

## CHAPTER 2

# INDIVIDUAL PREVENTIVE MEDICINE MEASURES

### Section 1. Heat Injuries

#### DRINK PLENTY OF WATER

Depending on the heat, you may need to drink from 1/2 to 2 quarts of water per hour—*4 gallons* or more per day in hot dry climates.

Drink extra water *before* starting any mission or hard work. Cool water (50° to 55°F) is absorbed faster than cold water.

- Drink small quantities frequently.
- Drink water even if you are not thirsty.
- Refill your canteens at every opportunity.



## NOTE

If your urine is dark yellow,  
you are not drinking enough water!  
Thirst is not a good indicator of dehydration.



## USE WORK/REST CYCLES

Work and rest as your leader directs.

Work and rest in the shade, if possible.

## EAT ALL MEALS TO REPLACE SALT

Take a salt solution *only* when directed by the medical personnel.



## RECOGNIZE THE RISK OF MOPP/ BODY ARMOR/ARMORED VEHICLES

MOPP/body armor increases your heat stress. You must:

- Drink more water.
- Work and rest as your leader directs.

You are at a greater risk of heat injuries when in armored vehicles-you must drink more water.

## **MODIFY YOUR UNIFORM**

If directed/authorized by your commander:

- Unblouse pants from boots.
- Keep skin covered in the sun; remove shirt in the shade.
- Keep clothing loose at the neck, wrists, and lower legs.

If the threat from biting insects is high, leave shirt sleeves down, and pants bloused in boots.



## **NOTE**

See GTA 8-5-45, heat injury prevention and first aid and FM 21-11, first aid for soldiers, for information on heat injury prevention and first aid.

## Section II. Cold Injuries



### **WEAR UNIFORM PROPERLY**

Wear the clothing your commander directs.

Wear clothing in loose layers (top and bottom). Avoid tight clothing including tight underwear.

Keep clothing clean and dry. Remove or loosen excess clothing when working or in heated areas to prevent overheating that causes sweating.

Wear headgear to prevent body heat loss.

Avoid spilling fuel or other liquids on clothing (or skin).

### **KEEP YOUR BODY WARM**

Keep moving, if possible.

Exercise your big muscles (arms, shoulders, trunk, and legs) frequently to keep warm.

If you must remain in a small area, exercise your toes, feet, fingers, and hands.

Avoid the use of alcohol.

Avoid standing directly on cold, wet ground, when possible.

Avoid tobacco products. The use of tobacco products decreases blood flow to your skin.

Eat all meals to maintain energy.

Drink plenty of water and/or warm nonalcoholic fluids. Dark yellow urine means you are not drinking enough fluids! You can dehydrate in cold climates too!

## PROTECT YOUR FEET

Bring at least five pairs of issue boot socks with you.

Keep socks clean and dry.

Change wet or damp socks as soon as possible. Beware of wet socks from sweating!





Wash your feet daily, if possible.

Avoid tight socks and boots (lace boots as loosely as possible).

Wear overshoes to keep boots dry.

### **PROTECT YOUR HANDS**

Wear gloves (with inserts) or mittens (with inserts).

Warm hands under clothing if they become numb.

Avoid skin contact with snow, fuel, or bare metal.

### **PROTECT YOUR FACE AND EARS**

Cover your face and ears with a scarf or other material, if available.

Wear your insulated cap with flaps down and around your chin.

Warm your face and ears by covering them with your hands.

Exercise facial muscles.

## **PROTECT YOUR EYES**

Wear sunglasses to prevent snowblindness.

Improvise sunglasses (slit goggles) if actual glasses are not available.

## **PROTECT YOUR BUDDY**

Watch for signs of frostbite on his exposed skin—pale/gray/waxy areas.

Ask him if his feet, hands, ears, or face are numb and need rewarming.

Do not let him sleep in or near the exhaust of a vehicle with the engine running or in an enclosed area where an open fire is burning (carbon monoxide poisoning). Do not allow him to sleep directly on the ground.



