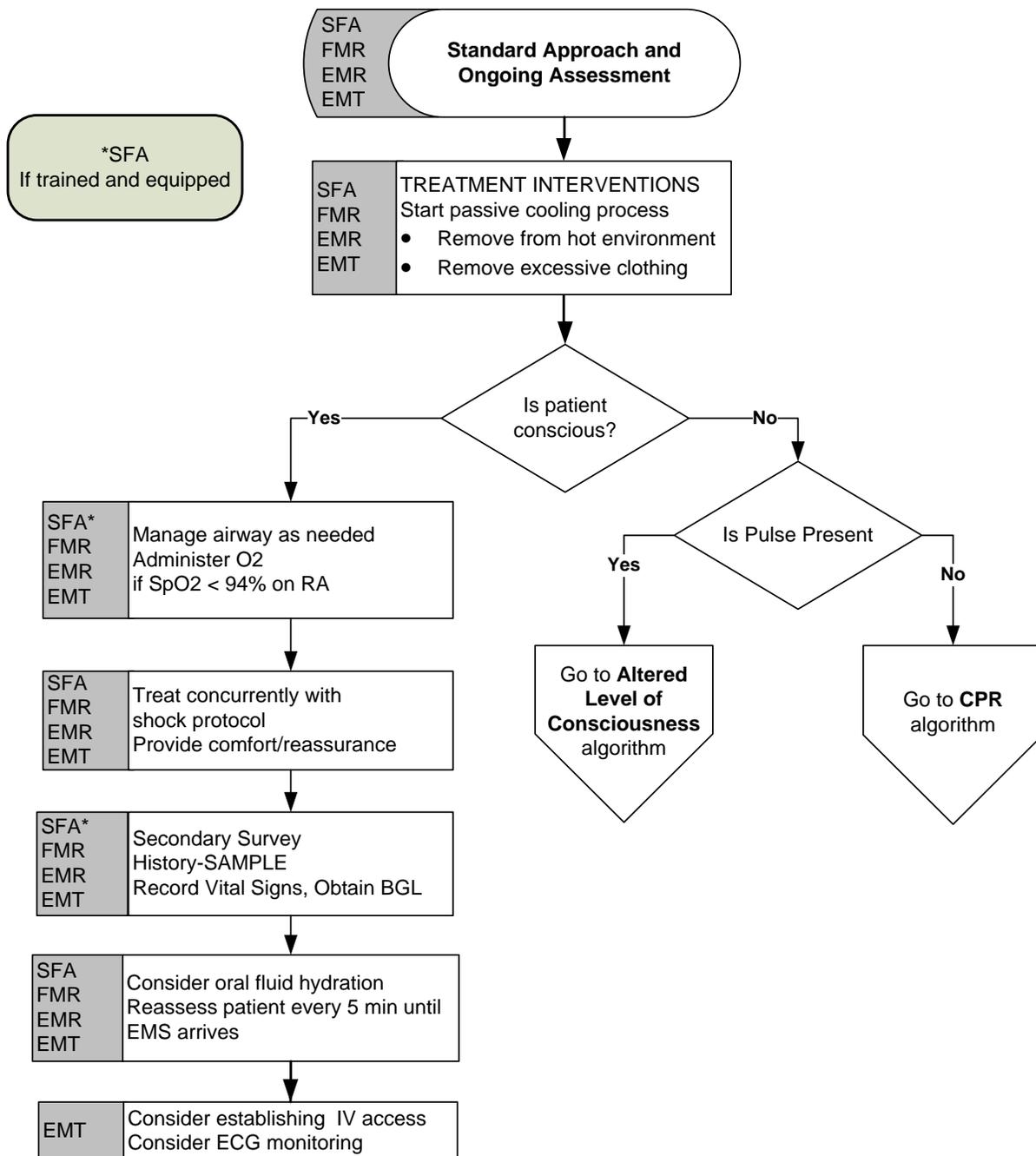


## Algorithm 16 Environmental Emergencies – Heat Related



## Environmental Emergencies – Heat-Related (Algorithm 16)

Hyperthermia results when the body gains or retains more heat than it can lose, resulting in a high core temperature. Mechanisms for body cooling include sweating and dilation of the blood vessels in the skin. When these mechanisms are overwhelmed and the body can no longer tolerate the excessive heat, serious injury results. High humidity reduces the body's ability to lose heat by evaporation. Vigorous exercise or prolonged strenuous activity leads to fluid and electrolyte loss. Elderly and pediatric patients are at greatest risk for heat injury. Newborns and infants have poor thermo regulation and can overheat easily.

### Heat Cramps

These painful muscle spasms occur after vigorous activity and usually involve the legs or abdomen. Heat cramps are the result of loss of salt and other electrolytes through sweating without adequate replacement.

### Heat Exhaustion

Heat exhaustion is the most common form of heat injury. It results from fluid and electrolyte depletion from excess sweating. These patients are mildly hypovolemic and their skin is usually cool, clammy and has poor colour. Their blood pressure is usually normal but their pulse may be elevated. If untreated, heat exhaustion can lead to heat stroke.

### Heat Stroke

Heat stroke is the least common heat injury, but if it is not promptly treated, it can be fatal. In heat stroke, the normal mechanism for heat release from the body is overwhelmed and body temperature rises to dangerous levels. The skin is usually hot, dry, and flushed; but in early heat stroke, the skin may still be sweaty and pale. As body temperature increases, the LOC decreases. Immediate cooling of the core temperature is vital.

### Treatment

Cramping (apply direct pressure to muscles with your hand),  
Conscious (remove from heat source, lie down, elevate legs, give water or diluted sports drink),  
Unconscious (remove from heat source, cool patient with wet towels, or ice packs to groin, neck, and axilla)

**Note:** These protocols do not apply to hyperthermia caused by a patient fever.