

# Detroit SonoWAR 2023

## #3 Resuscitation Station

You are watching the Detroit Grand Prix when the excitement becomes too much for a nearby fan and he clutches his heart and collapses. EMS is called and bystanders bring you a nearby AED. It advises no shock. You begin CPR. But how do you know if it is high quality CPR?



#### References to ruminare on en route to this station

1. Rolston, D. *Time is running out for manual pulse checks as ultrasound races past.* Resuscitation, 2022. [https://www.resuscitationjournal.com/article/S0300-9572\(22\)00622-0/fulltext](https://www.resuscitationjournal.com/article/S0300-9572(22)00622-0/fulltext)
2. Rabjohns, J et al. *Pesudo-pulseless electrical activity in the emergency department, an evidence based approach.* The American Journal of Emergency Medicine, 2020. <https://www.sciencedirect.com/science/article/abs/pii/S0735675719306527?via%3Dihub>
3. Koch, M et al. *Carotid Artery Ultrasound in the (peri-) Arrest Setting – A Prospective Pilot Study.* Journal of Clinical Medicine, 2022.
4. Adedipe, A et al. *Carotid Doppler blood flow measurement during cardiopulmonary resuscitation is feasible: a first in man study.* Resuscitation 2015.
5. Catena, E et al. *Association between left ventricular outflow tract opening and successful resuscitation after cardiac arrest.* Resuscitation, 2019.

## DETROIT SONOWAR 2023

### #3 Resuscitation Station

1 Point Discover this station

1 Point How accurate is a manual pulse check for determining pulselessness?

1 Point What is the difference between PEA and “pseudo”-PEA?

1 Point

1 Point List at least 3 ways you can use POCUS to assist in differentiating whether there is true pulselessness at a pulse check (i.e. how do you get better information than just your finger)

Carotid doppler blood flow measurement is currently being researched as a means of guiding adequate CPR<sup>3,4</sup>. In particular, the carotid End Diastolic Velocity (EDV) is proposed to be an important indicator, since adequate diastolic flow is required to ensure steady cerebral perfusion.<sup>3</sup>

1 Point What is a normal physiological EDV? (High quality CPR should try and match this!)

1 Point

1 Point Measure the carotid End Diastolic Velocity on your teammate.

1 Point It is a known phenomenon that POCUS can prolong pulse checks if left to run wild. List at least 3 ways you can improve time off chest while still using ultrasound.

1 Point If you placed a TEE on your patient during CPR, how could you tell if compressions were effective?

***Bonus Point: Tweet a photo for this station with your team name (and an action shot) with #SonoWAR to have a bonus point added on the back end!***