Guedal airway size 3	1
Guedal airway size 4	1

Dressing and suturing equipment:

Item	Size	Quantity
Suture and needle pack		
● sterile non-absorbable	26mm half needle	3

● sterile non-absorbable	40mm half needle	3
● sterile absorbable	40mm half needle	26
● 75mm steri-strips		6
Crape bandage	7.5cm x 4.5 m	4
Elastic adhesive	7.5cm x 4m	4
Trianglular bandage		4
Tubular gauze	finger size/ 20m	1
Conforming bandage	5cm x 5m	20
Conforming bandage	7.5cm x 5m	20
Paraffin gauze dressing	10cm x 10cm	40
No 13 BPC Dressings)		5
No 14 BPC Dressings)	arying size gauze pad with	5
No 15 BPC Dressings)	attached rollar bandage	4
No 16 BPC Dressing (eye pads)		3
Gauze sterile cotton	30 x 90cm	6
Cotton wool	15gm sterile	6
	100gm unsterile	3
Adhesive tape	2.5cm x 5m	1
Adhesive suture strips		pkt of 52
Bandaid	assorted	40
Zinc oxide plaster tape	2.5cm x 5 m	1
Gauze swabs	10cm x 10cm	100
Plastic Burns bags	46cm x 31 cm	5

Instruments

● disposable scaples No 23		2
● scissors 18cm		1
● scissors 12.5cm		1
● dissecting forceps		1
● haemostatic clamps		1
● needle holder		1
● disposable razors		2

Examination and monitoring equipment

Disposable tounge depressors	4
Reactive urine analysis test strips	50
Stethoscope	1
Sphygmomanomter	1
Std clinical thermometer	3

Hypothermia thermometer	1
Sputum cups	2
Specimen jars	2

Equipment for injection, perfusion and catheterisation

Bladder drainage set (bag/spigots/tube)	1
Rectal drip set	1
Syringes and needles (2ml / 5ml / 10ml of each)	6
Foley ballon catheter 16fr	1
Nelaton catheter 16fr (no ballon)	1
Penile sheath set	1

General Medical Equipment

Bedpan	1
Hot water bottle	1
Magnifying glass	1
Urine container	1
Ice bag	1
Safety pins	6
Kidney dish (stainless steel)	1
Lotion bowl (stainless steel)	1
Waterproof sheeting, 1m x 2m	2
Sterile plastic sheet , 90cm x 120cm	1
Nail brush	1
Disposable paper towels	100
Plastic measuring jug, 1/2 L	1
Disposable face masks	6
Disposable latex gloves	25
Disposable latex gloves, sterile	5
Malleable finger splint	1
Malleable forearm splint	1
Inflatable splints (half-leg/full leg/half-arm/full arm)	1 set
Thigh collar	1

Neck collar (sm/med/large)	1 set
Thomas splint	1
Seton traction kit	1
Disinfectants	
• chlorine compound	sufficient for 50l water
• general disinfectant	1L
• insecticide	
○ Liquid	5L
○ Hand spray	1
○ Powder	15gm

Dental instruments

Excavator double ended, Guy's pattern	1
Filling paste inserter	1
Dental mirror size 4	1
Cavit tube (temp filling inserter)	1

Stretcher Equipment

Neil Robertson/ Paraguard type 1

First Aid Kit (per 10 people)

Triangular Bandages	4
Small dressings (13 BPC)	4
Med dressings (14 BPC)	2
Large dressings	2
Medium safety pins	6
Band-aids assorted	20
Sterile eye pads	2
Cotton wool	15gms
Disposable gloves	5

Doctors Bag (if doctor is carried on board)

Adrenaline, 1:1000	1ml amp	5
Aminophylline, 25mg/1ml	10ml amp	4
Aspirin, 300mg	tabs	50
Beclomethasone, 50microgm	inhaler	1
Chlorpromazine, 25mg/1ml	1 ml amp	1
Cyclizine, 50mg/1ml	1ml amp	5
Dextrose, 50%	20ml amp	2
Diazepam, 5mg/ml	2 ml amp	5
Frusamide, 10mg/1ml	s ml amp	5
Glucagon, 1mg/ml	1 ml amp	1
Glucose infusion, 5%	500 ml bag	1
Blood glucose test strip		10
Blood glucose lancets		10
Grudel Airways	set of sizes 4,3,1	1
Hydrocortisone, 100mg/2ml	100mg vial	1
Insulin 100iu/ml rapid action	10ml vial	1
IV giving sets + cannulas + leur lock	16g/18g	6 (3/3)
Laerdal Pocket Mask		1
Plasma substitution infusion fluid		4
Morphine 15mg/1ml	1ml amp	5
Oxygen Resuscitator bag + tubing		1
Manual suction pump + 2 yankauer & 2 14fr catheters		1
Paediatric paracetamol 120mg	tabs	24
Prednisolone, 5mg	tabs	25
Salbutamol 100 micrograms	inhalers	1
Swabs Alcohol		50
Syringe and needle pack		
• 2ml syringe + 21g needle		2
• 20ml syringe + 21g needle		2
• 1ml insulin syringe + 25g needle		2
Stethoscope		1
Sphygmomanometer		1

