

## Dancer Health Tips: Exertional Heat-Illness and Dehydration

Dancers can find themselves in a variety of challenging performance situations. During exercise, sweating is usually the primary mechanism of body cooling. The evaporation of sweat from the skin's surface assists the body in regulating core temperature. If the body cannot adequately evaporate sweat from the skin's surface, core temperature rises rapidly. A side effect of sweating is the loss of valuable body fluids. The rate of fluid loss is related to exercise intensity, individual differences, environmental conditions and adaptation to them, clothing (costumes and dance clothes), and baseline hydration status. Dehydration of 1% to 2% of body weight begins to compromise bodily function and negatively influence performance. Dehydration of greater than 3% of body weight further disturbs physiologic function and increases an athlete's risk of developing an exertional heat illness (ie, heat cramps, heat exhaustion, or heat stroke). For treatment of symptoms of heat illness, place ice in the armpits and groin region to help cool the core temperature quicker than placing ice on the extremities. If the symptoms below do not resolve, you should seek medical attention.

### Recognition of Heat Illness

- Dehydration thirst
- Sweating & fatigue
- Muscle cramps
- Heat exhaustion
- Elevated core body temperature
- Dehydration
- Dizziness or lightheadedness
- Headache
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- Cool, clammy skin
- Drowsiness or confusion
- Irritability
- Hot and wet or dry skin
- Nausea or vomiting
- Rapid pulse or heart rate
- Possible loss of consciousness

### Tips to Reduce Your Risk of Heat Illness

- Be aware of heat illness symptoms
- Keep hydrated
- Monitor weather and temperature conditions
- Modify activity and take more frequent breaks
- Wear clothing appropriate for the heat
- Match fluid intake with sweat and urine losses
- When the body is properly hydrated, urine output is clear/light and color should be monitored between performances to avoid the cumulative impact of dehydration over time.
- Use sports drinks in extreme conditions to replace electrolytes
- Use cooling fans or air conditioning

Adequate hydration is crucial to preventing dehydration. Calculating the amount of fluid consumption required depends on the amount of fluid that is lost during activity. This amount will vary per person since sweat losses vary individually. Pre-

activity weight – Amount of fluid consumed during activity – Post-activity weight = the weight of fluid left to replace after the activity is completed. Generally, you should drink 23 ounces of water for every pound of body weight lost to adequately replace fluid losses within 2 hours of completion of activity. You should also be adequately hydrated prior to rehearsal/performance. Keep in mind that it is also important to stay hydrated during rehearsal and performance as well. Table 1 summarizes general hydration guidelines for dancers for rehearsal and performances.

Both air temperature and the relative humidity can contribute to heat illness. Other considerations for the dancer are lack of air motion and other sources of radiant heat such as stage lights, etc. A performer can increase their risk factors for dehydration when costuming prevents evaporation or absorbs heat, acclimatization to the region has not occurred, rest is inadequate for exertion levels, or a concurrent illness or medications impact their health status.

In some cases, a rehearsal or performance may need to be cancelled because of the risk of heat illness. The standard measurement is the Wet Bulb Globe Temperature Index which is a heat stress indicator that considers the effects of temperature, humidity, and radiation. It is calculated with the following formula: WBGT= 0.7 (wet-bulb) + 0.2(globe temp) + 0.1(dry-bulb). Table 2 summarizes the consequences and recommendations of exercises at certain temperatures using the WBGT formula.

For practical purposes, wet bulb globe temperature measurement is difficult because it requires special equipment. If you are unable to measure WBGT, It is important to account for the ambient temperature, humidity, costume, lighting, and stage effects, etc when deciding if a rehearsal or performance should occur as scheduled.

**Table 1: Proper Hydration in Athletes & Performers**

Before Rehearsal/Performance	During Rehearsal/Performance	After Rehearsal/Performance
<b>7.5 - 10 oz.</b> of cool fluid, 2-3 hours prior. <b>6 - 7 oz.</b> of cool fluid, 10-20 min prior.	Drink <b>6 – 8 oz</b> fluid for every ½ hour of activity	Drink <b>23 oz.</b> of cool fluid for every pound of body weight lost during activity. Fluid intake should occur <b>within 2 hours of activity.</b>

**Table 2: Summary of Temperature Risks for Those Engaged in Active Exertion.**

Category	Wet Bulb Globe Temperature	Suggested Modifications for Activity Among Fit, Acclimatized Adults: non-continuous training	Possible Heat Disorders for People in High Risk Groups
Extreme Danger	>86°F (30°C)	Cancel exercise.	Heat stroke or sunstroke likely.
Danger	82-86° F (28-30° C)	Risk for unfit or nonacclimated individuals is high. Increase rest:work ratio to 1:1; decrease intensity and total duration of activity. Limit intense exercise.	Sunstroke, muscle cramps, and/or heat exhaustion likely. Heat stroke possible with prolonged exposure and/or physical activity.
Extreme Caution	72 - 82°F (22 - 28°C)	Risk for all individuals is increased. Increase rest:work ratio; decrease intensity and total duration of activity.	Sunstroke, muscle cramps, and/or heat exhaustion likely. Heat stroke possible with prolonged exposure and/or physical activity.
Caution	<65 - 72°F (18 - 22°C)	Unrestricted activity but monitor participants for signs of heat illness. Monitor fluid intake.	Fatigue possible with prolonged exposure and/or physical activity.

**Disclaimer:** *The information on Exertional Heat-Illness and Dehydration tips listed above are to help guide and inform the dancer, it is not meant to take the place of the advice of a medical professional. This information is provided by Dance/USA Task Force on Dancer Health.*