

15. MEDICAL PREPAREDNESS

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Disclaimer: The lists, recommended treatments, etc., that are put forth here are never intended to replace the advice, treatment plans, or medications prescribed by a doctor, dentist, or other health care professional. Much of the information provided here is intended to help care for a patient UNTIL more advanced medical care is available.

15.01 First Aid Kits:

Kits should be replenished or replaced each year. Check for expiration dates on any ointments or medications. Keeping a spreadsheet with the medication names and expiration dates helps, as long as you check the roster every couple of months and tend to proper replacement.

Always read instructions for use of prepackaged first aid kits, and for use of medications, in order to be better prepared in case of emergency use. Review instructions with family but be sure to keep all first aid kit out of reach of small children.

- **Where to Keep a Kit**
 1. Home
 2. Automobile / Boat
 3. Travel / Vacation packs
 4. 72 hour Packs
 5. Work
- **Prepackaged Kits:** While prepackaged First Aid Kits are convenient, easy to purchase, and neatly packaged, the same materials can be obtained for a fraction of the price, when purchased separately.
- **Ideas for Kit Cases**
 1. Old shaving kits
 2. Zippered, plastic pouches-like in school pencil kits-handy, because the categories of supplies can be neatly organized in separate pouches and assembled in a thick, ringed binder.
 3. Plastic containers with snap-on lids
 4. Small plastic tackle boxes, since they are lightweight and have handles
 5. Altoid metal tins - for holding tablets or small parts
 6. Zip-sealing plastic bags
 7. Modified Pre-Packaged Kits - Perhaps the easiest way to organize the kit is to buy an inexpensive, prepackaged kit of the size that you want, then add in the extras and replacement parts as you desire. Most prepackaged kits contain a quick-summary sheet of First Aid. The American Red Cross has an online store that has a complete array of kits for purchase (www.redcross.org).



15.02 Lists for 72-hour Kits:

Lists for kits can be as simple or as complex as you personally desire, but the following should serve as a basic outline of a practical, well-supplied First Aid Kit:

Medications:

IMPORTANT NOTE OF CAUTION

You should never take any medication against the recommendations of your physician, or against the recommendations listed on the product.

DO NOT USE medications if you have any known drug allergies that would contraindicate your taking the drug, or if you have certain medical conditions that would contraindicate your taking the drug.

If you have any questions concerning a drug, you should consult with a pharmacist or other health professional before taking any medication. Never exceed the recommended dose of any medication.

Remember, children require smaller doses of medications than adults require and, again, NEVER exceed the recommended doses as listed on the packaging materials of any medication.

In case of accidental overdose, seek immediate medical attention by calling 9-1-1 and then call Poison Control at 1-800-222-1222

A. Pain Relievers

1. Acetaminophen (e.g. Tylenol) - Easier on the stomach, especially in those who suffer from gastro esophageal reflux , peptic ulcer disease, bleeding tendencies, or who have a know sensitivity to aspirin or aspirin-like compounds.

Typical ADULT dose for mild pain, headache, or fever:

- 325 mg/Regular Strength Tablet/capsule/caplet: 1-2 tablets, by mouth, every 4 hours as needed to relieve the pain or headache
- 500 mg/Extra Strength Tablet/capsule/caplet: 1-2 tablets, by mouth, every 4-6 hours as needed to relieve the pain or headache.

2. Ibuprofen (e.g. Motrin, Nuprin, Advil, etc.) - Excellent choice to relieve headaches, musculoskeletal and back aches, menstrual cramps, fever, cold and flu symptoms, and toothache.

Typical ADULT dose for mild pain, headache, or fever:

- 200 mg/Tablet/capsule/caplet: 2 tablets, by mouth, every 4 hours as needed for relief of symptoms. Prescription strengths of higher doses are available from your doctor.



3. Aspirin - Another choice to relieve headaches, musculoskeletal and back aches, menstrual cramps, fever, cold and flu symptoms, and toothache. Some doctors prescribe one aspirin a day for patients who have known coronary artery disease to reduce their risk of suffering a second heart attack.

Typical ADULT dose:

- 325 mg/Tablet/capsule/caplet: 2 tablets, by mouth, every 4 hours as needed for relief of symptoms.