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7.0 . Medications

The next two sections contain a significant amount of technical information. It is intended as a very brief overview and introduction of the subject area. I accept no responsibility for the accuracy or otherwise of this material. The following are more specific references for these topics :

Antibiotics

- Antibiotic Guide 1996. S. Lang. ADIS Press. 1995. (Local NZ book, most university hospitals produce similar)
- [Handbook of Antibiotics](#), R. Reese. Little Brown and Co. 1993
- Here's a suggestion from Captain Dave: [Pocket Handbook of Infection Agents and Their Treatments : A Quick Reference to Microbial Agents and the Drugs of Choice](#), by Nancy Hartman, Daniel Shapiro, Avery Publishing Group.

Microbiology

- [Microbiology : An introduction](#). G. Tortora. Benjamin & Cummings 1997 ISBN 0805385355
- Medical Microbiology and Immunology. Levinson. Lange 1996. ISBN 0838562256
- [Clinical Microbiology Made Ridiculously Simple](#). Mark Gladwin. Medmaster 1997. *** Excellent. My choice.***

Laboratory Medicine

No ideal book in this section, but these are a couple of suggestions.

- [Clinical Laboratory Medicine](#). K. McClatchey. Williams & Wilkins, 1994.
- [Medical Laboratory Haematology](#). 2nd Ed. Butterworth.

7.1 Storage and Rotation of Medications

Medications can be one of the more expensive items in your storage inventory and there can be a reluctance to rotate them due to this cost issue and also due to difficulties in obtaining new stock.

Unfortunately, drugs do have limited shelf life. It is a requirement for medications sold in the US (and most other first world countries) to display an expiration date. It is my experience that these are usually very easy to follow, without the confusing codes sometimes found on food products, e.g. -- Exp. 12/00=December 2000.

I cannot endorse using medications which have expired. But having said that it is my understanding that the majority of medications are safe for at least 12 months following their expiration date. A colleague recently did some aid work in the Solomon islands and a local pharmaceutical warehouse gave him a number of expired drugs. They stated that the drugs were safe to use for at least another 18 months. As with food the main problem with expired medicines is not that they become dangerous, but that they lose potency over time, and the manufacturer will no longer guarantee the dose/response effects of the drug. The *important exception* to this rule is the tetracycline group of antibiotics, which can become toxic with time, there may be others that I am unaware of but it is very difficult to obtain this information. Let the buyer beware, the expiry dates ARE there for a reason.

In addition, I recommend that if you are acquiring medications on a doctor's prescription that when you have the prescription filled you explain the medications are for storage (you don't need to say exactly what for), and request recently manufactured stock with distant expiration dates.

The ideal storage conditions for most medications is in a cool, dark, dry environment. These conditions will optimize the shelf life of the drugs. A small number of drugs require refrigeration to avoid loss of potency. These include insulin, ergometrine, oxytocin and some muscle relaxants. Others such as Diazepam rapidly lose potency if exposed to the light.

7.2 Antibiotics

7.2.1 Antibiotic Recommendations

Antibiotic Recommendations. In some cases access to antibiotics may be very limited. The following is my preferred list of antibiotics. If your limited in what you can get, I suggest you purchase and expand in this order. All are good broad spectrum antibiotics and have different strengths and weakness. I suggest you purchase an antibiotic guide, most medical book shops have small pocket guides for junior doctors detailing which drug to use for which bug and outlining sensitivities.

1. A Broad spectrum Penicillin (e.g.-- Amoxicillin+ Clavulanic Acid)
2. A Quinolone (e.g.-- Ciprofloxacin)
3. A Cephalosporin (e.g.-- Cefaclor)

NOTE: If allergic to Penicillin, I would advise A Quinolone as a first choice with some Metronidazole as a anerobe back-up. Alternative would be Erythromycin.

7.2.2 Antibiotic Summary

The Bugs:

A basic understanding of how bugs (read bacteria) cause infections is required to appropriately use antibiotics. I will not discuss viral or other infective agents here. This is not the forum for a proper discussion, so consider this a brief introduction. There are HUNDREDS of bacteria, I will only discuss common disease causing ones in man.

