


# CHAMPIONS FOR TOTAL HEALTH

## Hypertension and Vaccines



**Hypertension Defined**

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# Hypertension Defined

## What is Hypertension?


- Also known as high blood pressure or the “silent killer”, hypertension is a condition where the blood moving from the heart to the body is pumped under high pressure. This can damage the organs and cause wear on the heart
- Blood pressure = amount of blood pumped by the heart + amount of resistance (push back) to blood flow in the arteries
  - More blood pumped by the heart coupled with more narrow arteries leads to higher blood pressure
- It’s measured in millimeters of mercury (mm Hg) and written as two numbers (for example, 112/78 mm Hg)
  - The top number – systolic pressure – is the pressure when the heart beats
  - The bottom number – diastolic pressure- is the pressure when the heart rests between beats

*(High blood pressure (hypertension) 2021)*



## Ranges

**Blood Pressure Categories**



BLOOD PRESSURE CATEGORY	SYSTOLIC mm Hg (upper number)		DIASTOLIC mm Hg (lower number)
NORMAL	LESS THAN 120	and	LESS THAN 80
ELEVATED	120-129	and	LESS THAN 80
HIGH BLOOD PRESSURE (HYPERTENSION) STAGE 1	130-139	or	80-89
HIGH BLOOD PRESSURE (HYPERTENSION) STAGE 2	140 OR HIGHER	or	90 OR HIGHER
HYPERTENSIVE CRISIS (consult your doctor immediately)	HIGHER THAN 180	and/or	HIGHER THAN 120

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[heart.org/bplevels](https://heart.org/bplevels)

*(Understanding blood pressure readings 2022)*

## The Silent Killer

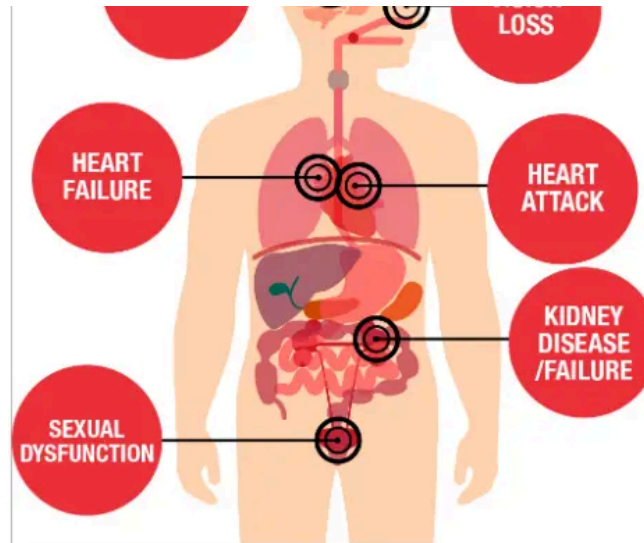


- Many people do not know they have high blood pressure
- High blood pressure makes the heart work too hard and damages the blood vessels
- The results, over time, include heart failure, heart attack, kidney disease, stroke, and vision loss
- Knowing your numbers and making changes that can prevent or treat high blood pressure are key



