

## **Hypertension**

Lacy Bayley

Margaret H. Rollins School of Nursing

Nursing 102: Nursing Care of Adults

J. Wingate, RN

3/21/2025

## **Hypertension**

Hypertension in layperson's term is high blood pressure, but should be referred to as the silent killer. Hypertension is a cardiovascular condition in which the force of blood being pushed against an artery wall is too high. A systolic reading 120-129mm Hg and/or a diastolic of less than 80mm Hg is considered elevated and prehypertensive, a systolic of 130-139mm Hg and/or a diastolic of 80-89mm Hg is stage 1 (AHA, 2025). Overtime and untreated this constant increased force will lead to many more serious health conditions such as heart disease and stroke which are some of the leading causes of death in the United States (CDC, 2025). Symptoms of hypertension are headaches, lightheadedness, nausea, bloody noses, and anxiety. The diagnosis process consists of two separate events of an elevated blood pressure on both arms, history and physical, and a lipid panel may also be considered. Fortunately, the treatment options primarily pertain to lifestyle modifications or medication adherence. Hypertension is a leading cause for many health conditions, which can be alleviated by fundamental lifestyle changes, reenforcing through community health projects and proper education will continue to raise awareness and decrease these numbers.

### **Systemic Effects, Risks, and Screening**

Hypertension affects 48.1% of adult in the United States (CDC, 2025). This condition affects nearly half of adults in the United States, yet do this many Americans know the true impact on their body? Overtime the consistent increased force causes stiff, weak arteries, and systemic vasoconstriction leading to inadequate blood flow especially to target organs such as, the brain, eyes, and kidneys. When major organs are not receiving enough blood, they will not be able to work properly, hence new conditions develop. A study found those with hypertension have doubled their risk for coronary heart disease and stroke (Ozemeck, Tiwari, Sabbahi,

Carbone, Lavie , 2020). Some other conditions that can occur due to untreated hypertension are heart attack, heart failure, stroke, vision loss, kidney disease, sexual dysfunction, diabetes, and atherosclerosis. In addition to these new conditions, it can worsen previous. A study found “the odds of death within 30 days in COVID-19 patients with having hypertension and diabetes comorbidities was 1.58, 2.13 and 1.91 times of patients without such comorbidities,” (Ayubi, Torkaman Asadi, Borzouei, Alafchi, Faghieh Soleimani, Khosronejad, Khazaei, Talebi, 2022). Thus, it is important to manage a healthy blood pressure.

The possible complications mentioned prior are all quite serious and with almost half of the adults in America affected by high blood pressure it is important to identify what populations are most at risk and what current screening tools are being utilized. Those most at risk for hypertension consist of those who are smokers, obese, physically inactive, drink excessive alcohol, high stress, excessive sodium intake, those with hyperlipidemia, diabetes, African American's, and a prevalent family history. A majority of these risk factors are considered modifiable, in other words people can make lifestyle changes to change them, on the other hand those such as race are out of one's hands but can do their best to screen and still manage with techniques that will be discussed later. Today the main way to screen for hypertension is to simply check one's blood pressure, other screening techniques involve monitoring an accurate history and physical. The American Heart Association implemented a National Hypertension Control initiative, during 2020-2022 encouraging local communities to put heavier emphasis on patients to monitor their blood pressure at home, during these two years there was already a 12.3% increase in controlled blood rates. In Los Angeles the blood pressure rates improved by 55% in one year after implementing the hypertension control initiative (Smith, Sanchez, 2023).

Imagine how many more people could self-identify and manage their hypertension if the National Hypertension Control initiative could have a nationwide impact.

The systemic effects of untreated hypertension not only affect the patient but the way the nursing community must operate. Given the laundry list of modifiable risk factors means nurses must not only put focused energy in to monitoring and actively treating the hypertension but adapting to different learning styles and ensuring patients are well educated to avoid being admitted or planting the seed for a new comorbidity. Education is the best prevention so if the nurse can pick up on early symptoms or current lifestyle habits they could prevent another unmanaged case, given only 1 in 4 adults with have their hypertension under control (CDC, 2025). In addition to providing educational material often the modifiable risk factors trying to be changed feel like teaching an old dog new tricks. In addition to excessive mental energy for education going towards hypertension the United States also spends \$131 billion dollars per year (CDC, 2024). Billions of dollars is an extreme price for a condition that could be alleviated by many at home changes.

