2017 High Blood Pressure Clinical Practice Guideline

Applying the Latest Hypertension Guideline to Your Practice

Carmine D'Amico, D.O., F.A.C.C.

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 Cardiology / American Heart Association Task Force on Clinical Practice Guidelines

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2017 Hypertension Clinical Practice Guideline

Overview

- Learning Objectives
- Abbreviations
- Historical Perspective
- New Hypertension "Guideline"
- Clinical application
- Summary

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Learning Objectives

1. Recognize that there is no JNC 8, and appreciate why there has been (and still is) a great deal of confusion about this.
2. Summarize the differences between the previous hypertension guideline (2014 Hypertension Science Advisory from the ACC/AHA/CDC) and the new (2017) ACC/AHA Guideline for the Prevention, Detection, Evaluation and Management of High Blood Pressure in Adults.

(cont.)

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Learning Objectives (cont.)

3. Apply current Hypertension Clinical Practice Guideline to actual patient care.

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Abbreviations

- ACC: American College of Cardiology
- AHA: American Heart Association
- CDC: Centers for Disease Control and Prevention
- NHLBI: National Heart, Lung, and Blood Institute

(cont.)

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Abbreviations (cont.)

- AAPA: American Academy of Physician Assistants
- ABC: Association of Black Cardiologists
- ACPM: American College of Preventive Medicine
- AGS: American Geriatrics Society

(cont.)

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Abbreviations (cont.)

- APhA: American Pharmacists Association
- ASH: American Society of Hypertension
- ASPC: American Society of Preventive Cardiology
- NMA: National Medical Association
- PCNA: Preventive Cardiovascular Nurses Association

(cont.)

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Abbreviations (cont.)

- JNC ___: ___th Report of the Joint National Committee for the Prevention, Detection, Evaluation and Treatment of Hypertension

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Historical Perspective

- JNC 1 1976
- JNC 2 1980
- JNC 3 1984
- JNC 4 1988
- JNC 5 1992
- JNC 6 1997
- JNC 7 2003
- JNC 8 Never!

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Historical Perspective (cont.)

- JNC 7 2003
- An Effective Approach to High Blood Pressure Control: A Science Advisory from the AHA, ACC, and CDC 2014
- 2017 ACC/AHA Guideline for the Prevention, Detection, Evaluation and Management of High Blood Pressure in Adults 2017

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Historical Perspective (cont.)

JNC 8 confusion…

- Excerpt from *Journal of the American College of Cardiology*, Vol. 64, No. 4, 2014:

  The Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC) published its last, and apparently final, recommendations for management of hypertension (JNC-7), which were supported and endorsed by the National Heart, Lung, and Blood Institute (NHLBI), in 2003. The next version (JNC-8) was being developed when the NHLBI announced in 2013 that it would no longer write such guidelines, but would instead focus on research and provide support for professional societies to write their own advisories.

(cont.)

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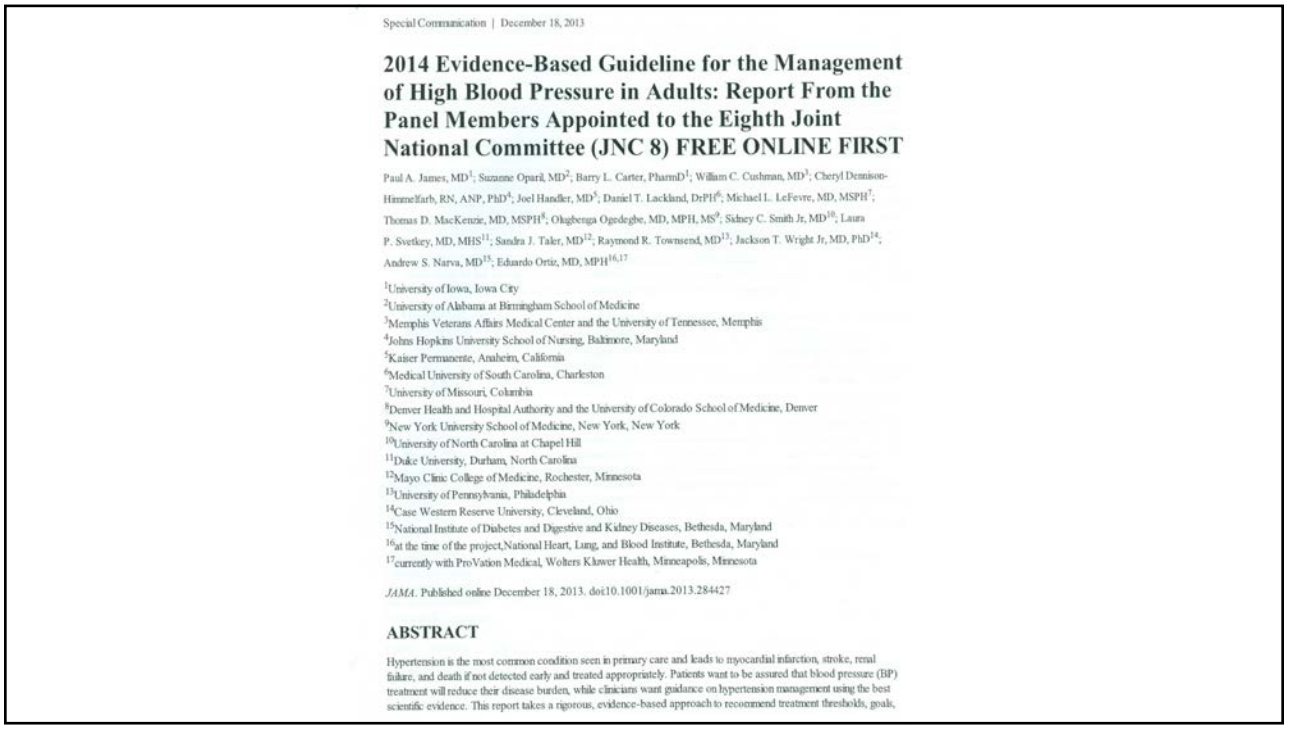
Historical Perspective (cont.)