*(What is high blood pressure? 2021)*

## American Heart Association Graphic of Potential Health Issues due to Hypertension



*(What is high blood pressure? 2021)*

# Lifestyle Drivers of Hypertension

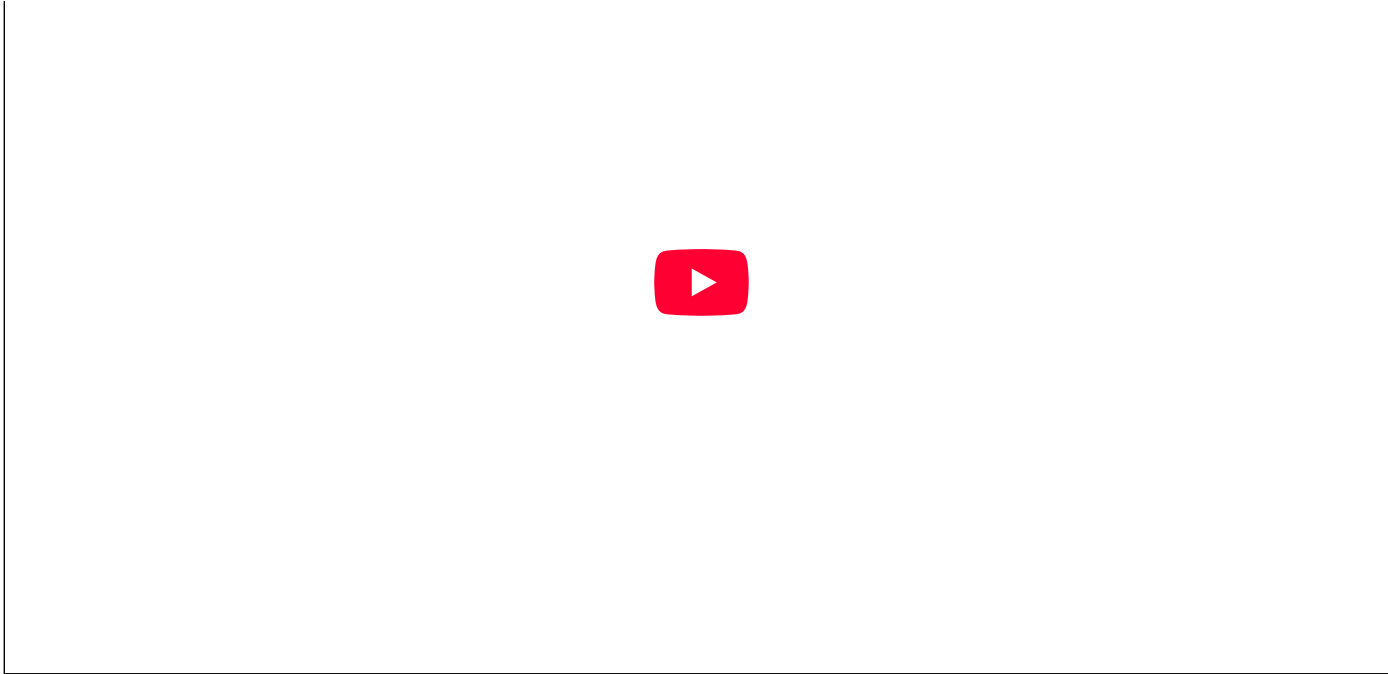
## Screening



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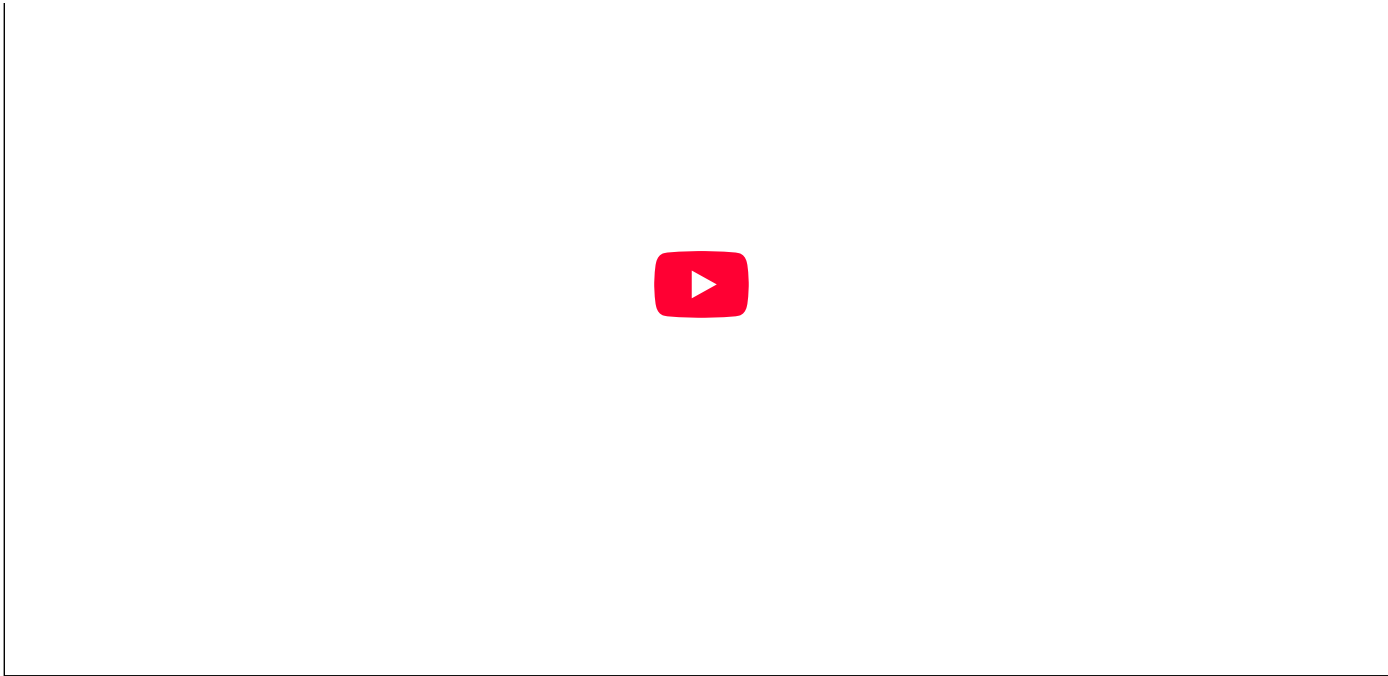
*(Cdc, 2022)*

