

2008-2009 Prince of Peace Football Team

Hydration and Heat Casualty Prevention Plan

General Guidelines and Recommendations:

1. It is recommended that each athlete completes a medical history exam and physical each year. The use of medication of any kind should be noted as consumption of medications increases the need for water as water is used in the break down and absorption of the chemicals into the body. Any medical symptoms like asthma, seizures, diabetes, or any condition that might be amplified by an increase in body temperature should be noted.

2. Gradual acclimatization to heat/humid conditions is a must. It is recommended that each athlete should gradually increase exposure to hot and/or humid environmental conditions over a period of 7 to 10 days. It is strongly recommend that every parent prior to the football season ensure their child is spending one to two hours outside every day starting with mild activities as simple as reading or studying and building up to moderate exercise so that the body acclimates to the environment.

3. Hydration guidelines should be followed prior to, during and after practices as well as games and scrimmages. Please see the hydration plan in this document under PREVENTION.

4. During hot conditions or high heat indexes, water and fluids should be readily available throughout practice instead of specific water breaks. (Behind huddles, on the field, etc.) All players must drink water or a sports drink (50/50 mix) throughout practice. The use of spray bottles of ice water should be used during breaks to help cool off players.

HEAT INDEX CALCULATOR - http://www.crh.noaa.gov/jkl/?n=heat_index_calculator

Category	Heat Index	Possible heat disorders for children and teenagers
Extreme Danger	130°F or higher (54°C or higher)	Heat stroke and Sunstroke likely.
Danger	105 - 129°F (41 - 54°C)	Sunstroke, muscle cramps, and/or heat exhaustion likely. Heatstroke possible with prolonged exposure and/or physical activity.
Extreme Caution	90 - 105°F (32 - 41°C)	Sunstroke, muscle cramps, and/or heat exhaustion possible with prolonged exposure and/or physical activity.
Caution	80 - 90°F (27 - 32°C)	Fatigue possible with prolonged exposure and/or physical activity.

5. To identify heat stress conditions, regular temperature measurements for our field will be monitored between 2:00 and 4:00 p.m. each day using <http://forecast.weather.gov>

and type in Plano, Texas in the location box. This will give you all the temperature information you will need to verify the heat index on the HEAT INDEX page of the same site.

6. All coaches must monitor players during dynamic warm ups to ensure they are not cramping (heat cramps) or having hydration issues. The fastest way to stop a heat casualty problem is to discover it during dynamic warm ups. Any player that is struggling, breathing hard, suffering from dry mouth, complaining of being thirsty, are dizzy during warm ups needs to be pulled and allowed to hydrate. If this is a reoccurring issue through out that practice they need to be sent home for lack of hydration and the hydration rule needs to be reinforced with their parent. This is to protect the players from becoming a heat casualty. During the rest of practice it is the responsibility of the entire staff to monitor the players for problems related to heat. The entire team should be taught to monitor each other and if a player is having a problem any player should be allowed to alert the coaching staff of the problem. Team captains should be taught to check their teammates during breaks for dizziness and change in personalities from their team mates. We should never have a heat related issue on this field.

Dealing with Heat Casualties

Level 1 – (It stops right here if we keep our eyes open!)

Heat cramps: First aid

Heat cramps are painful, involuntary muscle spasms that usually occur during heavy exercise in hot environments. The spasms may be more intense and more prolonged than typical nighttime leg cramps. Inadequate fluid intake often contributes to heat cramps.

Muscles most often affected include those of your calves, arms, abdominal wall and back, although heat cramps may involve any muscle group involved in exercise.

If you suspect heat cramps:

- Rest briefly and cool down in shaded area (behind bleachers)
- Drink clear water or an electrolyte-containing sports drink 50/50 mix (water/SD)
- Practice gentle, range-of-motion stretching and gentle massage of the affected muscle group
- If cramps don't subside in 15 minutes do the above send player inside to GYM and call parent to take home. Inform parent that player needs to hydrate and that he needs be hydrating through the day every day. Cut sodas out of diet if they are being consumed by player.

