

Staying Hydrated: By Billy Demong

US Ski Team Nordic Combined Racer-Fischer Salomon Athlete Force Member

The summer is very much upon us, and the consensus I am getting from friends all over the US is that it's HOT! Out here in Park City, Utah, the new training grounds for many of the United States best Nordic athletes, the mercury has been pushing the realm of triple digits nearly everyday. As you can imagine this is creating some interesting training schedules in attempts to beat the heat, and still get quality training. Hydration is another priority that becomes more challenging as the temperature rises.

Now, as endurance athletes, we are all conscious of our diet and fluid intake. Many of us from junior racers and jumpers, to World Cup champions, to Masters experiment with different sports drinks, recovery bars, and we all have our top-secret pre-race food strategies. Most of us, though, are probably neglecting one of the most important keys to maximizing our training efforts: that being the amount of fluid we intake during workouts. I, for one, have been guilty of packing the handiest water bottle with H₂O and heading out for the workout, and simply metering that fluid out, or running out and 're-hydrating' when I finish. There are two problems with that plan. The first most obviously being that 16- 20 fl oz., the amount in a standard bottle, is not enough for an extended aerobic session. The second problem being that water will not replenish the glycogen stores we all rely on during aerobic exercise.

The Nordic Combined team including members Nathan Gerhart, Johnny Spillane, Carl Van Loan, Todd Lodwick, and I are taking an increasingly more aggressive role in battling dehydration. While we try to train at times when the heat and sun are less intense, it simply is hot nearly all day. We engage daily in a multitude of outdoor training sessions; from the running, hiking, and roller skiing that many of you are doing, to plyometric (i.e. Hurdles, bounding, box jumps), technique, and on hill ski jump training. This gives us the opportunity to compare the various amounts of water loss through different training methods, and also allows for experimentation with various liquids.

One tool that we are utilizing to assess our fluid requirements is a Fluid Balance Test. This simple test is merely a pre-exercise weight, a post-exercise weight, and then the total amount of fluid ingested during the session minus any fluid you may have discarded through urination (you can approximate) added to the post value. We then assess the total volume of fluid lost due to perspiration. The ultimate goal is to maintain weight, and at least stay within 2% (at a maximum) of your original hydrated body mass. Some of our sessions, like ski jumping normally have a minimum caloric and fluid requirement. However, with the intense heat and sun, and the incredibly warm suits (the same space invader garb that we wear in sub-zero temps in the winter), we are finding that fluid loss is incredible just taking jumps and riding the chairlift up. During a typical two hour jump session in the present heat, the average jumper needs to intake around 1.5L of fluid to maintain body mass. While during a two-hour session of easy endurance fluid requirements are about 1.5L per hour! Now these values are based of our particular group

and the environmental influences, but they demonstrate the impressive need for fluid intake during exercise especially with regard to summertime heat.

This increased attention to fluid requirements has also led us to experimenting more even in colder weather. During a recent x-c training camp on Norway's Songefjell glacier, we made a more conscious effort to replenish fluids even though the cooler, moist climate did not seem to require it nearly as much. But, we found that during the 2-3 hour skis, at least one liter of sports drink per hour greatly enhanced energy levels throughout the session. The fluid replacement is key in maintaining performance, and water will suffice for the less intensive sessions like ski jumping or technique training.

The energy component plays more of a role during the prolonged (OD) sessions, and the more intensive (Interval, Time Trial) sessions. Just last week I went running for about three hours in the sweltering heat on Deer Valley with several other Nordic skiers including Trond Nystad and Andrew Johnson. As they too are fluid conscious, we all carried drink belts with a minimum of 2 L apiece instead of the traditional one or two bottle holsters. Although a bit cumbersome for running, by the end of an extended work out you will be thankful. Many athletes tend to drink water, and it does fine replacing fluid loss, however, in order to delay fatigue, and maximize your potential during these more energy intensive sessions it can make a difference to utilize sport drinks to replenish carbohydrate stores. Ingesting 30-60 grams of carbohydrate or .5-1 L of most sport drinks, per hour of exercise should be sufficient. There is a difference in sport drinks vs. energy drinks; the sport drinks are ideally 6-8% carbohydrates, they are typically devoid of caffeine, which is a diuretic, and carbonation, which interferes with absorption. Obviously a key to staying hydrated is finding a drink that appeals to you and allows you to drink enough during exercise. Additionally, another gram of carbohydrate per kilogram of body weight ingested within the first 30 minutes post exercise will enhance recovery. This recovery feed should also include enough fluid to re-hydrate you to pre-exercise levels.

As 'Combiners' we often have more sessions per day and per week than most sports in order to fit in the various types of training required. We usually have 6 endurance workouts, including two intensity sessions. We jump on plastic 5 or 6 times per week, and have 4 plyometric and maximal strength sessions. This means that being hydrated, fueled up, and recovered is key in maximizing the potential of each and every session. Our coaches Bard Elden and Corby Fischer have helped facilitate our efforts by making water and sports drinks available at all of our sessions in ample amounts. The same habits can enhance anyone's workout schedule.

Here are a few simple things to do: Drink up before you go out. Try to drink as much as you can, 1-1.5 L per hour seems like a lot, but sneaking a few gulps every 10-15 minutes makes it more comfortable and it will help. Don't wait until you are thirsty, start right away and continue throughout the workout. Sport drinks help for several reasons, the calories help prolong energy levels, and a good flavor can encourage more fluid consumption. Try to find a drink carrier that holds ample amounts for your workout, and rides comfortably during strenuous training, it will help encourage you to bring what you

need every session. Especially during these sweltering summer months fluid and energy replacement are more critical than ever, but remember even in the winter time you are probably using far more fluid than you realize, it's definitely better to be a little over-hydrated than the other way around. Fluid is an important part of training and recovery; maybe that fatigue you are feeling after your workouts could be just mild dehydration. Take the proper steps and you can train more, harder, and get more out of your training with less pain. I would like to thank the USSA sports science staff for their help and information, especially nutritionist Susie Parker. Best of luck to everyone in their training pursuits this summer! For more information on the US Nordic Combined Team, visit www.uskiteam.com.

Billy Demong had been a member of the US Ski Team's Nordic Combined team since 1999. He competed in the 1998 and 2002 Olympics. He and his teammates just missed out of Olympics medal with their 4th place finish in the relay.