

U.S. Army Center for Health Promotion and Preventive Medicine

A SOLDIER'S GUIDE TO STAYING HEALTHY CHAD

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A SOLDIER'S GUIDE TO STAYING HEALTHY IN CHAD

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INTRODUCTION

This country-specific guide should be used in conjunction with [GTA 08-05-062, *Guide to Staying Healthy*](#), and provides information that can help reduce your risk of Disease and Non-battle Injuries (DNBI) when deployed. This health threat and countermeasure information is based on the most current data available from U.S. Department of Defense medical agencies at the time of production. In addition to the information in this guide, you should also receive force health protection, health threat, and preventive medicine countermeasures training/briefings prior to and, as required, throughout the length of your deployment.

CHAD OVERVIEW

[Chad](#), about three times the size of California, can be divided into two geographical areas. In the northern half of Chad is the Sahara Desert, primarily in central and western areas. Other prominent features include the Bahr el Ghazal Depression in the west, Ennedi Plateau in the east, and the Tibesti Mountains in the north where the highest point, Emikoussi, rises to approximately 10,200 feet. The southern half includes arid savanna, grassland plains, wooded lowlands, plateaus, and Lake Chad in the west; the Ouaddai Highlands in the east; the Mandara Mountains on the southwest border; and the Guera Massif in the south central portion, with a peak elevation of 4,900 feet. The only permanent flowing rivers are the Chari and the Logone. Chad is landlocked and surrounded by Libya to the north; Sudan to the east; the Central African Republic to the south; and Niger, Nigeria and Cameroon to the west. Chad has three climatic zones. The northern Saharan zone averages less than 20 inches of rainfall annually. Extreme daily high temperatures in this zone vary between 121° F in May, the hottest month, and 97°F in December, the coolest month. Occasional sandstorms and dry, dust-laden air may irritate the skin, eyes, and respiratory system. The central Sahelian zone has temperatures similar to the northern zone. This zone has a dry season lasting October through May, and the average annual rainfall is only about 28 inches. The southern subtropical zone has mean daily maximum and minimum temperatures of 106°F in March and 58°F in December. This zone has a long rainy season from May through October, with an annual rainfall between 35 and 47 inches. Chad is prone to periodic droughts and locust plagues.

CHAD RISK ASSESSMENT

- *Disease Risks:* Based on a combination of all major infectious diseases that occur in a country, an [overall country risk level](#) is assigned as very high, high, intermediate, or low. Chad is VERY HIGH RISK for infectious diseases, with an overall disease risk among the worst in the world. Without force health protection measures, mission effectiveness will be seriously jeopardized. The diseases of **high risk** in Chad are **diarrhea** (bacterial and protozoal), **hepatitis A and B**, **human immunodeficiency virus (HIV)/acquired immune deficiency syndrome (AIDS)**, **malaria**, **meningococcal meningitis**, **schistosomiasis** and **typhoid/paratyphoid fever**. Diseases of intermediate risk are also discussed in this guide.

- *Environmental Risks:* The greatest short-term health risks to personnel deployed to Chad are associated with consumption of water contaminated with raw sewage or runoff containing fecal pathogens. The physical environment poses additional health risks from extreme heat. Other environmental factors include sandstorms; droughts; locusts; and agricultural and industrial contamination of water and food supplies. The drilling of 300 oil wells in the Doba fields of southern Chad threatens surface waters, groundwater systems and surrounding soils.

INCREASED REGIONAL DISEASE THREATS

The potential for acquiring infectious diseases in Chad is higher than most locations to which you may deploy and poses a very serious risk to your health. It is critical that you use appropriate countermeasures AT ALL TIMES to avoid incapacitations, hospitalization, and loss to your unit.

