

SAFE **DRINKING** **WATER**



**YOUR TOP
PRIORITY IN AN
EMERGENCY**

**SAFE DRINKING WATER:
YOUR TOP PRIORITY
IN AN
EMERGENCY**

By Glenn Meder

EMERGENCY WATER 101.COM PRESENTS
SAFE DRINKING WATER:
YOUR TOP PRIORITY IN AN EMERGENCY

By Glenn Meder

©2017 Glenn Meder. All Rights Reserved.

Do not copy, reproduce, distribute, or modify this book by any means. You are hereby authorized to print out up to two copies of this book for your immediate household.

Please tell your friends that they can also get a copy of this book if they send a blank email to...

FREEBOOK@EMERGENCYWATER101.COM

We update this book periodically. By signing up themselves they will automatically receive the latest version and will be notified of any updates.

Disclaimer: This book is designed to provide helpful information on the subjects discussed. The purpose of this book is to provide interested individuals with a higher level of understanding about how and why to provide their family with safe drinking water during an emergency situation. The information in this book is designed to supplement the recommendations provided by the Federal Emergency Management Agency (FEMA) and the American Red Cross, based on the document jointly published by FEMA and the American Red Cross, which is attached in whole at the end of this book. While every effort has been made to ensure that the book is as complete and accurate as possible, there may be mistakes, either typographical or in content. Therefore, this text should be used as a general guide only, and not as an ultimate source of such information. If any of the information or instructions in this book conflicts with statements made in the FEMA/Red Cross document, the user should follow the information provided in the FEMA/Red Cross document. Opinions expressed and information are subject to change without notice. The author, editors, NUSAZ, LLC, and distributors shall not be held liable, nor be responsible to any person or entity with respect to any loss or damage caused, or alleged to be caused, directly or indirectly by the information contained in this book or the website.

THIS BOOK IS PROVIDED BY GLENN MEDER AND EMERGENCYWATER101.COM



TM

Dear Reader,

My name is Glenn Meder and I want to thank you for downloading this vitally important ebook. Our mission at EmergencyWater101.com is to provide you with proper education about the subject of safe drinking water in an emergency.

Safe drinking water is something that we take for granted in daily life, but when our infrastructure fails in a crisis situation, such as a hurricane, earthquake, massive blackout, or act of terrorism, water can quickly become dangerously contaminated. By providing trusted, scientifically sound information about safe drinking water, we can give people the means to protect their families and to help others. At EmergencyWater101.com, we provide information for beginners, industry professionals, first-responders, emergency response leaders and the media.



Please note that we focus on the needs of individual families, and do not focus on political solutions or government policy.

Please visit EmergencyWater101.com for in depth articles, courses and more. Thank you!

Glenn Meder
Founder and Chief Editor
EmergencyWater101.com

TABLE OF CONTENTS

Introduction	6
What You Need to Know,	7
Why Be Prepared	7
Our Electric Grid	8
Our Greatest Strength and Our Greatest Weakness	9
What is the Threat to Your Family	11
How to Provide Your Family with Safe Water	12
What the Red Cross Recommends	12
Understanding Distillation	13
Water Contamination is Not One Dimensional	15
What is the Most Dangerous Type of Contaminant?	16
Going Beyond the Red Cross Recommendation	17
There are Different Types of Water Emergencies	19
To Summarize	23
Be Prepared Checklist	25
FEMA/Red Cross Pamphlet: Food and Water in an Emergency	26

INTRODUCTION

There is a shocking lack of knowledge about water in our society. Even many people who should know about water don't. This lack of knowledge doesn't hurt us very much in day-to-day life because of our tremendous infrastructure. Safe drinking water is plentiful. We can simply turn on the tap any time of the day and drink the water without any worries. We can go to countless restaurants and get soda, coffee, tea, or soup made with safe water. Every gas station, pharmacy and convenience store has high-quality bottled water. Anytime we want water, we simply drink it without a second thought.



BUT...

What happens when our fantastic infrastructure fails? A disaster, such as an earthquake, hurricane, flood, wide-scale blackout, or act of terrorism, can cripple the infrastructure that we take for granted. When this happens, tap water can quickly become dangerously contaminated. Municipal water treatment plants can go offline. Underground water pipes can shatter. Sewage can leak and mix with tap water. Chemical pipelines and storage tanks can rupture. Store shelves can be stripped bare, and impassable roads prevent them from being restocked.

It's during these times that your lack of knowledge about water can be a very dangerous thing. Yes, you will have other massive challenges if you find yourself in such a scenario. You will be hungry, you could be injured and you could have confrontations with people who want to prey on the weak.

BUT NOTHING WILL BE MORE IMPORTANT THAN SAFE DRINKING WATER!

In order to heal from an injury, you will need safe drinking water. In order to protect your family from others, you will need to be strong, healthy, and properly hydrated. You need water to think properly. Water is your foundation, and only by having a strong foundation will you be able to take care of other aspects of your survival.



So how can you provide your family with safe drinking water in an emergency? It comes down to KNOWLEDGE! Knowledge about safe drinking water is the single most important tool that you can have in an emergency. It can be the difference between life or death, health or illness, strength or weakness. With the proper knowledge, you will have the ability to help others and be a leader in hard times.

This is why I created EmergencyWater101. I want to provide you with the core knowledge that you need to be safe and to help others be safe. It's extremely important that you know this material, and I think you will find it to be very interesting. More than this, it will open your eyes to the importance of water in your everyday life.

WHAT YOU NEED TO KNOW...

If you want to be able to protect your family, there are some key things that you need to know...

1. You need to understand the threats of dangerously contaminated water.
2. You need to know what the Red Cross recommends.
3. The Red Cross recommendations are very good, but they don't explain WHY they recommend what they do. Having a deeper understanding is essential because in an emergency you need to be able to adapt to whatever situation you find yourself in.
4. You need to learn that there are different types of water emergencies. This is very important because you may have to react differently to different types of emergencies.
5. You need practical insight into what to do and what not to do.
6. You need a checklist for getting prepared.

But first, we have to start with this question...

WHY BE PREPARED?

We know that disasters can strike at any time. We've seen a number of disasters in recent



times, from Hurricane Harvey, Hurricane Katrina, to earthquakes in New Zealand, Ecuador, Haiti, and Nepal. One of the most devastating events of recent times was the massive 9.0 earthquake that struck Japan in 2011, causing a tsunami that killed more than 1,800 people, devastated northeast Japan, triggered the meltdown at the Fukushima power plant, and cost an estimated 220 billion dollars.

Scientists are worried about the next big earthquake to strike the USA. Most people know of the threat to Los Angeles and San Francisco, but the even bigger threat comes from a fault called the Cascadia Subduction Zone that runs from Northern California through Oregon, Washington, and up to Vancouver. This fault has considerably more power than the fault in Los Angeles, and scientists say it could cause the worst natural disaster in the history of North America.

DISASTERS HAPPEN WITHOUT NOTICE

When a disaster happens, bottled water is the first thing to fly off grocery store shelves and



it's the first thing that people scream for from FEMA. This is because we NEVER think about water. We all, to a person, take safe drinking water for granted. BUT, when an emergency strikes and you don't have access

to safe drinking water anymore, you will instantly realize how fundamentally important water is. Water is a biological need. Your body demands it and when you don't have it your body will quickly reset your priorities.

Drinking water WILL quickly become your top priority.

If you find yourself in a crisis situation and you're not prepared with a safe source of drinking water and you don't know how to make your own safe drinking water, your family could find themselves in a very dangerous or even deadly situation.

It's very important to be prepared for these events, which is something I will get into in a few moments, but first I want to take a bigger picture look at our society.

WE LIVE IN THE MOST ADVANCED SOCIETY EVER

We live in fantastic times. We are able to live healthy, incredibly productive lives with the highest standard of living in history. We are able to pursue incredibly specialized careers and we're able to travel and live a good life.

Our standard of living and everything that makes our lives easier is due to our fantastic infrastructure. This infrastructure is one of the main differences between developed First World countries like the US and Third World countries.

