



Ministry
of Defence

Commander's Guide to Cold Injury Prevention

JSP 375 Volume 1, Chapter 42, Annex A Version 1.4 (November 2024)



FOREWORD

General Dame Sharon Nesmith DCB ADC
Vice Chief Defence Staff



“Cold injuries are some of the most common medical conditions that we see across Defence, which can be frequently debilitating and at worst potentially life threatening. Cold injuries can range from the mild discomfort caused by chilblains to potentially life-threatening hypothermia. Cold injury is preventable.

Our personnel continue to live, work and operate in some of the harshest environments and climates across the world, however cold injuries can also be sustained in temperate environments too. Therefore, we all have a responsibility to understand how to prevent, recognise and respond to cold injury.

The purpose of this essential policy document is to improve awareness and the management of cold injury prevention across Defence. It was produced to equip us all with the information to help deal with the challenge of cold injury in a practical and pragmatic manner.

Our first duty as leaders is to place the wellbeing of those we lead at the forefront of everything we do and as such I fully support this cold injury prevention policy which provides the direction and guidance necessary to prevent cold injury and helps to protect our people from preventable harm.”

CONTEXT

Cold injuries can have a significant adverse effect on military training and operations and can result in death or lifelong incapacity. Good leadership, proper training and good practice can prevent or reduce the severity of cold injury. This guide sets out five policy statements, as established by Defence, that **must** be met. It also provides guidance on how to assess and manage the risk of cold injury as part of Defence's standard risk-assessment process.

Preventing cold injury is the responsibility of commanders or managers at all levels, as well as individuals.

The application of the cold injury prevention policy **must** be assured (that is, its use **must** be guaranteed). As part of their overall assurance activity, commanders or managers **must** make sure that the policy is followed and put into practice effectively. Assurance **must** be carried out in accordance with JSP 815 (Defence Safety Management System Framework) Element 12 - Assurance.

Scope

This guide applies to **all those employed by Defence** (military or civilian) including those under the age of 18 (for example recruits and apprentices) as well as those working on behalf of, or under the supervision of Defence (for example, contractors or visitors). It applies to **all Defence activities** carried out in any location (UK or overseas) and at all times of the year. It is not written for young persons in the cadet forces, Defence-run schools, nurseries and so on; those organisations **must** maintain their own safety policies and governance and **must** provide statutory compliant infrastructure and appropriate safe systems of work.

How body cooling occurs

As well as natural heat loss, body heat can be lost by touching something cold (for example, by standing or lying on cold ground), by being in wind or water (convection), and through evaporation (for example, through sweat or rain). Humans cool two to five times more quickly in cold water compared to in air of the same temperature.

Preventing cooling

Even in extremely low temperatures, peripheral (skin level) and core (internal) temperature, along with performance levels, can be safely maintained if the right equipment is used and the right behaviours are demonstrated. Conversely, cold injury may occur in only moderately cold environments when skills are poor, there is little or no opportunity to use the correct equipment, or it is not reasonably possible to limit exposure to the cold. So, adopting appropriate strategies for maintaining body temperature in cold environments is crucial.

TYPES OF COLD INJURY

Cold injury can occur throughout the year, not just in the winter months, and can appear as one or more of the following conditions.

Hypothermia (a core temperature of 35°C or lower) is a medical emergency and can prove fatal.

Freezing cold injury (FCI) and non-freezing cold injury (NFCI) most commonly affect the extremities (fingers and toes, hands and feet, and sometimes ears and nose). FCI involves freezing of the skin, and sometimes of deeper tissues. Prolonged exposure to cold or moderately cold conditions (especially if damp) can cause NFCI, with damage to nerves and blood vessels close to the skin.

Associated conditions

Immersion-related cold shock, hypothermia and drowning

These are common consequences of being in cold water. There are several pathways that can result in drowning including:

- being unable to hold your breath when entering the water, due to the gasping associated with cold shock;
- being incapacitated shortly after entering the water due to cooling of nerves and muscle in the extremities, resulting in not being able to keep the airway clear of the water; and
- unconsciousness as a result of hypothermia preventing the physical activity needed to protect the airway.



These hazards can be reduced by using specialist personal protective equipment (PPE) and lifejackets, entering cold water slowly, and limiting the amount of time in the water.

Snow blindness This is sunburn on the surface of the eye caused by ultraviolet (UV) light bouncing from snow or ice but is not technically a cold injury.

Acute mountain sickness (AMS) AMS, often referred to as altitude sickness, is the effect altitude can have on your body. The symptoms are dizziness, nausea, headaches and shortness of breath, and these can complicate travelling at altitude in cold conditions.

Chilblains These are small, reddish, itchy lesions on the extremities of the body. They rarely cause long-lasting problems.

PLANNING

You have a duty of care, so you **must** make sure that the activities you are responsible for are as safe as possible. This includes making sure that risk assessments are carried out and that control measures (mitigations) to reduce risks are identified and communicated to relevant personnel.

Cold injury is a significant hazard and **must** be considered during the planning phase before an activity is carried out. Specialist advice and guidance can be provided by medical personnel and training personnel.

Policy Statement 1

A commander or manager **must** be appointed to command or supervise Defence activities and they **must** make sure that cold injury is considered when planning those activities. Before the activity begins, personnel taking part in these activities **must** know (by name) who the commander or manager is and who to report any safety occurrences to.

