Searcher Safety & Health part I

Staying Part of the Solution Instead of Becoming Part of the Problem

When you respond to a search, you need to be both physically fit and healthy. A lack of either could jeopardize you, your team mates, the search subject, and more.

The SAR environment has inherent risks that can only be reduced, not eliminated. Searchers must know how to stay safe to avoid becoming victims themselves.

Many times it takes a stronger person to say “I cannot respond” or “I cannot go out on another assignment” so we all need to be aware of our fitness to search and pass on the search if you are not prepared.

Risk Management

- Risk is exposure to loss, injury, or death from a hazard.
- Hazard. Any real or potential condition that can cause personal injury or death, property damage, mission degradation or damage to the environment.
- Mishap Probability. An assessment of the likelihood that, given exposure to a hazard, a mishap will result.

There will always be risk in Search and Rescue.
The intent of Risk Management is to reduce or avoid those risks whenever possible.

Risk Management

- Risk Management (RM) is a systematic decision-making process used to identify and manage hazards that may endanger SAR personnel or the mission.
- Its purpose is to increase overall search readiness by anticipating and evaluating hazards.
- This evaluation is done by weighing the risks and likelihood they will happen against the potential gain.

Four principles of Risk Management

1. Accept risk when benefits outweigh the cost. Risk is inherent in SAR and is involved in every search. Risk is also related to gain; normally greater potential gain may warrant greater risk.

2. Accept no unnecessary risk. We should clearly understand that the acceptance of risk does not equate to the imprudent willingness to gamble. Only take risks that are necessary to accomplish the mission and warranted by the gain.

3. Anticipate and manage risk by planning. Risks are more easily controlled when they are identified early in the planning process.

4. Make risk decisions at the right level. The Incident Commander makes RM decisions due to being directly responsible for the operation. Prudence, experience, judgment, intuition and situational awareness of leaders (both Incident Command and team leaders) directly involved in the planning and execution of the search are the critical elements in making effective RM decisions.

Risk Assessment

HOW LIKELY IS IT TO HAPPEN (A – D)

VERY LIKELY

UNLIKELY

DEATH

HOW BAD MIGHT THE RESULT BE IF IT GOES WRONG (I – IV)

FINISH ASSIGNMENT LATE

		A	B	C	D
SEVERITY	I	1	1	2	3
	II	1	2	3	4
	III	2	3	4	5
	IV	3	4	5	5

Most of us do this intuitively in our daily lives. In SAR we need to give it conscious thought every day and on every mission, applying our best and honest judgment.

As you can see, if you evaluate something and feel that it comes into the red areas you probably shouldn't do it.

Planning ahead can go a long way towards reducing risk impact and likelihood it will happen such as proper training, proper equipment, assignments matching capability and training, getting rest between assignments, taking a nap before you drive home, etc.

If you see something that might be in the Red or Yellow zones, bring it to your team leader or the Incident Command immediately. Its far better to take a few minutes to talk it through than be faced with an injury or death during the search.

Contributors To Human Error

- Poor communications
- Lack of knowledge
- Fatigue
- Lack of resources
- Pressure to perform
- Lack of awareness
- Lack of assertiveness
- Maintaining norms (We always did it that way)
- Complacency
- Stress

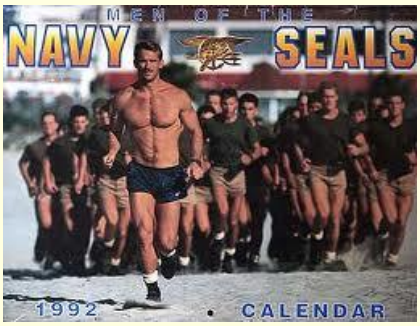
Any of these contributors can impact your safety or your effectiveness, costing a searcher's life or missing a subject and costing them their life.

If you see any of these speak up and ask your team leader or a more experienced searcher about it.

A new set of eyes will frequently see things a little differently and have valuable input.

Being Healthy – it takes more than just while you are searching

- Endurance
- Strength
- Flexibility
- Balance
- Attitude



If you go on a search in poor physical condition, you put other searchers and the search subject at risk!

Being physically fit does not mean being a Navy SEAL but it does mean being in reasonable physical and mental condition. Some things you can do to enhance your ability are:

- A regular physical exam and as often as your doctor recommends
- Know your physical limits
- Plenty of outdoor activities like hiking & snowshoeing to extend your endurance limits and balance and to be comfortable with mechanics of moving in the woods
- Endurance exercise is aerobic exercise: hiking, walking, running, biking or swimming 3 – 5 times weekly at a minimum (20 minutes at target heart [220 – your age x 60% to start] … 80% when experienced)
- Strength should involve both upper and lower body muscle groups
- Flexibility is stretching, Slow stretching is best
- Maintaining range-of-motion or enhancing it
- Balance training like Tai Chi, lunges, single leg balancing
- Attitude

Exercise reduces physical effects of stress. Reduced physical stress = better attitude and more effective searcher.

Proper balanced nutrition is not essential during the short period of a search, but appropriate foods can certainly enhance performance. A search is not an good time to experiment with unfamiliar foods as diarrhea, bowel cramps, and vomiting can result.

Searchers do not waste time or increase their risk by picking berries, munching on plants, etc. Many edible plants have inedible look-alikes and have inedible parts to them. Some edible plant parts are toxic in different seasons of the year.

