

of that liter for a thorough rinse. I do all of this over the cathole in order to “concentrate use.” I will freely admit that I have taken shortcuts with this procedure in some circumstances. An extended glacier trek comes to mind.

As in the health-care setting, the use of hand sanitizers in the backcountry is certainly better than nothing. It is obviously much more practical. Having the entire group use sanitizer prior to preparing and eating meals is a simple and probably effective intervention.

The choice of soap is personal and probably not evidence-based. I use a castile soap (“Dr. Bronner’s”) both at home and in the woods. Products without fragrance or preservatives are more environmentally sensitive. The environmental impact of tiny amounts of pure soap (assuming group dispersion and appropriate distance from water sources) is trivial.

If anyone along on your next trek questions the need for all of this, remind them of the findings in a recent research study by some colleagues and me. In a study of randomly encountered campers in various Adirondack locations (including a popular High Peaks trail), nearly one third had contamination of their hands by the types of bacteria found in human feces (*American Journal of Infection Control* 2012;40:893-895). Bon appétit!

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*Hospital infection control specialist Jana Shaw, MD, MPH, reviewed this column and supplied helpful suggestions. ▲*

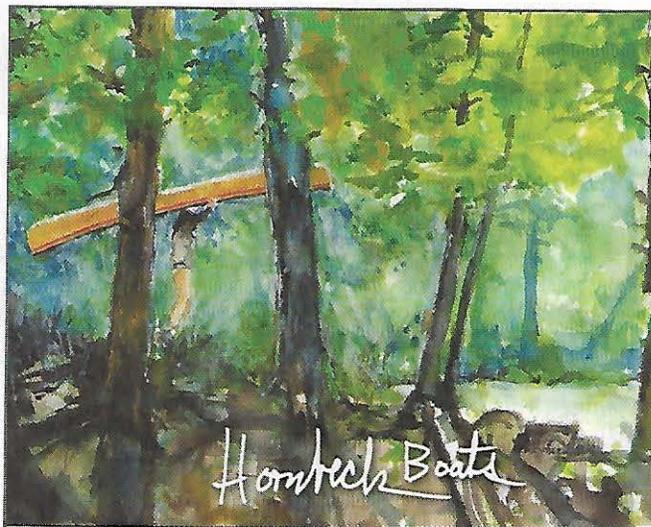


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# Soap, Water, and Sanitizing Gel?

## How to keep your hands clean

By Tom Welch, M.D.

REGULAR READERS OF THIS COLUMN and my other writings know that I view maintaining good hand sanitation as the key to most illness prevention in the backcountry—as well as everywhere else. (Note that public health authorities began teaching early on that it would do more to prevent coronavirus spread than masks.) What may not be clear, however, is the best way to keep one's hands clean: soap and water, or those rapidly proliferating hand sanitizer gels everyone seems to be carrying? As with a lot of things, the answer is unclear, and basically comes down to context.

First of all, it is important to understand how each technique works.

Soap and water are not intended to “kill” bacteria or other organisms; “antibacterial” soap is more of a marketing technique than product description. Soaps are chemical compounds (actually salts of fatty acids) that render a number of particles soluble in water. Through applying soap, particles on one's hands are more easily dislodged and washed away with a stream of water. Thus, the act of “soaping up” is only one part of the process; vigorous rinsing with water is equally important.

Sanitizing gels work completely differently. These chemicals (mostly alcohols) do not remove particles from the skin and therefore will not “clean” soil from hands. Rather, they destroy organisms on the skin by a direct chemical action. How effective they are against specific organisms (viruses, bacteria, protozoa) is a matter of some scientific dispute and is affected by factors such as the quantity of organisms on the skin, and the time during which the gel is in contact.

In the health-care setting, hand-

washing is the “gold standard.” Before taking out your appendix, your surgeon does not rub Purell on her hands. She practices a carefully prescribed and timed handwashing process known as a “scrub.” Handwashing before and after direct patient contact is also the preferred infection control procedure as caretakers enter and leave patients' rooms.

The problem in the health-care setting is that as strict hand sanitization was increasingly enforced, the time it required and the toll it was taking on the skin of staff who were needing to do it scores of times a day became a challenge. This led to the alternative of sanitizing gels and lotions being available outside exam rooms for the staff who were continuously coming and going. Most infection-control specialists accepted that this practice was not as good as handwashing, but was far better than nothing.

What about the backcountry? Handwashing is still the best practice, especially after defecation. In the absence of running water, technique is important. My practice has been to bring a full liter of water along for my morning ritual. I use a small amount to develop a lather with a dollop of soap. I then use the old trick of (silently) singing “Happy Birthday” as a timer while I develop that lather and rub it into my hands. The final step is using the rest



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