As a society, we have become completely dependent upon this technology and our infrastructure.

We don't even think about it. Every aspect of our lives is dependent upon infrastructure. Our food supply, drinking water, sewage

treatment, our communication systems, commerce, careers, recreation activities, travel, medical... everything depends upon our infrastructure.

THE CORE IS OUR ELECTRIC GRID

At the center of our infrastructure is the electric grid. Our electric grid is a very complicated network of power plants, transformers, switches, computers and more than 450,000 miles of high-voltage power lines.

Our electric grid is wonderful technology, but unfortunately it is shockingly vulnerable to terrorism, cyber-terrorism and EMPs, or electromagnetic pulses.



If our electric grid goes down, everything goes down. Communications, power, lights, hospitals and our food distribution system. We won't be able to pump gas, nor will our grocery stores be replenished. Water may not flow to our taps, or if it does flow, it could be dangerously contaminated.

We got a small taste of this in 2003, when the power went out for a few days in an area that stretched from Manhattan, through New York, up through Ontario, and then across to Detroit and Cleveland. Over 55 million people were affected. It affected water supplies in Cleveland and other areas because it shut down the water treatment systems, and the tap water became contaminated with raw sewage.

OUR GREATEST STRENGTH AND OUR GREATEST WEAKNESS

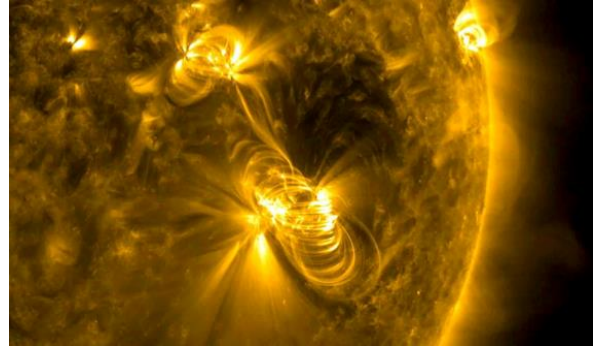
The fact is, our fantastic infrastructure is our greatest strength AND our greatest weakness. And this is not a secret. Our enemies know it.

We know that Russia and China can attack our power grid right now if they wanted to, and it has been done on a smaller scale against the Ukraine. But it's not just China and Russia. North Korea and Iran, and even terrorist organizations that are not tied to a specific state can either do this now, or will soon be able to. Such an attack could happen to our country without us knowing where it came from.



Another very serious threat to our electric grid could come from an electromagnetic pulse from the sun. A recent article in the *New York Times* said this: *“A powerful solar (or ‘geomagnetic’) storm has the potential to simultaneously damage multiple transformers in the electricity grid and perhaps even bring down large sections of it, affecting upwards of a hundred million people in the United States for many months, if not years.”*

This article went on to say, “A [2008 National Academy of Sciences study](#) warned that “because of the interconnectedness of critical infrastructures in modern society,” the “collateral effects of a longer-term outage” would likely include “disruption of the transportation, communication, banking and



finance systems, and government services; the breakdown of the distribution of potable water owing to pump failure; and the loss of perishable foods and medications because of lack of refrigeration.”

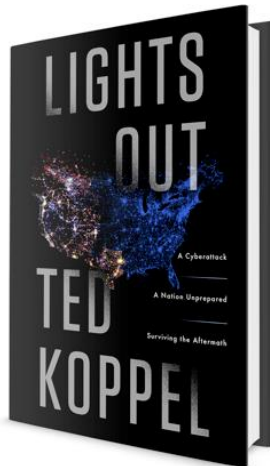
WE ARE MORE VULNERABLE TODAY

One hundred years ago, if something happened that crippled our infrastructure, people would have been fine because they were much more self-reliant than we are today. They weren't dependent upon technology. Even today, in most countries around the world people are not nearly as dependent upon technology as we are. Today, if our infrastructure fails on a large scale, we're in big trouble because we simply don't know how to live without our technology.

Yes, it's very important to be prepared for hurricanes and earthquakes, but these events typically cover small geographic areas, which means that other parts of the country can come together and help people in the devastated areas. Massive power outages, on the other hand, could impact very large areas of the country and affect millions of people for long periods of time. This type of scenario is much more dangerous, and it would be much more difficult for the government to respond to such a large-scale crisis.

“LIGHT’S OUT”

I want to tell you about a book called *Light’s Out* by Ted Koppel. You remember Ted Koppel as the investigative journalist for Nightline. For two years, Ted Koppel researched our electric grid and its vulnerability to terrorism and cyber-attacks. He interviewed people at the highest levels of Homeland Security, FEMA, the military, and state governments.



After his in-depth research, Koppel determined that the government doesn’t even have a plan for such an emergency. Here’s what he says

in his book... *“There are emergency preparedness plans in place for earthquakes and hurricanes, heat waves and ice storms. There are plans for power outages of a few days affecting as many as several million people. But if a highly populated area was without electricity for a period of months or even weeks, there is no master plan for the civilian population.”*

Think about how dependent we are on our technology, how vulnerable our electric grid is, and how willing certain terrorist groups would be to attack us, and you will realize that everyone, regardless of where they live must be prepared for an emergency.

WHY A BLACKOUT WOULD BE SO DANGEROUS.

Another advantage we have is that we live in a large, well-organized, wealthy society. Our emergency response system is highly effective. If a short-term emergency happens in one part of the country, the rest of the country can mobilize and come to the rescue.



BUT, if part of our electric grid goes down and tens of millions of people are affected for long periods of time, it would be an extremely difficult situation for emergency response or humanitarian organizations to deal with.



WHAT IS THE THREAT TO YOUR FAMILY?

Whether it's an earthquake, hurricane, flooding or other emergency such as a massive, long-term blackout, there are many things that can go wrong. Piping systems can fail, water may not flow or it may be contaminated. Toilets won't flush and human waste will become a big problem. Roads could be unpassable, which means that you cannot get out and that rescue and delivery trucks cannot get in. Communications may be down.

We can have chemical spills from storage tanks, trucks, pipelines, trains, and refineries. For example, in May of 2015, there was a chemical pipeline that ruptured in Santa Barbara, California. Most people don't realize that Los Angeles has thousands of chemical pipelines running through the city. So what happens if a large earthquake strikes the city?

You can also have nuclear power accidents, which is what happened in Fukushima, Japan in 2011 after the giant earthquake and tsunami. That nuclear disaster was the worst in history and it affected a large area.

BUT HERE'S THE REAL THREAT...

A stomach bug. I think we've all been here; a stomach bug with vomiting, diarrhea, nausea, pain, and weakness — all in all, a pretty horrible experience. But in day-to-day life, a stomach bug is typically not very dangerous. You drink plenty of fluids, get plenty of sleep and usually within 24 to 48 hours you're feeling much better. But what happens if it's the water that made you sick in the first place? If you are rapidly losing fluids through vomiting and diarrhea and if you're not able to replace those fluids because the water is contaminated, you can be in a very dangerous or even deadly situation.

Now imagine that you're sick, your spouse is sick, and your children are sick. ***THIS IS THE SITUATION YOU MUST AVOID AT ALL COSTS!***



CHILDREN ARE AT HIGHEST RISK!

Drinking contaminated water during an emergency is very dangerous even for strong, healthy adults, ***but it's especially dangerous for infants and children.***



Children and infants consume more water for their body weight than adults do. They become dehydrated faster. They're more susceptible to toxins, and their immune systems are not yet developed. So they're at

much higher risk of illness or death from water contamination.

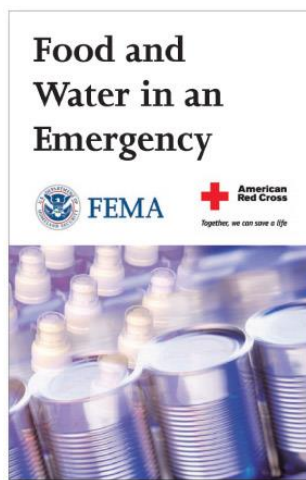
THE ANT AND THE GRASSHOPPER?

