

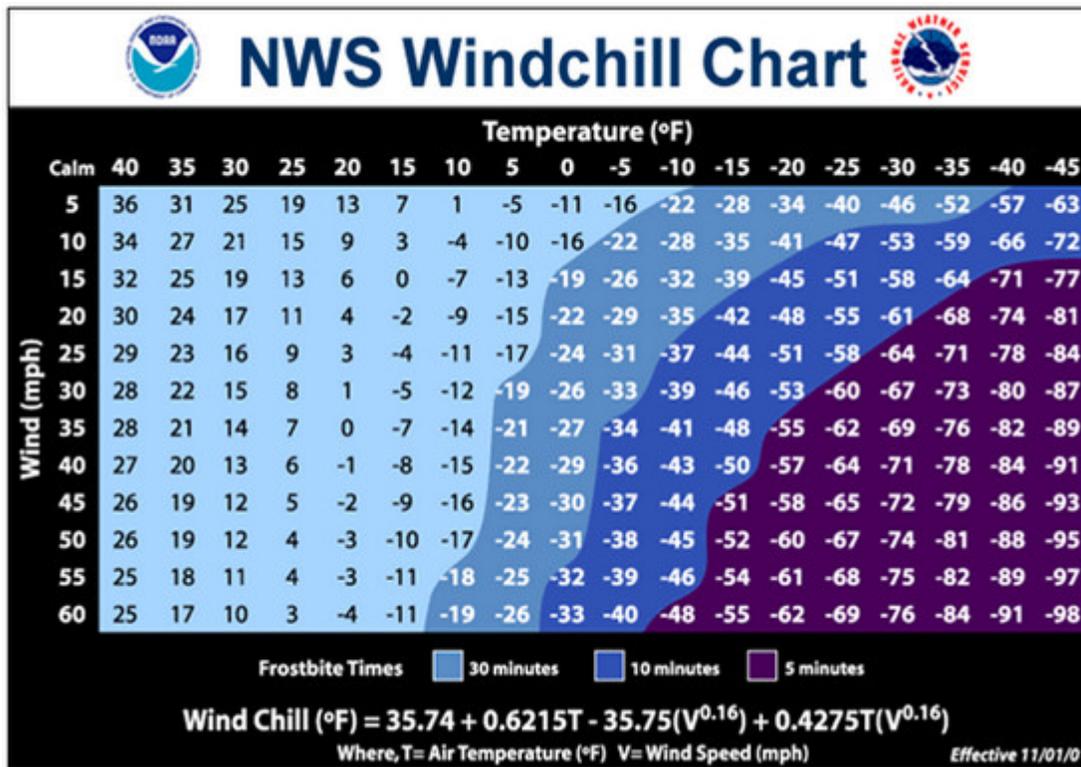


## Real Colorado Cold Weather Guidelines

The human body's ability to maintain heat is significantly less efficient than its ability to lose heat. Any warm object, like a human being, will lose heat when exposed to cold air, because we cool faster than we warm. Adding wind speed to colder temperatures rapidly increases body cooling. Wind chill temperature is how cold people feel when outside, taking into consideration the effect of existing wind speed.

Cold weather practice/game recommendations:

- **Outside participation limited to 45 minutes** – Temperature or wind chill, whichever is lower, reaches 25°F. Frostbite can occur in 30 minutes or less!
- **Termination of outside participation** – Temperature or wind chill, whichever is lower, reaches 15°F.



This table demonstrates that a cool temperature easily becomes much cooler with the addition of wind. This can be very dangerous for our young athletes who are playing outdoors in these conditions.

### Common Cold Exposure Injuries, In order of Increasing Severity

**Frostnip** – a nonfreezing injury of the skin, usually of the fingers, toes, cheeks, and chin. Symptoms develop when blood vessels supplying the affected tissues narrow because of the cold temperature.

