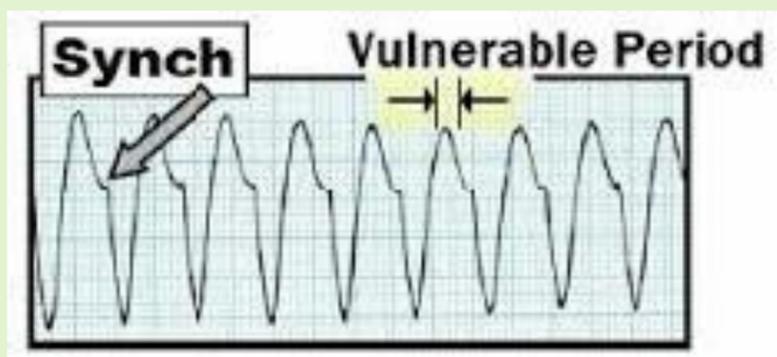


Scott DeBoer RN, MSN, CPEN, CEN, CFRN, CCRN, EMT-P
 Founder of Pedi-Ed-Trics Emergency Medical Solutions, LLC

Defibrillators vs Drugs

We have many uses for electricity in the world of emergency medicine. We have lights, sirens, scopes, and monitors. We also have that machine called a defibrillator. Defibrillators, it should come as no surprise, are used for defibrillation. That's quite handy when your patient is in ventricular fibrillation (V-fib). Defibrillation begins with "D" and that's for dead people... not our favorite scenario.

And when we think of that particular machine and use of electricity, we should remember that "C," as in cardioversion, comes before "D" in the alphabet. So, what do you do if your patient is not in V-fib, but is in supraventricular tachycardia (SVT) with a rate that is clearly too fast? If they are conscious and able to say, "Please don't put those paddles on my chest," they probably don't need to have the paddles put on their chest. In that case, it would probably be very appropriate to consider the other "D" in our lexicon... drugs (adenosine, diltiazem, etc.). And even if your patient is unstable, but still at all conscious, drugs for sedation should seriously be considered before cardioversion. Shooting electricity through the chest really is not a pleasant experience!



So, if your patient appears to be crashing right before your eyes, but is still alive with a pulse and a pressure, synchronized cardioversion is indicated. Cardioversion begins with a "C" and it's for patients who are "C"rashing. If your patient is not dead, but only "half-dead," the energy for cardioversion is half the defib dose (2j/kg) and that means 1j/kg. Yes, some peds cardiology centers who cardiovert kids on a regular basis use doses as low as 0.25-0.5j/kg, but in the ER, half the dead person dose is much easier to remember. In a very small child, it is distinctly possible that you won't be able to dial in the "exactly correct" dose for either defibrillation or cardioversion. You will often fall between numbers on the dial. If the dial choices are 15j and 20j, but you need 18j, go big (20j) or go home! Make sure you go over rather than under. It's like a reverse "Price is Right" game where you want to get closest, without going under, the formula amount.



"Sync"

Cardioversion is for the patient who still has a perfusing rhythm and when you want the electricity to be delivered at the right point of the cardiac cycle to avoid shocking the heart into V-fib. **It is crucial to remember to hit the "Sync" button** prior to each cardioversion attempt to ensure that cardioversion, not defibrillation, is done. Your patient has a pulse, rhythm, and a QRS complex; it's just REALLY fast. Defibrillating SVT can disrupt the QRS complexes and cause a full arrest. This would look really bad (and is so much more paperwork).

