



**National Institute of Health - Pakistan**  
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National Focal Point for IHR



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**Subject: Advisory on Prevention & Management of Heat Stroke for educational institutes**

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In the wake of the recent wave of high environmental temperature in different parts of the country. It is pertinent to take necessary measures especially for educational institutes. The objective of this advisory is to sensitize relevant educational institutes to take in time appropriate actions for preparedness, response and prevention to the events/incidents of heatstroke in their respective areas.

Heat stroke is a medical emergency and can be fatal if not managed properly. It is a form of hyperthermia in which the body temperature is elevated rapidly resulting in failure of sweating mechanism, body becomes unable to cool down consequently and the body temperature may rise to 106°F or higher within 10 to 15 minutes.

The body normally generates heat as a result of metabolism and is usually able to dissipate the heat by radiation of heat through the skin or by evaporation of sweat. However, in high environmental temperature, humidity or vigorous physical exertion under the sunlight, the body may not be able to sufficiently dissipate the heat and the body temperature rises. Another factor heat stroke is dehydration. A dehydrated person may not be able to sweat fast enough to dissipate heat, which also causes the body temperature to rise.

Common signs and symptoms of heat stroke are hot and dry skin or profuse sweating with hot red or flushed dry skin, weakness/lethargy, throbbing headache, elevated body temperature, irritability, dizziness, and decrease urine output, heat rash (red cluster of pimples or small blisters). Heat stroke can cause death or end organ damage or disability if not properly managed in time.

**Purpose**

This document provides recommendations for educational institutions/schools on actions to mitigate the effect of extreme heat on students to reduce the frequency of heat-related illness and to support schools to prepare for and manage risks associated with extreme hot weather / heat wave.

Children and young people are more susceptible to heat stress and therefore schools must have measures in place to prepare for and manage the risks associated with extreme hot weather.

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Several physiologic and behavioral factors can increase children's vulnerability to heat including:

- Children have a greater surface area-to-body mass ratio than adults, which causes a greater heat gain from the environment on a hot day
- Children have a lower sweating capacity than adults, which reduces children's ability to dissipate heat by evaporation
- Children have less adaptive capacity to change their environment and behavior while under thermal discomfort and they have less experience recognizing the symptoms of heat stress
- Children do not experience the same urge to drink water as adults and have less awareness of their own hydration status; dehydration is a risk factor for developing heat-related illness

Educational Institutions must be able to recognize and treat heat related illness and ensure to have strategies in place to manage the risks associated with periods of extreme heat, including early intervention, prevention and preparedness measures. It is important that school staff know the signs and symptoms of heat stress and how to respond. Treatment options vary according to the type of heat-related illness. It is imperative that the management should target specific groups and ensure certain elements:

- Set a "Heat Stroke Center" possibly at every institution.
- Institutions must have an "emergency and critical incident management plan"
- Education of supervisory staff including teachers on measures to prevent heat-related illness; as well as how to recognize the signs and symptoms of heat-related illness
- Education of staff, on how to treat the signs and symptoms of heat-related illness and when further medical support is warranted
- Education of students on the importance of prevention of heat-related illness, especially factors under their own control, and how to recognize signs and symptoms of heat-related illness in themselves and their peers
- Education of parents on how they can send their children to school prepared for hot weather and on what to expect from their school's heat policy

Actions that school can take to help protect students from heat-related illness:

- Physically separating students from heat by keeping them in a cooled indoor environment is the most effective way of preventing heat-associated illness, utilizing the indoor space for activities during extreme heat is an ideal way to protect students.
- Use artificial shading (canopies, tents, sails, umbrellas) to shade outdoor play spaces.
- Avoid materials and surfaces that radiate high amounts of thermal heat. Use natural surfaces as much as possible (where allowed) and if a surface has to be used for the safety of children, make sure it is shaded.
- Increase the number of water coolers. Increased access to drinking water can help encourage student behaviors to stay hydrated. Ensure electric fans are in working condition.
- Practice acclimatization. During the acclimatization period, changes occur as the body adapts to the stress of repeated exposure to heat. There is a strong evidence base that acclimatization can reduce heat-injuries.

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- Scheduled rest/hydration breaks. Proper hydration can help to reduce core body temperature. Dehydration of as little as 2% can negatively impact thermoregulation.
- School / College timings: possibly adjust classes for primary sections from 7 AM to 11 AM while the Middle/High/Senior Secondary schools from 7 AM till 12:30 PM.

Student level actions that can help to prevent heat-associated illness include:

- Students must avoid unnecessary exposure to sun-light
- Protect skin with sunscreen, hats, sunglasses, clothing, shade, and limit exposure during peak midday sun.
- Wear light-weight, long-sleeved protective clothing
- Hydrate adequately before, during, and after outdoor activity and allow water bottles in class

The educational institutions should arrange and equip the first-aid points and establish close coordination with relevant district health authorities / Hospital administration for timely management of any emergency.

**Note:** Public Awareness messages, Prevention and Control measure and IEC material for public awareness is available at NIH website: <https://www.nih.org.pk/health-education/>

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**This advisory may please be widely distributed among all educational public and private institutes (School, Colleges and Universities).**



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