Level 2 –

Heat exhaustion

Definition

Heat exhaustion is a condition whose symptoms may include heavy sweating and a rapid pulse, a result of your body overheating. It's one of three heat-related syndromes, with heat cramps being the mildest and heatstroke being the most severe.

Causes of heat exhaustion include exposure to high temperatures, particularly when combined with high humidity, and strenuous physical activity. Without prompt treatment, heat exhaustion can progress to heatstroke, a life-threatening condition. Fortunately, heat exhaustion is preventable.

Heat exhaustion: First aid

Signs and symptoms of heat exhaustion often begin suddenly, sometimes after excessive exercise, heavy perspiration and inadequate fluid intake. Signs and symptoms resemble those of shock and may include:

- Feeling faint or dizzy
- Nausea
- Heavy sweating
- Rapid, weak heartbeat
- Low blood pressure
- Cool, moist, pale skin
- Low-grade fever
- Heat cramps
- Headache
- Fatigue
- Dark-colored urine

If you suspect heat exhaustion:

- Get the player out of the sun and into an air-conditioned location ASAP.
- Lay the player down and elevate the legs and feet slightly.
- Loosen or remove the person's clothing and remove all football gear.
- Have the person drink cool water.
- Cool the person by spraying or sponging player with cool water and fanning.
- Put cold rags or ice bags under the arm pits, behind the knees, top of head, bottom of feet, and the groin to speed up the cooling down process as these areas transfer heat faster due to a larger amount of glands.
- Monitor the person carefully. Heat exhaustion can quickly become heatstroke.

If fever greater than 102 F (38.9 C), fainting, confusion or seizures occur, dial 911 or call for emergency medical assistance. Inform them you have a player that is in stages of heat exhaustion, inform duty officer of body temp, symptoms, and what has been done by the staff to present. Once the EMT is on site let them know exactly what has been done and clear out of the way so they can do their job. It is important to keep the area around the player open and if possible to keep a steady stream of air going over the body (fan).

Risk factors

Anyone can develop heat exhaustion, but certain factors increase your sensitivity to heat. They include:

- **Young or old age.** Infants and children younger than 4 and adults older than 65 are at higher risk of heat exhaustion. The body's ability to regulate its temperature isn't fully developed in the young and may be inhibited by illness, medications or other factors in older adults. Both age groups tend to have difficulty remaining

hydrated, which also increases risk. Regulation does not fully mature until full biological maturity occurs (completion of puberty/adolescences).

- **Certain medications.** Drugs that affect your body's ability to stay hydrated and respond appropriately to heat include those that narrow your blood vessels (vasoconstrictors, such as ergotamine), regulate your blood pressure by blocking adrenaline (beta blockers, such as atenolol), rid your body of sodium and water (diuretics, such as hydrochlorothiazide), alleviate allergy symptoms (antihistamines), calm you (tranquilizers, such as phenothiazines, butyrophenones and thioxanthenes), or reduce psychiatric symptoms such as delusions (neuroleptics, such as olanzapine).
- **Obesity.** Carrying excess weight can affect your body's ability to regulate its temperature and cause your body to retain more heat.

Causes

Your body's heat combined with environmental heat results in what's called your core temperature — your body's internal temperature. Your body needs to regulate the heat gain (and in cold weather, heat loss) from the environment to maintain a core temperature that's normal, approximately 98.6 F (37 C).

Impaired cooling mechanism

In hot weather, your body cools itself mainly by sweating. The evaporation of your sweat regulates your body temperature. However, when you exercise strenuously or otherwise overexert in hot, humid weather, your body is less able to cool itself efficiently.

As a result, your body may develop heat cramps, the mildest form of heat-related illness. Signs and symptoms of heat cramps usually include heavy sweating, fatigue, thirst and muscle cramps. Prompt treatment usually prevents heat cramps from progressing to heat exhaustion.

