

ASK THE DOC: APRIL 2022

TOPIC:

HEAT ILLNESS

WITH SUMMER COMPETITION APPROACHING, WHAT ARE THE BEST STRATEGIES TO AVOID HEAT ILLNESS WHILE PLAYING?



WHAT IS HEAT ILLNESS?

Heat illness refers to an acute medical condition that represents the body's inability to effectively dissipate the internal heat that is developed during play. The internal heat load will be created during practice or match play by both muscle activity and exposure to environmental conditions such as direct sunlight, high ambient temperature, high humidity and heat from the court surface. The body responds to increased internal heat load by the mechanism of sweating, allowing evaporation of water from the skin surface to dissipate the heat. Heat illness will occur most frequently in hot and humid conditions, especially if there is little wind.

WHAT DO SYMPTOMS OF HEAT ILLNESS LOOK LIKE?

Symptoms from heat illness may vary depending on the stage of heat illness. There are three recognized stages of heat illness: (1) Heat cramps--characterized by muscle tiredness and weakness, actual muscle cramping and mild dizziness; (2) Heat exhaustion -- characterized by muscle weakness, headache, nausea, dizziness, skin clamminess and inability to play; and (3) Heat stroke -- characterized by disorientation, passing out, skin clamminess and elevated body temperature. Athletes with heat illness may progress through all three stages but may present with more advanced symptoms early in the course of the illness. Heat illness can be seen across all age groups, but young athletes, due to smaller body surface area available to dissipate the heat, and older athletes, due to less efficient sweat mechanisms, are at more risk of developing heat illness symptoms.



WHAT TO DO IF YOU EXPERIENCE HEAT ILLNESS?

Any athlete with any of the symptoms should be removed from play immediately and not allowed to return to play the same day, because continued or resumed play creates a high risk of increasing the severity of the condition. Basic first aid methods are usually successful in addressing the milder forms of heat illness. Athletes with heat cramps or heat exhaustion should be removed from the sun and the heat and moved to shade or air-conditioned building, supplied with water (if they can drink fluids; don't try to force water), and take steps to reduce body temperature (fans to circulate air over the body, cool or wet towels applied to the face, neck, armpit and groin, ice packs to the same areas, and cool showers should be instituted). Heat stroke is a medical emergency that requires immediate medical attention and transfer to an ER. The first aid methods may be used with these athletes until experienced medical help is available.

HOW DO YOU MINIMIZE RISK OF HEAT ILLNESS?

There are several effective methods to decrease the risk and severity of heat illness. Several steps could be made to maximize efficient sweating, as this is the principal means of dissipating internal heat. The first steps would emphasize optimal hydration, both before and during the practice or match, and fluid replacement immediately after the practice or match. A good hint is to not use thirstiness as a guide for the need for fluid replacement, because that indicator has been shown to not be correlated with actual fluid levels in the tissues. Water is the replacement of choice. Flavored or "enhanced" water may be used depending on individual preference. Sodas or other acidic beverages, energy drinks and alcoholic beverages are not recommended for replacement. The second step is to optimize the sweating mechanism by acclimation to the climate by gradual exposure to hotter and more