Four Classes of Bacteria

1. Gram positive (+ ve)
2. Gram negative (- ve)
3. Anaerobes
4. Others

Gram positive bacteria stain blue and gram negative bacteria stain pink, when subjected to a gram staining test. It is related to the presence or absence of a coating in the cell wall of the bacteria. Anaerobic bacteria are ones which require no oxygen to grow. Bacteria are also described by their shape (cocci = round, bacilli = oval) and how they are grouped together (chains, clusters, pairs)

Gram Positive Bacteria (Gram +ve)

- Staphylococcus: Commonest pathogen is S. aureus. Gram + cocci in clumps. Causes boils, abscesses, impetigo, wound infections, bone infections, pneumonia (uncommonly), food poisoning and septicaemia. Generally very sensitive to Flucloxacillin as first choice and Augmentin and the Cephalosporins. A strain

which is resistant to the above, known as MRSA and is currently treated with vancomycin.

- Streptococcus: Gram + cocci in pairs or chains. Most are not pathogenic in man, except Strep pneumoniae and the Strep pyogenes. Strep pneumoniae causes pneumonia, ear infections, sinusitis, meningitis, septic arthritis, and bone infections. Strep pyogenes causes sore throats, impetigo, scarlet fever, cellulitis, septicaemia and necrotising fasciitis. Very sensitive to penicillins, cephalosporins, and the quinolones.

Gram Negative Bacteria (Gram -ve)

- Neisseria meningitidis: Gram -ve cocci in pairs. Common cause of bacterial meningitis, may also cause pneumonia and septicaemia. Can be rapidly fatal. Sensitive to penicillins, cephalosporins, quinolones, cotrimoxazole and tetracyclines.
- Neisseria gonorrhoeae: Gram -ve cocci in pairs. Causes gonorrhoea. Sensitive to high dose amoxicillin (single dose), Augmentin and also cephalosporins and quinolones.
- Moraxella catarrhalis: Gram -ve cocci in pairs. Common cause of ear and sinus infections, also chronic bronchitis exacerbations. Sensitive to Augmentin, Cephalosporins, Quinolones and Cotrimoxazole and tetracyclines.
- Haemophilus influenzae: Gram -ve coccobacilli. Can cause meningitis (esp. in children under 5), epiglottitis, cellulitis and a subgroup cause chest infections. Sensitive as M.catarrhalis
- Escherichia coli: Gram -ve bacilli. Normally found in the bowel. Causes Urinary infections, severe gastroenteritis, peritonitis (from bowel injury), septicaemia. Drug of choice is a quinolone or cephalosporin.
- Proteus sp.: Gram -ve bacilli. Lives in the bowel. Causes UTI's, peritonitis (from bowel injuries), wound infections. Drug of choice is the quinolones.

Anaerobes

- Bacteroides sp. gram negative bacilli. Normal bowel flora. Commonly causes infections following injury to the bowel or wound contamination, causes abscess formation. Treated first choice with metronidazole or second with chloramphenicol or Augmentin.
- Clostridium sp. Gram positive species. produce spores and toxins.
- C. perfringens/C.septicum - common cause of gangrene, treat with penicillins or metronidazole
- C.tetani - tetanus - For tetanus and botulism, the damage is from toxins, not the bacteria themselves
- C. botulinum - botulism

- *C. difficile* - causes diarrhea following antibiotics. treat with metronidazole

Others

- *Chlamydia* sp: Includes *C.pneumonia*, responsible for a type of atypical pneumonia and *C.trachomatis*, responsible for the sexually transmitted disease chlamydia. It is best treated with Tetracyclines or as second choice a macrolide.
- *Mycoplasma pneumoniae*: A cause of atypical pneumonia. Treated best with a Macrolide, with a second choice of a tetracycline.

The Drugs

- **Penicillins** - These act by preventing replicating bacteria from producing a cell wall. A number of bacteria produce an enzyme which inactivates the penicillins (β -lactamase).

A number of varieties:

- *Benzyl Penicillin*: Injectable preparation. Antibiotic of choice against severe Strep pneumoniae and Neisseria sp infections such as chest infections, meningitis and cellulitis.
- *Phenoxymethylpenicillin (Penicillin V)*: Oral preparation of above. Usually used only for the treatment of sore throats (strep throats), in other infections largely replaced by amoxicillin which is better absorbed.
- *Flucloxacillin*: Oral and IV drug of choice for Staph infection such as cellulitis, boils and abscess and bone infections. Also usually effective against Strep, but not first choice.
- *Amoxicillin: (newer version of ampicillin)*: Oral and IV. Effective against most gram positive and negative bugs. Limited use secondary to β -lactamase resistance in many bugs. This is overcome with the addition of Clavulanic Acid (e.g. Augmentin). Overcoming this resistance, makes this combination my ideal survival antibiotic, with good gram positive, negative and anaerobic cover. This drug I feel is the best "broad spectrum" antibiotic commonly available, other AB's may be better for specific infections but this is the best all purpose one.
- **Cephalosporins** - Same method of action as penicillins. Developed in three generations (now four, but not widely available). The third generation e.g., Cefotaxime (Claforan, IV only) and Ceftriaxone (Rocephin, IV only) have the most broad spectrum. They are effective against most gram positives and negatives and some variable anaerobic cover. The second generation e.g., Cefuroxime (Zinacef, oral and IV) and Cefaclor (Ceclor, oral only) also have good general cover, but are not as effective against some gram negative bacilli. This loss of gram negative