Commander's action

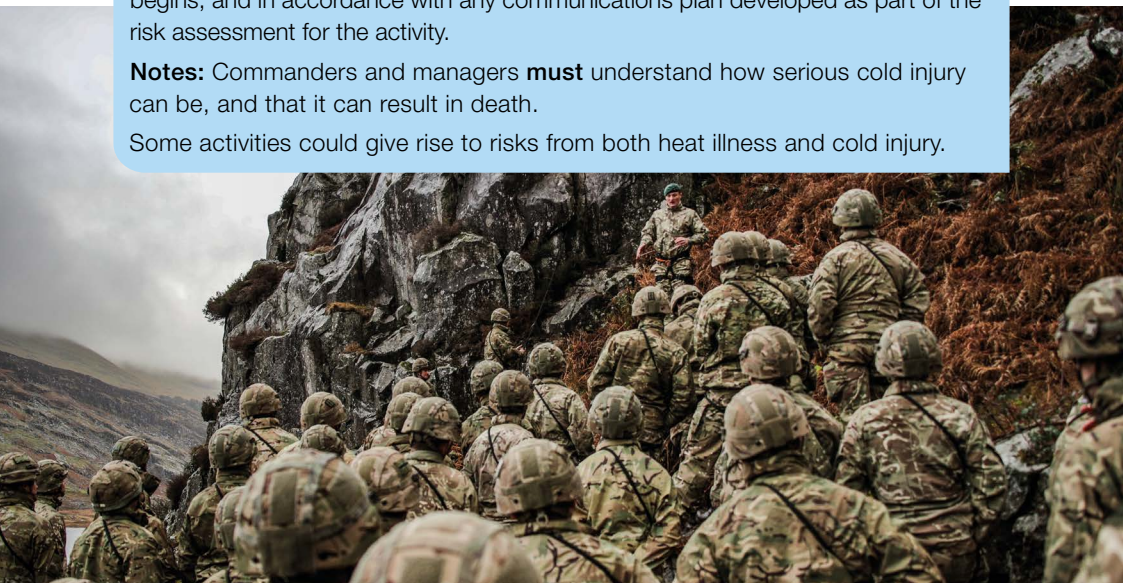
Cold injury is a significant hazard and you **must** consider the risk of cold injury during the planning phase of activities under your area of responsibility.

As the appointed commander you **must** make sure that you know your responsibilities and you **must** make sure that your junior commanders know their responsibilities and the measures required for the activity to be carried out safely.

The identity of the commander or manager (and who to report safety occurrences to) **must** be communicated effectively to everyone taking part in the activity before it begins, and in accordance with any communications plan developed as part of the risk assessment for the activity.

Notes: Commanders and managers **must** understand how serious cold injury can be, and that it can result in death.

Some activities could give rise to risks from both heat illness and cold injury.



RISK ASSESSMENT



Policy Statement 2

The risk of cold injury **must** be considered in the risk assessment for Defence activities in cold weather environments. The risk assessment **must** as a minimum consider the following cold injury risk factors and control measures.

- (1) Medical plan
- (2) Environmental
- (3) Individual
- (4) Clothing and equipment
- (5) Activity

Commander's action

If you are supervising and/or responsible for an activity, you **must** make sure that a risk assessment is carried out). The risk assessment **must** include an evaluation of the risk of cold injury and identify ways to control the risks.

You **must** make sure that any control measures identified in the risk assessment are put in place to make sure the risk of cold injury is reduced to as low as is reasonably practicable (ALARP) and they are communicated to the personnel taking part in the activity.

You may delegate the responsibility to carry out a risk assessment to a competent person, but you are still responsible for approving the risk assessment and the necessary control measures. Once the risk assessment has been approved by you, it **must** be followed.

You **should** request medical and training personnel to assist with risk assessments by them providing you with specialist medical and training advice and guidance. You **must** consider any advice or guidance they provide, including **if they recommend stopping an activity**.

Where you have been informed that a person under your area of responsibility has a known physical or medical condition (for example, a heart condition, breathing difficulties, and so on) you **should** seek the advice of medical personnel and if necessary you **must** re-evaluate the risk assessment .

You **must** record the risk assessment (so that there is evidence that it was carried out) and the recommended template for recording the risk-assessment process is the [MOD Form 5010](#) (please see [Guidance Notes](#)), but alternatives may be used.

THE FIVE-STEP RISK ASSESSMENT PROCESS

When carrying out a risk assessment, it **must** be conducted in line with the five-step risk-assessment process. The five-steps are as follows (these steps are set out in more detail within the main chapter of JSP 375, Volume 1, Chapter 42 - Cold Injury Prevention).

Step 1 - Identify the hazards

Step 2 - Decide who might be harmed and how

Step 3 - Evaluate the risks and identify suitable and sufficient control measures

Step 4 - Record and implement findings

Step 5 - Review the risk assessment and update if necessary

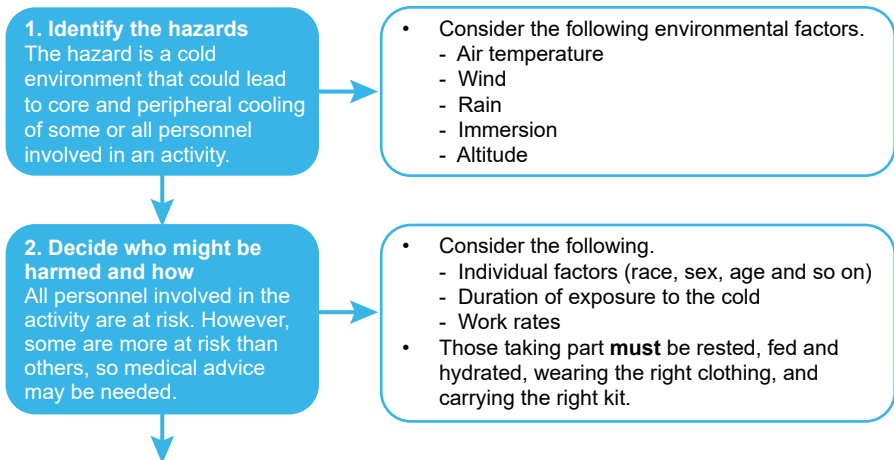
Awareness

Commanders and managers need to be aware of the factors that increase the risk of cold injury. This requires a process of identifying the risk factors and control measures, evaluating them, and taking into account that a combination of risk factors increases the overall risk.

In addition to the temperature and the duration of the exposure to cold weather, air humidity and wind speed are vital factors that **must** be taken into consideration in the risk assessment of whether the activity should still continue.

The five-step risk assessment process, and examples of the risk factors and control measures that must be considered, are shown in the following flow chart, with further details in the risk factor tables.

Risk Assessment Process Flowchart



3. Evaluate the risks and identify suitable and sufficient control measures

The risk assessment needs to consider the likelihood and severity of the risk and identify appropriate control measures.

- Get appropriate information on the following.
 - Weather
 - Availability of equipment and shelter
 - Availability of clothing and footwear
 - Ability to dry clothing
 - Availability of food and water
- Plan verbal checks and regular hand and foot inspections (increase frequency for high-risk personnel).
- Provide suitable clothing and guidance on use (including mandatory use and changes of clothing).
- Provide food and water.
- Plan rotation of tasks.
- Plan facilities for warming up in the field.
- Make sure all personnel have completed relevant training and brief them immediately before the mission.
- Train for buddy checks, and for hand and foot inspections (including using the NFCA Field Assessment Tool (NFAT)).
- Make sure measures for new supplies are in place.

