



UC DAVIS HEALTH | **SCHOOL OF MEDICINE**
Cardiac Risk Reduction Clinic
Cardiac Rehabilitation Program

Cardiovascular Wellness Program



SACRAMENTO STATE

Road Map to Health: Lifestyle Modifications for the Reversal of Hypertension and Diabetes

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PreventionForward



VA




U.S. Department of Veterans Affairs

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CDPH and CDC- Call to action


- How do we lower blood pressure and glucose?

High blood pressure (HTN)




High Glucose (Diabetes)

???



Knowledge is power




The power of preventing these:

- Heart attacks
- Heart Failure, Strokes, Obesity
- Peripheral arterial disease
- Amputations, Erectile Dysfunction
- Dementia, Kidney failure
- Premature Death, COVID-19

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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

©American Heart Association

heart.org/bplevels

Table 7. Best Proven Nonpharmacological Interventions for Prevention and Treatment of Hypertension*

	Nonpharmacological Intervention	Goal	Approximate Impact on SBP		
			Hypertension	Normotension	Reference
Weight loss	Weight/body fat	Best goal is ideal body weight, but aim for at least a 1-kg reduction in body weight for most adults who are overweight. Expect about 1 mm Hg for every 1-kg reduction in body weight.	-5 mm Hg	-2/3 mm Hg	S4.4-2
Healthy diet	DASH dietary pattern†	Consume a diet rich in fruits, vegetables, whole grains, and low-fat dairy products, with reduced content of saturated and total fat.	-11 mm Hg	-3 mm Hg	S4.4-7, S4.4-8
Reduced intake of dietary sodium	Dietary sodium	Optimal goal is <1500 mg/d, but aim for at least a 1000-mg/d reduction in most adults.	-5/6 mm Hg	-2/3 mm Hg	S4.4-10, S4.4-12
Enhanced intake of dietary potassium	Dietary potassium	Aim for 3500–5000 mg/d, preferably by consumption of a diet rich in potassium.	-4/5 mm Hg	-2 mm Hg	S4.4-14
Physical activity	Aerobic	90–150 min/wk 65%–75% heart rate reserve	-5/8 mm Hg	-2/4 mm Hg	S4.4-19, S4.4-20
	Dynamic resistance	90–150 min/wk 50%–80% 1 rep maximum 6 exercises, 3 sets/exercise, 10 repetitions/set	-4 mm Hg	-2 mm Hg	S4.4-19
	Isometric resistance	4 × 2 min (hand grip), 1 min rest between exercises, 30%–40% maximum voluntary contraction, 3 sessions/wk 8–10 wk	-5 mm Hg	-4 mm Hg	S4.4-21, S4.4-78
Moderation in alcohol intake	Alcohol consumption	In individuals who drink alcohol, reduce alcohol# to: Men: ≤2 drinks daily Women: ≤1 drink daily	-4 mm Hg	-3 mm Hg	S4.4-20, S4.4-24, S4.4-25

*Type, dose, and expected impact on BP in adults with a normal BP and with hypertension.
 †Detailed information about the DASH diet is available via the NHLBI^{§4.4-81} and Dashdiet.org.^{§4.4-82}
 #In the United States, 1 “standard” drink contains roughly 14 g of pure alcohol, which is typically found in 12 oz of regular beer (usually about 5% alcohol), 5 oz of wine (usually about 12% alcohol), and 1.5 oz of distilled spirits (usually about 40% alcohol).^{§4.4-80}
 BP indicates blood pressure; DASH, Dietary Approaches to Stop Hypertension; NHLBI, National Heart, Lung, and Blood Institute; and SBP, systolic blood pressure. Reproduced with permission from Whelton et al.^{§4.4-1} Copyright © 2017, American College of Cardiology Foundation and the American Heart Association, Inc.

1. No Smoking
2. Physical Activity
3. High quality diet
4. Moderate alcohol consumption
5. Normal weight



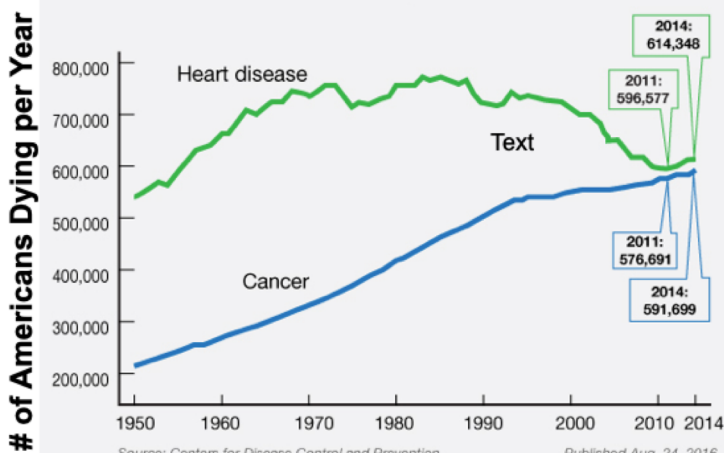
Today's Objectives

- How are we doing with Hypertension Management?
- How does HTN and COVID-19 are related?

