

What is high blood pressure?

- High blood pressure, also known as hypertension, is a disease that occurs when blood pressure stays above normal for a long time. As a result, the walls of arteries get stretched beyond their healthy limit, and damage occurs creating a variety of other health problems.
- Blood pressure is the force of blood pushing against the walls of the arteries, vessels that carry blood from the heart to other parts of the body.
- Blood pressure is measured in millimeters of mercury (mmHg) using two numbers. The first/top number, systolic blood pressure, represents the pressure in blood vessels when the heart contracts. The second/bottom number, diastolic blood pressure, represents the pressure in blood vessels when the heart relaxes between beats.
- Blood pressure normally rises and falls throughout the day based on the kind of activity in which an individual is engaged.
- High blood pressure usually has no warning signs or symptoms, so many people do not know that they have it. The only way to know whether you have high blood pressure is to have your blood pressure accurately measured.
- High blood pressure can lead to serious complications, including death, if not treated. However, controlling blood pressure through healthy lifestyle practices and/or medications could prevent or delay the development of complications.
- A hypertensive crisis is a medical emergency and occurs when blood pressure numbers rise above 180 for the systolic pressure or 120 for the diastolic pressure.

How many people are affected by high blood pressure?

- High blood pressure is the 13th leading cause of death in the United States.¹
- In North Carolina in 2016, high blood pressure was the primary cause of 2,167 deaths (about 2% of all deaths) and a contributing cause to 23,217 heart disease and stroke deaths.² That means high blood pressure causes or contributes to at least 28% of all deaths in N.C. each year.
- Almost one out of every three adults in the United States (29% or about 75 million people) has been diagnosed with high blood pressure.³ In addition, almost one out of three adults has prehypertension—the condition of having blood pressure higher than normal but not yet in the high blood pressure range.³
- About 2.7 million North Carolina adults (35%) have been diagnosed with high blood pressure by a health care professional.⁴ Assuming that national prehypertension rates also apply to North Carolina, up to an additional 2.5 million adults in North Carolina are at risk of high blood pressure.
- The North Carolina Medicaid program spent \$194 million on 64,561 beneficiaries (by principal diagnosis) with high blood pressure in 2017.⁵ That's about \$3,001 per beneficiary with high blood pressure.

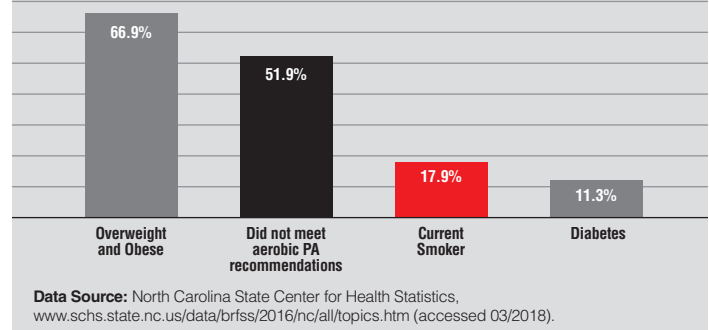
What are the symptoms of high blood pressure?

- High blood pressure is sometimes referred to as the silent killer because it usually has no warning signs or symptoms, so many people don't realize they have it.
- Only when blood pressure readings soar to very high levels (systolic of 180 or higher OR diastolic of 120 or higher) many obvious symptoms such as severe headaches, severe anxiety, shortness of breath and nosebleeds occur. This is known as a hypertensive crisis, and it is a medical emergency.

What are the risk factors for high blood pressure?

- Non-modifiable risk factors for high blood pressure include advanced age, gender (men between 45-64 years and women 65 years and older), race/ethnicity (non-Hispanic blacks or African Americans) and heredity.

Figure 1. Prevalence of modifiable risk factors for high blood pressure, North Carolina, 2015–2016



- Modifiable risk factors include unhealthy diet (eating foods high in sodium and low in potassium), physical inactivity, overweight/obesity, excessive alcohol consumption, diabetes, smoking and secondhand smoke (Figure 1).
- Elevated blood pressure and protein in urine during pregnancy is known as preeclampsia and usually resolves within six weeks after delivery. Having preeclampsia during more than one pregnancy is a risk factor for high blood pressure later in life.

How is high blood pressure diagnosed?

