

Wilderness Medicine for the Weekend Warrior



2013

Wilderness Medicine

- This is a HUGE topic!
- Each outdoor activity presents with different hazards
- Impossible to cover everything in 2 hours

Purpose of tonight...

- 1) Common wilderness injuries and illnesses
 - Practical Treatment and Management
- 2) How to be prepared and avoid #1
- 3) Get you motivated to get outside and explore!



Common Injuries+Illnesses

- Most are preventable by being prepared!
- But the outdoor enthusiast should be equipped to deal with emergencies as they occur
- Important to have good knowledge of wilderness first aid and have good first aid kits

Common Backcountry Afflictions

- 1) Gastroenteritis/diarrhea (21-46%)
- 2) Trauma, sprains and breaks (12-31%)
- 3) ~~Altitude Related~~ ^{High Altitude Respiratory Distress} (10.7%)
AMS, HAPE, HACE
- 4) Respiratory conditions (8%)
Asthma, infectious
- 5) Dermatologic (2.3%)
Blisters, rash
- 6) Other (8.3%)
heat related, frostnip/frostbite, eye conditions

An Approach to Heading Into The Bush

- Sh*t happens. The best way to avoid a bad ending to a great trip is to PLAN AHEAD.
- Is it a dayhike? An overnight backpacking trip? A car-camping trip up a logging road? A paddling trip?
- Picture the worst thing that could happen on the trip you're planning. This is what you need to prepare for. Sound like overkill? It's only overkill until you're in a bad situation, and then you're grateful you planned ahead.

General principles

- Always tell someone where you're going, when you plan to be back, and who they should contact if you don't show up. If you can, leave them a map showing your planned route. Just imagine yourself on the other end of someone not coming home when they're supposed to: what information would you want to have?
- Never go with nothing.

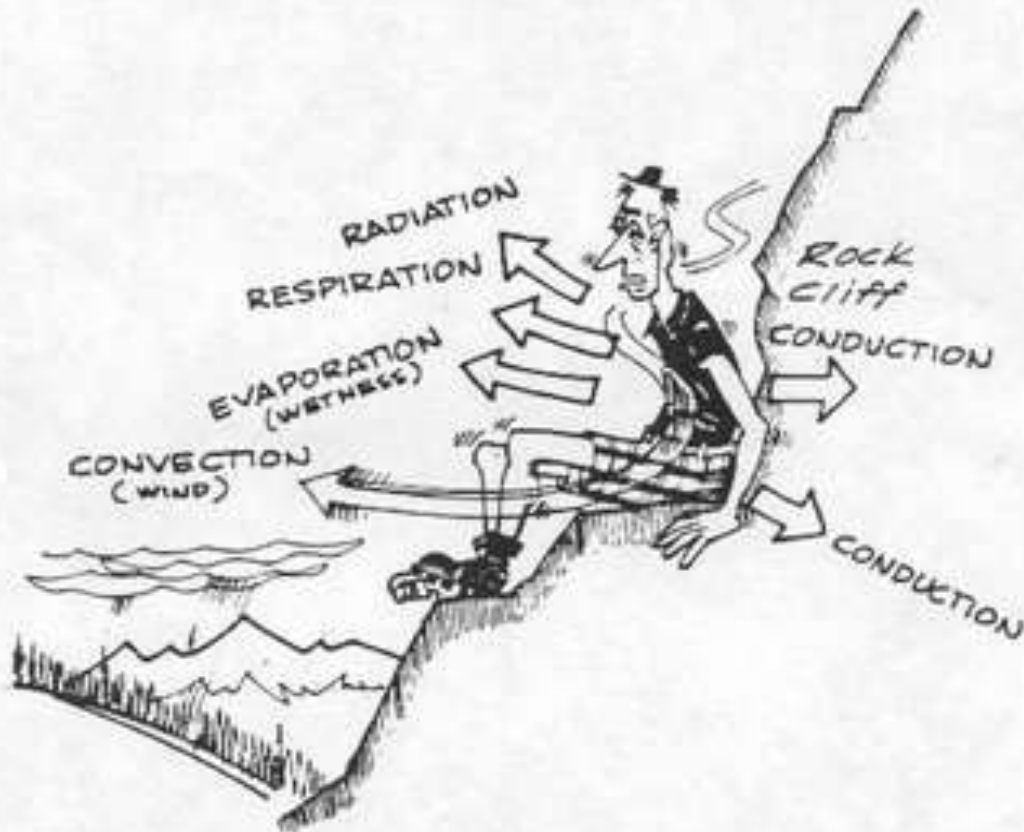
Even for a dayhike...

- Don't leave home without a bottle of water, a jacket of some sort (wind/rainproof), something warm (a toque is never a bad idea), some form of calories, and something you can use to light a fire.



