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## Opinion: UV water purification is the bomb

Dr. Rob Hamilton  
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After my last column on wilderness water treatment, a reader who logs a lot more miles on the trail than I do -- Dr. Leon Nelson, Redding's intrepid backpacking dentist -- called to say I had neglected a really neat method of field water disinfection (and in the process introduced me to a very cool gadget).

I had discussed three methods of field water disinfection: heat, chemicals (iodine and chlorine) and filtration.

I didn't realize that a fourth widely used water purification technology, ultraviolet (UV) light, was available in a portable and backpack-able form.

Ultraviolet light is widely used by municipal water disinfection plants, commercial water systems (hotels, campgrounds, restaurants, resorts), in home water disinfection systems, in the developing world, for algae control in landscape ponds, even in the medical field to disinfect water. When UV light penetrates the cell walls of single celled organisms, it disrupts their DNA and prevents them from reproducing, thus effectively killing them. It is effective against all the major disease-causing organisms including bacteria, viruses, protozoa, giardia, parasites and spores.

Ultraviolet light is safe and effective. It stays contained in the vessel in which it's being used. Unlike heat disinfection, it is quick and doesn't require as much setup or heat time or heavy fuel. Unlike chemical disinfection, it doesn't change the taste, odor, or clarity of water, and it works much more quickly, with minimal contact time. Unlike expensive, complex, large, heavy and easily clogged (ask me how I know that) filters with attached pumps, there is nothing to clog and viruses are killed without the use of iodine resins.

With all methods of water disinfection, the major challenge is disinfecting cloudy water with lots of particulate matter or sediment. A great technique for this is problem is "coagulation/flocculation." Mix a pinch of the spice alum in the water and let it sit for 15-30 minutes and then pour it through a coffee filter or fine cloth filter (a handkerchief will do).

With all the advantages of UV water disinfection, it seems like a natural for use in the woods -- and it is. The only problem is finding the right device to do it, and it turns out

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just such a device is manufactured and readily available. I've spent a lot of time searching the internet for UV water disinfection devices that could be ideal for backpacking, and so far I've found only the one that Nelson told me about: the SteriPEN from Hydro-Photon products ([www.hydro-photon.com](http://www.hydro-photon.com)). This is one very cool thing to add to your pack.

It is a small (about four inches long), light (less than four ounces), very portable, fast (90 seconds for a quart of water), effective (kills all the critters mentioned above) and ideal water disinfection method for wilderness travelers, international travelers, post-apocalypse types, and anybody else who might need to purify water for drinking. That latest version of the SteriPEN is available with rechargeable batteries and a neat solar charging case that can charge the batteries while you hike. Very cool.

As an informal column and not a product review, I very rarely mention products by brand name, but this is an exception. I have used every method of water disinfection extensively, and after trying and using the SteriPEN, it has become my method of choice.

So, drink up -- without fear or trepidation.

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