## NOTE

See GTA 8-6-12, adverse effects of cold, cause and symptoms and FM 21-11, first aid for soldiers, for information on cold injury first aid procedures.

### Section III. Arthropods and Other Animals of Medical Importance.



#### USE INSECT REPELLENT

Use on all exposed skin: face, ears, neck, arms, and hands.

Use where clothing fits tightly, such as: upper back, buttocks, and knees. Apply to all openings of the uniform (collar, cuffs, shirt front, waistband, and boot tops).



Reapply a thick coat immediately if you get wet or --

- Every two hours if get sweaty.
- Every four hours if you don't wet or sweaty.

Read the label for directions and precautions before using.

## **WEAR UNIFORM PROPERLY**

Wear uniform as your commander directs.

Wear headgear to protect the top of your head.

Wear loose fitting uniform, not tightly tailored, repair tears/holes.

When the arthropod threat is high–

- Blouse pants in boots and completely lace boots.
- Tuck undershirt in at waist.
- Wear sleeves down.
- Button blouse/shirt at the neck and wrist.
- Do not wear after-shave lotion or cologne in the field; they attract biting or stinging insects.



## **KEEP UNIFORM CLEAN**

Wash your uniform frequently to remove arthropods and their eggs. If the situation permits, use the quartermaster laundry. Otherwise, use a can, stream, or lake.

## **FOLLOW MEDICAL ADVICE**

Take malaria pills when directed by your commander.

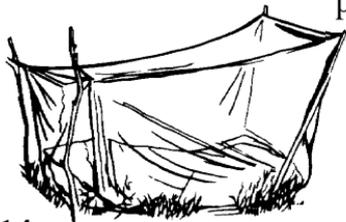
Use insect powder/cream/shampoo when prescribed by medical personnel.

## **PROTECT YOURSELF AT NIGHT**

Use your bednet when sleeping. Tuck net under sleeping pad/sleeping bag so there are no openings.

Use an aerosol insect spray inside the bednet after it is tucked (or in your tent if it can be sealed). Spray for only 1 or 2 seconds. Allow at least 10 minutes for aerosol to disperse before occupying the bednet or tent.

Repair holes in your bednet.



## **PROTECT YOURSELF FROM OTHER MEDICALLY IMPORTANT ANIMALS**

### Spiders–

- Remove spider webs from buildings.
- Shake out and inspect clothing, shoes, and bedding before use.
- Eliminate collections of papers and unused boxes.
- Thoroughly clean beneath and behind furniture.
- Check field latrines before use.
- Wear gloves when handling paper or cloth that has been stored for long periods.

### Scorpions–

Use a long handled tool or stick to turn over debris before removing it.

Remove accumulations of boards, rocks, and other debris.

- Wear leather gloves to remove rocks, lumber, and such from ground.
- Inspect and shake out clothing and shoes before putting them on.

#### Snakes—

- Avoid swimming in areas where snakes abound.
- Keep hands off rock ledges where snakes may be hiding and sunning.
- Look over the area before sitting down, especially if in deep grass or among rocks.
- Sleep off the ground, if possible.
- If military situation permits, avoid walking about an area during the period from twilight to complete daylight, as many snakes are active at this period.
- Avoid camping near piles of brush, rocks, or other debris.
- Never step over large rocks or logs without first checking to see what is on the other side.

- Turn rocks and logs toward you when they have to be removed so you will be shielded should snakes be beneath them.
- Handle freshly killed snakes only with a long tool or stick, as snakes can inflict fatal bites by reflex action after death.
- If bitten, try to get an accurate description of the snake to assist medical personnel in treating you. Do not panic!

## **DOMESTIC AND WILD ANIMALS OR BIRDS**

Avoid handling or approaching so-called “pets.”

Exclude such animals from your work and living areas, unless cleared by veterinary personnel.

Do not collect or support (feed or shelter) stray, domestic, or domestic-like animals/birds in the unit area, unless cleared by veterinary personnel.