4. Record your findings and implement them

Once the planning has been completed it is time to act.

- Use Mod Form 5010 (or an alternative) to record the whole risk assessment for the activity.
- Make sure everyone taking part in the activity, and all support personnel, understand the risks, control measures and medical plan.

5. Review your assessment and update if necessary

Review the risk assessment before the activity starts to make sure it is still valid and that all the control measures are still in place. If something changes while the activity is underway, a further risk assessment (a dynamic risk assessment) must be carried out.

- If something has changed, carry out a dynamic risk assessment.
- Consider if the existing control measures need to be changed.
- Consider if further control measures are required.
- Record the dynamic risk assessment so that there is evidence that it took place.

RISK FACTORS AND CONTROL MEASURES

Risk factor and control measures table: When carrying out a risk assessment, as a minimum the following risk factors and control measures **must** be considered.

Medical Plan	
<p>As part of the overall risk assessment, commanders or managers must make sure that a medical plan has been developed in consultation with the appropriate medical personnel. The medical plan must identify an agreed and appropriate response to any casualties or medical incidents. When developing the medical plan, the commander or manager should:</p> <ul style="list-style-type: none"> a. consider the level of medical cover (staffing) needed for the activity; b. consider the type and amounts of medical equipment needed for the activity; and c. consider how any cold injury casualties will be managed, including evacuation to a medical treatment facility appropriate to the level of injury. <p>Further medical guidance is given in Chapter 5 (First Aid) of JSP 375 Volume1, JSP 950 Leaflet 2-9-4 and in Defence organisation policy.</p>	
Environmental	
Air temperature	The colder the air temperature, the greater the risk of cold injury. The risk of NFCI increases in temperatures of 15°C or lower, and the risk of FCI generally increases at temperatures of -0.55°C and lower. Breathing extremely cold air, can have several effects on the lungs and respiratory system.
Wetness	Wet clothing next to the skin increases heat loss.
Altitude	The temperature drops by about 1°C every 100m gain in height, and decreased oxygen levels at altitude increase the risk of cold injury.
Wind chill	Heat loss increases with wind strength (see the wind chill table overleaf). Travel in open vehicles creates a similar risk.
Individual	
Race	African and Caribbean personnel are two to four times more likely to suffer a cold injury due to their physiological response to cold (according to 'The effect of ethnicity on the vascular responses to cold exposure of the extremities' (MJ Maley, CM Eglin, JR House and MJ Tipton), published in the European Journal of Applied Physiology).
Sex	Females are generally more susceptible to cold injury than males.
Medical conditions, medication and illness	Some medical conditions, medications and illnesses (such as flu and fevers) can increase the risk of cold injury. It is recognised that there may be times when an individual does not feel well enough to take part in certain physical activities, where this is the case, they should inform the activity leader immediately and refer to the 'Physical Opt-Out and Bad Day Policy' set out in JSP 822

Individual continued

Alcohol	Consuming alcohol within 24 hours of cold exposure may increase the risk of cold injury, affecting both judgement and causing vasodilation (blood vessels widening as a result of their muscular walls relaxing).
Age	Thermoregulation (control of body temperature) weakens with age, but the risk of cold injury as a result of this only begins to rise after the age of about 50.
Lack of sleep and insufficient food or drink	Lack of sleep, poor hydration and insufficient food (such as good-quality carbohydrates) may all increase the risk of cold injury.
Inadequate training	Individuals who have little or no cold-weather training and experience are at greater risk of cold injury. Personnel need to be taught that when it is cold, tasks may be more difficult but they are not impossible and can generally be performed safely.
Inexperience	Those new to the military are at greater risk of cold injury, including as a result of emotional stress due to unfamiliar circumstances.

Clothing and Equipment

Clothing	Clothing and equipment should be appropriate for the environment personnel are operating in (for example, is it waterproof and does it have the correct thermal efficiency?) All clothing must be issued and sized prior to individuals taking part in the activity.
Equipment	Equipment should be appropriate for the environment in which it is being operated. Carrying and using heavy equipment can put extra strain on the body which may increase the chances of injury in cold climates or can result in additional exposure (for example if gloves need to be removed to operate any delicate or digital equipment).
Inadequate training	Those new to the military are at greater risk of cold injury, including as a result of emotional stress due to unfamiliar circumstances.

Activity

Stationary duties	Staying still (for example, when on sentry duty, in small compartments in vehicles, and in defensive fighting positions) increases the risk of cold injury.
Immersion	Being in cold water increases heat loss, more so if the water is moving or personnel are moving in it. Immersion will severely reduce the insulation provided by clothing.
Prolonged exposure	Risk varies between individuals but increases with the duration of exposure to cold. Personnel exposed to cold over several days are particularly susceptible, even if they take breaks to warm up.
Lack of shelter	Shelter is critical for protection against wind, rain, snow and so on, and for creating a warmer environment. Without shelter, even an improvised structure, the risk of cold injury increases.
Contact with metals and liquid	Direct skin contact with metals or fluids with low freezing points (such as fuel) can cause FCI in seconds.

WIND CHILL

The table below (produced by P Tikuisis and RJ Osczevski in 2003) shows the wind chill temperature for a combination of air temperatures and wind speeds. The temperatures are shown in Celsius (°C). Wind speeds are measured at 10 metres above the ground and are shown in km/hr. To convert km/h to mph, divide by 1.609.

Weather forecasts

When planning an activity in the UK, if it is six days or more in advance a long range UK weather forecast temperature (°C) can be obtained from the [Met Office](#) (for example up to 30 days) or for longer periods the [UK climatic averages](#) can be used.

For planning overseas activities that are five-days or more in advance of the activity, the Joint Operational Meteorology and Oceanographic Centre (JOMOC) **should** be contacted to obtain a weather forecast for the location of the planned activity.