B. Indigestion Relievers

1. Antacids (e.g. TUMS, Rolaids, Maalox, Mylanta, etc.) - Help immediately to relieve symptoms of mild indigestion, heartburn, and sour stomach. The doses generally are 2 tablets as needed to relieve the symptoms.
2. H2 Blocking Agents (e.g. Pepcid, Zantac, etc.) - Help to prevent and to relieve symptoms of mild indigestion, heartburn, and sour stomach. The doses generally are 1 tablet/capsule every 12 hrs as needed to relieve the symptoms.
3. Proton-Pump Inhibitors (e.g. Prevacid, Prilosec OTC, etc.) - Help to prevent and to relieve symptoms of mild indigestion, heartburn, and sour stomach, but these generally take a few doses to become effective, generally requiring concurrent antacid consumption until the medication becomes effective. The doses generally are only 1 tablet/capsule every day for 14 days.

C. Antiseptics

1. ISOPROPYL Alcohol / Rubbing Alcohol - Serves as an excellent cleanser, disinfectant, and skin-drying agent. CAUTION: this is highly flammable, AND should never be consumed by mouth. Also, rubbing alcohol burns when applied to irritated or broken skin.
2. Antiseptic Soap-Antibacterial soap (e.g. Hibiclens, Dial Soap, Betadine Scrub, etc.) One of the best and most well-tolerated antiseptics is good, old-fashion soap and water.
3. Antimicrobial Hand Wipes-to clean hands well before and after applying first aid.

D. Ointments

Apply these using a clean cotton swab or gauze, as touching the end of the tube with a bare finger tip may contaminate the ointment within the tube and/or the wound to which the ointment is applied.

1. Bacitracin Ointment- serves to fight infection in minor abrasions. Apply 3 times a day and/or at dressing changes.



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2. Neosporin/Neomycin Ointment-serves to fight infection in minor abrasions. Apply 3 times a day and/or at dressing changes. NOTE: up to 25% of people develop hypersensitivity (a rash) or drug allergy to Neosporin and must stop its use.
3. Lanacaine / Lanabiotic -serves to fight infection in minor abrasions. This has the advantage of also relieving minor discomfort and relieving stinging in insect bites and wounds. Apply 3 times a day and/or at dressing changes.
4. Triple-Antibiotic-serves to fight infection in minor abrasions. Apply 3 times a day and/or at dressing changes.
5. Hydrocortisone Cream-1%-Cortaid -serves to decrease or stop itching and burning from insect bites and stings and from contact dermatitis. May apply as directed on the tube.

Bandages and Bandage Supplies

A. Latex-free Powder-free Gloves

2-3 pairs; for personal protection when applying first aid to others, and also for protection against further contamination of wounds

B. Instruments

At least one of each:

1. Tweezers - for removing splinters, debris, etc. from wounds
2. Flashlight - can be as simple as a penlight, or as complex as a wind-up (battery-less) flashlight.
3. Safety Pins - 2 large, 4 small
4. Needle - for facilitating splinter removal
5. Wire Clipper / Cutter - for clipping off a fishhook
6. Wooden Tongue Blade - may be used to expose things for closer examination (i.e. holding clothing, tissue, etc. out of the way); may also be used for use as a finger splint.
7. Sterile Saline Irrigation - small bottles are available in any store where Band-Aids and gauzes are sold, but, in a pinch, pure saline contact lens solution will work fine.
8. Lighter or Matches (Strike-Anywhere, Water/Wind-Proof are best)



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C. **Band-Aids**

Sterile, in individual packages, and in several sizes and shapes. Butterfly wound-closing Band-Aids and steri-strip wound closing bandages are generally discouraged because most wounds in the emergency setting should NOT be approximated unless managed in a professional setting.

