

Blood Pressure Measurement: Statewide Tools and Resources

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High Blood Pressure

- High blood pressure, or hypertension (HTN): a major **risk factor** for heart disease, stroke, and kidney disease.
- In NC, in 2013:
 - About **2.7 M adults (36%)** diagnosed with high blood pressure by a health professional
 - Up to **560,000 adults** may have high blood pressure but are **unaware** of their condition
 - HTN was the **primary cause** of 855 deaths and a **contributing cause** to 23,808 heart disease and stroke deaths

High Blood Pressure

- HTN can be **prevented** or **controlled** if already high. This requires:
 - Lifestyle modification
 - Long-term medication adherence
 - Regular monitoring of blood pressure – health care provider, at home
- Need for **evidence-based strategies** that can be implemented in communities to improve blood pressure control...
.....one such strategy is SMBP.

For Patients with High Blood Pressure

- **What is SMBP?**
 - **Self-measured blood pressure monitoring (SMBP)** refers to the regular measurement of **one's own** blood pressure
 - Broadly refers to regular use of a personal blood pressure measurement device by a patient **outside a clinical setting**
 - Typically **at home**, therefore referred to as “home blood pressure monitoring”

For Patients with High Blood Pressure

- Recommendations of **The Community Preventive Services Task Force**:
 - **“Sufficient evidence”** of effectiveness for SMBP interventions when **used alone** (i.e., patients receive self-measured blood pressure tools, training, and monitoring)
 - **“Strong evidence”** of effectiveness for these interventions when combined **with additional support** (i.e., patient counseling, education, or web-based support)

Self-Measured Blood Pressure Protocol

- The team at Community and Clinical Connections for Prevention and Health Branch has created a Self-Measured Blood Pressure Protocol to help implement SMBP interventions.
- Can be used by:
 - Health care providers – **more clinical**, with inputs on workflow
 - Community pharmacists
 - Health educators
 - Worksites
 - Faith-based organizations
 - Community health workers

Self-Measured Blood Pressure Protocol

- **Contents:**
 - An Introduction to High Blood Pressure
 - Self-Measured Blood Pressure Monitoring
 - **Why** to monitor?
 - **Who** should monitor?
 - **Who** should not monitor?
 - **How** to choose the right type of home monitor?
 - **How** to monitor?
 - Implementation guide (for worksites)

Additional Tools

- Patient handout demonstrating steps to accurately measuring blood pressure.

STEPS TO MEASURING YOUR BLOOD PRESSURE


Step 1:
Make sure the cuff fits. Measure around your upper arm, and choose a monitor that comes with the correct size cuff.

Step 2:
Don't smoke, drink caffeinated beverages, or exercise within the 30 minutes before measuring your blood pressure. Also, use the bathroom first. A full bladder can increase blood pressure slightly.

Step 3:
Be still. Do not talk while taking blood pressure readings.

Step 4:

- Sit correctly, with your back straight and supported (on a dining chair, for example, rather than a sofa).
- Place feet flat on the floor, with legs uncrossed.



- Support your arm on a flat surface (such as a table) with your upper arm at heart level. Make sure the middle of the cuff is placed directly above the eye of the elbow and approximately one inch above the elbow.
- Place the cuff on bare skin. Check your monitor's instructions for an illustration, or have your pharmacist show you how.


Step 5:
Follow directions on the blood pressure device to start the reading.

Step 6:
Take multiple readings. Each time you take your blood pressure, do it two or three times, one minute apart, and record all results.

Step 7:
Measure your blood pressure twice daily, once in the morning (before breakfast and medications) and once at night, or as recommended by your health care provider. It is also important to take the readings at the same time each day.

Step 8:
Record all of your readings, including the date and time taken. Share your blood pressure records with your health care team.

A single high reading of blood pressure is not an immediate cause for alarm. However, if you get a high reading, take your blood pressure several more times. If readings remain high, consult your health care professional to determine if a medical intervention is needed or your blood pressure monitor is malfunctioning. When blood pressure reaches a systolic (top number) of 180 or higher OR diastolic (bottom number) of 110 or higher, emergency medical treatment is required.



Additional Tools

- BP wallet card – for logging BP readings.
- Use of Heart360 website as a patient portal.

Set a Goal with Your Health Care Professional

Talk with a health care professional about setting a blood pressure goal and the changes you can make to reach that goal.