Complex carbohydrates should be emphasized as the most important type of food when stocking your SAR cache for a mission as they burn into energy and digest easily, and burn in a controlled fashion. Simple carbs like sugars in candy burn fast but all at once. They have their place as a quick pick-me-up or before crawling into your sleeping bag but your primary, long term foods should be built around complex carbs. Food bars respond differently depending on the season, some are brittle and difficult to eat in winter while others are mush in summer. Know what you are taking and that your system tolerates them well.

Complex Carbs you might consider are granola, sandwiches with whole wheat bread, peanut butter, apples or oranges.
Test sport drinks at home before fielding with them as many folks have to dilute them to avoid stomach cramping.

More on Nutrition

In an average 8 hour operational period conducting a ground search you can easily burn 4,000 calories

It is often better to eat small amounts frequently when in the field

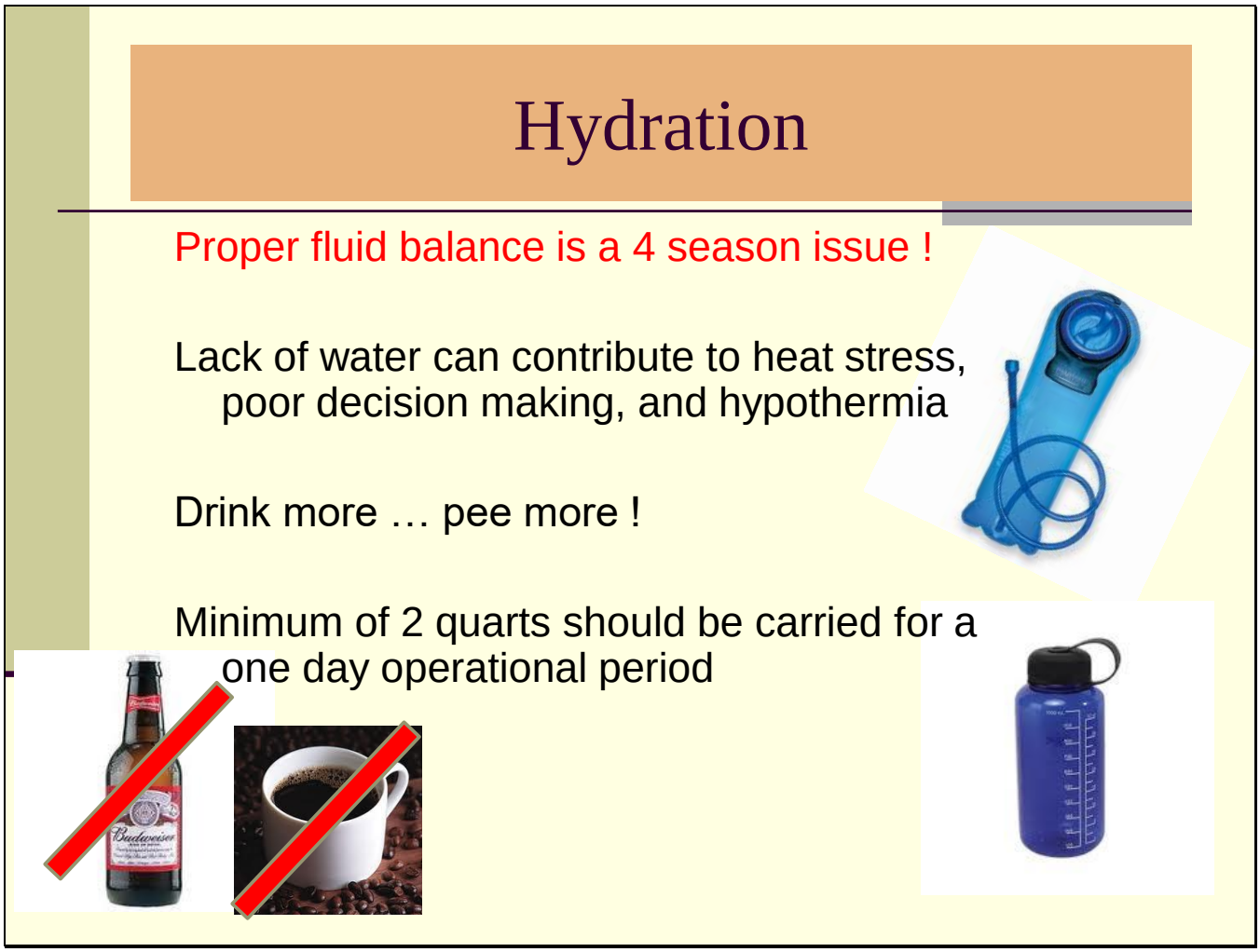
Food has increased importance when forced into the field overnight in colder or wet weather

The average person needs about 2,000 calories in a day and that amount can be doubled during an 8 hour field search and tripled during the same search when extra stress is involved, such as heavy packs, carrying litters for long distances, etc.

It is difficult to maintain high energy levels without eating, but it is possible to function (if properly equipped) with minimal food intake for several days.

Because food is both heat and fuel for your body, in colder weather or when you are wet, it will have increased importance.

Always drink water when you eat – your body cannot properly digest many foods without using a good deal of water in the process.



Thirst means dehydration has already started; if you are thirsty you are probably already at least a pint low on water in your body. A 2 - 3 % reduction in water content of the body can result in up to a 15% decline in efficiency (both mental and physical). All liquids have fluid value to the body but some cause short or longer term fluid loss especially caffeinated drinks or alcohol.

Winter is particularly problematic because you don't feel thirsty as quickly and typically lose large quantities of water through respiration into the lower humidity air. You should be urinating at least as frequently as when you are out of the woods in the summer (normal for you) – and it should be a pale yellow color. Dark urine, with a strong odor indicates dehydration has started and you need to take immediate action to hydrate yourself if possible.

