RG Medical – Neural Muscular Electric Stimulation to Prevent Blood Clotting

* The control pack can be attached to a belt worn around the patient’s waist, when mobility is desired. When it is removed from an AC power source a battery will provide power to the NMES for a limited duration (around 1 hour). When the patient is in a stationary position (sitting/laying) an IV pole can be used to charge and support the control pack.
* The control pack can contain a TI 320VC5505 DSP and will provide the following major functions:
  + Reflective Pulse Oximeter that will be taped to the patient leg (will be integrated into the NMES harness).
    - Assumption: SpO2 provides a good, proven and cost effective indicator of blood circulation. When there is good blood flow there will also be higher SpO2 levels and conversely poor blood flow means lower SpO2 levels. Low SpO2 levels means higher risk of the blood clotting.
  + NMES waveform generator.
    - Waveform(s) will be provided by RG Medical, based on studies.
    - Synchronized with the heartbeat
      * May be slightly out of phase to improve affect (TBD).
      * Occurs when PulseOx isn’t measuring, so not to interfere with the reading.
    - Max. Voltage – TBD (i.e. Max: 400V peak to peak)
    - Max. Current – TBD (i.e. Max: 1mA)
    - Max. Power – TBD (i.e. Max: 400V \* 1mA = 0.4W)