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1. Wintertime Safety: Walking and Working

Walking and working in snowy/icy/cold conditions are the focus of this article. Let's begin by reviewing suggestions for "walking." Walking around campus or from your vehicle/bus to your workplace during the winter can be hazardous. Every winter slip/trip/fall injuries at UNL attributed to snow and ice account for approximately 3% of the overall number of injuries in a given year. That may not sound like much...until YOU are one of the injured.

Just like winter driving, winter walking requires anticipation. Think "defensive walking." Follow these guidelines to help avoid injury:

- Use **appropriate footwear** for the surface/conditions. Avoid slick-soled shoes. Wear boots/shoes/overshoes with grip soles such as rubber or neoprene composite.
- Plan ahead to give yourself **sufficient time** to reach your destination.
- Plan your route and **watch where you walk**. Avoid routes that have not been cleared or appear glazed over.
- **Avoid carrying** large/heavy/awkward objects that can obstruct your view or affect your balance or center of gravity.
- Use special care in **parking lots**. Try to park in areas free of ice. When entering/exiting your vehicle, use your vehicle for support.
- Think about the **walking surface** whenever you move about campus, especially on days that are sunny. Some areas previously cleared may have partially thawed and refrozen, especially near the edges, leaving a glaze of ice.
- Use caution when **entering a building** as any snow left on your footwear will thaw with the building heat. Notice if the floor is wet from previous entrants. Avoid such indoor wet areas and if they cannot be avoided, traverse them the same as you would walk on ice. Contact Custodial Services to inquire about equipping areas prone to track-in with walk-off mats.

- **Pay complete attention** to your walking. Don't talk on the phone or text, search for items in your purse/briefcase, get distracted by greetings/conversation, think ahead to events of the upcoming day, etc.
- Always use “**defensive walking**” techniques. Watch for hazards like black ice.

If you must walk on slippery surfaces:

- Take short steps or shuffle your feet. Walk more slowly so you can react quickly to a change in traction.
- Bend slightly as you walk to keep your center of gravity over your feet. Curl your toes under and walk as “flat-footed” as possible.
- Test potentially slick areas by tapping your foot on them before proceeding.
- Avoid uneven areas and stepping up/down on icy areas such as curbs.
- Keep your hands out of your pockets. Use your arms for balance. Imagine you are going to “walk like a penguin.”

Resources Specific to Winter Walking:

- Snow & Ice Management Association “Safe Winter Walking”
<http://www.sima.org/discover-sima/public-safety/safety-tips/safe-winter-walking>
- Iowa State University Environmental Health and Safety “Helpful Hints When Walking on Snow or Ice”
<https://www-ehs.sws.iastate.edu/prep/weather/winter/walking>
- Bourassa, Sarah. "Stay Safe on the Ice by Walking like This Animal." *TODAY.com*. TODAY, 26 Jan. 2015. Web. 07 Nov. 2016 (graphic following).
<http://www.today.com/health/stay-safe-ice-walk-penguin-2D12108872>
- UNL Emergency Preparedness “Really Obvious: On Ice”
<https://www.youtube.com/watch?v=5Gv6QNZytF8>



Next let's look at "working outdoors." There are a number of hazards associated with working outside in cold weather. Be aware of potential hazards, their warning signs, and how to avoid the hazard so you can safely navigate this winter season.

- **Hypothermia.** In cold weather your body may lose heat faster than it is produced. Prolonged exposure will eventually use up all your body's stored energy, resulting in an abnormally low body temperature. If low body temperature affects your brain, you may not be able to think clearly or realize you are in trouble. Warning signs include: shivering, fatigue, and loss of coordination.
- **Frostbite.** Frostbite is an injury caused by freezing, characterized by reduced blood flow, leading to lack of feeling and color in the affected body parts. Most often the body parts affected are nose, fingers, toes, ears, cheeks or chin. Warning signs include: numbness, aching, tingling or stinging, bluish or pale skin, and skin that feels unusually firm or waxy.
- **Chilblains.** Repeatedly exposing skin to cold temperatures can cause permanent damage to groups of small blood vessels in the skin, characterized by redness and itching that return with subsequent exposures. Body parts most often affected are cheeks, ears, fingers and toes. Warning signs include: redness, itching, blistering/ulcers, and inflammation.

