

COLD WEATHER, SLEEP AND HYPOTHERMIA SURVIVAL GUIDE

Heat-loss control, ground insulation, sleep systems, drying routines, cold injury and emergency decisions.



14

SLEEP

WARM

STAY

ALERT

SLEEP WARM. STAY ALERT.

SYSTEM PRIORITIES

START WITH THE SYSTEM

Protect the body's heat faster than the environment removes it

Cold stress is a systems problem involving shelter, clothing, food, hydration, workload, wind, moisture, ground contact and sleep. The safest plan prevents heat loss early and treats persistent shivering or altered thinking as operational emergencies.

1 Core principles

- Stay dry from precipitation and sweat; moisture strips insulation and accelerates heat loss.
- Insulate from the ground as aggressively as from the air. Compressed bedding loses performance.
- Block wind while preserving enough ventilation to control condensation and combustion hazards.
- Eat, hydrate and schedule work so the body can produce heat without soaking clothing.
- Recognize cold injury early and seek emergency care for severe or worsening symptoms.

Warm air is not enough. Wind, wet clothing and ground contact can overwhelm a small fire and a good attitude with equal efficiency.

2 First-hour priorities

- Establish a dry sleeping platform and deep ground insulation before improving comfort elsewhere.
- Create dry and working clothing categories; protect sleep layers from sweat and rain.
- Stage fire-starting, water, light and footwear so a nighttime problem does not require disorganized exposure.
- Set a pre-sleep routine: eat, drink, urinate, dry feet, adjust layers and inspect shelter ventilation.
- Create clear thresholds for stopping work, rewarming, requesting help or evacuating.

Do not use open flame or unsafe combustion inside an enclosed shelter. Carbon monoxide is colorless, odorless and deadly.

FIELD RULE

Persistent shivering, clumsiness, confusion, slurred speech, unusual behavior or declining consciousness are not endurance tests; they are reasons to stop, shelter, rewarm and seek emergency help.

HEAT-LOSS CONTROL MATRIX

CHOOSE DELIBERATELY

Heat-loss control matrix

Control all major paths of heat loss. Improving one while ignoring another can create a false sense of safety.

Heat pathway	Field example	Primary control	Inspection question
Conduction	Sleeping on cold ground, wet logs or metal	Deep dry ground insulation and raised platform	Is bedding compressed, damp or too thin under hips and shoulders?
Convection	Wind stripping warm boundary air	Windproof shell, tight shelter skin and protected entrance	Where can moving air reach clothing or sleep system?
Evaporation	Sweat, wet clothing, breath and damp bedding	Pace work, vent layers and dry equipment	Did work create moisture faster than the system can remove it?
Radiation	Heat lost from exposed body and large shelter volume	Insulation, hat, smaller protected space and reflector used safely	Is unnecessary volume being heated?
Respiration	Cold dry air and high exertion	Moderate pace, face protection that does not obstruct breathing	Is heavy breathing driven by avoidable overwork?
Fuel deficit	Insufficient food and dehydration	Regular calories, warm fluids and planned reserves	Is declining warmth actually an energy problem?
Sleep disruption	Cold spots, wet feet, fire tending and anxiety	Reliable bedding, dry layers and a nighttime plan	Can the system maintain safe rest without constant crisis work?

Decision note: Test the sleep system in controlled conditions colder, wetter and windier than expected, with the clothing and body position you will actually use.

COLD-NIGHT SLEEP WORKFLOW

REPEATABLE BEATS HEROIC

Cold-night sleep workflow

A safe night is built before darkness. Sequence the work so shelter, bedding, fuel and dry clothing are protected while energy is still available.

1

SECURE THE SHELTER ENVELOPE

Repair leaks and drafts, manage drainage, protect ventilation and reduce unnecessary interior volume.

2

BUILD THE GROUND SYSTEM

Create a dry platform and enough loft to prevent hips and shoulders from compressing insulation to the ground.

3

DRY AND STAGE

Change out of wet work layers, dry feet, protect sleep clothing and stage boots, light, water and fire tools.

4

FUEL THE BODY AND CAMP

Eat an appropriate meal, hydrate, prepare safe fuel and eliminate tasks that would force unnecessary nighttime exposure.

5

MONITOR AND RESPOND

Check cold spots, moisture, shivering, thinking and partner behavior. Rewarm early and activate emergency plans when symptoms progress.