JNC 8 confusion (cont.)…

- Excerpt from *Journal of the American College of Cardiology*, Vol. 64, No. 4, 2014 (cont.):

  Not long after, the American Heart Association (AHA), the American College of Cardiology (ACC), and the Centers for Disease Control and Prevention (CDC) jointly provided a brief focused advisory and concise algorithm for management of hypertension. ….The JNC-8 panelists were not in agreement with this process or the reviews of the document, and chose to publish separately, no longer using the title JNC-8. Using the "members-appointed" phrase has led to confusion about this document, and it has been called "JNC-8" by the media with regularity since its publication. Neither the NHLBI nor any other federal agency sanctioned this 2014 guideline document.



Special Communication | December 18, 2013

2014 Evidence-Based Guideline for the Management of High Blood Pressure in Adults: Report From the Panel Members Appointed to the Eighth Joint National Committee (JNC 8) FREE ONLINE FIRST

Paul A. James, MD[1]; Suzanne Oparil, MD[2]; Barry L. Carter, PharmD[1]; William C. Cushman, MD[3]; Cheryl Dennison-Himmelfarb, RN, ANP, PhD[4]; Joel Handler, MD[5]; Daniel T. Lackland, DrPH[6]; Michael L. LeFevre, MD, MSPH[7]; Thomas D. MacKenzie, MD, MSPH[8]; Ohagbenga Ogedegbe, MD, MPH, MS[9]; Sidney C. Smith Jr, MD[10]; Laura P. Svetkey, MD, MHS[11]; Sandra J. Taler, MD[12]; Raymond R. Townsend, MD[13]; Jackson T. Wright Jr, MD, PhD[14]; Andrew S. Narva, MD[15]; Eduardo Ortiz, MD, MPH[16,17]

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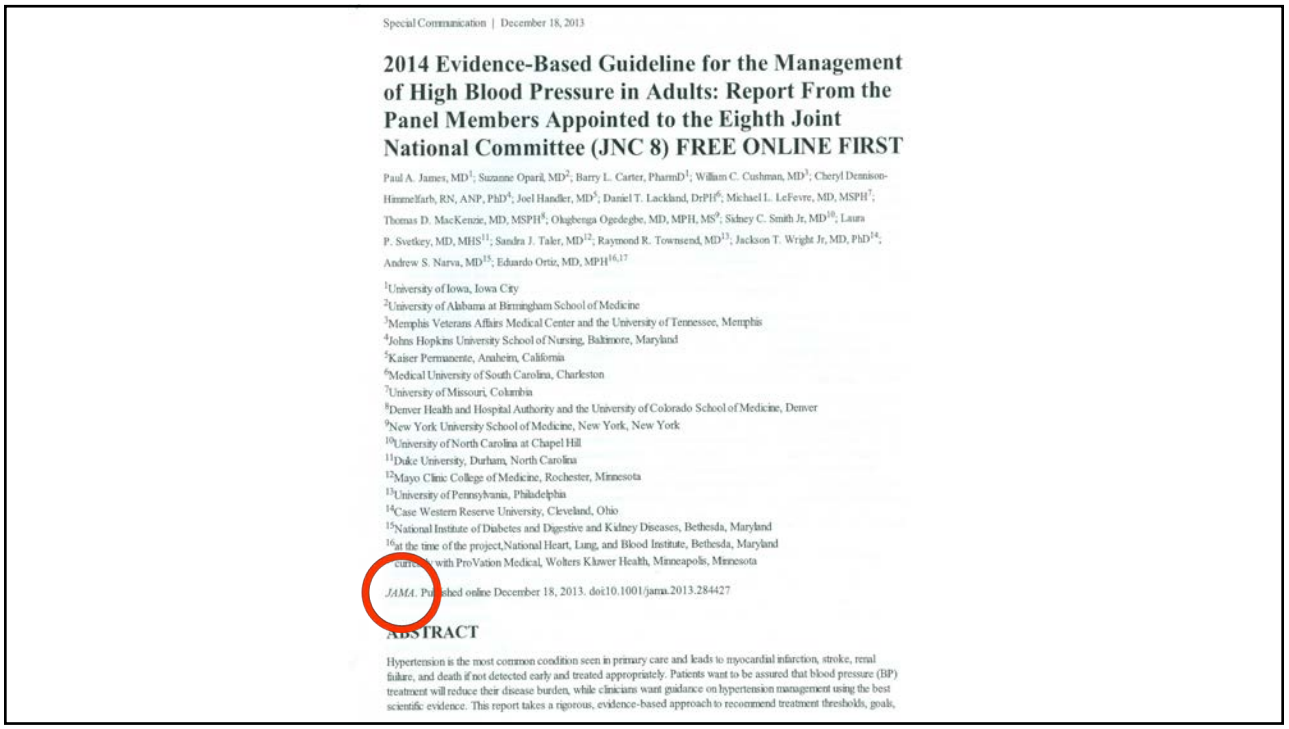
JAMA. Published online December 18, 2013. doi:10.1001/jama.2013.284427

