



## Structural Engineering Emergency Response First-Aid Kit

The SEER First-Aid Kit is designed to manage non-life-threatening injuries that, while not fatal, can compromise quality of life, reduce operational effectiveness, or require early withdrawal from deployment.

# STRUCTURAL ENGINEERING EMERGENCY RESPONSE TRAUMA KIT OVERVIEW

This SEER first aid kit is intentionally separated into two packets: a first-aid kit and a trauma kit. The division is based on two distinct scenarios the kit is designed to address.

The first scenario involves injuries that are not life-threatening, but could significantly affect quality of life and work efficiency, potentially resulting in early termination of deployment. Examples include severe blisters on the feet or severe sunburn.

The second scenario involves immediately life-threatening injuries that could result in death before professional emergency medical services arrive. These include cardiac arrest, respiratory arrest, and arterial bleeding.

Neither the boo-boo kit nor the trauma kit includes interventions outside of these two use cases. For instance, supplies for splinting are excluded. This is because musculoskeletal sprains, strains, and fractures, while painful and incapacitating, are not immediately life-threatening. Furthermore, such injuries would result in the individual being out-of-service regardless of whether the limb is splinted or not.

## PACKAGING

- A quart-size Ziplock bag is used for the boo-boo kit, as it is very likely this portion of the kit will need to be accessed during a deployment. The bag is clear, making it easy to see the contents, and it is also waterproof.

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### 1. Plaster/Band-aids



## 2. Caffeine Pills

Caffeine can be helpful as a general stimulant if you're beat down and, if you're someone who needs their coffee to function, sudden caffeine withdrawal can cause unpleasant symptoms. Having a dose or four on hand can help ease you down so you're not exploding at your FEMA shelter neighbors. Also, caffeine combined with Tylenol and Ibuprofen can be used replace an opioid pain reliever or effectively relieve a severe migraine.



## 3. Irrigation syringe / Saline wash

For eye irrigation or wound irrigation. An irrigation syringe is used to aim and force clean water into a wound to flush out contamination and debris. Tweezers can be used to pick out whatever chunkier stuff the water can't remove, such as visible slivers of wood or gravel. The pressure from running tap water (or even just a pour from your water bottle) is usually enough to remove most debris, but studies show improved performance when the wound is forcefully irrigated. An 18 gauge-nozzle tends to be the preferred size to create the best compromise between pressure and flow rate.



## 4. Tampon/Maxipad

Tampon is used for an unexpected period or a severe nosebleed. Do not use for wound packing. Use maxipad for unexpected bleeding or bleeding control.



## 5. Ibuprofen

For minor pain relief. Can be used in conjunction with Tylenol to provide more continuous pain relief, or it can be used in conjunction with both Tylenol and caffeine for stronger pain relief. All NSAIDs, including Ibuprofen, will slightly increase the chance of bleeding. Do not use if the patient is hemorrhaging. Available with single-dose packaging at many gas stations. When comparing common pain relievers — namely acetaminophen, aspirin, and ibuprofen — acetaminophen (Tylenol) is the single best universal choice because it's the safer of the three drugs. Ibuprofen can cause problems in people with clotting disorders, high blood pressure, heart disease, kidney problems, or who are elderly. Aspirin should not be given to children, and it reduces the body's ability to clot, much like ibuprofen. Acetaminophen is generally fine for pregnant women and is the only thing kids under six months can take for fevers. On the other hand, ibuprofen reduces inflammation better than acetaminophen, and an anti-inflammatory could be helpful for something like a sprained ankle. Buy the pill or tablet form of these medications. Capsules and gel caps are too fragile.

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## 7. Aspirin

For minor pain relief, but also very useful in treating someone experiencing chest pain (i.e., a suspected heart attack) because it inhibits clotting. All NSAIDs, including aspirin, will slightly increase the chance of bleeding. Do not use if the patient is hemorrhaging. When comparing common pain relievers — namely acetaminophen, aspirin, and ibuprofen — acetaminophen (Tylenol) is the single best universal choice because it's the safer of the three drugs. Ibuprofen can cause problems in people with clotting disorders, high blood pressure, heart disease, kidney problems, or who are elderly. Aspirin should not be given to children, and it reduces the body's ability to clot, much like ibuprofen. Acetaminophen is generally fine for pregnant women and is the only thing kids under six months can take for fevers. On the other hand, ibuprofen reduces inflammation better than acetaminophen, and an anti-inflammatory could be helpful for something like a sprained ankle. Buy the pill or tablet form of these medications. Capsules and gel caps are too fragile.

## 8. Alcohol prep

Not for disinfection. Best used for reviving someone who's passed out.

## 9. Wound closure strips

Used to close minor cuts / lacerations in order to minimize scarring (e.g., steri-strips or microMend).



## 10. Benadryl (Dyphenhydromene).

·Benadryl is an antihistamine, helpful for treating allergies, hay fever, minor contact dermatitis (e.g., poison ivy, rashes), or even as a sleep aid in a pinch. Available with single-dose packaging at many gas stations. Everyone should carry some, regardless of whether you have an allergy that's severe enough to justify an EpiPen. If you do need an EpiPen, keep in mind that the shot only treats the symptoms for 15-20 minutes, which buys time for the Benadryl to treat the underlying causes. Buy the pill or tablet form of medications. Capsules and gels are too fragile. Can be combined with Pepcid to treat severe allergic reactions.