COLD-WEATHER OPERATING SCENARIOS

ADAPT BEFORE CONDITIONS FORCE IT

Cold-weather operating scenarios

Different cold problems need different corrections. Wind, wetness, ground contact and metabolic fatigue are not interchangeable.

1 Wet cold near freezing

- Prioritize rain protection and sweat control.
- Change or dry wet base layers before rest.
- Increase airflow around bedding while keeping precipitation out.
- Use smaller work cycles to avoid soaking insulation.
- Treat persistent dampness as a shelter failure.

2 Dry extreme cold

- Protect exposed skin and extremities.
- Manage breath moisture near sleep insulation.
- Use deep loft and minimize compression.
- Warm tools and boots carefully without fire damage.
- Schedule frequent self-checks for numb or pale tissue.

3 Wind event

- Inspect anchors, roof, entrance and tree hazards early.
- Move work and storage into protected zones.
- Eliminate loose clothing and gear that can snag.
- Reduce trips outside.
- Maintain ventilation even while sealing drafts.

4 Nighttime decline

- Stop and assess shivering, speech, coordination and thinking.
- Replace wet clothing and add insulation from ground and wind.
- Use warm sweet fluids only when the person is alert and can swallow safely.
- Handle gently and avoid unsafe direct heat.
- Request emergency help for severe or worsening symptoms.

FAILURE
 MODES
 AND
 CORRECTIONS

DIAGNOSE
 THE
 SYSTEM

Failure
 modes
 and
 corrections

Cold systems often fail gradually: a damp layer, compressed bed, low food intake and one windy hour combine until judgment declines. Early correction is far easier than rescue.

Failure signal	Likely cause	Best correction
Cold hips or shoulders at night	Compressed or insufficient ground insulation	Add dry loft under pressure points and widen the insulated platform.
Bedding becomes damp	Sweat, breath, ground moisture, leaks or poor ventilation	Identify the moisture source, vent, dry and protect the sleep system.
Hands or feet stay cold	Wetness, constriction, low activity, poor insulation or systemic cooling	Dry, loosen, insulate and rewarm; assess for cold injury.
Shivering returns despite fire	Wind, wet clothing, ground loss, low fuel or progressing hypothermia	Move to shelter, replace wet layers, insulate fully and seek emergency help.
Morning gear is frozen	Moisture trapped in boots, gloves or clothing	Dry earlier, store strategically and keep critical items from saturating.
Thinking and coordination decline	Cold stress, exhaustion, dehydration or hypothermia	Stop work, shelter, rewarm, communicate and activate evacuation criteria.

FIELD CARD, RED FLAGS AND SOURCES

CARRY THE STANDARD

Cold-night readiness and symptom card

The purpose of the sleep system is not merely comfort. It preserves judgment, coordination, immunity, recovery and tomorrow's work capacity.

FIELD CHECKLIST

- ☐ Weather, wind, precipitation and overnight low reviewed.
- ☐ Shelter leaks, drainage, ventilation and overhead hazards checked.
- ☐ Ground insulation remains deep and dry.
- ☐ Sleep clothing is clean enough, dry and protected.
- ☐ Wet work layers separated and drying safely.
- ☐ Food and hydration completed before bed.
- ☐ Fire and combustion plan is safe and ventilated.
- ☐ Boots, light, water and emergency gear staged.
- ☐ Hands, feet, face and skin inspected for cold injury.
- ☐ Shivering, speech, coordination and thinking assessed.
- ☐ Night checks and partner checks scheduled when appropriate.
- ☐ Evacuation and communication thresholds remain clear.

STOP / REASSESS

Persistent or violent shivering, or shivering that stops despite continued cold.

Confusion, apathy, slurred speech, stumbling, poor coordination or unusual behavior.

Waxy, pale, hard, numb or blistered skin.

Unsafe indoor flame, stove or combustion with inadequate ventilation.

Person cannot swallow safely, becomes drowsy or loses consciousness.

AUTHORITATIVE STARTING POINTS

CDC - hypothermia and cold weather
<https://www.cdc.gov/winter-weather/about/about-hypothermia.html>

National Weather Service - cold safety
<https://www.weather.gov/safety/cold>

Wilderness Medical Society
<https://wms.org/>

American Red Cross - first aid
<https://www.redcross.org/take-a-class/first-aid/performing-first-aid/first-aid-steps>

Cold injury and hypothermia are medical emergencies. This guide supports prevention and recognition but does not replace emergency services, medical assessment or professional wilderness-medicine training.