

First Aid in the Woods



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“Be prepared.”

–Robert Baden-Powell
The Boy Scout Motto





Emergency

Dehydration

Hypothermia

Frostbite

Burns

Broken bones

Sprains & strains

Blisters

Stroke

Heart attack

Closed head injury

Spinal cord injury

Appendicitis

Pneumonia

Be Prepared

- Clothing
- Food
- Medications
- First-aid kit
- Map
- Let someone know where you're going
- Mobile phone + external battery



Water

- What's the worst thing that could happen?
 - Giardiasis
 - Cryptosporidium
 - Campylobacter
 - Shigella
 - Cholera





Drinking Water Treatment Methods for Backcountry and Travel Use

This document should only serve as a guide for individuals intending to use untreated or poorly treated water as a drinking water source. This document may also aid travelers and backcountry water users in researching drinking water treatment methods. Except for boiling, few of the water treatment methods are 100% effective in removing all pathogens.

Table Key for Pathogen Removal	
-	not effective
+	low effectiveness
++	moderate effectiveness
+++	high effectiveness
++++	very high effectiveness

Contaminant	Potential Health Effects from Ingestion of Water	Sources of Contaminant in Drinking Water	Methods that may remove some/all of the contaminant				
			REMEMBER: If boiling water is not a feasible option, the most effective pathogen reduction method in untreated or poorly treated drinking water is a combination treatment, using the appropriate filtration and disinfection methods.				
			Boiling (Rolling boil for 1 minute minimum) *	Filtration **	Disinfection***		Combination Filtration and Disinfection****
Iodine or Chlorine	Chlorine Dioxide						
Protozoa- <i>Cryptosporidium</i>	Gastrointestinal illness (e.g., diarrhea, vomiting, cramps)	Human and animal fecal waste	++++	+++ Absolute ≤ 1.0 micron filter (NSF Standard 53 or 58 rated "cyst reduction / removal" filter)	—	+ to ++	++++ Absolute ≤ 1.0 micron filter (NSF Standard 53 or 58 rated "cyst reduction / removal" filter)
Protozoa- <i>Giardia intestinalis</i> (aka <i>Giardia lamblia</i>)	Gastrointestinal illness (e.g., diarrhea, vomiting, cramps)	Human and animal fecal waste	++++	+++ Absolute ≤ 1.0 micron filter (NSF Standard 53 or 58 rated "cyst reduction / removal" filter)	+ to ++	+++	++++ Absolute ≤ 1.0 micron filter (NSF Standard 53 or 58 rated "cyst reduction / removal" filter)
Bacteria- (e.g., <i>Campylobacter</i> , <i>Salmonella</i> , <i>Shigella</i> , <i>E. coli</i>)	Gastrointestinal illness (e.g., diarrhea, vomiting, cramps)	Human and animal fecal waste	++++	++ Absolute ≤ 0.3 micron filter	+++	+++	++++ Absolute ≤ 0.3 micron filter
Viruses- (e.g., enterovirus, hepatitis A, norovirus, rotavirus)	Gastrointestinal illness (e.g., diarrhea, vomiting, cramps)	Human and animal fecal waste	++++	—	+++	+++	+++

Treatment methods listed above:

* **Boiling** can be used as a pathogen reduction method that should kill all pathogens. Water should be brought to a rolling boil for 1 minute (at altitudes greater than 6,562 feet (>2,000 m), boil water for 3 minutes.)

** **Filtration** can be used as a pathogen reduction method against most microorganisms, depending on the pore size of the filter, amount of the contaminant, particle size of the contaminant, and charge of the contaminant particle. Manufacturer's instructions must be followed. More information on selecting an appropriate water filter can be found at www.cdc.gov/crypto/factsheets/filters.html. Only filters that contain a chemical disinfectant matrix will be effective against some viruses.

*** **Disinfection** can be used as a pathogen reduction method against microorganisms. However, contact time, disinfectant concentration, water temperature, water turbidity (cloudiness), water pH, and many other factors can impact the effectiveness of chemical disinfection. The length of time and concentration of disinfectant varies by manufacturer and effectiveness of pathogen reduction depends on the product. Depending on these factors, 100% effectiveness may not be achieved. Manufacturer's instructions must be followed.

**** If boiling water is not possible, a **Combination of Filtration and Chemical Disinfection** is the most effective pathogen reduction method in drinking water for backcountry or travel use. Manufacturer's instructions must be followed.

