

## Heat Stroke Guidance

**Heat stroke is a medical emergency.** Clinical features include:

- core body temperature  $>40^{\circ}\text{C}$
- central nervous system dysfunction (e.g., altered level of consciousness ranging from confusion to coma [encephalopathy], seizures)

It occurs in the context of passive exposure to severe environmental heat (classic heat stroke) or strenuous exercise (exertional heat stroke).

**Heat exhaustion is a mild to moderate heat illness.** Clinical features include:

- normal or slightly elevated core temperature ( $37^{\circ}\text{C}$  to  $40^{\circ}\text{C}$ ),
- mild neurological symptoms (e.g., intense thirst, weakness, anxiety, dizziness, syncope), and an intact mental status.

If untreated, heat exhaustion can progress to heat stroke.

### Key Initial Investigations

Test	Rationale
<b>FBC, U+Es, LFTs</b>	Heat stroke can cause neutrophilia, AKI, or liver damage due to hypovolaemia Hyper/hyponatraemia may also be present
<b>Coag + Fibrinogen</b>	Heat stroke can lead to DIC
<b>Creatine Kinase</b>	Heat stroke can cause rhabdomyolysis
<b>VBG</b>	Elevated lactate, metabolic acidosis, respiratory alkalosis

### Risk Factors

- Old age
- Obesity
- Impaired cognition
- Working outdoors/without breaks/without access to water

### Treatment Tips

1. Consider giving small doses of an intravenous benzodiazepine (e.g., diazepam, midazolam) to reduce shivering, which causes heat gain (making cooling less effective).
2. Do not use dantrolene (usually used for treating malignant hyperthermia) in a patient with heat stroke. Do not use antipyretics in a patient with heat stroke or heat exhaustion.
3. Monitor the patient with heat stroke for complications that may develop at a later stage (even after return to normothermia) including rhabdomyolysis, acute kidney injury, disseminated intravascular coagulation, and acute liver failure.
4. Aim to achieve a target temperature of no less than  $39.0^{\circ}\text{C}$ . Stop cooling once this temperature is reached.
  - a. Be aware that the goal of cooling is not to achieve rapid normothermia as this would result in overshoot hypothermia.

## Treatment Algorithm

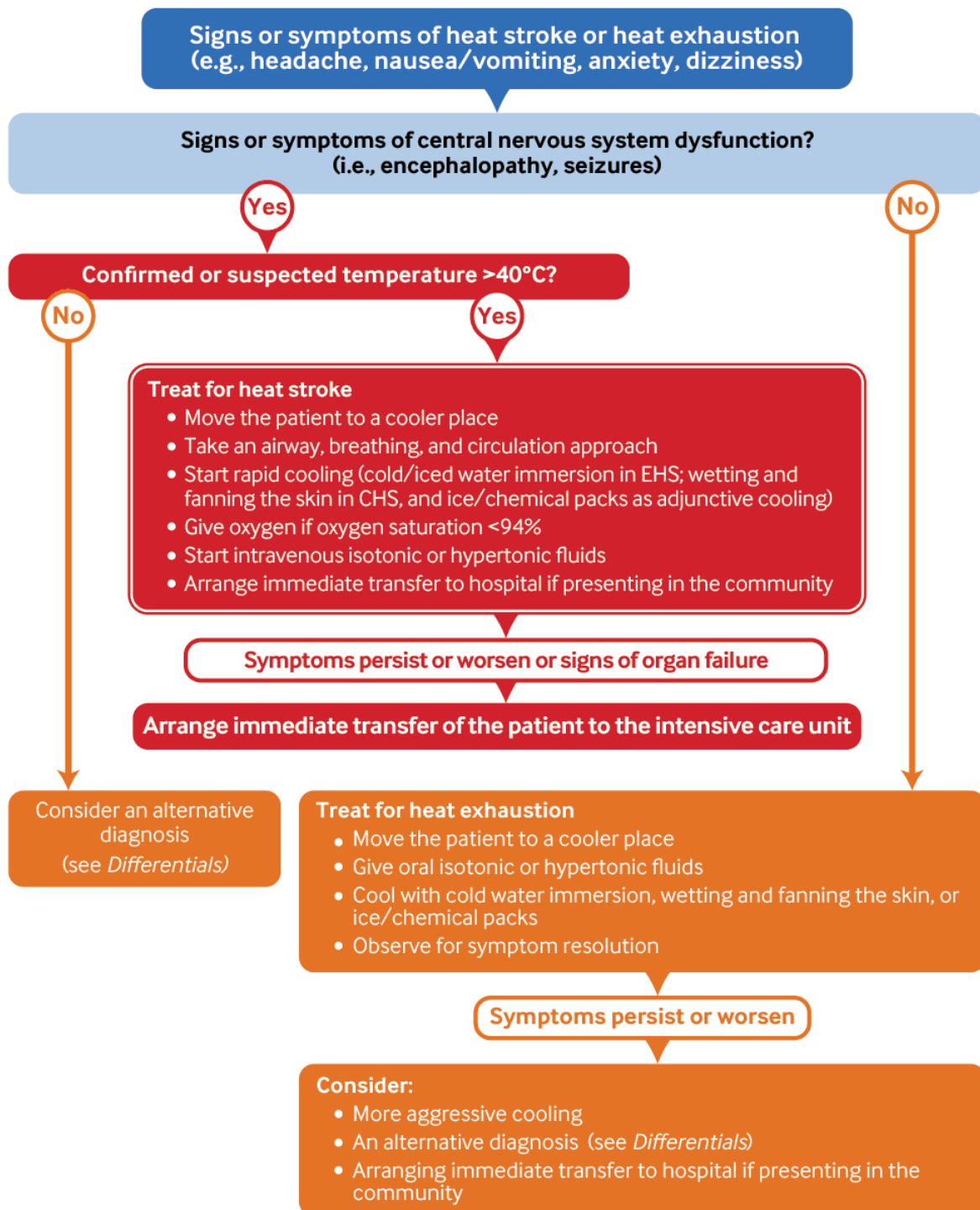


Figure 1: Treatment algorithm – Classic Heat Stroke (CHS) Exertional Heat Stroke (EHS)  
Obtained from <https://bestpractice.bmj.com/topics/en-gb/3000174/management-recommendations>