VECTOR-BORNE DISEASES

DISEASE RISKS

- Vector-borne diseases are diseases that are contracted through the bite of an insect. The vector-borne disease of greatest risk is [malaria](#), a serious illness that is contracted from the bite of a mosquito carrying the disease. Other diseases contracted through mosquito bites are [chikungunya virus](#); [dengue fever](#); [Rift Valley fever](#), often following heavy rainfall; [Sindbis \(Ockelbo\) virus](#); [West Nile fever](#); and [yellow fever](#) which is potentially very severe. Other vector-borne diseases are [leishmaniasis](#) from sand flies; [Crimean-Congo hemorrhagic fever](#), a very severe disease that often follows changes in agricultural land use; [rickettsioses \(spotted fever group\)](#) from ticks in which severe infections may occur with rare fatalities; and [trypanosomiasis](#), a potentially severe disease from the tsetse fly.
- Your local medical authority will determine whether these diseases or other vector-borne diseases are a threat in your specific location and provide appropriate countermeasures.

PREVENTION

- There is medicine you must take to help prevent malaria. Take your malaria prevention pills when directed to do so. This is CRITICAL. Normally, you will begin taking medication before arriving in the area, while in the area, and after returning home.
- When deployed to Chad, use the [DOD Insect Repellent System](#) detailed in [GTA 08-05-062](#) to reduce your risk of acquiring a vector-borne disease.
- Wear [permethrin](#)-treated uniforms with trousers tucked into boots, sleeves rolled down, and undershirt tucked into trousers. Wear N-diethyl-meta-toluamide (DEET) on exposed skin.
- When deployed to this region, sleep under a [permethrin-treated bed net](#) to repel insects and further reduce risks of vector-borne diseases.
- When using both DEET and sunscreen products, apply sunscreen to the skin first so it does not interfere with the effectiveness of the DEET. After 30 minutes to an hour, apply the DEET. This allows the sunscreen to penetrate and bind to the skin first.

FOOD-BORNE AND WATER-BORNE DISEASES

DISEASE RISKS

Food-borne and water-borne diseases are caused by eating food or drinking water that contains bacteria, parasites or viruses that cause certain diseases. You are at great risk of contracting food- and water-borne diseases in this area. The food- and water-borne diseases of greatest risk are—

- [Diarrhea \(bacterial and protozoal\)](#) (travelers' diarrhea). These illnesses vary in severity. The likelihood of contracting bacterial diarrhea approaches 100 percent if you consume local food, water or ice.
- [Hepatitis A and E](#). These are food- or water-borne diseases that can make you sick for a month or more.
- [Typhoid/paratyphoid fever](#). You can carry typhoid and give it to others without getting sick.

Other food- or water-borne diseases that pose a lesser risk to you are [brucellosis](#) (often caused by eating contaminated local dairy products) and [cholera](#).

PREVENTION

- Assume all non-approved food, ice, and water is contaminated. You should not drink local tap water, fountain drinks, or ice cubes. To prevent becoming ill, do not eat or drink anything (including bottled water) that has not been approved by the U.S. military. Even a one-time consumption of these foods or water may cause severe illness.
- See [GTA 08-05-062](#) for appropriate countermeasures.

WATER-CONTACT DISEASES AND SKIN INFECTIONS

DISEASE RISKS

Water-contact diseases are most often acquired by swimming or wading in contaminated water. The water-contact disease of greatest risk is [schistosomiasis](#) which is caused by parasitic worms. There is also a risk of [leptospirosis](#) which is caused by bacteria. Skin irritations and infections, such as athlete's foot and ringworm, are also common medical threats during any deployment and are commonly caused by fungi that thrive in moist conditions.

PREVENTION

- Do not swim or wade in water that has not been treated with chlorine; if you must, wear protective clothing and footwear.
- Never go barefoot.
- Clean your skin and clothing after wading or swimming in freshwater ponds or streams.
- To prevent skin infections, maintain clean, dry skin.
- See [GTA 08-05-062](#) for additional countermeasure information.

DANGEROUS PLANTS AND ANIMALS

RISKS

- Some regional plants have thorns, stinging hairs, or toxic resins that may puncture the skin or introduce poison into the skin causing skin irritation, rashes or infections. Contact with the smoke from the burning of these plants can also cause skin rashes and damage to your lungs.
- Numerous regional plants, some with fruits or seeds closely resembling edible species, may cause systemic poisoning if leaves, berries, flowers, or other plant parts are chewed or swallowed. Symptoms include dizziness, vomiting, irregular heartbeat, and delirium or hallucinations.
- Venomous snakes which live in the region include cobras, garter snakes, and vipers.
- Crocodiles and hippos inhabit Lake Chad and can be a hazard to swimmers.