For generations, the fable of the ant and the grasshopper has been passed down. You remember; the ant worked hard during the spring, summer and fall to prepare for the coming winter, while the grasshopper played in the sun and laughed at the ant for being so boring. When winter came, the grasshopper starved, while the ant was safe and cozy in his home.

Our society sometimes seems to ridicule people who are prepared for an emergency, as if they are extremists. But the fact is that everyone should be properly prepared for an emergency. Ideally, you should be prepared with food, communications and a way to defend yourself, but none of these things matter if you are deathly ill. **Water WILL become your number one priority, so at least be prepared with water.**

HOW TO PROVIDE YOUR FAMILY WITH SAFE WATER

I want to start by looking at the Red Cross and FEMA recommendations for treating water in an emergency. This is an image of the Red Cross pamphlet that I'll be referring to. It's a very good resource that not many people know about. The recommendations are solid and scientifically based. Everyone should have a copy of this pamphlet printed is. **NOTE: A COPY OF THIS PAMPHLET IS INCLUDED AT THE END OF THIS BOOK.**



HERE'S WHAT THE RED CROSS RECOMMENDS:

If you're in an emergency situation and the safety of your water could be compromised there are three ways to treat your water.



BOILING



CHLORINATION



DISTILLATION

So let's have a look at these three different treatment processes...

Boiling. You put a pot of water on the stove and bring to a boil then cool it before you drink.

Chlorination, or in other words, regular bleach (not color-safe or scented bleach). In the past, the Red Cross recommended other chemicals for disinfecting water, but now this is what they say, *“Other chemicals, such as iodine or water treatment products (sold in camping or surplus stores) that do not contain 5.25 to 6.0 percent sodium hypochlorite as the only active ingredient, are not recommended and should not be used.”*

Distillation. While most people know what boiling and chlorination are, not many people know what distillation is. So I want to go through this briefly.

UNDERSTANDING DISTILLATION

The easiest way to understand distillation is to look at what's called the hydrologic cycle, or the water cycle.

So here's a question: **Where does freshwater in lakes and streams and rivers come from?** It comes from rain, which is very pure water. And so where does the rain come from? Rain comes from the ocean, which obviously contains very salty, contaminated water that we just can't drink. The water cycle is the natural process that changes the very contaminated water from the oceans into very pure rainwater. What happens is that the sun provides heat to the ocean and the water changes from a liquid to a vapor, and that's the key. As soon as water changes from a liquid form into a vapor, it let's go of the contaminants that it's holding onto to. The pure water vapor rises while the salt and other contaminants stay behind in the ocean. So the pure water vapor rises, condenses into

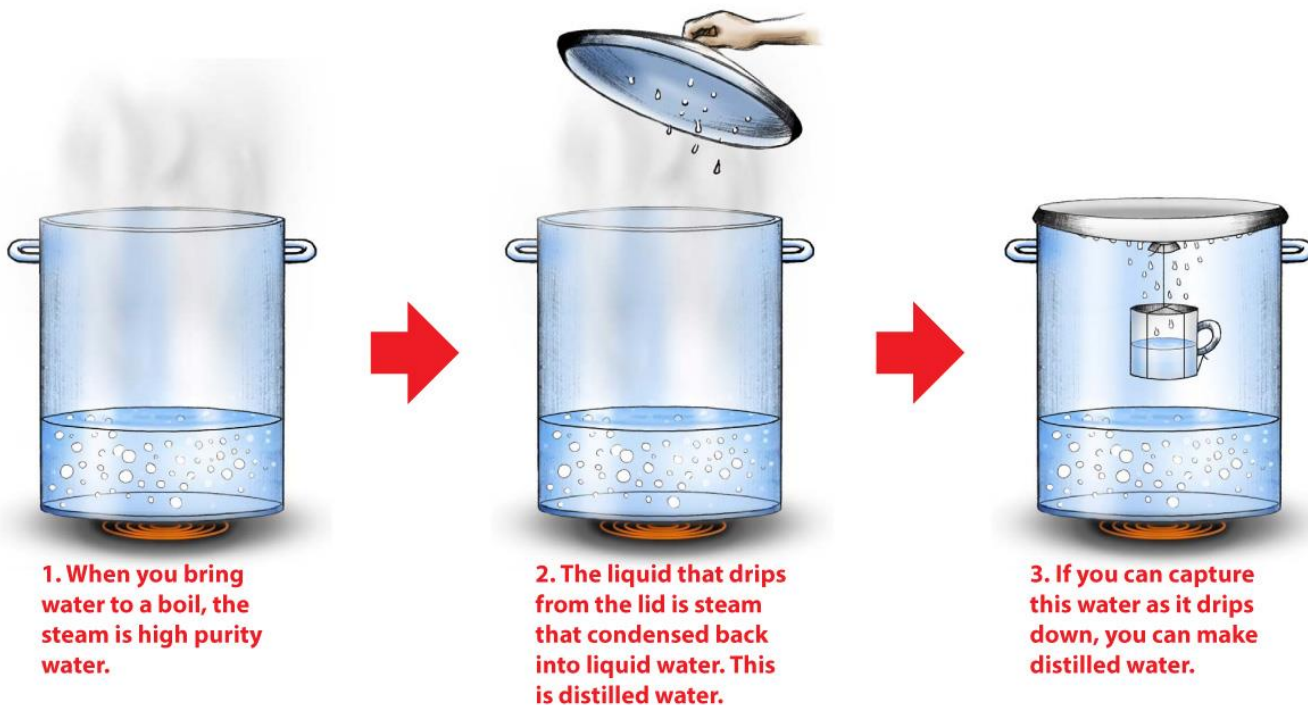
clouds, the clouds move inland, and then we get rain or precipitation.

Rain is very pure water and is the source of all freshwater on the planet including lakes, rivers, streams, and even glaciers, and underground aquifers. This is water's built-in purification process. **Water purifies itself by**



changing from a liquid to a vapor and then back to liquid. And the process of distillation duplicates this water cycle.

THE MOST BASIC WATER DISTILLER YOU CAN MAKE.



© Glenn Meder 2015 All rights reserved.

Put a pot of water on the stove and bring it to a boil. Boiling changes the water from a liquid to a vapor (image 1). So the pure steam rises and then just disappears into the air while the contaminants stay behind in the boiling water.

If you put a lid on the pot (image 2), and lift up the lid, water drips from the lid. This water that is dripping from the lid is distilled water. The steam came in contact with the cool surface of the lid and condensed back into liquid water. In other words, the water changed from a liquid to a vapor and then back to a liquid. Now if you were able to somehow capture this water (image 3) before it dripped back down into the boiling water, you would have a crude water distiller. The simplest way to do this is to invert the lid and tie a coffee mug underneath to capture the water. NOTE: There are also emergency water distillers on the market.

THIS IS WHAT'S HAPPENING...

This is the same process as the water cycle.



Just like in nature, there's a heat source that changes the water from a liquid into a vapor, which is called evaporation. The water condenses on the lid and drips down. So distillation is the process of evaporation, condensation, and precipitation. Or in other words, we're changing water from a liquid, to

a steam, and then back into a liquid form. So now you understand what distillation is. This is valuable knowledge because distillation is the single most effective method for purifying water (especially dangerously contaminated water) and it produces consistently pure water over time.

NOT RECOMMENDED...

Okay, so let's go back to the Red Cross recommendations. Some of the methods that the Red Cross does not recommend are:

- Filters
- Ozone
- Ultraviolet Light (UV)
- Chemicals other than chlorine.

There's a reason that they don't recommend these methods, so I'll explain this soon.

The Red Cross recommendations are very good, but ***you need to understand WHY they make these recommendations.***

WATER IS WATER

So let's delve deeper. The first thing I want you to understand is that ***water is water.*** What do I mean by this? What is the difference between dangerous water in a Third World country, very salty ocean water, water in a landfill, water in a stream that is full of green algae, bottled water, or pure water? The answer is that the ***water is the same but the contaminants are different.*** So water comes in different degrees of cleanliness.

