

JOURNAL OF

# *Civil* DEFENSE

VOLUME 50

2017 ISSUE 1

**Will YOU  
Be Ready?**







*Mark Your Calendars for*  
**TACDA'S SPRING CONFERENCE 2018**

**SATURDAY, MAY 12TH**  
**Salt Lake City, Utah**

We look forward to sharing a full day of  
information and ideas with you!  
(More details to come)

*“Knowledge is the key to survival,  
the real beauty of that is that it doesn't weigh anything.”* - Ray Mears

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## PRESIDENT'S MESSAGE



The threats we face as Americans seem to become greater every day. I will briefly enumerate a few of these.

It appears we may be moving into a cold war with Russia.

Major violence in the middle-east could erupt at any moment.

India and Pakistan continue their dispute over Kashmir, now India and China are in a major border dispute. All three of these countries are nuclear powers and there does not seem to be an easy solution to these problems.

North Korea appears to have an ICBM capable of hitting most of the United States with a nuclear weapon and they continue to threaten to use them on us.

China is threatening the international shipping lanes with the new islands they have constructed in the South China Sea.

Another major threat is that of cyber terrorism. Wilbur Ross (Secretary of Commerce) recently said "To me, the most terrifying form of warfare would be if there was some simultaneous cyber attack on our grid, on the banking system, and our transportation system. That would be quite a devastating thing, and yet in theory, absent some real protective measures, that could happen."

We may have to deal with a major Geomagnetic Storm (solar flare). NASA said we have a 1 in 8 chance of a major storm hitting the earth by 2020. A major storm could also take down our electric grid.

Depending on where we live, we may have to deal with the threat of tornadoes, earthquakes, floods, hurricanes, and winter storms. If there is a major disaster that covers a large area it is quite possible FEMA would be overwhelmed. We may be on our own for weeks or months.

*Now is the time to prepare.*

Remember when the time of need arrives – the time to prepare has passed.

A handwritten signature in black ink, appearing to read "Will Perkins".

William David Perkins  
President  
E-mail: kd4fjl@att.net

## FROM THE EDITOR

We are delighted to present this issue of the Journal of Civil Defense to our loyal members. A special thank you to each of our contributing authors for donating great content. Polly and Lisa are the creative geniuses behind this compilation. I greatly appreciate all of their talent and hard work. It is demonstrated in the final product.

Our world continues to grow more and more unstable. Society is rapidly declining and it is impossible to tell exactly what the catalyst will be that initiates the crash. We know it is inevitable. We work to be ready and to be part of the solution. I appreciate you for doing what you can to stand tall and work together through difficult circumstances and bless the lives of others.

Thank you for your continued support of The American Civil Defense Association. Please share this wonderful resource with your family and friends.

God bless you,

A handwritten signature in black ink, appearing to read "Kylene Jones".

Kylene Jones

Editor, *Journal of Civil Defense*



# Preppers are PESSIMISTS!

by Jonathan B. Jones, PE  
TACDA Advisory Board

**N**ow that I have your attention, I want to share some of my perspectives on being a so-called “Prepper.”

I, personally, am compelled to prepare myself and my family to weather the storms of life...whatever they may be. I find great fulfillment and peace of mind in steadily doing those things that help this happen. I also believe it is vital to maintain balance in our lives. I think most, or all of us, have full lives with a variety of important things going on. I strongly encourage those with whom I consult to add a little slice of preparedness to their lives and to make steady, consistent progress while continuing to do all the other important things.

I find it very interesting that many amongst us don't share that desire to become independent, resilient, and capable of being part of the solution. Others recognize the wisdom in making preparations, but

until the crisis arises, it's just not high enough on the priority list. Unfortunately, at that time, it is too late to do much good. This second group is really no better than the first since the outcome is the same (the road to some famous place is paved with good intentions).

I have, at times, found myself being labeled as a pessimist, preaching the “gospel” of gloom and doom. As a Civil Engineer, I was trained to design structures and other infrastructure to withstand the forces of man and nature. In that process, you look at anything and everything that might cause failure to occur and manage those forces in a way that preserves lives and property. Obviously, we don't always succeed, but most often we do.

Our efforts to prepare should follow a similar path...we look at the things that may disrupt our lives, and build a plan to maintain peace and order until our lives return to normal. Why people think this is a pessimistic activity, I do not understand.

I will now tell you why I think the preppers of this world are actually the ultimate optimists! Our world is fraught with perils, and challenges will arise whether we choose to prepare for them or not. As preppers, we actually believe that in spite of whatever may come, we can take care of ourselves, our families and friends, and make a positive difference for others and our communities.

Financially, we strengthen the economy by purchasing more than our immediate need. And when a crisis arises, we reduce competition for scarce resources because we have what we need and choose not to put ourselves in dangerous situations, competing desperately for limited life-sustaining resources.

Preppers ... hold your heads high and be thankful that you have not only the foresight, but discipline to take responsibility for your lives and your futures. You too can be an Ultimate Optimist! ●





# *Surviving* Chemical Attack

By Zachariah A. Amela  
TACDA Member

W

With the ongoing War on Terrorism, the rise of ISIS, tensions with North Korea, and renewed hostility from the Russian Federation, concerns over chemical weapons have resurfaced.

Chemical weapons are classified as a weapon of mass destruction and are devices designed to cause death, injury, or incapacitation to human targets. They are different than nuclear weapons, radiological dispersal devices (RDD), and biological weapon systems. Chemical weapons have been called “the poor man’s atomic bomb”. Some chemical weapons are designed to be lethal (e.g., nerve agents, blister agents, et al) while others are incapacitating (e.g., 3-Quinuclidinyl benzilate, KOLOKOL-1) or harassing agents (e.g., tear gas, vomiting agents, et al). Several nation states maintain stockpiles of chemical weapons and such weapons have been confirmed to be possessed by hostile non-state actors (e.g., terrorists and insurgency groups). Chemical agents can be released by the detonation of a bomb or sprayed from a moving vehicle. A number of chemical agents have no odor or taste, so they may be difficult to detect.

The following is an introductory guide to lethal chemical agents, how they might be deployed, and what may be done to prepare for their use.

### BLISTER AGENTS

**General:** Blister agents, also called vesicants, are a chemical agent that causes skin, mucosal, and eye pain. They can inflict serious chemical burns that result in painful, water-filled blisters. Beyond pain, exposure can also result in mild respiratory distress. Some agents, such as mustard gas, are highly carcinogenic and mutagenic.

**Examples:** Sulfur mustard (more commonly known as mustard gas), nitrogen mustards, and Lewisite.

**Method of Dispersal:** Artillery shells, bombs, rockets, aerosol sprays, improvised weapons.

### NERVE AGENTS

**General:** The class of chemical weapons known as nerve agents are phosphorus-containing organic chemicals that disrupt the biological mechanism by which nerve tissue transfers messages to the organs. Exposure to the agents leads to convulsions, involuntary urination/defecation, profuse salivation, contraction of the pupils, and death by asphyxiation. Their production and stockpiling was outlawed in the 1993 Chemical Weapons Convention.

**Examples:** G-series, V-series (e.g., VE, VG, VM, VR, and VX), Novichok (HOBL140K, “New-comer” in Russian) agents.

**Method of Dispersal:** Artillery shells, rockets, bombs, aerosol, landmines, etc.

### CHOKING AGENTS

**General:** Choking agents, also known as pulmonary agents, are chemical weapons created to impede breathing. The agents operate by creating a build-up of fluid in the lungs, which eventually results in suffocation.

Additionally, exposure to the eyes and skin are corrosive and can cause burns. Phosgene, for example, was responsible for about 80 percent of the chemical deaths in the First World War.

**Examples:** Chlorine gas, Phosgene, Diphosgene, and others.

**Method of Dispersal:** Artillery shells, bombs, etc.

### BLOOD AGENTS

**General:** Blood agents are chemical weapons that are metabolic poisons designed to disrupt the processes of blood. These arsenic or cyanide based agents are generally fast acting toxins.

**Examples:** Cyanogen chloride (CK), Arsine (SA), and Hydrogen cyanide (AC).

**Method of Dispersal:** Normally disseminated via aerosol.

### HOW TO PREPARE FOR A CHEMICAL ATTACK

A chemical attack could come from a terrorist organization or a hostile nation state with little or no warning. As mentioned above in this report, the agents could be dispersed as solids, liquids, aerosols, vapors, and by explosives. The weapons could be purpose built by a hostile foreign nation or improvised by terrorist groups and other non-state actors. Many chemical agents are odorless. Some may have an immediate effect upon an exposed population, while others may have a delayed reaction. The signs of an attack with chemical weapons can include a burning sensation in the throat, nose, and lungs, nausea, loss of coordination, and irritation to the eyes and other soft tissues.

The most ideal protection is an airtight gas shelter. However, having on hand plastic sheeting that is precut to fit to the doors, windows, fireplaces, and air vents of your home or business is also an effective means of pro-

chemical warfare  
gases and poisons



tection. A roll, or several rolls, of duct tape and a pair of scissors or sharp knife should also be on hand to fix the plastic sheeting to the appropriate means of intake. Some individuals and families can and have invested in gas masks, protective clothing, and infant escape hoods. Having a pre-selected safe room, preferably one without windows and on the highest level of the building is also a good idea.

When emergency management authorities instruct you to shelter-in-place due to a chemical attack, take the following steps:

- If caught out in the open, immediately move away from the affected area and seek shelter. Every second counts, so waste no time.
- Immediately close and secure all doors and windows.
- Turn off all ventilation, fans, vents, and air conditioners.
- Seal off the home or business with the aforementioned pre-cut plastic sheeting and duct tape.
- Eventually, news will be released via the radio and the Internet on what to do next. Stay sheltered until the authorities state it is safe to leave.

