Finding the phlebostatic axis

Place the patient on his back and note the elevation of the bed. Identify the phlebostatic axis by locating the intersection of the fourth inter-coastal space with the midpoint between the anterior and posterior chest. Mark this point for future referencing. Level the stopcock to the phlebostatic axis. Zero to this reference point every 24 hours. Although the supine measurement is considered the standard position for pressure measurement, accurate readings can be obtained when the patient is lying on his side. If the patient is lying in either the right or left 30 degree lateral position, the mid-point is located one half the vertical distance between the surface of the bed and the left sternal border. Allow 5 minutes following patient position change before noting measurements. Re-level each time the position of the body changes and note that change on the flowsheet.

How to perform a square wave test

A square wave test is used to check the accuracy of the pressure monitoring system. As you perform a fast flush of the pressure monitoring system watch the monitoring screen to evaluate the waveform.

Optimally dampened

The tracing will rise sharply, top off after you stop flushing, then decline sharply after you release it. One or two oscillations appear above and below the baseline after release. The pressure waveform of an optimally dampened system is clearly defined with a dicrotic notch. However, a patient with a hemodynamic problem (aortic stenosis, vasodilation or a low cardiac output state) will not have a clearly defined waveform.

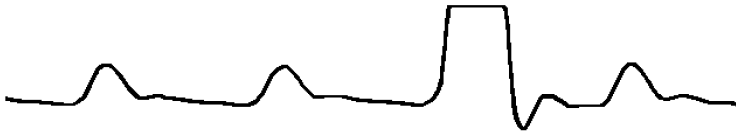
Underdampened

Many oscillations are seen below and above the baseline following the fast flush. An underdampened system records false-high systolic pressure and false-low diastolic pressure. An underdampened waveform may show more than one sharp upstroke, and diastolic points are hard to find. To correct this problem use rigid and short (3 to 4 feet) tubing and eliminate tiny air bubbles.

Overdampened

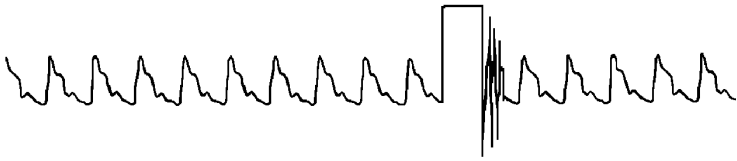
The tracing will have fewer than 1 1/2 oscillations below the baseline following the fast flush. In an arterial or pulmonary artery pressure tracing, the dicrotic notch will not be clear. An overdampened system records false-low systolic pressures but usually accurate diastolic pressures. This may be due to the catheter tip resting against a vessel wall or one of the following correctable causes:

Problem	Correction
Air bubbles or blood	Flush the system
Clotted blood.	Aspirate clot
Kinking or knotting of the tubing	Straighten tubing
Loose connection	Tighten connections
Cracked transducer	Replace system
Amplifier set in the wrong pressure range	Adjust range
Spontaneous catheter migration into a near-wedge position.	See back of card for corrections



Overdampened arterial waveform

Optimally dampened arterial waveform



Underdampened arterial waveform