D. **Gauzes**

Sterile, in individual packages. Assemble the following, at a minimum:

1. Gauze Rolls - 2 rolls each of 2" wide and 4" wide
2. Gauze Pads - 6 packages each of 2" and 4" widths
Do not confuse "Gauze Topper Pads" with Gauze pads. Toppers have cotton inside the gauze and are not as versatile as true gauze mesh. Topper gauze is useful in padding a dressing, serving to absorb more fluid/blood into a dressing, and such, but is not the best gauze item for a standard kit.
3. Eye Gauze Pads- at least 6 sterile pads.
4. Cotton Swabs and cotton balls - 6 of each, to help clean wounds, and to apply medications/antiseptics

E. **Bandage Sheers**

The funny looking scissors with a bent nose

F. **1" Paper Tape & 1" Cloth Adhesive Tape**

One roll of each

G. **2" and 4" Ace Wraps**

One of each. These are excellent for gently holding temporary dressings, ice-packs, or splints in place so that adhesive tape does not have to be applied to delicate skin. Also, the ribbed upper half of a sock (with the foot cut off) serves as an alternate means to hold dressings and such in place.

H. **Triangular Bandage (TB)**

Versatile and compact. May be purchased prepackaged or constructed out of any soft material (e.g. pillow case, sheet, large T-shirt, over-sized bandana, etc.) 36" x 36" x 51" is a good template size. Many Uses: SLING, tourniquet, splint binder, ice-pack barrier, etc.

To Make a SLING: Place the longest side of the TB under the arm, and tie the two corners of the long side together at the back of the neck, this "slings" the arm on that side. Tuck/safety-pin the third corner to brace/secure the elbow in the sling.



15.03 CPR and First Aid Certification:

American Red Cross offers training and certification in First Aid and in Cardiopulmonary Resuscitation (CPR). Contact your local Red Cross Chapter online at the following web address:

<http://www.redcross.org/services/hss/courses>

Skills learned and practiced are VITAL for competency. Guidelines are updated each year or two and it is necessary to renew your CPR certification at least once a year to stay current for the best outcome during an emergency.

15.04 Medical Care:

There will never be a better medical system available than is offered to people in the United States. But, a few points made in general first aid management may prove useful in the future (some knowledge and skills you can tuck in your pocket, as I tell my children).

NEVER let a little knowledge prevent you from seeking proper, professional medical treatment when needed.

Many of the concepts outlined here are to bridge the gap between the time of injury and the time that proper, professional medical help arrives.

In the case of any true emergency, you should always call 9-1-1 immediately to summon emergency help.

A. Handling an Injured Patient

1. Obviously, the circumstances are varied-so is the management of these patients, but there are some universally applicable measures to take until the medical help arrives:
2. ABC's of First Aid/CPR: Is the patient responsive and alert?
 - a. Airway - does the patient have a clear, safe airway?
 - b. Breathing - Is the patient breathing easily or with difficulty?
 - c. Circulation - Is the patient pulse less? Initiate CPR.
3. Keep the victim calm, quiet, and safe, until professional help arrives.
4. If a head/neck injury is suspected:
 - a. Sandbags, bags of flour, or even rolled up garments, placed on the ground on either side of their head will help the patient keep their head from turning from side to side, until the paramedics can properly immobilize their head and neck.
5. Quietly, gently talking with the patient can help calm them, and can provide you with additional information to relay to the paramedics upon their arrival.



6. **AIM** - Keeping this little memory tool on hand will help you ask 3 important questions:
- A** for Allergies (drug allergies)?
 - I** for Illnesses (in the past)?
 - M** for Medications (currently taking)?

B. Wound Management

1. Stop the bleeding
 - a. Fold or roll a couple of gauze or a clean cloth into as small a lump as possible, but large enough to cover the bleeding wound entirely.
 - b. Place the mass of the compression gauze/cloth directly on top of the bleeding wound and press as firmly as possible.
 - c. Maintain as firm pressure as comfort permits, and **DO NOT** "check" to see if the bleeding has stopped for at least 3 minutes. If the patient has taken aspirin within 8 days, this initial pressure-holding time should be at least 5 minutes before releasing the pressure to check if the bleeding has stopped. Each time the pressure is released, if bleeding persists, then most of the clot washes away and the process must be started over. **BE PATIENT. HOLD PRESSURE---**the bleeding will stop. Even if it means that you must hold steady, firm pressure until the paramedics arrive, **HOLD IT--Do NOT** check it.
 - d. Elevating the limb, too, helps to stop bleeding.