# Diet



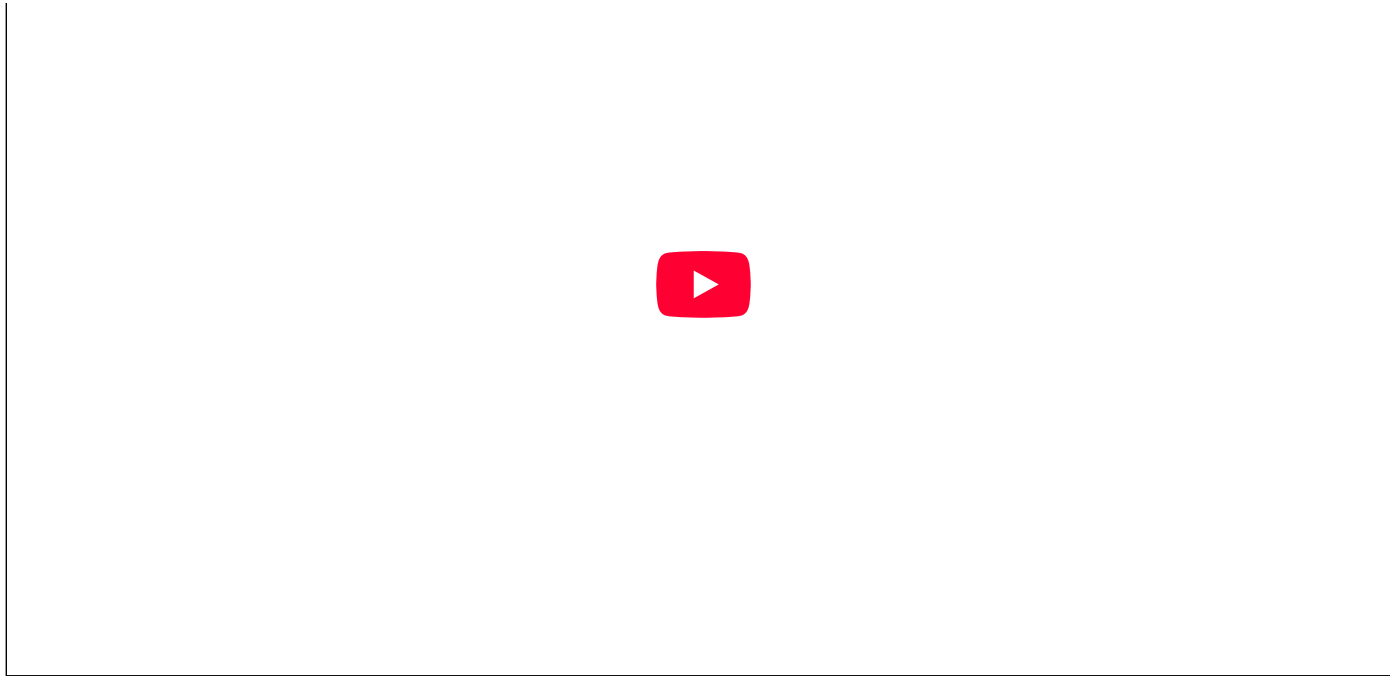
*(Cdc, 2022)*

# Medication Taking



*(Cdc, 2022)*

# Exercise



*(Cdc, 2022)*

# Smoking



**WHY STOP SMOKING?**

- It harms nearly **EVERY ORGAN** in your body, including your **HEART**
- Smoking causes **1 OUT OF 4 DEATHS** from heart and vascular disease
- Quitting isn't **EASY**, but it will give back years of **YOUR LIFE**

**HARM TO YOUR HEART**

- IRREGULAR HEARTBEAT
- THICKENED AND NARROWED BLOOD VESSELS
- PLAQUE BUILDUP IN THE ARTERIES

**TIPS TO QUIT**

- Find a plan that best fits you
- Set a date
- Remind yourself why you're quitting
- Avoid activities or places that make you want to smoke
- Make it public
- Ask about programs to help you quit
- Take advantage of the tools and resources available at [CardioSmart.org](http://CardioSmart.org) and get help at 1-800-QUIT-NOW
- Don't give up! Slips are often part of the process
- Celebrate small successes

Information provided for educational purposes only. Please consult your health care provider about your specific health needs.

**For more information, visit [CardioSmart.org/StopSmoking](http://CardioSmart.org/StopSmoking)**

@CardioSmart If you would like to download or order additional posters on other topics, visit [CardioSmart.org/Posters](http://CardioSmart.org/Posters)

(Stop Smoking)



# Outcomes

## Inequities in Hypertension Outcomes

- Disparate outcomes in hypertension are prevalent among historically excluded communities
