

# Blood and Water

Depicting first aid and wilderness survival  
techniques in game design



A Zine By:

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# So we all know regenerating health isn't real and you won't always have a minimap for surviving the wilderness...

Sometimes as writers and designers, we take liberties. And sometimes, you have to cut your losses! But when you're going for realism, sometimes it helps to have some documentation from a writing/gamedev standpoint that doesn't involve marathoning Survivorman or digging through prepper websites. That's what this zine is for!

Is your character facing a major wound or is their environment hostile? Here's a handy reference!

## Disclaimer:

I am not a medical professional (I just worked at a summer camp) and this zine is made for the purpose of making writing and game design more realistic. If a person is experiencing an actual injury, please seek medical attention immediately (this zine isn't a substitute)! Hopefully this goes without saying, but you can never be too careful!

Your camp counselor,  
- Anna

**CW:** Due to the nature of this zine's subject matter, please be aware that there is discussion of injuries, blood, and stressful situations!



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## Wounds:

By far the most common injury faced by anyone in a game or story is a wound: any sort of cut in a person's living tissue. Proper wound care can provide realism *and* help establish bonds between characters.

### Bleeding:

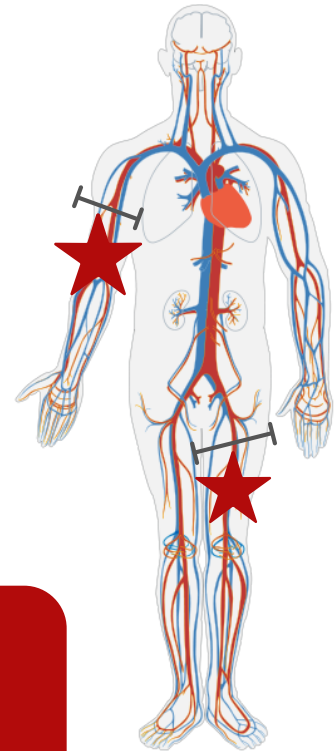
Bleeding is one of the biggest concerns with any wound.

When a character is bleeding and either they or someone nearby has medical training, it would be sensible for them to take action.

### Surefire Fix:

Have the character take a clean cloth/gauze/bandage etc, and use it to apply firm pressure to the wound. This helps the blood clot, and most bleeding can be stopped after about 10 minutes. Do not remove the cloth until you're sure bleeding has stopped, or it can disrupt the clotting process.

The Circulatory System



What about hemorrhaging and  
tourniquets?

You may have seen tourniquets used in games or movies, but they should be considered the last line of defense against hemorrhaging (extreme bleeding, often from an artery) and when pressure doesn't work, as they can actually do more harm than good.

But if a character has to use one:

- A simple tourniquet can be made with a rope/fabric scrap (1 inch thick or wider) and a stick, or a belt. Will often require the help of another character to apply (especially since the injured character may be in shock - see page 8).
- Tourniquets should be applied two-inches from the injury and between the injury and the heart (see diagram) and NEVER around the middle or neck for obvious reasons.
- Have one character note the time. Don't let them leave a tourniquet on for more than two hours, or irreparable damage can result.

## Anatomy of a Wound:

When a character is wounded, many things are transferable in the experience, regardless of the wound type.

### Examples of Wounds:

- Laceration (cuts/scrapes)
- Puncture (stabbing/gunshot/bite)
- Burns
- Open fracture

### Similar Concerns:

- Bleeding
- Infection
- Shock
- Promotion of healing
- Pain control

### Wound Care Rules of Thumb:

Stop the bleeding, keep it clean, keep it covered!

However, there are a few particulars when addressing some sub-types.

### Stabbing:

When in doubt: **don't take it out!**

When a character has been stabbed with something and the object remains lodged, it will not bleed.

Removing the object will open the blood vessels, causing potential hemorrhage. It's *very dangerous*.

This is one of the worst offenders in "game first aid!"



### Burns:

Burns come in 3 degrees based on how deep they go, and can be caused from not only heat, but also things like electricity and caustic materials.