### **Treatment and Community Health Project**

Treating hypertension can essentially fall under two categories, lifestyle and medication compliance. The first line is almost always lifestyle, these will especially affect the modifiable risk factors. Off the bat quitting smoking, reducing alcohol consumption, stress management, consistent exercise, and diet adjustments can make a major impact. A study in 2021 found for every 1kg lost in body weight systolic blood pressure went down 1mm hg, a diet rich in veggies, low fat, and salt improved the systolic by 11 mm hg, and partaking in 90-150 minutes of aerobic exercise per week can lower their blood pressure by 5-8 mm Hg (Ozemeck, Tiwari, Sabbahi, Carbone, Lavie , 2020). DASH, The Dietary Approaches to Stop Hypertension is the most

encouraged diet, limiting sodium to 1500mg, increasing fruit and vegetables, and lean meats (Challa, 2023). When educating and treating a patient about diet it is important to also figure out who is cooking for them or buying their groceries. Managing other comorbidities such as diabetes will also help manage hypertension, trying to move thick sugary blood through a vessel that is already stiff, vasoconstricted, and having trouble supplying adequate blood supply is not an ideal situation. In addition to adjusting diet and adding exercise overall stress management is equally important, excess stress on the already vasoconstricted body is not a good recipe, thus finding an outlet is crucial. The final option if fundamental lifestyle changes are not working falls back on to medication. Common medications are diuretics, angiotensin converting enzyme inhibitors, calcium channel blockers, and beta blockers, “most patients require more than 1 drug to reach their blood pressure target” (Schub, 2024). These medications work in different ways to help decrease the blood pressure. Once patients see an improvement and start maintaining a healthier blood pressure it is important to educate on medicine compliance and why the lifestyle changes must be utilized adjacently.

The learner should take away what is considered high blood pressure, the systemic effect, how to screen, and treatment options. Through the community project my group will present each of these topics on a poster board and allow practice. The learner will be able to identify two risk factors towards hypertension and two lifestyle modifications they can make to improve or manage their blood pressure. My group will utilize various food labels to identify foods high in sodium and saturated fat, an activity log, and of course practicing taking blood pressure. While taking blood pressure at this event we will have the chart that shows what category their blood pressure falls under. The other activity we will provide incorporates the food labels and bags of salt in which they must try and identify which food holds the most salt.

## **Conclusion**

In sum hypertension is an increased force of blood being pushed against the arteries leading to systemic vasoconstriction to vital organs, creating a slippery slope to new comorbidities. As previously mentioned, the impact hypertension has on the body affecting major organs could be avoided by atomic daily habits. The patient should take away that being diagnosed with hypertension is not the end all be all rather a wake-up call to make proper changes and better their health. In relation to evidence-based practice nursing this information can not only help patients be more aware of their overall health but allowing the healthcare provider to be more aware of what complications the patient is at risk for, what to monitor, and to recognize the importance of screening patients. Hypertension is a leading cause for many health conditions, which can be alleviated by fundamental lifestyle changes, reenforcing through community health projects and proper education will continue to raise awareness and decrease these numbers.

## Resources

Ayubi, E., Torkaman Asadi, F., Borzouei, S., Alafchi, B., Faghih Soleimani, M., Khosronejad, S., Khazaei, S., & Talebi, S. S. (2022, December). Effects of hypertension alone and in comorbidity with diabetes on death within 30 days among inpatients with covid-19 infection. *Journal of research in health sciences*.

<https://pmc.ncbi.nlm.nih.gov/articles/PMC10422163/>

CDC. (2025, January 28). High blood pressure facts. Centers for Disease Control and Prevention.

<https://www.cdc.gov/high-blood-pressure/data-research/facts-stats/index.html>

Challa, H. J., Ameer, M. A., & Uppaluri, K. R. (2023). DASH diet to stop hypertension. In *StatPearls*. StatPearls Publishing.

<https://www.ncbi.nlm.nih.gov/books/NBK482514/>

Ozemek, C., Tiwari, S., Sabbahi, A., Carbone, S., & Lavie, C. J. (2020, January 1). Impact of therapeutic lifestyle changes in resistant hypertension. *Progress in cardiovascular diseases*. <https://pmc.ncbi.nlm.nih.gov/articles/PMC7257910/>

Schub, T. (2024, July 24). Hypertension (adult). DynaHealth.

<https://www.dynahealth.com/diseases-and-conditions/hypertension-adult#GUID-02A99CAC-B8FC-4BC8-88F4-7ED7AD75DECB>

Smith, A., & Sanchez, E. (2023, September 7). Community-based, self-measured blood pressure control programs helped at-risk patients. American Heart Association.

<https://newsroom.heart.org/news/community-based-self-measured-blood-pressure-control-programs-helped-at-risk-patients>