cover expands to most gram -ve cocci and bacilli in the first generation cephalosporins e.g., Cephalexin (Keflex, oral only) and Cephazolin (Kefzol, IV only). The third generation is ideal for use in those with very severe generalized infection, meningitis or intra-abdominal sepsis (e.g., penetrating abdo wound or appendicitis, with metronidazole added in) and the second generation offer a good broad spectrum antibiotic for general use in skin, wound, urinary and chest infections.

- **Quinolones** - Acts by inhibiting DNA replication in the nucleus of the replicating bacteria. New generation of antibiotics. Most common is Ciprofloxacin. Very broad spectrum cover, except anaerobes. Excellent survival AB, but my second choice due to amoxicillin + clavulanic acids better cover of anaerobes. Effective for most types of infections except intra-abdominal sepsis and gangrene.

Macrolides - Acts by inhibiting protein synthesis in the replicating bacteria. Includes Erythromycin and the newer Roxithromycin and Clarithromycin. Often used in people with a penicillin allergy, however it does have a reduced spectrum (esp. with Gram negatives), but is an alternative to tetracycline in Chlamydia. First choice in atypical pneumonias e.g., with Mycoplasma pneumonia.

- **Co-Trimoxazole** - Acts by interfering with folate metabolism in the replicating bacteria. Previously a very broad spectrum antibiotic, now has a much more variable response rate due to resistance. Still useful for urinary and, mild chest infections.
- **Metronidazole** - Acts by directly damaging the structure of the DNA of the bacteria/protozoa. Drug of choice for anaerobic infection. Should be used with another broad spectrum AB in any one with possible fecal contamination of a wound or intra-abdominal sepsis (such as severe appendicitis). Also the drug of choice for parasitic infections such as Giardia.
- **Others** - There are many other antibiotics available. I have only discussed the common ones above. For further information I refer you to any Antibiotic guide, of which there are many.

NOTE

In pregnancy Penicillins and Cephalosporins are safe. Many others are not (or only during certain parts of the pregnancy). You should always check if any drug you are using is safe, before using in pregnancy and breast feeding. The PDR will tell you. If you want a specific reference try "Drugs in Pregnancy", Ed D.F Hawkins.

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8.0 The Basic Laboratory

8.1 Diagnosis

The basics of a diagnosis can generally be reached by a careful history and physical examination. Modern medicine relies heavily on laboratory investigations. In a survival situation these will not be available. However there are some simple laboratory tests which can be performed with very little equipment or chemicals. The problem is that even basic tests require some equipment. Ranging from simple test strips to a microscope and a few chemicals. Obviously what you are preparing for will dictate what tests you may want to be able to perform.

8.2 Urine Testing

Urine Testing: Urine is easily tested with multi-function dip stix. These can test for the presence of protein, glucose, ketones, nitrates, red blood cells and white blood cells. The test strip is dipped in a specimen of clean catch urine (i.e. you start to pee in the toilet, stop, then start again into the specimen container, stop, and continue into the toilet) and panels containing the test reagents change color depending on the presence and concentrations of the substance being tested for. The color changes are compared to a table supplied with the strips. Can be used to diagnose urinary infections, toxemia in pregnancy, dehydration, diabetes (outside pregnancy) and renal stones/colic.

The following is a quote on analyzing urine from a book to be published on the practice of medicine under relatively primitive conditions.

From . Roberts, S. D.; A Guide to the Practice of Medicine Under Austere Conditions (Revised Ed.), 1997, to be published.

Urinalysis

Of the various bodily fluids, urine is the most easily obtained. It is possible to perform a number of tests on urine with little or no equipment. Visual and olfactory examination of a urine sample alone can provide considerable information. Urine which is pink, red, or red-orange may contain blood, although it is important to remember that these colors may also be seen in those who have eaten certain foods, such as beets, blackberries, or rhubarb. Urine which is green or blue-green, or which takes on these hues on standing, may indicate diseases of the liver or gall bladder. Bright yellow or yellow-orange urine is indicative of kidney dysfunction (if there is no reason for the urine to be concentrated and if the color is maintained for several days). Cloudy urine may result from abnormally high levels of phosphates or carbonates in the urine, and may be a precursor of kidney stones. Cloudy urine may also indicate the presence of an infection, particularly if the fresh urine has an odor of ammonia or other disagreeable odor (note that urine will develop an ammoniacal odor on standing).