In an average 8-10 hour search period you should carry and be drinking 2 quarts of water. In warm humid weather or if you are going over particularly strenuous terrain three quarts should be carried. Drink even if you are not thirsty in order to stay ahead of it! One technique is to drink some water each time you stop for any reason.

Picture in upper right is a bladder that can go in most packs or use its own pack and can carry a couple quarts of water and permits sipping through the hose so you don't have to stop. (Keep in mind these hoses will freeze during cold weather).

Hydration - Continued

- Plain water is best
- Purifying water
  ALL water out in the woods is suspect of parasite & bacterial infections
  Use filters or chemical treatment
- Sports drinks can be hard on the stomach – consider diluting
- Be careful of caffeine in coffee or soda
- Salt is important…but needs caution

Plain water is very readily absorbed and so helps hydrate quickly and is the best source of hydration you can get. Make sure all water drawn from the field is purified as you can react quickly and very adversely to contaminated water. Just because it is clear or looks clean does not mean it is safe to drink.

- Know your purification system (picture at upper right is a water filter and to the left of it are water purification tablets).
- If you use the tablets allow the time it takes to work.

The use of sports drinks is fine but know how your body reacts to them before using them in the field.

Caffeine is a diuretic (makes you process and urinate out more body fluid) and also can affect many body processes such as blood pressure and the ability to sleep/rest.

Your body needs salt, especially in warm environments but only small amounts (good sources are sports drinks, beef jerky, freeze dried foods, potato chips). You probably do not need the amount in salt tablets under normal circumstances.

How Do I Tell I'm Not Drinking Enough ?

- If your body has enough fluids for every liter you drink you will pee a liter
- Don't pee as often as usual for you
- Urine is dark and smells stronger
- Sweat tastes salty
- Weakness, muscle cramping, nausea

If you feel thirsty, you are already running at a fluid deficit !

We are saying this again because **IT IS CRITICAL**
To review some highlights, you're not drinking enough if:

if you feel thirsty, you are already behind in your water intake

While it is possible to drink too much – it is not likely in the field during a search operation. The conditions caused by too much water in the body typically require an excess of two gallons of water taken in a day without appreciable loss of fluids.

The best way to tell if you are properly hydrated is that your body will get rid of as much fluid as you drink. If you are drinking and not peeing you probably are under hydrated.

Sometimes it is not easy to judge the amount you pee so use the other clues mentioned in the slide as well.

Lack of hydration can make you awkward, stumbly, and uncoordinated and your thinking fuzzy, not the kind of person you would want looking for YOU!

Is There An Easy Prevention ?

Yup – whenever you see anyone else on the search team drinking, consciously think about taking a drink !

This measure is particularly important during cold weather months as people don't tend to understand they need as much or more in the cold dry months.

Many people worry about ill effects from drinking too much water, in fact it is difficult to exercise physically and do that. Ill effects from too much hydration generally start at 2 to 2.5 gallons of fluid intake in a 24 hour period. There are 4 quarts in a gallon so that would be a lot of water.

Get Proper Rest

- Rest during a search is critical to good performance.
- Take breaks while searching every hour or so depending on difficulty of search.
- Between operational periods try to get 1 hour of sleep for every 2 you searched if possible.

Short breaks while searching to eat a little food and drink some water will make you more effective and safer.

Although not always possible, try to get naps between search assignments. According to the National Park Service, studies have show that even 1.5 hours less sleep can reduce your mental capacity and alertness by 32%.

Most Common Problems in the Field

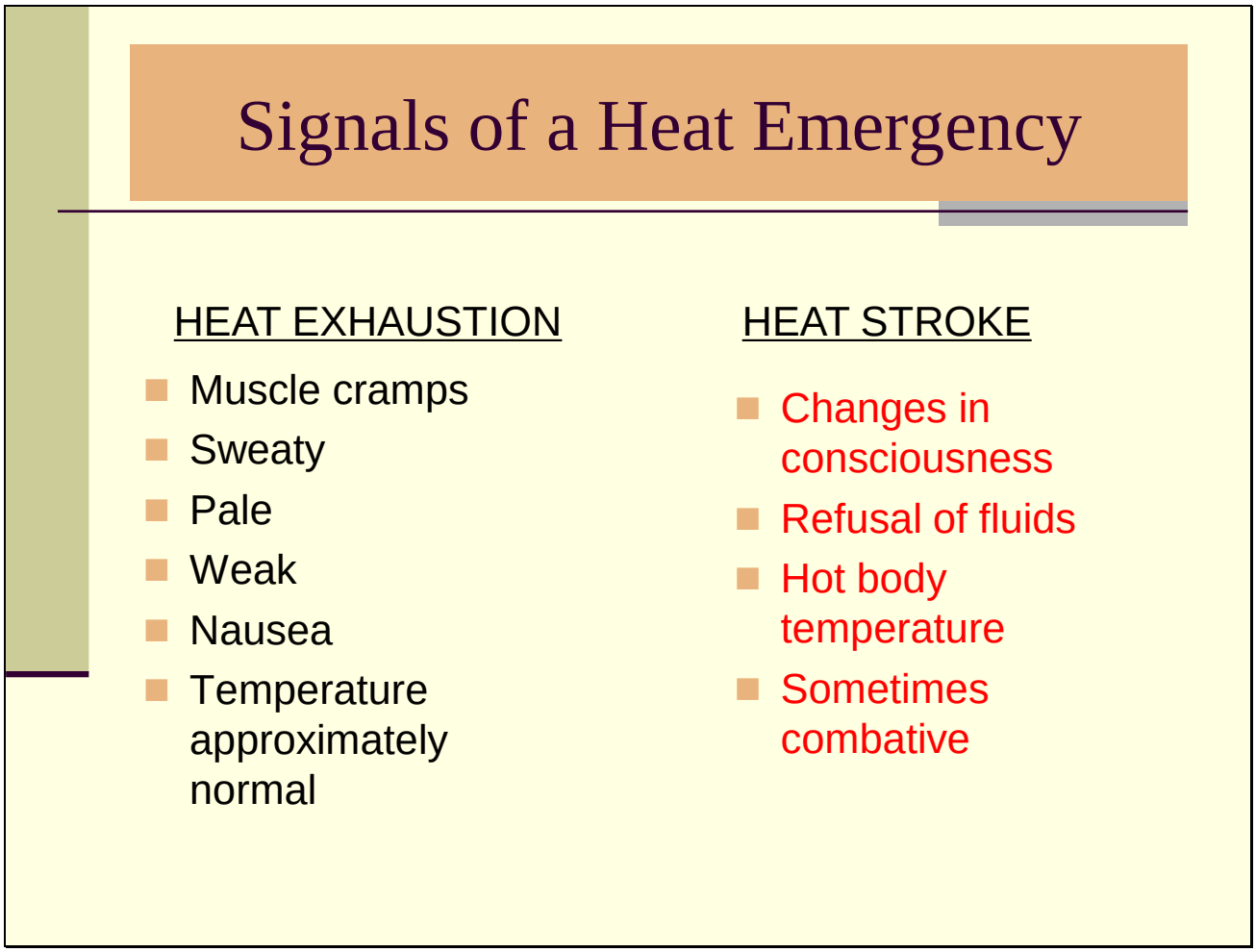
- Foot and ankle
- Eyes
- Heat exhaustion
- Dehydration