ABSTRACT

Hypertension is the most common condition seen in primary care and leads to myocardial infarction, stroke, renal failure, and death if not detected early and treated appropriately. Patients want to be assured that blood pressure (BP) treatment will reduce their disease burden, while clinicians want guidance on hypertension management using the best scientific evidence. This report takes a rigorous, evidence-based approach to recommend treatment thresholds, goals,



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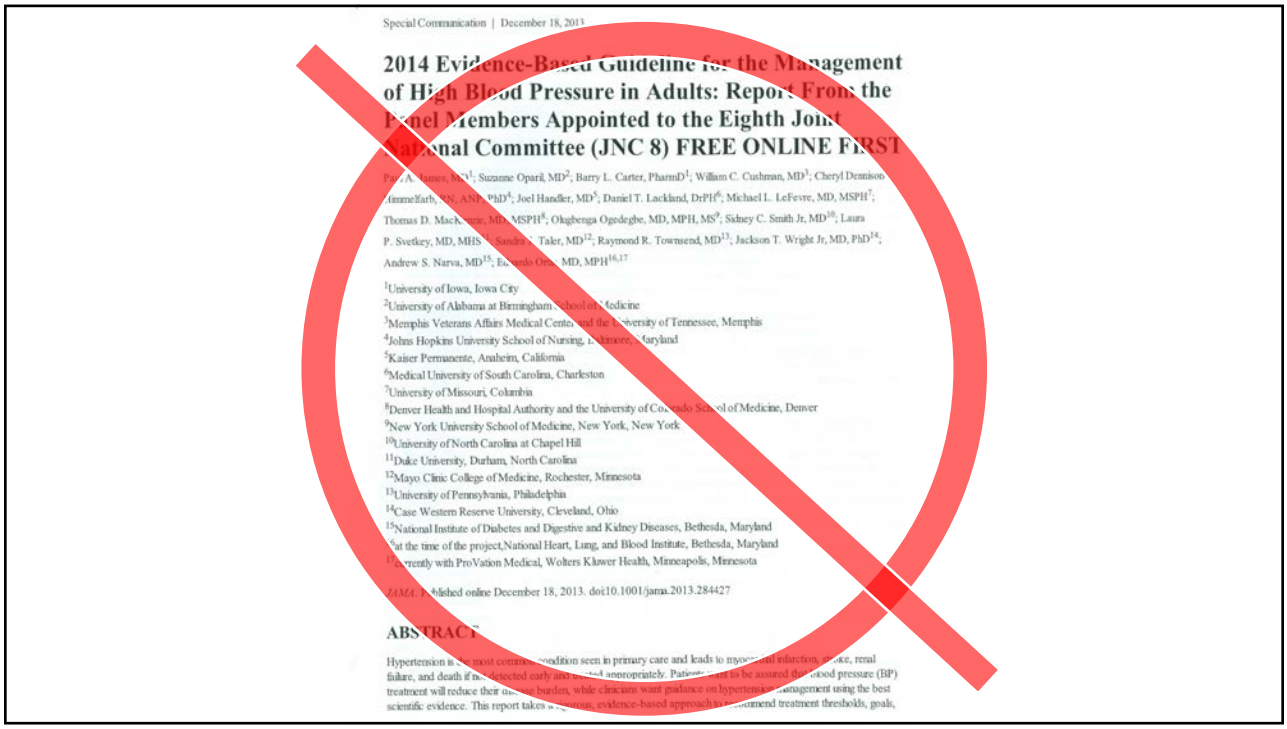