It is possible to approximately localize an infection that is producing cloudy urine by using the three glass test. This test requires three clean containers (glasses), of which at least one (the second used) will need a capacity of at least 500 ml. In this test, the first 5 ml is voided into the first container, the second container is used until the patient is almost done, and then the third container is used to collect the last 5 ml. If the urine in the first container is the most cloudy, with decreasing cloudiness in the remaining containers, a urethral infection is the most likely cause. If the urine in the first container is less cloudy than either of the following two, a kidney, bladder, or prostate infection is indicated as the cause, while, if the urine in the third container is the cloudiest, the prostate is the likely site of the infection.

The odor of maple syrup associated with fresh urine is, of course, the classic sign of maple syrup urine disease. The urine may also have characteristic odors which are associated with other genetic disorders: the 'mousy' odor associated with phenylketonuria, for instance. The presence of glucose in urine has long been recognized as an indication of diabetes, and its detection has been assigned a high degree of importance by the general public. While its presence was at one time detected by taste, a more aesthetically acceptable method (which is also less likely to transmit infection) is to heat the urine and observe the odor. If the scent of burning sugar or caramel is detected, there is an excessive amount of sugar present.

Proteins, or carbonates and phosphates, in urine may be detected by filling a

test tube three-fourths full of urine and boiling the upper portion. Any cloudiness produced by this may arise from either the presence of carbonates and phosphates (which may be normal) or from the presence of proteins. These two causes may be differentiated by adding a small amount of acetic acid (3-5 drops of 10% acetic acid) to the tube: if the cloudiness vanishes, carbonates and phosphates were the cause; if the cloudiness persists (or becomes apparent only after the acid is added), proteins are present.

The iodine ring test is a simple test which can detect the presence of bile in the urine before color changes or jaundice make its' presence obvious. In this test, the appearance of a green ring after layering a 10% alcoholic iodine solution over the urine in a test tube indicates the presence of bile.

8.3 Blood Counts

Blood Counts : There is no easy way to do blood counts without some basic equipment. You require a microscope and a graded slide. A graded slide is a microscope slide which has very small squares etched onto its surface. Using a standardized technique a smear of blood is placed on the slide. Now using the microscope the number of different types of blood cells in a square on the slide is counted, this is then repeated several times and then averaged. This technique will give you:

- White Cell count
- White Cell differential
- Red Cell count
- Platelet count

8.4 Blood Grouping

Blood Grouping: The simplest thing to do is have your group or expedition blood typed prior to your expedition or TEOTWAWKI. However provided you have several basic chemicals a cross match is a simple test. But due to its potential fatal complications if done incorrectly I will not describe the procedure here. It is well described in any basic laboratory medicine textbook. Also see *Lucifer's Hammer* quote in [section 12.1](#).

8.5 Pregnancy Tests

Pregnancy Tests: The ability to accurately diagnose pregnancy may be important, both for psychological reasons and for the practical reasons. Currently available pregnancy test kits test urine for the presence of the hormone Human chorionic gonadotrophin (HCG). They require only a small amount of urine, and are accurate from 10-14 days from conception.

8.6 Blood Glucose test strips

Blood Glucose test strips: Also known as BM stix, after a common brand. This can be used to diagnose diabetes (in a survival situation), both generally and during pregnancy, also it can detect low or high blood sugars in other severe illnesses. A finger or toe is pricked a drop of capillary blood is collected onto a test strip. It's allowed to sit for 30 seconds, then is wiped off, and a further 90 seconds, then the color of the test strip is compared to a control chart to give a blood glucose level.

8.7 Gram Staining

Gram Staining: This is a technique for approximate identification of bacteria in urine, pus, sputum, cerebral spinal fluid (csf) and from bacterial cultures. Although not highly accurate in species identification, combined with a knowledge of the clinical situation, it enables a good guess to be made for the appropriate antibiotic. It requires a microscope and also several chemical solutions. This is a very standard microbiological procedure and can be learned very easily at any entry level microbiology course.

The basic technique is: (1) the infected area or fluid is swabbed and the swab smeared onto a slide and dried and fixed. (2) It is then washed with crystal violet for 1 min, rinsed, washed with iodine for 1 min, long rinse, washed with safranin 30 seconds, washed again then dried. It is then examined down the microscope. The bacteria will stain certain colors and appear certain shapes depending on species, this aids in identification as discussed already.

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9.0 Simple Medical Tips

9.1 Rectal Fluid Resuscitation

The standard technique of giving fluids to an unconscious, shocked or dehydrated person is with intravenous fluids. However this may not be possible in a survival situation. An alternative is to give fluids rectally. This method will obviously not work if the cause of the problem is severe diarrhea. This is included for interest only and I do not recommend this procedure :-)

The person is placed on their side, with the buttocks raised on two pillows. A lubricated plastic tube with a blunt end (a large urinary catheter or naso gastric tube is ideal) should be passed through the anus into the rectum for about 9 inches. It should pass with minimal pressure and should not be forced. The danger is perforating the bowel.

