- ❑ Avoid exercising at times of day or in locations where pollutants or pollens are at their maximum.
- ❑ When preparing for a competition, do an extended warm-up, with a gradual increase in intensity and with vigorous exercise at the intensity just below your maximal exercise level (short-term burst activities like sprints are thought to intensify EIA more than steady-state exercise).
- ❑ Taking two grams (2000 mg) of Vitamin C one hour before a competition may provide some protection against an asthma attack.
- ❑ If post-exercise attacks are a problem, asthmatic athletes should develop a post-event strategy together with you to ensure timely use of their medication. Someone who knows how to use the “puffers” should be waiting at the finish line and be free to stay with them for a period of time following the event. Explain to them that it is not sufficient to leave the medication in the car or with an official who is not free to drop everything if they are having an attack.
- ❑ Many “puffers” do not work well if they have been outside in the extreme cold for long cold periods. Treat them like video camera batteries and keep them warm.
- ❑ After a workout or a competition a lengthy graduated warm-down provides a slow warming down of the airways, which lowers the risk of EIA. An abrupt stop may cause asthma symptoms to return.

Note: Competing on very cold, dry days should be undertaken with caution. Susceptible athletes should always take the precautions mentioned above, and in addition they should be encouraged to balance the importance of the event with their long term health, and to make their decision with care.

Disclaimer: This information is designed to aid coaches in managing asthma-related symptoms during exercise in cold weather. It is not a substitute for qualified medical advice. If your athletes experience asthmatic conditions before, during or after skiing, encourage them to seek medical advice without delay.

8.1.6 Cold Weather and Competitions

In most regions of Canada severe cold weather can occur when a competition is being held. Because of the potential risk involved, coaches should (1) prepare their athletes for this possibility in advance, and (2) take certain precautions when dealing with such situations.

Developing athletes don’t usually have access to the high tech clothing that can provide them with the best protection from the cold. Most young athletes cannot afford clothing of this kind if they are going to outgrow it in a year, and as a result this age group may often be more vulnerable to severe weather conditions than adults.

To help you educate your athletes the following list has been developed for a handout.

Cold Weather Tips for Your Athletes

The following guidelines will help your athletes deal with conditions of extreme cold weather:

- ❑ Don't be afraid to wear extra clothing during a competition. In cold weather conditions, vests can be an important addition and it may also be reasonable to wear two layers of synthetic (polyester) underclothing. Balaclavas and neckwarmers may be warranted as well. Wear a warm hat and replace racing gloves with warmer mitts. Even older athletes at high level events may choose to compete with warm ups on, especially if there are long fast down hills and windy sections along the course.
- ❑ Male skiers should always consider wearing windproof underwear if they are wearing a lycra racing suit.
- ❑ Creams, lotions and jellies can reduce the direct exposure of the skin to the air. However, to be effective they must not have a water base. Many athletes have had success with petroleum jelly and Dermatone.
- ❑ Ski glasses/goggles can keep the wind out of your eyes, but they can also cause a "wind tunnel" effect on other parts of your face. For eye comfort, blink more often than usual. This is particularly true if you wear contact lenses.
- ❑ Individuals have a different tolerance to cold weather. Consider this when you make your decision on what to wear, or whether to enter the competition or not. For more information on exercise induced asthma in cold weather conditions refer to section 8.1.5 above.
- ❑ If you are 10 years of age or younger and the temperature is going to be colder than -15C at start time, you should seriously consider not entering the race.
- ❑ Take extra care that your nutritional needs are met on the morning of the race.
- ❑ Bring extra foods and fluids to the race site in case there is a delay.
- ❑ Ensure that your warm-up is done correctly. If you are following a proper warm-up routine you should be physically prepared for your race and able to ski at the appropriate pace right from the start. Regardless of the temperature, the "feeling" should be the same. What changes as the temperature drops is how the warm-up is done to get and maintain this "feeling". Typically a good warm-up increases the core temperature, uses muscles and techniques at the intensity level required during the race, and sets the appropriate arousal level without your being fatigued at the start. On a cold day you may wish to cut the warm-up short because you are afraid of becoming cold. However, your warm-up should be long enough and intense enough for you to break into a sweat. To maintain this warmed up state, you need to minimize the amount of time you are in damp or wet clothing. In these conditions a well-prepared athlete will put on dry gloves/mitts and hat after the warm-up and before the start.
- ❑ In these conditions you should change at least your gloves and hat, and other clothing as well if you can, as soon as you have completed your race and before you do your warm-down.

- ❑ Keep in mind that cross-country skiers are at risk in cold weather situations because exhaustion and dehydration are both influencing factors with respect to hypothermia. In such conditions, it is especially important to do your warm-down with another skier. You could be unaware of your condition and put yourself at risk by skiing onto an unused part of the course alone.
- ❑ Take responsibility for your own safety.

Cold Weather Considerations for Race Officials That Coaches Should Know

- ❑ The basic considerations for determining postponement, alteration or cancellation of a competition are:
  - ✓ temperature;
  - ✓ wind;
  - ✓ the duration of exposure;
  - ✓ shelter, clothing and other protection against the cold; and
  - ✓ the ability of the organizers to meet the extra demands required to ensure the safety of everyone involved.