The JOMOC can be contacted 24 hours on the following numbers and email.

military: 9360 58112, civilian: +44 (0)1923 958112. Email jomoc@metoffice.gov.uk

V ₁₀		Air Temperature (°C)											
		T _{AIR}	0	-5	-10	-15	-20	-25	-30	-35	-40	-45	-50
Wind Speed (km/h)	5	2	-7	-13	-19	-24	30	-36	41	-47	-53	-58	-58
	10	-3	-9	-15	-21	-27	-33	-39	-45	-51	-57	-63	-63
	15	-4	-11	-17	-23	-29	-35	-41	-48	-54	-60	-66	-66
	20	-5	-12	-18	-24	-30	-37	-43	-49	-56	-62	-68	-68
	25	-6	-12	-19	-25	-32	-38	-44	-51	-57	-64	-70	-70
	30	-6	-13	-20	-26	-33	-39	-46	-52	-59	-65	-72	-72
	35	-7	-14	-20	-27	-33	-40	-47	-53	-60	-66	-73	-73
	40	-7	-14	-21	-27	-34	-41	-48	-54	-61	-68	-74	-74
	45	-8	-15	-21	-28	-35	-42	-48	-55	-62	-69	-75	-75
	50	-8	-15	-22	-29	-35	-42	-49	-56	-63	-69	-76	-76
	55	-8	-15	-22	-29	-36	-43	-50	-57	-63	-70	-77	-77
	60	-9	-16	-23	-30	-36	-43	-50	-57	-64	-71	-78	-78
	65	-9	-16	-23	-30	-37	-44	-51	-58	-65	-72	-79	-79
	70	-9	-16	-23	-30	-37	-44	-51	-58	-65	-72	-80	-80
	75	-10	-17	-24	-31	-38	-45	-52	-59	-66	-73	-80	-80
80	-10	-17	-24	-31	-38	-45	-52	-60	-67	-74	-81	-81	

- Low risk of frostbite
- Moderate risk
- High risk in 30 minutes of exposure
- Very high risk in 5 to 10 minutes of exposure
- Severe risk in 2 to 5 minutes of exposure
- Extreme risk in 2 minutes or less of exposure

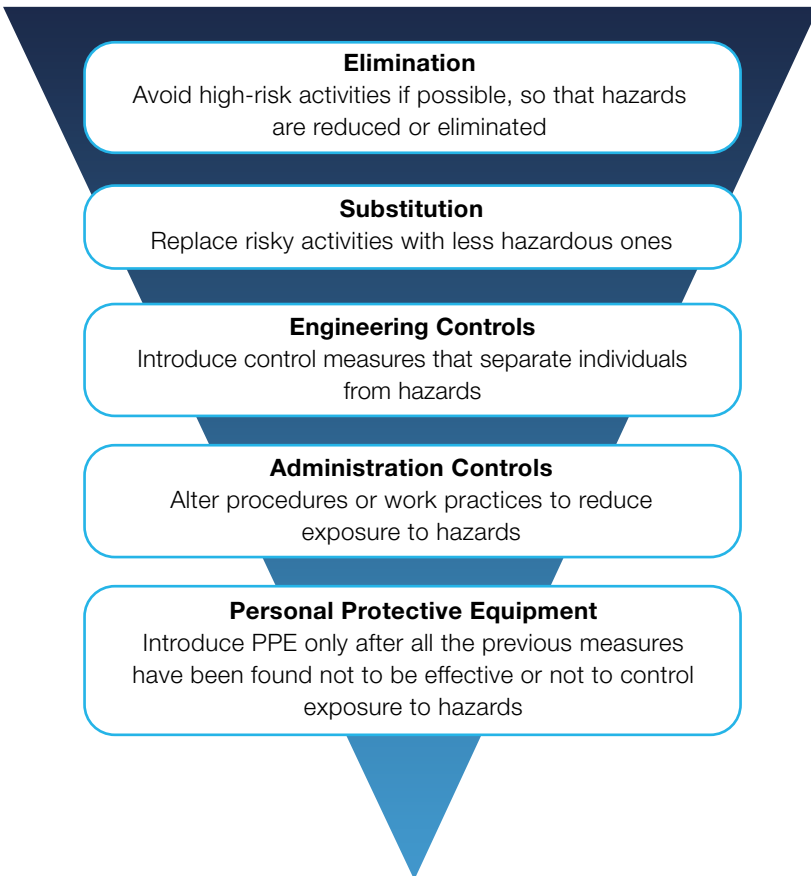
V₁₀ = wind speed measured 10 metres above ground level

The colouring in the table indicates facial cooling during cold air exposure (Bull Am Meteorol Soc BAMS: 927-933).

CONTROL MEASURES

When preparing for deployment in cold conditions, you **must** anticipate the effects the environment can have on the functioning of individuals, as well as the unit, by carrying out a risk assessment. The control measures identified by the risk assessment **must** be implemented to reduce risks to 'as low as reasonably practicable' (ALARP). (See [Annex C](#) - Risk factors and controls (Safe system of work) - for more information.)

The hierarchy of controls - the order control measures should be applied in:



Policy Statement 3

The commander or manager **must** review the risk assessment immediately before an activity starts to make sure it is still valid, that all the control measures are still in place and to re-assess the risk if necessary.

Where there are changes to the activity whilst it is underway or to the surrounding circumstances which could increase the risk of cold injury, then a dynamic risk assessment **must** be carried out.

As part of the dynamic risk assessment the commander or manager **must** consider pausing or stopping the activity, applying further control measures or elevating the risk.

Commander's action

You **must** review the risk assessment immediately before an activity starts to make sure it is still valid and that the control measures identified in the risk assessment still apply and are still in place. As part of the review consider any further control measures that may be needed, before re-approving it. Once the risk assessment has been approved, it **must** be followed. Once an activity has started, you **must** 'dynamically' risk manage it, and if necessary a dynamic risk assessment **must** be carried out.

When delivering the activity, you **must** carry out a dynamic risk assessment where changes to any of the following factors could increase the risk of injury or illness.

- a. If any of the risk factors in Table 1 have changed or the control measures cannot be met.
- b. If anyone shows signs of cold injury.
- c. If there are changes to the activity whilst it is underway (for example duration of the activity).
- d. If there are changes to the physical environment (for example, a change of location or a change to the location).
- e. If there are changes to the surrounding circumstances such as a sudden deterioration in the weather (for example an increase in wind chill, snow, rain and so on).
- f. If the clothing or equipment is no longer (or not) sufficient for the task or the environment.
- g. If an unexpected hazard arises.

Note: It may be necessary for the activity to be paused in order to carry out the dynamic risk assessment.

If a dynamic risk assessment is required, then you **must** consider the following actions.

- a. **Stopping the activity** - The dynamic risk assessment may determine that the activity needs to be stopped. At this stage you need to consult with your chain of command for a decision on how long the activity needs to be stopped for. Any decision(s) made in these circumstances **must** be in line with your Defence organisation's elevation process.
- b. **Applying further control measures** - Further control measures, for example, introducing alternative ways of working, issuing more thermal efficient clothing and so on) could be put in place. If the risk that remains after applying further control measures is higher than the level of risk you are authorised to accept, you **must** elevate the risk through your Defence organisation's elevation process.
- c. **Elevating the risk** - If the risk of an activity is higher than the level of risk you are authorised to accept, you **must** elevate the risk in line with your Defence organisation's elevation process.