WARNING: Do not tie a circumferential dressing around any extremity to hold a compression dressing in place. Pressure from a circumferential dressing that will stop bleeding will also stop the circulation in the affected extremity. Pressure must therefore be applied manually in order to apply it safely and effectively. If the patient must be moved and a pressure dressing is utilized, ensure that it is not tied too tightly so as the patient loses circulation to the extremity. If the bandage is too tight, and if the casualty is conscious they may complain of numbness, tingling, or as if their extremity is falling asleep. If the patient is unconscious and a circumferential dressing is applied, there is a high risk of cutting off circulation completely.

2. Wound packing for massive bleeding.
 - a. Apply direct pressure to wound with hand, knee, rag, gauze etc. to slow the flow of blood until you have supplies ready.
 - b. Get index or middle finger in wound to apply pinpoint pressure to bleeding vessel/ area.
 - c. With other hand, pack UN-ROLLED gauze (preferably hemostatic gauze) into wound near "bleeder", where the other hands fingers are holding pressure.
 - d. Pack entire void space in wound and hold direct pressure for 3 minutes.
 - e. **DO NOT REMOVE GAUZE TO SEE IF BLEEDING HAS STOPPED. THIS WILL DISRUPT THE CLOTTING PROCESS.**
 - f. Be careful as to not cause more tissue damage, but still be aggressive in stopping the bleed.



- g. Wrap wound with bandage to keep gauze in wound, do not tie bandage too tight as it may cut off circulation if on an extremity.
 - h. **DO NOT PACK ABDOMINAL WOUNDS DEEP**, this carries a high risk to the casualty of injuring other organs in the abdominal cavity.
 3. Once bleeding has stopped, the wound can be examined, cleaned with antimicrobial soap and warm water, and properly tended.
 - a. If sutured by a professional, follow their post-procedure instructions. Otherwise, some guidelines to keep a sutured wound clean are:
 - Remove the initial dressing after 24 hrs
 - Gently wipe off the incision with an alcohol wipe three times each day, and after each shower. Tub baths and soaking of sutured wounds is not advisable as this increases the risk of wound infection.
 - Either a dry gauze or no dressing at all may be applied to the clean, dry wound.
 4. Observe the wound carefully for any signs of infection:
 - a. Increasing redness around the incision.
 - b. Increased tenderness and pain at the wound.
 - c. Swelling around the wound.

If any signs of infection are noted, contact your health care provider immediately!

5. Special considerations
PLEASE make sure that everyone has UP-TO-DATE IMMUNIZATIONS.

C. **Wound Care**

If no professional medical care is or will become available.

Some wounds, including deep wounds, contaminated wounds, substantially large wounds, can heal without suture closure. In fact, in grossly and severely contaminated wounds, as found in animal bites, after appendectomy for ruptured appendicitis with peritonitis, and when several hours have passed between the time a laceration happened and the time medical treatment is available, the bacteria counts in the wound are too high to safely close the wound. Also, sometimes the development of infection within a closed wound necessitates that the sutures be removed, the pus and infection be drained, and the wound be packed open to heal.

In these cases, the wound is managed “opened” and allowed to heal from the bottom up, by a process known as Healing by Secondary Intention. The principle is that packing the wound open with saline-moistened clean gauzes (The dressing is known as Wet-to-dry Dressings) allows the healing to proceed. With 3 times a day dressing changes, the wound contracts up over a couple of weeks, and then heals completely.



How to provide wound care:

Wet-to-dry Dressings - cleansing dressings that heal

1. Thoroughly wash your hands and dry them on a clean towel/paper towel.
2. Arrange your supplies now, especially if you are working solo.
 - a. Lay out a clean cloth upon which to rest your dressing materials.
 - b. Open the gauze packages in a sterile fashion by peeling back the sterile paper packaging, allowing the gauze to remain on top the sterile packaging.
 - c. Tear off the tape you will need ahead of time and have it hanging ready
 - d. Have dry gauze pads open, too, to ultimately cover the packed wound.
 - e. Several gauze may now be moistened by pouring some saline on them. You may buy sterile saline for dressing changes or make your own by mixing 1 teaspoon of salt in 1 quart of hot water in a clean container.
3. With clean, disposable gloves on, pick up a moistened gauze, squeeze out the excess saline, unfold and open up the folded gauze as completely as possible.
4. Lay the gauze into the wound using either your gloved fingers, a cotton swab, or a sterile tweezers. This first gauze layer (The most important) should be applied to maximize the contact between the surface area of the gauze and the surface area of the wound.

