



SOP - 4 CALIBRATION, USE AND MAINTENANCE OF OMRON BLOOD PRESSURE MONITORS

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BP	Blood Pressure

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**CALIBRATION, USE AND MAINTENANCE OF OMRON BLOOD
PRESSURE MONITORS**

HR	Heart Rate
PI	Principle Investigator
SOP	Standard Operating Procedure
TARG	Tobacco & Alcohol Research Group

1. PURPOSE:

- To provide step-by-step instruction to all persons using OMRON devices to collect blood pressure and heart rate readings in clinical trials or research studies to ensure consistent data.

2. REFERENCES:

- Omron device website: <https://www.omron-healthcare.co.uk/category-landing/blood-pressure-monitors>

3. PERSONNEL REQUIRED AND LEVEL OF EXPERTISE:

- Investigator and research team.
- Training on how to use OMRON required.

4. MATERIALS AND EQUIPMENT REQUIRED:

- OMRON blood pressure monitor. Models include M10-IT, M6 and M6 comfort.
- Blood pressure cuff (small and large sizes also available for the M6 model only).
- Batteries (4 x AA size).

5. PROCEDURE:

5.1 When:

When a measure of BP and/or HR is required by the study protocol.

5.2 How:

5.2.1 Calibration

OMRON machines should be calibrated at least once per year and/or at the start/end of a study if deemed necessary. Allow plenty of time for calibration, this is completed out of house by OMRON and takes approximately 5-7 working days. The OMRON machines have a 3-year warranty. If the machine does not have a warranty, check the cost of calibration versus the cost of replacing the machine.

Prior to commencing testing, researchers should test the device to ensure the integrity of readings. If you suspect a device is reading inaccurately please check with your project supervisor/P.I. and, where necessary, return to the Research Team in 5D11 to send off for re-calibration. Date of last calibration can be found on the TARG Equipment log (contact Maddy). Calibration can be arranged by contacting the TARG administrator, and they will use the purchasing card to pay for this.

Please note that reading accuracy can be affected by the posture of the participant and by electromagnetic fields from devices such as mobile phones.

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5.2.2 Use

- Position the participant so that they are unable to see the display.
- Ensure the cuff is correctly attached to the participant's upper arm, as shown on the cuff/in manual. Participants should not be wearing thick clothing. Please note that small and large cuffs are available for the M6 models. Please choose a cuff size appropriate to the size of participant.
- Ask the participant if they have had their BP taken by a similar device in the past. If not, explain that the cuff will inflate and become tight, but it will then start to deflate.
- Ensure the participant is adequately rested prior to recording.
- Correct posture is vital to accurate readings. Feet should be placed flat on the floor, and participants should sit upright with their back straight. Their arm should be rested on the table so that the cuff is at the same height as their heart. Participants should be advised not to move or engage in any conversation during the reading.
- Press start button on the device and record BP and/or HR as required. If a second reading is required wait 2-3 minutes between recordings.
- Always use the same arm for multiple recordings.

5.2.3 Maintenance

In addition to the calibration checks, machines and attachments should be kept clean using a dry cloth as necessary. When not in use and between testing sessions the unit should be kept out of direct sunlight in the soft storage bag.

Spare batteries should always be kept in the laboratory, replacements are available from the Research Team (5D11). When the low battery symbol is shown on the display all four batteries should be replaced at the same time. If the device will not be used for 3 months or more batteries should be removed.

6. TROUBLE SHOOTING:

Problem	Solution
Error messages	Refer to device manual.
Machine operating slowly	Replace batteries.
Machine readings consistently fail	Re-attach cuff. If clothing is thick, should be removed/sleeve rolled up (although should not be tight on arm). Check the air plug is correctly connected to the unit.
Any other problems	TARG Laboratory phone: 07957334265. Professor Marcus Munafò (0117) 954 6841 internal 46841 Marcus.Munafò@bristol.ac.uk Dr Angela Attwood (0117) 331 7450 internal 17450 Angela.Attwood@bristol.ac.uk