Prevention is always the best policy to avoid cold stress. Here are some precautions workers should take if they must work in extreme cold:

- **Wear appropriate clothing.** Layered clothing, loose and not too tight, provides insulation yet allows good blood circulation. Wear footwear designed for cold, wet conditions.
- **Cover your head** to reduce body heat loss. Protect ears, face, hands and feet.
- **Try to schedule work** for the warmest/driest/least windy part of the day. Take regular breaks in a warm, dry, and protected area. Limit the total amount of time outside during extremely cold weather.
- **Do not touch** cold metal surfaces with bare skin.
- **Stay hydrated** by drinking plenty of fluids, especially warm fluids. Avoid drinks with sugar and/or caffeine.
- **Avoid exhaustion or fatigue**, because energy is necessary to keep muscles warm.
- **Be aware if any medications you are taking might make you more susceptible** to cold stress. Certain medical conditions also increase your risk: diabetes, high blood pressure, or cardiovascular disease.
- **Monitor your physical condition** and that of your co-workers. You may not be aware of warning signs that a co-worker would be able to observe.

A National Weather Service Wind Chill Chart will help you evaluate temperature/wind combinations to work more safely outdoors when the weather is cold.

Other wintertime hazards, often related to snow cleanup, but also applicable in other outdoor work situations are:

- Lacerations or amputations from improperly attempting to clear jams in snow removal equipment. Make certain all powered equipment is properly guarded, isolated from power sources, and all parts have stopped moving before performing maintenance or attempting to clear a jam.
- Strains and sprains from prolonged or improper use of shovels or other snow removal equipment. Keep in mind body movement and positioning. Avoid overexertion.
- Carbon monoxide poisoning can result from idling vehicles or use of gasoline or kerosene-powered heaters or generators in an inadequately ventilated area. Avoid idling vehicles in garages or near buildings where the air-intake may allow exhaust to enter the building. Do not use gasoline/kerosene burning devices indoors without proper ventilation of exhaust fumes.

NOTE: Carbon monoxide (CO) is a colorless, odorless, tasteless gas that can cause sudden illness or death. Seek prompt medical attention if you suspect CO poisoning and are feeling dizzy, light-headed, or nauseous.

Resources Specific to Working Outdoors:

- National Weather Service (NWS) Wind Chill Chart and Calculator
<http://www.nws.noaa.gov/om/winter/windchill.shtml>
- Occupational Safety & Health Administration (OSHA). “*Tips to Protect Workers in Cold Environments.*”
http://www.osha.gov/as/opa/cold_weather_prep.html
- OSHA. “*Cold Stress Quick Card: Protecting Workers from Cold Stress*”
<https://www.osha.gov/Publications/OSHA3156.pdf>
- OSHA “Winter Weather: Plan. Equip. Train.”
https://www.osha.gov/dts/weather/winter_weather/hazards_precautions.html
- Centers for Disease Control (CDC) & Prevention. “*Cold Stress.*”
<http://www.cdc.gov/niosh/topics/coldstress/>
- CDC “Frequently Asked Questions: Carbon Monoxide”
<http://www.cdc.gov/co/faqs.htm>
- Iowa State University Environmental Health and Safety “*Winter Driving*”
<https://www-ehs.sws.iastate.edu/publications/handouts/WinterDriving.pdf>

2. Safety Shorts – Avoid Slips, Trips, Falls & Working in the Cold

This series features links to short safety resource(s) each month. Regardless of format - video, PDF, other - these short features cover various topics and are intended as resources for safety committees, faculty/staff/students, as well as individuals, laboratories and work areas.

- **Cold Weather Slips and Falls – 9 Defenses – Safety Training Video – Fall Prevention** (Safety Memos, Duration 2:51 minutes). The focus of this video is walking on ice and snow. <https://www.youtube.com/watch?v=8YfwURGbJVg>
- **Don't Slip, Get a Grip – Trips, Slips & Falls – Slip & Fall Prevention** (Safety Memos, Duration 2:56 minutes). This video discusses slips and falls on the same level with avoidance tips related to walking hazards both indoors and out. <https://www.youtube.com/watch?v=t28Ws-HjW1w>
- **Winter's Hidden Hazard – Cold Weather Health & Safety – Safety Training Video** (Safety Memos, Duration 2:59 minutes). The focus of this video is working in the cold. <https://www.youtube.com/watch?v=g3vEkqotiE8>
- **Walk Like a Penguin** (AHSChannel, Duration 1:37 minutes). This concept is used to illustrate safe walking on ice and snow. <https://www.youtube.com/watch?v=LHaWGibGwyk>

NOTE: Resources are provided for informational purposes only. Publication does not in any way endorse a particular company or product or affect current UNL policies and procedures.