Be aware of your surroundings. The most common injuries are from slips, trips and falls because searchers frequently aren't on established travel-ways, the ground underfoot can be quite irregular and as the searcher must be looking for clues, it is easy to misstep.

Hiking boots are the best choice overall and it is important that they have good tread, a solid footbed, and ankle support.

Off-trail walking means branches encounter eyes with uncanny frequency.
EYE PROTECTION IS STRONGLY RECOMMENDED, especially at night.

Heat emergencies and dehydration require more detail due to the potentially serious nature of the conditions.



At first the body is able to maintain normal body temperature, and this is when intervention should happen.

The body displays various signals of problems dealing with heat:

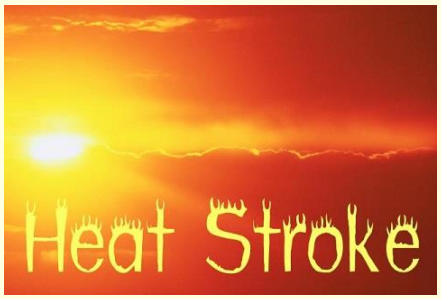
- Muscle cramps are usually in the thighs, calves or the abdomen
- Sweaty pale skin
- Weakness and nausea
- The body is still able to maintain relatively normal temperature

As a heat emergency continues, key signals to watch for are:

- Changes in level of consciousness or mental status changes (this could just be not thinking right)
- Combativeness or seizures
- Refusing to drink fluids
- Skin may be dry but not necessarily
- Inability to maintain approximately normal body temperature

Progress of Heat Problems

- Heat Cramps
- Heat Exhaustion
- Heat Stroke



Heat Cramps, heat exhaustion, and heat stroke are all part of a continuum of the body trying to cope with excess heat exposure. Heat cramps aren't always manifested and sometimes the problem becomes apparent with heat exhaustion.

In any case, heat stresses the body's ability to maintain approximately normal temperature. In heat cramps and heat exhaustion your body is able to maintain the balance, in heat stroke it has lost the ability to effectively regulate core body temperature.

Although people frequently progress through these stages it is possible to go directly to heatstroke without experiencing or noticing the first two stages. The key differentiation is in heat exhaustion the body can maintain near normal body temperature but in heat stroke the body is no longer able to maintain the proper temperatures and the person's temperature will be elevated.

Treating a Heat Emergency

- Remove from source of exposure
- Remove clothing
- Cool (Fan, moisten, apply cold packs)
- Hydrate… 2 – 4 ounces every 10 minutes or so
- Control re-exposure

If there are changes of consciousness or the victim refuses liquids, and you note the body temperature appears to be high:

- Initiate zone cooling
- Arrange for immediate evacuation

Understanding that there is a continuum here, that problems where normal temperature cannot be maintained may lead to problems where it can't be maintained without intervention, is a key concept.

Try to first remove the person from the source of exposure, perhaps into the shade if the sun (as is typical) is the likely culprit. Remove as many articles of clothing as practical and in particular make sure that anything left isn't tightly fitted. An air conditioned car with the seat tipped back can be an excellent resource if you are near one.

Fan the person to enhance heat loss by convection, moisten them so the evaporating water will cool them. Give 2 – 4 ounces plain water to drink every 10 minutes until the person is recovered (cool water whenever possible).

