

Understanding the Numbers

It may be necessary to undergo a left and/or right heart cardiac catheterization as part of your pulmonary hypertension evaluation. This is a glossary of terms to help you understanding the measurements are being obtained during the test. For more information about the left heart catheterization please see the Procedure tab on the home page.

RHC – right heart catheterization. The RHC is an invasive procedure in which a catheter is guided through the chambers of the heart into the large blood vessels of the lungs. The catheter is left in place in the pulmonary artery (PA). The catheter can then measure pressures in the heart and large blood vessels. The RHC is the “gold standard” in the diagnosis of pulmonary arterial hypertension. These definitions are just a few key components of measurements that must be taken during a RHC especially for those who have been diagnosed with pulmonary hypertension.

What is being measured?

- The pulmonary artery pressures (PAP) including the systolic, diastolic, and mean PAP are measured.
- The systolic pressure is the measurement of contraction phase during a cardiac cycle. The systolic pulmonary artery pressure is when the heart contracts and pumps blood into the pulmonary artery.
- The diastolic pressure is the measurement of the relaxation phase of the cardiac cycle. The diastolic pulmonary artery pressure is a measurement of the amount of pressure on the walls of the pulmonary artery when the heart is at rest.
- The mean pulmonary artery pressure is the average of the pressures in the pulmonary artery during one cardiac cycle. It is the continuous average of the pressure during on phase of the cardiac cycle. **Normal mPAP 12-15 mm Hg**

Other important measurements taken during your RHC include a pulmonary capillary wedge pressure (PCWP), pulmonary vascular resistance, cardiac output, and cardiac index.

- The pulmonary capillary wedge pressure also referred to as the pulmonary artery occlusion pressure is the indirect measure of the pressure on the left side of your heart. It is obtained by wedging or occluding the pulmonary artery with a small balloon on the catheter tightly enough to block flow from behind, therefore give a sample of the pressure beyond the balloon. Elevation in this PCWP can indicate that there is too much fluid in the lungs, which is called pulmonary edema, or have a problem of the left heart. **Normal PCWP 8 - 10 mmHg**
- The pulmonary vascular resistance is measurement of the amount of resistance to flow that must be overcome to force blood through the vascular of the lung. **Normal < 3 Woods Units (< 200 – 240 dynes)**
- The cardiac output is the measurement of the volume of blood being pumped by the ventricles of the heart in a minute. **Normal 5 – 8 L/min**
- The cardiac index is the measurement of the amount of blood being returned to the heart in a minute. **Normal 2.6 – 4.2 L/min**