TOP TWO KILLERS

By AMERICAN HEART ASSOCIATION NEWS



The total number of Americans dying from heart disease rose in recent years following decades in decline. Cancer deaths have nearly tripled since 1950 and continue to climb.



Multifactorial

- Pathology of vascular disease
- 1°/2° prevention
 - smoking cessation
 - Lifestyle modifications and medications for hypertension, diabetes and high cholesterol
- Risk stratification and therapies
 - Anti-platelet
 - Thrombolysis
 - Invasive treatment
 - Drug eluting stents

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Uncontrolled hypertension is getting worse in the U.S., study finds

High blood pressure can be a major risk factor for severe illness from COVID-19.


by Linda Carroll | NBC NEWS

COVID-19 ASSOCIATED HOSPITALIZATION RELATED TO UNDERLYING MEDICAL CONDITIONS


FACTORS THAT INCREASE COMMUNITY SPREAD AND INDIVIDUAL RISK




CROWDED SITUATIONS



CLOSE / PHYSICAL CONTACT



ENCLOSED SPACE



DURATION OF EXPOSURE

RISK FOR HOSPITALIZATION IF YOU HAVE ANY OF THESE CONDITIONS AND GET COVID-19 COMPARED TO PEOPLE WITHOUT THE CONDITION(S).

Asthma
1.5x

Hypertension
3x

Obesity (BMI ≥ 30)
3x

Diabetes
3x

Chronic Kidney Disease
4x

Severe Obesity (BMI ≥ 40)
4.5x


2 Conditions*
4.5x

3 or More Conditions*
5x


*Conditions include asthma, obesity, diabetes, chronic kidney disease, severe obesity, coronary artery disease, history of stroke and COPD.

Data has shown that racial and ethnic minority groups with the referenced conditions are at even higher risk for severe COVID-19 illness. Race and ethnicity are risk markers for other underlying conditions that impact health — including socioeconomic status, access to health care, and increased exposure to the virus due to occupation (e.g., frontline, essential, and critical infrastructure workers).


ACTIONS TO REDUCE RISK OF COVID-19




WEARING A MASK




SOCIAL DISTANCING (6 FT GOAL)



