# THE HEARTSUMMET 2018

# ARKANSAS HEART HOSPITAL®

# Hypertension and the 2017 Guidelines – Meeting the Targets in Small Groups

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"In this case, a new high score is not a good thing."



### The 2017 Guideline is an Update to JNC7

- New information regarding BP related risk of CVD
- Ambulatory BP monitoring (ABPM)
- Home BP monitoring (HBPM)
- Thresholds to initiate drug therapy for hypertension
- BP treatment goals
- Ideas to improve hypertension treatment and compliance



# Hypertensive Patients Commonly have CVD Risk Factors

### **Modifiable Risk Factors**

- Current cigarette smoking, secondhand smoking
- Diabetes mellitus
- Dyslipidemia/hypercholesterolemia
- Overweight/obesity
- Physical inactivity/low fitness
- Unhealthy diet

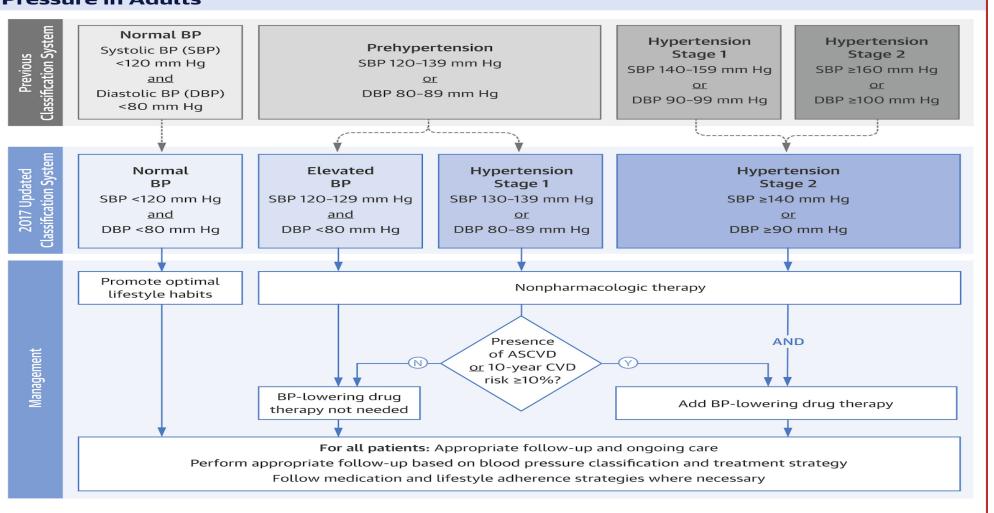
### **Relatively Fixed Risk Factors**

- CKD
- Family History
- Increased age
- Low socioeconomic/educational status
- Male sex
- Obstructive sleep apnea
- Psychosocial stress



### **Hypertension Classification**

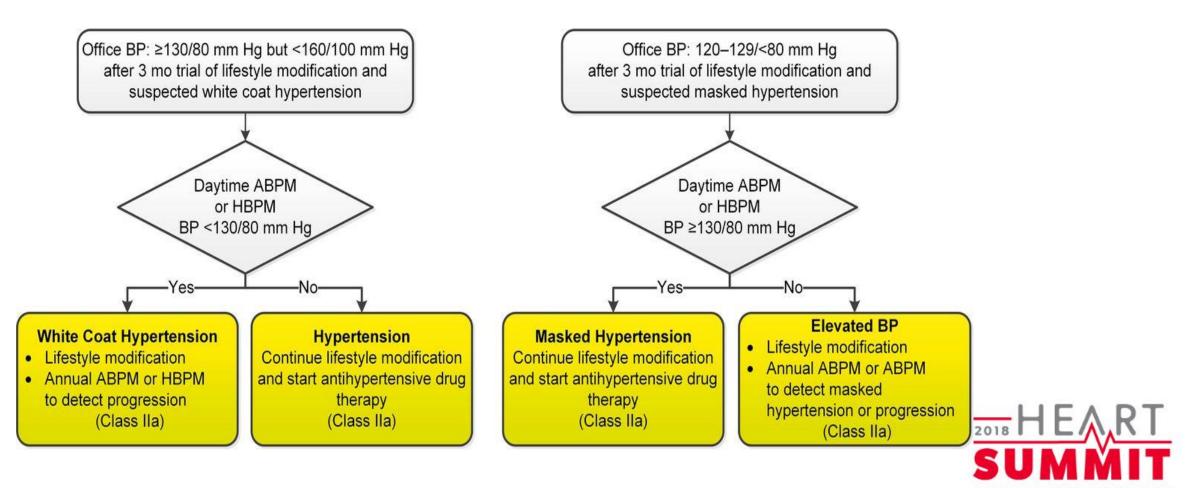
### **CENTRAL ILLUSTRATION: 2017 Updated Classification and Management of High Blood Pressure in Adults**



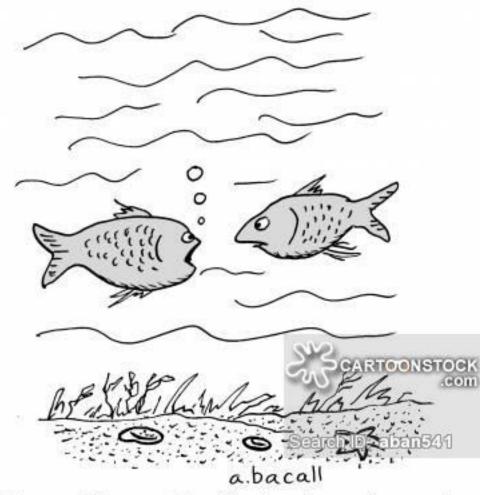


Whelton, P.K., et al. J Am Coll Cardiol. 10.1016/j.jacc.2017.11.006.