Cold and Heat: Can they
really be so bad???

BODY HEAT LOSS - "HYPOTHERMIA"



**WIND AND WETNESS
TAKE AWAY BODY HEAT FASTER
THAN IT CAN BE PRODUCED.**

Hypothermia

- Is what happens when your whole body gets TOO COLD.
- Someone who is getting too cold goes through different stages:
 - ✍ First, they get clumsy and stumble more. They become less social. They start to shiver. They become pale. They get a bit confused.
 - ✍ Then, they shiver more. They get more confused. Their skin turns dusky. Their stumbling gets worse. They might start to fall behind the group.
 - ✍ When hypothermia is severe, they stop shivering. They get really stupid and eventually go unconscious. They breathe slower and their skin is cold.

This is a big problem after
a while.



What can we do?

- Try to predict when hypothermia might occur.
 - ✦ Examples: it rains unexpectedly; it's very windy on the top of a mountain and someone didn't pack enough clothes; you have to hole up somewhere for a period of time unexpectedly while weather passes; someone forgets a sleeping bag.
 - Recognize the signs of someone getting too cold, and don't ignore it in yourself.
 - Get on it early! It's much easier to fix hypothermia in the early stages than later on.
 - ✦ Make hot drinks/soup; move around; change into dry clothes; put on a toque; find/build shelter; give them sugary snacks
 - DEMO: the burrito o'warmth

Myths about hypothermia

- Alcohol helps keep you warm.
- If someone is hypothermic, you should crawl into their sleeping bag with them.
- Any others from the crowd?

Frostbite

- Is what happens when a PART of the body FREEZES
- At first, it looks like this:
- Then, it looks like this:
(after it's re-warmed)



Eventually...

- It looks like this:



It's not always this bad

- Like most things, frostbite can be mild, moderate or severe.
- Mild frostbite is also called “frostnip”: skin is white, numb, cold to the touch, but still soft (i.e. not frozen solid).
- Moderate frostbite is also called “partial-thickness”, i.e. the body part isn't all the way frozen. The skin will look like frostnip, but when you touch it, the body part will dent and the dent may linger.
- Severe frostbite is also called “full-thickness” and in this case the body part is pale white and frozen solid. It's often described as “wooden”.

What do we do with frostbite?

- For mild and moderate, we re-warm the body part. The best way is to use warm water (NOT HOT) and have it swirl around the body part. If you can't heat water, the next best thing is to warm it against skin (i.e. put the hand in an armpit or feet on someone's belly).
- **DO NOT RUB** a frostbitten body part. This causes more damage.
- When frostbite is thawed, it can form really big blisters called "blebs". These need to be protected and you should try hard not to burst them.
- Place some sort of ointment and gauze between each finger/toe so they don't stick together and then wrap the whole body part. (DEMO 2)
- Get the person out of the bush and to a hospital.

What about severe frostbite?

- Thawing severe frostbite is VERY VERY PAINFUL. If you are deep in the bush and have to walk the person out to get them to medical help, it's better to leave a frozen foot alone because frostbite doesn't hurt and they can still walk.
- Only thaw if you have the time and support to manage the person once the body part is thawed (i.e. you're at a basecamp and have lots of painkillers with you).





Hyperthermia

- Is what happens when the body gets TOO HOT
- Dehydration, which is what happens when someone doesn't drink enough water, is part of the problem.
- Hyperthermia starts with heat cramps, and then turns into heat exhaustion and eventually becomes heatstroke, which can kill you.

- **Heat cramps** are a painful spasm of big muscles that are being exercised. Usually it happens after the person has been sweating a lot in hot weather. If these start happening to someone, have them drink water with a bit of salt in it.
- **Heat exhaustion** is a problem caused by too much heat, and not enough water and salt. People will complain of headache, feeling sick, having a fast heartbeat, breathing too fast, feeling dizzy and being really tired. They are also really sweaty.

- Heat stroke is life-threatening, and is what happens when heat exhaustion doesn't get treated. Usually it happens when people are working really hard in very hot weather that they aren't used to. They will become very confused and may start hallucinating, they can't speak right, their skin becomes red and hot but they can't sweat anymore, and they might start having a seizure.

What can we do?

- We need to cool people fast.
- Move them to shade.
- Leave cotton clothes on and make them wet – dump as much water on the person as you can.
- Fan them as much as you can. (DEMO 3)
- **MAKE THEM DRINK WATER!!!** If you can add salt and sugar, that's even better.
- If you have access to icepacks, put them on the patient's neck, in their armpits and in their groin.

How much water do I need to be drinking?