HAND HYGIENE



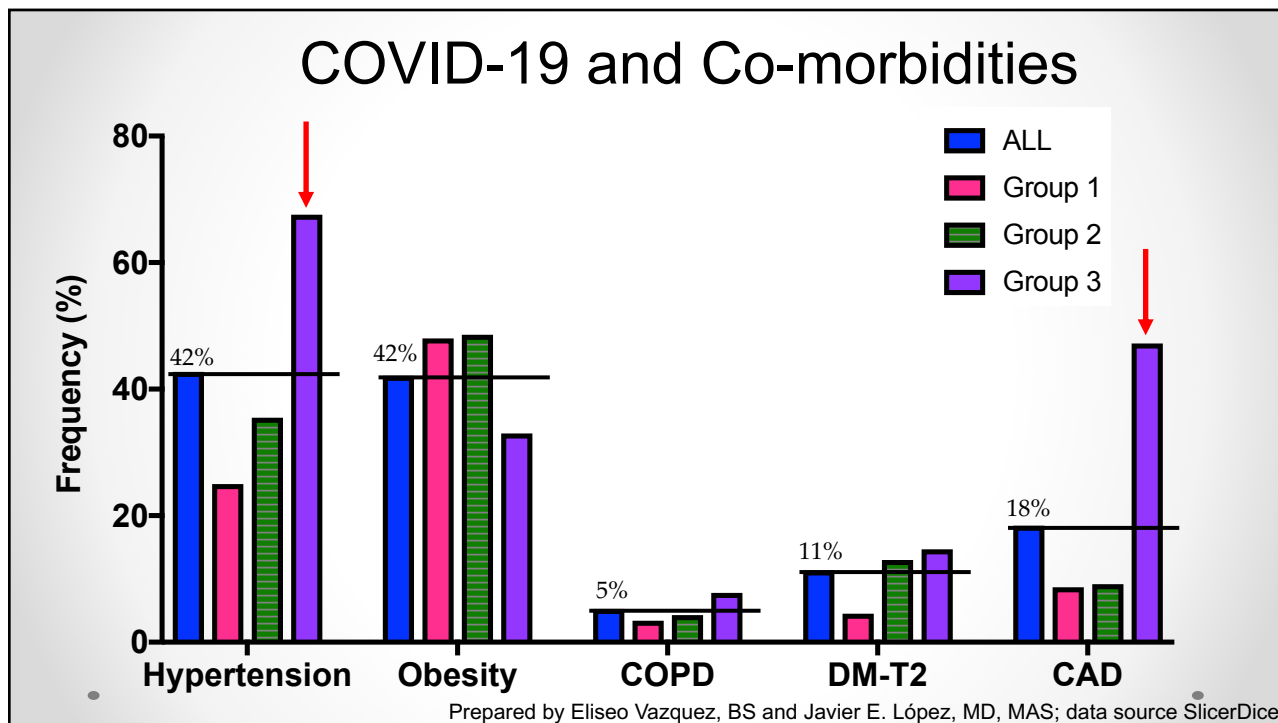
CLEANING AND DISINFECTION



ALTHOUGH RISK GENERALLY INCREASES WITH AGE, ALL INDIVIDUALS SHOULD ROUTINELY TAKE ACTIONS TO REDUCE RISK OF INFECTION AND AVOID ACTIVITIES THAT INCREASE COMMUNITY SPREAD.

cdc.gov/coronavirus

Source: Ko JY, Danielson ML, Town M et al. 2020. CS319360-A 08/08/2020



Research

JAMA | Original Investigation

Trends in Blood Pressure Control Among US Adults With Hypertension, 1999-2000 to 2017-2018

Paul Muntner, PhD; Shakia T. Hardy, PhD; Lawrence J. Fine, MD; Byron C. Jaeger, PhD; Gregory Wozniak, PhD; Emily B. Levitan, ScD; Lisandro D. Colantonio, MD, PhD

IMPORTANCE Controlling blood pressure (BP) reduces the risk for cardiovascular disease.

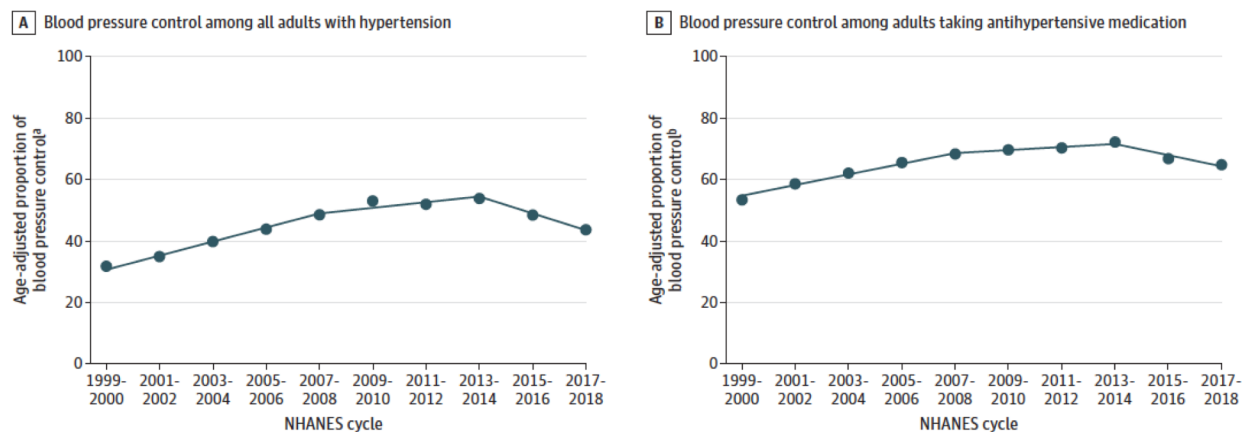
OBJECTIVE To determine whether BP control among US adults with hypertension changed from 1999-2000 through 2017-2018.

DESIGN, SETTING, AND PARTICIPANTS Serial cross-sectional analysis of National Health and Nutrition Examination Survey data, weighted to be representative of US adults, between 1999-2000 and 2017-2018 (10 cycles), including 18 262 US adults aged 18 years or older with hypertension defined as systolic BP level of 140 mm Hg or higher, diastolic BP level of 90 mm Hg or higher, or use of antihypertensive medication. The date of final data collection was 2018.

- [← Editorial pages 1166 and 1163](#)
- [← Related article page 1208](#)
- [+ Supplemental content](#)
- [+ CME Quiz at jamacmelookup.com](#)

- 51 761 participants included in this analysis
- 18 262 adults with hypertension

Figure. Age-Adjusted Estimated Proportion of Adults With Hypertension and Controlled Blood Pressure



Findings- Controlled BP was...

- **More likely- 45-64 years vs younger (49.7%vs 36.7%)**
- **Less likely >75 years (37.3%vs 36.7%)**
- **Less likely Black vs. White adults (41.5%vs 48.2%)**

Findings- Controlled BP was...

- More likely among those with private insurance (48.2%), Medicare (53.4%), or government health insurance other than Medicare or Medicaid (43.2%)
- Less likely among those without health insurance (24.2%)
- More likely among those with vs those without usual health care (48.4% vs 26.5%)
- More likely among those who had vs those who had not had a health care visit in the past year (49.1% vs 8.0%)