Other treatment methods can be effective against some of the above pathogens:

• **Ultraviolet Light (UV Light)** can be used as a pathogen reduction method against some microorganisms. The technology requires effective prefiltering due to its dependence on low water turbidity (cloudiness), the correct power delivery, and correct contact times to achieve maximum pathogen reduction. UV might be an effective method for pathogen reduction in untreated or poorly treated water; there is a lack of independent testing data available on specific systems. Manufacturer's instructions must be followed.

• **MIOX®** systems use a salt solution to create mixed oxidants, primarily chlorine. As a result, refer to the category above for chlorine disinfection. Manufacturer's instructions must be followed.

Important: Water that has been disinfected with iodine is **NOT** recommended for pregnant women, people with thyroid problems, those with known hypersensitivity to iodine, or continuous use for more than a few weeks at a time.

In addition to using the appropriate drinking water treatment methods listed above, you can also protect yourself and others from waterborne illness by:

- Burying human waste 8 inches deep and at least 200 feet away from natural waters.
- Practicing good personal hygiene. Wash hands before handling food, eating, and after using the toilet.

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Healthy Water



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Dehydration

- Increased thirst
- Dry mouth
- Dark yellow urine
- Reduced frequency of urination
- Muscle cramping
- Dizziness
- Confusion



Dehydration

- You need to drink more water than you think
- Increased physical activity
- Trying to stay warm
- Increased respiratory rate

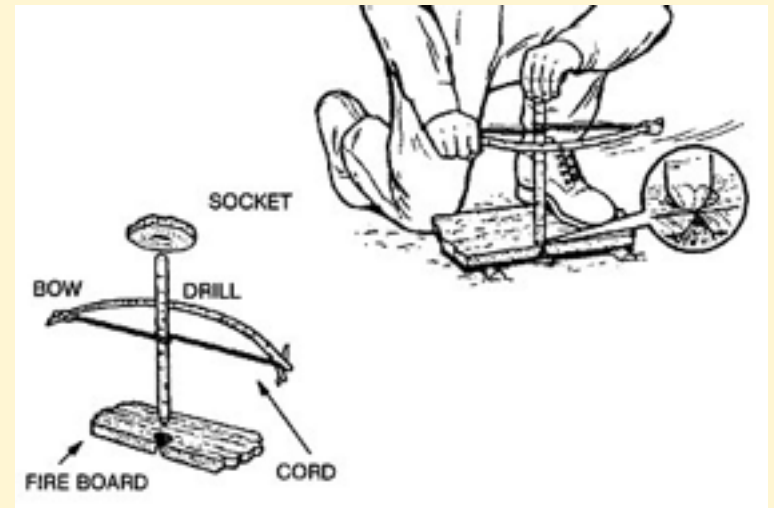


Fire

- Important for: warmth, protection from animals, cook food, boil water
- How can you make it?