- Researchers studying the racial and ethnic differences in hypertension prevalence, awareness, treatment, and control found that Black adults living in the US between 2013 – 2018 have a higher hypertension prevalence than white adults (45.3% versus 31.4% respectively) but have similar awareness and treatment rates as white adults.
- Conversely, Hispanic adults have similar hypertension prevalence and treatment rates than white non-hispanic adults, but lower awareness (71.1% awareness in





(Aggarwal et al., 2021)

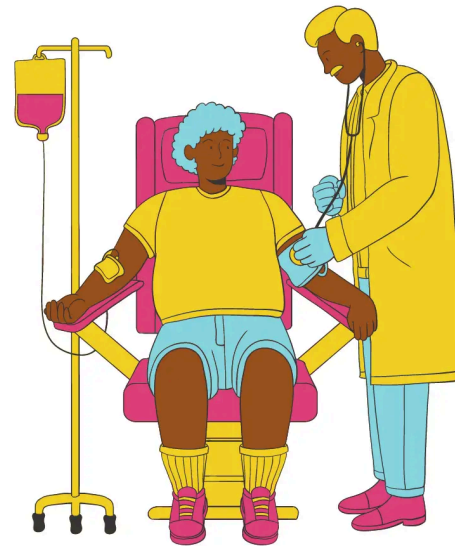
<b>Blood Pressure Control Cascade by Race/Ethnicity (Rates Adjusted to the 2018 US Population)</b>				
<b>Race/Ethnicity</b>	<b>Disease Prevalence</b>	<b>Awareness</b>	<b>Treatment</b>	<b>Control</b>
<b>White Non-Hispanic Patients</b>	31.4%	79.1%	67.3%	49.1%
<b>Black Non-Hispanic Patients</b>	45.3%	79.7%	67.2%	39.2%
<b>Hispanic Patients</b>	31.6%	71.1%	60.5%	40.0%

(Aggarwal et al., 2021)



# Hypertension

- Black Americans in the U.S. have a higher prevalence of high blood pressure (HBP) than other racial and ethnic groups
- It is also often more severe in Black patients and some medications are less effective in treating Black patients with HBP
- Unfortunately, death due to hypertensive heart disease is nearly two times higher among Black patients than white patients
- Likewise, poorly controlled blood pressure during pregnancy and after childbirth is a leading reason Black women experience higher rates of pregnancy-related death than white women



*(Minority health month: Spotlight on hypertension 2022)*



# 25%

of Hispanics have  
high blood pressure.

