

- » Rift Valley fever (mosquitoes): flu-like illness with fever, headache, malaise, weakness, back pain, dizziness, and weight loss.
- » O'nyong-Nyong virus (mosquitoes): joint pain, rash, muscle aches, fatigue, fever, and enlarged lymph nodes.
- » Sand fly fever (sand flies): fever, headache, muscle pain, eye pain, limb stiffness, malaise, nausea, vomiting, facial flushing, and neck stiffness.
- » Cutaneous leishmaniasis (sand flies): one or more sores on the skin, often with a raised edge and central crater (ulcer); swollen glands near the sores.
- » Visceral leishmaniasis (Kala-azar) (sand flies): fever, weight loss, weakness, and an enlarged spleen and liver. Some patients have swollen glands and some may develop skin lesions.
- » Bubonic plague (fleas): fever, chills, fatigue, muscle aches, nausea, sore throat, headache. A swollen, tender, painful lymph gland called a "bubo" may appear in the groin, armpit, or neck region. Pneumonic (lung) plague symptoms include fever, cough, bloody sputum, and difficulty breathing.
- » Trypanosomiasis (T.b. rhodesiense and T.b. gambiense) (tsetse fly): a painful chancre

- may be found at the site of the tsetse fly bite; also may be fever, intense headache, insomnia, painless enlarged lymph nodes, local swelling and rash.
 - » Tick-borne diseases (ticks): Crimean-Congo hemorrhagic fever, Tickborne Rickettsioses (Spotted fever group), Lyme disease.
 - » Other: Murine typhus (fleas), lymphatic filariasis, Sindbis, West Nile fever (mosquitoes), and onchocerciasis (black flies).
 - » Remember! Some of the above-mentioned diseases may start out looking like the flu but can quickly develop into much more serious versions of diseases, some involving multiple organ failure, neurological effects, coma, and death! If you become ill with any of the symptoms suggestive of these diseases, seek medical care immediately!
- Prevention:**
- » Take antimalarial medication as prescribed.
 - » Get prescribed yellow fever vaccination.
 - » Use insect repellents containing 20-50% DEET on exposed skin. Deploying Soldiers issued Flame-Resistant Army Combat Uniforms (FRACUs) have uniforms that have been factory-treated with permethrin (FRACU-Ps). Wear uniform properly: pant legs tucked into boots, undershirt tucked into pants, sleeves worn down.

- » Heat strain and dehydration can accumulate over several days before causing heat illness; therefore, during recovery periods, emphasize rest, shade, rehydration, and proper nutrition.
- » See Fluid Replacement and Work/Rest Guide Chart.
- » See TB MED 507, Heat Stress Control and Heat Casualty Management, 7 MAR 2003, for more information (www.usariem.army.mil).

Traffic Safety and Road Conditions

- Risk:**
Poor road conditions possible; night driving may be dangerous due to road hazards and the absence of lighting. Land mine detonations on roads in some locations.

More information on disease and environmental risks is available from the National Center for Medical Intelligence Center at <https://www.intelink.gov/ncmi/index.php>.

<http://phc.amedd.army.mil>
1-800-222-9698



Approved for public release;
distribution is unlimited.
TA-155-0411

- » Figure 1: Fluid Replacement and Work/Rest Guide*

Heat Cat	WBGT Index, °F	Easy Work		Moderate Work		Hard Work	
		Work/Rest (min)	Water Intake (QU/H)	Work/Rest (min)	Water Intake (QU/H)	Work/Rest (min)	Water Intake (QU/H)
1	78° - 81.9°	NL	½	NL	¾	40/20	¾
2	82° - 84.9°	NL	¾	50/10	¾	30/30	1
3	85° - 87.9°	NL	¾	40/20	¾	30/30	1
4	88° - 89.9°	NL	¾	30/30	¾	20/40	1
5	> 90	50/10 min	1	20/40	1	10/50	1

- » Easy Work = Walking on hard surface 2.5 mph <30 lb. load, Weapon maintenance, Marksmanship training
- » Moderate Work = Patrolling, Walking in sand 2.5 mph no load, Calisthenics
- » Hard Work = Walking in sand 2.5 mph with load, Field assaults

* See TB Med 507 for further guidance.

Deployment Health Card: Sudan, Eritrea, Ethiopia, Djibouti, Somalia, Uganda, Kenya, Burundi, Tanzania, Malawi, Madagascar, Seychelles, and Comoros

Eastern Africa

Use force health protection measures to avoid jeopardizing your mission

Eastern Africa is located on the easterly side of the African continent. The region straddles the equator and is bordered on the east by the Red Sea, Arabian Sea, and Indian Ocean. Thirteen countries make up the region including those listed above, of which Madagascar, Seychelles, and Comoros are the island countries of the Indian Ocean. The region contains the Great Rift Valley, some of the highest mountains in Africa, including Mt. Kilimanjaro, and the second largest freshwater lake in the world, Lake Victoria.