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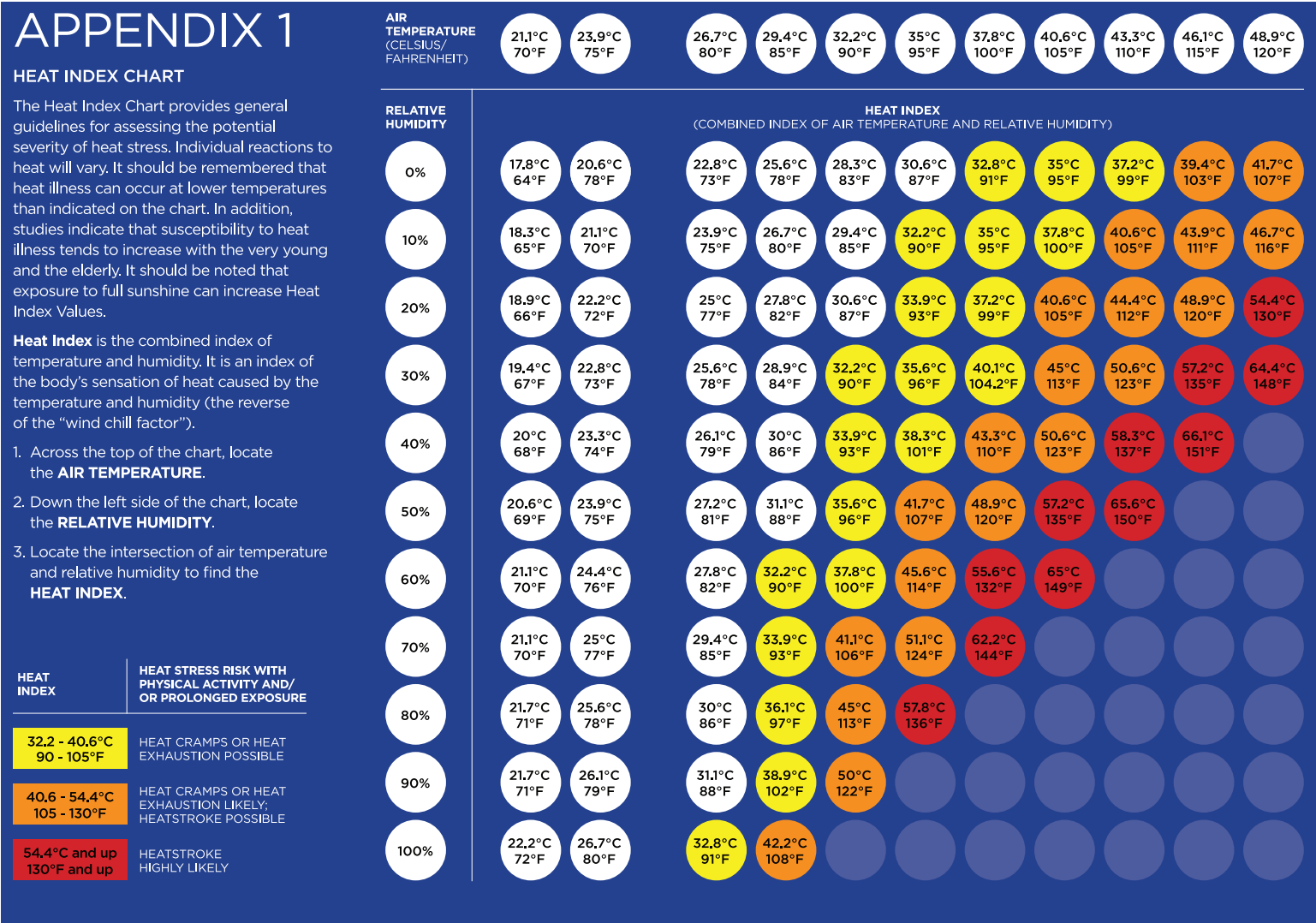
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humid climates. This improves the efficiency by increasing the water loss and conserving the loss of key nutrients such as sodium and potassium. Acclimation usually takes about two weeks to be effective. One good method of assessment of acclimation is the taste of the sweat. If the sweat is salty, there is insufficient acclimation. In this situation fluid replacement should be combined with salt replacement.

Modification of the environmental conditions is also very helpful in decreasing the risk and severity. It is important to be aware of the ambient temperature and humidity throughout the day, and to anticipate an increase in internal heat load as the heat index changes throughout the day. Heat index is a combined index of temperature and humidity that can be helpful in scheduling the timing and duration

of play. Increased risk of heat illness is present when the heat index is equal or greater than 32.2 degrees C (90 degrees F), according to the values in the chart below. Alterations in play when there is a high heat index can include changes in the timing of the matches, taking extended breaks between sets, provision of opportunities to take breaks in the shade, provision for ice or iced towels on court during changes of ends or shortening matches.

It is generally OK to play in the heat. Just be prepared, play smart and be aware of the early symptoms of heat illness.



Provided by the ITF Guide to Recommended Health Care Standards.