There are a very limited number of activities that may need to continue without pausing, stopping, applying further control measure or elevating the risk. Examples include combat operations and other instances where any of these actions could cause a greater risk to life than continuing and it is not possible or proportionate to follow your Defence organisation's elevation process. When this is the case, then you **must** make decisions relevant to these circumstances and then report your decisions at the earliest opportunity in line with your Defence organisation's elevation process.

If no further control measures are required then the activity can continue. However, if the activity has been paused or stopped it **must** only re-start again once the actions from the dynamic risk assessment have been implemented and you give approval for it to re-start.

All decisions you make in connection with the dynamic risk assessment actions above **must** be recorded and retained in line with step 4 of the five-step risk assessment process set out in the main chapter of JSP 375, Volume 1, Chapter 42 - Cold Injury prevention. When able to do so the actions **must** be formally recorded and the recommended template for doing so is the [MOD Form 5010A](#) (please see [Guidance Notes](#)), but alternatives may be used.

COLD INJURY (CI) RISK PLANNING TOOL

This Cold injury risk planning tool **should** be used as a checklist during the planning of an activity if the risk of cold injury could reasonably be expected.

Step 1: Identify the hazard Step 2: Decide who might be harmed and how Step 3: Evaluate the risks and identify suitable and sufficient control measures					
Risk assessments should be continuously reviewed throughout the activity					
Ask yourself		Reponse		Guidance	Notes / Control Measures
		Y	N		
Activity	Is shelter available for periods when personnel are stationary?			The risk of cold injury is increased when stationary, particularly if this follows a period of intense activity. Immersion and wet clothing greatly increases the risk of cold injury.	
	Can long periods of being stationary be avoided?				
	Can immersion be avoided?				
	Are there plans for changing into dry clothes after any immersion?				
Duration of activity	Can rest periods be incorporated in the activity?			Exhaustion increases the risk of cold injury.	
	Can any rest be provided in shelter?			Any structure can provide protection from danger or the weather	
Environmental conditions	Has accurate weather forecast been obtained?			The risk of cold injury increases when the air temperature is below 15°C. Windy and wet conditions greatly increase risk. UK weather forecasts can be obtained from the Met Office and UK WBGT forecasts from the Met Office Military Information Distribution System (MOMIDS). Further details in Annex C. (For overseas forecasts, contact the Joint Operational Meteorology and Oceanography Centre's 24-hour phone line - military: 9360 58112, civilian: +44 (0)1923 958112 from overseas)	
	Has wind chill been taken into account?				
	Can training be carried out in warmer or more sheltered conditions?				

**Step 1: Identify the hazard Step 2: Decide who might be harmed and how
Step 3: Evaluate the risks and identify suitable and sufficient control measures**

Ask yourself		Reponse		Guidance	Notes / Control Measures
		Y	N		
Supervision	Are directing staff (DS) and training personnel competent?			Training personnel and DS provide vital information on preventing cold injury and spotting the early signs of cold injury.	
	Is the medical support plan adequate?				
Preparation / Education	Have the individuals completed the mandatory DLE Cold Injury Prevention Training (Module 1)?			Knowledge of risk factors, and the signs and symptoms of cold injury, should help to prevent cold injury and identify casualties as early as possible.	
	Are those taking part familiar with JSP 375 Chapter 42 and its Annexes?				
Water Intake	Will a sufficient amount of safe water (or other drinks) be available throughout the activity?			Individuals may not feel thirsty in cold conditions, and you may need to encourage drinking.	
Food intake	Has the need for increased calories, and the availability of good-quality carbohydrates, been considered?			Energy requirements increase in cold conditions, so calorie intake needs to be higher.	
Alcohol	Has alcohol been avoided for 24 hours before the activity?			Alcohol increases the risk of cold injury.	
Dress & Equipment	Has the correct clothing and sleeping system been provided?			Correct clothing and equipment will reduce the risk of cold injury.	
	Do all personnel have spare dry clothes?				

**Step 1: Identify the hazard Step 2: Decide who might be harmed and how
Step 3: Evaluate the risks and identify suitable and sufficient control measures**

Ask yourself		Reponse		Guidance	Notes / Control Measures
		Y	N		
Predisposing factors	Can the activity wait until personnel have rested?			Lack of sleep, insufficient food or drink and illness increase the risk of cold injury.	
	Have personnel been provided with food and water before taking part in the activity?				
	Have personnel with underlying medical conditions that may put them at a higher risk of cold injury, and those who are unwell or injured, been identified and reviewed by medical personnel?				
	Have previous cold injuries been declared to, and investigated by, medical personnel?			Those with previous cold injury may be at greater risk.	
	Are any personnel in more vulnerable ethnic groups?			African and Caribbean personnel may be at greater risk.	

Step 4: Record your findings and implement them

Action	Comment
Record	Record the cold-injury risks as part of the overall risk assessment, and make sure the risk assessment is authorised by you or another named commander.
Report and elevate	Report additional risks and elevate any risks that you cannot control, or that have not been authorised, up the chain of command.
Communicate	Make sure everyone taking part and all support personnel understand the risks, control measures and medical plan. Use orders, briefs, exercise instructions and so on.
Training	Carry out pre-activity training if appropriate or necessary. Make sure you identify and monitor the individuals at greater risk. Use qualified personnel to carry out the training.
Consider the balance of risk and reward	Does the reward for taking the risk reflect the level of risk taken? Would a greater risk arise from pausing the activity? There are times when greater risk is acceptable (for example, when preparing for operations, to make sure personnel are operationally ready).
A risk assessment must be approved by the commander.	

Step 5: Review your assessment and update if necessary

Ask yourself the following and confirm higher up the chain of command.

- What is the consequence of stopping, or not going ahead with, the activity? Can alternatives be found?
- Have you identified all the risks and the individuals at greater risk?
- How often do I need to review the situation?
- Have I recorded any extra control measures?

Active management and rapid responses to changing conditions or signs of risk are vital for avoiding serious cases of cold injury. The **RAPID** checklist below is intended as a guide for commanders to use just before and during a planned activity, to make sure the key elements of the safe system of work and training are in place. It does not replace the Defence five-step risk-assessment process used to carry out a formal risk assessment of the activity.