#### WHY?

In relation to many other races,  
Hispanics are **more likely** to:

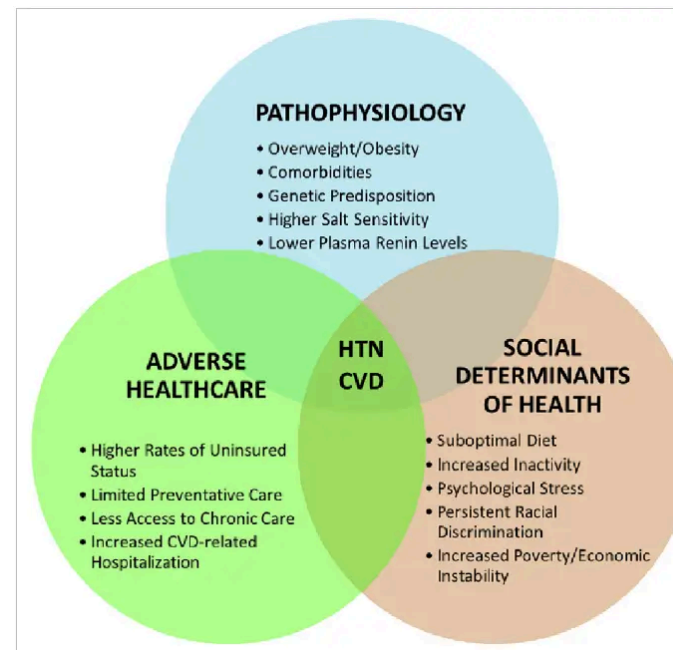
- Be unaware that they have high blood pressure
- Not take high blood pressure medication
- Delay care or avoid visits to their doctor
- Have uncontrolled high blood pressure
- Have higher risks of heart disease

*(National Hypertension Control Initiative: Printable Resources)*



## Drivers of Inequities in Hypertension

- Researchers have also worked to identify the drivers of inequities in hypertension outcomes
- The 4th Annual University of Utah Translational Hypertension Symposium discussed the intersections of the COVID-19 pandemic, hypertension and preexisting disparities in hypertension that were exacerbated by the pandemic



