

# An Ounce of Prevention

Don't be intimidated by the thought of catching some rare disease on a trip abroad. A safe hunt is possible, if you heed the doctor's orders.

By E. Donnell Thomas Jr., M.D.

**T**he best way for traveling hunters to deal with health problems is to avoid them.

Here in North America, we're fortunate to enjoy a tremendous variety of game and abundant habitat to support it. For many hunters in today's shrinking world, however, the challenge of new species and new experiences overseas proves impossible to resist. As a veteran of hunting trips to the corners of the earth and being a practicing physician, I'm frequently called upon to provide medical advice to other traveling hunters.

The topic is complex. Dealing with a full-blown medical emergency in a remote setting can be intimidating even for trained personnel, and staying out of trouble is a lot easier than getting out of it. Here we'll examine ways hunters traveling to exotic destinations can avoid health problems.

## IMMUNIZATIONS

Ever since doctors began to inoculate patients against smallpox, immunization has been a cornerstone of preventive medicine. Hunters bound for Third World destinations face exposure to a number of illnesses that are too uncommon in the U.S. to warrant routine vaccination. However, before proceeding to immunization against these diseases, be sure to review your records with your personal physician to ensure that your routine immunizations against tetanus, polio and measles are adequate, since all are common in developing nations. Then consider vaccination against the following:

**HEPATITIS A**—Although not life threatening, this viral liver infection can cost months of hunting time. Transmitted by contaminated food or water, it is very common in Third World nations. The vaccine is safe, effective and highly recommended for hunters heading to destinations in Africa, Latin America and Asia.

**HEPATITIS B**—A far more serious infection that can lead to fatal hepatitis, cirrhosis and cancer, this viral disease is transmitted via body fluids including blood transfusion and sexual contact. While the risk of infection is consequently lower for most travelers, the disease is potentially severe. Since the vaccine is safe, effective and readily available, authorities recommend it for travelers.

**YELLOW FEVER**—This is the only vaccination legally required for entry into any country. Caused by a virus transmitted by mosquitoes, this tropical disease can be fatal but the risk of acquiring it is so low that most authorities don't recommend vaccination unless you plan a prolonged stay in a remote area or your destination legally requires it for entry. Most countries do not require immunization for travelers arriving from areas free of yellow fever. Consult the CDC website ([cdc.gov/travel](http://cdc.gov/travel)) or a travel medicine clinic to determine whether your itinerary requires you to receive the

immunization. It must be administered at a designated center, so plan several months in advance and be sure to keep the certificate with your passport.

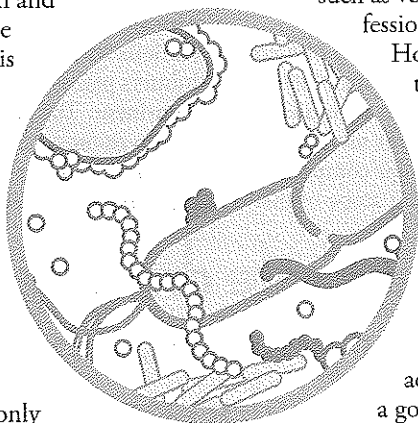
**TYPHOID FEVER**—This bacterial illness is transmitted by contaminated food and water. The risk for most travelers is low and the oral vaccine is only about 80 percent effective. However, the disease can be serious and the vaccine is safe, so it seems a wise precaution for hunters bound for rural areas in developing nations.

**CHOLERA**—The severe diarrhea this waterborne bacterial illness causes can be treated in the field with oral rehydration. The risk to occasional travelers is low and the vaccine is not very effective, so most authorities recommend it only for those planning prolonged stays in remote tropical areas.

**RABIES**—This viral infection of the brain is inevitably fatal and rabies is very common in both wild and domestic animals in many parts of Africa and Asia. Here at home, the risk of infection is low and effective preventive measures are readily available after a bite, so immunization is recommended only for extremely high-risk individuals such as veterinarians and professional wildlife workers.

However, post-exposure treatment is often unavailable in Third World nations. The original rabies vaccination regimen was complex and uncomfortable, but the new version is far safer and simpler to administer and may be a good idea for hunters who spend a lot of time in the bush overseas. Even previously vaccinated individuals should receive booster doses after a suspicious bite.