What to do		Comment
R	Assess, understand and control the Risks	<ul style="list-style-type: none"> • Make sure there is an up-to-date risk assessment. • Make sure the risk assessment is checked and signed by the person responsible for the activity. • Do you understand the controls set out in the risk assessment?
A	What are the specific considerations relating to the Activity ?	<ul style="list-style-type: none"> • Does the activity increase risk? Do you understand the intensity of the activity? What clothing and equipment is needed? • Is it a test, what is the duration and do you have the correct equipment? • How would you manage an emergency?
P	Are the Personnel prepared and competent for the activity?	<ul style="list-style-type: none"> • Consider acclimatisation, education and training, experience, fitness, injuries, and the effect of other activity. • Are those taking part rested, fed and hydrated, wearing the right clothing and carrying the right kit? • Do you have enough personnel with the necessary knowledge, skills, experience and behaviours (KSEB) for the activity?
I	Has the correct Information been supplied to the participants?	<ul style="list-style-type: none"> • Does everybody understand the control measures? • Do those taking part understand the causes, signs and symptoms of cold injury and know what to do if they have or witness them? • Does the medical plan have adequate resources (both personnel and equipment) and have personnel been adequately briefed? • Are casualty procedures rehearsed and agreed with all personnel?
D	Dynamically risk manage the activity?	<ul style="list-style-type: none"> • All activity must be 'dynamically' risk managed, with risk assessments carried out while the activity is underway as well as before it starts. • How will you manage a situation and prevent an emergency? • What could trigger a review of the risk assessment? <ul style="list-style-type: none"> - Difficulty - is the activity more difficult than you thought (terrain, intensity and so on)? - Duration - is the activity lasting longer than planned? - Casualty - has there been a cold-injury casualty? - Environmental - has there been a change to the weather forecast (such as temperature, humidity, cloud cover, wind strength and wind chill)?

CONDUCT

Policy Statement 4

Commanders and managers **must** monitor the activity to identify and immediately treat any cases of cold injury. All suspected or confirmed cold injury cases **must** be reported and investigated in accordance with their Defence organisation's safety occurrence reporting procedures.

The Defence Accident Investigation Branch (DAIB) **must** be notified immediately of all cold injury cases that resulted in hospitalisation and/or injuries that have been assessed by a medical professional as grades 3 or 4 on the [Cauchy Frostbite Scale](#). Additionally, the DAIB **must** be notified where there are four or more suspected cases of cold injury during the same activity.

Commander's action

You **must** monitor the activity whilst it is underway and liaise with junior commanders or managers, safety and medical personnel, to identify any signs of cold injury. Act quickly if you identify suspected cold-injury casualties and make sure that effective treatment is delivered immediately. If NFCI is suspected, the casualty **should** be slowly rewarmed.

Cold injury casualties **must** be treated in accordance with the Medical Plan that was developed during the activity planning stage. Further direction on the treatment of cold injury is set out in JSP 950 [Leaflet 2-9-4](#) (Medical Management of Cold Weather Injury). Further information and guidance for individuals is set out in [Annex B](#) (Individual's guide to cold injury prevention).

All suspected or confirmed (clinically diagnosed) cold injury cases **must** be reported and investigated in line with Defence organisation policy and Defence policy for safety occurrence reporting which is set out in [Chapter 16](#) (Safety occurrence reporting and investigation) of JSP 375 Volume 1.

You **must** make sure that you or your chain of command report all suspected or confirmed (clinically diagnosed) cases of cold injury within 48 hours and in line with your organisation's reporting procedures. Cases **should** be reported as suspected until formally diagnosed as cold injury by a medical professional in a cold injury clinic.

As a minimum, reports **should** specify the time, location, Met Office weather forecast (if available), what they were doing, what clothing was being worn at the time and type of activity being undertaken. Personal details of the casualty **should** include their name, rank, service or staff number and a description of the illness or injury.

The Defence Accident Investigation Branch (DAIB) **must** be notified immediately of all cold injury cases that resulted in hospitalisation and / or injuries that have been assessed by a medical professional as grade 3 or 4 on the [Cauchy Frostbite Scale](#). Additionally, the DAIB **must** be notified where there are four or more suspected cases of cold injury during that same activity. The DAIB **must** be contacted on their duty phone line - 01980 348622 - which is available 24 hours a day, seven days a week.

Unit medical centres **must** be told about all suspected or confirmed cases of heat illness, through the chain of command, to make sure appropriate medical follow-up action (see JSP 950 leaflet 2-4-4), formal diagnosis and recording takes place.

Defence tasks can often be extremely demanding. To adequately prepare military personnel for operations, the training and selection activities must be robust and realistic. They will sometimes push people beyond what is comfortable for them, but in a controlled and safe environment.

No life should be risked by pushing on through life-threatening conditions during training or assessment.

RECOGNITION AND RESPONSE

- early recognition of cold injury can save lives

If the risk of cold injury could be reasonably expected, Defence personnel **should** have a basic knowledge of the cold injury prevention policy ([Chapter 42](#) of JSP 375, Volume 1). The minimum requirement is for personnel to understand what causes cold injury, what the signs and symptoms are, what measures to take if they recognise cold injury in themselves or others, and what they can do as an individual to help reduce the risk (for example, looking out for colleagues to minimise the sense of isolation).

Commanders **should** fully understand the signs and symptoms of cold injury and the actions to be taken.

- You **should** put a 'buddy' system in place to monitor performance and health. Teach personnel to check their buddies every few hours.
- You **should** appropriately supervise your personnel at all times in cold conditions and make sure hand and foot inspections are carried out frequently. If personnel say they are feeling cold, extra checks **should** be carried out. The NFCI Field Assessment Tool (NFAT) at [Annex E](#) **should** be used as a guide for all hand and foot inspections.
- The signs and symptoms of cold injury are varied, and each casualty will display symptoms differently. The typical cold injury signs, symptoms and first-aid guidelines are set out in the following flowcharts.



FIRST AID: Hypothermia

Typical signs and symptoms of hypothermia are as follows. Not all symptoms may be present.

