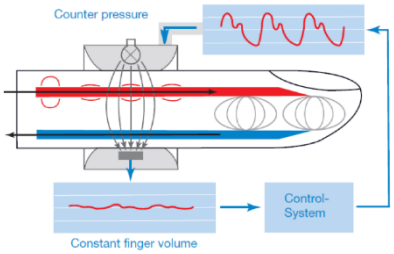
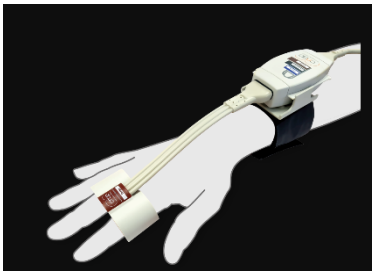
Measuring Stroke Volume Variation (SVV) with a LiDCO monitor

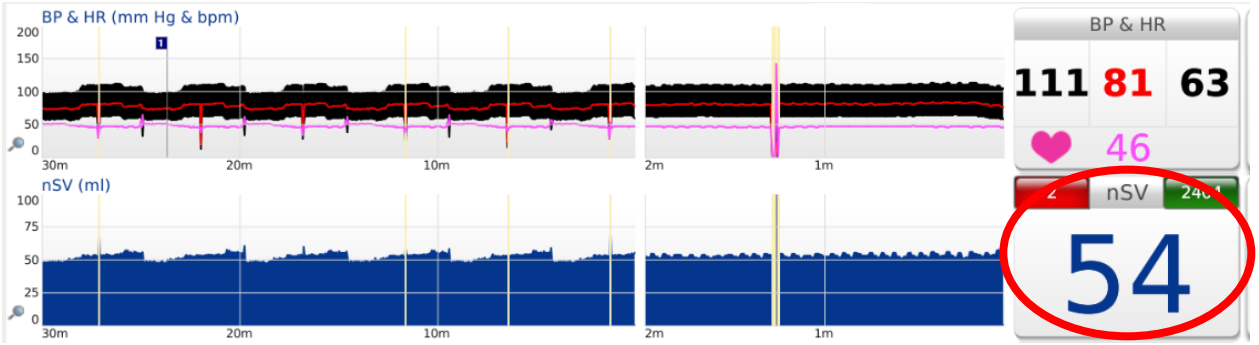
Materials needed

1) Regular arterial line (preferred) OR
2) CNAP sensor



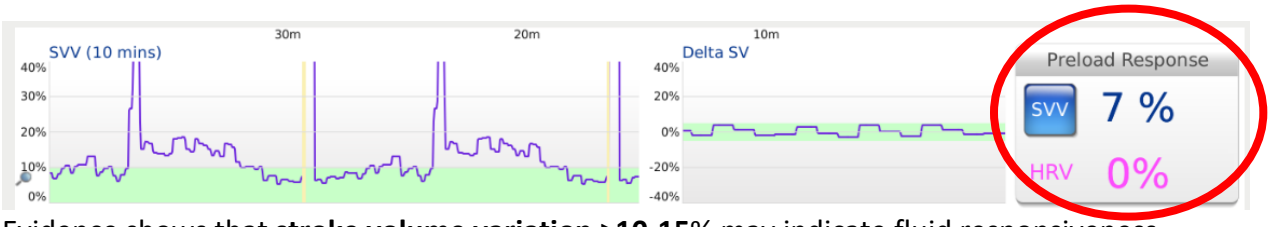


Hemodynamic Window



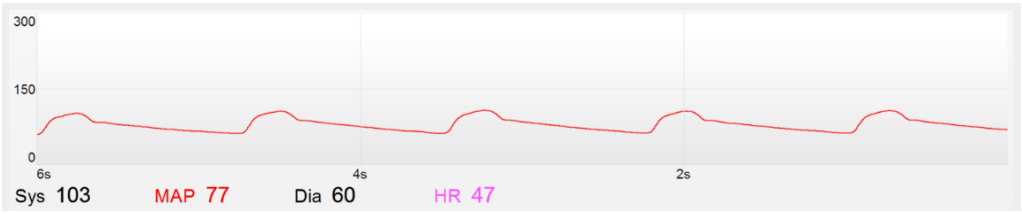
nSV = scaled stroke volume, based on patient parameters from a nomogram (height, weight, age)
nCO = scaled cardiac output (i.e nSV * HR)

Dynamic Preload Parameters Window



Evidence shows that **stroke volume variation >10-15**% may indicate fluid responsiveness

Blood Pressure Window



For the curious:

- LiDCO uses a proprietary PulseCO algorithm that converts arterial pressure wave form into a presumed stroke volume.

Pitfalls:

- Overdamped or Underdamped arterial lines
- Pathologies affecting vascular compliance (PAD, aortic regurg, IABP)
- Spontaneous breathing
- Low tidal volumes (<8ml/kg)
- Arrhythmias
- Pediatric patients (nomogram is not established)

References and Pictures from:
LiDCO website (www.lidco.com)

Drummond KE and Murphy E. "Minimally invasive cardiac output monitors." BJA. 2011; 12(1): 5-10

Pearse RM et al. "Equipment review: An appraisal of the LiDCO plus method of measuring cardiac output." Crit Care. 2004; 8(3): 190-195