

# 8<sup>TH</sup> CARDIOVASCULAR NURSING & NURSE PRACTITIONERS MEETING

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## TED-a low-cost time and life-saving automatic external defibrillator for home

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Sudden cardiac death (SCD)-caused by ventricular fibrillation (VF) or standstill- occurs in about 1000 persons/day in US alone. Since survival drops by 10% for every minute delay- no ambulance in the world will be quick enough to save them. The existing AEDs, that are now distributed in public places are not a good solution for home-use, due to their high cost for battery and capacitor not needed in TED. Our TED device modifies by computer the sinusoidal alternating electrical current from the mains to a biphasic defibrillatory wave and its cost-affordable to every household. In addition -it can pace the heart in case bradycardia or standstill caused SCD or it occurred after the electric shock. In order to prove the safety and feasibility of TED -we performed 2 animal experiments: in the first-we used 5 pigs: defibrillation of stable VF after 15 seconds was applied by TED or by a standard AED. Defibrillation was successful by both devices and thresholds were found to be similar. The second experiment used a rat model: six rats, underwent a mid LAD coronary closure and 3 months later VF was induced and TED defibrillation and external pacing was successfully achieved using TED in all at a heart rate above their rate, for an unlimited time before and after defibrillation. We conclude that modified alternating shock delivered by our device-TED- is feasible and as effective as that of the standard AED. This low-cost new technology should be used to prevent sudden cardiac arrest occurring at home/office.

### Biography

A Teddy Weiss has completed his MD in 1974 from Hebrew University School of Medicine and Cardiology at Hadassah Hospital in 1976 and Post-doctoral studies at Cedars-Sinai Cardiology Center in Los-Angeles in 1984. Since then, he is a fellow of the American College of Cardiology. He was the Director of the Coronary Care Unit at Hadassah for 30 years and is the Co-chairman of the Jerusalem Cardiology Chapter for the last 25 years. He is now the Director of the Cardiac Rehabilitation Center at Hadassah Hospital and has published more than 250 papers in reputed journals with a great impact on nuclear and interventional cardiology and early pre-hospital thrombolysis for acute myocardial infarction.

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