- Scorpions, centipedes, and spiders, some with potentially fatal venom, are present in Chad.

PREVENTION

- Avoid skin contact with plants when possible.
- Consider any snake encountered as poisonous, and do not handle. Avoid contact with all wildlife.
- Seek immediate medical attention if bitten or stung by any animal or insect; untreated snakebites may cause serious illness or death within one hour.
- Swim only at approved beaches.
- If possible, avoid sleeping on the ground.
- Shake out boots, bedding, and clothing prior to use, and never walk barefoot.
- Clean your clothing with soap and water after contact with animals or harmful plants.

ANIMAL-CONTACT DISEASES

DISEASE RISKS

There are a significant number of human [anthrax](#) cases in Chad each year resulting from direct contact with infected animals. The cutaneous or gastrointestinal type of anthrax (from eating the infected animal) is often fatal. [Rabies](#) is a serious illness that is contracted from the bite of an animal carrying the disease. It is fatal without treatment. Dogs are the main source of rabies in the area. There is also a risk of getting [Q fever](#) by inhaling dust that contains the organisms that cause the disease.

PREVENTION

- Avoid contact with all animals.
- If bitten, seek medical attention immediately.
- Keep living quarters free of rodents, and stay clear of buildings infested with rodents.
- Always check dug-in fighting positions for potentially dangerous animals.
- Clean your skin and clothing after contact with animals or dust.

RESPIRATORY AND SEXUALLY TRANSMITTED DISEASES

RISKS

- Unvaccinated personnel risk being infected with [meningococcal meningitis](#) which can be a very severe disease. There is also a risk of being exposed to the bacteria that causes [tuberculosis](#) (TB). Breathing in the bacteria that someone coughed or sneezed into the air spreads TB. Being exposed to the bacteria will cause a positive skin test even if you do not become sick.
- Soldiers are also at risk of contracting sexually transmitted diseases ([STDs](#)) such as [gonorrhea](#), [chlamydia](#), [HIV/AIDS](#) and [hepatitis B](#). HIV/AIDS and hepatitis B are potentially fatal STDs that can also be passed by sharing needles. Though the immediate impact of HIV/AIDS and hepatitis B on an operation is limited, the long-term impact on your individual health is great.

PREVENTION

- There is a vaccine for hepatitis B but not for any other STD. **Anyone deployed to the region should not have unprotected sex and should not share needles.**
- Those deployed should see [GTA 08-05-062](#) for appropriate countermeasures.

HOT AND COLD WEATHER INJURIES

- Heat injuries are possible when deployed to this region, especially in the desert and during the early phase of deployment; acclimatization is critical. Individual and unit countermeasures are extremely important.
- Cold injuries are possible in the mountainous region. See [GTA 08-05-062](#) for appropriate countermeasures.

HIGH ELEVATIONS

- Military operations occurring at elevations over 6,000 feet can be dangerous due to low levels of oxygen. Serious illness or death can result if you increase your elevation rapidly without allowing for acclimatization. Remain well hydrated; you need more fluids at higher altitudes.
- Symptoms of mountain sickness include headache, nausea, vomiting, dizziness, fatigue, irritability, and coughing. Seek medical attention immediately if you experience any of these symptoms.
- For appropriate countermeasures during high altitude operations, see [GTA 08-05-062](#) and [GTA 08-05-060, A Soldier's Guide to Staying Healthy at High Elevations](#).