YOU DON'T KNOW

The next point is that you do NOT know whether your water is contaminated or not. You can't tell by sight, smell, or taste. If you are in an emergency, assume that the safety of your water has been compromised and take precautions.

WATER CONTAMINATION IS NOT ONE-DIMENSIONAL.

The next point is extremely important to understand! There are different types of contaminants that can be in water. You can group contaminants into five categories of contaminants.



PARTICULATES. Particulates are suspended contaminants that make the water cloudy, or turbid.



MICROBIOLOGICAL. Microbiological contaminants are living organisms including bacteria, parasites, viruses, cysts and more, such as cholera, e. Coli, giardia, worms, etc. These organisms can cause serious illness or death.



INORGANIC. Inorganic contaminants include metals and minerals such as mercury, lead, chromium, arsenic, fluoride, nitrates and many others. Many of these contaminants can be very toxic and have been linked to brain damage, birth defects, neurological damage, cancer and other serious health issues.



RADIOACTIVE. Radioactive elements include isotopes of uranium, radium, plutonium, cesium 137 and others. Radioactive elements can be chemically toxic as well as radioactive and can cause a broad range of health issues, but especially cancer.



ORGANICS. Organic chemicals are carbon-based chemicals, such as gasoline and other petrochemicals. These chemicals can be particularly toxic and include pesticides, herbicides, solvents, gasoline and other additives.

SO, THIS BRINGS US TO A VERY IMPORTANT QUESTION...

WHAT IS THE MOST DANGEROUS TYPE OF CONTAMINANT?

In an emergency, **biological contaminants** are definitely the most dangerous. Biologicals such as cholera, typhoid, giardia, cryptosporidium's, these can be very, very dangerous.

So why are biologicals more dangerous?

FIRST is the speed at which they can make you extremely ill. If you have arsenic in your water, for example, and you consume it, (which you don't want to do, of course) it may contribute to you getting cancer 10 or 20 years down the road. But if you consume biological contaminants, they could lay you out or even kill you tomorrow. Remember when we talked about the lady who had the stomach bug? A stomach bug in an emergency situation is a very serious thing. That was a biological contaminant that caused her to be sick, and that's the situation you have to avoid at all costs during an emergency.



SECOND, biological contaminants are more dangerous than other types because they are living organisms. They can grow and multiply extremely quickly. This is especially true in an emergency when the municipal water supply is not treating the water, and especially if there is sewage mixing with the tap water. As soon as that happens, the biologicals can grow exponentially fast, and they can get out of control very, very quickly.

ETCH THIS INTO YOUR BRAIN!

The Red Cross recommends what they do because of their concern over biological contaminants! There is no room for error

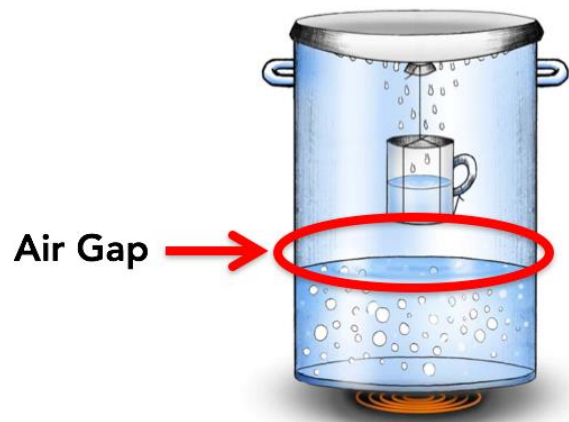
with biological contaminants. This is vital to understand.

NOW THE RED CROSS GUIDELINES MAKE SENSE!

So now that we understand this point, the Red Cross recommendations make total sense. The three recommended methods of boiling, chlorination, and distillation, are the most effective and reliable ways to protect against biological contaminants. **Boiling is obvious.** Whenever there is a bacterial outbreak, cities announce a boil notice, which means that residents are supposed to boil the water before they drink it. Boiling is very effective at killing biological contaminants. **Chlorine is also very good at killing biological contaminants**, which is why municipal water systems have been using chlorine to treat water for decades. **And the most effective way to kill and remove biological contaminants from water is distillation.**

LET'S LOOK AT DISTILLATION

So let's look at distillation a little closer. This is our illustration of a very basic water distiller.



You put contaminated water in the pot and bring to a boil which kills the bacteria and viruses. When the pure steam rises, the contaminants are left behind in the boiling water. The steam condenses on the lid, and the pure distilled water drips down. Now I want you to notice something here; I want you

to look at the space above the boiling water. This is an air gap and it's very important. This air gap creates a physical separation between the contaminated water and the pure distilled water. This air gap ensures that the pure water does not come in contact with the raw water.

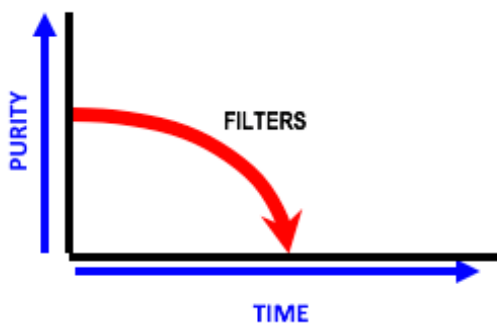
WHY FILTERS ARE NOT RECOMMENDED

This brings us to filters and the reason that they are not included in the Red Cross recommendations. This is a very basic representation of a filter. It's simply a pipe with



water flowing through it, with a filter in the middle. So the water has to flow through the filter, and the hope, of course, is that the filter will let the water through but not let the contaminants through. The problem is, this is not what happens.

Filters fail. Filters deteriorate over time and when they fail they let contaminants through.



In daily life, we change water filters every few months because the filter deteriorates and as it deteriorates, it lets more and more stuff through. And the problem with filters is that there is a direct connection from the raw contaminated water to the filtered water. So when the filter lets contaminants through, the filtered water will be contaminant without your

knowledge. And remember what we said: ***There is no room for error with biological contaminants.*** These are living organisms so if even a few get through, they can grow and multiply. This is why filters are generally approved only for water that is already safe and are not recommended for dangerous water. I do want to point out that there is a way to properly use filters and I'll get to that in a minute.

GOING BEYOND THE RED CROSS RECOMMENDATIONS

Now you understand what the Red Cross recommends and you understand why the recommended what they do. Their recommendations are very good and their priorities are right because biologicals can be extremely dangerous, but there is obviously a weakness with the Red Cross recommendations. While we certainly want to protect ourselves against biological contaminants, we also want to protect ourselves against other toxins that could be in the water. This is especially true in an emergency situation because these toxins could be present in the water in greater amounts than usual. So what we need to do is go beyond the Red Cross recommendations.

STEP ONE: HAVE THE PROPER PRIORITIES

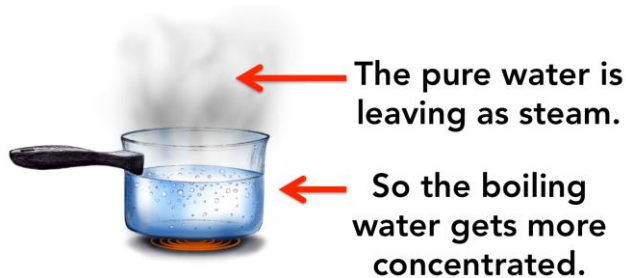
PRIORITY #1 in an emergency is to protect yourself from biological contaminants.

PRIORITY #2 is to protect yourself against all other contaminants, as long as priority number two does not interfere with priority number one.

In other words, we want to keep the Red Cross recommendations as our foundation and we want to build on this foundation.

UNDERSTANDING BOILING WATER

So let me show you an example of what I'm talking about. Now that you understand the process of distillation, you have a better



understanding of what happens when you boil a pot of water on the stove. When you boil water on the stove, the steam, which is pure water, is leaving. This means that the boiling water still in the pot is actually getting more concentrated with contaminants. So if you boil half of the water away, you have just doubled the concentration of chemicals that are in the boiling water. If you boil a pot of water dry, you will see a layer of stuff stuck to the bottom of the pot. That stuff is the contaminants that were in the water, but now the water is gone and so the contaminants are what is left behind.

