

**PROTOCOL FOR THE MEASUREMENT OF BLOOD PRESSURE
USING THE MICROLIFE™ AUTOMATED BLOOD PRESSURE DEVICE (MODEL #3AA1-2)**

MATERIALS:

1. Microlife automated blood pressure device
2. Regular adult blood pressure cuff
3. Large adult blood pressure cuff
4. Calculator
5. Plasticized tape measure
6. 4 spare batteries (size AA; 1.5V)
7. Data collection form; pen with black ink; clip board.
8. Study table and chair

BLOOD PRESSURE MEASUREMENT PROCEDURES

Blood pressure measurement: The blood pressure measurement and the design and operation of the automated blood pressure device are based upon the combined principles of compression of the brachial artery under an elastic, inflatable cuff and the digital registration of systolic and diastolic blood pressures and the pulse using an oscillometric method. The blood pressure cuff is inflated automatically.

Arm circumference measurement: Since individuals have different arm sizes, several different sized cuffs are available. Proper cuff size must be used to avoid incorrect estimate of the blood pressure. Arm circumferences should be measured in the patient's left arm prior to being seated for the blood pressure measurement. Use the following procedures to measure the participant's arm circumference to determine the appropriate cuff size.

ARM CIRCUMFERENCE MEASUREMENT PROTOCOL

- Ask the patient to remove clothing that is covering the upper left arm
- Request that the patient sit with the forearm horizontal to the floor (the elbow should be bent)
- Measure the arm length from the bony prominence of the shoulder girdle (acromion) to the tip of the elbow using a tape measure
- Determine the midpoint of the upper arm and mark this on the back of the arm
- Ask the patient to relax his/her arm along the side of the body
- Draw the tape measure horizontally around the arm at the midpoint mark, but do not indent the skin. Record the measurement in centimeters.
- Use the measurement to determine the correct cuff size.

Arm circumference

Cuff size

22.0-31.9 cm

regular cuff

32.0-42.0 cm

large cuff

If the arm measures less than 22.0 cm or greater than 42.0 cm, the patient is not eligible for the study. In this case, thank the patient for coming and provide a gift card.

For patients whose arm circumferences meet the measurement specifications, seat them comfortably at the table with the left arm resting on the table.

APPLICATION OF THE CUFF

Use the following procedure when applying the cuff.

- Ensure that the participant is seated comfortably and both feet are flat on the floor. The sleeve on the left arm should be rolled up or the garments removed.
- Slip the left arm into the appropriately sized cuff and position the cuff on the upper arm 2 cm to 3 cm above the elbow. The tube should point in the direction of the lower arm.
- Tighten the free end of the cuff and close the cuff by affixing the Velcro. The cuff should be snug on the upper arm so that 2 fingers will fit between the cuff and the upper arm.

MEASUREMENT PROCEDURE

After the cuff has been appropriately positioned:

- Allow the patient to rest quietly for 5 minutes without talking before taking the measurement
- Set the instrument to measure a single (1) blood pressure
- Press the “START” button to inflate the cuff. The cuff will inflate and deflate automatically.
- Record the digital readings for systolic and diastolic blood pressures on the appropriate places on the form.
- Wait at least 30 seconds between blood pressure readings. Take and record 3 blood pressures.

DETERMINATION OF PATIENT ELIGIBILITY BASED ON BLOOD PRESSURE

Blood pressure eligibility criteria are based on the average of the second and third systolic and the average of the second and third diastolic blood pressure measurements. To calculate the averages, enter the second plus the third systolic blood pressure into the calculator and then divide the sum by 2. *Record the average systolic blood pressure on the data collection form.* Enter the second plus third diastolic blood pressures and divide the sum by 2. *Record the average diastolic blood pressure on the data collection form. See data collection form for eligibility criteria.*