You usually can treat heat cramps by drinking fluids containing electrolytes (such as Gatorade or other sports drinks), getting into cooler temperatures, such as an air-conditioned or shaded place, and resting.

Other causes

Besides hot weather and strenuous activity, other causes of heat exhaustion include:

- **Dehydration**, which impedes your body's ability to sweat and maintain a normal temperature
- **Alcohol use**, which can affect your body's ability to regulate your temperature
- **Overdressing**, particularly in clothes that don't allow sweat to evaporate easily

Complications

- Untreated, heat exhaustion can progress to heatstroke, a life-threatening condition that occurs when your body temperature reaches 104 F (40 C) or higher. Heatstroke requires immediate medical attention to prevent permanent damage to your brain and other vital organs or death.

Parents if Player Goes Home

Contact your doctor if their signs or symptoms worsen or if they don't improve within 30 minutes. Seek immediate medical attention if their body temperature reaches 104 F (40 C) or higher. Ensure they are drinking water and/or a sports drink and staying cool. If they need to take a cool shower they should do so.

Level 3 -

Heatstroke

Definition

Heatstroke is a life-threatening condition that occurs when your body temperature reaches 104 F (40 C) or higher. Heatstroke can be brought on by high environmental temperatures, by strenuous physical activity, or by other conditions that raise your body temperature. Whatever the cause, you'll need immediate medical attention to prevent brain damage, organ failure or death.

Heatstroke is the escalation of two other heat-related health problems: heat cramps and heat exhaustion. In these conditions, you develop signs and symptoms that are milder than those of heatstroke. You can prevent heatstroke if you receive medical attention or take self-care steps as soon as you notice problems.

Heatstroke: First aid

Heatstroke is the most severe of the heat-related problems, often resulting from exercise or heavy work in hot environments combined with inadequate fluid intake.

Young children, older adults, people who are obese and people born with an impaired ability to sweat are at high risk of heatstroke. Other risk factors include dehydration, alcohol use, cardiovascular disease and certain medications.

What makes heatstroke severe and potentially life-threatening is that the body's normal mechanisms for dealing with heat stress, such as sweating and temperature control, are lost. The main sign of heatstroke is a markedly elevated body temperature — generally greater than 104 F (40 C) — with changes in mental status ranging from personality changes to confusion and coma. Skin may be hot and dry — although if heatstroke is caused by exertion, the skin may be moist.

Other signs and symptoms may include:

- Rapid heartbeat
- Rapid and shallow breathing
- Elevated or lowered blood pressure
- Cessation of sweating
- Irritability, confusion or unconsciousness
- Feeling dizzy or lightheaded
- Headache
- Nausea
- Fainting, which may be the first sign in older adults

If you suspect heatstroke:

- Understand that if you don't lower the player's body temperature ASAP he might die so act fast and be calm. If you appear irrational or panic the player will panic and possibly go into shock.
- Get the player out of the sun and into an air-conditioned location ASAP.
- Contact 911 NOW! Inform them you have a player going into HEATSTROKE.
- Lay the player down and elevate the legs and feet slightly.
- Loosen or remove the person's clothing and remove all football gear.
- Have the person drink cool water if possible.
- Cool the person by pouring or sponging player with cool water and fanning.
- Put cold rags or ice bags under the arm pits, behind the knees, top of head, bottom of feet, and the groin to speed up the cooling down process as these areas transfer heat faster due to a larger amount of glands.
- Do not hesitate to get the player immersed in cold water quickly.
- Monitor the person carefully. Rapid response can save the player's life.

When you call 911 inform them you have a player that is has gone into a heatstroke, inform duty officer of body temp, symptoms, and what has been done by the staff to present. Once the EMT is on site let them know exactly what has been done and clear out of the way so they can do their job. It is important to keep the area around the player open and if possible to keep a steady stream of air going over the body (fan).