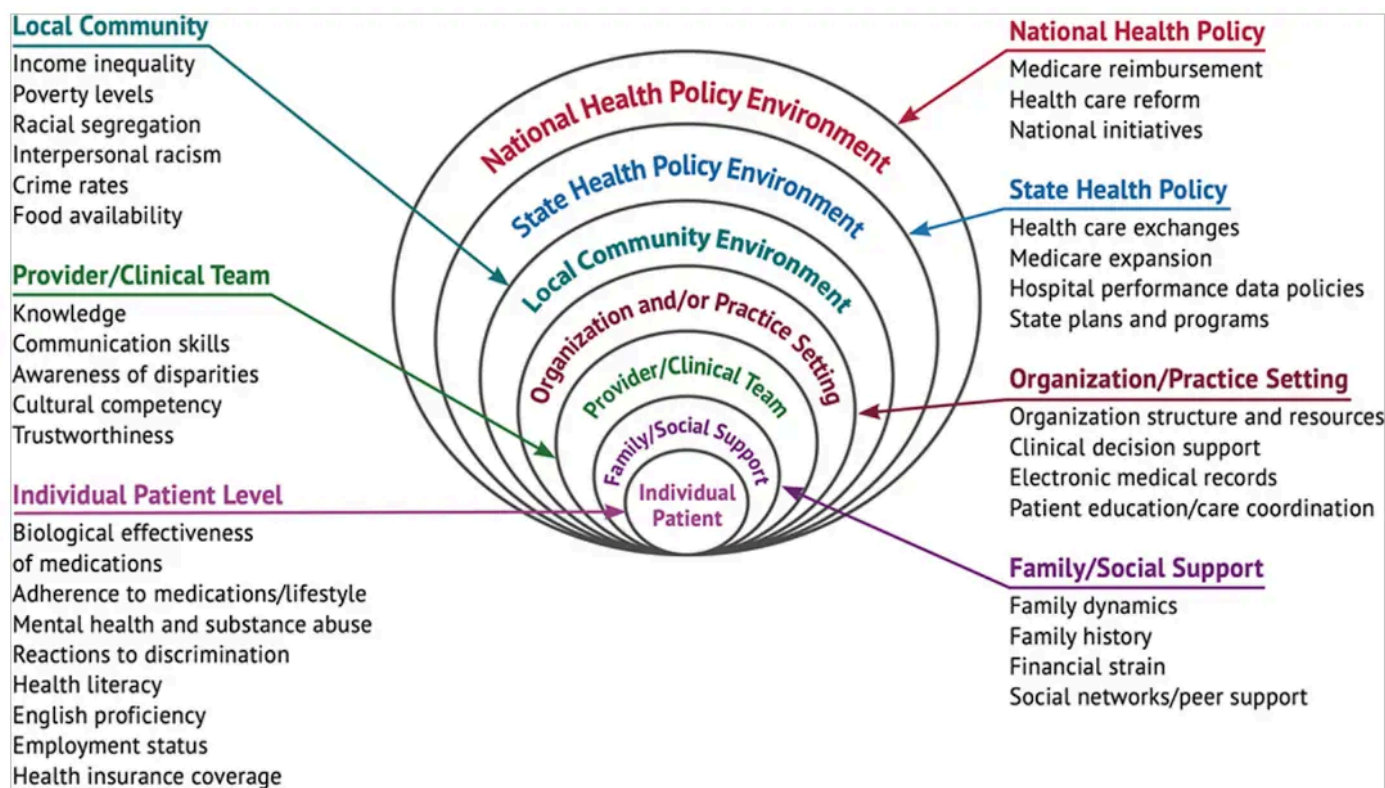
(Bress et al., 2021)

- Factors that emerged from this discussion include:
  - Structural racism
  - The digital divide (e.g., unequal access to hi-speed internet and unequal digital literacy)
  - Lack of access to health insurance and/or healthcare
  - Lack of access to a built environment that empowers physical activity
  - Food insecurity
  - Diets lacking nutrient-dense foods
  - Resistant hypertension



- Provider biases (clinical and cultural uncertainty, beliefs, and stereotypes about minority patients)
- Clinical inertia (clinicians' failure to initiate or intensify antihypertensive therapy when BP goals are unmet)
- Resistant hypertension
- Earlier hypertension

(Ferdinand et al., 2020)



(Bress et al., 2021) Authors adapted with permission from Mueller et al., ©2015, Oxford University Press.



# Hypertension and COVID-19

- According to a review recently published in 2021, hypertension was identified as the most prevalent cardiovascular comorbidity in patients infected with the SARS-CoV-2 virus that causes COVID-19
  - Studies showed that a COVID-19 would “demonstrably” increase the risk of hospitalization and death due to hypertension

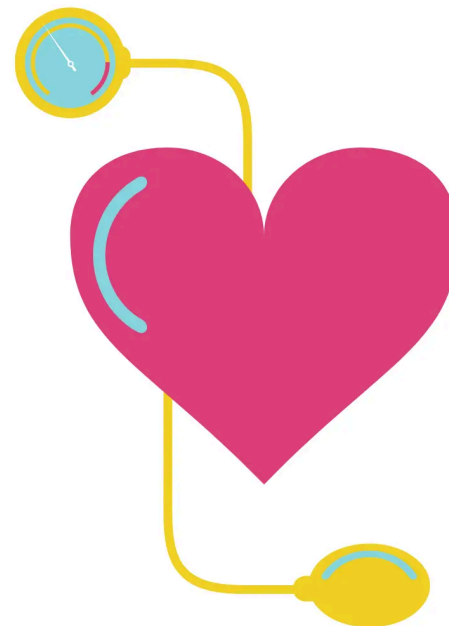




- severity of COVID-19
- Being fully vaccinated and receiving all recommended boosters is the best protection against the risk of hospitalization and death from COVID-19 in patients living with hypertension
- Consult your physician with any questions or concerns you may have