BOILING WATER VS. DIFFERENT TYPES OF CONTAMINANTS

So now with this perspective let's go back and look at how boiling works on the different types of contaminants. Particulates are actually going to stay behind in the boiling water. Boiling actually concentrates particulates in your water. Boiling kills biological contaminants but it does not remove them. When bacteria die, they can create toxins called endotoxins which can be dangerous, and these are left behind in the boiling water. Boiling actually concentrates inorganic, radioactive metals, and most organic chemicals.



- **Particulates.** Concentrates.
- **Microbiological.** Kills (no removal).
- **Inorganic.** Concentrates.
- **Radioactive Metals.** Concentrates.
- **Organic.** Concentrates.

THERE ARE DIFFERENT TYPES OF WATER EMERGENCIES!

This is crucial point: There are different types of water emergencies, and the right way to treat water in one type of emergency may be the exact wrong way to treat water for another type of emergency.

EXAMPLE #1: WEST VIRGINIA CHEMICAL SPILL

In January 2014 there was a chemical spill in West Virginia. Over 10,000 gallons of a dangerous organic chemical that is used to



clean coal leaked into the Elk River. The Elk River is the source of drinking water for more than 300,000 people. These people were told not to drink, consume, touch, bathe in, or brush their teeth with their tap water. So this is the water emergency and one of the Red Cross recommendations is to boil water. Now, with what you've learned, let me ask you, ***“If you were in this situation should you boil this water before you drink it?”***

NO!!!!

The last thing that you should do in this situation is boil your water before you consume it. Why? Because as you boil the water, the pure water would have left as steam, so the chemicals would have stayed behind in the boiling water and would have

actually become concentrated. ***Boiling this water would've actually made the problem worse!***

EXAMPLE #2: BLUE-GREEN ALGAE

This is an important point so I want to give you another example. In August 2014, Toledo, Ohio, had a water emergency in which there was a blue-green algae bloom in Lake Erie,



which is their source for tap water. Again, people were told not to drink, bathe in, or even touch the water. So let me ask you, in this water emergency, ***should you boil the water before you drink it?***

ACTUALLY, THIS IS A TRICK QUESTION

This sounds like a biological contamination issue, right? So were talking about algae, and boiling is a very effective way to kill biologicals including algae.

But here's the thing; in this situation, the real danger does not come from the algae, but from a ***toxin*** the algae creates called microcystin, which is very dangerous for your liver and kidneys. So in other words, the algae make a chemical and these chemical stays behind in the boiling water. So if you boil the water, yes, your killing the algae, but you're

actually making the water more dangerous because you're concentrating the microcystin in the water.

EXAMPLE #3: FLINT, MICHIGAN



Let's go through one more example. In August 2014, the town of Flint Michigan changed water supply from the Detroit water to the Flint River. They did this in order to save money. It was subsequently discovered

that this process was not handled properly, and the water turned out to be more corrosive which put high amounts of lead into the tap water. Lead is an inorganic contaminant that is very dangerous especially to children because it can cause permanent damage to developing brains. So this is another water emergency. ***So should you boil the water before you drinking it?***

I hope this is obvious by now. The answer is no. If you boil the water, the lead stays behind in the boiling water and makes the problem worse.

NOW YOU KNOW SOMETHING THAT FEW UNDERSTAND...

You see now why it's very important to understand that there are different types of water emergencies. ***From a practical perspective, this means that you may need to treat water differently for the different types of emergencies.*** I emphasize this because this is something that the vast number of people don't understand, but now you do!

CHLORINE VS. DIFFERENT TYPES OF CONTAMINANTS

So what about chlorine? Chlorine doesn't concentrate the contaminants, but it doesn't remove them either. Chlorine can kill biological contaminants, but it does nothing to remove particulates, inorganic, radioactive, or organic contaminants. So if you chlorinate the water and think everything's okay, you may be putting your family at risk.



- **Particulates.** No removal.



- **Microbiological.** Kills (no removal).



- **Inorganic.** No removal.



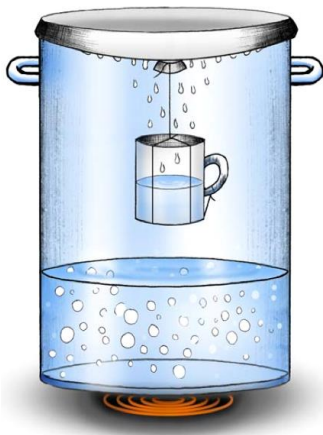
- **Radioactive Metals.** No removal.



- **Organic.** No removal.

DISTILLATION VS. DIFFERENT TYPES OF CONTAMINANTS

Now distillation is a different story. While distillation incorporates boiling, it takes it much further. Distillation is the only one of the three methods that actually purifies the water because it captures the pure steam that comes off of the boiling water. So distillation is very effective at removing particulates because they stay behind in the boiling water. Distillation is the most effective way to kill and remove biological contaminants, and is very effective at removing inorganic, radioactive, and organic contaminants. And distillation is also a very effective way to remove salt from ocean water, because salt is an inorganic contaminant. And that makes sense because this is how the hydrologic cycle works, and that's how we get fresh water on this planet.



- **Particulates.** Good removal.



- **Microbiological.** Kills & Removes.



- **Inorganic.** Good removal.
 ← Including salt water.



- **Radioactive Metals.** Good removal.



- **Organic.** Good removal.

IMPORTANT NOTE!

I am not dismissing boiling or chlorination, because these are important treatment processes that can save your life in an emergency. BUT, you need to know their limitations, and how to use these processes effectively.

LET'S RATE THE PROCESSES

So let's look at the different processes and let's rate them.

DISTILLATION IS BEST. There's no question that distillation is the best process for treating water in an emergency because it provides the highest level of protection against biological contaminants while also providing excellent protection against other possible contaminants. Distillation can turn ocean water into pure water, and it has an air gap that puts a physical separation between the contaminated water and the distilled water. Distillation also provides long-term protection and produces the same quality water basically forever. The quality of the water that distillation produces does not deteriorate over time like filters do. There is no perfect water treatment process, including distillation, but distillation is at the top of the list. It gives us a good way to compare other options, because it is important to have other options. You may not be able to use distillation all the time, so you need to know how to use other treatment methods in the most effective way.



BOILING IS NEXT BEST, BUT IT'S FLAWED, SO... The next best method is boiling, but you now know boiling has some serious weaknesses. It kills biologicals but it concentrates other contaminants, so you must remove as many of the other contaminants as possible prior to boiling. You

can do this with a filter. Using the best filter that is available to you, maybe even a combination of filters. Maybe you have a reverse osmosis system or a carbon filter, or even a very finely woven fabric that you can use as a filter. But remember—and this is a very important point—you are not going to drink the water that comes out of the filter until you then boil it. The solution is not as good as distillation and it will become less effective over time because filters become less effective over time, but it's definitely a more complete solution than boiling alone.



CHLORINATION IS THIRD BEST, BUT STILL SHOULD BE PART OF YOUR PLAN.

Now let's look at chlorination, which I rank third. Chlorination is not as good as distillation or boiling because there are some biological contaminants that are resistant to chlorine such as giardia or cryptosporidium. Also, the effectiveness of chlorine depends on carefully following the instructions that the Red Cross provides. Just as with boiling the water, you want to pre-filter the water as thoroughly as possible before you chlorinate it.



The goal is to have a complete water treatment solution, while keeping the Red Cross recommendations as the foundation of anything that you do. In other words, you want to do everything possible to clean the water and then you want to follow it up with one of the Red Cross recommended methods. The Red Cross recommended method should always be the last step in the process. Distillation is the only process that is a complete solution in and of itself.