Fire



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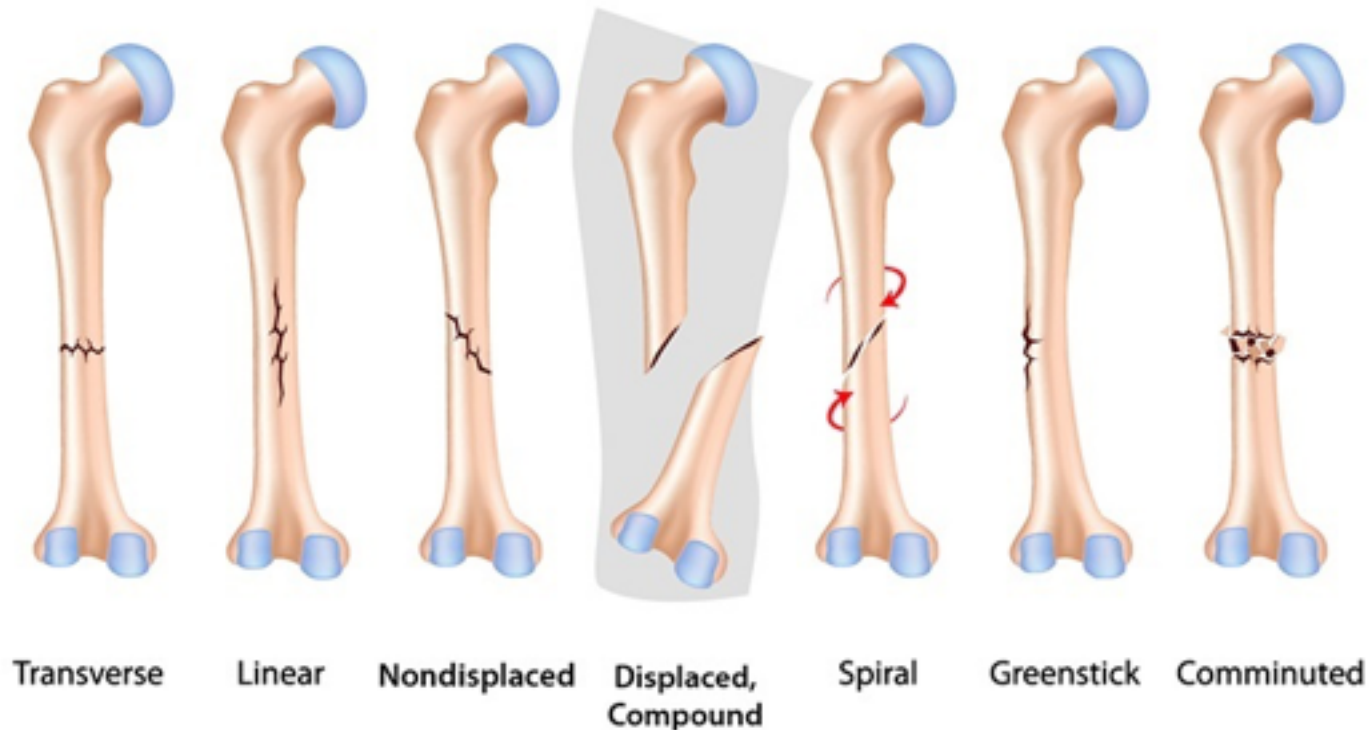
Hypothermia

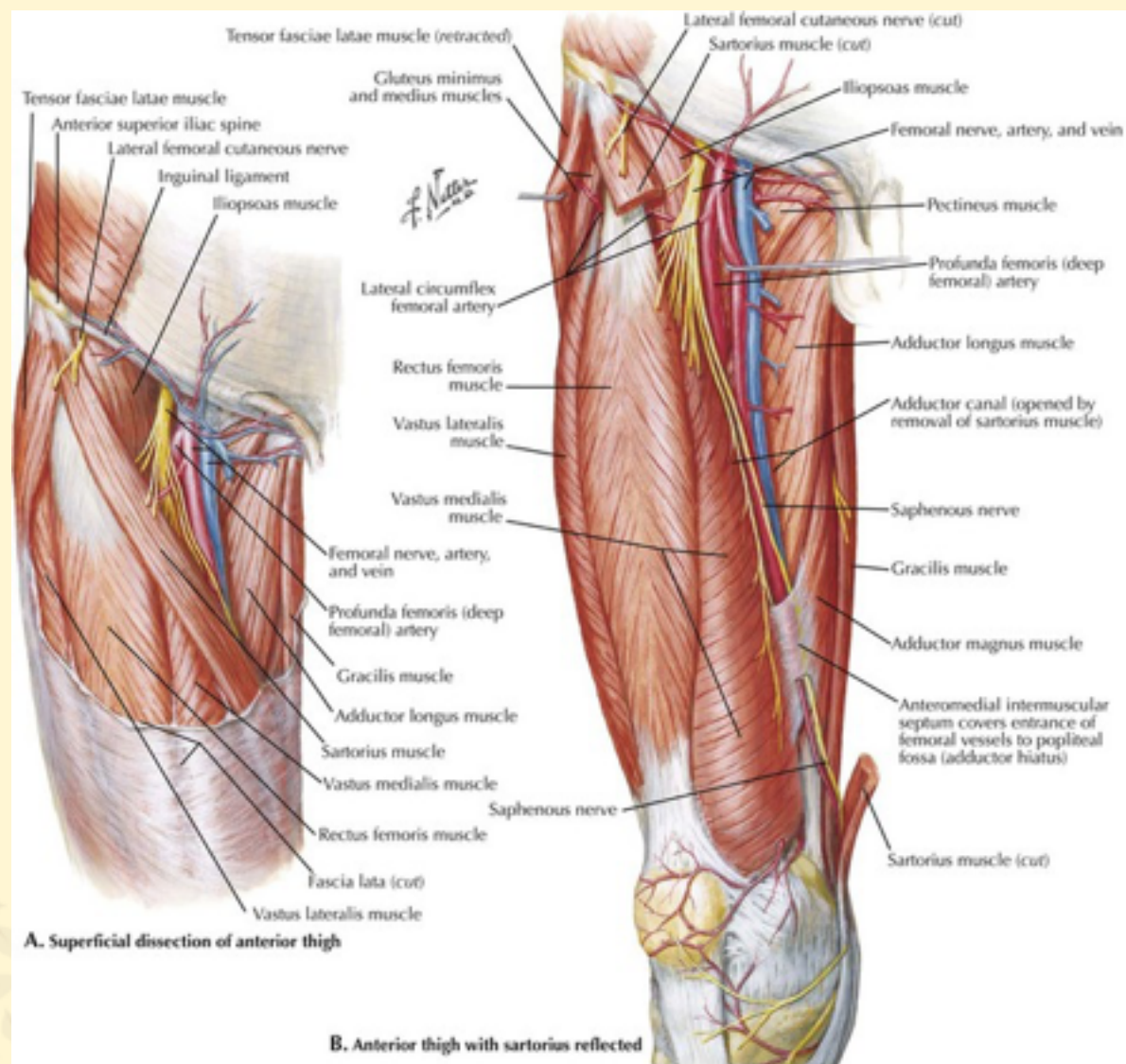
- Shelter
- Fire
- Remove wet clothing
- Share body heat
- Drink warm liquids



