

You have initiated management for a 61 year old in cardiac arrest. The arrest was unwitnessed and you gather a medical history from the spouse that includes diabetes (NIDDM), hypertension and hyperlipidemia, with no known allergies. The patient presents with pulseless electrical activity (PEA).

Would this case warrant glucometry? If you said NO, you are correct.

With the removal of hypoglycemia as a reversible cause of cardiac arrest from the 2010 AHA guidelines Part 8.2 (Neumar et al. 2010), routine glucometry is no longer recommended in adult cardiac arrest patients. Hypoglycemia is an uncommon cause of cardiac arrest and blood glucose level testing has a high incidence of false readings in cardiac arrest. False low readings can lead to the administration of IV dextrose which studies have shown to be associated with increased mortality and poor neurological outcomes (Peng et al., 2015). More importantly, treatment of hypoglycemia in routine circumstances can serve as a distraction to the overall provision of best practice management of out-of-hospital cardiac arrest: high quality CPR and defibrillation. Routine glucometry should also not be routinely performed when there is a return of spontaneous circulation (ROSC) as false low readings can serve as a distraction for routine ROSC care such as continued ventilatory support, 12 lead ECG, as well as fluid therapy and medication administration if required.

There are unusual circumstances where glucometry would be warranted in the out-of-hospital cardiac arrest or post-arrest setting. These include:

- Suspected recreational medication toxicity (overdose)
- Prolonged comatose state prior to arrest
- Recent administration of insulin (< 1 hour)
- Suspected severe sepsis precipitating arrest
- Age < 16 years (as pediatric patients are thought to be at increased risk of sepsis and have inadequate oral intake and inadequate glycogen stores)

Neumar RW, Otto CW, Link MS, Kronick SL, Shuster M, Callaway CW, Kudenchuk PJ, Ornato JP, McNally B, Silvers SM, Passman RS, White RD, Hess EP, Tang W, Davis D, Sinz E, Morrison LJ. Part 8: adult advanced cardiovascular life support: 2010 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care. *Circulation*. 2010; 122(suppl 3):S729-S767. DOI:10.1161/CIRCULATIONAHA.110.970988.

Peng TJ, Andersen LW, Saindon BZ, Giberson TA, Kim WY, Berg K, Novack V, Donnino MW. The administration of dextrose during in-hospital cardiac arrest is associated with increased mortality and neurologic morbidity. *Critical Care*. 2015;19:160. DOI:10.1186/s13054-015-0867-z