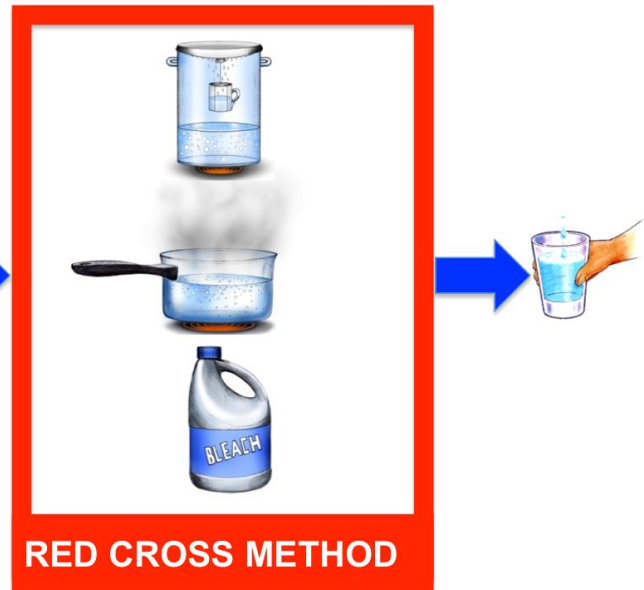
IN OTHER WORDS...

When possible, use a filter to pretreat the water before you use one of the Red Cross recommended methods. But remember, the Red Cross recommended method is always last. It is not advised to use a filter as a stand-alone treatment method.

PREFILTER

Use the best filter, or a combination of filters to remove as many chemicals and toxins as possible before using the Red Cross methods.

The Red Cross recommended method is your foundation.



TO SUMMARIZE...

So let me summarize what you've learned so far:

1. First, you understand how vital water is and how water can become dangerously contaminated in an instant and put your family's safety at risk. Remember the picture of the lady with the stomach bug? That is the situation you want to avoid at all costs.
2. You've learned the Red Cross and FEMA recommendations for treating water in an emergency.
3. Now you understand why they recommend what they do. You understand that there are different types of contaminants, and there is one type of contaminant—biological—that is more dangerous than the others in an emergency.
4. You also understand that there are different types of water emergencies and that this may affect the way that you should treat the water.
5. Finally, you understand what the proper priorities are and what water treatment methods are the best. You understand that you should not rely on filters alone, but you know that filters can play an important role in pretreating water before you use one of the Red Cross recommended methods.

A FINAL COMMENT...

It's important that you understand that you now know more about water than 99% of the population. If an emergency strikes, the vast majority of people are not going to understand the threat to their safety, nor will they have



any clue about what to do and what not to do. By reading this book, you understand more than the vast majority of people. If disaster struck tonight and disrupted your drinking water supply, you would know the basics of how to take care of your family, and you'd be better able to help others. But there is one thing that will make you much safer: IF YOU ARE SURROUNDED BY PEOPLE WHO ALSO KNOW THIS INFORMATION! ***Tell people to get their own copy of this book for free by sending a blank email to FREEBOOK@EMERGENCYWATER101.com***

WATER IN AN EMERGENCY

"Be Prepared" Checklist

This checklist is provided by www.EmergencyWater101.com

Check it off!
Be Prepared!



- 1 **KNOWLEDGE.** The single most important tool in an emergency situation is knowledge. In an emergency, you could be dehydrated, panicked, and in shock, all of which can affect your mental capacity, so you must have something written down that you can reference. At the very least, have the Red Cross recommendations, which are included in a booklet that you can download by sending a blank email to FREEBOOK@EMERGENCYWATER101.com. Also, visit www.EmergencyWater101.com for other educational materials.
- 2 **BOTTLED WATER.** The Red Cross recommends that you have at least a three-day supply of bottled water, but if possible, have a two-week supply. You should have at least one gallon per person per day. This should be commercially produced bottled water, preferably a well-known brand name. Keep the bottles sealed and stored in a dark, cool area. Rotate the bottles out at least every twelve months.
- 3 **STOVE & FUEL.** A non-electric stove is an important part of being prepared, because it can be used to boil or distill water. Preferably you should have a stove that can use different types of fuel, including a simple wood fire.
- 4 **A NON-ELECTRIC WATER DISTILLER.** The core component of being prepared for an emergency is to have a professionally designed non-electric water distiller (see www.SurvivalStill.com). The Red Cross brochure has a simple diagram for creating your own, very simple distiller.
- 5 **BLEACH.** You can chemically disinfect water with bleach. Have at least one bottle of unopened bleach that can be used to disinfect water supplies. Do not use scented bleaches, colorsafe bleaches or bleaches with added chemicals.
- 6 **AN EMERGENCY FILTER.** Filters are not recommended by the Red Cross for treating water in an emergency, but they can be used to pretreat water before you boil, bleach or distill the water.
- 7 **PREPARE YOUR LOVED ONES & NEIGHBORS.** You know how important it is that your friends and loved be prepared. If you can't convince them to be prepared, give them a gift of the essential items that they need, especially educational materials. It's also important to talk to your neighbors, because your family will be safer if they are surrounded by strong, healthy people. Tell them about EmergencyWater101.com

The Red Cross and FEMA Pamphlet

In the next few pages we have attached the pamphlet called “Food and Water In An Emergency” which is published jointly by the American Red Cross and the Federal Emergency Management Agency (FEMA). We have included the complete, unaltered document.

As a quick reference, here is an excerpt from the pamphlet regarding “Ways to Treat Water”.

Ways to Treat Water

The instructions below are for treating water of uncertain quality in rare emergency situations in the absence of instructions from local authorities when no other reliable clean water source is available and you have used all of your stored water. If you store enough water in advance, you will not need to treat water using these or other methods.

In addition to having a bad odor and taste, contaminated water can contain microorganisms (germs, bacteria, and viruses) that cause diseases such as dysentery, typhoid, and hepatitis. You should treat all water of uncertain quality before using it for drinking, food preparation, or hygiene.

There are many ways to treat water, though none are perfect. Often the best solution is a combination of methods.

Boiling or chlorination will kill most microorganisms but will not remove other contaminants such as heavy metals, salts, and most other chemicals. Before treating, let any suspended particles settle to the bottom, or strain them through layers of paper towel, clean cloth, or coffee filter.

Boiling

Boiling is the safest method of treating water. In a large pot or kettle, bring water to a rolling boil for 1 full minute, keeping in mind that some water will evaporate. Let the water cool before drinking. Boiled water will taste better if you put oxygen back into it by pouring the water back and forth between two clean containers. This will also improve the taste of stored water.

Chlorination

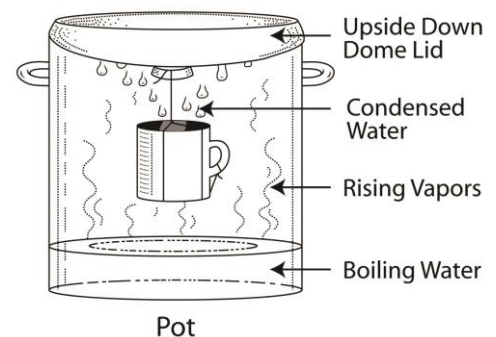
You can use household liquid bleach to kill microorganisms. Use only regular household liquid bleach that contains 5.25 to 6.0 percent sodium hypochlorite. Do not use scented bleaches, colorsafe bleaches, or bleaches with added cleaners. Because the potency of bleach diminishes with time, use bleach from a newly opened or unopened bottle.

Add 16 drops (1/8 teaspoon) of bleach per gallon of water, stir and let stand for 30 minutes. The water should have a slight bleach odor. If it doesn't, then repeat the dosage and let stand another 15 minutes. If it still does not smell of bleach, discard it and find another source of water. Other chemicals, such as iodine or water treatment products (sold in camping or surplus stores) that do not contain 5.25 to 6.0 percent sodium hypochlorite as the only active ingredient, are not recommended and should not be used.

Distillation

While the two methods described above will kill most microorganisms in water, distillation will remove microorganisms that resist these methods, as well as heavy metals, salts, and most other chemicals.

Distillation involves boiling water and then collecting the vapor that condenses back to water. The condensed vapor will not include salt or most other impurities. To distill, fill a pot halfway with water. Tie a cup to the handle on the pot's lid so that the cup will hang rightside-up when the lid is upside down (make sure the cup is not dangling into the water), and boil the water for 20 minutes. The water that drips from the lid into the cup is distilled. (See illustration.)