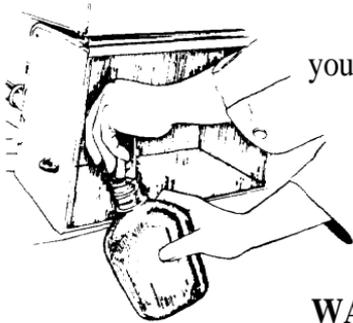
## Section IV. Poisonous Plants and Toxic Fruits

Avoid contact with poisonous plants by properly wearing the uniform.

Avoid areas where poisonous plants grow.

Do not eat plants or parts of plants which might be unsafe. If you do not know, do not eat it.

Do not put field or turf grasses or woody twigs or stems in your mouth.



## Section V. Food/Waterborne Diseases/Illness

### WATER

Fill your canteen with treated water at every chance. When treated water is not available, you must disinfect water in your canteen using one of the following methods.

## PREFERRED METHOD—IODINE TABLETS

Fill your canteen with the cleanest water available.

Put one tablet in clear water, or two in cold or cloudy water..  
Double these amounts in the 2 quart canteen.

Place cap on canteen, wait 5 minutes, then shake. Loosen the cap and tip the canteen over to allow leakage around canteen threads. Tighten the cap and wait an additional 25 minutes before drinking.



## ALTERNATE METHODS

### CHLORINE AMPULES

Fill your canteen with cleanest water available.

Mix one ampule of chlorine with one-half canteen cup of water, stir the mixture with a clean device until contents are dissolved. Take care not to cut your hands when breaking open the glass ampule.



Pour one-half plastic canteen capful or one NBC canteen capful of the above solution into your canteen of water.



Place the cap on your canteen and shake. Slightly loosen the cap and tip the canteen over to allow leakage around threads. Tighten cap and wait 30 minutes before drinking.

### TINCTURE OF IODINE

Fill canteen with cleanest water available.

Add 5 drops of 2 percent Tincture of Iodine per canteen/quart. If water is cold or cloudy, add 10 drops.

Mix thoroughly by shaking canteen. Slightly loosen the cap and tip canteen over to allow leakage around threads. Tighten cap and wait 30 minutes before drinking.

Very cloudy or cold water may require prolonged contact time. Let stand several hours or overnight if possible.

### HOUSEHOLD/COMMON BLEACH

Fill canteen with cleanest water possible.

Read label on bleach bottle to determine amount of available chlorine. Liquid chlorine laundry bleach usually has 4 to 6 percent available chlorine.

Drops to be Added to a  
One Quart Canteen

Available Chlorine	Clear Water	Cold or Cloudy Water
1%	10	20
4—6%	2	4
7--10%	1	2

Place cap on canteen and shake. Slightly loosen the cap and tip canteen over to allow leakage around threads. Tighten cap and wait 30 minutes before drinking.

When chlorine or iodine is not available, boil water for 5 to 10 minutes.

In an emergency, even boiling water for 15 seconds will help. Boiled water must be protected from recontamination.



## FOOD

- Obtain food from approved sources (dining facility) when possible.
- Do not buy food, drinks, or ice from civilian vendors unless approved by veterinary personnel.
- When eating in local establishments or from approved vendors only eat hot food entrees, or raw foods that can be washed and peeled prior to eating.
- Inspect all cans and food packets prior to use.
- Discard all cans with leaks or bulges.
- Discard food packets with visible holes or obvious signs of deterioration.
- Do not eat foods or drink beverages that have been prepared in galvanized containers (zinc poisoning).

## WASH YOUR HANDS

After using the latrine.

Before touching eating utensils or food.

After eating.



## WASH YOUR MESS KIT

A sure way to get diarrhea is to use a dirty mess kit. Protect yourself by washing your mess kit—

- In a mess kit laundry.
- With treated water or disinfectant solution.

## BURY YOUR WASTE

Always bury your waste immediately to prevent flies from spreading germs from waste to your food. Also, burying your waste helps keep unwanted animals out of your bivouac area.



## Section VI. Personal Hygiene, Physical, and Mental Fitness



### KEEP PHYSICALLY FIT

Physically fit soldiers are less likely to get sick or injured.

