How to use the H's and T's.

THE H's and T's – POTENTIALLY REVERSIBLE CAUSES

You must use these on all cardiac arrests and near cardiac arrests.

H's	T's
• **Hypovolemia** • **Hypoxia** • **Hydrogen ion – acidosis** • **Hyperkalemia / Hypokalemia** • **Hypothermia** • **Hypoglycemia and other metabolic disorders**	• **Tablets (drug OD, accidents)** • **Tamponade (cardiac)** • **Tension pneumothorax** • **Thrombosis, coronary (ACS)** • **Thrombosis, pulmonary (embolism)** • **Trauma**

Hypovolemia (is this pt hypovolemic?)

1. Look for obvious fluid/blood loss.
2. Secure IO/IV access
3. Give fluid boluses and reassess
4. Check mark for Hypovolemia

Hypoxia (is this person hypoxic?)

1. Confirm chest rise and bilateral breath sounds with each ventilation
2. Check O2 source (trace from bag to flow meter)
3. Check mark for hypoxia

Hydrogen Ion Acidosis (is this pt acidotic?) (Respiratory or metabolic)

1. Respiratory acidosis ensure adequate ventilation (don't hyperventilate!)
2. Metabolic acidosis give sodium bicarbonate
3. Check mark for acidosis

Hyper /Hypokalemia (is there any evidence hyper/hypokalemia in this pt?)

1. For elevated S-T's and tall peaked T waves (hyperkalemia) give calcium chloride 10ml of 10% over 5 minutes
2. Hypokalemia, (flat T-waves & U waves) give potassium 20 to 30 meq/hour, Magnesium 1 to 2 g (2 to 4 ml of 50% solution) diluted in 10 ml of D5W IV/IO
4. If no signs of hyper/hypokalemia move to the next H.
5. Checkmark for hyper/hypokalemia

Hyper/Hypothermia (take a temp)

1. If too hot, cool down
2. If too cold, warm up
3. If normothermic or mildly hypothermic go to the next H.
4. Check mark for Hyper/hypothermia

Hypo/Hyperglycemia

1. Accu-check and correct if needed.
2. If normoglycemic move to the T's Checkmark for Hypo/hyperglycemia

Tablets (drug OD, accidents)

1. Support circulation while you find an antidote or Reversal drug- (Poison control)
2. If no drug OD suspected, move on to the next T. Check mark for tablets

Tamponade (chest trauma, chest malignancy, recent central line insertion, JVD, narrow pulse pressure, electrical alternans etc…)

1. Pericardial centesis

If no history or ruled out move on to the next T and check mark for Tamponade

Tension Pneumothorax (chest asymmetry, tympani, diminished breath sounds, high peak pressures, JVD, tracheal deviation, severe respiratory distress etc…)

1. Vent tension in chest
2. Support ventilation and oxygenation with BVM and intubate as necessary
3. If no history or ruled out move on to the next T and check mark for pneumothorax

Thrombosis (coronary or pulmonary)

1. Consider fibrinolysis for suspected coronary or pulmonary embolus.
2. CPR is not an absolute contraindication for fibrinolysis.
3. If no history or ruled out move on to the next T and check mark for thrombosis

Trauma Inspect body completely. Remove all clothes.

1. Secure airway
2. Control external bleeding with tamponade while concurrently delivering volume with isotonic crystalloids and blood products.
3. Look for internal bleeding (tap the abdomen if suspicious for internal bleed)and take to OR within a couple of minutes.
5. If no history or ruled out move on to the next check mark for trauma Etc…

By Terry White Oct 2012