Attachment: FEMA / Red Cross Pamphlet about treating water in an emergency. (Cover)

Food and Water in an Emergency



FEMA



**American
Red Cross**



If an earthquake, hurricane, winter storm, or other disaster strikes your community, you might not have access to food, water, and electricity for days or even weeks. By taking some time now to store emergency food and water supplies, you can provide for your entire family.



Emergency Food Supplies

Even though it is unlikely that an emergency would cut off your food supply for two weeks, consider maintaining a supply that will last that long.

You may not need to go out and buy foods to prepare an emergency food supply. You can use the canned goods, dry mixes, and other staples on your cupboard shelves. Be sure to check expiration dates and follow the practice of first-in, first-out.

PREPARING AN EMERGENCY FOOD SUPPLY

As you stock food, take into account your family's unique needs and tastes. Familiar foods are important. They lift morale and give a feeling of security in times of stress. Try to include foods that they will enjoy and that are also high in calories and nutrition. Foods that require no refrigeration, water, special preparation, or cooking are best.

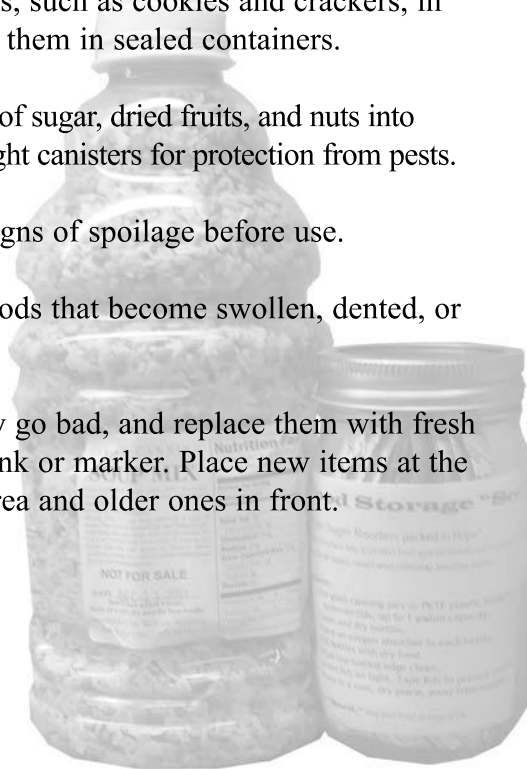


Individuals with special diets and allergies will need particular attention, as will babies, toddlers, and the elderly. Nursing mothers may need liquid formula, in case they are unable to nurse. Canned dietetic foods, juices, and soups may be helpful for ill or elderly people.

Make sure you have a manual can opener and disposable utensils. Don't forget non-perishable foods for your pets.

STORAGE TIPS

- ◆ Keep food in a dry, cool spot—a dark area if possible.
- ◆ Open food boxes and other resealable containers carefully so that you can close them tightly after each use.
- ◆ Wrap perishable foods, such as cookies and crackers, in plastic bags and keep them in sealed containers.
- ◆ Empty open packages of sugar, dried fruits, and nuts into screw-top jars or air-tight canisters for protection from pests.
- ◆ Inspect all food for signs of spoilage before use.
- ◆ Throw out canned goods that become swollen, dented, or corroded.
- ◆ Use foods before they go bad, and replace them with fresh supplies, dated with ink or marker. Place new items at the back of the storage area and older ones in front.



SHELF LIFE OF FOODS FOR STORAGE

The following provides some general guidelines for replacement of common emergency foods.

Use within six months:

- ◆ Powdered milk — *boxed*
- ◆ Dried fruit
- ◆ Dry, crisp crackers
- ◆ Potatoes

Use within one year, or before the date indicated on the label:

- ◆ Canned condensed meat and vegetable soups
- ◆ Canned fruits, fruit juices, and vegetables
- ◆ Ready-to-eat cereals and uncooked instant cereals
- ◆ Peanut butter
- ◆ Jelly
- ◆ Hard candy and canned nuts
- ◆ Vitamins

May be stored indefinitely (in proper containers and conditions):

- ◆ Wheat
- ◆ Vegetable oils
- ◆ Dried corn
- ◆ Baking powder
- ◆ Soybeans
- ◆ Instant coffee, tea, and cocoa
- ◆ Salt
- ◆ Noncarbonated soft drinks
- ◆ White rice
- ◆ Bouillon products
- ◆ Dry pasta
- ◆ Powdered milk — *in nitrogen-packed cans*

IF THE ELECTRICITY GOES OFF ...

FIRST ...

Use perishable food from the refrigerator, pantry, garden, etc.

THEN ...

Use the foods from the freezer. To limit the number of times you open the freezer door, post a list of freezer contents on it. In a well-filled, well-insulated freezer, foods will usually still have ice crystals in their centers (meaning foods are safe to eat) for at least two days. Check to make sure the seal on your freezer door is still in good condition.

FINALLY ...

Begin to use non-perishable foods and staples.



HOW TO COOK IF THE POWER GOES OUT

For emergency cooking indoors, you can use a fireplace. A charcoal grill or camp stove can be used outdoors. You can keep cooked food hot by using candle warmers, chafing dishes, and fondue pots. Use only approved devices for warming food. Canned food can be eaten right out of the can. If you heat it in the can, be sure to open the can and remove the label before heating. Always make sure to extinguish open flames before leaving the room.



WHEN FOOD SUPPLIES ARE LOW

If activity is reduced, healthy people can survive on half their usual food intake for an extended period and without any food for many days. Food, unlike water, may be rationed safely, except for children and pregnant women.

If your water supply is limited, don't eat salty foods, since they will make you thirsty. Instead, eat salt-free crackers, whole grain cereals, and canned foods with high liquid content.

NUTRITION TIPS

During and after a disaster, it is vital that you maintain your strength. Remember the following:

- ♦ Eat at least one well-balanced meal each day.
- ♦ Drink enough liquid to enable your body to function properly (two quarts or a half gallon per day).
- ♦ Take in enough calories to enable you to do any necessary work.
- ♦ Include vitamin, mineral, and protein supplements in your stockpile to ensure adequate nutrition.

Emergency Water Supplies

Having an ample supply of clean water is a top priority in an emergency. A normally active person needs to drink at least two quarts (half gallon) of water each day. People in hot environments, children, nursing mothers, and ill people will require even more.

You will also need water for food preparation and hygiene. Store at least one gallon per person, per day. Consider storing at least a two-week supply of water for each member of your family. If you are unable to store this quantity, store as much as you can.

If supplies run low, never ration water. Drink the amount you need today and try to find more for tomorrow. You can minimize the amount of water your body needs by reducing activity and staying cool.



PREPARE AND STORE AN EMERGENCY SUPPLY OF WATER

To prepare the safest and most reliable emergency supply of water, it is recommended that you purchase commercially bottled water. Keep bottled water in its original container, and do not open it until you need to use it.



Store bottled water in the original sealed container, and observe the expiration or “use by” date.

If You Are Preparing Your Own Containers of Water ...

It is recommended to purchase food-grade water storage containers from surplus or camping supplies stores to use for water storage.

If you decide to re-use storage containers, choose two-liter plastic soft drink bottles — not plastic jugs or cardboard containers that have had milk or fruit juice in them. The reason is that milk protein and fruit sugars cannot be adequately removed from these containers and provide an environment for bacterial growth when water is stored in them. Cardboard containers leak easily and

are not designed for long-term storage of liquids. Also, do not use glass containers, because they are heavy and may break.

Preparing Containers

- ◆ Thoroughly clean the bottles with dishwashing soap and water, and rinse completely so there is no residual soap.
- ◆ Additionally, for plastic soft drink bottles, sanitize the bottles by adding a solution of 1 teaspoon of non-scented liquid household chlorine bleach to a quart (1/4 gallon) of water. Swish the sanitizing solution in the bottle so that it touches all surfaces. After sanitizing the bottle, thoroughly rinse out the sanitizing solution with clean water.

