

Patients with heatstroke will present with cutaneous calor (heat) and rubor (redness). This occurs due to cutaneous vasodilation as the body attempts to lose heat via conduction and radiation.

## Rhabdomyolysis

### Rabbit-muscle-lights

Rhabdomyolysis is a likely complication of severe heat stroke. Severe increases in body temperature rapidly denature proteins, cause extensive oxidative stress and can lead to ischemia. Muscle tissues that are affected will rapidly break down, releasing creatinine kinase, lactic acid, and electrolytes into the circulation. This process of skeletal muscle breakdown is called rhabdomyolysis.

## No Diaphoresis

### No Sweat-Sweatband

In patients with non-exertional heat stroke, anhidrosis, or a lack of sweating, may be seen. In patients with exertional heat stroke, profuse sweating is seen.

## CNS Changes

### CNS Delta

Neural tissue is extremely sensitive to changes in core body temperature. Additionally, acute hyponatremia due to excessive water loss can impair CNS function. This can lead to altered mental status, seizures, or cerebrovascular events.

## Acute Kidney Injury

### Acute-angle Kidney-injured

Up to 30% of patients with heatstroke can develop acute kidney injury. This can be due to rhabdomyolysis, electrolyte abnormalities, ischemia, oxidative stress, or DIC.

## Management

### Rapid External Cooling

#### Rapid-rabbit External Cooling

As heatstroke is characterized by the failure of the body's innate cooling mechanisms, rapid external cooling is indicated in order to lower core body temperature to safe levels. Cooling measures should be halted at 38 to 39 degrees C to prevent hypothermia.

### Hydration

#### Hydrating with Water

Hydration is crucial in the management of hyperthermia, as the excessive sweating seen in exertional heatstroke is associated with hypotension and volume depletion.

### Electrolyte Correction

#### Electric-lights

Severe electrolyte derangement may be seen in patients with heatstroke. Hyponatremia due to free water loss in sweat, acidosis, and hyperkalemia due to lactate release from muscles, and hypocalcemia may be seen. Patients' electrolyte levels should be measured frequently and corrected.