HEALTH ADVISORY # 4

PRECAUTIONARY MEASURES DURING HEAT WAVE

20th MAY 2024

1. As per Pakistan Meteorological Department, severe heat waves will sweep most parts of the country including Rawalpindi and Islamabad 20th May 2024 to 30th May 2024 with expected rise in temperature from 4-8 degree Celsius. The period may extend beyond the stated dates. The forecasting includes dust storms, thunderstorms, and heavy rains in the country's northern areas. Detailed advisory to this effect has been issued by NDMA (available on NDMA Website).

2. The above expected conditions necessitate several precautions for prevention of effects on human health. The summers in general and special weather (heat conditions) in particular present spectrum of conditions with minor symptoms such as **prickly heat or heat rash**, progressing to heat cramps, **then heat exhaustion**, and finally to **heat stroke**, a life-threatening medical condition. General precautions during summers, Symptoms / precautions during heat exhaustion and heat stroke are summarized for compliance

a **General Precautions during summers**. The body cools itself most efficiently by sweating and having that sweat evaporate. Should sweating be unable to meet the cooling demands of the body, heat-related illness can occur. By following these measures, you can help yourself and others stay safe during periods of extreme hot weather. Remember that taking proactive steps is crucial in preventing heat-related emergencies

(1) **Stay hydrated**: Drink plenty of water regularly, even if you're not feeling thirsty.

(2) **Stay cool:** Spend time in air-conditioned locations or use fans to circulate air. Avoid direct sunlight and seek shade if you need to be outdoors.

(3) **Dress appropriately:** Wear lightweight, loose-fitting, and light-colored clothing to help your body stay cool. Use full sleeve clothes;

(4) **Limit outdoor activities:** Avoid prolonged exposure to the sun, especially during peak heat hours. Use headgear in outdoor.

(5) **Power Shut Down:** Avoid staying in rooms (in case they are hot) during power shutdowns. Remain in open ventilated spaces under shade.

(6) **Use Sunblock:** Use sunblock to avoid sunburns.

(7) **Check on vulnerable individuals:** Keep in touch with colleagues / other students.

(8) **Know the signs of heat-related illnesses:** Learn the symptoms of heat exhaustion and heatstroke and seek medical help if someone exhibits these signs.

b **Heat Exhaustion** Heat exhaustion occurs when a person exercises or works in a hot environment and sweating cannot dissipate the heat generated within the body.

(1) **Causes**

(a) Heat exhaustion occurs when a person exercises and works in a hot environment and the body cannot cool itself adequately. Dehydration occurs with water loss from excessive sweating, which causes muscle cramps, weakness, nausea, and vomiting. Nausea and vomiting make it difficult to drink enough fluid to replenish the body's water supply, and the lack of body water impairs further sweating, evaporation, and cooling.

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(b) The relative humidity is an important factor in developing heat exhaustion. If the humidity is too high, sweat on the skin cannot evaporate into the surrounding air and body temperature cooling fails.

(c) Living in a hot environment may predispose a person to heat exhaustion. During a heat wave, the elderly, the poor, and those who live an isolated life may not have access to air conditioning and are at risk of heat-related illnesses.

(2) **Who is at risk for heat exhaustion?**

(a) Heat exhaustion usually affects people who are working or exercising in a hot environment, and those who do not have access to adequate water. Those at risk for heat exhaustion include:

(b) Infants and young children are at risk because their temperature regulation mechanisms are not fully developed. They also are dependent upon others for water and appropriate clothing.

(c) The elderly are similarly at risk because of underlying medical conditions that limit the ability to sweat including poor circulation, skin changes, and chronic medication usage.

(d) Certain medications such as antidepressants, antipsychotics, and tranquilizers may impair the ability of the body to sweat.

(e) The overweight or obese

(3) **Symptoms**

(a) Nausea/ Vomiting

(b) Fatigue/ Weakness

(c) Headache, Muscle cramps and aches

(d) Dizziness

(e) As dehydration increases from the loss of body water, light headedness and fainting may occur, especially if the affected individual stands up quickly. The person also may have a low-grade fever.

(4) **Treatment**

(a) Cooling and rehydration are the cornerstones of treating heat exhaustion.

(b) The affected individual should stop their activity, and then move or be moved from the hot environment to a cooler environment. The person may be placed in the shade or taken to an air-conditioned environment.

(c) Clothes may be removed to help with air circulation across the body.