Thereafter, the remainder of the moistened gauze can be gently tucked into the wound. Do not over pack the wound (i.e. do not tightly pack the gauze into the wound The wound should be filled with gauze, but not crammed tightly). Do not overlap the wound skin edges with the moistened gauze as that will chap the skin edges. Allow the packing to touch the inside wound edges, but not to overlap.

5. Apply a dry gauze pad on top, and apply a minimum of tape to hold the dressing in place. On the extremities, a stocking cut to form a tube can effectively hold the dressings in place without the need for tape touching the skin. On the trunk, a velcro abdominal binder can achieve this tape less dressing. Tape irritates some people's skin more than others, so these ideas provide a few tape-less options.
6. Between dressing changes, the saline-moistened gauze dries out somewhat. At a dressing change, the packed gauze is re-moistened by gently pouring a little sterile saline onto the gauze in the wound. The gauze actually cleans the wound surfaces each time it is removed for dressing changes. The wound debris and infectious material stick to the gauze and are removed with each dressing change.
7. Gradually, as the wound heals in, from the bottom outward, the wound will accept less and less gauze. Eventually, only a dry gauze on top is applied at dressing



change.

D. Burns

Burns are classified into degrees of burns:

1. First (1st) Degree Burns
2. Second (2nd) Degree Burns
3. Third (3rd) Degree Burns

While most 1st and 2nd degree burns do not require emergency medical care, anything more than a simple sun burn should be seen by a health care professional, especially if:

1. The patient is a child.
2. The burn is larger than 2 to 3 inches across.
3. The burn is on the face, hands, feet, or genitals

Burn Classification

1. First (1st) Degree Burns
 - a. Red, painful burns, with or without swelling of the involved skin
 - b. Usually sunburns are 1st degree burns.
 - c. Apply cool water for comfort, not butter or grease, not ice.
 - d. Moisturizers may help with comfort
 - e. Aspirin, if not contraindicated, may help promote healing of a sunburn and reduce the discomfort. Best if taken within the first 24 hours. Thereafter, other over the counter pain medications, like ibuprofen, acetaminophen, or aspirin, may help reduce the pain.
 - f. Usually heal in less than a week, although the skin may flake and peel.
2. Second (2nd) Degree Burns
 - a. Blistered, painful burns; the blister is called a bulla, and is best left in tact for healing to occur.
 - b. If the bulla is torn open, trimming the dead flap off is better than leaving it in place because the underlying dermis is more easily kept clean without the flap of dead skin holding bacteria and debris in place.
 - c. With clean hands, wash the burned area well but gently with cool water and antimicrobial soap.
 - d. Dry with a clean cloth.
 - e. Apply antiseptic ointment and a clean dressing of either gauze or a Band-Aid.
 - f. Dressing changes as above should be done at least twice a day, but also after getting the dressing dirty or wet.
 - g. If any signs of infection appear, a health care professional should be contacted without delay:
 - Increased redness
 - Increased pain and/or swelling
 - Discharge of pus from the wound



- Usually heal in 2-3 weeks

3. Third (3rd) Degree Burns

- a. Because this level of tissue injury/death is deep, skin involved in a third degree burn will appear white or gray (no blood), or charred, and it will not be painful in the acutely (no sensation).
- b. Are generally life threatening and mandate immediate emergency care
- c. May take months to heal, and even then only with complex medical and surgical treatments.

E. Fractures / Sprains Management

Until proper care is available

1. Attendant injuries

Survey the patient for more significant injuries: ALWAYS tend to the ABC's before addressing an obvious fracture.

