

WVU Medicine Uniontown Hospital presents “Why Heat Illness is Important to Understand, Especially in the Summer”

Heat Illness is an important consideration for anyone who works or recreates in the outdoors during the summer months. It is the leading cause of death for young athletes each year and its incidence is increasing. Proper knowledge of the spectrum of heat illness, thermoregulation, and when it is safe to return to the outdoor environment are important for all ages.

1. What are some types of heat illness? – Heat cramps, heat syncope, heat exhaustion, heat injury and heat stroke are the main types of illnesses that are described.

2. What causes heat illness? – The body manages heat regulation through the part of the brain called the hypothalamus. Our temperature is maintained by balancing the heat load from outside with the heat dissipation of the body. Evaporation, when water vaporizes from the skin and respiratory tract, is the main mechanism of heat dissipation. Convection, radiation, and conduction are other mechanisms. Evaporation is diminished when the relative humidity is higher than 75%. Heat illness occurs when the body is no longer able to dissipate heat relative to the external load.

3. What are some types of heat related concerns? – We should all be concerned with any exercise or activity that we do during the heat of the summer. Proper hydration and being aware of the potential problem is the first step in avoiding heat illness. Understanding our own limitations and acclimating to the outdoor activities is important.

4. What is the difference between heat exhaustion and heat stroke? – Heat exhaustion is the inability of the body to maintain adequate cardiac output due to strenuous activity in a hot environment. Dehydration may be an element but isn't required. Many symptoms overlap with heat stroke, however the main difference is heat exhaustion patients have little to no neurologic symptoms (except per-

haps minor brief confusion) and the core temperature is below 104 F. Heat injury develops as progression from heat exhaustion and when the core temperature goes above 104 F but without neurologic symptoms. Heat stroke occurs as progression from exhaustion and injury to include neurological symptoms of altered mental status and coma. End organ damage is often seen as well.

5. When should people be mindful of heat as a health concern? – Any time there is prolonged and/or strenuous activity in a hot environment people should be aware and concerned about the development of heat illness.

6. Are there groups that should be particularly careful? – As with many health and environmental concerns, the younger patients and the elderly are at increased risk. Children may be more tolerant to a point and then become suddenly and severely ill. The elderly, with medications and underlying illnesses, are certainly more prone to having poor heat regulation.

7. How can people protect themselves and their children from heat-related illness? – Recognition of the plans for exercise and activity during a hot day are the first step. Hydration before, during, and after the event as well as intermittent rest in a shady environment is very important. For children and sports activities in the summer, it is imperative that the children have access to cool water, and intermittent use of an electrolyte solution such as Gatorade or Pedialyte can be helpful. Coaches need to be aware of the signs of heat illness and allow for rest and hydration as well as timely heat acclimation for the beginning of all practice and game plans in the summer. Cooling towels in an ice bath are an excellent addition to any game or practice in the heat.

8. What is the difference between heat illness and fever or sun burn? – Heat ill-



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ness is due to prolonged exposure to a hot environment with progression of poor thermoregulation. Fever is due to illness or loss of central thermoregulation without exposure to a hot environment. Sun burn can obviously occur during activity in the sun, but is independent of central thermal regulation.

9. When should a person seek emergency care? - When there is concern for developing heat illness, a person should seek medical care. If someone is lightheaded, dizzy, has a headache or extreme weakness or are confused they should seek care. Anyone who has heat exposure with inability to rehydrate (nausea, vomiting, diarrhea, etc) or develops increasing temperature despite their best efforts should also seek help from our emergency department.

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