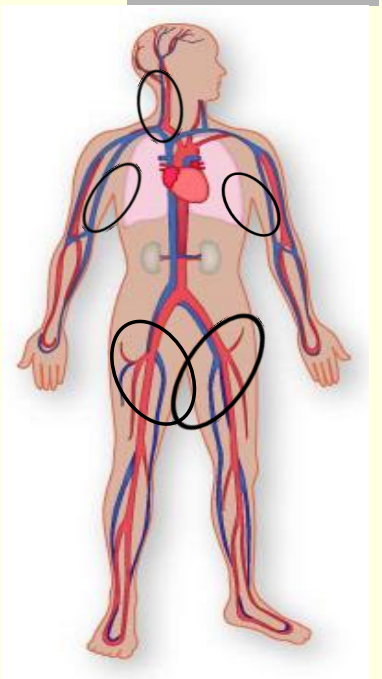
If the person must resume activity under heat-producing conditions, monitor them carefully. Watch for changes in consciousness or if the victim becomes unwilling to continue drinking liquids. This is often noted with suddenly increasing body temperature. **When the body temperature can no longer be self-regulated you have the life-threatening condition of heat stroke**, which is often accompanied by core temperatures of 105 or 106 degrees. If the person feels hot you need to initiate cooling with wetted towels or water bottles with cool water placed in the high heat exchange areas of the body. The towels or water bottles will need to be checked every few minutes and likely will need to be swapped as they pick up body heat.

Heat stroke is a medical emergency requiring immediate evacuation!

Zone Cooling & Heating

What are the high heat loss/gain areas:

- Neck & Head
- Armpits and sides of chest
- Groin



These are the highest heat loss and gain areas of the body.

As we will see in the next few minutes, placing warmed objects such as water bottles in these areas can help warm a cold subject, and placing cool objects can help cool an overheated subject.

What are some things you think these parts of the body have in common?

- *They are all areas where large amounts of blood flow are concentrated and that cooling or heating of the blood will help carry the heating or cooling to the rest of the body most efficiently.*

What About Cold Emergencies ?

- Frostbite & Frostnip

  requires sufficient cold exposure to freeze tissue

  Most prone are:

  Feet & Toes
  Hands & Fingers
  Nose & Ears

- Hypothermia

  The effect from cool or cold on the body as a whole when core body temperature can no longer be maintained

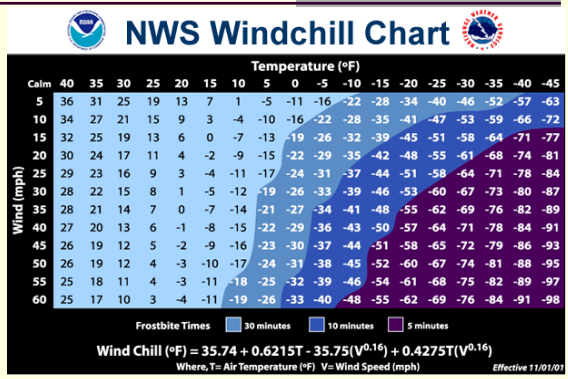
Unlike heat emergencies, which represent a continuum, cold emergencies covered here represent two different conditions entirely.

Frostbite is the actual freezing of a body part and frostnip is the near-freezing of a body part. The areas most prone to freezing are the end-of-circulation parts of the body such as the feet and toes, hands and fingers, nose and ears. Generally speaking, frostbite requires that the actual air temperature is below 32 degrees. Initial appearance of exposed area may be whitish with some resilience to touch followed by total loss of sensation and rigidity to touch. Unexposed areas (i.e., toes and fingers) may go from feeling cold to numbing to no feeling at all.

Hypothermia is the effect of cold or cool on the body systems as a whole. In hypothermia the body cannot maintain normal temperature in the core area – the vital organs. Hypothermia generally begins when the core temperature drops below 95 degrees.

How do I lose Heat ?

- Respiration
- Convection (wind-chill)
- Radiation
- Evaporation
- Conduction



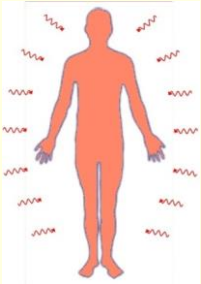
NWS Windchill Chart

Wind (mph) \ Temperature (°F)	Calm	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45
5		36	31	25	19	13	7	1	-5	-11	-16	-22	-28	-34	-40	-46	-52	-57	-63
10		34	27	21	15	9	3	-4	-10	-16	-22	-28	-35	-41	-47	-53	-59	-66	-72
15		32	25	19	13	6	0	-7	-13	-19	-26	-32	-39	-45	-51	-58	-64	-71	-77
20		30	24	17	11	4	-2	-9	-15	-22	-29	-35	-42	-48	-55	-61	-68	-74	-81
25		29	23	16	9	3	-4	-11	-17	-24	-31	-37	-44	-51	-58	-64	-71	-78	-84
30		28	22	15	8	1	-5	-12	-19	-26	-33	-39	-46	-53	-60	-67	-73	-80	-87
35		28	21	14	7	0	-7	-14	-21	-27	-34	-41	-48	-55	-62	-69	-76	-82	-89
40		27	20	13	6	-1	-8	-15	-22	-29	-36	-43	-50	-57	-64	-71	-78	-84	-91
45		26	19	12	5	-2	-9	-16	-23	-30	-37	-44	-51	-58	-65	-72	-79	-86	-93
50		26	19	12	4	-3	-10	-17	-24	-31	-38	-45	-52	-60	-67	-74	-81	-88	-95
55		25	18	11	4	-3	-11	-18	-25	-32	-39	-46	-54	-61	-68	-75	-82	-89	-97
60		25	17	10	3	-4	-11	-19	-26	-33	-40	-48	-55	-62	-69	-76	-84	-91	-98

Frostbite Times: 30 minutes, 10 minutes, 5 minutes

$$\text{Wind Chill (°F)} = 35.74 + 0.6215T - 35.75(V^{0.16}) + 0.4275T(V^{0.16})$$

Where, T= Air Temperature (°F) V= Wind Speed (mph) *Effective 11/01/01*



<u>Maintaining of proper body temperature is our #1 goal for our safety in SAR</u>.
Because our normal body temperature is around 97.6 - 98.6 degrees, it means that the vast majority of time we are giving up body heat to an environment that is cooler than that temperature. This happens in several ways:

- **Respiration** – when you breathe in air the body attempts to very rapidly warm it to body temperature, and this heated air is lost when we exhale.