When a character is burned, the first concern should be cooling it (apart from getting away from the dangerous substance) with cool running water or compresses. **DO NOT** have a character apply ice to a burn, remove stuck clothing, or pop any blisters. BIG no-no.

**Gunshot wounds**, one of the most common injuries in games, are covered more in-depth on page 8 about shock.



## Advanced Wound Care:

Sometimes, when a character has an advanced injury, more advanced techniques are required after initial first aid measures (such as stopping bleeding) have been taken.

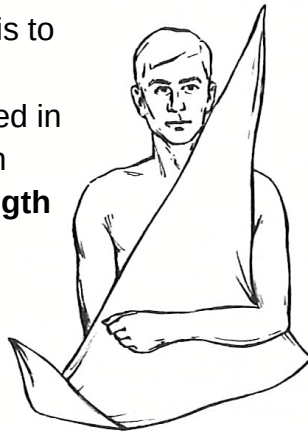
### Sprains and Breaks:

If a character is REALLY unlucky, they might end up with a sprain or a break. Taking care of these definitely requires another character to help out!

#### Slings:

If I had a dollar for every time I saw an incorrect sling in a game, I'd be rich! They're really quite simple and only require a triangle bandage (a standard med-kit item) or any other sort of cloth.

The main purpose of a sling is to immobilize an injured arm or shoulder, but can also be used in case of rib fracture. The cloth needs to span **the entire length of the arm** to give proper support!



Worst  
Offender  
Award!

#### Splints:

If there's a suspected break or bad sprain, a splint can be used to immobilize a joint or bone. It's just a rigid object (board, stick, ruler, etc) which is secured to the appendage it needs to stabilize (sandwiching not always necessary).

In case of a break: Splints are only meant as a temporary fix until the bone can be properly set by a doctor!

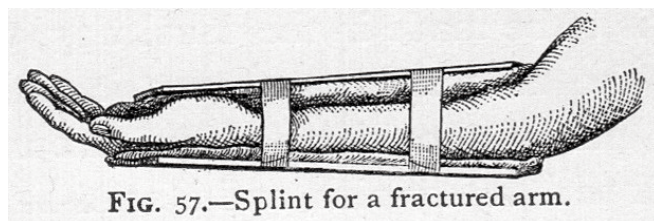


FIG. 57.—Splint for a fractured arm.

## What does a break or sprain feel like?

Most of us have accidentally been cut or burned at some point in our lives. But breaks and sprains are a lot less common. To give better expression to your character, here are some sensations associated with each:

### Break:

- Pain (deep)
- Tingling / pins-and-needles
- The area either feeling very hot or very cold
- Numbness
- Nausea
- Dizziness
- Shock

### Sprain:

- Pain (surface)
- In terms of raw pain, often hurts more than a break
- Inability to bear weight (if applicable)
- Stabbing or throbbing sensation
- Burning

### Bites:

Bites are included in the "advanced" section, not just because your character might be concerned about succumbing to a zombie virus, but also because bites are DIRTY (especially when from a human - think of all those germs)!

Bites need to be kept VERY clean and the character will likely need antibiotics to prevent infection.



### Hey Anna, What About Sutures?:

This definitely goes beyond first-aid, so it's best to have a medically-trained character do this. As such, I won't be covering it in this zine.

When it comes to researching sutures or any other material not discussed here, nursing education materials on the internet are a great, reputable place to look!

# Losing Consciousness:

This happens a lot in games, but usually under two circumstances:

- As a stand-in when HP becomes too low
- Within the plot

I'm not one to be of the mind that suspension of disbelief can never happen - I have a theater background, so I'd be a lair if I thought so. When losing consciousness happens in the first instance, I think it's find to handle it without any real sort of accuracy. But when a character has lost consciousness for some reason as a part of the narrative, I think that addressing it more realistically can become more of a concern.