Risk factors

Anyone can suffer from heatstroke, but several factors may place you at greater risk:

- **Young or old age.** Your ability to cope with extreme heat depends of the vitality of your central nervous system. In the very young, the central nervous system is not fully developed, and in older adults, the central nervous system begins to deteriorate, which makes your body less able to cope with changes in body temperature. Both age groups usually have difficulty remaining hydrated as well, also increasing risk.

- **Genetic response to heat stress.** To some degree, the way your body responds to extreme heat is determined by genetics. Researchers believe that your genes may play a vital role in determining how your body will respond in extremely hot conditions.
- **Certain medications.** Some medications place you at a greater risk of heatstroke and other heat-related conditions because they affect your body's ability to stay hydrated and respond to heat.

Be careful in hot weather if you take medications that narrow your blood vessels (vasoconstrictors, such as ergotamine), regulate your blood pressure by blocking adrenaline (beta blockers, such as atenolol), rid your body of sodium and water (diuretics, such as hydrochlorothiazide), or reduce psychiatric symptoms like delusions (neuroleptics, such as olanzapine).

Causes

Heatstroke is the escalation of two less serious heat-related conditions. If you don't take steps to treat these lesser conditions quickly, your condition may worsen and become heatstroke:

- **Heat cramps.** Heat cramps are caused by initial exposure to extreme temperatures or physical exertion. Signs and symptoms of heat cramps usually include profuse sweating, fatigue, thirst and muscle cramps. This condition is common in warmer weather or with moderate to heavy physical activity. You can usually treat heat cramps by drinking fluids containing electrolytes (Gatorade or other sports drinks), resting and getting to a cool spot, like a shaded or air-conditioned area.
- **Heat exhaustion.** Heat exhaustion occurs when you don't act on the signs and symptoms of heat cramps and your condition worsens. Signs and symptoms of heat exhaustion include a headache, dizziness or lightheadedness, nausea, skin that feels cool and moist, and dark urine. Often with heat exhaustion, you can treat the condition yourself by following the same measures used to treat heat cramps. If your symptoms persist, seek medical attention immediately.

The cause of your heatstroke depends on the activities you do that bring on your condition. Heatstroke can occur in these ways:

- **Environmental conditions.** In a type of heatstroke called nonexertional heatstroke, your condition is caused by extreme environment temperatures that cause your body temperature to increase. You may be doing some light or moderate activity, but activity is not the primary cause of your heatstroke. This type of heatstroke is typical in warmer weather.
- **Strenuous activity.** In a type of heatstroke called exertional heatstroke, your condition is caused by strenuous activity that increases your body temperature.

You can suffer exertional heatstroke even if you're accustomed to working or exercising in very hot temperatures.

In either exertional or nonexertional heatstroke, your condition can be brought on by:

- Wearing excess clothing that doesn't allow your sweat to evaporate easily
- Drinking alcohol, which can affect your body's ability to regulate your temperature
- Drinking soft drinks with a high content of caffeine can act as a diuretic and reduce your body's ability to retain water.
- Dehydration and not hydrating properly.

Shock: First aid

Shock may result from trauma, heatstroke, allergic reactions, severe infection, poisoning or other causes. Various signs and symptoms appear in a person experiencing shock:

- **The skin is cool and clammy.** It may appear pale or gray.
- **The pulse is weak and rapid.** Breathing may be slow and shallow, or hyperventilation (rapid or deep breathing) may occur. Blood pressure is below normal.
- **The eyes lack luster and may seem to stare.** Sometimes the pupils are dilated.
- **The person may be conscious or unconscious.** If conscious, the person may feel faint or be very weak or confused. Shock sometimes causes a person to become overly excited and anxious.