Decontamination will be needed quickly; however do not leave the safety of a shelter until emergency management authorities have announced it is safe to leave.

General guidelines for decontamination are:

- Remove clothing and other items that have come in contact with the body. Cutting off clothing is generally safer as removing clothing over the head may result in exposure to the eyes, mouth, and nasal area. Seal contaminated clothing articles in plastic bag. Leaving the contaminated clothing, properly sealed, outside the home or business is a good idea.
- Thoroughly wash your hands in soap and water to decontaminate after removing clothing.
- Irrigate the eyes with cool water in a back and forth motion. Contact lenses should be removed and disposed of. Eyeglasses may be decontaminated.
- Taking a full shower, if possible, is also recommended after the aforementioned has been completed.
- Change into clothing known not to be contaminated.
- Visit the designated medical facility for screening and treatment, as necessary. ●

*The following guide has been an introductory text to chemical weapons, but is by no means exhaustive. The books, articles, and other media referenced in the Sources section will provide additional details.*

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# Evacuations: WHEN AND HOW?

*By Colonel Jim Smith*  
MSS, CLEE, CPC, NRP, FABCHS

In many circumstances, individuals are faced with the need to evacuate. These events may range from hazardous material releases, civil disorder, severe weather events, and sustained loss of infrastructures such as power, water, sewer, or fires. Individuals must be

familiar with the laws regarding forced evacuations and have an “individual or family” written policy regarding evacuations.

The policy should be based in practical terms and well-constructed. Careful research should be conducted to determine what statutory

authority may exist for forced evacuation by government. Some individuals will not leave their property under any circumstances.

In most jurisdictions, law enforcement officers have the statutory authority to regulate traffic and pedestrians at any emergency, but

may lack statutory authority to evacuate unless a local, state, or federal disaster is declared.

In situations in which persons refuse to leave their business or homes, the individuals must have a clear understanding of who has the authority to remove them and what constitutes a situation in which an evacuation is legally mandatory. In some jurisdictions, officers may not have authority to forcefully remove citizens from their homes or businesses. Further, the resources to do so may not be available.

How does one become aware of the need to evacuate a location? Weather radios alerting one to a tornado, blizzard, or impending hurricane is one method of notification and the emergency alert system may provide the information needed to make the decision to evacuate. In some circumstances, situational awareness is the key.

Factors that will affect the evacuation decisions include:

- Type of threat posed
- Credibility of the threat and its probability of affecting the area
- Intensity of threat

- Environmental conditions
- Routes available for evacuation
- Number of persons to be evacuated and their mobility
- Available transportation and available shelters
- Predicted time span of the incident in terms of longevity and arrival
- Danger presented by the evacuation

Many situations are clear-cut when a visible hazard such as a wild fire or rising floodwaters is present. Situations in which there may be hesitancy to evacuate are hazardous material releases in which a hazard is not readily apparent. A common situation in which individuals must make a decision regarding evacuation is a severe weather threat. The rational approach to this situation is that the leader of the group, or family, makes the call based upon the totality of the circumstances. The risk presented by the threat and the potential risk of evacuating should be considered. Blindly evacuating may not be the best alternative in severe weather events or hazardous materials incidents. It may be not be feasible to evacuate with shelter-in-place being the only option.

The decision maker must evaluate the situation and respond accordingly. There may be limited routes safe to use for evacuation purposes. Remember the wind direction and point of release of any potentially toxic airborne materials when evacuating. Another consideration is safe lanes of travel if shooting or civil disorder is involved. Rioting may be so widespread that evacuation is not feasible.

Once an evacuation is undertaken, the use of vehicles is recommended with time commensurate with safety used to “stock” the vehicle. Immediate go kits and second-

ary go kits need to be taken when feasible, and additional items, if time permits. One must know what shelters might be available which are provided by government or private concerns, and a secondary option to stay in an unaffected area with family or friends should also be considered.

These commitments with friends or family must be established prior to the emergency and solid plans of who will stay in what area of the residence or shelter provided by family or friends should be made. Pets and companion animals must also be considered as many individuals will not evacuate without taking their pets or companion animals. Knowing that family and friends have a place for pets or companion animals is important. Some shelters are now allowing pets and companion animals. (The author will not evacuate without taking his companion animals and has refused to evacuate on more than one occasion during two hurricanes because of this.)

In some circumstances to shelter-in-place may be the best option, especially during “in progress” hazardous materials incidents where the area to be evacuated is already contaminated with the hazardous material. Several hazardous materials events, involving anhydrous ammonia and chlorine releases, saw those evacuating exiting the relative safety of a residence into the cloud of chlorine or anhydrous ammonia and dying as a result. Those who sheltered-in-place survived the event.

What items are needed to ensure the evacuation is successful?

- Immediate Go Kit (home, vehicle, work)
- Secondary Go Kit (kept at home and if feasible at work)
- Shelter-in-Place Kit (make this “kit” to support the person

Knowing that family and friends have a place for pets or companion animals is important.

Some shelters are now allowing pets and companion animals.





- seven days)
- Preplanning (know where one needs to go and how to arrive there)
- Exercise the plan

Essential items may vary with type of evacuation hazards. Below are some recommended necessities carried in a backpack or other transportable carrying device:

### PRIMARY GO KIT

- Money (small bills, with larger bills hidden in the kit)
- LED Flashlight and spare batteries
- Prescription Medications (seven days of medications if feasible)
- OTC drug items (pain relievers, antihistamines, anti-diarrheal)
- Cell phone charger
- Charged spare battery or device to provide power to electronics
- First aid items
- Clothing (socks, underwear)
- Emergency poncho
- Sturdy footwear
- Insect repellent
- Multi tool
- Bottled water
- Water and windproof matches
- Smoke escape mask (useful if a toxic atmosphere or smoke is encountered)

\*Wear clothing suitable for the environment

### SECONDARY GO KIT

- Sleeping bag and mat
- Bottled water and water purification method
- Emergency foods - consider MRE or (if weight is not a consideration) canned items
- Larger first aid kit
- Underwear and clothing suitable for environment
- AM/FM/Weather radio

- Battery powered long lived LED lantern
- Needed medications and OTC drug items
- If evacuating into a non-shelter area consider these items - purified water, shelter, heat, light, insect repellent, toilet needs, and rain gear

Some individuals with proper permits also add a concealed handgun and spare ammunition to the Go Kit. This is a controversial issue if one is going to a public shelter which typically forbids such.

Communications with separated family members or relatives is critical. Some families establish an off-site assembly point and communicate via text messages or social media. The key is to let someone outside the affected area know the location of those affected and establish an accountability method.

In terms of items to place in a Go Kit, each kit should be customized to fit the person, locale, and season. Obviously during the summer, winter clothing items are not needed. This means that the kit should be emptied, inventoried and restocked with fresh items for those perishable items, at least twice annually. This serves the two-fold purpose of refreshing the items and making the person who will use the kit familiar with the items and their location. Some individuals build sophisticated kits that require a large backpack or wheeled luggage type device to carry while others use a small duffel or small backpack. The usage of a wearable carrier is advised to leave hands free.

Vehicle kits should be changed and checked at least four times annually as they are likely to be exposed to substantial heat or cold. This will decrease the life span of perishable items requiring their

replacement. Make certain the vehicle kit contains the basic repair items such as tire inflator – sealant items, booster cables, emergency radiator hose repair tape, LED flashlight, gloves, and a multi tool. A first aid kit with insect repellent is another requirement. Those operating in areas with rugged terrain may carry a tow strap, collapsible shovel, tire chains or related items. Every family member should be capable of using a tire inflator-sealant kit and changing a tire, along with the safe use of booster cables and tow strap.

Perhaps the more important factors are a customized kit, rational decision making, with exercises to validate the plans. A quote from Sophocles at the Siege of Troy is appropriate:

*“Far-stretching, endless Time  
Brings forth all hidden things,  
And buries that which once did  
shine.  
The firm resolve falters, the sacred  
oath is shattered;  
And let none say, ‘It cannot happen  
here.’”* ●

**About the author:** Colonel Jim Smith has more than 40 years public safety experience with a master’s degree in safety from the University of Southern California. He is the public safety director for an Alabama community. Smith teaches terrorism, emergency management, and counter terrorism classes for the University of Phoenix and Troy University. Smith has published five textbooks regarding WMD, emergency management, crisis management, and tactical medicine. He currently serves as a task force officer on a federal joint terrorism task force.