- High blood pressure is diagnosed using blood pressure measurement devices.
- Measuring blood pressure is quick and painless. This can be done by a trained health professional or other individual (provided an appropriate device is used and measurement instructions are correctly followed). For recommendations for selecting an accurate blood pressure monitor and instructions for taking accurate blood pressure measurements at home, please visit the [American Heart Association website—Symptoms, Diagnosis & Monitoring of High Blood Pressure page](#).

What are the complications of high blood pressure?

- For years, people whose blood pressure numbers remained above 140/90 mmHg were said to have uncontrolled high blood pressure and often developed serious complications, and high blood pressure patients who maintained blood pressure numbers below 140/90 mmHg were said to have controlled high blood pressure and less likely to develop complications.
- However, the 2017 Guidelines for Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults recommend a new approach to classification of blood pressure in adults.⁶ 2017 guidelines state that numbers greater than 130/80 are elevated.⁶
- Over two out of every three people (69%) who have a first heart attack, three out of every four (77%) who have a first stroke and three out of every four (74%) who have chronic heart failure also have high blood pressure.⁷
- Other complications of high blood pressure include kidney damage, vision loss, erectile dysfunction, memory loss, fluid in the lungs, angina and peripheral artery disease.

What are the treatment options for high blood pressure?

- The goal of treating high blood pressure is to maintain blood pressure control in order to prevent or delay the development of complications.
- Research shows that a team-based approach to treatment—involving the patient, his or her social support system (family, friends and/or support groups), the health care provider team (doctors, nurses and allied health

personnel), community health workers and pharmacists—is an effective way to achieve blood pressure control in patients.

- The main options for controlling high blood pressure include healthy lifestyle practices and blood pressure lowering medications. For more information on a high blood pressure management program visit startwithyourheart.com/knowitcontrolit.
- Healthy lifestyle practices that are beneficial in controlling high blood pressure include:
 - Maintaining a healthy weight or losing weight (for those who are overweight or obese). See esmmweighless.com.
 - Engaging in regular physical activity. See myeatSMARTmove.com.
 - Maintaining a healthy diet (including reducing sodium intake). For general information on physical activity and healthy eating, please visit
 - myeatSMARTmove.com.
 - medinsteadofmeds.com.
 - cdc.gov/dhdsp/data_statistics/fact_sheets/fs_sodium.htm.
 - cdc.gov/salt/pdfs/Reducing_Sodium_Diet_BP_Control.pdf.
 - Avoiding tobacco products and secondhand smoke for non-smokers and quitting for current smokers. For general information about smoking and how to get help quitting, please visit quitline.com or call 1-800-QUIT-NOW (1-800-784-8669).
 - Limiting alcohol consumption. Men should have no more than two drinks per day, and women should have no more than one. For more information, visit cdc.gov/alcohol.
 - Get adequate sleep (at least 7 hours per night). For more information on adequate sleep visit cdc.gov/features/getting-enough-sleep.
- In many circumstances, one or more blood pressure lowering medications may be needed in combination with healthy lifestyle practices to maintain blood pressure control.
 - If blood pressure-lowering medications are recommended by a health care provider, taking them every day as prescribed is vital to help control high blood pressure. Patients should never stop taking their medications without first talking to their health care provider or pharmacist.
- Because blood pressure can fluctuate, home monitoring and recording of blood pressure readings can provide health care providers with valuable information to determine whether a given treatment plan is working.

— Visit preventchronicdiseasesnc.com for information on how to monitor blood pressure.

- Patients can also work with their pharmacists to measure blood pressure and monitor blood pressure medication adherence.

How can high blood pressure be prevented?

- The development of high blood pressure can be prevented or delayed by adopting a healthy lifestyle and managing other medical conditions that increase the risk of high blood pressure.
- The healthy lifestyle practices that are beneficial in controlling high blood pressure are also beneficial in preventing high blood pressure. (Refer back to the treatment section.)
- In some cases, medications may be necessary to control other medical conditions that increase the risk of high blood pressure, such as diabetes. For fact sheets about diabetes and obesity in NC, visit communityclinicalconnections.com.