Characters can lose consciousness for a plethora of reasons:

- Blood loss
- Seeing something startling
- Exhaustion
- Lack of food (low blood sugar)
- Magical reasons (if the setting is fantasy)
- Head injury
- Shock - the worst case scenario

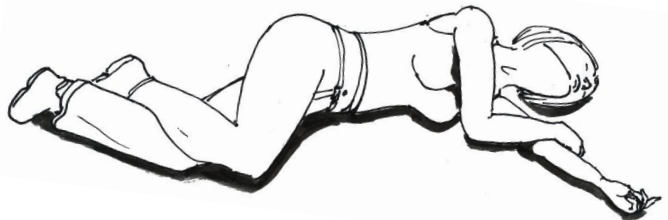
**An unconscious character should always be handled very carefully by other characters!**

## The Recovery Position:

This is One Of Those Things that people know about but didn't know there was a name for! This protects the unconscious character from further injury.

Three things to remember:

- On one side
- One knee up
- Chin tipped upward to open airway



There are other recovery positions, such as the one associated with shock (see page 8). A character should **only be moved into a position if further movement will not make their condition decline.**



## Shock:

Shock is a life-threatening state. If a character is in shock, they are most likely critically injured and tells the player that they may die (especially if they are not around proper medical facilities).

Game situations where a character might experience shock:

- Severe injury, such as a gunshot wound (see below) or major fracture or burn
- Infection (either by bacteria or by a fictional agent like the T-Virus)
- Allergic reaction

The only first aid that can be provided for shock is to work to stop any bleeding (if applicable) and for the character to be placed in shock position (if otherwise not too injured).

## Gunshot Wounds:



Most likely the most common injury faced by characters in games. Regardless of health regen or armor, gunshot wounds vary dramatically.

Variables such as the strength/caliber of the gun, the type of ammo used, and the location of impact can all play a part in the severity.

Biggest concerns:

- Bleeding
- Shock
- Infection
- Tissue damage

If the gunshot wound is above the waist, **do not place the character in shock position**, as that can increase bleeding.

## A Character May Experience:

- Mental status change: agitation, anxiety, or disorientation
- Shakiness
- Rapid breathing
- Increased heart rate
- Nausea or vomiting
- Dizziness or fainting
- Pallor and clammy skin

## Shock Position

Unless moving the person could cause further injury:

- On their back
- Feet elevated about 12 inches
- Head to one side
- Cover with a blanket to keep warm

## What does it feel like?

According to the good ol' internet, the first thing typically experienced is a forceful impact, like getting punched. Then, an intensely hot or cold burning sensation.

# Environmental Hazards:

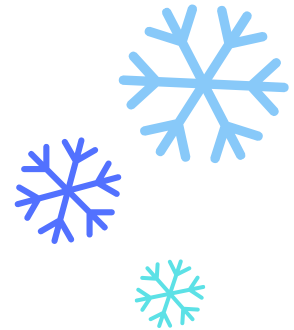
Nature is beautiful, but can also be straight-up dangerous (and in the case of most games, both are usually true).

## Temperature:

Especially in some survival/hardcore modes, temperature can impact the player's HP, which can be capitalized on as a story device for NPCs.

### Hypothermia:

Hypothermia begins gradually and ultimately leads to unresponsiveness and death if untreated.



A character may experience:

- Shivering
- Shallow breathing / weak pulse
- Drowsiness / apathy
- Slurred / difficult speech
- Loss of coordination

Caretakers should:

- Remove all wet clothing
- Shelter in a warm, dry place out of elements
- Place blankets over them
- Give warm beverages (not food) if they are alert

### Heat Exhaustion:

The opposite of hypothermia, heat exhaustion occurs when the body becomes too hot and is unable to cool itself. This can lead to heat stroke and death if untreated.

Heat exhaustion is a real danger - it happened to me when working at camp one summer. NOT FUN.