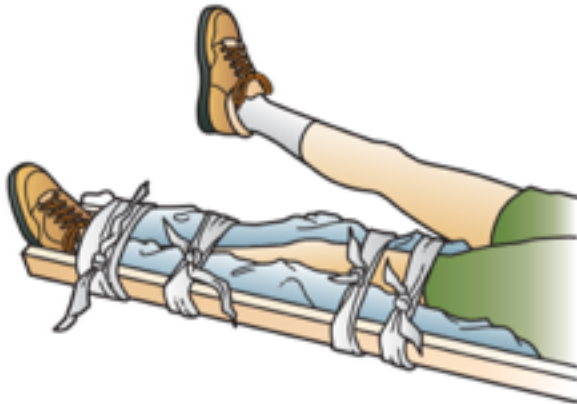
Fracture

Femoral shaft fracture





Fracture



Lower-leg fracture. Use splints that are long enough to reach from the middle of the thigh to past the heel. Place one splint on each side of the injured limb and bind them together.

Cravat Bandage

To make a cravat bandage from a Scout neckerchief or triangular bandage:

1. Fold the point up to the long edge.
2. Finish by folding the bottom edge several times toward the top edge.
3. Tie all bandages in place with square knots.



Upper-arm fracture. Tie a splint to the outside of the upper-arm. Place the arm in a sling with the hand raised about 3 inches above level, then use a cravat bandage to hold the upper arm against the side of the chest. The body will act as a splint to immobilize the elbow and shoulder.

Laceration

“All bleeding stops eventually.”

