



LOS ANGELES UNIFIED SCHOOL DISTRICT POLICY BULLETIN

TITLE: Guidelines for Preventing Heat Stress

NUMBER: BUL-963.1

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Office of Curriculum, Instruction and School Support

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Student Health and Human Services

DATE: January 24, 2011

ROUTING
All Employees
All Locations

POLICY: To counteract heat stress, all District personnel must pay attention to weather conditions and use common sense and good judgment for modifying activities and/or school days. This policy applies to all school sponsored activities.

MAJOR CHANGES: This bulletin replaces BUL 963.0 of the same subject, issued by Student Health and Human Services, dated August 4, 1998. The content has been updated to conform to the new format for written communications.

GUIDELINES: I. Introduction

Heat stress is the overall effect of excessive heat on the human body. The body dissipates heat in various ways: by increasing blood circulation, by losing water through sweating, and as a last resort, by panting or altering breathing. When heat gain exceeds the level the body can remove, body temperature begins to rise, and heat related illnesses and disorders may develop.

Those at highest risk are the very young, the elderly, people with acute or chronic health problems, and people using certain medication or taking illicit drugs. For various reasons, not all people tolerate heat to the same extent.

Heat Index is a measure of how hot it really feels when relative humidity is factored with the actual air temperature. High relative humidity slows evaporation of water, and therefore counteracts the cooling mechanism of sweating. Most heat alert procedures are based on the Heat Index, rather than just temperature. To estimate the Heat Index using temperature and relative humidity, look at the Heat Index Chart below or go to http://www.nws.noaa.gov/om/heat/images/heat_index.png. The National Oceanic and Atmospheric Administration (NOAA) is a federal agency focused on the condition of the oceans and the atmosphere. For local and forecasted temperature and humidity, go to the NOAA website at <http://www.noaa.gov/wx.html> and type in the local zip code. Local news reports on radio and television also carry this information.



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advisory has been distributed.

The decision to modify school activities will be made by the school principal after consulting with the Local Superintendent who may consult with the Superintendent of Schools.

Attachment A provides a guideline for consideration in modifying instructional programs, physical activity, and school schedules based on the Heat Index.

Please Note:

Students with certain health problems may require more attention. If students complain about the heat, allow them to rest and inform the school nurse who may want to have their health status clarified by a parent or guardian.

Employees with specific health problems making them more sensitive to heat should alert the site administrator.

On very hot, humid days, administrators, teachers, and other staff should be aware of the following procedures to help minimize possible heat stress:

- A. Faculty and staff must be informed at the beginning of each semester/track, and as needed thereafter, about the school's program for preventing heat stress, and the most efficient methods for reducing heat and maximizing ventilation in classrooms.
- B. Doors and windows must be closed in air-conditioned rooms, and any air-conditioning equipment malfunction should be reported at once.
- C. When possible, all air-conditioned rooms should be used as classrooms.
- D. Non-air conditioned classrooms should be surveyed by teacher or principal's designee when temperatures require that maximum cooling efforts be instituted, including:
 - Windows, doors, transoms, and venetian blinds should be adjusted for maximum ventilation and air circulation.
 - Electric fans, where available, should be placed to bring in fresh air and exhaust stale air rather than just blowing it around the room. Fans should be placed in or next to an open window at one end of the room to bring in air, and a window or door (not one that opens into a hall) at the opposite end of the room should be opened to exhaust air. For rooms with unusual heat problems, installing an electric fan in one window or transom and covering the opening with a security screen should be considered. Fans should be turned on as early as possible.
 - Adjusting custodial hours should be considered to permit early entry



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- into classrooms to open doors, windows, transoms, and turn on fans.
- Precautions should be taken to ensure that when fans, coolers, or other devices are used they meet safety standards and that cooling strategies do not place an overload on existing electrical systems.
- E. When classroom temperatures exceed 92° F, consideration should be given to moving students to cooler rooms or other appropriate areas, such as the auditorium, multipurpose room, library, or shaded outdoor areas. When possible, classes should be combined in air-conditioned rooms not to exceed the occupancy load.
- F. Teachers, especially at the elementary level, may adjust their programs to use the cooler early hours for physical activity.
- G. Water must be available. Personal water containers are recommended for use when heat is excessive as a means to prevent dehydration. Use at other times should be a local school option. School sites and secondary physical education departments should establish policies for use of water containers and inform students and parents.