**MENINGOCOCCAL MENINGITIS**—Here at home, vaccination against this potentially fatal bacterial infection is recommended for young people living together in crowded conditions such as college dorms and army barracks. The disease is very common in the "meningitis belt," which includes a lot of great hunting destinations in central, eastern and southern Africa. Since the vaccine is safe and readily available, immunization



**HEPATITIS A**: viral liver infection transmitted by contaminated food and water; non-fatal, but can cause prolonged fever and prolonged fatigue

**HEPATITIS B**: viral liver infection transmitted by contaminated body fluids; can cause fatal acute liver failure, chronic hepatitis, cirrhosis and liver cancer

**YELLOW FEVER**: potentially fatal viral infection transmitted by mosquitoes, occurring only in South America and Africa; symptoms include fever, chills, headache, muscle aches, vomiting, backache; after a brief recovery period, infection can lead to shock, bleeding and kidney/liver failure (liver failure causes jaundice, thus the name)

**TYPHOID FEVER**: potentially fatal bacterial illness transmitted by contaminated food and water containing the *Salmonella typhi* bacteria; symptoms may include fever, headache, fatigue, loss of appetite, red spots on chest or back, constipation (in adults)

**CHOLERA**: transient but severe gastrointestinal illness caused by bacterium *Vibrio cholerae*; transmitted by contaminated food and water; causes severe diarrhea; severe disease (affecting about one in 20 people) characterized by profuse watery diarrhea, vomiting, leg cramps (rapid loss of body fluids leads to dehydration and shock; without treatment, death can occur within hours)

**RABIES**: viral infection of the brain usually transmitted through the bite of a rabid animal; infects central nervous system, causing encephalopathy; early symptoms include fever, headache, malaise, and as disease progresses include insomnia, anxiety, confusion, paralysis, hallucinations, hypersalivation, hydrophobia; death usually occurs within days of onset

**MENINGOCOCCAL MENINGITIS**: frequently fatal bacterial nervous system infection transmitted by airborne spread (exchange of respiratory/throat secretions, i.e., coughing); symptoms include fever, headache, stiff neck, nausea, vomiting, confusion, sleepiness, seizures

**MALARIA**: caused by a microscopic parasite transmitted by mosquitoes; malaria kills more people than any other infection in the world; effective treatment is available; untreated, malaria causes death by rupturing red blood cells, occluding small blood vessels and producing multiple organ failure

seems prudent for hunters heading to those areas.

Many of these vaccinations require booster doses to remain effective, so inquire about the need for additional doses when you receive the first.

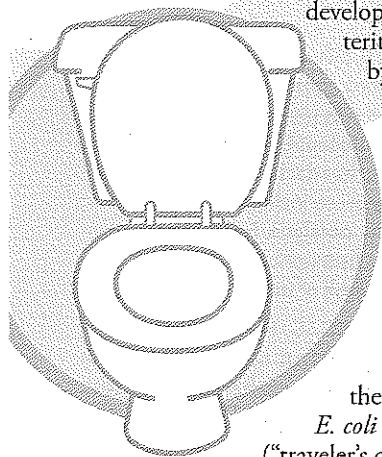
## PREVENTING WATERBORNE ILLNESSES

At home, we take safe drinking water out of the tap for granted. That's a mistake in most developing nations, where hunters traveling through urban areas on their way to remote destinations should drink only bottled water. Well-run hunting camps in the field should always have an adequate supply of safe water, but be sure to inquire on arrival about what is safe to drink and what is not. When in the bush or on your own you will have to ensure the safety of your drinking water for yourself.

Three kinds of infectious agents can potentially contaminate drinking water:

**VIRUSES**—In addition to hepatitis A, a number of common viruses cause self-limited infections characterized by nausea, vomiting and diarrhea (gastroenteritis, "stomach flu"). None will kill you, but they can be very unpleasant for a day or two and cost you hunting time.

**BACTERIAL**—While serious bacterial infections such as cholera and typhoid are rare, visitors to developing nations commonly develop gastroenteritis caused by various strains of



the common *E. coli* bacteria ("traveler's diarrhea").

Again, you won't die, but it's hard to hunt buffalo while you're sitting on the toilet. In general, the presence of blood in the stool or high fever should alert you to the possibility of one of the more serious bacterial infections for which specific treatment may be indicated. In such cases, seek medical attention if possible.