Some lifestyle changes to discuss are:

- Choosing foods that are lower in salt and other forms of sodium. Read food labels.
- Eating a diet high in fresh fruits and vegetables and low-fat dairy products.
- Maintaining a healthy weight.
- Getting at least 30 minutes of physical activity per day.
- Limiting yourself to no more than one drink of alcohol a day for women, two drinks a day for men.
- Remembering to take your blood pressure medicine.

For more information, visit www.startwithyourheart.com

My Blood Pressure DIARY

My blood pressure goal is: _____

Location <small>(e.g. pharmacy name)</small>	Date/Time	Blood Pressure

To track your blood pressure electronically, visit www.heart360.org

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My Blood Pressure WALLETS CARD

Start tracking your blood pressure today.



Start With Your Heart
Join the Heart360 & Your Prevention Task Force

Source: Million Hearts® Initiative

DID YOU KNOW?



Link Between High Blood Pressure and Diabetes and Kidney Disease

- If you have diabetes and high blood pressure, your risk for a heart attack is higher.
- High blood pressure and kidney disease can contribute to a heart attack.

Questions to Ask Your Pharmacist

- What is my medicine called, and what does it do?
- How and when should I take it? And for how long?
- What if I forget to take it?
- Are there any side effects?
- Is it safe to take with other medicines or vitamins?
- Can I stop taking it if I feel better?



How to Take Your Blood Pressure with an Automatic Blood Pressure Machine

- Take your blood pressure at the same time every day, such as in the morning and at night.
- Don't smoke, drink caffeinated beverages or exercise within 30 minutes before measuring your blood pressure.
- Relax and sit with your arm slightly bent and resting comfortably on a table at the same level as your heart.
- Place the cuff securely on your upper arm (approximately one inch above your elbow). The cuff should be touching your skin.
- Follow the directions on the blood pressure machine to start the reading.
- Each time you take your blood pressure, do it two or three times, one minute apart, and write down all results.
- Share all results with your health care professional.

Additional Tools

- Self-monitoring of blood pressure: Video courtesy -Mayo clinic
Link: <http://startwithyourheart.com/Resources/index.php>



Measuring Blood Pressure

- Blood Pressure measurement:
 - A **frequently performed** medical test
 - **Quick and painless!**
 - Only **way to know** whether pressure is high
- Seems to be such an easy measurement to make; accuracy of results is seldom questioned.

Measuring Blood Pressure

- Studies have shown that that **60-100%** of blood pressure measurements are performed **inaccurately**.
- **Underestimating** true blood pressure by 5 mm Hg-**mislabeled 20 M adults** with prehypertension when true hypertension is present.

Measuring Blood Pressure

Blood Pressure Classification

JNC 7 Definition

Blood Pressure (mm Hg)		Category
Systolic	Diastolic	
<120	and <80	Normal
120-139	or 80-89	Prehypertension
140-159	or 90-99	Stage 1 hypertension
≥160	or ≥100	Stage 2 hypertension

The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of Hypertension

- Consequences of an **untreated 5 mm Hg** of excessive systolic blood pressure : **25% increase** in rates of fatal stroke and heart attack for these individuals.

Measuring Blood Pressure

- Conversely, **overestimating** true blood pressure by 5 mm Hg would lead to inappropriate treatment with antihypertension medications in almost **30 M adults**.
- To improve the rates of accurate blood pressure measurement we created a **Blood Pressure Refresher Training/Course** for health care providers.

For Providers: Blood Pressure Refresher Training

- The **online** Blood Pressure Refresher training will:
 - Update healthcare providers on current concepts in hypertension **detection, evaluation, and treatment.**
 - Provide information on:
 - accurately and reliably measuring blood pressure
 - maintaining and calibrating blood pressure equipment
 - lifestyle modifications

For Providers: Blood Pressure Refresher Training

- **Audience:**
 - Physicians
 - Mid-level providers such as Physician Assistants, Nurse Practitioners
 - Nurses
 - Office staff members who measure blood pressure
- Next steps: To offer this training with Continuing Education Units/Credits.

Additional Tools

- A “**Health Care Provider Blood Pressure Refresher**” video:
 - Developed in house
 - Short - **5.30 minutes**
 - Shows proper techniques for blood pressure measurement: preparation, positioning, equipment, and technique
 - **Link to video:**
<http://startwithyourheart.com/Resources/index.php>