- **Convection** – this is the familiar wind-chill. It basically means that inappropriately protected skin surfaces will lose heat faster in moving air than in still air. Your body likewise attempts to warm the air next to it, only to have that warmed air blown away to start the warming process all over again. Clothing warms because we heat up the air space between the skin and the clothing and within the clothing material itself.
  The more insulation, the better the heat-trapping involved.

- **Radiation** – the explanation above is directly related to radiation losses. Radiation loss is selective. The head and neck can lose many more times the heat one would believe given their size compared to legs for example. This is because the head and neck are much more vascular (more blood flow).

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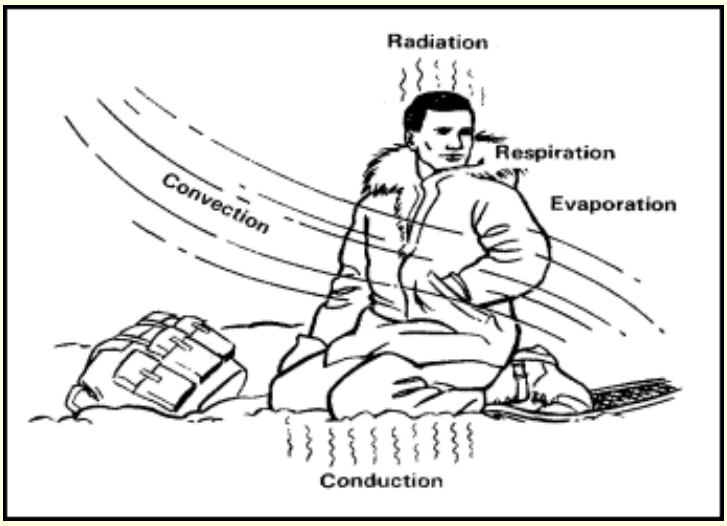
Because our normal body temperature is around 97.6 - 98.6 degrees, it means that the vast majority of time we are giving up body heat to an environment that is cooler than that temperature. This happens in two more ways.

- **Evaporation** – often this is sweat, so it is easy for us to understand that skin with a thin layer of moisture will carry away heat much more effectively as that moisture evaporates. It is critical to understand that this happens in both summer and winter.

- **Conduction** – because solids or liquids are more dense than air, contact with them will wick heat away much faster than in air. Therefore, body parts in frequent contact such as feet and hands are very prone to heat loss. The most intense conductive loss for SAR folks comes from immersion in water. Because water "touches" the body so intimately it wicks heat away very quickly… a minimum of 25 times faster than air of the same temperature and as much as 250 times faster! Also, don't underestimate the conduction that will occur when in contact with a large rock or the ground.

<u>It is Very important when someone is lying on the ground to insulate them from it.</u>

How do I lose Heat ?



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Because our normal body temperature is around 97.6 - 98.6 degrees, it means that the vast majority of time we are giving up body heat to an environment that is cooler than that temperature.

Rescuers need to understand all of the ways in which the body loses heat, and what steps they can take to minimize heat loss. This is largely achieved through proper clothing that provides adequate insulation and breathability and also protection from wind and water.

Recognizing Frostbite or Frostnip

- Tissue hurts badly then feels intensely cold, then numb
- Tissue develops a glossy yellowish or white coloration
- Tissue begins to stiffen

Differentiating between frostbite and frostnip in the field serves little if any practical purpose as both need immediate attention.

Feelings of pain and then being very cold in the danger areas of the body should be a warning to take action now. Once numbness starts the damage has begun.

The skin will look glossy and can get a white to yellowish or grayish coloration. As the process continues, the tissue begins to stiffen.

Unlike hypothermia, frostbite is easily detected by the person with the condition…however, it is not uncommon for persons with developing frostbite to also be hypothermic and that means they may not act on the signals they feel.

Treating Frostbite in the Field

- Don't re-warm frozen tissue unless it can be kept warm and no re-freeze
- Insulate from additional freezing
- Arrange removal for professional care

Frostbitten tissue is durable, it's the area between where it is frostbitten and normal tissue that is subject to tearing damage from rubbing. This applies as long as the body part can be kept frozen, once it is rewarmed there are several complications all best dealt with by a hospital.

The previously frozen tissue becomes pasty and can stick to other tissue or anything else, is intensely painful, blistered, and is subject to further damage from cold exposure quite easily.

In SAR situations the best bet is to prevent frostbite and if it happens NOT to attempt rewarming in the field, but rather to insulate from further exposure. If frostbite does occur, watch for and treat hypothermia and assist with removal to professional care.