(d) Misting the skin with cool water also helps by stimulating evaporation and cooling the body.

(e) Rehydration is the next important step in treating heat exhaustion. This may be a challenge if the person begins to suffer from nausea and vomiting. Small sips of water, may be tolerated in this condition.

(f) Water and other electrolyte replacement drinks are reasonable options.

(g) If oral rehydration fails or if symptoms persist, intravenous fluids may be required to replace the water loss which requires professional medical attention

(h) Hydration continues until the patient begins to urinate, a signal that the kidneys have sensed that there is enough fluid in the body, and it no longer retains fluid.
(i) Muscles cramps and pain may be treated with medications like ibuprofen , etc.)

(5) **What are the complications of heat exhaustion?**

(a) Heat exhaustion is one part of the spectrum of heat-related illness, and symptoms should be reversible with treatment. However, some affected individuals do not recognize their symptoms and if they are not removed from the hot environment, cooled, and rehydrated, the heat-related illness can progress to heat stroke, a life-threatening condition.
(b) Individuals who have suffered from heat exhaustion are more prone to experience another episode and should be cautious when working or exercising in hot conditions.

(6) **How can heat exhaustion be prevented?**

(a) Avoid direct exposure to sun and strenuous activities during excessively hot or humid environments.
(b) If unavoidable take frequent breaks in cooler areas, adequate fluid intake, and slowing the pace of work to decrease the heat generated by the body.
(c) Keep a watch on urine output to monitor hydration status. If the body is dehydrated, the kidneys will hold onto water, and make concentrated, strong-smelling urine. If enough water is present, the urine will turn clear.
(d) Follow General precautions listed at para 2a.

c **Heat stroke** Heat stroke can be fatal. Heat stroke is a form of heat-related illness, an abnormally elevated body temperature (>104 F, 40 C) with accompanying physical symptoms including changes in the nervous system function. Unlike heat cramps and heat exhaustion, heat stroke is a true medical emergency that is often fatal if not properly and promptly treated. Heat stroke is also sometimes referred to as sunstroke

(1) **Causes**

(a) 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.
(b) In extreme heat, high humidity, or vigorous physical exertion under the sun, the body may not be able to sufficiently dissipate the heat and the body temperature rises
(c) Another cause of heat stroke is dehydration. A dehydrated person may not be able to sweat fast enough to dissipate heat, which causes the body temperature to rise.

(2) **Who is most at risk for heat stroke?**

(a) Infants and children are much more vulnerable to heat stroke as compare to elders

(b) The elderly (often with associated heart diseases, lung diseases, kidney diseases, or who are taking medications that make them vulnerable to dehydration and heat strokes)

(c) Individuals who work outside and physically exert themselves under the sun

(3) **Symptoms**. Different people may have different symptoms and signs of heat stroke. Symptoms of heat stroke can sometimes mimic those of heart attack or other conditions. Sometimes a person experiences symptoms of heat exhaustion before progressing to heat strokes which have already been explained above. Common symptoms and signs of heat stroke include

(a) High body temperature / Rapid pulse
(b) Absence of sweating, with hot red or flushed dry skin
(c) Difficulty breathing
(d) Strange behavior/ Hallucinations
(e) Agitation
(f) Disorientation / Confusion
(g) Seizure
(h) Coma

(4) **First aid treatments for heat stroke**. Victims of heat stroke must receive immediate treatment to avoid permanent organ damage.

(a) cool the victim, Get the victim to a shady area, remove clothing, apply cool water to the skin (for example, you may spray the person with cool water from a garden hose), fan the victim to promote sweating and evaporation, and place ice packs under the armpits and groin.
(b) If the person is able to drink liquids, have them drink cool water or other cool beverages that do not contain alcohol or caffeine.
(c) Monitor body temperature with a thermometer and continue cooling efforts until the body temperature drops to 101 to 102 F (38.3 to 38.8 C).
(d) Always ask for professional medical care immediately.

(5) **How can you prevent heat stroke?**

(a) Avoid becoming dehydrated
(b) Avoid vigorous physical activities in hot and humid weather.
(c) If you have to perform physical activities in hot weather, drink plenty of fluids (such as water and electrolytes.
(d) Take frequent breaks to hydrate yourself.
(e) Wear hats and light-colored, lightweight, loose clothes.
(f) Follow General precautions listed at para 2a.

2. **Immediately report any emergency case** to MI Room for necessary professional medical attention.

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