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2017 ACC/AHA Guideline

What's new…

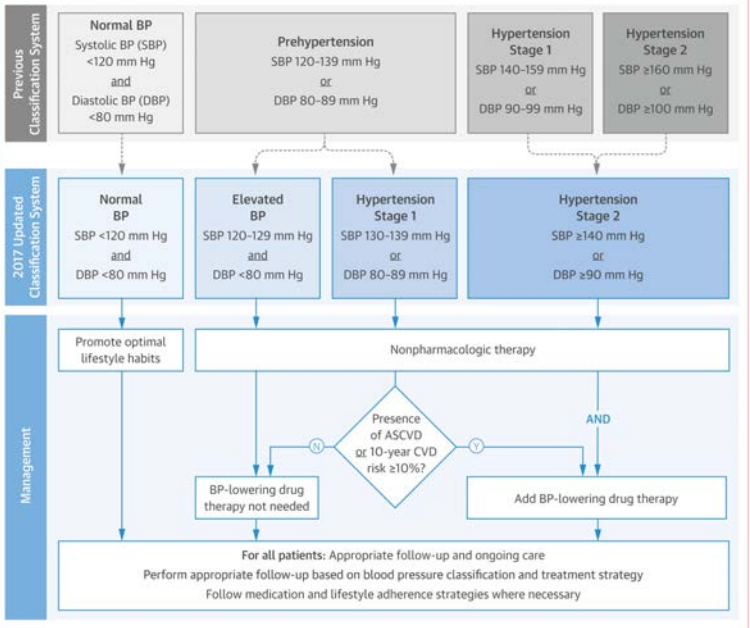
- New BP classification scheme
- New treatment targets
- Use of the atherosclerotic cardiovascular disease (ASCVD) risk estimator in decision-making regarding initiation of pharmacologic therapy in patients with stage 1 hypertension

Blood Pressure Categories

American Heart Association | American Stroke Association

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

CENTRAL ILLUSTRATION: 2017 Updated Classification and Management of High Blood Pressure in Adults



Whelton, P.K., et al. J Am Coll Cardiol. 10.1016/j.jacc.2017.11.006.

2017 Hypertension Clinical Practice Guideline

2017 ACC/AHA Guideline (cont.)

Nonpharmacologic therapy

- Recommended for everyone with a systolic BP > 119 mmHg or diastolic BP > 79 mmHg
- May be the sole treatment for patients with:
  - Systolic BP 120-129 mmHg and diastolic BP < 80 mmHg
  - Systolic BP 130-139 mmHg and diastolic BP 80-89 mmHg without clinical ASCVD, with ASCVD 10-year risk < 10%

TABLE 15 Best Proven Nonpharmacological Interventions for Prevention and Treatment of Hypertension*

	Nonpharmacological Intervention	Dose	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	(S6.2-1)
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	(S6.2-6,S6.2-7)
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	(S6.2-9,S6.2-10)
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	(S6.2-13)
Physical activity	Aerobic	■ 90-150 min/wk ■ 65%-75% heart rate reserve	−5/8 mm Hg	−2/4 mm Hg	(S6.2-18,S6.2-22)
	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	(S6.2-18)
	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	(S6.2-19,S6.2-31)
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	(S6.2-22–S6.2-24)

Resources: Your Guide to Lowering Your Blood Pressure With DASH–How Do I Make the DASH? Available at: https://www.nhlbi.nih.gov/health/resources/heart/hbp-dash-how-to. Accessed September 15, 2017. (S6.2-72) Top 10 Dash Diet Tips. Available at: http://dashdiet.org/dash_diet_tips.asp. Accessed September 15, 2017. (S6.2-73) *Type, dose, and expected impact on BP in adults with a normal BP and with hypertension. †In the United States, one "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) (S6.2-29).

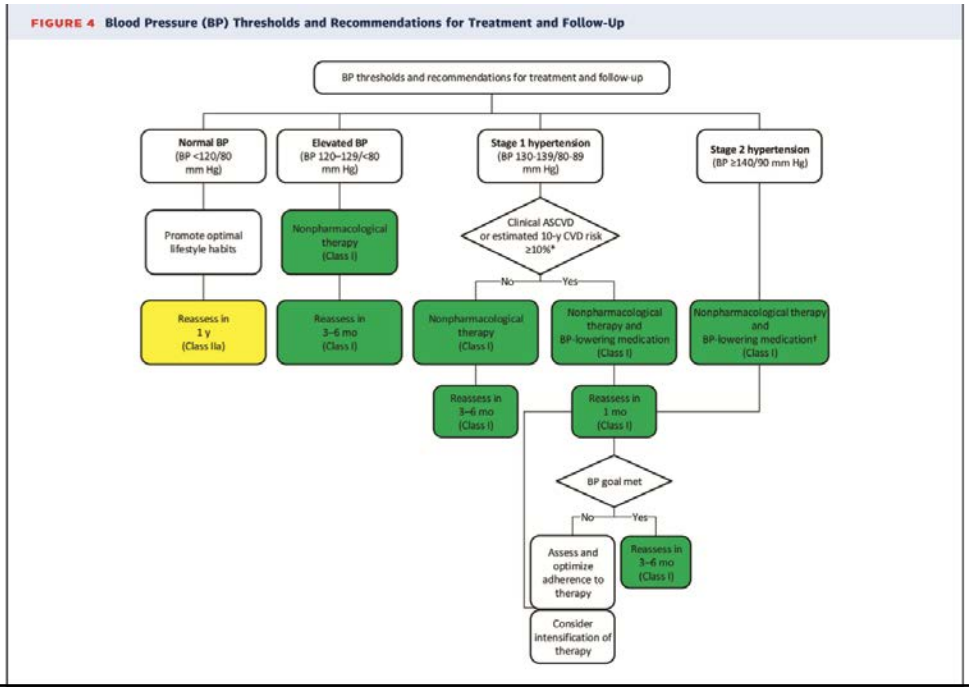
DASH indicates Dietary Approaches to Stop Hypertension; and SBP, systolic blood pressure.

