

## Potential Causes of Blood Pressure Inaccuracies

Many outside forces contribute to blood pressure measurement variability.

The following is a list of influences that can be easily controlled:

<i>Cause</i>	<i>Systolic Effect</i>
The cuff is too small	+ 10-40 mmHg
The cuff is too large	- 5-25 mmHg
The artery line is not centered	+ 4-6 mmHg
The arm is above heart level	+ 2 mmHg / inch
The arm is below heart level	- 2 mmHg / inch
Patient's feet are not flat on the floor	+ 5-15 mmHg
Patient's back is not supported	+ 5-15 mmHg
Legs crossed	+ 5-8 mmHg
Patient in pain	+ 10-30 mmHg
Patient talking	+ 10-15 mmHg
Patient has full bladder	+ 10-15 mmHg
Patient has difficulty breathing	+ 5-8 mmHg
Patient doesn't rest 3-5 minutes	+ 10-20 mmHg
White Coat Syndrome	+ 11-20 mmHg
Tobacco or Caffeine use	+ 6-11 mmHg
The cuff is placed over clothing or has separate bladder/ cover	+/- 10-40 mmHg

### References:

1. O'Brien Eoin, Asmar Roland, Beilin Lawrie, Imai Yutaka, Mallion Jean-Michel, Mancina Giuseppe, Mengden Thomas, Myers Martin, Padfield Paul, Palatini Paolo, Parati Gianfranco, Pickering Thomas, Redon Josep, Staessen Jan, Stergiou George, Verdecchia Paolo. European Society of Hypertension recommendations for conventional, ambulatory and home blood pressure measurement. *J Hypertens* 2003; 21: 821-848.
2. Pickering Thomas G, Hall John E, Appel Lawrence J, Falkner Bonita E, Graves John, Hill Martha N, Jones Daniel W, Kurtz Theodore, Sheps Sheldon G, Roccella Edward J. Recommendations for blood pressure measurement in humans and experimental animals: Part 1: Blood pressure measurement in humans: A statement for professionals from the Subcommittee of Professional and Public Education of the American Heart Association Council on High Blood Pressure Research. *Hypertens* 2005; 45: 142-161.
3. <http://www.bloodpressure-drs-practical-guide.com/bloodpressurecuff.html>