

# K-12 Extreme Heat Guidance

 **LOUISIANA  
DEPARTMENT OF HEALTH**  
*Public Health*

# TABLE OF CONTENTS

- 3** Introduction
- 4** Signs & Symptoms of Heat-Related Illness
- 5** What Parents & Teachers Should Know About Heat
- 7** **For Families & Students:** What Students Should Know & Do
- 9** **For School Administrators:** Scheduling Strategies
- 10** **For School Administrators:** Considerations for Safe Buildings & Grounds
- 11** **For Coaches & School Administrators:** Considerations for Sporting Activities & Student-Athletes
- 12** **Appendix:** Additional Resources



# INTRODUCTION

Extreme heat events have increased in Louisiana in recent years, making it critical that administrators, teachers and students are prepared and educated on how to prevent heat-related illness.



Exposure to extreme heat can cause poor health outcomes in **children of all ages**. Children are vulnerable to ground-level ozone, which increases with rising high temperatures. A child's respiratory rate can be 2-3 times higher than an adult's respiratory rate, and exposure to poor air quality can affect lung development. Extreme heat has also been linked to reduced cognitive skill development and performance. A study of 10 million school-age children showed that high temperatures reduced test scores and theorized that each degree Fahrenheit temperature increase reduces the amount learned by about 1%<sup>1</sup>. Schools can nearly offset these effects with a working air conditioning system<sup>2</sup>.

Dehydration of **as little as 2%** can negatively impact body temperature balance (regulation)<sup>3</sup>.

This is why it is critical for **everyone** — teachers, administrators, coaches, parents and even students — to understand heat-related illness and how to take the appropriate precautions to prevent it.

This document outlines the following:

- What teachers and parents should know about heat
- What students should know and do
- Scheduling strategies for school administrators
- Considerations for safe buildings and grounds
- Considerations for sporting activities and student-athletes

1. National Bureau of Economic Research: <https://www.nber.org/papers/w24639>

2. CDC: [https://www.cdc.gov/climateandhealth/docs/HeatResponsePlans\\_508.pdf](https://www.cdc.gov/climateandhealth/docs/HeatResponsePlans_508.pdf)

3. National Center for Biotechnology Information: <https://bit.ly/3wb2jth>

# Signs & Symptoms of Heat-Related Illness

## HEAT STROKE

### What to look for

- High body temperature (103 Fahrenheit or higher)
- Skin can be hot and red, or dry and damp
- Fast, strong pulse
- Dizziness
- Nausea or vomiting
- Confusion
- Fainting or loss of consciousness
- Convulsions

### What to do

- **Call 911 immediately. Heat stroke is a life-threatening emergency.**
- Move the person to a cooler place.
- Loosen clothes.
- Cool the person quickly by wetting or applying ice to the neck, armpits and groin areas.

## HEAT EXHAUSTION

### What to look for

- Heavy sweating
- Cold, pale and clammy skin
- Fast, weak pulse
- Nausea or vomiting
- Muscle cramps
- Tiredness or weakness
- Dizziness
- Headache
- Fainting

### What to do

- Move to a cool place.
- Loosen your clothes.
- Put wet, cool cloths on your body or take a cool bath.
- Sip water.

### Get medical help right away if:

- You are throwing up.
- Your symptoms get worse.
- Your symptoms last longer than 1 hour.

## HEAT CRAMPS

### What to look for

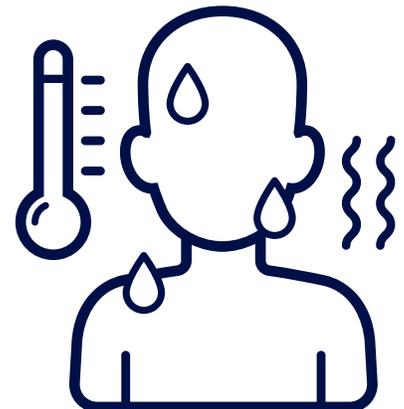
- Heavy sweating during work or exercise
- Muscle pain or spasms

### What to do

- Stop physical activity and move to a cool place.
- Drink water or a sports drink.
- Wait for cramps to go away before you do any more physical activity.

### Get medical help right away if:

- Cramps last longer than 1 hour.





# What Teachers & Parents Should Know About Heat

Teachers and parents should learn to manage the effects of heat, as children often have limited control over their environments and can be exposed to high temperatures. Most children are also not in a position to stay informed on their own about weather forecasts and heat advisories, and they do not have a role in regulating the temperature of the vehicles they spend time in when they are traveling to and from school. It is also worth considering that children's schedules throughout the school day are set by adults, whose decision-making is critical to the school community's overall wellness.

A thorough understanding of heat-related illness and prevention is crucial for adults making decisions that impact children's health on scorching school days.

