VERMONT PRINCIPALS’ ASSOCIATION
Procedure for Athletic Participation in the COLD

COLD INJURY

- Cold weather is defined as any temperature that can negatively affect the body’s thermoregulatory system.
- It is important to remember that temperatures do not have to be freezing to have this effect.
- Individuals engaged in sports activities in cold, wet and/or windy conditions are at risk for environmental cold injuries.
- Reminder: Windy & Wet conditions reduce body temperature 3-5 times quicker

STEPS FOR MONITORING COLD WEATHER:

- Weather should be monitored by designated athletic department personnel (Athletic Trainer if present) and an advisory should be issued to school coaching staff when applicable. Usually by email the day prior to the event warning of the potential, and the day of the event with potential modifications.
- Temperature, wind speed, and wind chill will be monitored.
- Athletic Department officials will use a Wind Chill Index Chart (Chart 1) as a measurement for impending weather situations and adjust outside activities as necessary using the Activity Modification Table 1
  - The Wind Chill Index considers effects of temperature and wind speed (see Chart 1 below)
  - Keeping in mind that precipitation increases risk dramatically
  - This chart is available at: http://www.nws.noaa.gov/om/winter/windchill.shtml
- Based on information from the National Weather Service, local weather stations and local/on-site Cold Index measurements, determine the risk of potential danger to participants. Issue a warning and implement the practice or game plan for that day to be distributed to all coaches.

### Activity Modification Table 1

<table>
<thead>
<tr>
<th>RISK</th>
<th>Temp/Windchill</th>
<th>MODIFICATIONS*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Risk</td>
<td>30°F &amp; below</td>
<td>Outside participation allowed w/appropriate^ clothing</td>
</tr>
<tr>
<td>Moderate Risk</td>
<td>25°F &amp; below</td>
<td>Mandate additional protective clothing (hat, gloves, layers)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Limit practice time to 60-90 minutes/15 min rewarm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Provide re-warming facilities (warm dry environment, fluids, blankets, hot packs)</td>
</tr>
<tr>
<td>High Risk</td>
<td>15°F &amp; below</td>
<td>All participants must have appropriate clothing as above</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cover all exposed skin (cover helmet ear holes)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Outside participation limited to 45 minutes/15min rewarm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Provide re-warming facilities (warm dry environment, fluids, blankets, hot packs)</td>
</tr>
<tr>
<td>Extreme Risk</td>
<td>0°F or below</td>
<td>Termination of all outside activities * #</td>
</tr>
</tbody>
</table>

*Frostbite can occur in 30 minutes with minimal wind. See attached Windchill chart

Nordic ski teams, Alpine ski teams, and snowboard teams are subject to coach’s and venue location discretion. These participants and the nature of their sport dictate necessary equipment/clothing for such extreme weather. Venues issue warnings & “wind holds”.

^See appropriate clothing on following page under Clothing Recommendations

VPA Sports Medicine Advisory Committee August 2015
### Chart 1

**NWS Windchill Chart**

<table>
<thead>
<tr>
<th>Wind Speed (mph)</th>
<th>0</th>
<th>5</th>
<th>10</th>
<th>15</th>
<th>20</th>
<th>25</th>
<th>30</th>
<th>35</th>
<th>40</th>
<th>45</th>
<th>50</th>
<th>55</th>
<th>60</th>
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<tbody>
<tr>
<td>Calm</td>
<td>36</td>
<td>31</td>
<td>25</td>
<td>19</td>
<td>13</td>
<td>7</td>
<td>1</td>
<td>-5</td>
<td>-11</td>
<td>-16</td>
<td>-22</td>
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<td>-34</td>
</tr>
<tr>
<td>5</td>
<td>34</td>
<td>27</td>
<td>21</td>
<td>15</td>
<td>9</td>
<td>3</td>
<td>-4</td>
<td>-10</td>
<td>-16</td>
<td>-22</td>
<td>-28</td>
<td>-35</td>
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<td>-17</td>
<td>-24</td>
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<td>7</td>
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<td>-21</td>
<td>-27</td>
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<td>6</td>
<td>-1</td>
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<tr>
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<td>12</td>
<td>4</td>
<td>-3</td>
<td>-10</td>
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<td>-24</td>
<td>-31</td>
<td>-38</td>
<td>-45</td>
<td>-52</td>
<td>-60</td>
</tr>
</tbody>
</table>

