Table 33. Intervention characteristics of included studies for Key Question 3b and 3c

| Author, Year Quality | Inter-vention | Device | Oscil Or Ausc | Auto Or Man | # of Measure-ments | Time Btwn Measurements | Method of BP Determination | Arm Position | Sitting | Resting Time (min) | Cuff Size (cm) | Interven-tionist (training) |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Andreadis, 2012128 Good | ABPM (24hr) | Microlife WatchBP | NR | A | 96 (max) | q15min | Morning ABPM average of reading taken in the first hour of waking, first 2 hours of waking and in the first 3 hours of waking (based on diary) | Immobilize arm during measurement | NR | NR | 22 x 32 or 32 x 42 | NR (NR) |
| HBPM | Omron 705 IT, Omron HEM 705 CP, Microlife BPA100Pluse | O | A | 4 (2 per session) | 1 minute w/in 1 hour after waking and in the evening before going to bed | Morning HBPM average of all morning recordings taken 1 hour after waking | NR | ✓ | 5 | 13 x 23 or 15 x 30 (Omron 705); 12 x 23 or 14 x 28 (Omron 705CP); 22-42 (Microlife); according to arm circumference | Self (Shown how to use the devices and instructed) |
| OBPM | Microlife WatchBP | NR | A | 6 | 1 minute | Averaged, one calibration reading not included in the six readings. | Supported by adjustable armrests at heart level | ✓ | 5 | NR | NR (NR) |
| Celis, 2002114 Fair | ABPM (daytime) | SpaceLabs 90207 and 90239A | O | A | 40 (max) | q15min 8 AM - 10 PM; q30min at other times | Daytime defined as mean of all readings between 10:00 AM and 8:00 PM weighted for time interval between consecutive readings | NR | NR | NR | NR | NR (NR) |
| OBPM | NR | NR | NR | 6 | NR | Average of 6 readings (3 each at 2 visits) | NR | ✓ | 5 | NR | NR (NR) |
| Cuspidi, 2011129 (4856) Good | ABPM | SpaceLabs 90207 | O | A | 88 (max) | q15min 7 AM - 11 PM; q20min 11 PM - 7 AM | Average 24hr | Still | NR | NR | NR | NR (NR) |
| OBPM | Mercury sphyg. | U | M | 3 | 1 minute | Mean of three measurements | NR | ✓ | 5 | NR | NR (NR) |
| Fogari, 1996130 (13470) Fair | ABPM (24hr) | SpaceLabs 90207 | O | A | 96 (max) | q15min | Averaged BP measurements for daytime (6AM - 10 PM) and nighttime | NR | NR | NR | NR | NR (NR) |
| OBPM | Mercury sphyg. | U | M | 2 (first visit), 3 (remaining visits) | 1 minute | Averaged | NR | ✓ | 2, 10 | NR | Physician (NR) |
| Gerc, 2000131 (10194) Fair | ABPM (daytime) | Remler M200, Sandoz Pressure System, and the Profilomat | O | A\* | 36 (max) | q20min | Average | Stationary during cuff deflation | NR | NR | NR | NR (NR) |
| Nurse OBPM | Mercury sphyg. | U | M | 3 | NR | Average | NR | ✓ | NR | NR | Nurse (NR) |
| Physician OBPM | Mercury sphyg. | U | M | NR | NR | NR | NR | NR | NR | NR | Physician (NR) |
| Graves, 2010132 Fair | ABPM (24hr) | SpaceLabs 90208 | O | A | 72 (max) | q15min 9 AM - 9 PM); q30min at night | Daytime average (median of 31 readings included in calculated averages) | NR | NR | NR | NR | NR (NR) |
| Auto-mated OBPM | Omron 705 CP | O | A | 3 | 1 minute | 1. Average of the second and third readings; 2. Average of all three readings | At heart level | ✓ | 5 | Appropriate to arm size | NR (NR) |