Understanding  
**NUCLEAR  
FALLOUT  
OR RAINOUT**



By Sharon Packer, MS Nuclear Engineering  
TACDA Board

*The nuclear threat from North Korea has prompted many callers during the past few weeks, asking about the effects and attenuation of radiation. There is a great deal of misinformation about radiation from fallout. The following old rule of thumb for shelter design still holds true. NBC shelters should have four feet of dirt cover, or three feet of concrete cover to give a minimum PF level of 1,000 from fallout. If a "rainout" should occur, or if the sheltered area is within 1.5 miles of a potential primary target, the shelter will require a minimum of eight to ten feet of cover. Shelter entrances require careful engineering, as most of the radiation exposure will come from these entrance areas.*

*I recently reviewed a series of articles about Nuclear Weapons Effects, written by Carsten Haaland, of the Oak Ridge national Laboratory. The entire series of articles can be found in our Journal of Civil Defense published in 1990. Some of you may be fortunate enough to still possess these journal articles. I have re-typed, in part, the section on 'Fallout' and 'Rainout' for this current Journal.*

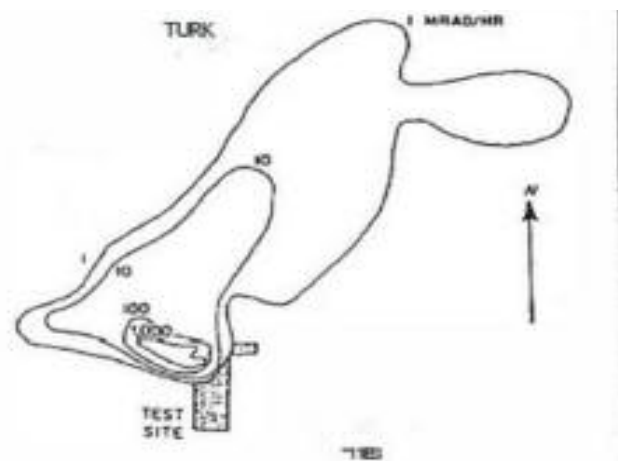
## FALLOUT FROM NUCLEAR DETONATIONS

Carsten M. Haaland  
Oak Ridge National Laboratory

### What is Fallout?

**F**allout is the radioactive dust that comes back to earth as a result of a nuclear explosion at the surface of the earth, or at an altitude low enough for the fireball to engulf solid materials. Fallout dust may look like sand, ash or crystals, depending on the kind of material engulfed by the fireball. If the material engulfed is ordinary earth or sand the fallout will look like sand, but if the engulfed material contains calcium to the extent found in concrete buildings or coral, the fallout may look like ashes. Large dense particles will descend faster than very small particles. For this reason, fallout particles several hundred miles downwind from a nuclear surface burst will be very small, somewhat like particles in atmospheric pollution, and the nuclear radiation from the fallout will be greatly reduced.

The danger of fallout arises from the intense and highly penetrating nuclear radiation emitted from it, which produces a potentially lethal hazard to people in the vicinity unless they



**Figure 1.**  
Early fallout dose-rate contours from the TURK shot at Nevada Test Site, 1955.  
(Note: RAD may be taken in this case to have the same effect as roentgens.)  
1 MRAD means millirad. A millirad is 1/1000 of a Rad or .001 Rad. All numbers on contours indicate millirads per hour.)

have protection. Large areas, covering hundreds to thousands of square miles, depending on the yield and number of surface detonations, can be poisoned with fallout such that radiation from the contaminated area is hazardous or lethal to an unprotected person passing through or dwelling in the area, for periods of days to weeks after the detonations.

**How is Fallout Produced?**

**W**hen a nuclear weapon explodes near the ground, the instantaneous release of incredible energy makes a huge pit or crater. Tons of earth in the crater are instantly changed from solids into hot gas and fine dust, by the tremendous heat and pressure from the bomb explosion. This hot gas and dust, together with vaporized materials of the bomb itself, form a giant fireball that rises like a hot-air balloon to high altitude. This material spreads out, cools, and becomes more dense as it rises. The fireball stops rising when its density reaches the same density as the atmosphere into which it has risen.

Some of the dust and heavier particles that are drawn up with the fireball form the stem of the mushroom cloud. The dust in the cap of the mushroom spreads out horizontally when the fireball stops rising, and begins to be shaped and drawn along by the winds

at that altitude. This dust cloud can be carried for hundreds of miles by the upper winds. The dust falling and drifting to the earth from this moving cloud becomes the radioactive fallout with which we are concerned. Somewhat confusingly, the process itself; that is, the dust's action of falling and drifting to the ground, is also called "fallout".

The dust in the stem and in the mushroom cloud becomes radioactive mostly from the fission products created in the nuclear explosion that become stuck to part of the dust particles. The air around the particles does not become radioactive, and neither do the ground-surface materials on which they settle.

The smallest particles of fallout can be carried hundreds of miles by the wind before reaching the earth. Most of the fallout will come down to the ground within 24 hours after the detonation. Very small particles come down very slowly and may be spread over large areas of the earth's surface in the downwind directions over time periods of many days, even weeks. This delayed fallout is sometimes called "worldwide" fallout, although most of the fallout comes down in the hemisphere in which it is produced (Northern or Southern). Fallout that arrives within the first day or two after the explosion poses a much greater threat to human life than does delayed fallout.

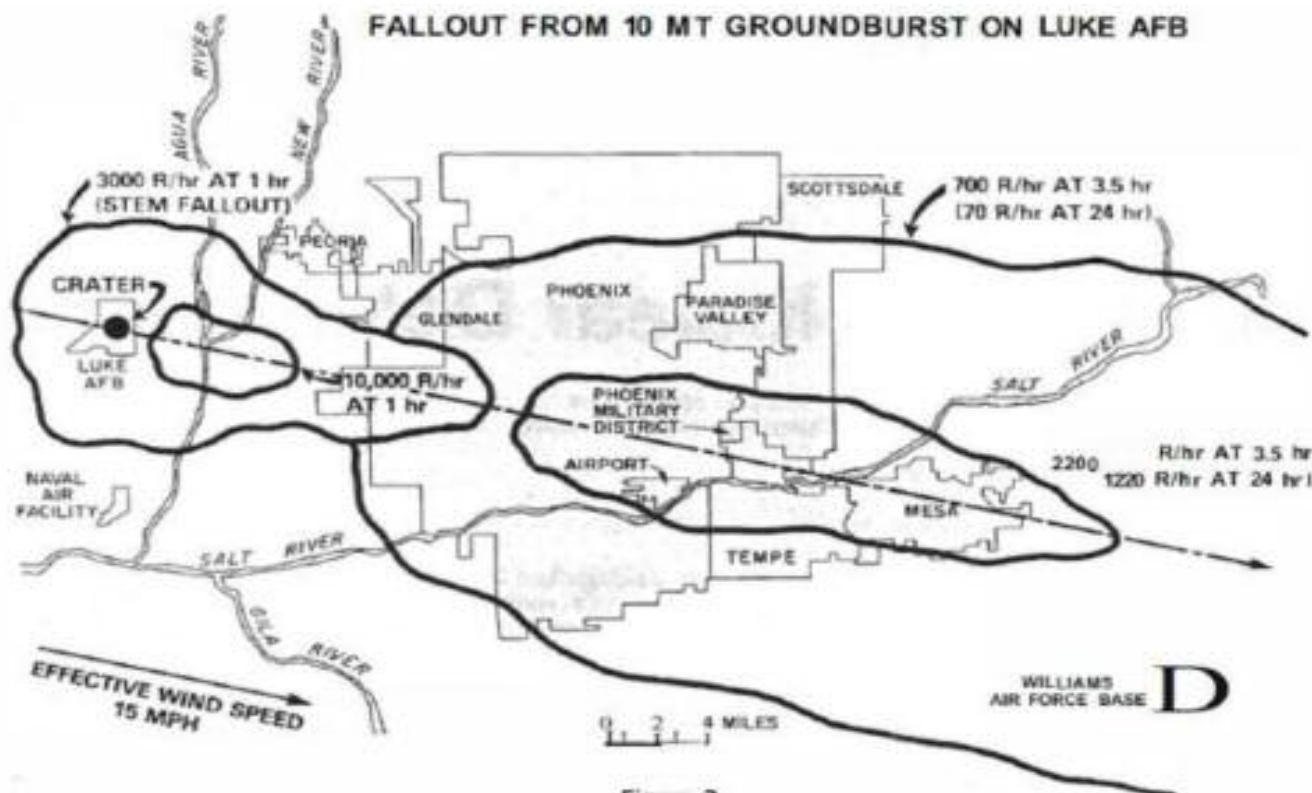
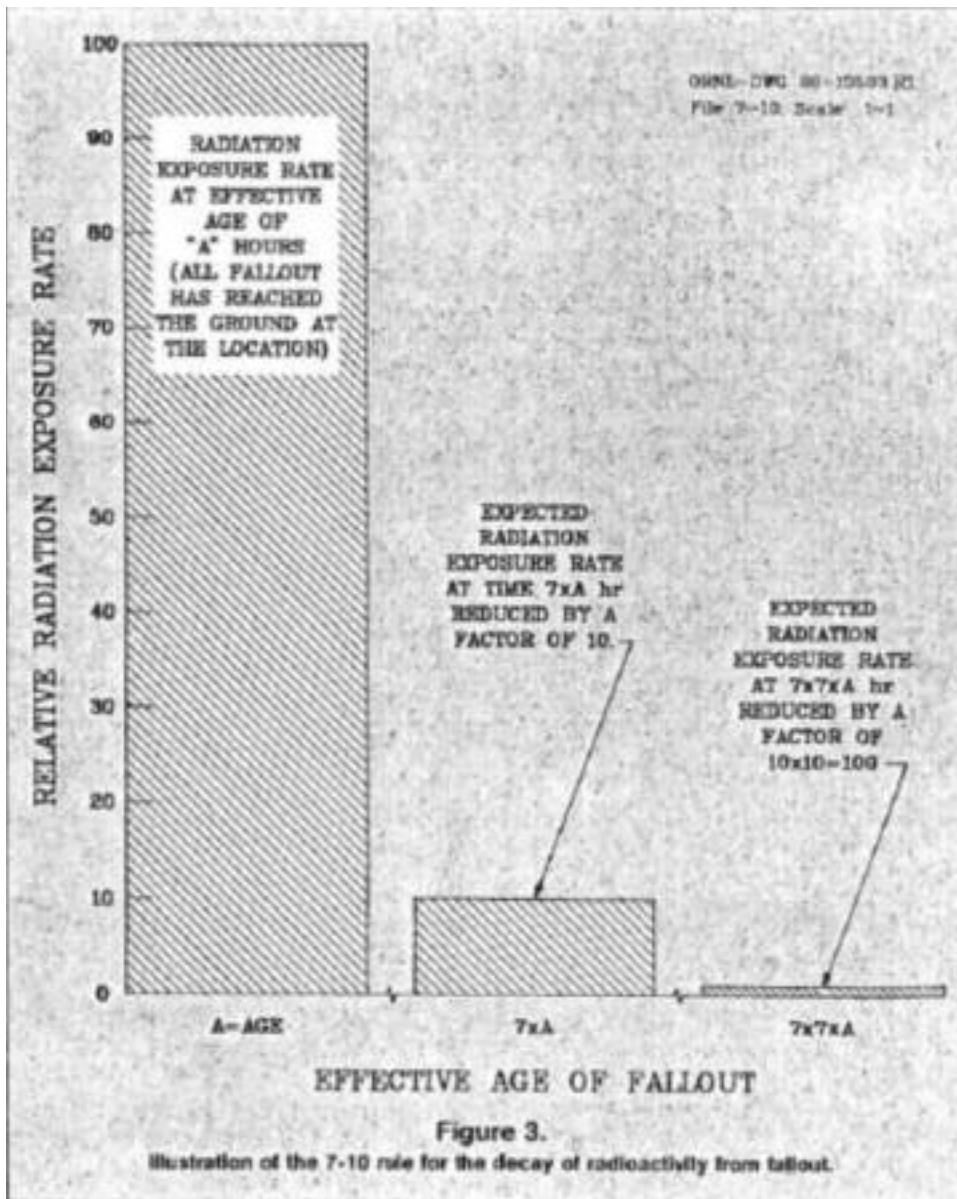