**PARASITES**—A number of para-

sites can cause waterborne illnesses in tropical settings, and diseases such as amoebiasis can be serious. The most common parasitic cause of waterborne illness among outdoorsmen, however, is *Giardia*, which frequently contaminates clear, cold water in wilderness areas here in North America as well as abroad.

And there are three basic ways to decontaminate drinking water in the field, each with advantages and disadvantages:

**1) BOILING**—Bringing water to a boil for three minutes will reliably kill all three classes of infectious agents. (Because the *Giardia* organism common here is very sensitive to heat, even a brief boil will destroy it.) The only disadvantage is the time and inconvenience involved in building a fire.

**2) FILTRATION**—Numerous micro-filtration systems are available on the market now, suitable for both individual use (in the form of a straw) and, in pump systems, for treating large volumes of water in camp. The principle disadvantage is that because of their small size, viruses pass readily through the filters. Nonetheless, filter systems are convenient and quite effective against bacteria and parasites if used properly.

**3) CHEMICALS**—A variety of halogen-based (iodine or chlorine) chemical water-treatment products are available in pill or powder form for use in the field, but a review of their comparative merits is beyond the scope of this

boil drinking water when feasible. If you can't boil water, use either a filtration system or a chemical water treatment depending on personal choice. (I prefer the former because it's effective against *Giardia*, which is common in many areas I hunt, and I dislike the taste of chemically treated water.)

## MALARIA PROPHYLAXIS

If you foresee a hunting trip to a destination in sub-Saharan Africa or tropical portions of Latin America, Asia or the Pacific, pay attention as the advice that follows could save your life.

Caused by a microscopic parasite transmitted by the bite of the *Anopheles*, malaria kills more people worldwide than any other infectious disease. Preventive measures are extremely important for travelers to areas of risk. Always ask your personal physician for specific recommendations regarding the risk of malaria in any specific location while your trip is in the planning stages. If he or she is not conversant with current recommendations (and many American physicians are not because malaria is so rare here), consult a travel medicine clinic or the CDC website listed earlier.

Because of the resurgent interest in African safari hunting, these considerations will be most important to hunters planning a trip to the Dark Continent. The good news: Hunting season in most popular destinations in southern Africa takes place during their winter (our summer), when

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discussion. They are convenient and all are reasonably effective against bacteria and most viruses. Almost all chemical treatments impart some taste to treated water, and parasites, especially *Giardia*, are relatively resistant to them.

In summary, recognize the potential for waterborne illness when traveling to Third World destinations or when drinking untreated water anywhere in the field. Avoid tap water in developing nations and inquire about safe drinking water sources in camps. In the field,

mosquito activity and malaria risk are relatively low. The bad news: The risk in all these areas is never zero. Our CDC recommends malaria prophylaxis for all American travelers to southern Africa. Listen to the professionals and do not rely on advice to the contrary from travel services and outfitters.

Despite intensive research, there is no effective vaccine against malaria. Medical prevention depends on appropriate medication taken before, during and after a trip. For years, chloroquine remained

a safe, effective and cheap standby. Unfortunately, in most tropical regions (including all of Africa), *Plasmodium falciparum*, the parasite that causes the deadliest of the four forms of malaria, has largely become resistant to this agent. Hunters headed to Africa must choose from one of three alternatives:

**MEFLOQUINE**—Intermediate in price, mefloquine has a convenient weekly dosing schedule and remains the drug of choice among most travel medicine consultants. While serious neurological side effects can occur with the high doses used for treatment, they are rare with the low doses used for prevention. However, irritating side effects including insomnia, nightmares and restlessness are fairly common even at low doses and some people simply cannot take the drug. Pregnant women, small children and travelers with a history of mental illness should avoid mefloquine.

**DOXYCYCLINE**—A derivative of the common tetracycline class of antibiotics, doxycycline is by far the least expensive choice. It must be taken daily and can cause an occasionally severe skin rash provoked by sun exposure, which necessitates stopping the drug. Pregnant women and young children should not take doxycycline.

**MALARONE**—This newly developed combination of two medications—proguanil and atovaquone—offers the advantage of few side effects and weekly dosing. The inevitable disadvantage is cost. A standard course adequate to cover a two-week African hunt will run nearly \$300.