- 1** Data collected by the Louisiana Department of Health shows that since 2010, hotter temperatures have resulted in escalating numbers of heat-related emergency department visits and deaths.
- 2** Recognize that spending time outdoors, at the bus stop, outside at recess or on an unairconditioned bus can contribute to heat-related illness.
- 3** Temperatures inside vehicles without air conditioning can increase dramatically, reaching dangerous levels within a short time. Never leave children alone in vehicles.
- 4** Holding recess or athletic practices and events outdoors, especially during the hottest parts of the day (10 a.m. to 4 p.m.) should be avoided on days with excessive heat.
- 5** Some children may live in environments without air conditioning or where air conditioning cannot keep up with the hot temperatures outside. Even a short amount of time in air conditioning can go a long way toward cooling the body down.
- 6** Providing shade in areas where children spend time outdoors — including bus loading and unloading, recess and athletic practices — will help protect against heat-related illness.
- 7** Drinking plenty of fluids goes a long way toward avoiding heat-related illness. Providing water to children during travel, during periods outdoors and in the classroom is a key prevention tactic.
- 8** Know the symptoms of heat-related illness:
  - Headache or fainting,
  - Muscle pain or spasms,
  - Cold, pale or clammy skin,
  - Tiredness, weakness or dizziness, and
  - Nausea and confusion.

Remember the three main keys  
to preventing heat-related illness:

**WATER. REST. SHADE.**





## FOR FAMILIES & STUDENTS

# What Students Should Know & Do

- 1** If you must be outside, remember to wear lightweight, long-sleeved protective clothing, and protect your skin with sunscreen, lip balm, hats, sunglasses, clothing and shade. Limit exposure during peak midday UV.



- 2** Hydrate adequately before, during and after outdoor activity and allow water bottles in class. Insulated containers help keep drinks colder longer, especially outside in the heat.

- 3** Avoid dehydrating liquids: Water is essential to fuel the body properly! Tea, coffee and caffeinated soft drinks can actually hurt more than help during extreme heat. Even hours after consumption, these drinks dehydrate the body, making for more uncomfortable rides home on the school bus.



- 4** Avoid sugary and salty foods: As tempting as it is to pack your child's favorite snacks in their lunchbox, please avoid sugary and salty items during this time of year. Large amounts of these ingredients dry out the body quickly, leaving little hydration to properly fuel the body.

**5**

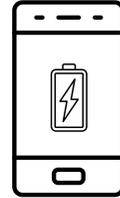
Use a cooling device: Encourage students to pack a manual or battery-powered personal fan as one of the best ways to keep cool while riding home from school. Not only will this help your child stay cool, but it also helps circulate the air around them, creating a breeze.

**6**

Applying cool items to the back of your neck can help bring down your core body temperature. This could be a simple towel, a fancy cooling band, portable fan or other high-tech cooling devices, such as a personal neck fan or cooling vest.

**7**

Encourage students to power off or put electronic devices in standby mode while traveling on the school bus to avoid generating extra heat. When powered on, electronic devices put off phantom power, which puts off heat even when not in use.

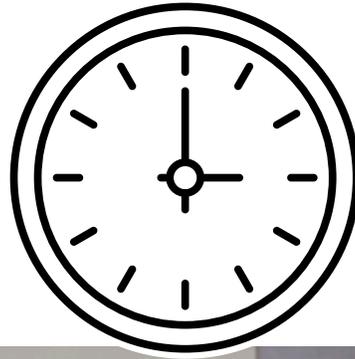
**8**

Bring your own shade. Not all transit stops have shade, so bring an umbrella or hat. Shade creates a barrier between you and the sun, keeping your body out of the direct heat.



FOR SCHOOL ADMINISTRATORS

# Scheduling Strategies



- 1** Move outdoor activities to cooler times of the day. Rescheduling activities during the mornings will reduce student exposure to extreme heat. Some studies have found that exertional heat illness is most likely to occur during mid-day activities when the temperature is hottest.
- 2** Indoor physical education activities at all grade levels should be limited to less strenuous activities and/or rescheduled to a more appropriate time, such as the morning.
- 3** Elementary teachers may rearrange the daily schedule so that basic skills subjects are taught at the optimal time, during peak heat.
- 4** Anticipate and plan for increased restroom breaks to account for increased water intake.
- 5** Make larger indoor areas with air conditioning available for playtime and/or recess when not otherwise being used. Larger spaces such as media centers, cafeterias or auditoriums can be used for this purpose.

# Considerations for Safe Buildings & Grounds

- 1** Cooler areas of school buildings and grounds should be used when available. For example, when students must gather outdoors, identify shaded lawn areas.
- 2** Shading is key: If a lawn area is not available during times such as bus loading and unloading, consider using temporary shade such as canopies and large umbrellas.
- 3** If non-air-conditioned portable facilities are in use, find ways to merge students using these buildings in larger rooms with air conditioning, such as media centers, auditoriums and cafeterias.
- 4** Check the temperature of metal and plastic playground equipment.
- 5** Add trees and other plants for shade.
- 6** When material replacement is needed, use heat-deflecting materials instead of blacktop.
- 7** Paint blacktops and walls used for play in lighter colors.
- 8** Use reflective materials and/or white roofing materials on rooftops.