Figure 2. An idealized fallout pattern used to estimate radiation exposure levels on Phoenix, Arizona. (shaded area) due to a 10 megaton radiation ground burst on Luke Air Force Base.





Because the rate of fall of a fallout particle depends on the size, shape and density of the particle and on the local winds (Haaland, 1989), the pattern of deposition on the ground can be highly irregular. The pattern shown in Fig. 1 resulted from measurement of radiation intensities on the ground after the nuclear test named TURK at the Nevada Test Site in 1955, a 43 kiloton tower shot (Glasstone, 1977). The pattern shown in Fig. 2 shows how an “idealized” fallout pattern is used to estimate fallout on the city of Phoenix, Arizona, resulting from a hypothetical ground burst of a 10 megaton nuclear weapon on Luke Air Force Base (Haaland, 1987a).

### Radiation from Fallout

**T**he radioactivity from fallout decays and fades away by natural processes. The radioactive materials produced by the nuclear explosion are unstable. These materials change (or decay) into a stable condition by shooting out nuclear radiation, such as alpha, beta, and gamma rays. Gamma radiation is by far the most dangerous of the three kinds of fallout radiation, because it can penetrate the entire body and cause cell damage to all parts, to the organs, blood and bones.

A more detailed discussion of the kinds of fallout radiation and their potentially harmful effects may be found in Radiation Safety in Shelters, CPG 2-6.4, 1983, available from the Federal Emergency Management Agency, Washington, DC. The penetration of gamma radiation through matter, dose-factors for the body, comparison of fallout radiation with initial nuclear radiation, and other topics, are discussed in great technical detail in Fallout Facts for Nuclear-Battlefield Commanders (Haaland, 1989). Methods of providing protective shielding from lethal fallout contamination have been presented by Chester (1986) and Spencer (1980). ●

The smallest particles of fallout can be carried hundreds of miles by the wind before reaching the earth. Most of the fallout will come down to the ground within 24 hours after the detonation.



# MANAGING PAIN *in a pinch*

By Cynthia J. Koelker, MD  
Excerpt from *Armageddon  
Medicine, How to Be Your Own  
Doctor in 2012 and Beyond*

**T**he daily queue of suffering seems endless. Toothache, stomach ache, headache, earache, back pain, leg pain, joint pain, neck pain, sore throat, sore feet, sore muscles, sore eyes. People come to you seeking relief – relief from their pain, and relief from fear. Are you up to the task of helping others, or ready to run away? Becoming a healer is not for the faint of heart.

If and when the medical community collapses, those left to carry on will need an armamentarium of tools to deal with pain. Even if it's only your own problems and those of your family that you'll be facing,

learning how to relieve pain now, before you're in the midst of crisis, will spare you needless worry. Pain is the #1 symptom that drives patients to physicians today. Pain will remain a fearsome opponent tomorrow, no matter what catastrophe brings the world to its knees.

Pain and fear go hand in hand, two sides of the same coin. Fear is pain's best friend, its evil ally. Relieve one and the other may subside, at least to tolerable levels. I know what it is to fear pain. Every time I visit the dentist my childhood dread of drilling on a nerve rears its ugly head. It's not a rational process. My childhood dentist didn't believe in novocain. I'll never get over it.

People can often tolerate an amazing degree of pain if given hope that the condition is only temporary. Labor pain is every bit as bad as any other sort of pain, yet how many women suffer through hour after

hour of gut-wrenching torture without requesting so much as an aspirin? People will also endure an incredible amount of pain if they believe good will come of it – such as a new baby, or saving another's life.

As a healer, you'll need to dispense more than a dose of narcotics. Having enough medical knowledge to understand a disease process will help you foresee the course of the disease and offer hope of recovery. Even if you cannot relieve the pain, you can relieve fear – both fear of unending pain, and fear of being alone. If you lack the tools to deaden the pain, don't think you're doing no good. Like a child who wants his boo-boo kissed, adults, too, want to know that someone cares.

In this regard, doctors are not necessarily the best healers. Physicians are aloof by training and sometimes by nature. Once you try



helping others, you'll learn that part of the patient's suffering becomes your own. Taking on the pain of the world is a crushing burden. Doctors cannot function when they are overwhelmed by too heavy a load, and so often limit their emotional involvement. But emotional involvement is a powerful salve. An infant with an earache may be comforted in its mother's arms. "Hold me" may be a laboring wife's request of her husband, knowing he cannot take the pain away.

**I**mphasize the non-medicinal treatments of pain because: 1) sooner or later they may be all you have; 2) stretching your supply of pain relievers will help you treat more patients; and 3) many people are intolerant of or allergic to pain medications.

The best way to relieve pain is to eliminate the underlying cause. Deliver the baby, lance the abscess, pass the kidney stone. Pain is your friend when it comes to diagnosis, but sometimes you'll just have to treat it regardless of cause.

The English language has many words for various kinds of pain: aching, stabbing, burning, stinging, piercing, numbing, cramping, throbbing, tingling, smarting, lancinating, agonizing, and nagging, to mention the most common. The type of pain will clue you as to both cause and severity. The fluent or bodily-aware patient will be able to describe their discomfort in some detail. Others will simply say they hurt.

Beyond what a patient may say, their body language will alert you to the intensity of their distress. A smiling teenager flirting with her beaux does not need narcotics, even though she says she's dying of pain. A silent man curled up in the fetal position has something serious going on.

The art of medicine includes

deciphering both what a patient wants and needs. Some patients request no medicine, if they can only be permitted a day off work. Others prefer to pop a pill and keep going. In America, we overmedicate because we rest too little. Sleep is a powerful analgesic. If pain medication is not available, simply getting a person to rest and/or sleep may be the ticket to relief.

Doctors use many classes of drugs to alleviate or prevent pain: anti-inflammatories, steroids, narcotics, antidepressants, anti-anxiety drugs, anti-seizure drugs, beta-blockers, calcium channel blockers, triptans, muscle relaxers, sedating antihistamines, caffeine, nitroglycerin, antacids, oxygen, anesthetics, and even alcohol. We don't always know how these drugs work. A patient does not have to be depressed for an anti-depressant to relieve pain. Thinking beyond traditional pain medications will broaden your ability to offer relief.

On treating pain—whereas patients focus on pain abatement, doctors often focus on functional improvement. Generally speaking, physicians do not necessarily aim for complete relief of pain, but rather sufficient improvement to permit adequate functioning. Relieving all pain can actually make a situation worse, allowing the patient to injure himself. A truck driver with chronic back pain may say he's feeling no better, but now is able to unload his cargo. A migraine patient may report her headaches are as bad as usual, but hasn't missed a day of work in a year. It is difficult to measure how much a patient hurts. It's much easier to measure how well a patient functions.

Despite current medical thinking, I'm not much of a believer in patient-reported pain scales, though

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*Others will simply say they hurt.*

others find them useful. Among my patients, they seem to make little difference in clinical treatment, at least with chronic pain. Patients have difficulty remembering how much they were hurting last week or last month compared to now.

The one situation where a pain scale may be useful is where short-term observation (hours to days) of a hurting patient is possible. Asking the patient to report pain on a scale of 0 to 10 may yield a measure of improvement, or lack thereof. In the current medical environment, pain scales are often more a matter of documentation than a meaningful addition to medical care. It makes little sense to collect the information if it is not going to be used as a basis for treatment. Patients must understand the scale well to offer significant feedback. Many patients will report their pain as 8 or 9 out of 10 when it is obvious from their behavior that it is not this intense. If you are going to use a pain scale, take the time to explain it thoroughly. It also helps to use words or pictures to demonstrate the degree of pain, as in the table on this page. Check online if you want an example with pictures.