Mild

- Casualty says they feel cold
- Cold to touch
- Uncontrolled shivering
- Mild confusion, disorientation, or irritability
- Loss of manual dexterity (clumsiness)

Moderate or severe

- Slurred speech
- Lips may turn blue
- Shivering has stopped
- Apathetic, confused, irrational (may deny problem and refuse help)
- Reduced level of consciousness
- Slow or irregular pulse or undetectable pulse
- Unresponsive and may look dead

If anyone taking part in the activity shows any signs or symptoms of hypothermia, pause or stop the activity and then:

- remove the casualty from immediate danger;
- carry out the 'airway, breathing and circulation' (ABC) assessment; and
- assess the severity of hypothermia.

Mild hypothermia

Prevent further cooling

- Protect the casualty from the wind and rain - (move to shelter or shield them).
- Put a layer of insulation between the casualty and the ground.
- Remove wet clothing.

Moderate or severe hypothermia

Handle the casualty very gently

- Keep the casualty horizontal, lying as flat as possible.
- Carefully check for signs of life, for at least 60 seconds.

Are there signs of life (breathing, a pulse)?

Yes

No

- Put any available dry, warm and windproof clothing on the casualty.
- Cover the casualty's head and neck.

Gently warm the casualty

- Give the casualty high-energy food such as chocolate.
- Huddle around the casualty.
- When the casualty is dry and has been stable for at least 30 minutes, help them with gentle exercise.
- Transfer the casualty to a heated environment when possible.

The casualty can return to the activity when a clinical assessment finds that they have recovered.

Note: A single case is a warning that other personnel are at risk. A dynamic risk assessment must be carried out and any extra control measures that are identified must be put in place.

Is the casualty conscious or unconscious?

Conscious

Treat the casualty as you would for mild hypothermia
- prevent further cooling and gently warm.

Unconscious

Gently place the casualty flat or in the recovery position, on top of an insulating layer between them and the ground if possible.

Are any of the following true?

- The conditions make it too unsafe to rescue the casualty.
- It is obvious that the casualty is dead and could not be resuscitated.
- The casualty was buried by an avalanche for more than 60 minutes and they have no pulse.

Yes

Consider withholding or stopping CPR.

No to all

Immediately call for evacuation transport and start CPR.
• If continuous CPR is not possible due to difficult or dangerous conditions, consider:
- delaying CPR; or
- performing CPR intermittently.

Prevent further cooling and gently warm the casualty as for mild hypothermia, as long as it does not prevent effective CPR or delay transport.

Evacuate the casualty for emergency care (Civilian emergency services or Role 2/3 medical treatment facility (MTF))

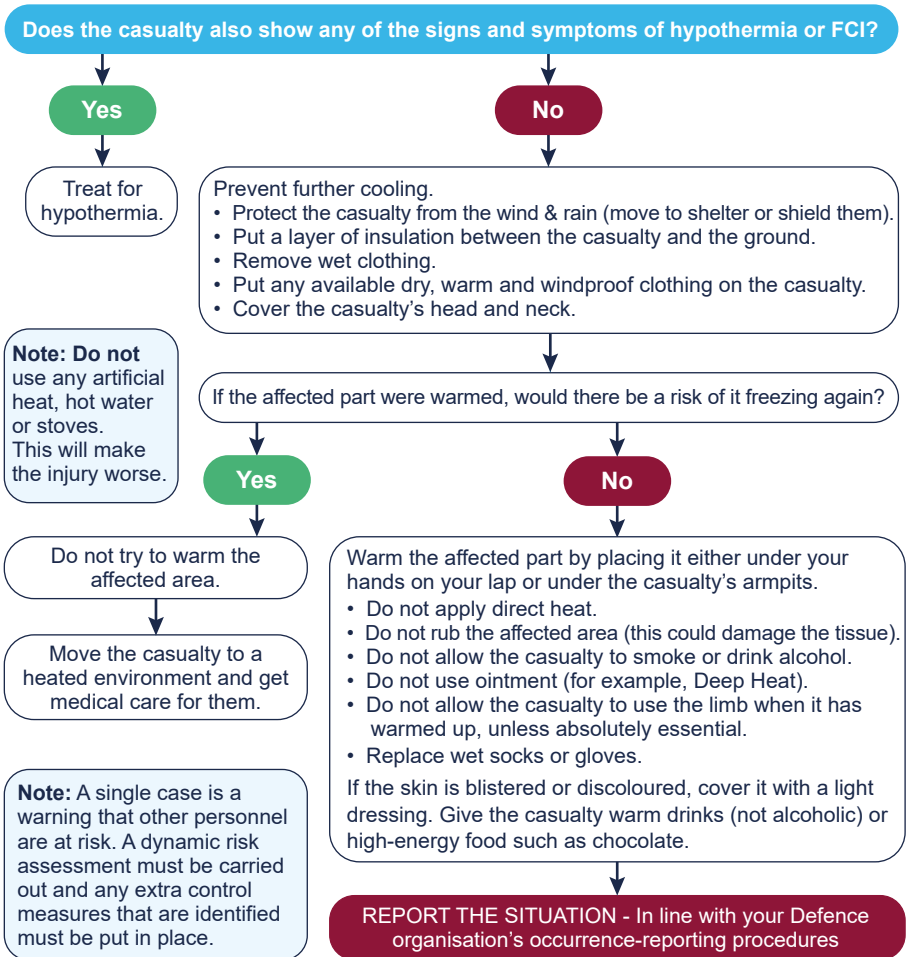
REPORT THE SITUATION
In line with your Defence organisation's occurrence-reporting procedures

FIRST AID: Freezing Cold Injury (FCI)

Use the NFCI Field Assessment Tool (NFAT) at Annex E as a guide for hand and foot inspections.

Suspect FCI if a hand or foot inspection identifies any of the following signs and symptoms.

- The affected area of skin is much paler than normal, with a clear border between the frozen skin and the normal coloured skin.
- The casualty is not in pain and there is no feeling in the affected part.
- The affected part feels cold and hard to the touch.
- Any skin that is warming up appears blistered and bruised.



FIRST AID: Non-freezing Cold Injury (NFCI)

Carry out a hand and foot inspection using the NFCI Field Assessment Tool (NFAT) in Annex E.

You should suspect NFCI if a person is suffering numbness, tingling, pain or swelling in their hands or feet after prolonged exposure to cold or wet conditions.

Prevent further cooling

- Protect the casualty from the wind and cold (move to shelter or shield them).
- Put a layer of insulation between the casualty and the ground.
- Remove wet clothing.
- Put any available dry, warm and windproof or waterproof clothing on the casualty.
- Cover the casualty's head and neck.