**FOR COACHES & SCHOOL ADMINISTRATORS**

# Considerations for Sporting Activities & Student-Athletes

- 1** Limit outdoor activity, especially during the middle of the day when the sun is hottest.
- 2** Wear and reapply sunscreen as indicated on the package.
- 3** Schedule workouts and practices earlier or later in the day when the temperature is cooler.
- 4** Pace activity. Start activities slow and pick up the pace gradually.
- 5** Encourage athletes to drink more water than usual and don't wait until you're thirsty to drink more. Muscle cramping may be an early sign of heat-related illness.
- 6** Monitor a teammate's condition and have someone do the same for you.
- 7** Wear loose, lightweight, light-colored clothing.

# Appendix

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## **Heat-Related Illness: Data Dashboard and Guidance**

<https://ldh.la.gov/heat>

## **Heat & Health: What You Need to Know**

<https://ldh.la.gov/assets/docs/lah/LDH-HeatRisk-FactSheet.pdf>

## **HEAT.gov — National Integrated Heat Health Information System**

<https://www.heat.gov>

## **Occupational Safety and Health Administration (OSHA) Heat Safety Tool**

<https://www.osha.gov/heat/heat-app>

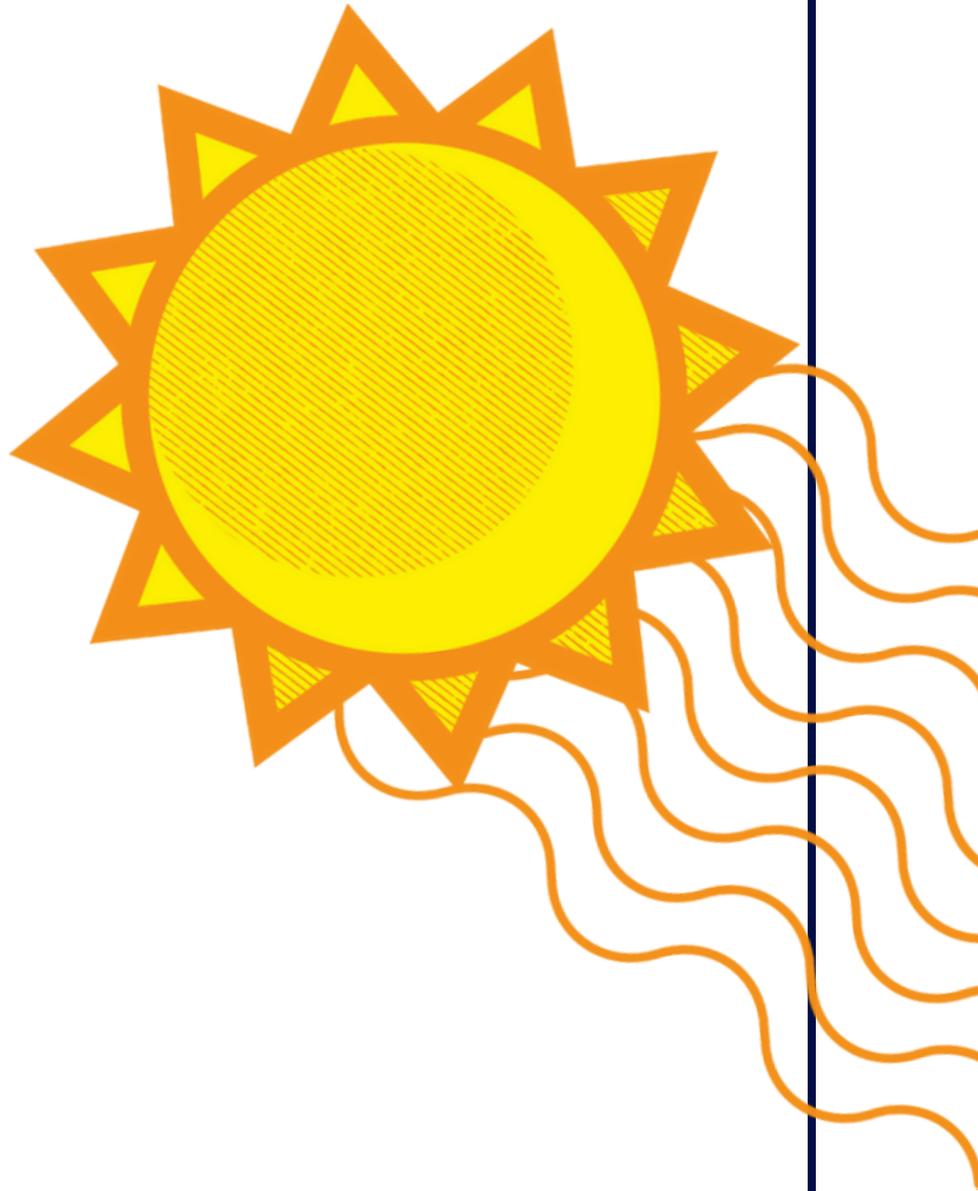
## **National Institute for Occupational Safety and Health (NIOSH) Heat Stress**

<https://www.cdc.gov/niosh/topics/heatstress/default.html>

## **Centers for Disease Control and Prevention (CDC) — Extreme Heat**

<https://www.cdc.gov/disasters/extremeheat/index.html>





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