**W**hen doctors evaluate pain, one of the immediate goals is to determine if it is life-threatening or not. Is chest pain a heart attack? Is abdominal pain appendicitis? If you think you have an emergency on your hands and have the option of referring to a hospital or physician, please do so. But the goal of this discussion is to focus on what you can offer on your own, without emer-

gency back-up. Here are a few examples to consider:

Say a patient is experiencing excruciating chest pain in association with a likely heart attack. What can you do about it? First, give the patient an aspirin, to thin the blood a little, and perhaps limit further damage. This will not alleviate the pain, but may do some good in the long run. If you have oxygen available, have the patient inhale it at a rate of 2–3 liters per minute (per the machine’s gauge). The pain of a heart attack is partly due to inadequate oxygen within the heart muscle, somewhat like leg pain in a runner, and improving oxygenation may lessen the discomfort. Assuming you don’t have oxygen available, have the patient lie in the bed with his upper body propped up on several pillows. This decreases the work of breathing compared to lying flat, with less demand on the cardiac muscle. Next, give nitro. Nitroglycerin lessens heart pain by opening up the coronary circulation, thus delivering more oxygen to the heart. Nitroglycerin sublingual (dissolved under the tongue) offers very quick but short-term relief; nitroglycerin paste, patches, or delayed release capsules offer longer-term relief, but are slower to take effect.

Up to this point, we haven’t mentioned pain relievers per se. Oxygen, positioning, and nitroglycerin may not only improve the underlying problem, but also relieve the patient’s discomfort to a degree. As for direct pain treatment, you probably won’t have injectable morphine available, but oral Vicodin,

Percocet, or even tramadol may offer some relief. Nausea frequently accompanies severe heart pain, and you may need to treat with OTC meclizine or a prescription antiemetic (Phenergan, Vistaril, Compazine) to allow the patient to keep narcotics down. Also, if the patient is agitated, calming him may decrease his oxygen consumption, thereby decreasing chest pain. Valium, Xanax, or Ativan (all controlled prescription drugs) may be helpful.

Medically speaking, this is about all you can do – but still it’s not all you can do. Hold the patient’s hand or rub their neck, if this seems to comfort them. Offer a cool washcloth if they are sweating. Allow a calm, supportive family member to assist you. Keep disturbing or anxious relatives out of the room. Offer to pray with the patient, if this seems appropriate. Offer fluids unless the patient is vomiting. Two reasons fluids are withheld in the hospital are that the patient is getting an I.V. anyway, and that a surgical procedure may be around the corner, with associated anesthesia and risk of vomiting. Your post-Armageddon patient is not going to undergo a heart bypass or stenting, and does not need to suffer dehydration on top of a heart attack. Be careful, though, if the patient is short of breath, as excess fluids may worsen a case of congestive heart failure.

Now, whatever you’ve done with the equipment at hand, don’t blame yourself if the patient dies. We are simply not in control of

<b>0</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
<i>No pain</i>		<i>Annoying</i>		<i>Uncomfortable</i>		<i>Dreadful</i>		<i>Horrible</i>		<i>Agonizing</i>



everything. You did not cause the patient's heart attack and you've done what you can to help.

**Y**our next patient is a 45-year-old woman, complaining of chest pain as well, but who doesn't appear ill. Chest pain in a person under about 50 years of age is more likely related to the lungs, ribs, or digestion than to the heart. In an asthma patient, when the lungs are tight and the patient is short of breath or wheezing, opening the airways (with an inhaler or steroids) may do more to relieve pain than any pain reliever. If the patient is breathing normally but complains of pain on inspiration, this is usually pleurisy (inflammation of the lining of the lungs) or rib-cage pain. Either way, anti-inflammatory medicine such as ibuprofen, naproxen, or even aspirin is helpful. (Remember, though, that if you're wrong and the pain is coming from the stomach, these drugs may aggravate the problem.) In our index case, there is definite tenderness when you palpate along the rib margins. The heart and lungs cause pain, not tenderness. If rib tenderness is present, you can be fairly confident the problem is musculoskeletal, that is, not serious, and again an anti-inflammatory should help relieve the discomfort. Heat or ice (and not wearing an underwire bra) often help as well.

Next in line is your 30-year-old nephew who works hard and parties harder. His chest is hurting, too, sort of burning, and you can see he's hung-over. Home-brew will be available even in the worst of times. Chest pain due to acid reflux (often aggravated by alcohol or anti-inflammatory medications) requires a different approach altogether. Pain medication is not the answer. Decreasing the amount of stomach acid refluxing into the esophagus will alleviate this pain. Baking soda and liquid

antacids offer almost immediate relief, which is a diagnostic test in itself. Any of the OTC antacid reducers (Pepcid, Tagamet, Zantac, Axid, Prilosec, Prevacid) will afford longer-term acid suppression. Since these medications will not be available forever, avoiding heartburn triggers is only sensible (NSAIDs, alcohol, tobacco, spicy food, fried or fatty food, citrus fruits, tomato products, chocolate, caffeine – yes, avoid all the good stuff).

At first your 40-year-old cousin thought the pain was in her right lung, but now it seems focused in the upper abdomen, toward the right. She's pretty sure it came on after eating half a jar of peanut butter. The pain is dull to sharp, mostly aching, but with cramps coming in waves, with intermittent nausea. This type of pain is typical of gut pain, probably stemming from gallbladder irritation. With gut pain, narcotics may help, but NSAIDs (anti-inflammatory drugs) should be avoided. Sleep, relaxation, a hot bath, and abstaining from eating also offer partial relief. These same measures help individuals with colitis, kidney stones, kidney infection, diverticulitis, and other intra-abdominal irritations.

Very light massage is a technique that helps gut pain by distracting the mind from the deeper pain. This is part of the basis for the efficacy of effleurage, a TENS unit (transcutaneous electrical nerve stimulation unit), and even a hot shower. Just as an Internet connection can only carry so much information at once, the human nervous

system can only process so much neural input at one time. The heat of a hot shower takes at least several minutes to penetrate sore muscles, but partial relief begins the moment the skin is stimulated. Laboring women sometimes massage their own bellies to lessen the deep pain. Anyone can experiment with this superficial massage technique, which works not only for gut pain, but other deep pains as well. Light oil massage works similarly.

*Whereas patients focus on pain abatement, doctors often focus on functional improvement. Generally speaking, physicians do not necessarily aim for complete relief of pain, but rather sufficient improvement to permit adequate functioning. Relieving all pain can actually make a situation worse, allowing the patient to injure himself.*

Deep massage is best described and taught by a professional masseuse, which I am not. But even an untrained friend can give a good backrub that relieves the tensions of the day. I've had many patients obtain as much relief from a professional massage as from medication or physical therapy. The relief may be short-lived, and the massage may need to be repeated in a day or two, but this natural remedy is used worldwide for pain relief. In fact, in countries where there isn't a drugstore on every corner, touch therapy is the primary mode of pain relief.

**D**oing anything at all is nearly always better than doing nothing. Placebos, which have no physical basis for helping, still do so about a third of the time. Hope is a natural narcotic, and people will try a multitude of peculiar and likely ineffective therapies on the basis of hope alone. This is also how so many crackpot therapies work their way into the health care field. Anything, even a sugar pill, will help somebody. Part of the benefit is mind over matter; part is giving your body time to heal on its own. Many patients who think an antibiotic cured them overnight were simply going to be better by the next day anyway. Applying cool cabbage leaves to tender, engorged breasts is purported to relieve the discomfort, but perhaps grape leaves, lettuce leaves, or a cool wash cloth would accomplish as much. Still, applying cabbage leaves lies in the realm of “doing no harm,” plus it gives the mother something active to do. People prefer to be in charge of their own bodies.

As a physician I struggle with the need to be honest with my patients versus the desire not to deprive them of the placebo effect. Modern medicine prides itself on “truth.” But for anyone who believes in a certain therapy, even one proven by medical science to be ineffective, for that individual the relief is real. After an Armageddon event, the placebo effect may be a doctor’s strongest ally. A placebo may be a pill, a procedure, an activity, or a dressing. Whatever you do, choose your placebos wisely and first, do no harm.

Natural remedies also include biologically active chemicals such as opium and salicin (from which aspirin

is derived). Through the years, the pharmaceutical industry has developed many refinements, but these two are the original basis of all narcotics and anti-inflammatory medications, including codeine, morphine, hydrocodone, oxycodone, ibuprofen, and naproxen. When supplies of pharmaceutical pain relievers run out, healers will need to resort to the original, naturally-available painkillers.

White willow bark contains the natural pain-killer salicin. For a full discussion, see the University of Maryland Medical Center (UMM) website, which includes details of dosing, drug interactions, side-effects, and recipes for willow bark preparations made from commercially available supplies. Of course, stockpiles of willow bark will run out as quickly as stockpiles of aspirin, and it makes more sense to learn to recognize the tree, and either locate it within your community or plant your own. Other types of willow may also be effective.

Narcotics are the strongest pain relievers and will be the hardest for preppers to come by. Doctors are extremely unlikely to prescribe enough to stockpile and so, aside from learning to prepare your own, are there any alternatives?