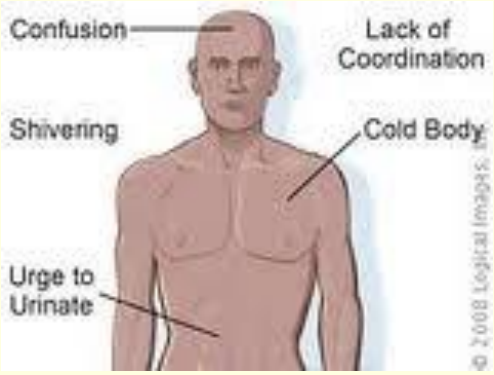
It is preferable that removal be by evacuation but self-evacuation may be more practical, quicker, and do little if any further damage if treatment protocols are followed.

DO NOT SEND THE PERSON OUT BY THEMSELVES AS THEY ARE AT RISK FOR HYPOTHERMIA AS WELL.

Hypothermia

The natural process involved when the body can no longer maintain functional (96-99 or so degrees) warmth to all needed areas of demand

Acute versus chronic



The vast majority of hypothermia cases are detected by someone other than the victim!

Hypothermia then, is the effect of cool or cold (one only takes longer than the other) on the body as a whole.

It is important to realize that both acute and chronic hypothermia are possible in the SAR or other wilderness environment. Chronic hypothermia is especially possible in overnight exposures or longer. The gradual lowering of body temperature doesn't always produce shivering which is normally the first and a key signal that is easy to detect.

Acute hypothermia (sudden cold-front comes in, slip into a stream, sweaty from a strenuous search, etc.) happens as a result of much shorter exposure and very often triggers shivering as a signal. It can also happen to a rescuer standing around at a scene waiting for instructions or during a break during a search.

Hypothermia is not related to freezing of the body, it is related to lowering the vital organ temperature a mere 3 to 4 degrees. Unfortunately one of the first type of cells that is affected by this temperature lowering are the higher reasoning cells of the brain. That means that typically, that the person going into hypothermia may not see it for what it is and <u>their life may depend on their partner noticing AND doing something about it..</u>

<u>KEEP AN EYE ON YOUR PARTNER AND SPEAK UP IF THEY ACT LIKE THEY ARE GETTING HYPOTHERMIA!</u>

Initial Hypothermia

- Shivering usually is present and may be momentarily controlled in early stage
- Guarding
- Withdrawal from activity
- "Feels" cold

- Remove from exposure if possible
- Get out of anything and everything that is wet
- Cover the head
- Give carbs by mouth if fully conscious and alert to add energy
- Person should leave the field with a partner

Shivering is the body's attempt to rewarm using muscle activity to produce body heat. In the early stages of hypothermia the person may momentarily stop shivering. If this is the case, it may be quite easy to rewarm and remain a part of the operation. Often the person will hold their arms and legs close to their body (GUARDING) and begin to remove themselves from the activity. They often will complain about feeling "cold".

In initial stages try to remove them from exposure if possible. Everything that is wet (wet means soaked or moist) must come off. Cover the head, remember selective heat loss! Give quick energy foods (M&Ms, jelly beans, Jell-O in their water, power bars) by mouth as long as the person is alert and fully conscious. Follow the simple carbs up by complex carbs for longer term energy.

Warm drinks do little but help boost morale and provide a "quick" short-term heat hit unless they have quick calories such as warm hot chocolate or Jell-O mix. There is also a risk that a *hot* drink will be gulped by the sensation-numbed person and cause burning…now you will have another problem. Alcohol is a depressant and actually dilates blood vessels making the problem far worse. Caffeine is not a good bet either. Basically, if you rely on just the temperature of the drink to increase body temperature you will need a gallon's worth to make a difference in their body temperature.

NEVER, EVER GIVE ALCOHOL OR CAFFEINE TO A CHILLED PERSON

If you decide that the person should leave the field it is imperative that they have a partner go out with them as they may not be thinking well enough to get out safely.

More Advanced Hypothermia

Symptoms

- Shivering never starts or stops
- Person mentally withdraws
- Decision-making and communication is poor
- May lose consciousness
- May be difficult or impossible to detect pulse or respirations

Treatment

- Remove from source of exposure
- Everything wet off & insulate
- Arrange for evacuation
- Consider zone warming
- Not dead until warm & dead!

As hypothermia progresses shivering may stop. The person becomes more and more mentally withdrawn. Decision-making and the ability to communicate deteriorate significantly. They may mumble when trying to talk, stumble as they walk or fumble and drop things (referred to as "The umbles"). At this point it is critical that you make every attempt to limit further exposure while arranging immediate evacuation. They need to leave the field. Because the person is no longer fully conscious and alert, be extremely careful in providing anything by mouth.

Remove all wet clothing and insulate the person as much as possible and remember to include the head. Handle them gently, be especially cautious about heavy-handling of the chest area as advanced hypothermia puts the subject at risk of cardiac arrest or arrhyhmias. Insulate the torso and head more than the arms and legs if possible. Do not initiate active rewarming unless evacuation to medical assistance will be delayed.

If evacuation will be prolonged you should consider using the heat gain and loss zones of the body to begin rewarming with heat packs or water bottles heated to the point where YOU can still tolerate their touch. Remember this will be in contact with the person for some time. Water bottles will need to be checked frequently and often require reheating. This may be difficult or impractical if there is not a source of warm water. Continue efforts until the person becomes alert and starts shivering again, then move to providing high energy foods to keep shivering going and help their body rewarm itself.

Keep in mind that if you find the subject of a search during cold weather who is not showing any obvious signs of death (significant trauma), they should not be considered deceased! CPR should be initiated if possible and the subject evacuated until they can be warmed up in a hospital setting.

