**Inter-arm systolic blood pressure (IASBP) differences in young adults**

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**Objective.** To test the hypothesis that IASBP differences do not differ between right hand (RH) and left hand (LH) dominant persons and determine the dependence of IASBP differences on gender, total body water and fat, arm fat, arm muscle mass and arm local tissue water (LTW).

**Background.** Prior reports have documented IASBP differences among various subject groups but the role of handedness has not been systematically examined.

**Methods.** Bilateral paired-simultaneous systolic (SBP) and diastolic (DSP) blood pressures were measured in triplicate in 75 mostly young adults (39 female, 36 male, 30 LH and 45 RH). Average age (±SD) was 27.7±9.3 years. Body composition parameters were measured with bioimpedance and LTW estimated by tissue dielectric constant (TDC) values at 1.5 and 2.5 mm depths on forearms and biceps.

**Results.** SBP and DSP were greater for males vs. females (124.6±12.9/74.9±8.7 vs. 109.2±10.1/68.2±9.5, p<0.001) but within gender, dominant vs. non-dominant arm pressures were not different and were unrelated to body composition parameters. Average absolute IASBP differences (5.0±4.2 mmHg) did not differ with respect to handedness being 5.2±4.4 mmHg for RH and 4.8±3.8 mmHg for LH, p=0.447. Absolute IASBP differences for all measurements (n=225) were >= 5 mmHg in 48.9% of measurements, >= 10 mmHg in 16.4% and >= 15 mmHg in 2.7%. These percentages did not depend on gender, handedness, or body composition parameters.

**Conclusion.** Handedness, gender and body composition appear not to be important determinants of IASBP differences in young adults. However, it is noteworthy that IASBP differences greater than 10 mmHg occur 16.4% of measurements.

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