Diseases from Food and Water Consumption

- Risk:**
Food, water, and ice may be contaminated with bacteria, parasites, viruses, raw sewage, toxins or pesticides that can cause illness.
- » Traveler's Diarrhea: loose or watery, frequent bowel movements, sometimes with fever, nausea and/or vomiting.
 - » Hepatitis A/E: flu-like illness (fever, malaise), abdominal discomfort, and yellowing of skin and/or eyes (jaundice).
 - » Typhoid/paratyphoid: fever, headache, malaise, weight loss, abdominal discomfort, enlarged spleen, decreased heart rate, cough, and in some cases, rose spots on the skin of the trunk may appear.
 - » Brucellosis: fever (may be intermittent), headache, weakness, sweating, chills, joint pain, depression, weight loss, and generalized aching.
- Prevention:**
- » Wash hands often, especially before eating and after using latrines. If soap and water are not available, use an alcohol-based hand sanitizer.
 - » Avoid locally caught seafood, especially shellfish, ice and frozen desserts, and local dairy products. The safest plan is

- to consume only food, water, and ice approved by the U.S. military.
- » Get prescribed hepatitis A and typhoid vaccines. A hepatitis E vaccine is in development. Check with your doctor regarding future availability.
- » If your mission requires that you eat from non-approved food sources, choose fully cooked foods that are served hot and hard-skinned fruits and vegetables that have to be peeled and that grow either in trees or above the ground.

Diseases from Insects

- Risk:**
Eastern Africa is home to many insects and arachnids that may cause disease, including mosquitoes, flies, fleas, and ticks.
- » Malaria (mosquitoes): fever, chills, aches, respiratory distress, diarrhea, and vomiting.
 - » Dengue fever (mosquitoes): fever, intense headache, muscle pain, joint pain, eye pain, loss of appetite or weight loss, nausea, vomiting, and rash.
 - » Yellow fever (mosquitoes): sudden onset fever, chills, headache, backache, muscle pain, nausea, vomiting, and jaundice.
 - » Chikungunya (mosquitoes): fever, enlarged lymph nodes, joint pain affecting multiple areas, rash, muscle aches, and fatigue.

- » Sleep under permethrin-treated bed nets.
- » When possible, stay inside well-screened areas at dawn, dusk, and nighttime.
- » Keep living areas free of trash and food. Use trash cans with lids. Eliminate sources of standing water whenever possible
- » Remove ticks with tweezers. Do not crush it. Do not apply any substance to it while attached, including petroleum jelly, alcohol, repellent, or a lighted match. After removal, wash the wound site and apply antiseptic. Save the tick in a clean, dry container and submit it to your medical provider for testing. All tick-borne diseases display symptoms within one month of the bite. Seek medical care if symptoms develop. Some illnesses may not become apparent for several months after you leave the country. In that case, let your provider know you have been to Eastern Africa.

Diseases from Animal Contact

Risk:

- » Rabies: any animal bite or scratch should be evaluated by medical personnel for risk of rabies.
- » Other: Anthrax, Brucellosis, Rift Valley fever, Q fever, Lassa fever, and Hantavirus hemorrhagic fever with renal syndrome.

Prevention:

- » Avoid all contact with animals, including rodents, cats, dogs and livestock, and animal hides, including clothing and decorative items made from them, such as drumheads and wall hangings.
- » Do not adopt local pets or mascots.
- » Thoroughly clean your hands with soap and water afterwards if animal contact is unavoidable.
- » If scratched or bitten, immediately cleanse the site of the wound and seek medical attention.
- » Keep living areas free of trash and food.
- » Avoid inhaling dusts near livestock enclosures.

Diseases from Water Contact

Risk:

- Wading, swimming, fording streams, and other contact with contaminated water can cause disease.
- » Leptospirosis: a variable clinical picture of fever, chills, nausea, muscle aches, particularly of the calves and thighs, and bloodshot eyes.
 - » Schistosomiasis: You may not notice any symptoms with mild infections. Heavy infections with a fever may occur with

diarrhea, abdominal pain, and painful, frequent, and/or bloody urination possible.

Prevention:

- » Do not swim or wade in unapproved water.
- » If you must wade through water, towel dry affected skin area (thoroughly and vigorously) and apply 70% alcohol immediately afterwards. As soon as possible after exposure, thoroughly wash skin and clothing with soap and water.