2017 Hypertension Clinical Practice Guideline

2017 ACC/AHA Guideline (cont.)

Pharmacologic therapy

- Recommended for everyone with a systolic BP 140 mmHg or higher or diastolic BP 90 mmHg or higher
- Recommended for patients with systolic BP 130-139 mmHg or diastolic BP 80-89 mmHg and:
  - Clinical CVD, or
  - ASCVD 10-year risk ≥ 10%



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2017 ACC/AHA Guideline (cont.)

ASCVD Risk Estimator

- The only time it is necessary to use the ASCVD risk estimator to help guide decision-making regarding initiation of pharmacologic antihypertensive therapy is in patients with systolic BP in the 130's and/or diastolic BP in the 80's (stage 1 hypertension) *and* without a history of CVD.

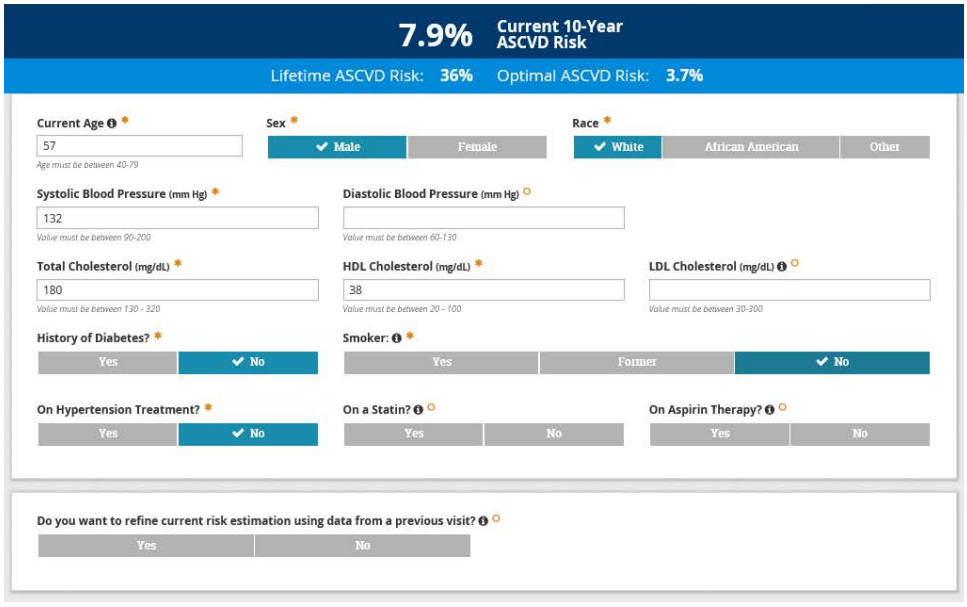
2017 Hypertension Clinical Practice Guideline

2017 ACC/AHA Guideline (cont.)

ASCVD Risk Estimator (cont.)

- Available at:
  - http://tools.acc.org/ASCVD-Risk-Estimator/


App intended for primary prevention patients (without ASCVD) who have LDL-C < 190 mg/dL (4.921 mmol/L)
Current Age *
Age must be between 40-79
Sex *
Male
Female
Race *
White
African American
Other
Systolic Blood Pressure (mm Hg) *
Value must be between 90-200
Diastolic Blood Pressure (mm Hg)
Value must be between 60-130
Total Cholesterol (mg/dL) *
Value must be between 130 - 320
HDL Cholesterol (mg/dL) *
Value must be between 20 - 100
LDL Cholesterol (mg/dL)
Value must be between 30-300
History of Diabetes? *
Yes
No
Smoker: *
Yes
Former
No
On Hypertension Treatment? *
Yes
No
On a Statin?
Yes
No
On Aspirin Therapy?
Yes
No
Do you want to refine current risk estimation using data from a previous visit?
Yes
No


7.9%
Current 10-Year ASCVD Risk
Lifetime ASCVD Risk: 36%
Optimal ASCVD Risk: 3.7%
Current Age *
57
Age must be between 40-79
Sex *
✔ Male
Female
Race *
✔ White
African American
Other
Systolic Blood Pressure (mm Hg) *
132
Value must be between 90-200
Diastolic Blood Pressure (mm Hg)
Value must be between 60-130
Total Cholesterol (mg/dL) *
180
Value must be between 130 - 320
HDL Cholesterol (mg/dL) *
38
Value must be between 20 - 100
LDL Cholesterol (mg/dL)
Value must be between 30-300
History of Diabetes? *
Yes
✔ No
Smoker: *
Yes
Former
✔ No
On Hypertension Treatment? *
Yes
✔ No
On a Statin?
Yes
No
On Aspirin Therapy?
Yes
No
Do you want to refine current risk estimation using data from a previous visit?
Yes
No

2017 Hypertension Clinical Practice Guideline

2017 ACC/AHA Guideline (cont.)

Pharmacologic therapy (cont.)

