

# Microlife Watch BP Home Monitor:

## A tool for reliable home BP monitoring designed strictly according to the European Society of Hypertension recommendations

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### BACKGROUND

Hypertension Societies endorse self-home blood pressure (HBP) monitoring as an important adjunct to office measurements.

#### Advantages of HBP

- Can detect the white coat and the masked hypertension phenomena.
- Is more reproducible compared to office BP.
- Correlates more closely to target organ damage.
- Predicts cardiovascular events better.

#### Current problems with HBP

- Device accuracy.
- Observer bias and misreporting.
- Optimal monitoring schedule.
- Data summary.

In 2003 the European Society of Hypertension Working Group on BP Monitoring (ESH) provided detailed device recommendations and proposed a schedule for HBP in the initial phase of hypertension diagnosis and in the long-term follow-up [1].

### DESIGN

The Microlife WatchBP Home monitor (Fig 1) is a novel oscillometric device designed to provide reliable and unbiased HBP monitoring strictly in line with ESH recommendations [1].

The Microlife WatchBP Home monitor has a dual mode function for clinical use (Fig 2):

- In the **“USUAL”** mode patients can take casual BP measurements (multiple measurements any time or day) or measurements to other people.
- In the **“DIAG”** mode the patient has to follow a strict HBP monitoring schedule in accord to the ESH recommendations (duplicate morning and evening measurements for 7 days).

Average home BP after discarding initial day is displayed, as well as the individual readings.

The device has PC link capacity (USB cable) to display, store or print through a PC the average HBP data and the individual readings (Fig 3).



Fig 1

The Microlife WatchBP Home monitor for self-home blood pressure monitoring.



Fig 2

The switch to change function from Usual to Diagnostic mode.

Fig 3. PC display of WatchBP Home monitor data presenting 7-days home BP measurements and average home BP

#### Features of Microlife WatchBP Home monitor

- ✓ Validated oscillometric device for SHBPM at the level of the arm.
- ✓ Dual-function: “Usual” and “Diag”.
- ✓ Memory separate for each mode.
- ✓ Data summarizing: Display of ESH average HBP (average of at least 12 readings after exclusion of the first day) and individual readings.
- ✓ PC link capacity: Export of ESH average HBP and individual readings.

#### Advantages of the Microlife WatchBP Home monitor

- ✓ Accurate self-home blood pressure measurement.
- ✓ Reliable and unbiased assessment (devoid of observer or reporting bias).
- ✓ HBP schedule and summary adhering to ESH recommendations [1].
- ✓ Convenient for patient and physician.
- ✓ Reasonable cost.

### PILOT STUDY

Twenty consecutive subjects (table) attending an Outpatients BP Clinic with previous experience in HBP monitoring were invited to use the Microlife WatchBP Home device for 5 days. Participants were briefly instructed (5 minutes) on the use of the device and received single-page instructions-handout. In the end of each HBP monitoring session users were asked to fill in a questionnaire about the usefulness of the device (11 questions, each with 5 possible answers).

#### Main findings

- **95%** of participants effectively used the “DIAG” mode (one did not use the device).
- **70%** used the “USUAL” mode (4 participants used only the “DIAG” mode).
- **90%** found it “easy” or “very easy” to understand the dual function and to use the device.
- **90%** found the dual function “useful” or “very useful”.
- **60%** regarded the “DUAL” function as the main advantage of the device and 20% the memory (10% did not answer this question).

Table. Participants' characteristics

Mean age	65.4 years (range 34-78 years)
Sex	13 men and 7 women
Education	<7 years : 2 7-12 year : 6 College/university : 12

### CONCLUSION

The Microlife Watch BP monitor has been designed to provide a reliable and unbiased assessment of home BP strictly according to the ESH recommendations. The device appears to be user friendly and well accepted by hypertensives patients.

1. O'Brien E, Asmar R, Beilin L, Imai Y, Mallion JM, Mancia G, Mengden T, Myers M, Padfield P, Palatini P, Parati G, Pickering T, Redon J, Staessen J, Stergiou G, Verdecchia P. European Society of Hypertension recommendations for conventional, ambulatory and home blood pressure measurement. *J Hypertens* 2003; 21:821-48.
2. Stergiou GS, Bernd J, Giovas PP, Arron C, CY Y, Tan T. A tool for reliable self-home blood pressure monitoring designed according to the European Society of Hypertension recommendations: Microlife WatchBP Home monitor, *Blood Press Monit*, in press.