- a. If patient is in shock, lay the patient down, loosen his clothing, elevate his feet higher than his head (also supporting his knees if possible), and cover him with a blanket. ALWAYS remember to talk soothingly to him as you go.
- b. Stop bleeding

2. Immobilizing the injured limb

- a. Padding around the injured hand, arm, leg, or foot will help protect it from accidental bumps and movements. Clothing, blankets, pillows, and cushions all make good padding.
- b. AFTER padding is applied, splints can be fashioned out of tree bark, wood, rulers, etc. and secured to the outside of the padding.
- c. Elevating the limb helps with comfort and slows swelling-injured hands and arms are best secured in a sling, made from a Triangular Bandage (see earlier notes).
- d. If ice is available, an ice pack also will help with comfort and reduce swelling.

3. Transport as soon as possible for proper medical attention and treatment.

F. Head Injuries

1. **Very complicated set of injuries**
2. **Many are life threatening.**
3. **The patient requires immediate transport to a medical emergency center.**

G. Eye Injuries

1. Foreign Body

- a. Imbedded objects must be left in place for removal by an eye specialist
- b. Debris-may be flushed out with sterile saline solution or gently wiped out using the corner of a clean tissue or cloth



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- c. Occasionally, a foreign body lodges in the underside of the upper eyelid, necessitating flipping the upper eyelid back over upon itself for exposure and foreign body removal. Flipping the lid over a swab stick or similar object helps achieve this exposure, then the particle may be swept out using a rolled corner of a tissue or cloth.
- d. If the eye is irritated and painful, a corneal abrasion or retained foreign particle may be present. The eye should be bandaged to reduce movement until proper medical care by an ophthalmologist is available.

2. Eye Bandage

- a. Have the patient keep his eyes closed for application of the eye bandage. If no broken skin (i.e. lacerations or abrasions) is present on the forehead and cheek, degrease the skin with an alcohol wipe first, so that the tape will stick and the dressing will be secure.
- b. Place 1 1/2" stack of sterile gauze pads over the closed eye and tape the dressing securely into place with 5-6" strips of adhesive tape. If concurrent abrasions and lacerations are present, do not tape the dressing in place. Instead, wrap the forehead with gauze rolls to fix the eye gauze pads into place. NEVER wrap the neck circumferential. Wraps may require gauze pads over both eyes (the injured eye and the unaffected eye) in order to apply the wrap securely at the correct level.

15.05 Miscellaneous:

A. Prescription Medications

1. Keep a 3 month supply (minimum)
2. Paying out of pocket? Learn alternative ways of managing the disease for more long-range issues, when stores are depleted

B. Necessities - Groceries, supplies, hardware, tools, medications, etc.

1. Use to barter for things you need in a crisis/disaster situation.
2. Offer as charity. Help those who may not be able to help themselves in medical care, obtaining materials and medications in a crisis situation, if or until emergency responders are available.
 - a. Elderly
 - b. Children
 - c. Those physically or mentally unable to care for themselves.
3. Someone who you help in a first aid situation, might help you in another situation.

15.06 Reference Sites, Texts, and Contacts



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- 9-1-1
Remember to call first in an emergency. Teach your children to use properly.
- POISON EMERGENCY HOTLINE 1-800-222-1222
- <http://www.redcross.org/services/hss/courses/>
Each course offered at the American Red Cross for First Aid and CPR certification includes a manual.
- <http://www.quickmedical.com>
All types of disposable medical supplies.
- <http://www.first-aid-product.com>
Whole-sale medical on line. Every Prepackaged First Aid kit contains a complimentary booklet on First Aid.
- McManners, Hugh, The Complete Wilderness Training Book, DK Publishers, New York, New York, 1998.
- Wilkerson, James A., M.D. Medicine for Mountaineering and Other Wilderness Activities, The Mountaineers Books, Seattle, Washington, 2001.

EMERGENCY ORAL REHYDRATION FORMULA

In severe instances of diarrhea or vomiting, water alone will not re-hydrate a patient. In the absence of an IV type rehydration, this formula has been used in many places throughout the world to save lives that would otherwise be lost to dehydration.

International Oral Re-hydration Formula

Pure drinking water	1 liter
Sodium chloride	3.5 grams
Trisodium citrate	2.9 grams
Potassium chloride	1.5 grams
Glucose	20.0 grams

Equivalent Common formula:

Pure drinking water	1 quart
Table salt	1/4 tsp.
Morton Lite Salt	1/2 tsp.
Karo Light Corn Syrup	2 Tbs.

