



Wound disinfectants in resource-limited settings

Target group & disclaimer: The recommendation first and foremost targets non-professional caregivers and health care professionals without wound expertise. Professional caregivers may benefit additionally from the publications referenced below. The recommendations and guidelines will be chosen by a select group of EWMA experts with experience in wound management from war, crisis and emergency aid contexts. The guidelines are thus not based on a broad consensus.

Before giving care and if achievable, remember to provide an environment as clean as possible and use alcohol-Based Hand Rub or water and soap to clean your hands.

Practical file inspired by:

How to make Dakin's solution

<https://diabeticfootonline.com/2009/08/06/how-to-make-dakins-solution/>

Acetic acid and the skin: a review of vinegar in dermatology

<https://onlinelibrary.wiley.com/doi/pdf/10.1111/ijd.15804>

Honey dressing in wound treatment: a systematic review

<https://www.sciencedirect.com/science/article/pii/S096522992030131X?via%3Dihub>

Sugar for wounds

<https://www.sciencedirect.com/science/article/pii/S0965206X00800352>

First remember that clean and clear water, used in great quantity to rinse a wound, is often enough to keep them clean and prevent infection ([find EWMA guide on wound cleansing with water here](#)).

However, in some cases, especially if there are infectious signs, the use of a disinfectant can be required.

The use of medical grade disinfectants should always be the first choice. Only use the following alternatives if you have no access to it.

Some symptoms indicative of infection include: redness, heat, pus, oozing or weeping, increased tenderness, swelling, fever.

Note that:

- At some point, topical disinfection can have limited effect and further care like antibiotics (by the mouth or injection) and/or surgery can be required,
- H₂O₂ (oxygenated water, peroxide) is not an effective disinfectant,
- drinkable alcohol is not a good disinfectant because of its low alcohol percentage (30-40 degrees). An alcohol percentage (or degree) of 60-70 would be needed to be effective. It's also painful on an open wound.



1. Homemade disinfectants to be used before applying a dressing

1.1. Homemade Dakin's Solution (Sodium hypochlorite 0.5%)

Can be produced by diluting household bleach

Needed supplies:

- Household bleach (Sodium hypochlorite) solution (usually dosed at 5.25%, but this can differ). If possible it should be non-perfumed,
- sodium bicarbonate (baking soda),
- clean water,
- clean pan with lid,
- sterile measuring cup, spoons and jar or bottle with sterile lid (to sterilize use boiling water if available).

Follow the steps below strictly in the order they are listed to make the solution:

- a) Wash your hands well with soap and water. Gather your supplies. Wear glasses (goggles) to protect your eyes from projections,
- b) pour 1'000 milliliters of clean water (one liter, 32 ounces, 4 cups) in the clean pan,
- c) add 95 milliliters of household bleach (a little less than a deciliter, 6 table/soup spoon),
- d) add ½ teaspoonful (15 milliliters) of baking soda to the water (this is not essential if you don't have it).
- e) place the solution in a sterile jar/bottle. Close it with a lid. If possible, protect it from light (closet, aluminum foil),
- f) unopened, it can be kept up to one month,
- g) opened it must be used within 48 hours.

1.2. Homemade household/table vinegar solution (acetic acid)

Household /table vinegar (acetic acid) has a good effect on most germs. Most table vinegars contain 4 to 8 % (or degrees) of acetic acid. The aim is to produce a 1% to 2% (or degree) solution.

Needed supplies:

- Household /table vinegar (white if possible),
- clean water,
- clean pan with lid,
- sterile measuring cup and jar or bottle with sterile lid (to sterilize; use boiling water if available).

Making the Solution:

- a) Wash your hands well with soap and water. Gather your supplies. Wear glasses (goggles) to protect your eyes from projections,
- b) pour 750 milliliters of clean water (23 ounces, 3 cups) in the clean pan,



- c) add 250 milliliters of table vinegar (8 ounces, 1 cup),
- d) place the solution in a sterile jar/bottle. Close it with a lid. If possible, protect it from light (closet, aluminum foil),
- e) unopened, it can be kept up to one month,
- f) opened it must be used within 48 hours.

1.3. How to use these solutions

Do not mix the two solutions. Use one or the other.

- a) First rinse the wound with clean water ([find EWMA guide on wound cleansing with water here](#)).
- b) soak gauzes with the chosen solution. A good amount should be used to make the gauze very wet,
- c) put the soaked gauzes on the wound. Leave them on the wound for at least 10 to 30 minutes,
- d) rinse with clear water before applying a dressing.

1.4. Disinfection and dressing frequency recommendations

In infected wounds, the recommendation is to change the dressing once a day.

As soon as wound infection gets better (usually by reduction of the following factors: redness, pus, pain, swelling, secretions), limit disinfection and dressing-change to every other day or twice a week.

Of course, if the wound infection gets worse, increase disinfection and dressing-change to twice a day.

2. Homemade ointment with disinfectant properties that can be applied under the dressing

2.1. Honey dressing

Honey if left in place for a long time will play a role against germs. used for a few minutes it will have no effect

After having cleaned the wound with clean water, make a dressing ([please see our tutorial on dressings here](#)) with honey (typically put the honey directly in the wound or apply to the gauze and then apply gauze on the wound), replace after 24 hours.

2.2. Sugar dressing

As honey, sugar, left in place for a long time will have action against germs.



Icing sugar (very fine) but also crystalized sugar can be used.

It can be used directly (powder) or as a thick paste (mixing it with a small amount of clean water in a sterile pan and applying it with a sterile spatula or any other sterile instrument, knife blade, spoon,...).

After having cleaned the wound with clean water, make a dressing ([please see our tutorial dressings here](#)) with sugar (typically put it in the wound or on the gauze and then on the wound), replace after 24 hours.

Both for honey or sugar, please note that it can:

- in some patients, generate a burning sensation and need painkillers,
- become liquid with the body heat and spill out of the dressing (especially honey),
- generate exudate that can also spill out of the dressing, as it is normal, you will need to add extra gauze if it happens.

2.3. Dressing frequency recommendations

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Useful reminders:

To get sterile instrument you can:

- Boil them a few minutes,
- put them in a bath of 70 degrees alcohol or undiluted household bleach for 10 minutes (the container must be kept closed for the liquid active ingredient not to evaporate),
- directly pour 70 degrees alcohol or undiluted household bleach on them and wait until it has evaporated,
- if you have a metallic instrument (fork handle, knife blade), you can heat it on a flame and wait until it has cooled down.

Liquid measurements equivalents

Imperial system	Metric system
1 teaspoon	5 ml
1/2 teaspoon	3 ml
1 table/soup spoon	15 ml
1 cup	250 ml