- For stage 1 hypertension, first-line therapy includes:
  - Thiazide diuretics
  - Calcium channel blockers
  - ACE inhibitors
  - ARB's
- For stage 2 hypertension, two first-line drugs of different classes are recommended.

2017 Hypertension Clinical Practice Guideline

2017 ACC/AHA Guideline (cont.)

Pharmacologic therapy (cont.)

Target:

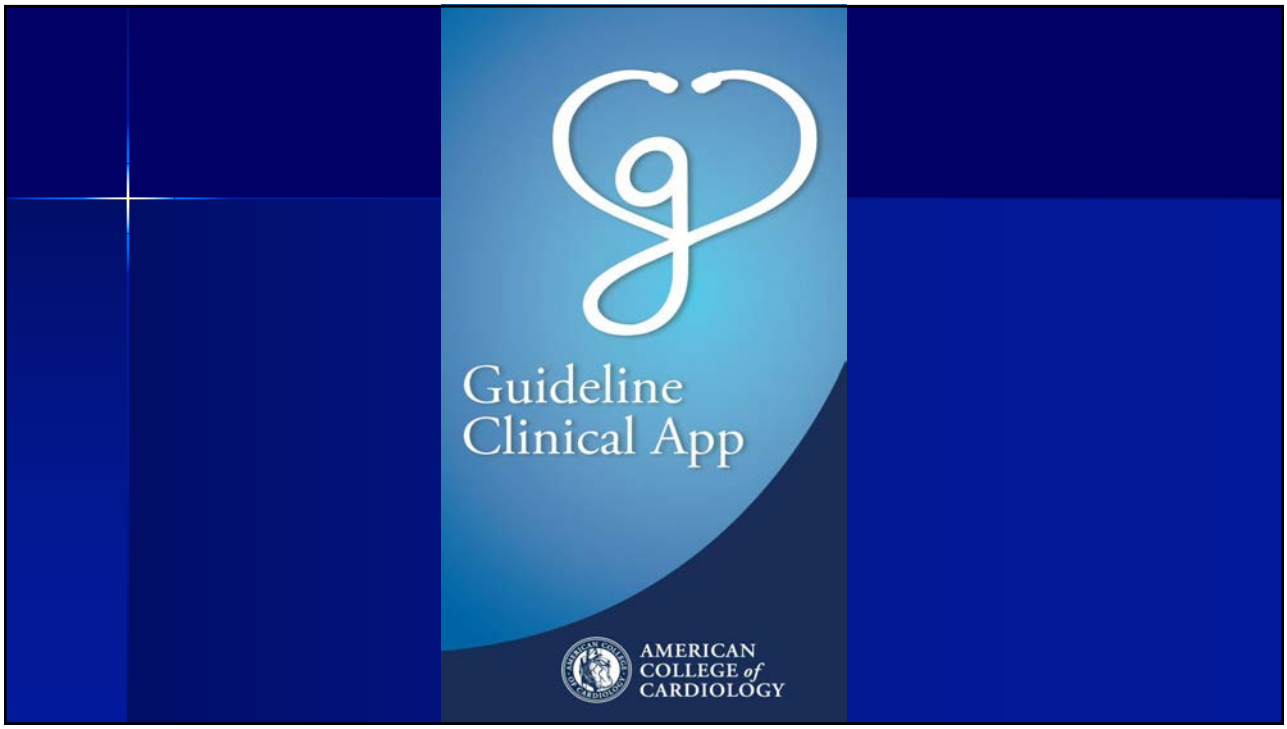
- BP goal of pharmacologic therapy for all ages and all (or no) comorbidities:
  - Systolic < 130 mmHg and diastolic < 80 mmHg

