

Heat Related Illness

Air temperature, humidity, and dehydration are common risk factors associated with heat illness. Heat related illness occurs in hot humid temperatures where body cooling by evaporation is limited either by humidity levels and/or excessive clothing layers. A few teams from the Northern region explained how they tried practicing with excessive clothing to help prepare their bodies for the Texas heat! Heat illness falls into three categories: heat cramps, heat exhaustion, and heat stroke. Heat cramps occur from excessive sweating (diaphoresis) during strenuous activity. Sweating depletes the body's salt and moisture, which leads to dehydration. The low salt level in the muscles causes forceful and painful muscle contractions, usually in the quads, hamstrings, abdomen, or arms. If athletes do not take in enough - nor the right - fluids as they sweat, their blood actually thickens. If a player recognizes any signs or symptoms of heat related illness, he or she should treat the problem immediately. Dangerous results can occur if athletes ignore what their bodies are trying to tell them, do not treat their problem, and continue to play. Athletes should consider the environmental conditions, their individual needs, the dynamics of the game, and fluid and electrolyte balance. Heat stroke occurs when the internal body core temperature exceeds 104 degrees F or 40 degrees C. When the athlete competes

Signs and Symptoms of Heat Related Illness

Heat Cramps

- Heavy sweating / diaphoresis
- Abdominal cramps
- Fatigue

Heat Exhaustion

- Nausea/Vomiting
- Feeling weak/confused
- Fast heartbeat
- Headache
- Dark colored urine, which indicates dehydration
- Fatigue
- Chills
- Flushed or red skin

Heat Stroke: This is a medical emergency and the patient needs to be transported to a medical facility immediately.

- Change in level of consciousness
- Loss of consciousness
- Frequent vomiting
- Combative, feeling anxious

- Shortness of breath or difficulty breathing
- Seizures
- The inability to spit
- Dry mucous membranes (lack of sweating)
- High fever (greater than 104 degrees F / 40 degrees C)

Treatment and Prevention of Heat Related Illness

- **Acclimate.** Acclimatization means gradual exposure to the heat and humidity. Think on how you acclimate to altitude - same theory applies here. You can achieve this by exercising in the heat for short periods, gradually increasing the time in the heat over a period of 10 to 14 days.
- **Avoid alcohol, caffeine, and carbonated beverages.**
- **Avoid certain medication or drugs that can increase risk for heat illness.** Examples include but are not limited to:
 - antihistamines
 - decongestants
 - certain asthma medications
 - Ritalin
 - water pills (diuretics)
 - illegal drugs (cocaine)
 - diet pills
 - laxatives
 - some meds that Tx mental health issues (antidepressants and antipsychotics)
 - seizure medications (anticonvulsants)
 - alcohol
- **Avoid certain nutritional supplements.** Some may contain stimulants such as ephedrine, ma huang or caffeine. These substances can dehydrate the body and/or increase metabolism and heat production. They are of particular concern to people with underlying medical conditions such as hypertension, asthma and thyroid dysfunction.
- **Condition your body.** Be honest! Are you fit enough to sustain a peak performance level for an extended length of time?
- **Drink and eat right.** To prevent dehydration or heat exhaustion, athletes need to drink “optimally but not maximally” before, during, and after play. Eat nutritious foods as long as you can tolerate them during play which contain plenty of sodium (salt), potassium, and zinc. Energy bars are not enough.
- **Don't drink too much!** Too much water without proper balanced nutrition of sugar, salt, potassium and zinc can deplete. There are dangers in OVERHYDRATING! Consult with a physician about maintaining a good fluid and electrolyte balance.
- **Monitor your urine.** If it's clear and copious, then you're hydrated. If it's dark yellow like apple juice, you're dehydrated and need water and electrolyte replenishment.
- Previous illness from a cold, fever, gastrointestinal illness, or sickle cell trait
- **Rest and cool down after play.** Allow your body to recuperate from the beating of ultimate frisbee! Find shade and cool off. Evaporative cooling is the most efficient and practical means of cooling patients. Skin should be wet with room temperature water and placed in front of cooling fans.

- **Weigh yourself before you compete.** The most accurate method for determining your level of dehydration is by recording your weight change over a tournament. Weight loss equals water loss. If you lose more than 5 percent of your weight, seek medical care immediately.
- **Wear light colored clothing.** Dark clothing absorbs heat.
- **Wear sunscreen.** Sunscreen of SPF of 15 or more is good.
- **Get in to the shade!** Head in to the shade when not competing – and, choose the shaded routes when competing (like long stretches of pavement shaded by trees on one side – run on that side!). Shaded tents, umbrellas – or even wearing hats helps keep the temps down.

Nutrition is an important aspect of keeping the body going during and after competition. Remember, the body needs more than just a bagel and some fruit. Here are some ideas on certain snack foods to eat while playing and/or resting between games. Remember to eat real food (a sandwich) as long as you can tolerate it. Save the energy bars for last resort snacks instead of first resort snacks.

Nutrition Ideas During Tournaments

Potassium is important. Good sources of potassium include:

- Sports drinks (i.e. Gatorade, Powerade)
- Yogurt
- Grapefruit juice
- Bananas
- Nectarines
- Oranges

Sodium is important. Good sources of sodium include:

- Sports drinks
- Vegetable juices
- Pretzels
- Nuts
- Cheese crackers

Fluids are important.

- Water
- Sports drinks

After exercising, carbohydrates are important. Foods rich in carbohydrates include:

- Potatoes
- Honey
- Cereal
- White bread
- Corn chips
- Sports drinks
- Jelly beans
- Rice cakes
- Bagels
- Crackers
- Gummy candies

Heat Index vs. Relative Humidity

Heat Index (HI) is sometimes referred to as the “apparent” temperature. The HI, given in degrees F, is a measure of how hot it feels when relative humidity (RH) is added to the actual air temperature.

Relative Humidity indicates how moist the air is. RH may be defined as the ratio of the water vapor density (mass per unit volume) to the saturation water vapor density, usually expressed in percent.

RH is also approximately the ratio of the actual to the saturation vapor pressure.