

# **THE RELIABILITY OF A WRIST-CUFF BLOOD PRESSURE MONITOR IN COMPARISON TO AN ARM- CUFF BLOOD PRESSURE MONITOR**

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## **ABSTRACT**

**Objective:** Home Blood Pressure Monitors (HBPM) offer a convenient and easily accessible approach in the long-term monitoring of hypertension. It has the added potential of eliminating white-coat and observer dependence. As hypertension is perceived as one of the most common silent killers among patients, it is worth exploring new and improved methods in care against target organ damage. This importance is heightened even more when common comorbidities such as diabetes mellitus are added to the picture. Thus, a wrist-cuff device would be a helpful alternative for patients. However, despite the increasing popularity of wrist-cuff home blood pressure monitors, the issue remains that it must be properly validated.

**Methodology:** This is a diagnostic study which measures the reliability of the OMRON RS6 Blood Pressure Monitor HEM-6221-E against an arm-cuff blood pressure monitor in 62 subjects between the ages 18 to 65. Both devices were used on subjects and the readings were analysed using Bland-Altman plot. The association between both devices are also analysed using Pearson Correlation and the validation of the wrist-cuff device is measured following the criteria of both The Association for the Advancement of Medical Instrumentation (AAMI), European Hypertension Society (EHS) and Universal standard: AAMI-ESH. Further information regarding demographics, medical history and risk factors were also taken for descriptive analysis.

**Results:** According to the Bland-Altman method, it showed that both devices are in agreement. In Pearson Correlation, it was proved that there is good correlation between the two devices ( $r = 0.65$ )