

Measurements and Interpretation

During and after cardiac imaging it is useful to do qualitative and quantitative assessments of volume status, cardiac function, and volume status. The measurements allow informed decision making about the cause of shock and can help guide resuscitation. Also learning how to do them will improve the quality of your global assessments. In this section we review how to do measurements and analysis relevant to acute and critical care medicine.

Measurement	Equation/method	Normal values
LVEF (%)	Visual estimation	50–70 %
LVOT (cm)	Measured 2D	1.7–2.3
LV VTI (cm)	Measured PW	18–25
Stroke Volume (mL/beat)	$3.14 (LVOTD/2)^2 \times LV\ VTI$	70–140
Stroke Volume Index (mL/m ² /beat)	SV/BSA	34–47
Cardiac Output (L/min)	$(SV \times HR)/1000$	4–7
Cardiac Index (L/min/m ²)	CO/BSA	2.8–4.2
SVR (dynes -sec/cm ⁵)	$((MAP-RAP)/CO) \times 80$	800–1200
SVR Index (dynes -sec/cm ⁵ /m ²)	$((MAP-RAP)/CI) \times 80$	1970–2390
PASP (mmHg)	$4(TR\ V_{max})^2 + RAP$	5–25
EPSS (cm)	Measured M-mode	EF > 50% <0.7 EF < 30% > 1.8
TASPE (mm)	Measured M-mode	> 17 mm
Aortic root (cm)	Measured 2D	Women: 2.7–3.3 Men: 3.1–3.7
<ul style="list-style-type: none"> • Use 10 mmHg for RAP most cases, good enough for an estimate and easy to use <ul style="list-style-type: none"> • 5 very small underfilled RA, RV, IVC • 15 Dilated RA, RV, IVC • ASE guidelines 3, 8, 15 mmHg based on IVC and IVC sniff <ul style="list-style-type: none"> • Less accurate in ventilated patients and more complex 		