Tramadol is a prescription painkiller, nearly as strong as codeine or hydrocodone, at least in the narcotic-naïve patient. People who get a “high” on narcotics are not fond of this drug. Whereas a few years ago it was quite expensive, now the cost is on a par with ibuprofen. Because it is less likely to be addicting, doctors are happy to use it more freely for many conditions ranging from headaches and stiff necks to sciatica and broken bones. If you have a good relationship with your doctor, you may be able to obtain a small supply, which you should plan on reserving for serious pain. The normal dose is 50–100 mg every 4 to 6 hours. (Note: This paragraph was written in 2011, before the change in approach to pain medicine nationwide. As of 2017 it is much less likely your doctor will give you even a small supply of tramadol unless you have a current need.)

Secondly, the combination of Tylenol plus an anti-inflammatory is nearly as strong as the narcotics hydrocodone or codeine, and in many patients, works as well or even better. As long as a patient can tolerate the ingredients separately, they are well-tolerated in combination. With 500-count bottles of Tylenol, ibuprofen, and naproxen sodium readily available over the counter at minimal cost, anyone can lay in a good supply for future use.

Of course, anti-inflammatories (NSAIDs) are not tolerated by every patient. Any NSAID may cause stomach

## WILLOW BARK TEA RECIPE

(from UMM)



**Boil** 1–2 teaspoons of (commercially-available) dried white willow bark in 8 ounces of water.

**Simmer** 10–15 minutes and let steep for half an hour.

**Drink** one cup 3–4 times daily as needed.

*Continues on page 33*





*Fresh,  
Homemade*  
**Yogurt**

*By Jennifer Smith*

**I love yogurt!** I love it with granola and fresh berries, in smoothies, and as a sour cream and cream cheese substitute. If you like yogurt like I do, here are some reasons to begin making it at home. It can be flavored and sweetened to taste—a big plus if you are looking to cut back on your sugar intake. It can be money saving—especially if your favorite brand is on the expensive side. Best of all, it is easy to make and does not require any specialized equipment. No need to worry about not getting those beneficial bacteria—they are all present in homemade yogurt.

**ONLY TWO INGREDIENTS** are needed to make yogurt: milk and a culture, or starter.

### **MILK**

Almost any kind of milk can be used. Whole, low-fat, non-fat, powdered, raw and goat milk have all been successfully cultured. The higher the fat content, the thicker the yogurt. (Ultra-pasteurized milk is not recommended.)

### **CULTURE, OR STARTER**

The culture is a blend of beneficial bacteria found in a favorite brand of yogurt bought from the grocery store. The yogurt must have *active* cultures in order for it to “grow” and should be *plain*, not flavored.

## **HOW TO**

### **Ingredients:**

- 1 gallon of milk
- $\frac{3}{4}$  cup of yogurt starter with live, active cultures, room temperature

*\*for smaller batches, use one quart of milk with 2–3 tablespoons of starter*

### **Equipment:**

- Six-quart stainless steel pot
- Wire whisk
- Thermometer (a cheese making thermometer works well)
- Glass measuring bowl
- Four one-quart glass canning jars with lids
- Incubator







### 1. Heat Milk

Heat the milk in a 6-quart stainless steel pot to 180F over medium-high heat. Stir frequently. Heating the milk will kill any unwanted bacteria that might be present.

### 2. Cool Milk

Once the milk has reached 180F, take it off the heat and allow it to cool to 115F. This can take up to an hour. The milk temperature is important for culturing. If it is too high, the culture will die. If it is too low, the culture won't grow. I try not to let the milk get below 110F.

### 3. Add Culture

Pour a small amount, about a cup, of the cooled milk into a glass measuring bowl and add the yogurt starter. Whisk together until well blended. This will help to better incorporate the culture. Add the remaining milk and stir well, but gently. The mixture is now ready for incubation.

### 4. Incubate

The yogurt needs to incubate for 5–12 hours. The temperature must stay as constant as possible for the duration of that time. For mild flavor, incubate for a short time. For a stronger flavor, incubate longer. Longer incubation tends to produce a slightly thicker yogurt as well. There are many ways to incubate yogurt. I like using a thermos for small batches and an insulated bag for large batches.

#### Thermos method

Simply pour the yogurt mixture into the thermos and set on the counter for 5–12 hours. If it is winter, I wrap a towel around the thermos to help keep in the heat.

#### Insulated bag method

Pour the yogurt into clean canning jars, put on the lids, wrap the jars in towels and place them into the insulated bag. Set aside for 5–12 hours.

### 5. Refrigerate

When incubation time is up, pull the yogurt out of the bag, let it cool for an hour or two and then place it in the refrigerator. Some yogurts will have a clear yellowish liquid that forms on the top. This is whey. It can either be mixed back into the yogurt solids or drained off and used for something else.

### 6. Eat

Eat it plain, dress it up, or use it in a favorite recipe. Fresh, homemade yogurt will store well for 7 to 14 days in the refrigerator. It can even be used to culture a new batch of yogurt, if used within 5–7 days. If the yogurt ever looks or smells bad, throw it out. ●

**I t really is that easy** to make yogurt at home. Experiment with different kinds of milk, with different brands of starter, with the incubation time and method of incubation. Find what works best for you and enjoy!

The yogurt in the photos was made with a store brand 2% cow's milk, Siggitt's plain yogurt as the start, and incubated for nine hours.



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# Extending the Life of LEAD ACID BATTERIES

*By Jay Whimpey, PE  
TACDA Board*

**A** desulfator can restore the capacity of lead acid batteries of any type and can extend the life of a typical battery by a factor of five times. The technology works for flooded cells, gel cells, AGM, and VRLA configurations. Lead acid batteries are normally considered a consumable item and extending the life of batteries in an emergency situation can be a significant advantage.

The technology works by imposing a high voltage pulse while charging the battery to help remove the sulfate coating on the lead plates that causes loss of capacity. Lead acid batteries form a sulfate coating on the surface of the lead plates as they are discharged. The coating is normally removed with the next charging cycle, but if a charging cycle is interrupted with another discharging cycle and a different layer of sulfate forms on the surface, then it is more difficult to remove the underlying layer. Deep discharge cycles also tend to age the batteries because of the thickness of the sulfate coating. The high voltage pulse helps to break up the sulfate coating and allows the sulfate coating to go back into solution of the battery electrolyte (the acid solution).

Two different brands of desulfators were tested to confirm the effectiveness of the technology. A set of large flooded cell industrial batteries that were over 20 years old were tested with the desulfator. The batteries had lost capacity and were to the point where they were going to have to be replaced even though they had been on a float charge for most of the 20-year life.

An initial test of the electrolyte with a battery charge tester showed that the density of the acid solution was on the low side because they had become sulfated over time and much of the sulfuric acid had come out of solution and was tied up with the sulfate coating on the plates. The battery bank had roughly 1000 Amp-hours of capacity and the desulfator only charges at about a 2 Amp rate.





The desulfator was plugged into a 110-volt power source and was allowed to charge and de-sulfate the batteries over several weeks. The electrolyte was tested every few days to measure progress and over the course of the test the density of the solution increased, indicating that solids were being removed from the internal lead plates and that capacity was being restored. Subsequent testing with a battery load tester verified that capacity had been restored. Several smaller flooded cell and AGM batteries were tested with positive results, however some batteries were too far gone to be recovered by the desulfator.

Both PulseTech and CenTech desulfators were tested and both appeared to be effective. I preferred the PulseTech XC100-P Xtreme Charge Battery Charger

and Desulfator because it was simpler to operate and the battery status indicator lights were very easy to read and understand. The CenTech unit was more a battery charger with a desulfator function that would automatically change to different charging modes that did not involve desulfation. The PulseTech equipment can be purchased on the web by going to [www.pulsetech.net](http://www.pulsetech.net) or by calling 1-800-580-7554. The battery electrolyte testers can be purchased from automotive parts stores or battery suppliers.

The desulfators cost roughly \$100 but they appeared to be well worth the purchase price by extending the life of lead acid batteries and reducing the frequency of battery replacement. ●







*Community:*  
**A CRITICAL  
LINK TO  
SURVIVAL**

*By Jonathan B. and  
Kylene Anne Jones*





**A**re you missing the critical link to your survival? A strong community may play the determining factor in how well you come out of the challenges that lie in the future.

As human beings, we are designed by nature to live in groups and depend on each other for survival. The family is the perfect pattern for successful communities. Each family unit is unique and while most have room for improvement, this unit provides the best opportunity for each member not only to survive but to thrive. The family has effectively functioned for thousands of years with no comparable equivalent.

Throughout history people have lived in small groups or tribes, clustering together for protection, friendship, division of labor, food and shared skills. In ancient times, banishment from the tribe or community was a certain death sentence. Survival rates significantly increase when a group of people work together. Rarely do you hear of one family intentionally isolating themselves from the group. The benefits of the group might mean the difference between life and death.

No matter how well we prepare for possible hazards, if our community is not prepared, we are in trouble. If we are the only ones with food, we become a target. Could we really feed our young son and watch his little friends starve to death if we have the means to help, thus putting our own family at risk? These problems are significantly lessened when each family in our community is prepared, even if they just have a supply of longer term food storage tucked under each person's bed.

You may not have the ability to motivate your entire city to prepare, but you may have great influence over your neighborhood or social groups. Community not

only blesses each other during tough times, but can lift and strengthen each other through the daily challenges of life.

Successful communities are deliberately built through planning and effort. They have long standing traditions, close relationships, and a culture of self-sufficiency. Everyone is considered family.

They look out for each other and maintain ties that keep the group strong. Some areas are routinely struck by disasters. The citizens choose to stay there and rebuild over and over again. That crazy determination comes from a love of a community and the residents that live there.