A personal water container is a firm, non-breakable plastic receptacle which is no more than 9” high and 4” wide that will hold no more than 32 ounces of water. The container may have a pressure seal, screw or pop-up cap, or a straw drink device on its top. The use of all other types of personal water containers is prohibited. The following are recommended precautions:

- For health reasons, water containers should not be shared.
 - For safety reasons, 1) students should not run with straws or containers in mouth, and 2) containers may not be used while riding District buses.
 - Students should not bring containers to physical education activity areas unless given permission by the physical education teacher.
- H. Staff and all personnel supervising physical activities, including Youth Services personnel, should observe students during activity periods and modify activities as recommended in Exhibit A. Students known to have health problems should be closely observed and their activity modified or restricted.

III. Weather Conditions For Modifying Athletic Activities

During times of excessive heat, the following precautions need to be taken for outdoor physical activity which includes recess, physical education, recreation, and competitive sports:

- A. The intensity of exercise activities must be limited or they must be modified whenever the Heat Index is above 95°. See Heat Index table on**



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page 2.

- B. Air Quality Advisories issued by the South Coast Air Quality Management District (SCAQMD) must be obeyed. The Office of Environmental Health and Safety will provide informatives based on SCAQMD's advisories. Please contact the Office of Environmental Health and Safety for more information.
- C. Adequate water must be available. If adequate water is not available, physical activity must be modified. Prior to prolonged physical activity, a person should be fully hydrated. During the activity, periodic drinking of water every 15 to 30 minutes should be encouraged. Use of salt tablets is not advised, and commercially available replacement fluids for athletes are not usually necessary. Sugary and caffeinated beverages cause dehydration. Carbonated beverages may cause abdominal pain.

If water fountains are not located near the place of activity, large urns from the cafeteria may be filled with water and placed in strategic locations. Do not use irrigation systems for drinking water such as hose bibs and quick coupler valves.

- D. Proper clothing should reflect heat, permit freedom of movement, and allow free perspiration. Clothing should be light colored, lightweight, loose, and limited to one layer of absorbent material in order to facilitate evaporation of sweat and expose as much skin as possible, yet still be appropriate for the school environment.

Sweat-saturated garments should be replaced by dry ones. Rubberized sweat suits should never be used to produce loss of weight. Sunscreen, proper clothing, and hats should be used to prevent sunburn.

- E. Staff and all personnel supervising physical activities, including Youth Services personnel, should observe students during activity periods and modify activities as recommended in Attachment A. Students known to have health problems should be closely observed and their activity modified or restricted.
- F. Teachers must observe students closely and know signs and symptoms of heat stress, emergency first aid, and how to obtain medical help. (See Attachment B)
- G. The intensity and duration of a strenuous exercise program should be adjusted initially for students who are not acclimated to the climate. The intensity and duration of the program can then be gradually increased over a period of 10 to 14 days to allow the students to adapt to the effects of heat.



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- H. Marked differences between indoor and outdoor temperatures may precipitate physical problems.
- I. Secondary and adapted physical education teachers should modify the type, duration, and intensity of exercise. For suggestions refer to “Inclement Weather Program” in the Secondary Physical Education Curriculum, Grade 6-12, Publication No. SC-957, 1990, page 49 or the appropriate elementary guide.
- J. Rest periods should be provided during activity.
- K. Activities must be followed by the proper cool-down (for example, jogging should be followed by walking) and rest.
- L. Athletes engaging in competitive sports must have their activities closely observed for all of the above considerations.

IV. Strategies For Preventing Heat Stress During the School Day

- A. Each school should review this bulletin with their staff on an annual basis. Teachers, staff, parents, and students should be instructed by school nurses regarding awareness of signs and symptoms and first aid for problems attributable to excessive heat. Teachers should explain precautions to students.
- B. A “cool room” should be established for use by students showing early signs of heat stress. This room should provide maximum coolness possible. During an emergency, if an air-conditioned classroom is to be used as a “cool room” and is occupied by students, the students should be moved to another location. During excessive heat the “cool room” should be available for use at all times during the school day.

If possible, the “cool room” should be located near restrooms and should be equipped with chairs, cots, or mats; running water or adequate amounts of cool dispensed water; telephone or functioning communication with the main office; refrigerator or ice chest with ice and cold compresses; and basic first aid supplies. It should be supervised by staff trained to recognize signs and symptoms of heat stress and administer first aid.

Students showing any signs of heat stress should be cared for using the guidelines in Attachment B.

- C. Prior to boarding buses, traveling students should be encouraged to drink water and be given time to drink cool water located near the pickup areas. For safety reasons, personal water containers may not be used while riding



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District buses. When the Heat Index is 95° or greater, schools may consider providing large moist towelettes for use by students.