3. Check IBC Protocols Before Starting Work

The rapidly evolving nature of research often points investigators toward new experiments or approaches. But researchers need to be sure their Institutional Biosafety Committee (IBC) protocols are in order before beginning new biological work.

If the new work is not described in current IBC protocols, researchers must submit a protocol amendment or new protocol form through NUgrant before initiating the work. In certain situations – for example, when work involves human pathogens, human materials or viral vectors – investigators may not begin work until the IBC reviews and approves the amendment or new protocol.

Changes or additions to any of the following require amending an IBC protocol or submitting a new protocol if one does not exist:

- genes studied or host/vector systems used in recombinant nucleic acid work
- infectious agents or biological toxins affecting humans, animals or plants
- work with substances from humans or certain vertebrate animals
- transgenic animal or plant work
- collection or sampling of wild animals with a zoonotic disease risk
- administration of biologics to animals
- administration of biologics to plants
- other scenarios that may impact the biosafety level of the work.

Additionally, researchers should submit a minor modification form or an amendment form to the IBC if the new work involves using UNL core facilities or the addition or removal of laboratory spaces. The Environmental Health and Safety biosafety staff can help investigators determine which form to submit.

It is crucial to report changes in uses of recombinant nucleic acid molecules or creation of transgenic organisms. Failure to do so may be reportable to the National Institutes of Health (NIH), and multiple instances of noncompliance could hinder UNL's ability to obtain NIH funding.

The EHS office encourages researchers to review IBC protocols annually, amend IBC protocols when research changes and contact UNL's biosafety officer with questions about changes to research. For more information contact EHS biosafety staff at 402-472-4925 or ibc@unl.edu.

Resources

- **UNL Biosafety Guidelines** http://ehs.unl.edu/Biosafety_Guidelines.pdf
- Institutional Biosafety Committee (IBC) <http://ehs.unl.edu/committees/ibc>

4. Compressed Gas Safety Colloquium Online

The fall colloquium, **Compressed Gas Safety**, co-sponsored by EHS and the Office of Research and Economic Development, presented in October by Tim Zoz and Greg Reeder, Matheson Tri-Gas, is online along with other past colloquia.

Resources

- EHS Safety Colloquium Series <http://ehs.unl.edu/training/Colloquium>

5. Makita Recalls Circular Saws

The United States Consumer Products Safety Commission (CPSC) was created to protect the public against unreasonable risks of injuries and deaths associated with consumer products. On October 16, 2016, a recall was issued for Makita 5057KB circular saw. The lower blade guard can malfunction and expose the blade, posing a laceration hazard and risk of injury. More information is available from Makita U.S.A. at 800-462-5482 from 8 a.m. to 7:45 p.m. ET Monday through Friday or online at www.makitatools.com.

community to provide feedback on our services and staff. By taking a few moments to complete the survey (<http://ehs.unl.edu/survey>), you will be helping us to identify areas where we might need to focus our attention. Your participation is greatly appreciated.

Please feel free to contact Brenda Osthus, EHS Director, at 402-472-4927 or bosthus1@unl.edu if you would rather communicate outside the parameters of this survey.

9. Revised Safe Operating Procedures

➤ ***Safety Audit Guidelines for Offices, Conference Rooms, and Similar Locations*** SOP

http://ehs.unl.edu/sop/s-SAG_offices_confrooms_similar_loc.pdf

Updated to be consistent with the checklist used by EHS personnel for safety and compliance audits.

➤ ***Select Agents and Toxins*** SOP

http://ehs.unl.edu/sop/s-bio-select_agents.pdf

Bacillus cereus biovar *anthracis* was added under the “Overlap Select Agents and Toxins” heading.

➤ ***Shipping Infectious Substances With or Without Dry Ice*** SOP

http://ehs.unl.edu/sop/s-ship_infectious_substances.pdf

Bacillus cereus biovar *anthracis* was added under the “UN2814, Infectious substance affecting humans” heading.

Remember...SAFETY IS AN ATTITUDE!

Environmental Health and Safety

University of Nebraska-Lincoln

3630 East Campus Loop

Lincoln, NE 68583-0824

(402) 472-4925

<http://ehs.unl.edu>