A character may experience:

- Excessive sweating
- Dizziness / fainting
- Nausea
- Headache

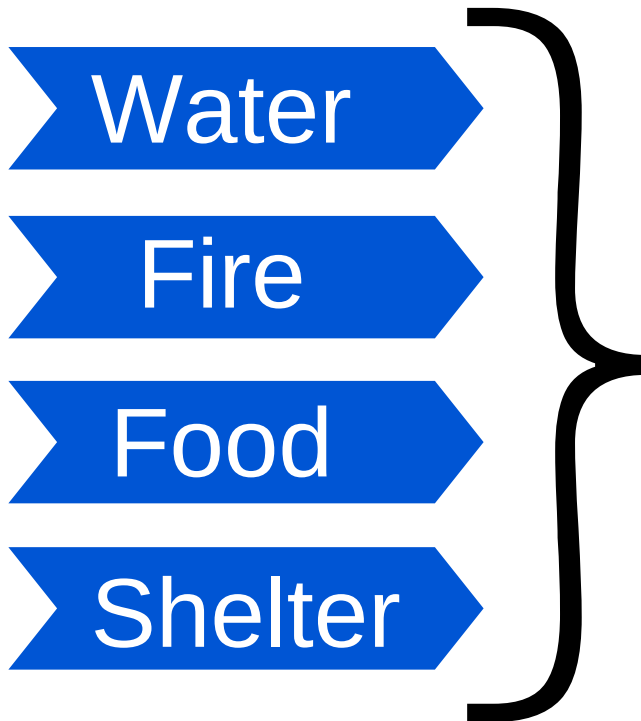
Caretakers should:

- Give cool liquids
- Take out of the heat
- Apply cool compresses in front of a fan (trust me)

# Survival Basics:

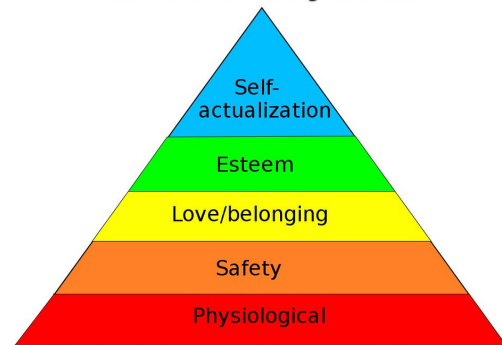
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There are four pillars when it comes to survival in any sort of hostile environment (be it the wilderness, or not).



Making sure that all of these needs are fulfilled increases a character's chances of survival. But from a writing standpoint, it also means that your base concerns are taken care of, so you can move on to more advanced concepts (think Maslow!).

## Maslow's hierarchy of needs



## Water Purification:

Don't go telling the Enclave, but water purification is actually pretty simple, and yet...



Step 1: do an initial filter of the water through some cloth like a bandana. This gets rid of things like silt that might be hiding out.



Step 2: bring the water to a boil - let boil for 60 seconds. This kills any bacteria or parasites.



Step 3: let cool, and slurp away!

**PLEASE don't have your characters drink out of a wild water source or I will assume they died later of giardia!**

## Making a Fire:

This is a great skill for characters to have if they are in any sort of survival or post-apocalyptic setting!

### Sparky Tools for the Job:

- Matches
- Lighter
- Flint and Steel
- Bow drill
- Hand drill
- Fire plow

### General Fire Safety:

- Dig a pit to put the fire in to prevent spreading
- Line the pit with rocks or a metal ring
- **Do not** have a character light a fire using some sort of aerosol product!



### The "Teepee Method"

The teepee method is one of the most foolproof for starting a fire. Get a nice pile of kindling and construct the characteristic "teepee" of SMALL sticks over it.

Once the kindling is lit and is ablaze, more sticks can be added to the teepee, which will eventually collapse, and viola! You have a proper fire you can put logs on!

### Other Popular Types of Fire Builds:

- A-Frame
- Log Cabin
- Lean-To
- Star

Info on these builds can readily be found online!



**FUN FACT:** if you don't have dry kindling, corn chips like Doritos work GREAT in a pinch!



# Sheltering:

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Hopefully your characters aren't *completely* out in the wilderness, but should that be the case, there are some basic structures they can use to shelter.



## A-Frame:

One of the easiest shapes that can be made on a fallen tree or just with a cord and a tarp, this is the most basic of shelters.

Ideal for: Quick setup and staying dry in rainy climates.



## Lean To:

Often made against a natural object like a fallen tree or rock face, lean tos are easy to make with brush, sticks, or a tarp.

Ideal for: camouflaging into the landscape.

Cons: might require extra construction if the surroundings don't have ready opportunities.