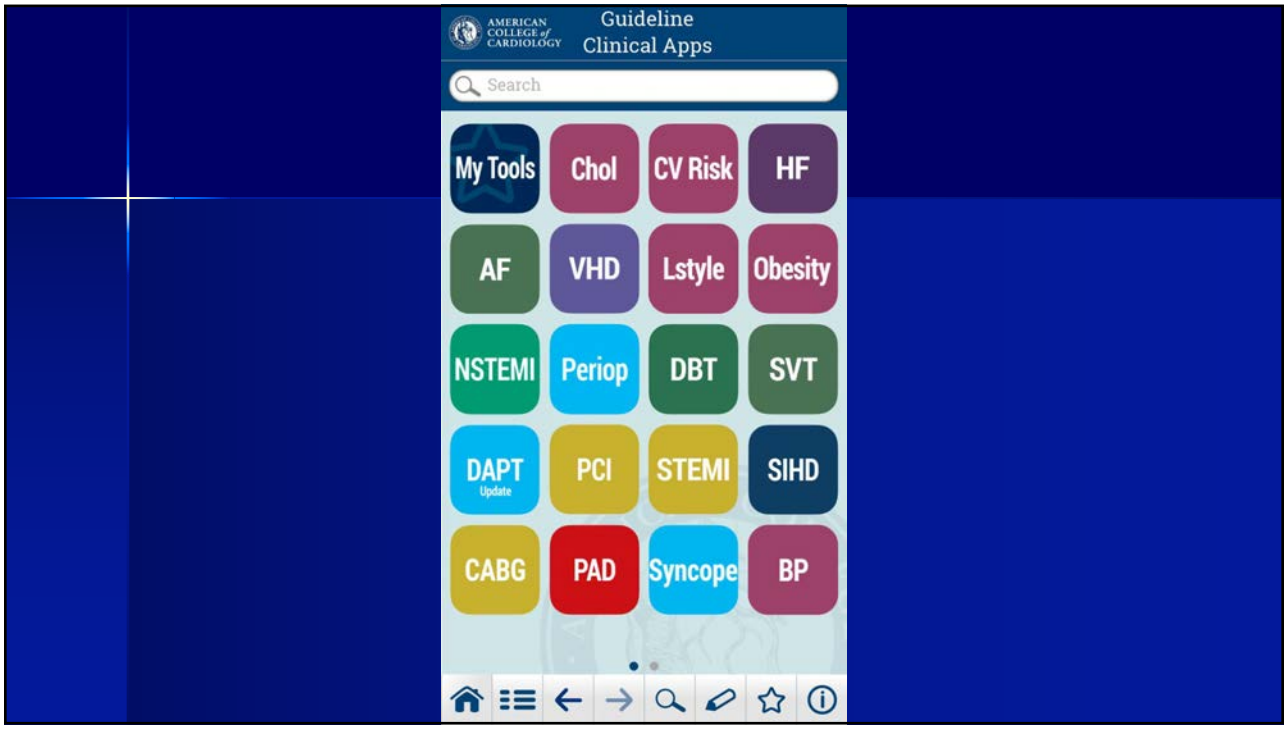
2017 Hypertension Clinical Practice Guideline

2017 ACC/AHA Guideline (cont.)

Current ACC Guidelines (HTN and many others):