Arterial

- bright red blood
- pumper

Venous

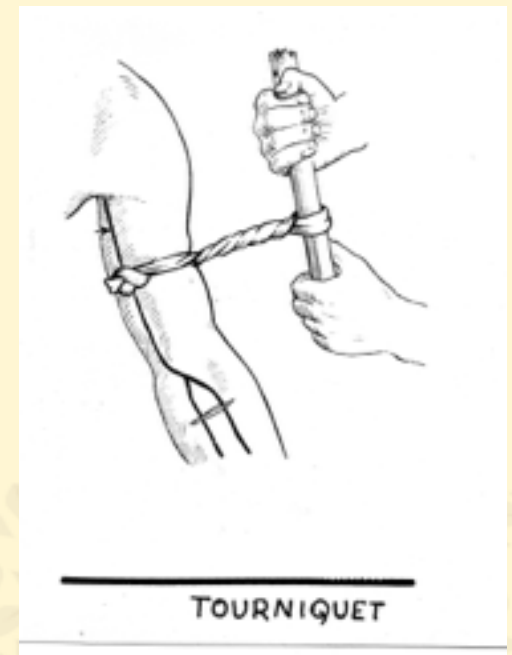
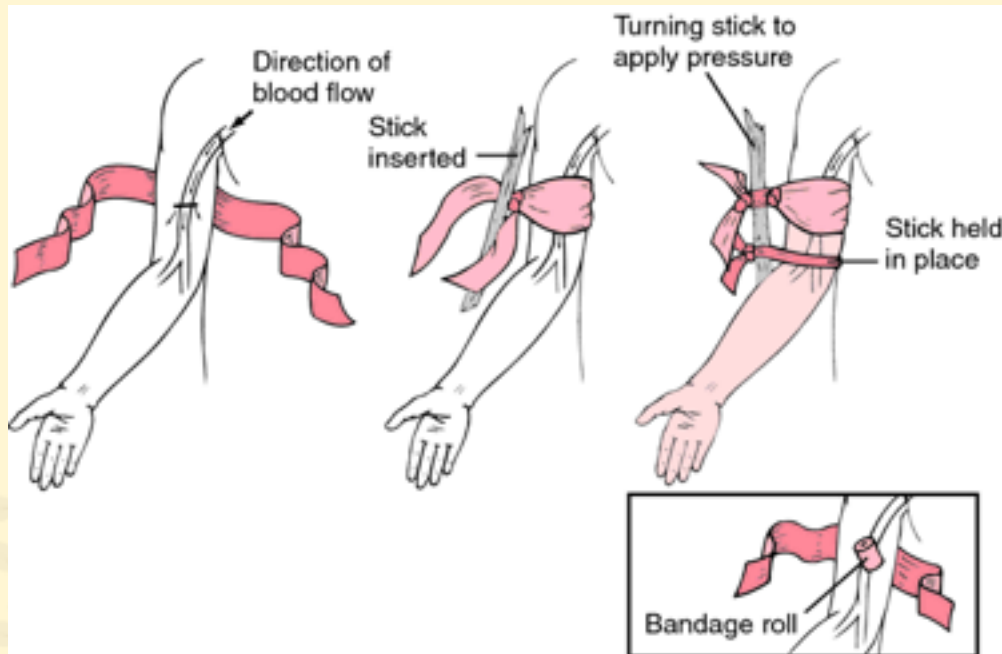
- Darker blood
- Ooze to more continuous bleed