### **Detection White Coat or Masked HTN**



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"I'm sure if I moved to a fresh water environment, my hypertension would abate."



# Nonpharmacological Interventions for Prevention and Treatment of HTN

- Weight loss Best goal is ideal body weight. For every 1 kg reduction in body weight expect about 1mm Hg reduction in blood pressure
- Healthy diet DASH dietconsume a diet rich in fruits and vegetables, whole grains and low fat dairy products
- Low sodium diet Goal is <1500mg/d, but at least a 1000mg/d reduction is recommended for most adults
- Increase physical activity Aerobic 90-150 min/wk
- Moderation in alcohol intake Men < 2 drinks daily</li>

Women < 1 drink daily



# **Drug Therapy**

### Stage 1 HTN

- Thiazide diuretics
- Calcium Channel Blockers
- ACE inhibitors or ARBs

### Stage 2 HTN

• Two first line drugs of different classes are recommended



### **Drug Therapy in Special Populations**

- Chlorthalidone is the preferred diuretic. It has a long half life and proven reduction of CVD risk. Potassium will need to be monitored.
- ACE inhibitors, ARBs and direct renin inhibitors should not be used in combination.
- ACE inhibitors and ARBs increase the risk of hyperkalemia in CKD and with potassium sparing diuretics.
- CCB and dihydropyridines cause edema.
- Non-dihydropyridine CCBs can cause bradycardia and heart block and should be avoided in heart failure.



# **Drug Therapy in Special Populations**

- Loop diuretics are preferred in HF
- Amiloride and triamterene can be used with thiazides in adult with a low potassium but should be avoid if GFR < 45 ml/min</li>
- Spironolactone and eplerenone is preferred for the treatment of primary aldosteronism and in resistant HTN. The potassium level will need to be monitored.
- Beta-blockers are not first line therapy except in CAD and heart failure.
- Beta-blockers with both alpha and beta receptor activity are preferred in heart failure(carvedilol is preferred).



# Drug Therapy in Special Populations

- Alpha-1 blockers are associated with orthostatic hypotension.
- This drug class may be considered in men with symptoms of benign prostatic hyperplasia
- Central acting alpha2-agonists should be avoided and are reserved as last line due to side effects and then need to avoid sudden discontinuation.
- Direct acting vasodilators are associated with sodium and water retention and must be used with a diuretic and beta-blocker
- In African American adults with HTN but without HF or CKD, initial HTN treatment should include a thiazide type diuretic ore CCB\_HF



### Age Related Issues

- Treatment is recommended for noninstutionalized ambulatory adults <u>></u> 65 with average SBP <u>></u> 130 mmhg with a goal of <130mmhg</li>
- For adults > 65 with HTN and a high burden of comorbidity and/or limited life expectancy clinical judgement and a team approach to assess risk benefit is reasonable.



- 58 year old white male
- CC uncontrolled HTN
- HPI His blood pressure at home has been 160-190 systolic and 90-100 diastolic. He has chest pressure when his blood pressure is high. He has dyspnea with activity and complains of severe edema in his lower legs. He wears his c-pap regularly.
- VS HR 54, BP 165/82, H 70 inches, wt 327 pounds
- PE Unremarkable, except for severe lower extremity edema



- PMH HTN
  - Sleep apnea
  - Obesity
  - Chronic lower extremity edema
  - Angiogram 3 months prior no significant CAD with a NL EF
- Social Non-smoker and no ETOH
- Labs BUN 23, sodium 141, potassium 3.4, creatinine 1.17



 Current medications: Losartan 100mg daily Clonidine 0.1mg at mid day Clonidine 0.2mg BID Atenolol 100mg daily Minoxidil 5mg BID Furosemide 20mg daily



- Plan: Weight loss
- Stop: Clonidine, Furosemide, Losartan and Minoxidil
- Start: Amlodipine 5mg daily
   Irbesartan 300mg daily
   Indapamide 2.5mg daily
   Guanfacine 1mg daily at night
   Potassium chloride 20 mEq BID



### CASE Study: Mr. T. – One Week Follow UP

- HPI Feels better, BP at home 150-160 systolic and 80's diastolic
- VS HR 54, BP 150/80, Ht 70 inches, Wt 313 pounds,
- PE Edema is better
- Labs Potassium 4.6
  - Sodium 137 Creatinine 1.07
  - BUN 21
- Plan continue medications follow 4 weeks.



### CASE Study: Mr. T. – 4 Week Follow Up

- HPI Feels well. Has been hunting.
- VS HR 63, BP 126/66, Ht 70, Wt 315
- PE Edema much improved
- Plan: Taper Guanfacine and then stop.



### Home Blood Pressure Monitoring

### **Omron Wellness App**

- You can wirelessly sync BP readings to your smart phone or tablet.
- Easily track your history and detect any changes in your blood pressure over time.

### **Omron Connect App**

- You can wirelessly sync BP readings to your smart phone or tablet.
- Stores your heart history.
- Tracks your weight
- With an activity tracker will track activity
- With a heart rate tracker

will track heart rate



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### Reference

 Whelton PK, Carey RM, Aronow WS, Casey DE Jr, Collins KJ, Dennison Himmelfarb C, DePalma SM, Gidding S, Jamerson KA, Jones DW, MacLaughlin EJ, Muntner P, Ovbiagele B, Smith SC Jr, Spencer CC, Stafford RS, Taler SJ, Thomas RJ, Williams KA Sr, Williamson JD, Wright JT Jr. 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. J Am Coll Cardiol 2018;71:e127–248.



# **SUMATIONS ARKANSAS HEART HOSPITAL**