*(Peng et al., 2021)*

- One study suggests that treating high blood pressure during the pandemic should involve telemedicine to manage the chronic illness
- It notes that effective management and treatment of high blood pressure will be key in fighting COVID-19
- Since racial and ethnic minorities are more likely to be hospitalized and/or die from COVID-19, and they often experience high blood pressure





assist in fighting this illness

*(Swamy et al., 2022)*

## Hypertension and Flu



- According to the AHA, patients living with high blood pressure have an increased risk of serious health issues due to flu
- Patients with heart disease are more likely to die from an infection with influenza than patients with any other chronic condition
- The AHA notes that flu symptom management is important, but understanding the risks of blood pressure elevation due to cold and flu medications is equally vital



**Cardiology** recommend that people with cardiovascular disease, including those with coronary and other atherosclerotic vascular disease, get a flu shot annually.”

- People age 65 and older should try to get the high dose flu shot
- Consult your physician with any questions or concerns you may have



## Hypertension and Adult Vaccines



Vaccine	Pregnancy	Immune compromised (excluding HIV Infection)	percentage and count <15% or <200 mm <sup>2</sup>	≥15% and ≥200 mm <sup>2</sup>	Asplenia, complement deficiencies	End-stage renal disease, or on hemodialysis	Heart or lung disease; alcoholism <sup>1</sup>	Chronic liver disease	Diabetes	Health care personnel <sup>2</sup>	Men who have sex with men
IIV4 or RIV4 or LAIV4	1 dose annually										
Tdap or Td	1 dose Tdap each pregnancy	1 dose Tdap, then Td or Tdap booster every 10 years									
MMR	Contraindicated <sup>3</sup>	Contraindicated	1 or 2 doses depending on indication								
VAR	Contraindicated <sup>3</sup>	Contraindicated		2 doses							
RZV		2 doses at age ≥19 years			2 doses at age ≥50 years						
HPV	Not Recommended <sup>3</sup>	3 doses through age 26 years			2 or 3 doses through age 26 years depending on age at initial vaccination or condition						
Pneumococcal (PCV15, PCV20, PPSV23)		1 dose PCV15 followed by PPSV23 OR 1 dose PCV20 (see notes)									
HepA				2 or 3 doses depending on vaccine							
HepB	3 doses (see notes)	2, 3, or 4 doses depending on vaccine or condition									
MenACWY		1 or 2 doses depending on indication, see notes for booster recommendations									
MenB	Precaution	2 or 3 doses depending on vaccine and indication, see notes for booster recommendations									
Hib		3 doses HSCT <sup>3</sup> recipients only		1 dose							

Recommended vaccination for adults who meet age requirement, lack documentation of vaccination, or lack evidence of past infection  
 Recommended vaccination for adults with an additional risk factor or another indication  
 Recommended vaccination based on shared clinical decision-making  
 Precaution—vaccination might be indicated if benefit of protection outweighs risk of adverse reaction  
 Contraindicated or not recommended—vaccine should not be administered.  
 No recommendation/Not applicable  
<sup>1</sup>Vaccinate after pregnancy. <sup>2</sup>\*Vaccinate after pregnancy.

1. Precaution for LAIV4 does not apply to alcoholism. 2. See notes for influenza, hepatitis B, measles, mumps, and rubella; and varicella vaccinations. 3. Hematopoietic stem cell transplant.

Disparities may occur across the cancer continuum of care.