| Manual OBPM | Mercury sphyg. | U | M | 3 | 1 minute | 1. Average of the second and third readings2. Average of all three readings | At heart level | ✓ | 5 | Appropriate to arm size | Registered nurses (Formal instruction in performing ausculatory BP measurements according to the American Heart Association Guidelines. Training was uniform across observers and full instructions were specified within the study protocol for the anti-hypertensive treatment trial.) |
| Gustavsen, 2003133 Fair | ABPM (24hr) | A&D TM2420 | U | A | 80 (max) | q15min 7 AM - 11 PM, q30min 11 PM - 7 AM | Average daytime BP 8 AM - 10 PM, nighttime 12 - 6 AM | NR | NR | NR | NR | NR (NR) |
| OBPM | Aneroid or mercury column sphyg. | NR | NR | NR | NA | NR | NR | ✓ | NR | NR | Physician (NR) |
| Hond, 2003b134Fair | ABPM (24hr) | SpaceLabs 90207 | O | A | 76 (max) | q15min 8AM - 10 PM, q30min 10 PM - 8 AM | Daytime time-weighted means 10AM - 8 PM, nighttime time weighted mean midnight - 6 AM | NR | NR | NR | 24 x 14 or 32 x 15 | NR (NR) |
| HBPM | Omron HEM 705 CP | O | A | 6 (3 per morning and evening) | NR (12 hours between sessions) | NR | NR | ✓ | 5 | 24 x 14 or 32 x 15 | Self (Instructed by physician or nurse) |
| OBPM | Mercury sphyg. | U | M | 3 | NR | Last two measurements of the two visits were averaged | NR | ✓ | 5 | 24 x 14 or 32 x 15 | Physician (NR) |
| Hozawa, 2002127 Fair | ABPM (24hr) | ABPM-630 | O | A | 48 (max) | q30min | Daytime BP average over 8 hours of waking time, nighttime BP average of 4 hours while subject in bed, average 24hr daytime and nighttime BP calculations over 24hr; time calculated from diaries | NR | NR | NR | NR | NR (NR) |
| HBPM | Omron HEM 401C | O | A\* | 2 (morning and evening) | NR | Average of all measurements | NR | ✓ | 2 | NR | Self (Health education classes) |
| OBPM | USM700F | U | A | 2 | NR | Average | NR | ✓ | 2 | NR | Nurse or technician (NR) |
| *Aihara, 1998293 (companion publication to Hozawa, 2002)* *Fair* | *ABPM (24hr)* | *ABPM-630* | O | A | *48 (max), 46.9 (mean)* | *q30min* | *Daytime BP average over 8 hours of waking time, nighttime BP average of 4 hours while subject in bed, average 24hr daytime and nighttime BP calculations over 24hr* | *NR* | *NR* | *NR* | *Standard* | *NR (Household representatives attended classes for ABPM)* |
| *OBPM* | *USM 700F* | *U* | *A* | *2* | *NR* | *NR* | *NR* | ✓ | *2* | *Standard* | *Nurse or technician (NR)* |
| Inden, 1998135 Fair | ABPM (24hr) | ABPM-630 | O | A | 50 (max) | q30min | Average during daytime (7 AM - 11:30 PM) and nighttime (11:00 PM - 6:30 AM) and 24hrs after removing the first 2 measurements | NR | NR | NR | NR | NR (NR) |
| OBPM | Mercury sphyg. | U | M | 2 | NR | Average | NR | ✓ | 15 | NR | NR (NR) |
| Kario, 2013136 Fair | ABPM (24hr) | NR | O | NR | 48 (max) | q30min | Average data during 24hr, daytime and nighttime periods | NR | NR | NR | NR | Physician (Trained participant as recommended by JSH guidelines) |
| HBPM | NR | O | NR | 2 | NR, once in morning and once in evening | Average of morning and evening | NR | NR | NR | NR | Self (Trained by physician as recommended by JSH guidelines) |
| OBPM | NR | NR | NR | 1 | NA | One BP measurement | NR | NR | NR | NR | Clinical practitioner (NR) |
| Khoury, 1992137 Fair | ABPM (24hr) | SpaceLabs 90207 | O | A | 96 (max) | q10min 7 AM - 8 PM; q15min 8 PM - 10 PM; q30 min 10 PM - 11 PM; q60min 11 PM - 7 AM | Mean hourly blood pressure | NR | NR | NR | NR | NR (NR) |