- **There's an app for that!**
  - **Enter: "ACC Guideline Clinical Apps"**

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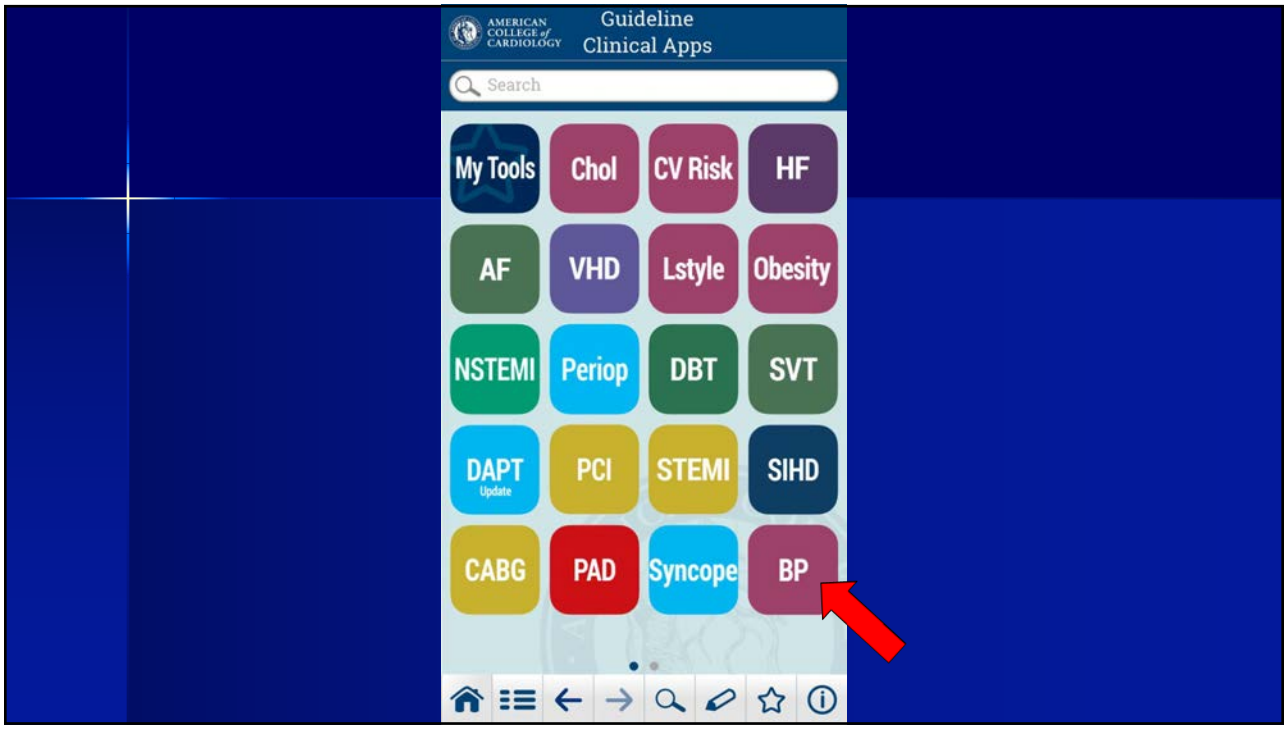
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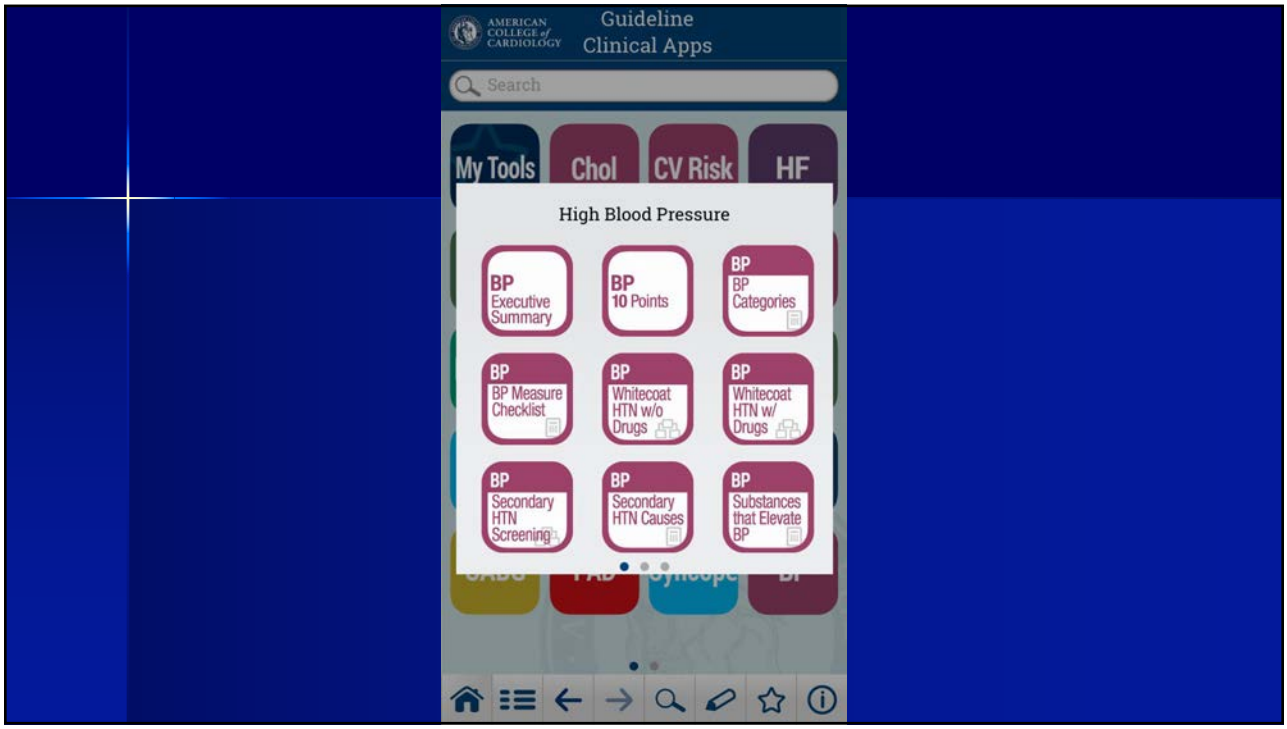
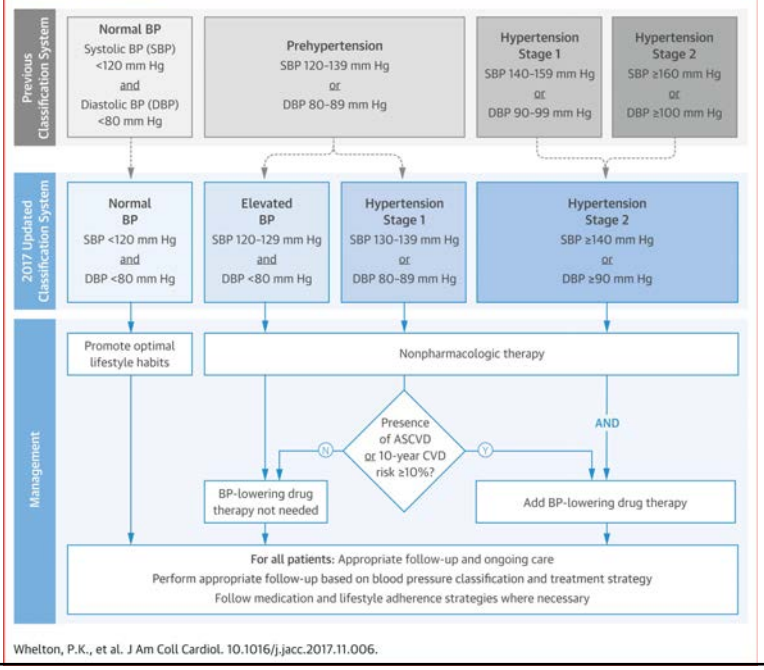


2017 Hypertension Clinical Practice Guideline

Summary

- New BP classification scheme will result in increased prevalence of hypertension and, most likely, increased use of antihypertensive medications among U.S. adults.
- New BP goal of pharmacologic therapy for all ages and all (or no) comorbidities is:
  - Systolic < 130 mmHg and diastolic < 80 mmHg

CENTRAL ILLUSTRATION: 2017 Updated Classification and Management of High Blood Pressure in Adults



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2017 Hypertension Guideline

References

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