Personal Hygiene

Poor hygiene leads to infections and illness

Foot care is particularly important:

- Keep them clean, warm, and dry
- Dry shoes and socks during off time
- Massage and powder does wonders

Hygiene in SAR is important because of the amount of time spent under less than ideal conditions and the impact that problems in the field can have on you, your unit, and the search itself.

What do you think might be some of the most important ways to maintain hygiene?

- *Stay clean and get dry whenever practical. Dry clothes, in particular dry socks, are critical.*

It is really important that you care for your feet. You need to be able to work hard to keep them clean, warm and dry. When wetted in the field, get them dried as soon as practical. During non-operational periods dry your boots and socks and make sure you slip into something else that permits your feet to dry out like Crocs. Daily inspection of the feet, along with several minutes of massage, and some moisture-controlling powder can work wonders.

Hygiene - continued

Clean & Dry! A wipe down after a search can do wonders for your attitude.

Take good care of your feet

There are several things you can use to enhance hygiene in the field during longer searches.

When in base camp and the opportunity presents, don't pass up a perfectly serviceable shower. Most searches aren't long enough for searchers to be afforded showers so carrying some baby wipes in your car can be a refreshing opportunity to clean yourself. You can uncover body parts progressively to limit exposure… it can work wonders.

Your feet are critical to your being able to search and to get in and out of the woods, take especially good care of them. After a search period, try to take off boots and socks, put some foot powder on along with dry socks or if it is warm enough just a pair of sandals that will permit direct air contact with your feet.

Ticks & Wounds

Poor hygiene leads to infections and illness.

Wound and tick checks and care is critical.

Consider preventative measures – repellent, gaiters.

Hygiene in SAR is important because of the amount of time spent under less than ideal conditions and the impact that problems in the field can have on you, your unit, and the search itself.

It is very important to check for wounds daily, and to check for changes in wound condition in particular. Wounds that are warm to the touch, throb, and/or develop redness merit special concern and medical attention. If you have a wound that is showing any of these symptoms talk to someone with medical knowledge at the Staging Area and tell your team leader.

In season it is also important to check thoroughly for ticks. This is where a "close relationship" with a SAR partner can help… help each other. Know what you are looking for. Deer ticks have a dark head and reddish body, wood ticks are the opposite, and both should be removed immediately. However, deer ticks are quite tiny, like pepper-flakes. Neither is likely to cause serious damage if removed within 12 – 24 hours of the time they embed their mouth parts.

Use constant pressure with tweezers in-line with the body of the tick. It is important to remove the tick intact, if the head is separated from the body Lyme Disease can still be transmitted. Do not slather ticks with oil, Vaseline or the like. Do not try to burn them off. The use of repellent or treating your clothes with permethrin can be helpful prevention.

Stress Indicators

Physical

- Indigestion
- Gas
- Heartburn
- Diarrhea
- Constipation

Mental

- Irritability
- Inability to concentrate
- Difficulty sleeping or nightmares
- Anxiety
- Guilt
- Change in appetite
- Loss of interest in work and family

Stress is an unavoidable part of life. It has helped humans survive for thousands of years, and it keeps us on our toes in dangerous or critical situations. However, too much stress can cause potentially serious physical and mental health problems. Remember, stress can be both physical and mental.

MENTAL: In SAR we may see scenes that are disturbing if we find the person and they are injured or dead. We also may feel some guilt or anxiety if we did not find the person (…did I do everything I could, what if…). For multi day searches we sometimes become very emotionally attached or engaged and if the person is not found may find ourselves needing closure and becoming stressed about the person still being out there somewhere. These feelings are normal and what is important is how we deal with them. First find someone to talk with about your feelings. If the discussion is sensitive to the search, ask your team or unit leadership, they may be a big help just by listening or by sharing some things that have happened to them. Professional help is always available and should be sought out if other methods don't help. Mental stress can manifest itself in any of the ways listed in the slide and should be watched for after a difficult search. Mental stress can also lead to physical stress and may not go away when the exposure to the potential physical triggers goes away.

PHYSICAL: Searches frequently expose us to hard physical work with inadequate sleep. We also tend to eat foods that are different than we may be used to, drink water with different purification methods and levels, and do all this in an environment that may not be as hygienic as we are used to, all of which can disrupt our digestive tract, stress our muscles or joints causing physical stress for us.

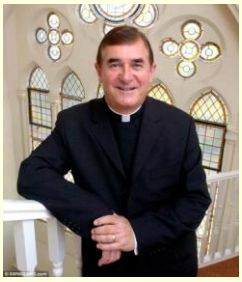
Stress can do real long-term damage to the body and mind.

It needs to be addressed quickly.

Dealing With Stress

<u>Don't hold it in</u>, talk to someone, your team leaders or others on your team

Your spiritual leader at church



Sometimes just a hug from someone who understands

IT IS NATURAL TO EXPERIENCE STRESS WHEN WE ARE EXPOSED TO TRAUMATIC THINGS OUTSIDE OF OUR NORMAL EXPERIENCES.

During searches you may see people with severe injuries or a deceased person or not find the person being looked for. All these things can cause you mental or emotional stress.
Most emergency responders and searchers may experience this and the best approach is to talk to someone about it. Good places are your team leadership, people on your team or from other teams, your spiritual leader or doctor. Many SAR teams have preplanned arrangements for professional help for members who are experiencing post-incident stress.

THE WORST THING YOU CAN DO IS TO KEEP IT TO YOURSELF.
FIND SOMEONE AND TALK ABOUT IT.

Congratulations, you have finished this module

You may close this window to return to the main course and select Health & Safety module part II to complete.

Be sure you keep track on your course checklist so you know which modules you have completed