## 11. Tweezers

Used to pull splinters or bee stingers. Tweezers and an irrigation syringe are the two most basic items you need to properly clean wounds in the field, which greatly reduces the chances of infection and can speed up healing.

## 12. Swiss army knife

Choose the Swiss army knife with the small scissors, small knife, tweezers, and fingernail clippers. Multitools (e.g., Leatherman or Gerber) have unnecessary tools and are unnecessarily heavy.



## 13. Pepto-Bismol

Pepto-Bismol. Include Pepto-Bismol instead of Imodium and Tums. Pepto Bismol can serve as an antacid, and it can also help with other digestive issues like nausea and diarrhea. Pepto doesn't stop symptoms as rapidly as Imodium, but it treats the underlying causes more effectively. Additionally, Pepto comes in a pill-form whereas Tums come in chalky tablets that easily get crushed into a powder while in a backpack.



## 14. Nitrile gloves

Gloves do more to protect the patient from you, rather than protecting you from the patient. It's very unlikely that you'll pick up something contagious from getting another person's fluids on your hands, even if you have an exposed cut. Mucous membranes, like around your eyes, nostrils, and mouth, are far more likely to be the point of entry for something bad, so safety glasses will do more to protect you than gloves. Nevertheless, it's best to wear gloves if available. Tan or light blue is the best color for the gloves as you will be able to see blood on the gloves when doing your physical assessment. Nitrile material is better than latex or vinyl. Some people are allergic to latex (which might be your patient, not you), and both latex and vinyl have durability and quality issues compared to nitrile. Although gloves between 3mm and 8mm thickness are common, 5mm is the sweet spot between comfort and durability. Tip: You can also fill gloves with water, then freeze them for a DIY ice pack

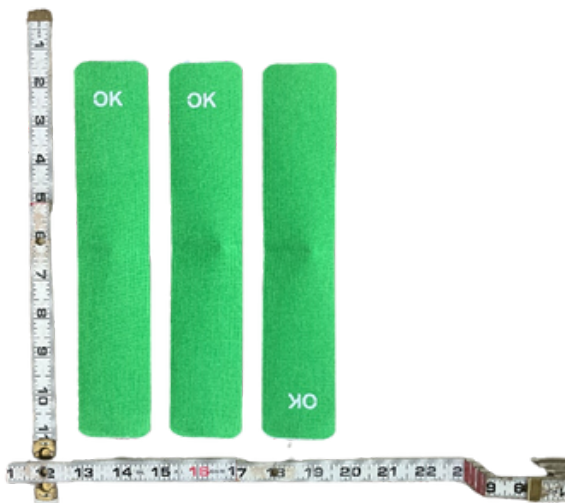
## 15. Lanacane

Anti-itch cream used for bee stings or poison ivy. Lanacane is preferable to hydrocortisone because the topical benefits of hydrocortisone are questionable.



## 16. Blister Kit

Used to treat blisters that develop on the feet due to the use of new footwear or due to walking abnormally long distances (such as during a SEER deployment). The specific items stocked in the blister kit are a matter of personal preference, but typically include items such as moleskin, kinesiology tape, and/or a needle and thread. Moleskin and kinesiology tape can be preemptively applied over “hot spots” before a blister forms. If a blister does form, Moleskin can be cut into a donut shape around the area to prevent any more friction damage. Never put duct tape over a blister or hotspot, which will just make it worse by tearing at skin or the edges will ball up and create new friction points. Generally, blisters should be left intact. Popping or deroofting a blister puts you at risk for infection, and, once it’s deroofted, you’ll have to spend more time and resources treating it like any other open wound. This is why many field medics carry a needle with six inches of thread stored in a small container of isopropyl alcohol (which can also serve alcohol’s normal medical purpose). By threading the sterile needle and thread straight through a blister, leaving the thread behind and dangling out from both ends, you keep the roof intact while giving the fluid a wick to drain through.



## 17. Petroleum Jelly (Vaseline)

White petroleum is useful for everything from providing a non-stick layer between the skin and dressings to healing cracked skin or lips. Petroleum jelly also makes a great fire starter when combined with gauze or cotton balls. Try to find single-use packets or a small tube.



## 18. Safety pins

Safety pins are handy in a variety of situations, such as a reusable bandage closure or to make a sling for a broken arm with a cravat or t-shirt. The t-shirt can be worn by the patient and folded up from the waist to create the sling. Safety pins can also be used to repair torn clothing in a pinch.



## 19. Lighter

Can be used to start a fire or sanitize a needle in a pinch.



## 20. Pepcid AC

Pepcid (famotidine) can treat GI issues such as heartburn; however, it is also an antihistamine. Most antihistamines block the H1 receptor. Famotidine blocks the H2 receptor. Accordingly, Benadryl can be combined with Pepcid to treat severe allergic reactions.