SAND, WIND, AND DUST

Severe sandstorms and dust storms can occur in the desert region. Heat, sand, wind, and dust cause health problems, particularly to skin, eyes, nose, throat and lungs. Take care of problems early to avoid infection. High winds can turn loose objects into flying missiles (which may not be visible in blowing sand). To help avoid problems—

- Take a daily sponge bath, using an approved water source.
- Wash your face and eyelids several times per day.
- Carry at least two pairs of glasses and a copy of your prescription. Do not wear contact lenses; [AR 40-63](#) prohibits contact lens use during a military deployment.
- Carry artificial tear drops to use if you get something in your eye or your eyes feel dry.
- Breathe through a wet face cloth, or coat the nostrils with a small amount of petroleum jelly to minimize drying of mucous membranes. Protect your lips with lip balm.
- Shield your face with cloth materials to protect from blowing dust and sand.
- Wear goggles (NSN 8465-01-328-8268) to protect your eyes from wind, dust, and sand or when traveling in open vehicles.
- Wear gloves and use moisturizing skin lotion to protect your hands.

ORAL HEALTH

[Dental disease](#) is a common problem during deployments because it is not easy to take care of your mouth. You should deploy with toothbrush, dental floss, and fluoride toothpaste. You should brush your teeth twice a day and floss your teeth once a day. This is the best way to prevent gum disease, trench mouth and tooth decay. In difficult tactical environments, teeth should be brushed at least once a day. Seek medical attention immediately at the onset of any dental problems. You are more vulnerable to other diseases when your mouth is not healthy.

TOXIC INDUSTRIAL CHEMICALS AND MATERIALS

When deployed, you may face health risks from industrial chemicals and materials as a result of activities by terrorists or warring parties; accidents related to improper design, maintenance, or operation of indigenous industrial facilities; inadvertent exposure to toxic waste materials in the environment; or improper handling or disposal of hazardous material with which our own forces deploy. The degree of health risks depends upon many parameters. Consult your medical authority for additional information.

HEARING PROTECTION

It is essential that you use properly fitted [hearing protection](#) during military operations. Exposure to high-intensity noise and especially weapons fire may cause permanent hearing loss. Good hearing is essential to mission success. If you are a dismounted soldier, the [Combat Arms Earplug](#) (NSN 6515-01-466-2710) will protect you from the impact noise of weapons fire while only slightly interfering with voice communications and detection of combat sounds such as vehicle noise, footfalls in leaves, and the closing of a rifle bolt. While not as effective as the Combat Arms Earplug at preserving your ability to hear important mission-related sounds, noise muffs or standard earplugs are very effective at preventing noise-induced injury. If you are a member of vehicle or helicopter crews, your combat vehicle crew or aircrew helmets have built-in hearing protectors.

FIELD SANITATION TEAM

Each company-sized unit has a Field Sanitation Team (FST) whose members are trained (40-hour course) and fully equipped according to [AR 40-5](#), [FM 4-25.12](#), and [FORSCOM REG 700-2](#). Know who the members of your FST are, and know how they can assist in preventing medical threats to your health. Become familiar with FST equipment and training.

PRE-DEPLOYMENT HEALTH INFORMATION

- [Complete the Pre-Deployment Health Assessment \(DD FORM 2795\)](#) to assess your state of health before deployment and to assist health care providers in identifying your medical needs and providing present and future medical care to you.
- You will not have access to your health care record during the deployment. The Adult Preventive and Chronic Care Flowsheet ([DD FORM 2766](#)) will be used as your deployment health record. This document will include information on all your immunizations, any medications you are currently taking, and any ongoing medical problems that you may have. When you go through readiness processing, ensure that all appropriate information is documented on your DD FORM 2766. When you return home, this information will be placed in your regular health record.

INFORMATION ABOUT YOUR HEALTH CARE WHILE DEPLOYED

- It is important that you know where to seek health care while deployed. This may or may not be through the same channels as your home station. Ask your chain of command for more information.

- While deployed, you must maintain your health and seek care whenever an illness or injury affects your work. Your unit is depending on you. It is always better to seek care early so your problems can be documented appropriately and taken care of immediately. When problems are caught early, they are usually easier to treat.

POST-DEPLOYMENT HEALTH INFORMATION

- [Complete the Post-Deployment Health Assessment \(DD FORM 2796\)](#) to assess your health after deployment and to assist health care providers in identifying your medical needs and providing present and future medical care to you.
- If you become sick after you return home, tell your doctor that you were deployed.
- Complete malaria medications as directed, and receive follow-on medical care/tests as directed.

Contact your Preventive Medicine or Medical Support Unit for more information.



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