Because of the nature of the parasite's life cycle, all medications need to be started a week before departure and continued throughout your stay and for four weeks after return. Newer evidence suggests that an even longer course may be advisable. Although the recommendation is not official, travelers to areas of particularly high risk should consult a travel medicine clinic about the advisability of remaining on preventive medication up to three months after return.

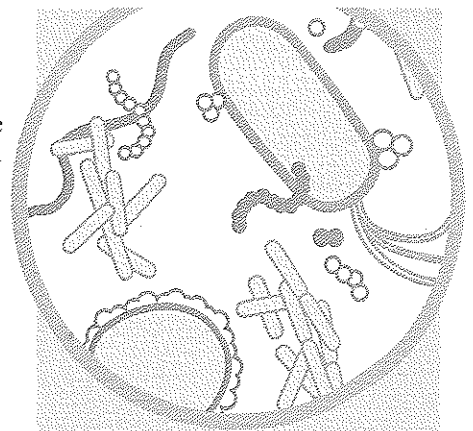
Medication side effects can be annoying and occasionally serious, but it's important to put them in perspective. In people with no prior exposure—and that includes almost all North American hunters—malaria can

be a devastating illness. While effective treatment is certainly available, it's still possible for previously healthy young hunters to die of severe malaria even with the best possible care. Concern about side effects should not deter travelers at risk from taking appropriate preventive measures.

All three medications discussed are approximately equal in effectiveness and differ mainly in side effect profile, cost and convenience of dosing. None, however, is totally certain, so travelers to areas of risk should also take measures to avoid contact with mosquitoes. Anopheles mosquitoes are only active from dusk until dawn, so they're seldom a problem during shooting light. In camp at night, wear long sleeved shirts and cover exposed skin with a DEET-based repellent. Camps in malarious areas should provide netting over beds. In addition to the safety they provide, I personally enjoy the "Old Africa" feeling sleeping under mosquito nets provides.

Remember that many exotic illnesses don't cause symptoms until long after return from a far-off destination. American physicians don't routinely consider the possibility of these diseases, so be sure to mention your travel history during evaluation for any unexplained illness within a year of your return. This simple precaution may help avoid an unnecessary delay in diagnosis.

Despite the intimidating list of illnesses whose prevention we've just reviewed, the purpose of this piece is not to dissuade anyone from taking a good hunting trip. Although I enjoy great hunting near my home, multiple journeys to Africa, Asia, Latin America and the Pacific have provided some of my most memorable experiences in the field. And I've never experienced any unusual health problems during my travels. Some of the good fortune is due to sound basic health and some to luck. But I have no doubt that heeding Ben Franklin's old adage about the value of an ounce of prevention has helped as well.



## OTHER NASTIES

**VIRUSES:** among the smallest of all life forms, they cause a wide variety of illnesses ranging in severity from the common cold to AIDS

**BACTERIA:** one-celled organisms that normally and harmlessly inhabit the human skin and intestines; can also cause serious infections such as pneumonia and meningitis

**PARASITES:** ranging in size from microscopic organisms to worms visible to the naked eye, parasites cause a wide variety of illnesses, particularly in tropical areas and developing nations

**E. COLI:** normal and ordinarily harmless resident of the human intestine, this bacterium can cause serious human infections, particularly of the urinary tract

**AMOEBIASIS:** intestinal illness caused by a microscopic parasite transmitted by contaminated food and water; can lead to serious and occasionally fatal complications including liver infection

**GIARDIASIS:** diarrheal illness caused by a one-celled, microscopic parasite, *Giardia intestinalis* (aka *Giardia lamblia*); variety of intestinal symptoms include diarrhea, gas, greasy stools, stomach cramps, upset stomach or nausea, may lead to weight loss and dehydration

*Editor's Note:* Although he spends a lot more time writing (and hunting) now, Don Thomas is still a practicing physician. He has dealt with wilderness health issues for more than 30 years from his homes in Montana and Alaska.

### WANT TO LEARN MORE?

Find information about specific overseas destinations at the Travelers' Health page, sponsored by the Centers for Disease Control, at [cdc.gov/travel/](http://cdc.gov/travel/)