In a perfect world, your immediate neighborhood could be built into an ideal community. Most neighborhoods can be greatly improved by building and strengthening relationships. There are times and places where that is not a possibility. Sometimes it may be dangerous to develop close relationships with neighbors who participate in illegal drugs or other illicit activities. Use wisdom in everything you do. Do not put your family in danger.

If you live in a dangerous neighborhood, build a network of like-minded people outside of your local community. Many preppers have a bug out location where they plan to evacuate to if the city gets too intense. It may work for you to buy some land with some friends and create a well-stocked home away from home.

In either case, that community of people is critical to your survival. A plan to ride the trouble out all alone is not generally a successful one. You might have the ability to build your own group and hand pick the members. Most of the time your group is determined by geograph-



ical location (neighbors or church members), birth (family), or some other variable out of your control.

A group of people will have a variety of necessary skills and resources. It is difficult for one person to have all of the necessary expertise such as; medical, emergency response, communications, small engine repair, carpentry, physical defense, baking, preserving, and gardening. Combine the skills of 10 families and you will be amazed at the diverse skill set you have access to. This collection of skills and resources increase probability of survival.

**F**inancial resources and time allow an inventory of valuable tools to be accumulated. A mature couple in the neighborhood may have acquired many tools, but may not have the physical strength and stamina to make the best use of them. A younger couple may be in the opposite situation, strength and energy, but no money for tools. Working together, both can benefit greatly from the relationship.

Just as each of us brings strengths to the group, we also have limitations which make us dependent upon others for survival. Young children are completely dependent on others for every aspect of survival. A mother who is caring for those tiny ones does not have the time to devote to others in the community because her energy is spent on the children. She makes a valuable contribution, but her time is limited.

Perhaps you raise chickens for eggs, but just can't bring yourself to slaughter the birds. This is where community comes in. You have a neighbor that loves to hunt and doesn't have any issues with slaughtering and preparing the birds. You raise them and he slaughters them for the cost of a few birds to feed his family. Working together, limitations are eliminated.

A chain is only as strong as its weakest link, but it is impossible for each member of the group to contribute equally. Each must be the very best they can be in order for the group to be strong. It is important to carefully think these tough questions through.

A group may include several young children, while they are the promise of a brighter future, they only consume resources. These contribute to the group by providing love, hope, and a reason to work hard and provide for a brighter future. The group may include an 80 year old couple who you might assume is a burden and

an expendable part of the group, perhaps even dead weight. While it is true that they may be physically weak and slow, they can provide valuable resources through accumulated knowledge, wisdom and possibly even physical resources. Their home might boast a 50 year old walnut tree that produces enough storable protein to bless the entire group through the year.

As you build your community, look for a variety of skills, experience, and resources to balance out your group. The best characteristics for group members might include; integrity, resilience, strong work ethic, adaptable, willing to learn, and a strong desire to contribute to the welfare of the entire group.

No matter what your survival community looks like, they all have one thing in common—people. And people are not perfect. **The following quote by Jeffrey R. Holland puts this concept in a unique light:**

*So be kind regarding human frailty—your own as well as that of those who serve with you.... Except in the case of His only perfect Begotten Son, imperfect people are all God has ever had to work with. That must be terribly frustrating to Him, but He deals with it. So should we. ...so be patient and kind and forgiving.* This is some great advice from a very wise man.

Anger, hostility, resentment, accusations, and other negative approaches will not bring out the good in others. People are going to fall short of your expectations and make mistakes. That is just the way it is. Here are some suggestions to help you deal with the human factor in your community:

- The past is history. Learn from it, but leave it behind you.
- Work to become your very best self. Allow others time to do the same.
- Exercise great patience and love. Lead by example.
- Acknowledge different viewpoints and consider the value of each.
- Follow with a cheerful, pleasant disposition.
- Learn to forgive others, as well as yourself.

While you may not have control over everyone that is in your group or community, there are certain traits that are highly destructive and are not in harmony with a successful community. Selfishness is the root of most

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**Entitlement** can be a very real threat from within a community or from outside it.

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One mother in our elementary school was overheard to say, "We don't need food storage. We have guns and we will take whatever we want."

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**Physical resources** are an important part of self-reliance. Provident living is preparing for the future while enjoying today. That means that you need to come up with a reasonable plan to acquire needed tools, supplies, and food storage.



problems in society. It really is not all about you. We like to consider ourselves stewards of our resources, not owners.

Entitlement can be a very real threat from within a community or from outside it. One mother in our elementary school was overheard to say, “We don’t need food storage. We have guns and we will take whatever we want.” Entitlement is a totally appropriate developmental stage for a two-year old, but grownups should not act like toddlers. It is wrong and unacceptable for anyone who has passed that stage to think they deserve something that they have not honestly earned. Just because you are a member of a community does not mean you are entitled to property or resources that belong to someone else.

Appearances can be very deceptive. Are you at risk from those you assumed to be safe? For this reason, it is wise to practice a little operational security and not reveal all of the details of your plan to anyone, even in a healthy community. It is important not to make your family into a target. We can still work together without putting your family at risk.

As a society we have become isolated, living on the same street or apartment building for years and never getting to know our neighbor. This voluntary isolation contributes to lack of a sense of community, depriving

folks of great benefits. Life can be much richer when neighbors reach out and get to know one another, help each other, and build relationships.

Camaraderie promotes group resilience and survival. People in supportive social networks tend to have stronger immune systems and are happier. The healthier the culture of the group, the better the members deal with the stress of disasters and are able to recover sooner. We encourage you to help one another and be prepared to share resources and skills to benefit your group.

Building skills and knowledge is an important factor in self-reliance. You may lose everything that you have worked hard to acquire. Your home, tools, food, everything may be gone in an instant. However, the knowledge you gain and the skills you master will help you to survive regardless of your circumstances. What you know is more important than what you have!

Physical resources are an important part of self-reliance. Provident living is preparing for the future while enjoying today. That means that you need to come up with a reasonable plan to acquire needed tools, supplies, and food storage. It may require sacrifice and hard work. It is well worth the effort when you know that you can take care of yourself and your family in the event of a sustained emergency.

Self-reliance is an important characteristic of each



individual in the group. Can you live off of your stores for an extended period of time without draining the resources of the combined group? Healthy communities are not socialist communities. All resources do not belong to the group. Each member of the group first works for self-reliance and then for the success of the others in the group. They are not a drain on the resources nor are they sacrificing the basic needs of their family unit to allow others in the group to live in excess. Balance, wisdom and order.

Each member of the community should do their best to be prepared with; shelter, water, food stores, medical supplies, clothing, fuel, tools and home food production. Help each other plant food producing trees, vines, bushes, herbs and other perennial plants as part of the landscape. Grow a vegetable garden, even if it is only in pots on the porch. Share with others and involve the entire family.

A large group will need to be officially organized into smaller groups or blocks to increase efficiency. This works well for a single neighborhood or for organizing a thousand people. Divide neighborhoods into groups, or blocks, using geographical boundaries that make sense.

The sad truth is this, if you leave it up to someone else, most likely, it will not get done. We encourage you to stand tall and initiate the process. It is your neighborhood and you have the ability to make it a safer, better place. You do not have to do everything, just lead out and keep the momentum going. Once the plan is in place, it takes very little to maintain a healthy neighborhood.

The final critical component is faith. At the command of Elijah, the prophet, the widow of Zarepath's barrel of flour and jar of oil never became empty. When her son died, Elijah brought him back to life. The Lord has power to do all things. He required this widow to prove her faith and use the very last of her supplies to feed a stranger, knowing that she and her son would soon die of starvation. This great act of faith blessed her and her household with food until the drought ended.


You can choose to be part of the problem or part of the solution. We encourage you to be part of the solution. Prepare your home and family. Then reach out to others and help them prepare for the challenges in our future. Together we are stronger than we are alone. Together we will love life, build a better future and thrive when disasters strike. ●

*Jonathan and Kylene Jones are authors of **The Provident Prepper: A Common-Sense Guide to Preparing for Emergencies.***



**Powdered  
Milk-  
It's Nothing  
to Gag on  
Anymore**





*By Debbie Kent, Author of Store This, Not That!*

**T**he mention of powdered milk has been enough to make me gag most of my life. However, this food storage item has come a long way due to new drying techniques. It can now hold its own in taste tests against fresh milk. But powdered milk can be used for so much more than just drinking. It can be used to make bread, soups, sauces, mixes, yogurt and even in delicious homemade ice cream! In fact, it can be used in any recipe calling for fresh milk. Because of its convenience, ease of use, shelf life and nutritional benefits, there is no doubt that powdered milk should play an important role in your food storage.

If you think you already know all about powdered milk, think again. There are some interesting and deceptive details that just may change your mind about the kind of milk you want to store. Let's get started separating fact from fiction in the whitewashed world of powdered milk.

All powdered milks are not created equal. They differ in how they are labeled, mixed, their taste, what they can be used for, ingredients (one is more like a milk flavored punch), storage life and price. Of course, you should buy what your family likes, but be aware of what you are getting. Here are some tips that will help you in making choices.

What is the difference between instant and non-instant? Both are made from non-fat milk, they both come in vitamin fortified versions, and can be used for drinking, cooking and making yogurt and cheese and will store 20+ years, but they are processed a little differently, leaving a few differences. You need less non-instant when mixing, it's cheaper per serving and dissolves best in warm water. When using instant, you need almost twice as much powder, so you need to store more and it dissolves instantly in cold water.