| OBPM | NR | NR | NR | 1 | NA | Previous office casual blood pressures from the last 12 months were used for analysis. One measurement was made on the day ABPM was applied. Average of office measurements used. | NR | ✓ | NR | NR | Nurses (NR) |
| Licitra, 2012138 Fair | ABPM (24hr) | SpaceLabs 90207 | O | A | Not enough information to calculate | q15min during daytime, q20min during nighttime | NR | NR | NR | NR | NR | NR (NR) |
| OBPM | NR | NR | NR | 2 | NR | Averaged | NR | ✓ | NR | NR | Physician () |
| Manning, 1999139 Fair | ABPM (24hr) | Medilog ABP | U | NR | 48 or 70 | q30min for 24 hours, or q15min from 7 AM - 6 PM and q30min 6 PM - 7 AM | Mean of daytime and nighttime BPs as determined by diary; recordings in which >=20% of recordings failed were rejected and those patients asked to return for repeat measurement | NR | NR | NR | NR | NR (NR) |
| OBPM | Mercury sphyg. | U | M | 3 measures per visit, 3 visits | 1 minute | Mean of 3 readings per visit and then mean of 3 visits | NR | ✓ | 5 | NR | NR (NR) |
| Martinez, 1999140 Fair | ABPM (24hr) | SpaceLabs 90207 | O | A | NR | q15min during daytime; q30min all other hours | Daytime average of BP between 10 AM and 8 PM; nighttime average 12 AM and 6 AM; 24hr average over entire period | Still | NR | NR | NR | NR (NR) |
| OBPM | TRIMline (mercury sphyg.) | U | M | 2 or more | 1 minute | Mean of two BP values, mean of 3 visits | NR | ✓ | NR | NR | Nurse and doctor (Trained with video-taped technique, re-trained every 3 months) |
| Myers, 2010141 Good | ABPM (24hr) | SpaceLabs 90207 | O | A | 76 (max) | q15min 8AM - 10 PM, q30min 10PM - 8 AM | Mean awake ABP calculated according to the awake period as reported in each diary | NR | NR | NR | NR | Technician (Instructed participant) |
| Auto-mated OBPM | BpTRU model 100 | O | A | 5 | 1 minute or 2 minutes | Mean of 5 measurements | NR | ✓ | NR | NR | NR (NR) |
| Nasothimiou, 2012142 Good | ABPM | SpaceLabs 90207 or 90217 | O | A | 72 (max) | q20min | At least 20 valid awake readings required. Average awake and asleep BP calculated. | Forearm extended | NR | NR | 12 x 23 or 14 x 30 where appropriate | NR (Instructions given) |
| HBPM | Omron HEM 705 CP, Omron IC, Omron 705IT | O | A | 4 (2 per morning, 2 per evening) | 1 minute | All HBP readings averaged. | NR | ✓ | 5 | 12 x 23 cm, 14 x 28 cm (HEM0705 and IC); 13 x 23, 15 x 30 (705IT) | Self (Instructions given) |
| OBPM | Mercury sphyg. | U | M | 3 | ≥ 1 minute | Average of the second and third clinic BP reading of the three visits averaged to give clinic BP. | NR | ✓ | 5 | 12 x 23 or 15 x 35 where appropriate | Physician (Met British Hypertension Society Protocol criteria for observer agreement in BP measurement.) |
| Pessanha, 2013152 Fair | ABPM | SpaceLabs 90207 | O | A | 62 (max) | q20min 7 AM - 11 PM; q30 min 11:30 PM - 6:30 AM | Average daytime | Non-dominant arm | NR | NR | NR | NR (NR) |
| OBPM | OMRON M6 | U | A | 3 | 5 minutes | Average of 3 recordings | Left arm | ✓ | 10 | "Appropriate" | NR  |
| Pierdomenico, 1995143Fair | ABPM (24hr) | SpaceLabs | NR | A | 84 (max) | q15min 6 AM - 12 AM; q30min 12 AM - 6 AM | Average over 24 hours | NR | NR | NR | NR | NR (NR) |
| OBPM | Mercury sphyg. | U | M | 3 | NR | Averaged | Same arm | ✓ | 10 | NR | NR (NR) |