Filling Water Containers

- ◆ Fill the bottle to the top with regular tap water. (If your water utility company treats your tap water with chlorine, you do not need to add anything else to the water to keep it clean.) If the water you are using comes from a well or water source that is not treated with chlorine, add two drops of non-scented liquid household chlorine bleach to each gallon of water.
- ◆ Tightly close the container using the original cap. Be careful not to contaminate the cap by touching the inside of it with your fingers. Write the date on the outside of the container so that you know when you filled it. Store in a cool, dark place.
- ◆ Replace the water every six months if not using commercially bottled water.

HIDDEN WATER SOURCES IN YOUR HOME

Safe water sources in your home include the water in your hot-water tank, pipes, and ice cubes. You **should not** use water from toilet flush tanks or bowls, radiators, waterbeds, or swimming pools/spas.

You will need to protect the water sources already in your home from contamination if you hear reports of broken water or sewage lines or if local officials advise you of a problem. To shut off incoming water, locate the main valve and turn it to the closed position. Be sure you and other family members know beforehand how to perform this important procedure.

To use the water in your pipes, let air into the plumbing by turning on the faucet in your home at the highest level. A small amount of water will trickle out. Then obtain water from the lowest faucet in the home.

To use the water in your hot-water tank, be sure the electricity or gas is off, and open the drain at the bottom of the tank. Start the water flowing by turning off the water intake valve at the tank and turning on a hot-water faucet. Refill the tank before turning the gas or electricity back on. If the gas is turned off, a professional will be needed to turn it back on.

EMERGENCY OUTDOOR WATER SOURCES

If you need to find water outside your home, you can use these sources. Be sure to treat the water according to the instructions on the next page before drinking it.

- ◆ Rainwater
- ◆ Streams, rivers, and other moving bodies of water
- ◆ Ponds and lakes
- ◆ Natural springs

Avoid water with floating material, an odor, or dark color. Use saltwater only if you distill it first. You should not drink flood water.

WAYS TO TREAT WATER

The instructions below are for treating water of uncertain quality in rare emergency situations in the absence of instructions from local authorities when no other reliable clean water source is available and you have used all of your stored water. If you store enough water in advance, you will not need to treat water using these or other methods.

In addition to having a bad odor and taste, contaminated water can contain microorganisms (germs, bacteria, and viruses) that cause diseases such as dysentery, typhoid, and hepatitis. You should treat all water of uncertain quality before using it for drinking, food preparation, or hygiene.

There are many ways to treat water, though none are perfect. Often the best solution is a combination of methods.

Boiling or chlorination will kill most microorganisms but will not remove other contaminants such as heavy metals, salts, and most other chemicals. Before treating, let any suspended particles settle to the bottom, or strain them through layers of paper towel, clean cloth, or coffee filter.

Boiling

Boiling is the safest method of treating water. In a large pot or kettle, bring water to a rolling boil for 1 full minute, keeping in mind that some water will evaporate. Let the water cool before drinking.

Boiled water will taste better if you put oxygen back into it by pouring the water back and forth between two clean containers. This will also improve the taste of stored water.

Chlorination

You can use household liquid bleach to kill microorganisms. Use only regular household liquid bleach that contains 5.25 to 6.0 percent sodium hypochlorite. Do not use scented bleaches, colorsafe bleaches, or bleaches with added cleaners. Because the potency of bleach diminishes with time, use bleach from a newly opened or unopened bottle.

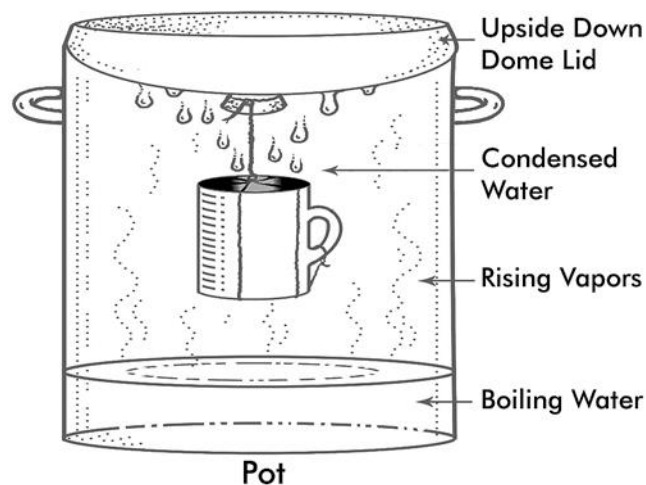
Add 16 drops (1/8 teaspoon) of bleach per gallon of water, stir and let stand for 30 minutes. The water should have a slight bleach odor. If it doesn't, then repeat the dosage and let stand another 15 minutes. If it still does not smell of bleach, discard it and find another source of water.

Other chemicals, such as iodine or water treatment products (sold in camping or surplus stores) that do not contain 5.25 to 6.0 percent sodium hypochlorite as the only active ingredient, are not recommended and should not be used.

Distillation

While the two methods described above will kill most microorganisms in water, distillation will remove microorganisms that resist these methods, as well as heavy metals, salts, and most other chemicals.

Distillation involves boiling water and then collecting the vapor that condenses back to water. The condensed vapor will not include salt or most other impurities. To distill, fill a pot halfway with water. Tie a cup to the handle on the pot's lid so that the cup will hang right-side-up when the lid is upside down (make sure the cup is not dangling into the water), and boil the water for 20 minutes. The water that drips from the lid into the cup is distilled. (See illustration.)



Disaster Supplies Kit

In the event you need to evacuate at a moment's notice and take essentials with you, you probably will not have the opportunity to shop or search for the supplies you and your family will need. Every household should assemble a disaster supplies kit and keep it up to date.

A disaster supplies kit is a collection of basic items a family would probably need to stay safe and be more comfortable during and after a disaster. Disaster supplies kit items should be stored in a portable container(s) near or as close as possible to the exit door. Review the contents of your kit at least once per year or as your family's needs change. Also, consider having emergency supplies in each vehicle and at your place of employment.

The Following Should Be Included In Your Basic Disaster Supplies Kit:

- ◆ Three-day supply of non-perishable food and manual can opener
- ◆ Three-day supply of water (one gallon of water per person, per day)
- ◆ Portable, battery-powered radio or television and extra batteries
- ◆ Flashlight and extra batteries
- ◆ First aid kit and manual
- ◆ Sanitation and hygiene items (hand sanitizer, moist towelettes, and toilet paper)
- ◆ Matches in a waterproof container
- ◆ Whistle
- ◆ Extra clothing and blankets
- ◆ Kitchen accessories and cooking utensils
- ◆ Photocopies of identification and credit cards
- ◆ Cash and coins
- ◆ Special needs items such as prescription medications, eyeglasses, contact lens solution, and hearing aid batteries
- ◆ Items for infants, such as formula, diapers, bottles, and pacifiers
- ◆ Tools, pet supplies, a map of the local area, and other items to meet your family's unique needs

Learn More

The Federal Emergency Management Agency's Community and Family Preparedness Program and American Red Cross Community Disaster Education are nationwide efforts to help people prepare for disasters of all types.

For more information, please contact your local emergency management office or American Red Cross chapter. This booklet and the preparedness materials listed below are online at www.fema.gov and www.redcross.org. Other preparedness materials are available at these sites, as well as at www.ready.gov.

These publications are also available by calling FEMA at 1-800-480-2520, or writing:

FEMA
P.O. Box 2012
Jessup, MD 20794-2012

Publications are available from your local American Red Cross chapter.

- ◆ Are You Ready? An In-depth Guide to Citizen Preparedness (IS-22)
- ◆ Preparing for Disaster (FEMA 475) (Red Cross 658615)
- ◆ Preparing for Disaster for People with Disabilities and other Special Needs (FEMA 476) (Red Cross 658618)
- ◆ Helping Children Cope with Disaster (FEMA 478) (Red Cross 658619)

Local sponsorship provided by:



FEMA 477
Red Cross 658613
rev. May 2006