

Validation of the OMRON M6 COMFORT IT (HEM-7322U-E) Upper Arm blood pressure monitor for self/home measurement, according to the revised (2010) European Society of Hypertension International Protocol

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A handwritten signature in blue ink, appearing to read 'Pr. R. ASMAR', is written over a light blue rectangular background.

Date: May 20, 2016

Signature Pr. R. ASMAR

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Device Details

Brand	OMRON
Model	M6 COMFORT IT (HEM-7322U-E)
Manufacturer	OMRON
Location	Upper Arm
Method	Oscillometry
Purpose	self/home measurement
Operation	Automatic
Arm Cuffs device	ONE UNIVERSAL RIGID CUFF 22- 42 CM
Arm Cuffs mercury	Medium: 22 cm to 32 cm and Large: 32 cm to 42 cm
Other features	VALIDATION OF THE OMRON M6 COMFORT IN THE DIABETIC POPULATION

Screening and Recruitment Details

Screening and Recruitment		Recruitment Ranges				
Total Screened	56			mmHg	All	On Rx
Total Excluded	23			< 90	0	
Ranges Complete	14		Low	90-129	11	0
Range Adjustment	0	SBP	Medium	130-160	11	0
Arrhythmias	0		High	161-180	11	0
Device Failure	0			> 180	0	
Poor Quality Sounds	1					
Cuff Size Unavailable	0		Low	< 40	0	0
Observer Disagreement	0		Medium	40-79	11	0
Distribution	0	DBP	High	80-100	11	0
Other Reasons	8			101-130	11	0
Total Recruited	33			> 130	0	0

Subject Details

Sex	Male:Female	12:21		
Age (years)	Range (Low:High)	43:85		
	Mean (SD)	60.9 (11.0)		
Arm Circumference (cm)	Range (Low:High)	24:36		
	Mean (SD)	30.2 (3.0)		
Wrist Circumference (cm)	Range (Low:High)	15:20		
	Mean (SD)	17.3 (1.0)		
Cuff for Test Device	Standard	20		
	Large	13		
	Small	0		
Mercury Cuff	Standard	20		
	Large	13		
	Small	0		
Recruitment BP (mmHg)	Range (Low:High)	SBP 105:178	DBP 51:107	
	Mean (SD)	144.4 (23.0)	86.3 (17.0)	

Observer Measurements in each Recruitment Range

SBP (mmHg)	DBP (mmHg)
Overall Range (Low:High)	Overall Range (Low:High)
101:175	50:109
Low (< 130)	Low (< 80)
36	33
Medium (130 – 160)	Medium (80 – 100)
32	35
High (> 160)	High (> 100)
31	31
Maximum Difference	Maximum Difference
5	4

Observer Differences

		SBP (mmHg)	DBP (mmHg)
Observer 2 – Observer 1	Range (Low:High)	-4:+4	-4:+4
	Mean (SD)	-0.2 (2.2)	+0.3 (2.1)

