



Blood Pressure Monitoring

- **Before taking a BP measurement:** rest comfortably and quietly (with no talking) for 5 minutes in a sitting position, with back supported.
- **When taking a BP measurement:** maintain sitting position with back supported, arm supported at heart level, with feet flat on floor.
 - Use cuff with an appropriate size bladder
 - Width close to 40% of arm circumference
 - Length should cover 80-100% of arm circumference
 - Lower edge of cuff 3 cm above elbow crease
- When using **non-automated BP monitors** in the office
 - 3 readings should be obtained
 - The first should be discarded and the following 2 measurements should be averaged
- When using **automated BP monitors** in the office
 - Set for measurements at 1-2 minute intervals
 - Leave patient alone after first measurement
 - The average BP is displayed on the device
- When using **home BP monitors** it is recommended that patients take ≥ 2 morning and evening readings every day for 1 week.
 - In the morning (before medication) and before bed
 - First day values should be discarded; the remaining 6 days of results are averaged for the reading
 - Interval between readings can be as short as 1 minute
 - Educate patients about the variability of readings



Mercury Monitor Aneroid Monitor



Automated Monitors



Use validated and calibrated devices

**There may be variations
between different
monitoring devices for BP
measurements.**

**BP thresholds should be
utilized as a guide.**

Additional information and references are available in the handout:

<https://medicine.dal.ca/departments/core-units/cpd/programs/academic-detailing-service/AC-Service-Resources.html>



Is more intensive BP control in select high risk patients beneficial?

SPRINT asked if a target SBP < 120 mmHg is better than a SBP of < 140 mmHg in **SELECT** people with high CV risk?

THE SPRINT POPULATION

- SPRINT **included** 9361 people
 - ≥ 50 yrs
 - SBP 130 – 180 mmHg
 - With ≥ 1 CV risk factor: clinical or subclinical CVD (other than stroke); CKD with eGFR 20-60 mL/min; Framingham risk ≥ 15; age ≥ 75
- SPRINT **excluded**
 - Patients with diabetes, history of stroke, nursing home residents, pregnancy, ESRD & polycystic kidney disease, unstable angina ≤ 3 months prior, symptomatic HF ≤ 6 month prior, LVEF < 35%, proteinuria ≥ 1g/day, 1 min standing SBP < 110 mmHg
- It is estimated that **8% of the general adult population and 17% of treated hypertensive adults in the United States meet the inclusion criteria for SPRINT.**

RESULTS

- At the start of the study**
 - > 90% of patients were treated with at least one antihypertensive
 - Mean BP was 140/78 mmHg
 - Mean Framingham risk score ~20%
 - ~20% had CVD
 - Mean age was 68 (28% ≥ 75 years of age)
- At the end of the study**
 - Patients required a mean of 3 medications to achieve the intensive target (mean SBP = 121 mmHg)
 - Fatal and non-fatal CV events (MI, other ACS, stroke, HF) were significantly lower in the intensive group compared to the standard group (NNT = 63 over 3.3 years)
 - Serious AE related to treatment with medications occurred at significantly higher rates in the intensive group compared to the standard group (NNH = 46 over 3.3 years)

BOTTOM LINE....

- For ~ every 50 people treated to a SBP < 120 for 3.3 years instead of a SBP < 140 mmHg
 - There was approximately one less CV event (mostly HF or death)**BUT**
 - There was approximately one more serious AE related to treatment (mostly AKI).
- In patients similar to the SPRINT population lower may be better **SOMETIMES**
- Keep in mind, lower targets may increase**
 - The number of antihypertensive medications
 - Drug interactions
 - Risk of serious side effects
 - Need for monitoring
 - Costs

The results of SPRINT are not generalizable to all hypertensive patients with elevated CV risk

- Recent meta-analyses have found that lower BP targets do not result in improved outcomes when compared to standard BP targets in:
 - People with established CV disease
 - People with diabetes
 - People with a previous stroke
 - or the very frail elderly

