Assessing Fluid Responsiveness

**CVP (IF CENTRAL LINE ALREADY IN PLACE)**

*CVP can serve as a starting point for adequate fluid loading. However, reaching these CVP thresholds does not guarantee adequate fluid loading. While a very low CVP usually indicates an under-resuscitated patient, the opposite is not true. In non-intubated patients, fluid load until CVP > 10
In intubated patients, fluid load until CVP > 14*

**IF YOU HAVE ULTRASOUND, USE B-LINES ON LUNG ULTRASOUND**

3 or more B-Lines in one Intercostal Space

**IF NOT TUBED-USE DYNAMIC IVC**

If IVC collapses with inspiration (>30%), give fluid bolus.
Measure just caudal to hepatic veins

**IF NOT TUBED AND PATIENT IS HYPERPNEIC-CAN USE DYNAMIC CVP**

If CVP decreases 2 mmHg with deep inspiration, administer fluid

**IF TUBED, REGULAR HEART RHYTHM, ALINE, NOT SPONT BREATHING-USE SYSTOLIC OR PULSE PRESSURE VARIATION**

Increase Vt to 10 ml/kg
If there is a visible decrease in systolic or pulse pressure with mechanical breaths, give fluid
After observation, change Vt back to lung protective settings
Limited evidence would indicate the pulse ox pleth wave may be used the same way

**IF ALINE IN PLACE-USE PASSIVE LEG RAISE**

Place patient in semi-fowlers (45)
Observe arterial MAP and Pulse Pressure (PP)
Place patient in modified Trendelenberg
If arterial MAP or PP rises during the next 60 seconds, patient will benefit from fluid
Return patient to original position
To know if your passive leg raise is accurate, you need to see the CVP increase by at least 2 mm or use a SV monitor

**IF YOU ARE SKILLED AT ECHO-USE LEFT VENTRICULAR ASSESSMENT (LVEDD)**

Transthoracic echo M-mode PLAX
Hypovolemia < 2.3 cm
Measured at the tip of the mitral leaflets at the q-wave