Laceration

Elevation

Direct Pressure

Pressure Bandage

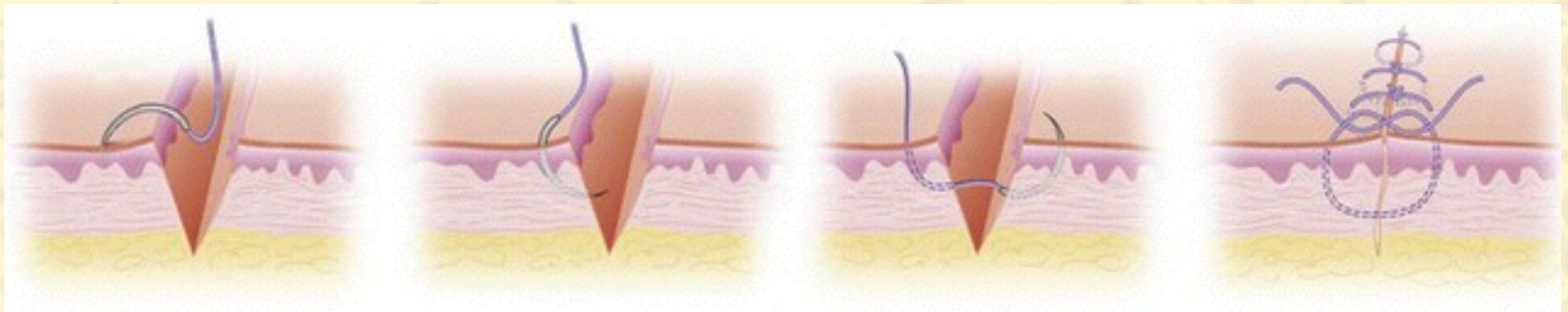
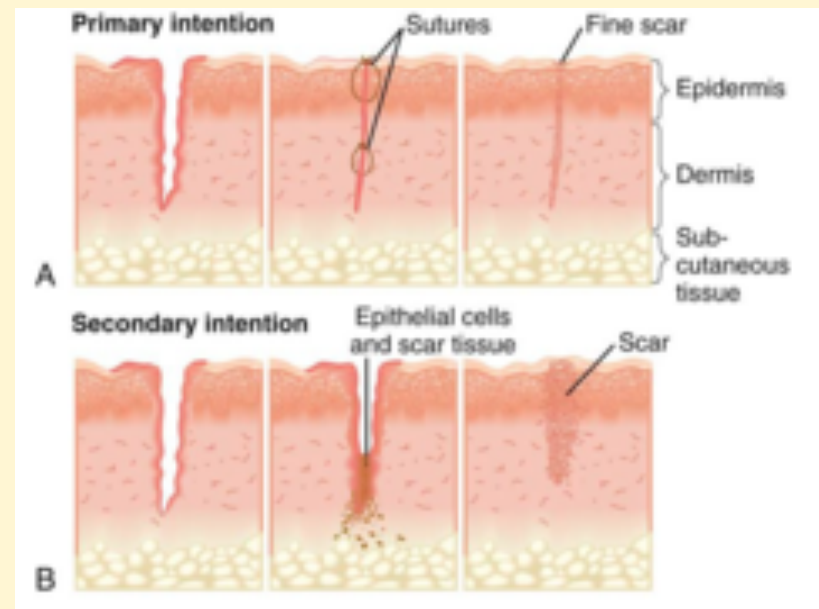
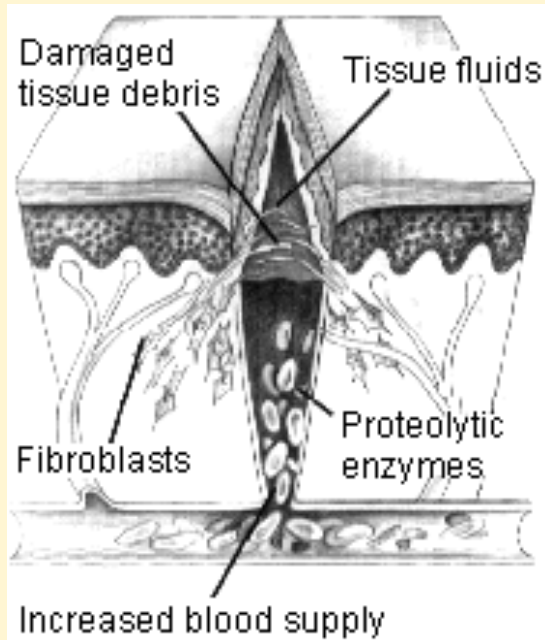


Laceration repair

“Dilution is the solution to pollution.”

- Rinse
- Approximate the wound
- Keep it covered and clean

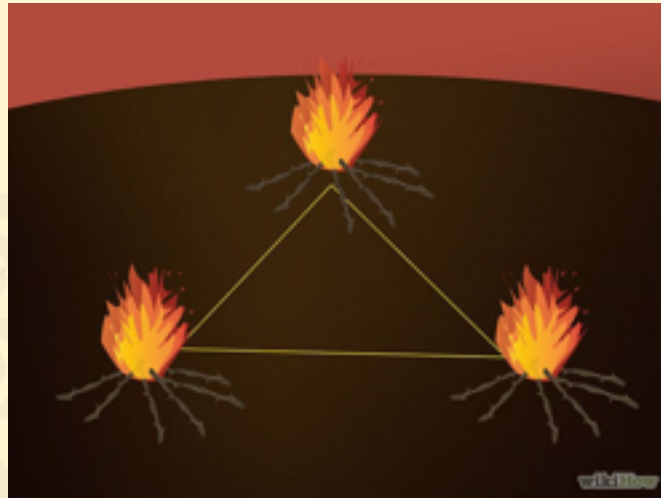
Laceration



Stay or Go



OR



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Shelter



Can you eat it?



Yes!
wild blueberries

Can you eat it?



No!

Amanita phalloides
aka death cap angel

Can you eat it?



Yes!
morel mushroom

Can you eat it?



Yes!
wild raspberries

Can you eat it?



No!
Toxicodendron radicans
aka Poison Ivy

Poison Ivy

- Resin causes itchy rash
- Wash right away with cold water
- Avoid scratching as will spread the oil

First Aid Kit

Matches	Bug spray	Garbage bag
Fire starter	Antibiotic ointment	Compass
Flashlight	Band-aids	Map
Signal mirror	Moleskin	Knife
Whistle	Coban	Energy bar
	Emergency blanket	
	Superglue	

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