## Wikiup:

A building technique used by some First Nations, a wikiup is a circular dwelling that can be constructed by leaning sticks around a central pole or tree.

Ideal for: When padded with leaves or a tarp, they're great for trapping heat in cold climates.

A tarp is an essential object for making shelters, packing up all of your gear, and keeping things dry. If your characters are out in the wild, consider giving them one! They'll thank you!

# Signaling for Help:

This section is **dual purpose!**



If your characters are **hoping someone will find them**, there are plenty of basic sure-fire techniques to get them noticed.

If your characters **are trying to avoid being found**, these techniques should be AVOIDED.

## Mirror:

Many basic survival kits contain a mirror (and for good reason). Holding a mirror or similar reflective surface like a CD and tilting it from side to side can create a strong reflection that can grab attention from aircraft and search parties alike!

## Flag:

A flag can easily be fashioned out of a tarp or spare t-shirt. Hang it in a clearly visible place.

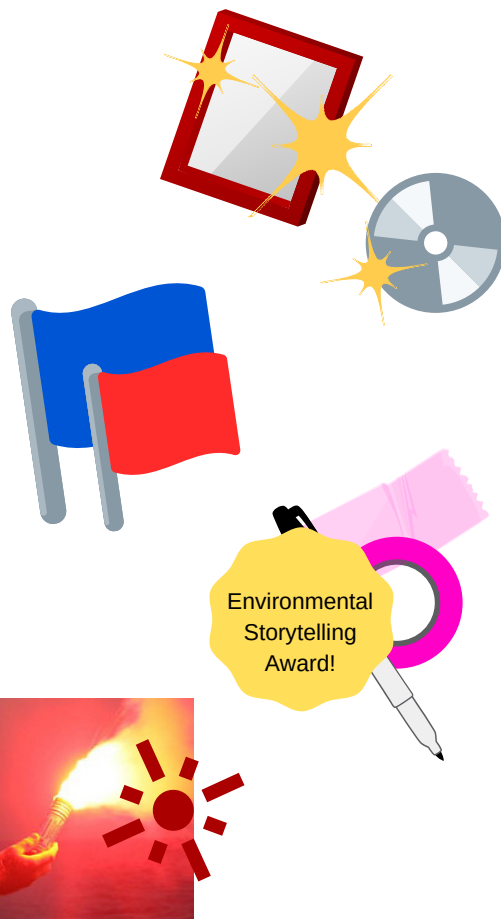
## Tape markings:

Tape, such as duct tape or surveyor's tape, is an easy way for characters to show where they have been, and write any notes for any search parties who might be trying to find them!

## Flares:

There are two types of flares that are sometimes included in survival kits (especially if at sea): hand flares and flare guns. While both of these provide bright light at any time of day, using them at dawn, dusk, and at night have the most effect.

They can also be used as backup fire starters and weapons if necessary, which I've seen games do before. But that would most likely only be as a last resort, as these are valuable.





## The Signal Fire:

Perhaps the most popular option for getting attention is the signal fire - because it provides light *and* a smoke signal. Refer to page 11 for more info on fire-starting!

### Tips:

- Make the fire in an open place, so both the light from the fire, and the smoke trail can be seen from a distance.
- Make multiple fires in close proximity, such as a triangle. That clearly indicates that this isn't just a camper - something's wrong.
- Burn plastic items or a tire in order to change the color of the smoke - just don't breathe it in as much as possible.



### The Power of Three:

Three is the international number of distress: think SOS! Three fires in a row or in a triangle will signal to search and rescue folks that your characters need help.

## Most Importantly: Keep Calm!

Keeping calm in survival situations is imperative. Based on your characters' dispositions, they will respond to the stress of whatever the narrative hands them in their own ways. However, keeping their head on straight is perhaps the biggest indicator of if they will be able to respond appropriately. This can be difficult in stressful situations, but it's something to keep in mind!





# Thanks for Reading!

I hope you found this material helpful, and you're able to use it in future stories/games!

If you really enjoyed this zine and want to support me, you can throw me some clams on ko-fi!

[ko-fi.com/annacwebs](https://ko-fi.com/annacwebs)

You can also find me here!



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annacwebster.com

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