## Additional Resources

**American Heart Association (AHA): The Facts About High Blood Pressure**

**AHA: High Blood Pressure Fact Sheet (English)**



**AHA: Understanding Blood Pressure Readings**

**American Medical Association: 9 ways to reduce inequity in hypertension treatment and control**

**JAMA Open Network: Will the 2021 USPSTF Hypertension Screening Recommendation Decrease or Worsen Racial/Ethnic Disparities in Blood Pressure Control?**

**Centers for Disease Control and Prevention: Recommended Immunization Schedule for Adults Aged 19 Years or Older by Medical Conditions and Other Indications, United States, 2022**

# **Watch Now: Hypertension And Vaccines**



**Panelists:**

**Yabo Beysolow, MD, MPH, FAAP, COVID & Flu Immunization Expert, AIM and iREACH Program for Centers for Disease Control and Prevention**

Dr. Yabo Beysolow is a pediatrician with over 20 years of experience in private practice and urgent care settings. She is also a public health professional with several years of work experience at the Centers for Disease Control and Prevention, CDC, in the Immunization Services Division, where Dr. Beysolow led as a Medical Officer and subject matter expert on immunizations, assisted in the development of and presented educational content for live, print, web-based, and remote audiences at the local, state and national levels. Dr. Beysolow led the U.S. Childhood Immunization Schedule Working Group from 2011-2014 as the CDC representative to the ACIP (Advisory Committee on Immunization Practices). Since 2020, Dr. Beysolow has served as an educator and Chair of the EPIC Immunization Advisory Committee for the Georgia Chapter of the American Academy of Pediatrics, educating health care providers across the state of Georgia on immunizations and also serves as the Georgia Chapter's Immunization Representative to the National AAP.



Dr. Laurence S. Sperling is the Executive Director of the Million Hearts Initiative for the Division of Heart Disease and Stroke Prevention at the Centers for Disease Control and Prevention and the Center for Medicare and Medicaid Services. He is the Founder and was the Director of The Heart Disease Prevention Center at Emory Healthcare. Dr. Sperling is currently the Katz Professor in Preventive Cardiology at the Emory University School of Medicine, and Professor of Global Health in the Rollins School of Public Health. He served as the President of the American Society for Preventive Cardiology from 2014-2016, served on the writing committee of 2018 the ACC/ AHA Guideline on the Management on Blood Cholesterol, and served as Chair of the World Heart Federation writing group on the Roadmap for Cardiovascular Disease Prevention among People Living with Diabetes. Dr. Sperling was the recipient of the 2017 Award of Honor from the Alumni Association of Emory University School of Medicine. He has received awards for excellence in teaching (including 4 Golden Apple Awards and The Dean's Teaching Award), mentorship (Emory SOM 2018 Mentorship Award), and the R. Wayne Alexander Research mentor award. He has authored over 350 manuscripts/ abstracts/ books, and has been an invited speaker on every continent except Antarctica.

Moderator:

Kristen Hobbs, MPH, CPH, Director, Quality Improvement & Equity, Center for Sustainable Health Care Quality and Equity, National Minority Quality Forum

Kristen Hobbs is responsible for the oversight of quality improvement and education projects for a variety of therapeutic areas. A senior-level public health professional with experience in epidemiology, public health program evaluation, public health program development and implementation, and partnership development, Kristen is proud to champion the advancement of health equity and believes in the value of implementing epidemiologic principles for the design, implementation, and management of evidence-based public health interventions. Before joining NMQF/SHC, Kristen worked at Susan G. Komen Headquarters as Senior Manager of the African American Health Equity Initiative. She served at Komen for five years and held varying roles as an evaluator and subject matter expert in the development and implementation of the initiative. Prior to Komen, Kristen worked with the Institutional Review Board and Institutional Animal Care and Use Committee of Saint Louis University on accreditation efforts, survey development, research, and analysis. She also worked for the Saint Louis County Department of Public Health's Communicable Disease Control Services Division to evaluate and monitor the department's perinatal hepatitis B program, conduct epidemiologic surveillance of infectious diseases, and refine behavioral health marketing messages for STD prevention and awareness in north St. Louis, Missouri. Kristen earned



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