



## MOBILE RESUSCITATION DEVICES, THE DEFIBRILLATORS

### What happened to Christian Eriksen in the Euros?

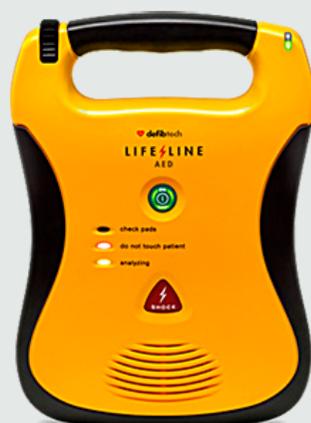
Many will have been shocked by the cardiac arrest suffered by Christian Erikson during the Euros recently. In some ways he was lucky that his cardiac arrest was witnessed and there was medical help close at hand. From reports it sounds like he had an early shock with a defibrillator and this jolted him out of a lethal cardiac rhythm - he survived because there was help around.

(OneWelbeck.com)



- Public recognition has increased during recent years regarding the vitality of mobile resuscitation devices, the defibrillators.
- Using the defibrillator **does not require any previous knowledge**.
- It is however recommended to know the location and how to operate a defibrillator to avoid reluctance in case of an emergency.
- The defibrillator guides the user, step by step, on its operation.
- The defibrillator automatically diagnoses and determines to shock, Electrocutation by mistake cannot occur (the defibrillator will not operate if a proper heart rhythm is identified).
- **The defibrillator is the only device which can save a life in the case of cardiac arrest, arrhythmia, or ventricular fibrillation.**
- Distributing defibrillators across Israel is obligated by the law of "Public access defibrillation", 2008.
- Defibrillators distribution in the Technion exceeds that which is required by law. A [list of all the defibrillators](#) locations, including photos, can be found on the Safety Unit website.
- The Security and Emergency Unit at the Technion provides first aid service around campus, until a certified medical help arrives. **In case of emergency call 2222 (or 5222 in medicine faculty)**. The Security and Emergency Unit will escort the ambulance to the needed location.
- Every ambulance carries a defibrillator.
- If you wish to **add a defibrillator** in your building, please contact the Safety Unit to get further information and provide contact details of the person in charge of maintaining the device.
- Throughout the year, first aid and resuscitation trainings are provided by the Safety Unit, according to the [Safety Unit training program](#).
- A national defibrillators' distribution around Israel can be found on <https://defi.co.il/>. This will help you identify the most proximal device wherever you go.
- A courseware on operating the defibrillator, courtesy of "Amitay - first aid trainings", can be found on the Safety Unit's website.

**We urge everyone to dedicate several minutes to locate the closest defibrillator to your workplace and home, and 10 minutes to the [courseware](#), explaining how to use it.**



## THE USE OF CELLULAR PHONES IN THE LAB

Cellular phones have become an extension of most. We are more and more dependent upon the information and the functions they provide. Therefore, one should note potential risks entailed upon the use of these devices in a laboratory environment:



### 1 Infection and contamination -

- Cellulares left on contaminated surfaces containing infectious agents, bloodborne pathogens, and even harmful chemicals, like welding materials, can contaminate one's cellular and subsequently other surfaces: hands and body, the lunch table, and even our homes.
- A recent study regarding cellulares as a potential source of bacterial contamination in hospital operating rooms revealed that 83% of cellulares carried pathogens on their screens (Department of Orthopedic Surgery, Saint Louis University, Missouri-pubmed.ncbi.nlm.nih.gov/25653323/).

### 2 Distraction -

- Constant incoming phone calls and/or messages while performing a high-risk assay or operating heavy machinery could result in fatalities. Research states that the average time it takes for a person to view a message is approximately seven (7) minutes on average. Most people cannot restrain themselves longer.

### 3 Interference with electronics -

- The radio frequency wavelengths (RF) emanated from cellulares can potentially interact with sensitive high power medical electronic devices.
- According to the FDA, pacemaker patients should avoid placing a cellular closer than 15 cm to their pacemaker due to possible magnetic interference.
- Cellulares might interfere with sensitive equipment being operated in the lab.

### 4 Laser reflection -

- When a laser beam hits a screen of a cellular - two reflections occur: (1) a specular reflection, of which intensity is related to the index of the individual screen's reflection (~ 8% of the laser beam is reflected); (2) a diffused reflection. These reflections can be harmful, therefore when working with an open laser system - cell phones must be kept away.

### 5 A potentially explosive atmosphere -

- For a cellular to explode the following circumstances must converge:
- The fume flammability range should be exceeded. Such a concentration could occur in a case of malfunction within a highly explosive atmosphere.
  - A serious cellular malfunction could cause a spark to reach the room's atmosphere via a gap larger than the quenching distance (> 2 mm). Most cellular cracks are so small that the heat loss would be too high for the flame to exit the device (same as in gas cylinders' flame stoppers).
  - The flammable gas in the environment should diffuse into the cellular for a few minutes (assuming a diffuse factor of 0.1 cm<sup>2</sup>/sec, which is the average diffuse factor for most hydrocarbons).
  - The temperature inside the cellular should be higher than the auto ignition temperature of the flammable gas in the environment.

**In conclusion, pay extra attention when using cell phones in the lab. While performing high-risk and focus-draining procedures, always store your cell phone away.**