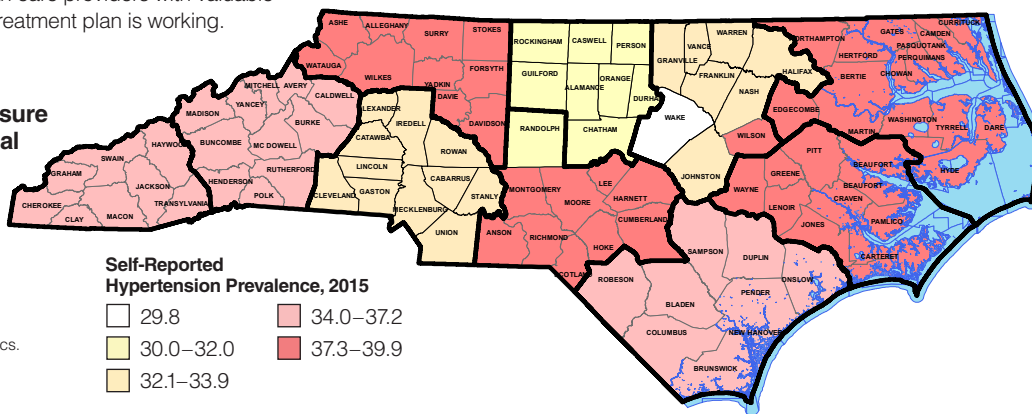
How can the complications of high blood pressure be prevented?

- The primary way to prevent or delay complications of high blood pressure is to maintain blood pressure control. (Refer back to the treatment section.)

Disparities, inequality and inequity in the burden of high blood pressure

- North Carolina has the 11th highest prevalence of diagnosed high blood pressure among the 50 states and Washington, D.C.⁸
- Non-Hispanic African Americans (prevalence = 44.3%) are more likely to have been diagnosed with high blood pressure compared to non-Hispanic Whites (prevalence = 35.5%) in North Carolina.⁴ In addition, there are about 22 more deaths per 100,000 population among non-Hispanic African Americans (age-adjusted death rate = 36 per 100,000) compared to non-Hispanic Whites (age-adjusted death rate = 14 per 100,000) in North Carolina.⁹
- There is considerable geographic variation in the prevalence of high blood pressure and death and hospitalization rates due to high blood pressure, with the eastern part of the state generally having a higher burden. (Figure 2)

Figure 2. Diagnosed High Blood Pressure Prevalence by NC Association of Local Health Director Region, 2015



Data Source: North Carolina State Center for Health Statistics. www.schs.state.nc.us/data/brfss/2015/nc/all/topics.htm#ha Accessed February 22, 2018.

REFERENCES

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3. National Center for Chronic Disease Prevention and Health Promotion, Division for Heart Disease and Stroke Prevention. High Blood Pressure Facts. Accessed at www.cdc.gov/bloodpressure/facts.htm, March 1, 2018.
4. North Carolina Department of Health and Human Services, Division of Public Health, State Center for Health Statistics. Behavioral Risk Factor Surveillance System (BRFSS). Accessed at www.schs.state.nc.us/data/brfss/2015/nc/all/topics.htm#ha on December 12, 2016.
5. North Carolina Department of Health and Human Services, Division of Medical Assistance. Data produced upon request, January 5, 2018.
6. 2017 ACC/AHA/AAPA/ABC/ACPM/AGS/APHA/ASH/ASPC/NMA/PCNA Guideline for the Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults: A Report of the American College of Cardi-

7. American Heart Association. Heart disease and stroke statistics—2015 Update: A report from the American Heart Association. Published online December 17, 2014.
8. Centers for Disease Control and Prevention. Behavioral Risk Factor Surveillance System. Sortable Risk Factors and Health Indicators. Accessed at <https://sortablestats.cdc.gov/#/> on December 12, 2016.
9. Centers for Disease Control and Prevention, National Center for Health Statistics. Underlying Cause of Death 1999-2016 on CDC WONDER Online Database, released December, 2017. Data are from the Multiple Cause of Death Files, 1999-2016, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Accessed at <http://wonder.cdc.gov/ucd-icd10.html> on March 1, 2018.

In addition to the above references this fact sheet was developed with heavy reliance on information from:

- The American Heart Association website: www.heart.org/HEARTORG/Conditions/HighBloodPressure/High-Blood-Pressure-or-Hypertension_UCM_002020_SubHomePage.jsp
- The Centers for Disease Control and Prevention website: www.cdc.gov/bloodpressure/about.htm