- Skin may appear white and waxy or gray or mottled
- May have sensation or may be numb and tingling
- Redness
- no tissue freezing

Management – do not rub the affected area, but gently re-warm the skin with clothing or skin contact

**Chilblain** – a more significant nonfreezing injury of the skin, which include exposure to cold, wet conditions for more than 60 minutes at temperatures less than 50°F

- most commonly affect the hands and feet
- burning and itching sensation
- swelling
- pain

Management – remove wet or constrictive clothing, warm wash and dry the area gently, elevate the area and cover with warm, loose, dry clothing or blankets, do not rub the affected area

**Frostbite** – the destruction of body tissues due to freezing which occurs at temperatures 32°F and below. Ice crystal formation in the tissues breaks apart cells, thereby destroying the tissue

#### *Superficial frostbite*

- swelling
- redness or mottled gray skin appearance
- stiffness
- transient tingling and burning

Management – do not rub the area re-warm the affected tissue with clothing, skin contact or warm immersion (avoid water temperatures greater than 98°-104°). Once re-warming has begun, do not allow the affected tissue to refreeze. Seek immediate medical attention.

#### *Deep frostbite*

- swelling
- mottled or gray skin appearance
- tissue feels hard and does not rebound
- numbness

Management – re-warm the affected tissue through warm immersion (98°-104°), remove any constrictive clothing and submerge the entire area when thawing is complete the tissue will be pliable and color and sensation have returned. Do not use dry heat or steam to re-warm. Do not rub the affected area. Once re-warming has begun, do not allow the affected tissue to refreeze. Seek immediate medical attention.

Hypothermia – a decreased core body temperature

1. Mild Hypothermia – core temperature 95°-98.6°, lethargy, vigorous shivering, impaired fine motor control

Management – remove wet or damp clothing, insulate with warm, dry clothing or blankets and moving into a warm environment with shelter from the wind and rain, when re-warming, apply heat only to the trunk and other areas of heat transfer, including under the arm (axilla), chest wall and groin, provide warm fluids

2. Moderate Hypothermia – core temperature 90°-94°, impaired mental function, cessation of shivering, slurred speech, impaired mental function, loss of consciousness, muscle rigidity, dilated pupils

Management – primary survey to determine the necessity of cardiopulmonary resuscitation (CPR) and activation of Emergency Action Plan and call 9-1-1, remove wet or damp clothing, insulate with warm, dry clothing or blankets and moving into a warm environment with shelter from the wind and rain, when re-warming, apply heat only to the trunk and other areas of heat transfer, including under the arm (axilla), chest wall and groin

3. Severe Hypothermia – core temperature below 90°, rigidity, pulse rate decreases, usually comatose

Management - primary survey to determine the necessity of cardiopulmonary resuscitation (CPR) and activate Emergency Action Plan and call 9-1-1, remove wet or damp clothing, insulate with warm, dry clothing or blankets and move into a warm environment with shelter from the wind and rain, when re-warming, apply heat only to the trunk and other areas of heat transfer, including under the arm (axilla), chest wall and groin

### **Prevention of Cold Exposure injury**

There are precautions that we can take to avoid cold injuries when outside in extreme weather, such as wearing proper clothing and using appropriate equipment. In cold weather temperatures clothing should be *layered* to allow for adjustments as activity level may increase or decrease which may elevate or drop body temperature. Extremities and head should be covered with hat and gloves if possible and thermal socks are recommended. Athletes should be instructed to always carry a change of dry clothing, including jacket, shirt, pants, shoes, socks, hat, and gloves, Use the guidelines above to determine if outside weather is too severe such than practice should be cancelled, modified, or relocated.

#### References:

[www.NATA.org/position-statements](http://www.NATA.org/position-statements) environmental cold injuries

Castellani JW, Young AJ, Ducharme MB, Giesbrecht GC, Glickman E, Sallis RE. American College of Sports Medicine position stand: prevention of cold injuries during exercise. *Med Sci Sports Exerc.* 2006;(11):2012-2029.

National Weather Service. Windchill Temperature Index. Office of Climate, Water, and Weather Services, Washington, D.C., National Oceanic and Atmospheric Administration 2001.