- D. When planning an outdoor event such as graduation, educational fairs, health fairs, etc. that cannot take place indoors, certain precautions need to be addressed:
- If possible, plan outdoor events around the coolest part of the day. For example, plan outdoor graduations in the early morning or early evening.
 - Adequate shaded areas should be available to prevent heat exhaustion or heat stroke. This can be met by providing canopies, preferable near a restroom.
 - Under the shaded area: chairs, cots, an adequate water supply, an ice chest with ice and cold compresses, and first aid supplies must be available.
 - This area should be supervised by staff trained to recognize symptoms of heat exhaustion and heat stroke and administer first aid.
 - Participants in these activities should be notified to wear appropriate clothing, hats, and sunglasses and to bring liquids and snacks as appropriate.

V. Strategies For Preventing Heat Stress During Athletic Practice and Competition

1. Conditioning period: It is recommended that all sports have a minimum of five (5) days of pre-practice progressive conditioning prior to more strenuous and sport specific practices to develop the level of conditioning necessary for more strenuous and stressful workouts. Pre-conditioning workouts should incorporate strength, endurance, speed, plyometric, agility and flexibility training in a progressively and structured program.
2. Progressive build up to acclimate to extreme heat conditions should include:
 - a. Shorter workouts
 - b. Reduce pace of workout
 - c. Reduced required equipment
 - d. Modify drills
 - e. Increase breaks between work periods
 - f. Plenty of ice water available during practice
 - g. Cooling areas
 - h. Educate students and coaches on pre-hydration and adequate hydration during activity.
 - i. Postpone or schedule practice session during cooler period of day.
 - j. It is recommended that football not be allowed to have two-a-day workouts.
3. Include information and strategies for preventing heat related injuries at annual



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coaches meeting. This presentation would include:

- a. causes of heat related injuries,
 - b. hydration and preventive strategies,
 - c. using the Heat Index ranges to identify activity recommendations and modification strategies.
4. Use current medical health history and physical to identify students susceptible to or at high risk for heat related injuries. Students identified as high risk should be removed from participation at a lower Heat Index. These would include:
- a. Students with history of previous heat illness
 - b. All current illnesses and/or health sensitive medical conditions
 - c. Students who have experienced recent injuries

RELATED RESOURCES:

Data used in this bulletin was adapted in part from:

1. American Academy of Pediatrics, Committee on School Health, "Heat Stress and School Closings," Pediatrics, Vol. 74, No. 2, 1984
2. American Academy of Pediatrics, Committee on Sports Medicine, "Climatic Heat Stress and the Exercising Child and Adolescent," Pediatrics, Vol. 106, No. 1, July 2000.
3. Journal of Athletic Training, 2002;37(3):329-343; "National Athletic Trainers' Association Position Statement: Exertional Heat Illnesses."
4. Journal of Athletic Training, 2000;35(2):212-224; "National Athletic Trainers' Association Position Statement: Fluid Replacement for Athletes."
5. National Collegiate Athletic Association (NCAA); Guideline 2c, "Prevention of Heat Illness," Revised June 2002.
6. National Federation of State High School Associations. April 2008; "Position Statement and Recommendations for Hydration to Minimize the Risk for Dehydration and Heat Illness."

ASSISTANCE: For assistance or further information, please contact the Director, Student Medical Services at (213) 765-2830; Director, Interscholastic Athletics, at (213) 207-2200 or the Office of Environmental Health and Safety at (213)241-3199.

Precaution and Modification Guidelines for Classroom and Physical Activity based on the Heat Index

***Please note: Heat Index temperature IS NOT the same as regular (thermometer) temperature. For definition of Heat Index and/or more information, please see BUL-963.1. For the current Heat Index, go to www.noaa.gov.