*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)

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VPA Sports Medicine Advisory Committee August 2015
VERMONT PRINCIPALS’ ASSOCIATION
POLICY for Athletic Participation in the COLD

Recommended Preventative Strategies:

Competition/Practice Modifications:

- Consider extended half-times to allow for rewarming
- Provide access to a warm building
- Consider abbreviated introductions
- Ensuring/mandate proper clothing (hats, gloves, pants)
- Consider a “EZ” up tent for players/officials for protection from the elements
- Coaches should be vigilant and monitor player’s physical condition and mental status
- Have adequate rehydration fluids available, consider warm beverages
- Have hotpacks, blankets, additional warm, dry clothing available

Appropriate Clothing^:

In cold weather conditions appropriate clothing should be worn to prevent cold exposure. Both the Athletic Trainer(s) and coaches should require the student-athletes to implement the following:

- Wear several layers around the core of the body (especially those who are not very active).
  - The first layer should wick moisture away from the body (DryTech, underarmor)
  - The top layers should trap heat, block the wind (fleece, windblock)
  - No cotton as inside layer.
  - Outside layer should be water resistant/waterproof
- Long pants designed to insulate.
  - On cold/and or windy days windpants or a nylon shell should be worn on the surface layer to break the wind.
- Long sleeved garment that will break the wind
- Gloves
- Hat or helmet to protect the ears; tape helmet ear holes for cold/wind protection
- Face protection
- Moisture wicking socks (preferably wool blend)

-It is important that athletes avoid wearing multiple layers of cotton. When the body sweats the cotton will become dense and permeated with sweat

Factors Affecting Body Temperature Regulation in Cold:

- Wind and moisture (rain) dramatically increase heat loss from the body
- Cold exposure/activity requires more energy from the body. Additional calorie intake may be required.
- Cold exposure/activity requires similar hydration to room temperature; however the thirst reflex is not activated. Conscious efforts before and after practice to hydrate should be initiated.
- Never train alone. A simple ankle sprain in cold weather may become life threatening.
- Appropriate clothing must be closely monitored and mandated (see above)
- Increased risk factors: Previous cold injury, females, low body weight, asthma, CV conditions
COLD INJURY DEFINITIONS:

**Hypothermia:**
- Body Core Temperature below 95°F
- Symptoms include:
  - Shivering
  - Lethargy, amnesia
  - Impaired motor control
  - Pale, cold face and extremities
  - Decreased heart rate
  - Slurred speech
  - Impaired mental function

*Treatment:* remove wet clothing, warm with dry insulating blankets, cover the head, get to a warm environment. Provide warm beverages, avoid friction, avoid warming extremities initially

**Frostnip/Frostbite:**
- Frostbite is actual freezing of body tissues. Most susceptible are fingers, toes, earlobes, nose.
- Symptoms include:
  - dry, waxy skin
  - swelling
  - burning, tingling
  - limited movement
  - white/blue/gray patches
  - aching, throbbing, shooting pain

*Treatment:* rewarm slowing in warm water (not hot); avoid friction/rubbing tissue

**Chillblain:**
- An exaggerated or uncharacteristic inflammatory response to cold exposure
- Symptoms include:
  - red or blue lesions
  - swelling
  - tenderness
  - itching, numbness, burning
  - increased temperature

*Treatment:* wash, dry area, elevate, cover with loose clothing/blankets, avoid friction, lotion

**General Signs/ Symptoms of Cold Stress:**
- Uncontrollable shivering
- Swollen Extremities
- Confusion
- Fatigue
- Blurred Vision
- Slurred Speech
- Headache, dizziness
- Red or Painful extremities
- Numbness/tingling of skin

References:  
www.NATA.org/position-statements  
Environmental Cold Injuries  