The tube should be taped to the skin. A longer length of tubing and a drip bag or funnel should be attached to the end and elevated. Then 200mls of fluid slowly dripped in over 15 to 20 minutes. The catheter should then be clamped. This can be repeated every 4 hours with a further 200mls. Up to 1000-1200mls/24hrs can be administered this way. If 200mls is tolerated it can be worth increasing the volume slightly or reducing the time to 3 1/2 or 3 hrs. If there is over flow the volume should be reduced. A rectum full of feces does not absorb water very well, so the amounts may need to be reduced, but given more frequently.

9.2 Death

People are going to die, one way or another it will happen and you need to be prepared for it.

9.2.1 Diagnosing Death:

- No pulse.
- No respiration.
- No heart sounds.
- No pupil response to light.

If all of the above are present, you're dead!

Hypothermia Note:

Precautions need to be taken where the person concerned has been in the extreme cold, either the snow or very cold water. Severe hypothermia causes a profound slowing in the body's metabolism and as a consequence can mimic death.

One option is to aggressively resuscitate anyone found in the above situations, although in my view this is likely to be an extremely uphill battle in a survival situation, especially if they clinically appear to be dead. The management of severe hypothermia is dealt with in detail in most advanced first aid texts. But for interest the basics are included below:

Extreme care needs to be taken in handling a very hypothermic patient as they are predisposed to developing ventricular fibrillation if roughly handled. But the goal is slow rewarming

- body heat
- warm room
- space blanket
- warm IV fluids*
- irrigation of stomach and bladder with warm fluid*
- packing groin and axilla with hot packs.*

*there is still some debate in the literature about the place for these last 3 options.

9.2.2 Handling a dead person

Handling a dead person: The human body decomposes very quickly, especially in hot weather. A decomposing body rapidly becomes a health hazard. A dead person should be buried quickly, in a reasonably deep grave to avoid predation by scavengers. Most religions have short rites for the burying of the dead, but for the non-religious a favorite poem may be appropriate.

9.2.3 Records

Records: It is important to document the fact that someone has died, but also the circumstances of the death, your guess as to a cause of death and how the body was disposed of. This becomes important for legal reasons should things return to normal or in the case of an isolated expedition for the coroner on your return.

9.3 Gastroenteritis and Dehydration.

Gastroenteritis and Dehydration. Gastroenteritis is still a killer in the third world especially for young children (I include typhoid, cholera, giardia, salmonella, "food poisoning" etc., under the general heading gastroenteritis). The most important preventive action you can take in preventing gastroenteritis is to wash your hands following defecation. Also hands should be washed before handling food, dealing with the sick or babies and infants. All drinking water should be boiled unless you are sure of its purity. Hand washing and clean water will prevent 99% of diarrhoeal disease. This topic is very well covered in "Where there is no Doctor".

9.3.1 Dehydration

What kills is not having diarrhea or vomiting, but dehydration. Again this is not the forum for detailed medical treatments. But you must understand how to recognize dehydration and know how to treat it. The basis of any treatment is replacement of lost fluids and electrolytes. This is a relatively simple matter if you have access to IV fluids, but without you must rely on the patient drinking. It is often difficult to get a patient to drink, especially when they feel very unwell, but it must be emphasized to them that if they don't drink they will die. The secret is small amounts of fluid, frequently. If you try and force a large glass down, it will come straight up right away. They must put in at least what they are putting out, more in hot weather. There has been much debate over what to offer to replace lost fluids and electrolytes. It must contain not only water, but also Sodium (table salt), Potassium (light salt) and also some form of sugar. The sugar is vital for absorption to take place in the intestines, salts alone are poorly absorbed when the gut lining is damaged as it often is in gastroenteritis. I refer you to an excellent article in *Scientific American May 1991* on oral rehydration formulas (thanks to Logan VanLeigh for the reference).

9.3.2 Oral Rehydration Fluid

The following is an easy formulae for making an oral rehydration fluid.

- 1/4 Tsp Salt (Sodium Chloride)
- 1/4 Tsp Lite Salt (Potassium Chloride)
- 1/4 Tsp Baking Soda
- 2 1/2 Tbsp Sugar

Combine ingredients and dissolve in 1000 mls (1 liter) of boiled and cooled water.

9.4 Sterilization

I've tried to emphasize the importance of basic hygiene in any survival situation. This is especially true when performing any surgical procedure. From suturing a small cut or dressing a wound, to dealing with a major injury or operation.

You should wash your hands for 2-3 minutes with soap or a surgical scrub and then if available use a pair of sterile gloves. The instruments you are working with should also have been sterilized.