Category	Outdoor Instructional Activities including Physical Education and Events	Precautions and Practice Lengths	SUGGESTED Fluid Intake
Under 95° F Heat Index “Green Flag”	Learning skills decrease with long exposure Heat Index is above 95°.	Low to Moderate Risk. Use Caution for practice sessions and monitor on basis of risk factors. Workout:Rest Ratio as needed or 6:1	Fluid Replacement beverages should be easily accessible in individual fluid containers to permit easier monitoring of fluid intake. Allow athlete to carry water bottles of hydration system when practical.
95° to 99° Heat Index “Yellow Flag”	Encourage loose-fitting, light colored, lightweight clothing; encourage wide brimmed hats and sun screen (Sun Protection Factor [SPF] 15 or higher) during recess and outdoor activities; Encourage students to bring water bottles or take frequent water breaks; increase room ventilation (open windows/doors, use fans); provide wet wipes, damp clothes and/or spray bottles to cool forehead, arms, legs, and face.	High Risk. Use increased caution for practice sessions and consider modifying practice lengths and intensity level. Decrease physical activity at recess and in PE classes and, limit recess to cooler morning hours. Workout:Rest Ratio 2-3:1	Athlete should consume apx. 17-20 fl oz of water 2-3 hours before exercise and 7-10 fl oz of water 10 to 20 minutes before exercise. Fluid replacement should occur every 10-20 minutes at 7-10 fl. oz.
100° to 105° Heat Index “Red Flag”	All of the above and move students/staff to cooler areas of the building, as often as necessary, to avoid being in the above 90° Heat Index areas for longer than 60 to 90 minutes at a time.	Very High Risk. If possible, events should be rescheduled or delayed until safer conditions prevail. If the event must take place, be on high alert. Take steps to reduce risk factors (e.g., more and longer rest breaks, reduced practice time, reduced exercise intensity, access to shade, minimal clothing and equipment, cold tubs at practice site, etc.). Heat index should be rechecked every 30 minutes. Workout:Rest Ratio 1-2:1	Mandatory water breaks every 20 minutes for 10 minutes in duration. Traditional sports drinks with appropriate carbohydrate (CHO) and sodium may provide additional benefit for the athlete. A 6-8% addition of CHO to water is the maximum that should be utilized. All fluids should be cold to optimize gastric emptying.
Above 105° Heat Index “Black Flag”	All of the above and immediately move the students/staff to cooler areas of the building. If there are no suitable locations below the “Black Flag” level, immediately contact the Office of Environmental Health and Safety (OEHS) to determine what actions, including the possible dismissal/modification of school to initiate.	Extreme Risk. No Practice. Heat Index should be rechecked every 30 minutes.	All students must have water readily available to them.

Heat Related Illnesses, Signs/Symptoms and Treatment

Heat Illness	Definition/Description	Signs/Symptoms	What to Do
Muscle (Heat) Cramps	Occurs during or after intense exercise. Athlete will experience acute, painful, involuntary muscle contractions typically in the arms, legs, or abdomen.	Dehydration Thirst Fatigue Sweating Muscle cramps	<ul style="list-style-type: none"> • Stop all activity and sit quietly in a cool place. • Drink clear juice or a sports drink. • Do not engage in exercise/strenuous activity for a few hours after cramps subside, as this may lead to heat exhaustion or heat stroke. • Seek medical attention if heat cramps do not subside in 1 hour.
Heat Syncope	Occurs as result of exposure to high temperatures. Typically occurs during the first 5 days of acclimation to physical activity in the heat. May also occur after a long period of standing after physical activity.	Dehydration Fatigue Fainting Lightheadedness Tunnel Vision Pale or sweaty skin Decreased pulse rate	<ul style="list-style-type: none"> • Lie down in a cool place. • Drink clear juice or a sports drink.
Heat (Exercise) Exhaustion	The inability to continue exercising that is associated with heavy sweating, dehydration, energy depletion, and sodium loss. *Frequently occurs in hot, humid conditions	Normal or elevated body-core temp (97-104°F) Dehydration Dizziness/Lightheadedness Headache Nausea/Diarrhea Weakness Persistent muscle cramps Profuse sweating Chills Cool, clammy skin	<ul style="list-style-type: none"> • Seek medical attention immediately if symptoms are severe, the athlete has existing heart problems or high blood pressure. • You may attempt to cool the athlete by giving: cool, non-alcoholic beverages (as directed by physician), rest, cool shower/bath/sponge bath, moving to an air conditioned environment, and wearing lightweight clothing.
Heat Stroke	Life-threatening unless promptly recognized and treated. Occurs as a result of prolonged heat exposure while engaging in physical activity. Symptoms are a result of the body shutting down when it is no longer able to regulate temperature naturally.	Same Symptoms as Heat Exhaustion and High body-core temp (>104°F) Change in Mood (e.g., apathy, irrational) Hot and wet or dry skin Increased heart rate Confusion	<ul style="list-style-type: none"> • If any symptoms are evident-CALL 911 or seek immediate medical assistance. • Move the athlete to a shady area. • Cool the athlete rapidly using whatever methods you can: immerse the victim in a tub of cool water; place the person in a cool shower, spray the victim with cool water from the hose, sponge the person with cool water; fan the athlete. • Monitor body temperature and continue to cool the athlete until temp drops to 101-102°F. • Continue until medical professionals arrive and take over. If medical attention is delayed, call the emergency room for further instructions.

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