Did You Know???

Races

303.2.2: With air temperatures below -20C (temperature measured at the coldest point of the course and without wind factor) and competition distances less than or equal to 15 km, the Jury must postpone or cancel the competition. With competition distances greater than 15 km and temperatures less than -18C without wind factor, the Jury must postpone or cancel the competition.

With any difficult weather conditions (eg. strong winds, high air humidity, heavy snow, icy track conditions), at any air temperature, the Jury may, on consultation with the Team Leaders of the participating teams and the doctor responsible for the competition, postpone, cancel or shorten the competition.

Loppets

387.2.1: Between -15 and -25C, recommendations regarding cold weather protection should be made available to the participants. Under such conditions it is the responsibility of the participants to seek the information and to follow the recommendations given by the organizer.

387.3.1: If the temperature in a major portion of the course is -25C or below, the competition shall be delayed or cancelled.

Excerpts for Canadian competitions from CCC Rules & Regulations (2006)

- ❑ Always take into consideration the age and experience level of the field of skiers when determining whether to alter or cancel a competition. The rules that govern “races” were established for experienced, healthy elite athletes at high level competitions. -20C is the coldest temperature at which you can hold the event. Under some circumstances, modifications or cancellation should occur at temperatures warmer than -20C.
- ❑ Adequate controls must be established to insure the recommendations are being followed and the health and safety of competitors are protected.
- ❑ It is possible to have a situation where it is best to cancel the events for athletes ten years of age and younger, shorten the distances for remaining athletes 18 years of age and younger, and retain the events originally scheduled for older athletes. For example, if the temperature is between -15C and -20C, whether other factors such as wind chill are involved or not, you may wish to shorten some distances (i.e. a 5 km event for Juveniles could be shortened to 3.5 km), while retaining the original distances for the adult categories. Or, you may choose to shorten the distances for all age groups.
- ❑ The Jury has the option of delaying the start time if it appears that the temperature will rise to an acceptable level later in the day. This decision can create new problems, however, and should be carefully thought through. It is possible that skiers will be at greater risk skiing at -19C after an extended period of repeated delays, (i.e. 2-3 hours) than they were at -21C two or three hours earlier.
- ❑ Some additional factors to consider before delaying the start time would be:
  - ✓ Is there adequate shelter for all the competitors close by the staging area, or will they be cramped into crowded, humid vehicles for an extended period of time with no place to change their clothes before they compete?
  - ✓ Will there be food and fluids available at the race site that all the competitors can access? For example, athletes may have traveled two or three hours to get to the race site that morning and they may not have the extra refreshments they will require for a lengthy delay. They may never have been to this race site before and they may not have been aware that refreshments were not available at the site.

  Each of the above could influence how well the athlete handles the cold temperature when the race finally does get underway.
- ❑ If there is <u>any</u> possibility of a delayed start, enough advance warning must be given to the coaches and athletes to allow them to make appropriate decisions regarding warm-up routines.
- ❑ Ensure an adequate supply of wool blankets and refreshments (drinks prepared at the correct temperature!) at the finish line.
- ❑ Station someone trained in First Aid at the finish line. Have them (1) check each athlete for frostbite, and (2) ask each athlete a few questions to check out their responses.

- ❑ One of your greatest frustrations will be the variations in the temperature readings between one thermometer and another. Long before you host your event select a reliable model and purchase enough of them to cover all the bases.
- ❑ Don't hold the competition unless you are prepared for the conditions!

8.1.7 Backcountry Skiing

The following article by Knox Williams offers eight steps to help you discover that skiers can ski the backcountry safely, provided they take the time to learn about the activity first.

Into the Backcountry

You live in a part of the world that has splendid scenery. You take advantage of every opportunity to get outdoors. Of the seasons, you love winter the best. You would like very much to take up backcountry skiing.

But there are inherent risks, and you don't know how to get started – safely!

I have been in the avalanche business for 25 years, and I have read far too many avalanche articles that seem to have one purpose, to scare the reader. This article is different. I am going to give you an eight-step plan for learning about avalanches *so that you will understand and respect them, not fear them.* Learning respect should be your goal, because you then have the knowledge and confidence to travel where you like with a good idea of what the real risks are.

"All the avalanche experts are dead", I was told when I first began my avalanche education (and didn't know an avalanche from a snowball). That's bunk! I didn't believe that then, and I certainly don't now. You don't have to die in an avalanche, or be scared badly enough to wish you were dead, to have avalanche savvy. However, you will have to work at learning about snow and avalanches before you gain the confidence to judge the risk and make a "go or no go" decision.

Like life, avalanche education is "hard by the yard, but a cinch by the inch". What I mean by this is don't try to swallow the whole avalanche pill of knowledge at once: it will choke you. Rather, take your education in small doses; it will eventually develop into a clear picture. You will discover two things on your quest for knowledge. First, attaining an avalanche education is a life-long endeavor. No matter how much you learn, every winter will bring new revelations and challenges. Second, *you will be studying in the most wonderful classroom on this planet – the lofty domain of mountains*.

With this in mind, here are my "eight steps to reducing your avalanche risk." Some involve time and work on your part, and others are offered as simple tips, but taken altogether, they are guaranteed to improve your odds in a risky situation.