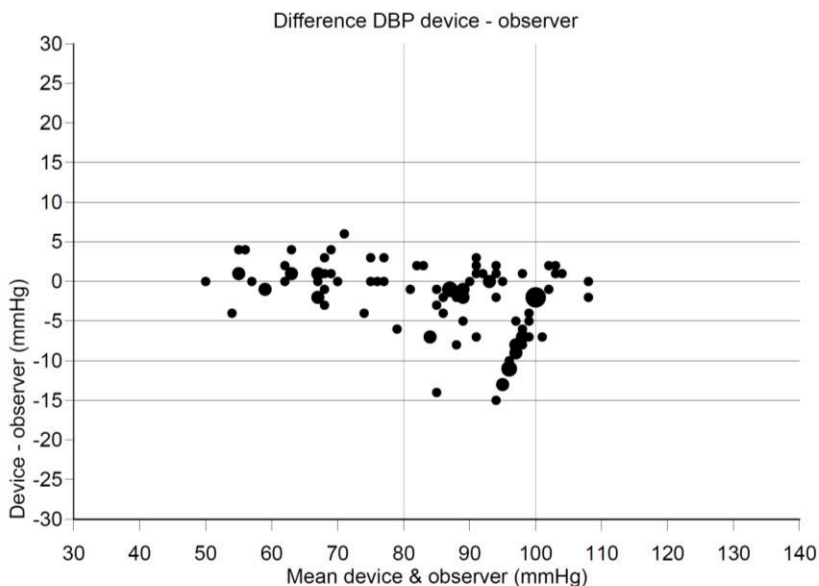
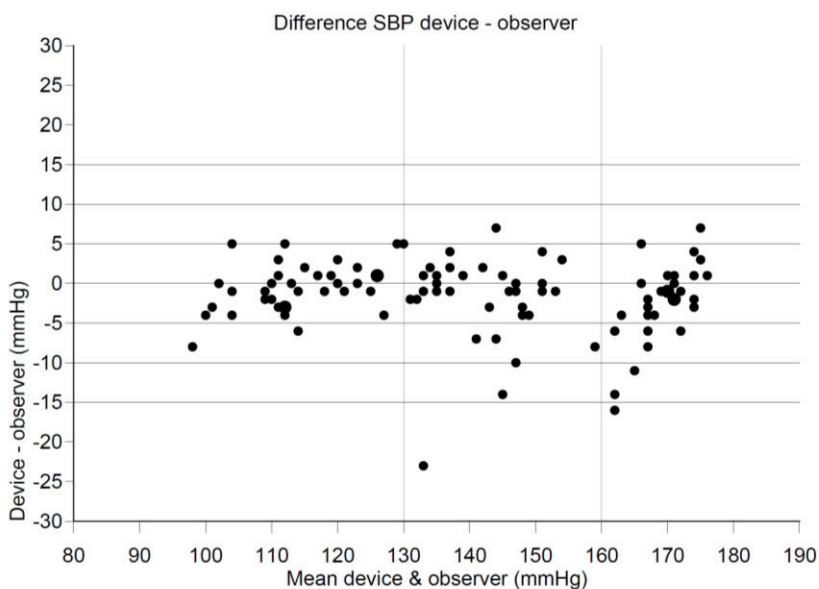
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Validation Results

Part 1		≤ 5 mmHg	≤ 10 mmHg	≤ 15 mmHg	Grade 1	Mean mmHg	SD mmHg
Pass Req.	Two of	73	87	96			
	All of	65	81	93			
Achieved	SBP	82	94	97	Pass	-1.6	4.7
	DBP	75	92	99	Pass	-2.2	4.5

Part 2		$2/3 \leq 5$ mmHg	$0/3 \leq 5$ mmHg	Grade 2	Grade 3
Pass Req.		≥ 24	≤ 3		
Achieved	SBP	29	0	Pass	Pass
	DBP	25	2	Pass	Pass

Part 3	Result
	Pass



References

- (1) O'Brien E, Pickering T, Asmar R, Myers M, Parati G, Staessen J, Mengden T, Imai Y, Waeber B, Palatini P. Working Group on Blood Pressure Monitoring of the European Society of Hypertension International Protocol for validation of blood pressure measuring devices in adults. *Blood Press Monit* 2002; 7:3-17.
- (2) Association for the Advancement of Medical Instrumentation. American national standard: electronic or automated sphygmomanometers. Arlington, VA: AAMI; 1993.
- (3) O'Brien E, Petrie J, Littler WA, de Swiet M, Padfield PL, Altman D, Bland M, Coats A, Atkins N. The British Hypertension Society Protocol for the evaluation of blood pressure measuring devices. *J Hypertens* 1993; 11(suppl 2): S43-S62.
- (4) O'Brien E, Atkins N, Stergiou G, Karpettas N, Parati G, Asmar R, Imai Y, Wang J, Mengden T, Shennan A; Working Group on Blood Pressure Monitoring of the European Society of Hypertension. European Society of Hypertension International Protocol revision 2010 for the validation of blood pressure measuring devices in adults. *Blood Press Monit* 2010;15(1):23-38.