There are several effective low tech ways to do this:

1. **Soaking in Alcohol:** Soak the instruments in Ethyl Alcohol. The higher the concentration and the longer the soak the better. Recommended that > 70% (ideal is >95%) solution for >12 hrs. This time can be shortened to several hours by the addition of Formaldehyde solution to the Alcohol.
2. **Boiling in water:** Boil in water for 30 minutes (at sea level). Will cause rusting of anything which holds a edge such as scissors and knives. De-ionized or soft water will reduce this problem.
3. **Pressure cooking:** The gold standard in a survival situation. This is the basis for hospital autoclaves. Ideally the instruments must be cooked for 30-40 minutes at temperatures >110 deg Celsius at 18-20 psi. Using this method it is possible to sterilize instruments wrapped in cloth or linen. This will mean they stay sterile following removal from the pressure cooker and can be used at a later date. If packed allow further 15-20 minutes drying time. The instruments need to be placed on a rack in the pressure cooker, above the water in the bottom, rather than in the water.

The main problem is that home pressure cookers and canners mostly they come in a range of 5, 10 and 15 lbs of pressure which I understand equates to 220, 230 and 240 degrees Fahrenheit at sea level pressure. There's no safe way to take them up to 20 psi without the serious risk of blowing their pressure safety valves. They generally come in two types, the dial gauge and the dead weigh pressure gauge. The dial gauge can do odd pressure levels, but really needs to be calibrated periodically

with a year being the suggested interval. This calibration is usually beyond what the average homeowner can do, thus they are not well suited to survivalist use. The dead weight gauge can only do what it is manufactured for, 5, 10, 15 psi for most pressure canners and usually only 10 or 15 psi for most pressure cookers. The best advise to those using these devices is to use one set for 10 or 15 psi and lengthen the "cooking time" by 15 minutes. There is no good information available about improvising "autoclaving", so this information must be used with caution. (Thanks to Alan Hagan for help with this section)

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10.0 Alternative Therapies

Finally, I feel I should make a passing comment on alternative therapies. I *exclude* herbal- and plant-based medicines from the following comments, because obviously these medicines form the basis of modern pharmacology and post-TEOTWAWKI will do so again. I stress these are my opinions. If you find a particular alternative treatment works, and wish to practice it and use it post-TEOTWAWKI then that's fine. However I think it would be unsafe to ignore conventional medicine. The alternative therapies are most commonly used and successful with low grade chronic problems. I would suggest that what will kill you and what you need to prepare for is not chronic lower back pain or irritable bowel syndrome, but major trauma, or cholera, or severe pneumonia and I don't think arnica or a good foot rub will fix the problem. Things which are currently annoying or distressing chronic problems may pale into insignificance alongside finding enough to eat and drink and avoiding the baddies. (But who knows, under survival stress it may make them worse :-))

Colloidal Silver should be specifically mentioned as it receives a lot of questions on the news group. IMHO its merits have been exaggerated in the extreme. There is no reputable scientific evidence that it has any useful in-vivo (in the human body, rather than in a lab) antibiotic or antibacterial effects. If its proponents can supply recent case/control trials, published in a reputable scientific or medical journal, I am prepared to revise my opinion and include the results here. I just advise caution to those who plan to rely on CS as their antibiotic in a survival situation.

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11 Common Sense Medical Phrases

There are hundreds of little sayings within medicine about dozens of topics. At first some of them sound extremely basic or stupid, but they all have a basis in fact. Medicine is made up of common sense. Here's a selection. I welcome additions.

- Knowledge is power.
 - First do no harm.
 - Masterful inactivity saves lives.
 - The placebo effect has cured more people than any doctor.
 - If it hurts, rest it or immobilize it.
-
- Always wash your hands before touching a patient.
 - It's better to boil all your water, than die of diarrhea.
 - Don't shit in the water you are going to drink (or let anyone else).
 - A comfortable, warm bed fixes many problems, a good meal fixes many more.
 - Direct pressure stops bleeding.
 - Pretend you know what you are doing and people will believe you do.
 - Don't stitch a dirty wound.
 - Clean boiled water is a great antiseptic (So is urine but we won't start that one)
 - If you've got a rash: If it's wet, dry it; if it's dry, wet it.
 - 90% of problems get better by themselves.

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12 Quotes and Final Comments

12.1 Quotes from "Lucifer's Hammer"

Larry Niven and Jerry Pournelle, Little Brown and Company (UK), 1995. pg 610-612

I've included these quotes because one accurately describe a primitive medical technique, giving an example of how a life saving procedure such as cross matching blood can be done under primitive conditions and the second and third summarizes several key realities of a long term TEOTWAWKI situation. Obviously I do not recommend using this procedure.

When Maureen reached the hospital, Leonilla Malik took her and led her firmly into a front room.

"I came to help," Maureen said. "But I wanted to talk to the wounded. One of the Tallifsen Boys was in my group and he-".

"He's dead." Leonilla said. There was no emotion in her voice. "I could use some help. Did you ever use a microscope?"