Use caution when exercising in extremely hot weather, heat injuries can occur. Actively participating in physical fitness training aids in your becoming acclimatized to the field environment.



### NOTE

See FM 21-20, physical readiness training, for more information.

## PREVENT SKIN INFECTIONS

Bathe frequently, take a full bath at least once every week, if showers or baths are not available, use a washcloth daily to wash:

- Your genital area.
- Your armpits.
- Your feet.
- Other areas where you sweat or that become wet, such as: between thighs or (for females) under the breasts.

Keep skin dry:

- Use foot powder on your feet, especially if you have had fungal infections on the feet in the past.
- Use talcum powder in areas where wetness is a problem, such as: between the thighs or (for females) under the breasts. Cornstarch may be used as a substitute for talcum powder.
- Change to clean clothing at the time of the full bath to aid in the control of lice.



Wear proper clothing:

- Wear loose fitting uniforms; they allow for better ventilation. Tight fitting uniforms reduce blood circulation and ventilation.
- Do not wear nylon or silk-type undergarments; cotton undergarments are more absorbent and allow the skin to dry.

## **PREPARE FOR THE FIELD**

All soldiers need to bring toilet articles such as: soap, shampoo, washcloths, towels, toothbrush, dental floss, and toothpaste. Do not share items, prevent infections.

Male soldiers need a razor and blades.

Female soldiers need sanitary napkins or tampons.

Some soldiers need talcum powder and/or foot powder.

*Remember, in Combat You May Not Be Able to Easily Obtain These Items If You Run Out. Bring at Least a ONE Month Supply.*

## **PREVENT DENTAL DISEASE**

Go to the dentist at least annually for examination and treatment.

Brush at least once a day. If available, toothpaste helps but it is not a necessity.

Use dental floss at least once a day.

Rinse your mouth with potable water after brushing and flossing.



## **PREVENT GENITAL AND URINARY TRACT INFECTIONS**

For males:

- Wash the head of your penis when washing your genitals. If uncircumcised, pull the foreskin back before washing.

- Protect yourself from sexually transmitted disease (STD). Use a condom—condoms help prevent STD transmission.

For females:

- Wash your genital area daily.
- Don't use perfumed soaps or feminine deodorants in the field—they cause irritation.
- Protect yourself from STD. Insist that your sex partner use a condom—condoms help prevent STD transmission.
- Don't douche unless directed by medical personnel.
- *Drink extra fluids, even when it is not hot.*
- Wear cotton underwear, not silk or similar materials.

#### NOTE

Some individuals don't drink enough fluids and tend to hold their urine due to the lack of privacy in field latrines. Urinary tract infections are one of the most frequent medical problems females face in the field. Drinking extra fluids will help prevent these infections.



## **SLEEP WHEN YOU CAN**

Follow your leaders' instructions and share tasks with buddies so everyone gets some time to sleep safely.

Sleep whenever possible (6 to 9 hours per 24 hours).

Take catnaps whenever you can, but expect to need a few minutes to wake up fully.

Sleep as much as you can *before* going on a mission which may prevent sleep.

After going without sleep, catch up as soon as possible.

Learn and practice techniques to relax yourself quickly.

### **NOTE**

Do not sleep where you may be run over by vehicles or on other unsafe areas.

## **MEASURES AGAINST THE EFFECTS OF SLEEP LOSS**

If you cannot sleep because of the mission, discomfort, or mental tension, don't worry about it—sleep loss does NO permanent harm to body or mind.

Protect against the temporary effects of sleep loss on alertness, mood, and task performance.

- Play mental games or talk with buddies to stay alert during dull watches or monotonous critical jobs such as driving at night.
- Take short stretch breaks or get light exercise in place.
- Do not trust your memory-write things down. Double check your communications and calculations.

Watch out for your mind playing tricks (seeing things that are not there) when very tired, and check strange observations before acting.

Do not let bad dreams frighten you into staying awake—they are a normal way your mind has of dealing with combat experiences.

## IMPROVE RESISTANCE TO STRESS

Fear and physical signs or symptoms of stress are normal reactions before and during combat or other dangerous/life threatening situations. You should not let fear or stress keep you from doing your job.

