



Accurate Blood Pressure Tips

- Use the proper size cuff; if two cuff sizes fit, use the larger one.
- Place the cuff on a bare arm.
- Place the artery marker over the brachial artery.
- Apply the cuff snugly, allowing room for no more than two fingers underneath.
- Have the patient sit quietly for a few minutes.
- Do not talk to the patient while taking a blood pressure.
- Support the patient's back and feet; keep legs uncrossed.
- Keep the upper arm at heart level with the lower arm passively supported, i.e. resting on lap.
- Keep the arm still during the measurement cycle.

Blood Pressure Variability

The following activities affect a blood pressure reading.

<u>Activity</u>	<u>Systolic (mmHg)</u>
Cuff too small ^{2,4,6,7,8,10,12,14,16,18,19}	10 to 40 ↑
Cuff over clothing ^{10,16,18}	10 to 40 ↑ or ↓
Back/feet unsupported ^{3,18}	5 to 15 ↑
Legs crossed ^{1,5,9,16,17,18}	5 to 8 ↑
Not resting 3 to 5 minutes ^{2,10,16,18,19,20}	10 to 20 ↑
Patient talking ^{2,10,11,16,17,18}	10 to 15 ↑
Labored breathing ^{16,18}	5 to 8 ↑
Full bladder ^{13,16,18}	10 to 15 ↑
Pain ¹⁶	10 to 30 ↑
Arm below heart level ^{2,10,13,16,17,18}	1.8 /inch ↑ 4.6 /cm ↑
Arm above heart level ^{10,13,16,17,18}	1.8 /inch ↓ 4.6 /cm ↓

For references, refer to the footnotes listed on this card.

References

1. Adiyaman Ahmet, Tosun Nevin, Elving LammyD, Deinum Jaap, Lenders JacquesWM, Thien Theo. The effect of crossing legs on blood pressure. *Blood Press Monit* June 2007; **12:3**: 189-193.
2. Campbell NormanRC, McKay DonaldW. Accurate blood pressure measurement: Why does it matter? *CMAJ* 1999; **161(3)**: 277-278.
3. Cushman WilliamC, Cooper KarenM, Horne RichardA, Meydrech EdwardF. Effect of back support and stethoscope head on seated blood pressure determinations. *Am J Hypertens* 1990; **3**: 240-241.
4. Fonseca-Reyes Salvador, Garcia de Alba-Garcia Javier, Parra-Carrillo JoseZ, Paczka-Zapata Jose Antonio. Effect of standard cuff on blood pressure readings in patients with obese arms. How frequent are arms of a 'large circumference'? *Blood Press Monit* 2003 **8:3**: 101-106.
5. Foster-Fitzpatrick Lucille, Ortiz Anna, Sibilano Helena, Marcantonio Richard, Braun LynneT. The effects of crossed leg on blood pressure measurement. *Nursing Research* Mar/Apr 1999; **48:2**: 105-108.
6. Geddes LA, Whistler SJ. The error in indirect blood pressure measurement with the incorrect size cuff. *Amer Heart J* July 1978; **96:1**: 4-8.
7. Gomez-Marin O, Prineas RJ, Rastam L. Cuff bladder width and blood pressure measurement in children adolescents. *J of Hypertens* Oct 1992; **10:10**: 1235-1241.
8. Iyriboz Y, Hearon CM, Edwards K. Agreement between large and small cuffs in sphygmomanometry: A quantitative assessment. *J of Clin Monitoring* Mar 1994; **10:2**: 127-133.
9. Keele-Smith Rebecca, Price-Daniel CeCilia. Effects of crossing legs on blood pressure measurement (Research Data). *Virginia Henderson Internat Nurs Lib* Aug 2007.
10. Lockwood Craig, Conroy-Hiller Tiffany, Page Tamara. Vital signs. *JBIR Reports* 2004; **2**: 207-230.
11. Lynch JamesJ, Long JackM, Thomas SueAnn, Malinow KennethL, Katcher AaronHonori. The effects of talking on the blood pressure of hypertensive and normotensive individuals. *Psychosomatic Medicine* Feb 1981; **43:1**: 25-33.
12. Manning DennisM, Kuchirka Carolee, Kaminski Jill. Miscuffing: inappropriate blood pressure cuff application. *Diag Methods Hypertens* 1983; **68:4**: 763-766.
13. Marx GertieF, Orkin LouisR. Overdistention of the urinary bladder during and after anaesthesia. *Can Anaes Soc J* Sep 1966; **13:5**: 500-504.
14. Netea RT, Lenders JWM, Smits P, Thien T. Arm position is important for blood pressure measurement. *J Hum Hypertens* Feb 1999; **13:2**: 105-109.
15. Nicholas WC, Watson RL, Barnes TY, Goodinow C, Russel E. Does blood pressure cuff size make a difference in blood pressure readings? *J Mississippi Med Assoc* Feb 1985; **26:2**.
16. 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.
17. Peters GrantL, Binder SaraK, Campbell NormRC. The effect of crossing legs on blood pressure: a randomized single-blind cross-over study. *Blood Pressure Monitoring* 1999; **4:2**: 97-101.
18. Pickering ThomasG, Hall JohnE, Appel LawrenceJ, Falkner BonitaE, Graves John, Hill MarthaN, Jones DanielW, Kurtz Theodore, Sheps SheldonG, Roccella EdwardJ. 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.
19. Rastam I, Prineas RJ, Gomez-Marin O. Ration of cuff width/arm circumference as a determinant of arterial blood pressure measurements in adults.
20. Rousanthisuk Weranuj, Wongsurin Unticha, Saravich Surachai, Buranakitjaroen Peera. Blood pressure determination by traditionally trained personnel is less reliable and tends to underestimate the severity of moderate to severe hypertension. *Blood Press Monit* 2007; **12**: 61-68.

WelchAllyn®