"Not since college biology class"

"You don't forget how" Leonilla said. "First I want a blood sample. Please sit down here." She took a hypodermic needle from a pressure cooker. "My autoclave" she said. "Not very

pretty but it works."

Maureen had wondered what had happened to the pressure cookers from the ranch house. She winced as the needle went into her arm. It was dull. Leonilla drew out the blood sample and carefully squirted it into a test tube which had come from a child's chemistry set.

The tube went into a sock: a piece of parachute cord was attached to the sock, and Leonilla used that to whirl the test tube around and around her head. "Centrifuging" she said. "I show you how to do this and then you can do some of the work. We need more help here in the lab". She continued to swing the test tube.

"There", she said. "We have separated the cells from the fluid. Now we draw off the fluid and wash the cells with saline." She worked rapidly. "Here on the shelf we have cells and fluid from the patients who need blood. I will test yours against theirs."

"Don't you want to know my blood type?", Maureen asked.

"Yes. In a moment. But I must make the tests anyway. I do not know the patients blood types and I have no way to find out, and this is more certain. It is merely very inconvenient."

The room had been an office. The walls had been painted not long ago and were well scrubbed. The office table where Leonilla worked was formica, and very clean. "Now", Leonilla said "I put samples of your cells into a sample of the patient's serum, and the patient's cells in yours, so, and we look in the microscope."

The microscope had also come from a child's collection. Someone had burned the local high school before Hardy had thought to send an expedition for its science equipment.

"This is very difficult to work with." Leonilla said. "But it will work. You must be careful with the focus." She peered into the microscope. "Ah, Rouleaux cells. You cannot be a donor for this patient. Look so that you will know."

Maureen looked in the microscope. At first she saw nothing, but she worked the focus, the feel of it coming back to her fingers. ..Leonilla was right, she thought. You don't really forget how. She remembered that you weren't supposed to close close the other eye, but she did anyway. When the instrument was properly focused she saw blood cells. "You mean the little stacks like poker chips?", she asked.

"Poker chips?"

"Like saucers-" "Yes. Those are Rouleaux formations. They indicate clumping. Now what is your blood type?"

"A" Maureen said.

"Good. I will mark that down. We must use these file cards one for every person. I note on your card that your blood clumps that of Jacob Vinge, and note the same on his card. Now we try yours with others." She went through the same procedure again, and once more. "Ah. You can be a donor for Bill Darden. I will note that on your card and his."

....."We have no way to store whole blood, except as now - in the donor".

....."No, we must learn to live without penicillin." She grimaced. "Which means a simple cut untreated can be a death sentence. People must be made to understand that. We cannot ignore hygiene and first aid. Wash all cuts." -----

For a fictional account I recommend James Wesley Rawles "TEOTWAWKI" (Note: the title has been changed to "Triple Ought"). This contains accounts of survival medicine in practice (in addition much other excellent material) with detailed descriptions of several surgical procedures and childbirth in a post-collapse society. Although there is some dramatization to it I feel this accurately reflects some of the medical situations which will need to be faced.

These are some final thoughts about the medical situation post a severe TEOTWAWKI. I've included this just to stimulate some thoughts and discussions

12.2 Final Thoughts

With no antibiotics there would be no treatment for bacterial infections, pneumonia and a cut would kill again, contagious diseases (including those sexually transmitted) would make a come back and high mortality rates would be associated with any surgery. Poor hygiene and disrupted water supplies would lead to an increase in diseases such as typhoid and cholera.

Without vaccines there would be a progressive return in infectious diseases such as polio, tetanus, whooping cough, diphtheria, mumps etc, especially among children. People

suffering from chronic illnesses such as asthma, diabetes or epilepsy would be severely effected with many dying (especially insulin dependent diabetics). There would be no anesthetic agents resulting in a return to tortuous surgical procedures with the patient awake or if they were lucky drunk or stoned. The same would apply to painkillers, a broken leg would be agony and dying of cancer would be distressing for the patient and their family.

Without reliable oral contraceptives or condoms the pregnancy rate would rise and with it the maternal and neonatal death rates, woman would die during pregnancy and delivery again and premature babies would die. Women would still seek abortions and without proper instruments or antibiotics, death from septic abortion would be common again. In the absence of proper dental care teeth would rot and painful extractions would have to be performed. What limited medical supplies were available would have to be recycled, resulting in increases risks of hepatitis and HIV infection.

THE MOST IMPORTANT THING TO REMEMBER IS THAT GOOD HYGIENE CAN PREVENT MANY PROBLEMS. WASH YOUR HANDS AND BOIL YOUR WATER!

Any comments or suggestions welcomed. I plan to periodically update this FAQ with any recurring questions from misc.survivalism and also with any interesting things I come across.

Craig Ellis, loucr@globe.co.nz

All views in this FAQ reflect only my opinions and is not to be considered in any way a professional opinion or advice.

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