How does a "milk alternative" compare? It weighs and mixes the same as non-instant, it is cheaper and has fewer calories, but it has only half the protein and one third less calcium and only stores 5 years. Its ingredients include sugar (sometimes the first ingredient), hydrogenated oils and other long and hard to pronounce words. It does not perform well in cooking and baking and is, in reality, more of a sweet, milk-flavored drink which is why many prefer it.

How much should you store? That is really up to how much your family likes milk. In general, for one glass per day for a year, you would need: six #10 cans of non-instant or ten #10 cans of instant. Powdered milk can cost up to \$8 per gallon.

So why store milk? Because powdered milk is a complete protein and you could survive for a while just by drinking that alone, but, more importantly, it adds balance and variety to your meals. After all, who doesn't like a hot steamy bowl of creamy soup or bowl of delicious ice cream? These and a whole lot more have their humble beginnings with some water and a little powdered milk.

For more information and videos on using powdered milk and other food storage items visit [www.storethisnotthat.com](http://www.storethisnotthat.com). ●



# SITUATIONAL AWARENESS

*By Bruce Curley  
TACDA Board*

**E**very day you exercise situational awareness. Maybe your son is about to do yard work. You remind him it is critical, as a redhead, to put on and reapply sunscreen to avoid pain and skin cancer. As skin cancer can be prevented by wearing sun screen, applying sunscreen is an excellent way, or strategy, for preventing skin cancer. The same strategy applies to your data. Like applying sunscreen to prevent skin cancer, you can apply a variety of measures to prevent your data from being stolen or compromised.



I'd like to suggest you apply that same common-sense situational awareness in other areas of your life in protecting your data.

Hackers are like the sun. They are out there 24/7 probing, locating data they can steal, and stealing it. Like the sun, they are a reality and you must deal with them. Also like the sun, they are not going away.

For your data situational awareness, be aware that hackers are always probing your device (tablet, computer, cell phone, etc.). They want your data. You must have a multi-layered strategy to protect your data from very real threats ... like ransomware that can:

- Prevent you from accessing Windows
- Encrypt files so you can't use them
- Stop certain apps from running (like your web browser)

All ransomware will infect your device and demand that you pay a ransom to get access to your computer or data. **Do not** let that happen. Here are some tips to prevent it from happening in the first place.

### Ransomware: WannaCry Example

One of the most recent hacking probes occurred on Friday, May 12, 2017. It was known as WannaCry. It attacked computer system data on approximately 350,000 computers in more than 150 countries within the span of 48 hours.

WannaCry is a unique ransomware strain that exploits a critical Microsoft Windows Server Message Block (SMB) vulnerability to spread like a worm, lending to its rapid propagation after just a few hours of initial detection. The exploit spread across network shares, encrypted data on the shares and left users unable to access their data unless they paid a ransom in the form of untraceable “bitcoin” currency.

Thousands of users turned on their computers that day to see the following message:



This massive ransomware attack was less successful than it would have been had they not sought their ransom payment in bitcoin. As criminals who use bitcoin to hide their activity to avoid being discovered, arrested and prosecuted, they assumed everyone knows how to obtain and pay them in bitcoins. Bad strategy on their part. Out of all the computers they attacked the best estimate is that they only collected approximately \$40,000 in bitcoin ransomware payments.

Although this attack eventually fizzled, we may not be so fortunate the next time. Hackers continuously analyse where they went wrong, recreate their code, and send out a variation on the original ransomware several times after the original ones. Maybe you can take the steps suggested here before a follow up WannaCry code or other ransomware attacks your data.

You need a strategy to prevent data loss from ransomware and other attacks. Here are a few suggestions for how to get started:

### Simple Ways to Prevent Loss of Data

- Use strong passwords and change them frequently
- Add the most recent software patches
- Double check every email to confirm it is safe
- Verify that you know the email sender before opening it
- Verify that any link in the email is safe before you click it
- Back up your data (more below)

### Back Up your Data

A basic strategy is to keep your device offline, or perform cloud backups of your data. Back up your software programs at least once.

When you have backed up your data prior to the ransomware attack, like WannaCry, you can simply ignore the demand for money because you have all of your data safely in another location. They cannot fleece you out of your money.

Adopting a strategy of redundant backup is a good practice. The table on the following page lists several tools that will help you ensure that you can back up your data so it is available when you need it. Choose one or two that are most useful to your circumstances. Do not risk being locked out of your data. Create a backup system *now* that includes archiving and routinely backing up. You can do this manually or automatically.



TOOLS	DESCRIPTION
<b>CLOUD COMPUTING</b>	<p>Cloud computing is taking services, including backup services, and moving to shared systems. Applications and services are accessed via the Web, instead of your hard drive. The services are delivered and used over the Internet. The cloud infrastructure is maintained by the cloud provider (such as <a href="https://aws.amazon.com/">https://aws.amazon.com/</a>). This is a strategy that particularly applies for those who use their device and data outside of their office.</p>
<b>ONLINE DATA BACKUP AS A COMPANY SERVICE</b>	<p>For a fee, there are many companies that will store your data at their data center on their servers, such as Carbonite, Rackspace, etc. and many other companies will backup and protect your data daily. This service will automatically backup and synchronize your data across multiple devices.</p> <p>An online backup service makes it easy to access data from a mobile office. Even if you have just one computer, this is a great way to ensure consistent backup and accessibility of your data after a system crash, ransomware attack, natural disaster, or other threats to your data.</p>
<b>EXTERNAL HARD DRIVE</b>	<p>An external hard drive is a storage device located outside of a computer that is connected through a USB cable or wireless connection. An external hard drive is usually used to store media that a user needs to be portable, for backups, and when the internal drive of the computer is already at its full memory capacity. These devices have a high storage capacity compared to flash drives and are mostly used for backing up numerous computer files or serving as a network drive to store shared content. External hard drives are also known as removable hard drives. Available online or in retail stores such as Best Buy, Wal-Mart, or Staples.</p>
<b>USB FLASH (STICK, JUMP, THUMB) DRIVE</b>	<p>These insert into your device's USB port. They are removable and rewritable. Their storage capacity has risen and their price has dropped. It is a good practice to keep one with your keys so you always have it available to copy files, especially in an emergency. USB sticks are constantly increasing in capacity and are highly useful for quick data backups. They are highly portable. Available online or in retail stores such as Best Buy, Wal-Mart, or Staples.</p>
<b>BACKUP GHOST COMPUTER</b>	<p>If you have valuable business or family data, you can invest in a backup computer or device. Keep all your data on two devices and if one goes down you will have another one with all your vital data. Computer prices have fallen so much in the past few years this is a viable option.</p>

### Auto Install or Manually Install Patches

Consider that those who applied readily-available Microsoft Windows patches on a regular basis *before* the WannaCry attack were protected. Other companies installed patches immediately upon hearing of the WannaCry malware and were protected. Both strategies worked, but it is always better to install the patches via auto install well in advance of an attack.

### Anti-Virus, Anti-Malware, and Other Data Protection

There are many excellent antivirus, antimalware and other data protection software packages available. Prices and features vary. Many free ones are available online. Here is a link to a few: <http://www.pcmag.com/article2/0,2817,2388652,00.asp>.

### Don't Fall for Phishing Scams

Phishing is a leading way that cybercriminals steal data. You receive an email that has an urgency to it. Inside the mail is a link that the sender urges the recipient to click.

The link takes the user to a fake website and your data can be compromised. *Never* open a phishing email!

### Power On

**Final Tip:** Data depends on devices (computers, tablets, laptops, cell phones, etc.) that depend on power. To make sure that you can access your data, be prepared by maintaining backup energy sources to power your devices and make it a habit to have these items working and available.

- Mouse batteries
- Computer batteries
- Power cords
- Surge protector
- Laptop batteries

*Read more from Bruce at [poetslife.blogspot.com](http://poetslife.blogspot.com) ●*

## MANAGING PAIN IN A PINCH, *continued from page 18*

discomfort or even an ulcer with prolonged use. They should always be taken with food to minimize contact with the stomach lining. Some patients are able to tolerate an NSAID if they take an acid-lowering drug (such as Pepcid, Zantac, Prilosec, or Prevacid). Allergies to NSAIDs are not uncommon, and sensitive individuals may develop hives or wheezing.

For musculoskeletal pain (sprains, fractures, injuries), the NSAIDs, narcotics, and Tylenol are useful, but again, don't limit yourself to thinking of pills as the only way to alleviate pain. Rest, ice (or heat), splinting, wrapping, and taping are all measures that decrease pain by lessening the stress on the affected body part.

Again, the main point is to get beyond thinking that pain pills are

the answer to pain. Yes, they have their place, when the pain is disabling and nothing else works. But overall, especially with the supply of narcotics severely limited, do what you can to avoid them, and save the "big guns" for situations that truly warrant their use.

### Checklist—Items to include in your medical supplies:

- Tylenol and OTC NSAIDs – ibuprofen, naproxen sodium, and aspirin
- Prescription tramadol, narcotics, muscle relaxers, sleep aids, antidepressants, beta-blockers, calcium channel blockers
- Oxygen tank or concentrator; extra tubing
- Hot water bottle or reheatable rice bag
- Athletic tape; Coban; elastic

wraps; ankle, wrist, finger, and hand splints; slings

- OTC Prilosec, Prevacid, Pepcid, Zantac (or generics); liquid Maalox; baking soda
- Oil of clove for dental (nerve) pain

### Actions to take:

- Learn about using willow bark at the University of Maryland Medical Center Web site (at <http://www.umm.edu/altmed/articles/willow-bark-000281.htm>); also, locate a local source of willow bark or plant your own trees.
- Study up on massage and effleurage techniques
- Download a pain scale you find useful ●

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