| Radi, 2004144 Good | OBPM | Omron 805 CP | O | A | 3 | 1 minute | Mean of three measurements | NR | ✓ | 5 | NR | NR (NR) |
| Talleruphuus, 2006145Fair | ABPM (daytime) | QuietTrak and TM 2421 monitor | NR | NR | ≥ 32; 64 (max) | q15min 7 AM - 11 PM | Median of accepted values | Still arm | NR | NR | NR | NR (NR) |
| OBPM | Standard sphyg. | U | M | 5 (7 if necessary) | NR | Average of 3 consecutive measurement on arm with highest BP | Each arm | NR | 10 | 12 x 35 | Technician (Trained by authors) |
| Tanabe, 2008146 Fair | HBPM | LifeSource UA 787EJ | NR | A\* | 14 (max) | NR, on waking and before going to bed | Average after deleting highest and lowest readings | NR | NR | NR | NR | Self (NR) |
| OBPM | NR | NR | NR | 2 | 30 minutes (minimum) | NR | NR | NR | NR | NR | Research assistant (NR) |
| Toyama, 2008147 (7003) Fair | HBPM | Omron HEM 7471C | O | A | 14 | 1 day | Mean of at least 7 morning measurements | NR | NR | NR | NR | Self (NR) |
| OBPM | BP-203RVII | NR | A | 1 | NA | Had to be above threshold in three screens, but only including the third screen here as the study entry OBP. | NR | ✓ | 30 | NR | Physician (NR) |
| Ungar, 2004148 Good | ABPM (24hr) | SpaceLabs 90207 | O | A | 97 (max) | q15min 7 AM - 10 PM; q20min 10 PM - 7 AM | Average across entire 24 hour period, daytime and nighttime periods | Non-dominant arm, relaxed and stable during measurements | NR | NR | Most appropriate of three cuff sizes encircling 80% of arm: 17 x 26, 24 x 32, 32 x 42 | NR (NR) |
| OBPM | Mercury sphyg. | U | M | 2 (3 if necessary) | NR | All measurements averaged | Suspended at approximately heart level | ✓ | 10 | Standard, larger cuff used when arm circumference > 32 cm | Physician (NR) |
| Verdecchia, 1995149Fair | ABPM (24hr) | SpaceLabs 5200, 90202 or 90207 | O | A | 96 (max) | q15min | Daytime: 6 AM - 10 PM; Nightime: 10 PM - 6 AM). Averages in each time period used. Editing performed by software; SBP <70 or >260, DBP <40 and >150 discarded. | NR | NR | NR | NR | NR (NR) |
| OBPM | Mercury sphyg. | U | M | 3 | 1 minute | Mean of 3 | Non-dominant arm at heart level, relaxed and supported | ✓ | 5 | NR | Physician (NR) |
| Zabludowski, 1992150Fair | ABPM (24hr) | Accutracker I | NR | A | 84 (max) | q15min during daytime, q30m 12 AM - 6 AM | Average of readings | NR | NR | NR | NR | NR (NR) |
| OBPM | Accutracker I | NR | M | 3 | NR | Average | NR | ✓ | 5 | NR | Physician or nurse (NR) |
| Zawadzka, 1998151Fair | ABPM (24hr) | A&D TM2420 | U | A | 20 (minimum) | 30 minutes during waking day | Mean daytime diastolic BP | Supported | ✓ | NR | NR | NR (NR) |
| OBPM | NR | NR | NR | 3 | NR | Mean | NR | NR | NR | NR | Physician, clinic nurse (NR) |

\*Semi-automated device

**Abbreviations**: A = automated; ABP = ambulatory blood pressure; ABPM = ambulatory blood pressure monitoring; AM = ante meridiem; BP = blood pressure; btwn = between; cm = centimeter(s); DBP = diastolic blood pressure; HBPM = home blood pressure monitoring; hr = hour(s); M = manual; min = minute(s); mm Hg = millimeters of mercury; NR = not reported; OBPM = office blood pressure measurement; O = oscillatory; PM = post meridiem; q = every; SBP = systolic blood pressure; sphyg = sphygmamonometer; U = auscultatory