Disease from Soil Contact

Risk:

- Soil heavily contaminated with human or animal feces can put personnel at risk of parasitic skin or intestinal worm infestations. Some worms enter the human body through the skin by direct contact with the soil (hookworm); others are ingested as eggs (roundworm, whipworm) and develop in the intestinal tract.
- » Intestinal worms: skin rash, fever, cough, abdominal pain, nausea, diarrhea, and unintentional weight loss.
 - » Skin worms: visible red worm-like burrows or inflamed tracks under skin. Intense itching at the sites.

Prevention:

- » Do not walk barefoot or contact soil with bare hands. If soil contact occurs, thoroughly and immediately wash with soap and water.
- » Wash all fruits and vegetables thoroughly prior to consumption.

Sexually Transmitted Diseases (STDs)

Risk:

Unprotected sexual contact may result in sexually transmitted diseases including HIV/AIDS, hepatitis B, gonorrhea, and chlamydia.

Prevention:

- » Abstain from having sexual contact.
- » If sexual contact is to occur, use a new latex condom with each and any sexual encounter.
- » Get prescribed hepatitis B vaccine before deployment. Consider getting the human papillomavirus (HPV) vaccine.

Diseases Transmitted by the Respiratory Route

Risk:

- » Meningococcal meningitis: sudden onset fever, intense headache, nausea and vomiting, stiff neck, sensitivity to light, and often a rash.

- » Tuberculosis: productive cough, fatigue, fever, night sweats, unexplained weight loss early on; coughing up blood-tinged sputum, chest pain, and hoarseness may occur later.
- » Acute Respiratory Disease: coughing, sneezing, sore throat, fever and/or wheezing.

Prevention:

- » Sneeze and cough into your sleeve rather than your hands.
- » Clean hands often, especially before eating and after handling oral and/or nasal discharges.
- » Dispose of oral and nasal discharges and materials used to handle them (tissue paper, paper towels, etc.) in a sanitary manner.
- » Sleep head-to-toe in staggered bunks and avoid crowding.
- » Get prescribed meningococcal vaccine before deployment.

Hazardous Animals

Risk:

Many hazardous land animals can be encountered in Eastern Africa including venomous snakes, spiders, scorpions, and large aggressive mammals and reptiles. Many dangerous marine animals live along the coastline including venomous sea snakes,

mollusks, stingrays, fish, jellyfish, and starfish, as well as man-eating sharks.

- » Leave wildlife alone.
- » Assume any snake you encounter is venomous.
- » Do not handle any snake, marine animal or insect.
- » Swim only at approved beaches.
- » Shake out boots/bedding/clothing prior to use.
- » Never walk barefoot.
- » Avoid sleeping on the ground.
- » Seek medical attention immediately if bitten or stung.

Hazardous Plants

Risk:

Toxic plants can cause skin, eye, lung, and/or gastrointestinal irritation if they and/or their sap or smoke generated from them are touched, inhaled, ingested, or otherwise contacted.

Prevention:

- » Do not touch, chew, eat, or burn unfamiliar plants; avoid breathing or touching smoke generated from them. Use clothing as a protective barrier for skin; wash contaminated skin/clothing thoroughly

with soap and water after contact with unfamiliar plants, their sap, or smoke.

Altitude Illness

Risk:

- » High altitudes can cause headache, nausea, vomiting, dizziness, fatigue, disturbed sleep, irritability, coughing, difficulty breathing and impaired mental status.
- » If symptoms occur, stop ascent; descend to lower altitude as soon as mission and capability allow. Seek medical attention immediately.
- » Environmental stressors (wind, cold, snow, oxygen depletion, etc.) are more severe at higher elevations.

Prevention:

- » If at all possible, become acclimatized to high altitude before attempting high altitude operations.
- » Stage ascents over time so that you are not ascending too high too quickly or going very high and staying there.
- » Plan frequent rests during work and exercise.
- » Consider taking medication (e.g., acetazolamide) to avoid or forestall the effects of high altitude if conducting operations at 1,200 m (3,937 ft) or higher.

Consult a preventive medicine officer. Have on hand sunglasses, lip balm, sunscreen, and skin care items for high ultraviolet exposure.

- » See TB MED 505, Altitude Acclimatization and Illness Management, 30 SEP 2010, for more information (www.usariem.army.mil).

Heat Stress

Risk:

- Heat stress impairs thinking, concentration, cognitive ability and physical performance and can cause heat cramps, heat exhaustion, and heat stroke.
- » Symptoms may include muscle cramps, nausea, or vomiting. If cooling and hydration are not provided, can progress to confusion, disorientation and loss of consciousness or death. When in doubt, treat as a heat illness. Seek medical attention and begin cooling the Soldier immediately, especially if mental status is altered or loss of consciousness occurs.

Prevention:

- » Maximize physical fitness and heat acclimation prior to deployment.
- » Observe Soldiers carefully for signs of distress in the heat and adjust work/rest schedules, work rates and water consumption according to conditions.