- Join the 3C's Club:
 - Crystal Clear and Copious
 - Before you leave on a big hike or a big paddle in full-sun, drink at least half a litre of water.
 - For every half hour you're out, drink another $\frac{1}{4}$ - $\frac{1}{2}$ litre of water.
 - Drink water with snacks and meals.
 - Avoid alcohol.





BURNS

- First-degree burns:
☑ ex: sunburns
- Second-degree:
☑ ex: flame burns,
hot water/objects



BURNS

- Third-degree:
 / ex: flame,
 lightning

How do we manage
burns in the bush?



Step 1: Stop the burning process!! The faster the
better (<30sec is best). Water is your best friend.
Don't forget stop, drop and roll!

- Step 2: Remove jewellery and clothing near the burn. Burns swell, and rings, watches and bracelets that aren't removed can cut off blood supply.
- Step 3: Try and figure out how bad the burn is. First and second degree burns are very painful. Third degree burns aren't. First and second degree are bright red, third degree are white/grey. Second degree has blisters. Third degree may have blisters. Also consider where the burn is on the body: deep/large burns to face, hands, feet, groin, circumferential (all the way around a limb) = immediate evacuation.

- Step 4: burn treatment: the goal is to avoid infection! And manage pain.
 - Gently wash burns with lukewarm water and mild soap. Pat dry. Don't open blisters that haven't broken. If they've already broken, gently remove the skin and wipe away any obvious dirt.
 - Dress burns with a thin layer of antibiotic ointment and cover them with a burn gel (i.e. Second Skin) or ointment-covered gauze.
 - Cover this moist layer with a loose dry covering.
 - DEMO 4

- Step 5: Decide if you need to get out right away.
 - Not all burns need to be evacuated.
 - If you think the patient needs to be evacuated, then get on it. Don't second-guess yourself.
 - If you'll be getting them out fast (i.e. same-day), don't re-dress the burns. If not, change the dressings twice a day.

Speaking of...how does evacuating someone work?

- The worst has happened, and someone has gotten themselves so badly injured that they are unable to walk out.
- **COMMON SENSE.** Look around: where are you? How many people do you have in the group? How's the weather?
- Moving a person who is badly injured and unable to walk is **NOT AN OPTION** with fewer than 10-12 able-bodied people, especially if they need to be carried more than several kilometres.

- If the person is just a bit injured (i.e. has a badly-sprained ankle but the other leg is fine) and the distance isn't too bad, then supporting them while they use their good leg is an option.
- You can also do single- or two-person carries if you don't have far to go. Sometimes this is the best option if you have a base-camp set up; you can transport the injured person to the basecamp and then plan further evacuation from there.





Sprains and Strains

- First Rule: Assess the scene and keep yourself safe.
- Think of what the injury could be
- Treat the worst injury first.
 - ▣ Ex: if the person fell from a high distance, think about trauma to their neck and immobilize (keep the neck still) before you fix the finger injury.

Sprains and Strains

- ✦ Ankle sprains are the most common so we'll focus on these.
- ✦ Most are preventable with good shoes, hiking poles, etc
- ✦ Sprain
 - ✦ Mild: can be taped, can walk well
 - ✦ Moderate: can be taped, give bag to other members of the group
 - ✦ Severe: splint, carry person out for medical care
- ✦ Break:
 - ✦ can not walk on it, painful to touch ankle.

General management

- Look, Ask, Feel
- Compare to opposite side.
- If no signs of serious injury...
 - ✍ Test the injury for usability. This is the most important factor as will indicate if the person can continue or not.
- RICE:
 - ✍ REST
 - ✍ ICE: ice pack/snow/wet shirt x 20-30mins. Then allow to warm naturally x15mins before using limb.
 - ✍ COMPRESS: not too tight.
 - ✍ ELEVATE: above heart.



If you think it's broken...

- signs of a broken bone:
 - Severe pain, swelling, deformity, point tenderness, sound heard, cold limb, loss of sensation, loss of motion, wound at site.
- Splint and evacuate
 - Something for padding, something rigid. Be creative!
 - Immobilize above and below the joint
 - Arms: sling and swathe
 - Legs: sleeping pads with rope
- Demo



Shoulder Dislocations

- They will be holding their arm away from their body. They won't be able to touch their other shoulder with that hand.
- Look, ask, feel.
- Reduce the dislocation if evacuation is greater than one hour, or if there is no pulse or decreased sensation

Shoulder Dislocation

- Slow, steady, traction in line.
 - ▣ Abduction-Traction method
 - ▣ Herring Bone Method
 - ▣ Simple Hanging Traction Method
- Immobilize and RICE after.
- DEMO

HERRING-BONE METHOD



1.