If you suspect shock, even if the person seems normal after an injury:

- **Dial 911** or call your local emergency number.
- **Have the person lie down** on his or her back with feet higher than the head. If raising the legs will cause pain or further injury, keep him or her flat. Keep the person still.
- **Check for signs of circulation** (breathing, coughing or movement). If absent, begin CPR.
- **Keep the person warm and comfortable.** Loosen belt(s) and tight clothing and cover the person with a blanket. Even if the person complains of thirst, give nothing by mouth.
- **Turn the person on his or her side** to prevent choking if the person vomits or bleeds from the mouth.
- **Seek treatment for injuries**, such as bleeding or broken bones.

Prevention

You can take a number of precautions to prevent heat exhaustion and other heat-related illnesses. When temperatures climb, remember to:

- **Wear loosefitting, lightweight, light-colored clothing.** Excess, dark or tight clothing holds in heat and doesn't let your body cool properly because it inhibits sweat evaporation. The use of modern lightweight clothing that help to maintain normal body is suggested (UNDERARMOR and RIDDELL make great products).
- **Avoid sunburn.** If you're going to be outdoors, wear a lightweight, wide-brimmed hat or use an umbrella to protect yourself from the sun, and apply sunscreen to any exposed skin. Having a sunburn reduces your body's ability to rid itself of heat.
- **Seek a cooler place.** Being in an air-conditioned building, even for just a few hours, is one of the best ways to prevent heat exhaustion. **Drink plenty of fluids.** Staying hydrated will help your body sweat and maintain a normal body temperature.
- **Take extra precautions with certain medications.** Ask your doctor or pharmacist whether the medications you take make you more susceptible to heat exhaustion and, if so, what you can do to keep your body from overheating.
- **Proper hydration is a big key.** Every player is required to drink 64ozs o water throughout the day. Every player must bring 32 ozs of water to practice and 20 oz sports drink both of which must be consumed in their entirety by the end of practice. Fluids should be consumed in between all drills and throughout practice. Good judgment should be used when a player asks for water or break.
- **Acclimate to the temperature.** It is essential that all players take time prior the start of preseason to become acclimated to the environment. That means spending time outside as much as possible so the body becomes adapted to the temperature. The body needs time to adapt to the environment and the ability to control body temperature during physical stress and heat stress. Introducing physical activity once the player is adapted to the environment and increasing that physical activity over a period of time is the best way to get a player acclimated to football activities. If you're otherwise healthy, your body can adapt to heat after several weeks, and its ability to regulate its temperature becomes more efficient. You'll still need to take precautions, but working or exercising in heat should become more tolerable.

Complications

- The most immediate complication of heatstroke is shock. Shock occurs when your body doesn't get enough blood flow, which can damage your organs if it's not treated quickly.
- If you don't act quickly on the other symptoms of heatstroke, you could die or suffer damage to your brain or other vital organs. In response to heatstroke,

these organs swell, and if you don't cool your body temperature quickly, the damage from this swelling could be permanent.

Treatments and drugs

Heatstroke treatment centers on cooling your body to a normal temperature quickly to prevent or reduce damage to your brain and vital organs. To do this, your doctor may:

- **Immerse you in cold water.** Your doctor may immerse your body in a bath of cold water or ice water to quickly lower your temperature. This method has fallen out of favor with some doctors because it restricts access to your body if additional medical evaluation or treatment needs to be done, such as inserting an intravenous (IV) line or performing chest compressions.
- **Use evaporation cooling techniques.** Some doctors prefer to use evaporation instead of immersion to lower your body temperature. In this technique, your doctor mists cool water on your skin and fans warm air over your body to evaporate the water on your skin.
- **Pack you with ice and cooling blankets.** Another method is to wrap you in a special cooling blanket and pack your groin, neck, back and armpits with ice packs to lower your temperature.
- **Stop your shivering.** If any treatments to lower your body temperature make you shiver, your doctor may give you a muscle relaxant, such as benzodiazepine. Shivering increases your body temperature, making treatment ineffective.

SOURCES FOR INFORMATION

www.mayoclinic.com (Symptoms of heat related illness and first aid)

<http://forecast.weather.gov> (Heat Index and weather related facts)