Gently warm the casualty

- Provide warm food and drink.
- Huddle with others around the casualty.
- Once the patient is dry, has had some food and has been stable for at least 30 minutes, encourage mild exercise.
- Re-warm hands and feet using available measures (body warmth, clothing, rubbing, hand warmers).

Do not immerse the hands and feet in water or hold them up to a flame.



When the casualty has warmed up, follow the management guidelines in NFAT.



REPORT THE SITUATION - In line with your Defence organisation's occurrence-reporting procedures

Note: Do not use any artificial heat, hot water or stoves. This will make the injury worse.

Note: A single case is a warning that other personnel are at risk. A dynamic risk assessment must be carried out and any extra control measures that are identified must be put in place.



RECOVERY

Any casualty with FCI or NFCI will be downgraded while they are injured. Most people will recover from their injury, but how long this will take can vary from less than a week to a number of years. A casualty is considered to have recovered when they do not have any symptoms when in the cold and recovery has been confirmed by a medical professional.

During recovery, the casualty can do outdoor work but their protection from the cold **must** be enough to prevent cooling to the point of loss of feeling. This will vary from person to person. You **should** regularly check that the casualty is warm (this can be by asking them every hour) and there **must** be arrangements in place to remove them from the cold environment within an hour if they show any signs or symptoms of further cold injury. You **should** then manage the situation as set out in the NFAT.

A casualty can be deployed to cold environments if appropriate support is in place. A rigorous risk assessment **must** be carried out and recorded on the Medical Risk Assessment, with evidence. The control measures identified in the risk assessment **must** include providing adequate protection from the cold and ready access to facilities where casualties can warm up if needed.

Once symptoms have gone and a medical examination has confirmed that the casualty has recovered, the medical officer will recommend that they start to be exposed to increasingly cold environments to make sure they have a normal response to cold. Once this has taken place, upgrading the person who has recovered may be considered in line with JSP 950, [Leaflet 6-7-7](#).

The Defence organisation is responsible for overseeing the controlled re-exposure (progressive exposure to cold, in terms of both duration and severity) of the recovered person. Exposure **should** start with short periods spent in relatively mild conditions, building up to longer periods in more severe conditions. The person **should** be exposed to the full range of duties required of their career employment group (CEG). For example, those who deploy forward **should** spend at least three consecutive nights in UK winter conditions or equivalent.

REPORTING, NOTIFYING, INVESTIGATING AND RECORDING

MOD Form 5010 **should** be used to record risk assessments, but alternatives specified by a Defence organisation's Safety and Environmental Management Systems (SEMS) may be used. Risk assessments **must** be retained for audit and investigation purposes, as set out in [Chapter 39](#) of JSP 375, Volume 1 (Retention of records).

MOD Form 5010A should be used to record any actions from the dynamic risk assessment and **must** be retained in line with Step 4 of the five-step risk assessment process set out in the main chapter of JSP 375, Volume 1, Chapter 42.

All suspected and confirmed (clinically diagnosed) cases of cold injury **must** be reported and investigated in line with your Defence organisation's policy and Defence policy for safety occurrence reporting procedures, which is set out in [Chapter 16](#) (Safety occurrence reporting and investigation) of JSP 375 Volume 1. The actions for reporting to your organisation's reporting system and notification to DAIB, are covered in the 'Commander's actions' set out in Policy Statement 4.

As a minimum, reports **should** specify the following.

- Details of the activity being performed - type, time and location.
- Met office weather forecast (if available).
- What they were doing, what clothing was being worn at the time.
- The casualty's personal details - name, rank and service number for military personnel and name, grade and staff number for civilian personnel.
- A description of the cold injury, recording this as 'suspected' until it is diagnosed by a medical professional.

Unit medical centres **must** be told about all suspected or confirmed cases of cold injury, through the chain of command, to make sure appropriate medical follow-up action (as per JSP 950, [Leaflet 2-9-4](#)), formal diagnosis and recording takes place. The chain of command **must** carry out an investigation locally to identify lessons that can be learnt and shared with other units.

A rapid, local, easy-to-use alert mechanism, to make all local units performing similar activities aware of all cases of cold injury as they arise, **must** also be considered as part of the planning and the risk assessment process.

For confirmed cases of cold injury, a Unit Investigation **must** be carried out and use an appropriate investigation method to identify causal and contributory factors (the factors that contributed to the case) and the action needed to avoid those factors in the future. The actions **should** be tracked until the investigation has been completed.

TRAINING

Policy Statement 5

Those involved in planning or undertaking activities which involve any risk of cold injury **must** receive suitable training.

Commander's action

Make sure that:

- you have received suitable and sufficient training and you are competent to consider cold injury when planning, taking part in or supervising any Defence activity;
- those under your command have a basic awareness what causes cold injury, what the signs and symptoms are, and what they can do as an individual to help reduce the risk; and
- you have access to and utilise medical personnel to provide advice with planning and undertaking activities.

All commanders and managers have a duty of care, meaning that you are legally responsible for the health and safety of others and **must** be appropriately trained.

If the risk of cold injury could reasonably be expected, then all personnel (military and civilian) **should** have a basic level of knowledge of the cold injury prevention policy as set out in the main chapter of JSP 375 Volume 1, Chapter 42.

The minimum requirement is for personnel to understand what causes cold injury, what the signs and symptoms are, what they can do as an individual to help reduce the risk, and what control measures to use if they notice signs of cold injury in themselves or others. Further information and guidance for individuals is set out in [Annex B](#) - Individual's guide to preventing cold injury.

To help all personnel understand the causes and effects of cold injury, an introduction to cold injury prevention training (Module 1) is available on the [Defence Learning Environment \(DLE\)](#) and **must** be completed as follows:

- a. **Module 1** training **must** be completed by all military personnel at the earliest opportunity (for example Phase 1 training for new entrants) and then **at least** every two years for the rest of their career.
- b. **Module 1** training **must** be completed by all civilian personnel that are taking part in any activity where a risk of cold injury could reasonably be expected and then **at least** every two years thereafter if they regularly take part in this type of activity.

Commanders, managers and those planning activities **must** assess the risks of cold injury and take action to reduce and prepare for those risks. To support this, a more detailed package of cold injury prevention training courses for commanders or managers are available on the DLE as Module 2.

Module 2 training **must** be completed by all commanders or managers in advance of them supervising or planning any activity where a risk of cold injury could reasonably be expected.

Once completed, the training will be valid for two years, after which point the currency expires. The course would only need to be completed again if two years has expired and the commander or manager was supervising or planning another activity where a risk of cold injury could reasonably be expected.



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