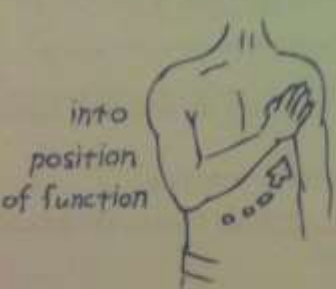
2.



3.



4.



5.



6.

SIMPLE HANGING TRACTION





Wound Management

- Direct pressure and elevation to control bleeding
- Clean the wound
 - ❑ Disinfectants should be used AROUND the wound, not directly into it. Soap and water works just fine.
 - ❑ squirt disinfected water on it under pressure. (irrigation syringe). Use at least 1/2 L
 - ❑ Remove any dirt with brushing off or carefully with (sterile) tweezers
- Cover with clean dressing. Add an antibiotic ointment if you have it. “Butterfly strips” useful
- Keep clean and dry. Change dressings every 24 hours.

Wound Management

- Evacuate if the wound is very dirty, involves a joint, was caused by an animal bite, is on the face, amputation, crushing injury, no improvement in mild infection in 12-24hrs, severe infection, etc
- Signs of infection:
 - ▣ Mild: red, warm, swelling, tender, pus.
 - ▣ Severe: more pus, red streaking, fever

Wound Management

- Tetanus:

Every person with an open wound needs to be immunized against Tetanus if...

1. They have never been immunized
2. They haven't had a booster for 10 years
3. Wound is large or very dirty, and no booster in 5 years

- Antibiotics:

- Most wounds don't need them. Unless they are very dirty, involves an animal bite, or if it involves a joint.



Diarrhea

- Up to 60% of hikers/campers will experience diarrhea.
- Most cases need no treatment
 - ▣ Small percent may need antibiotics or Imodium
- Most caused by viruses, some by bacteria (E.coli). Occasionally by *Giardia lamblia* (“Beaver Fever”)

Camp Hygiene

- 1. Wash your hands!**
2. Don't share toothbrushes, Water bottles, etc.
3. Keep sick people away from Food prep
4. Disinfect all drinking water

“Boil it, cook it, filter it, peel it, or forget it!”



Water Disinfection

1. Boiling:

- cheap but can be inconvenient

2. Halogenation:

- Chlorine
- Iodine

3. Filtration: pump vs gravity

4. UV Light: handheld device, but requires batteries

Thoughts?

Back to the Diarrhea...

- Mild Gastro
 - increasing abdominal discomfort
 - Cramping
 - Lots of loose stools
 - Nausea and vomiting
 - Flu-like symptoms
- Severe Gastro
 - Worsening pain over 24 hours
 - Can't keep water down
 - Blood or mucous in stools
 - High fever (>39 degrees)

Treatment

1. Hydrate!
2. Bland diet
3. Anti-emetics (Gravol)
4. Anti-diarrheal (Imodium. Pepto-bismol may help)
5. Evacuate if blood in the stool, diarrhea doesn't go away, or the person is dehydrated.

- Pack oral rehydration salts or make your own!
 - 1tsp salt, 8tsp sugar in 1L water.
 - Drink 1/3 of this every hour along with clear fluids.
- You should NOT be taking anti-diarrheals if severe diarrhea, bloody stools, fever. This is the body saying it needs to get rid of something. Rehydrate and Seek medical attention.





**FRESH CUT
FRENCH FRIES**
FISH & CHIPS
BY THE SEA

CREAM CONES • FLOATS

PIRATES LUNCH

ALASKAN COD

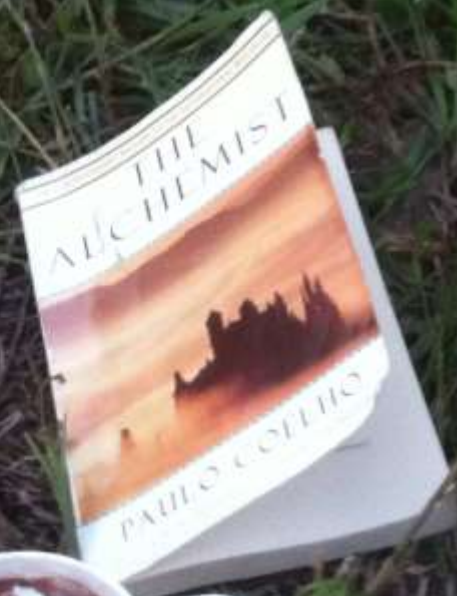
FRESH CUT FRENCH FRIES

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FRESH CUT FRIES

First Aid Kits....

- Depends on what you prefer: do you want to make your own kit, or do you want to just have it made for you?
- Pros and cons to both.
- Generally you won't take the same kit on a dayhike as you would for a multi-day trip.
- See handout



Altitude Sickness