Talk about what is happening with your buddies, especially during after action debriefings.

Learn ways to relax quickly.

Welcome new replacements into your group and get to know them quickly.

If you must join a new group, be active in establishing friendships.

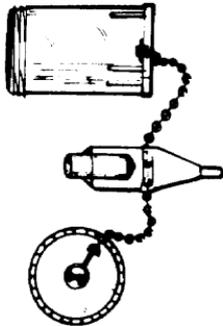
Give each other moral support if things are tough at home or in the unit.

Care for your buddies and work together to provide everyone food, water, sleep, and shelter, and to protect against heat, cold, poor sanitation, and enemy action.

## NOTE

See FM 21-11, first aid for soldiers,  
for first aid procedures.

## Section VII. Noise



**EARPLUG  
CARRYING CASE**

### RECOGNIZE THE TYPES OF NOISE

Impact noise—very loud-short burst of noise such as small arms fire, cannon, or gun fire.

Continuous noise—loud, steady noise such as wheeled vehicle, tracked vehicle, aircraft, and other equipment operations.

### RECOGNIZE THE EFFECTS OF NOISE

To the soldier—

- Immediate—ringing in ears; temporary loss of some hearing that last for minutes to hours; or pain/broken ear drums.

- Long-term—permanent, early hearing loss.
- To the mission
- Soldiers cannot hear important combat noise such as snapping of twigs; metal to metal; and approaching vehicles resulting in the unit position being overrun or destroyed.

## PROTECT YOURSELF AND YOUR MISSION FROM NOISE

Wear ear plugs such as single flange; triple flange; and hand formed.

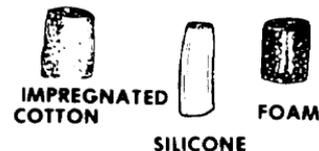
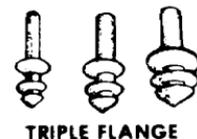
Use on vehicle headgear such as helicopter crew helmet; armor crew helmet; or earmuffs for others.

Keep earplugs and muffs clean to prevent ear infections.

Avoid noise or limit time around noise to only critical tasks.

### NOTE

If you have to raise your voice to be understood, it is too noisy. Put on hearing protectors.



## **Section VIII. Toxic Chemicals NonNBC**

### **RECOGNIZE THE TOXIC CHEMICAL NONNBC THREAT**

Carbon monoxide from gasoline engines and fuel space heaters.

Hydrogen chloride from rocket system exhaust.

Bore/gun gases such as lead, carbon monoxide, and other gases from ammo propellant.

Solvents, greases, and oils from vehicle maintenance and repair.

### **RECOGNIZE THE INJURY**

Carbon monoxide is colorless, odorless, and tasteless. It causes headache, sleepiness, coma, and death.

Hydrogen chloride is a very irritating gas that reacts with water (body fluids) to produce hydrochloric acid in the throat, lungs, and eyes. It causes coughing, tissue acid burns, and flu-like lung disease.

Bore/gun gases cause the same effects as carbon monoxide and hydrogen chloride.

Solvents, greases, and oils cause skin rash, burns, drying, and infections. They cause damage to the liver, blood, and brain. Also many are poisons that may cause cancer.

## **PROTECT YOURSELF AND YOUR MISSION FROM TOXIC CHEMICALS NONNBC**

Carbon monoxide

- Run engines outdoors or with doors/windows open.
- Keep windows cracked where you sleep.
- Do not use engine exhaust for heat.

Hydrogen chloride

- Position yourself upwind of rocket systems.
- Hold your breath until the cloud passes by you.

### Bore/gun gases

- Use onboard vehicle ventilation systems.
- Keep bore evacuator well maintained.

### Solvents, greases, and oils

- Use “Safety” Stoddard solvent.
- Never substitute one solvent for a “Better” one, for example, never use Benzene instead of Stoddard.
- Use coveralls and gloves.
- Wash or change clothing often, especially when soiled by chemicals.
- Always follow label instructions for use and safety precautions.