

# *Pressure Points: Navigating the 2025 Hypertension Guideline Updates*

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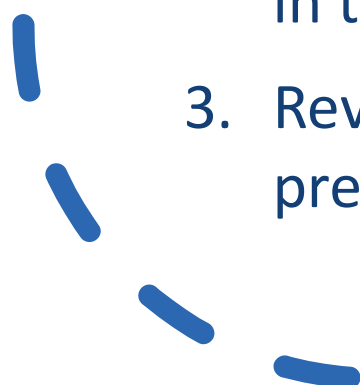
## Disclosure Statement

- David Foote and Taylor Baszynski have no relevant financial relationship(s) with ineligible companies to disclose.
- None of the planners for this activity have relevant financial relationships with ineligible companies to disclose.



# Learning Objectives

1. Compare current hypertension treatment decisions with previous guideline recommendations
2. Evaluate the implementation and clinical decision-making considerations associated with the PREVENT Risk Equation in the management of hypertension in adults
3. Review recommendations for self-monitoring of blood pressure and patient education pearls



# CASE: Meet the Patient

Patient CS is a 62-year-old woman presenting for hypertension education after elevated blood pressure was identified at her last primary care appointment.

## Current Medications:

- Metformin 500 mg 2 tabs BID
- Atorvastatin 40 mg daily

## Social Determinants

- Limited access to fresh foods
- Relies heavily on canned/boxed/fast food
- Custodian at local community center
- Housing & Access: Stable housing; high social deprivation area

## Past Medical History

- Type 2 Diabetes Mellitus, diagnosed 8 years ago
- A1c: 8.0% (measured 2 weeks ago)
- Depression, stable but untreated
- Obesity
- No CKD history
- No ASCVD history

## Social History

- Tobacco: Never smoker
- Alcohol: None
- Illicit drugs: None
- Diet: Limited access to fresh fruits/vegetables
- Physical activity: Moderate
- Insurance: Medicaid



# 2025 American Heart Association/American College of Cardiology High Blood Pressure Guidelines

Published August, 2025  
*Previous update: 2017*



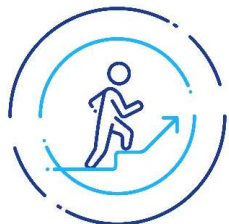
# Why Guidance Has Changed

- Shift from BP-only thresholds to risk-based treatment
- Stronger evidence supporting lower systolic BP targets
- Improved cardiovascular risk prediction tools
- Greater emphasis on precision, equity, and shared decision-making



# Blood Pressure Classification

BP Classification	SBP		DBP
Normal	<120 mm Hg	and	<80 mm Hg
Elevated	120 to 129 mm Hg	and	<80 mm Hg
Hypertension			
Stage 1	130 to 139 mm Hg	or	80 to 89 mm Hg
Stage 2	≥140 mm Hg	or	≥90 mm Hg



# Previous BP Goals

- Adults with HTN and CVD or 10-yr ASCVD risk  $\geq 10\%$ 
  - Target  $<130/80$  mmHg
- Adults with HTN without additional CVD risk
  - Target  $<130/80$  mmHg



# What's New?

- BP targets tied to **PREVENT Risk Equation**, not ASCVD alone
- Clear distinction between:
  - “Recommended” goals
  - “May be considered” goals
- Greater emphasis on accurate BP measurement and averaging



# New BP Goals

PREVENT 10-Year CVD Risk	Systolic BP Goal (SBP)	Diastolic BP Goal (DBP)	Strength of Recommendation
≥ 7.5%	<130 mmHg recommended <i>Encourage &lt;120 mmHg if tolerated</i>	<80 mmHg recommended	Class I (Strong)
< 7.5%	<130 mmHg reasonable <i>&lt;120 mmHg may be considered</i>	<80 mmHg may be beneficial	Class IIb (Weaker)



# Old vs New Blood Pressure Assessment

Feature	2018 Guidance	2025 Guidance
Risk tool	ASCVD (PCE)	PREVENT
SBP target	<130	<130 recommended <120 encouraged
DBP target	<80	Risk-stratified
Measurement	Office BP	Averaged, HBPM emphasized
Equity	Race-based inputs	Race removed



# How BP Should Be Measured

- BP decisions should be based on:
  - Average of  $\geq 2$  readings
  - Across  $\geq 2$  separate visits
- Single in-office readings should not drive treatment decisions
- Reinforces the role of home and ambulatory BP monitoring

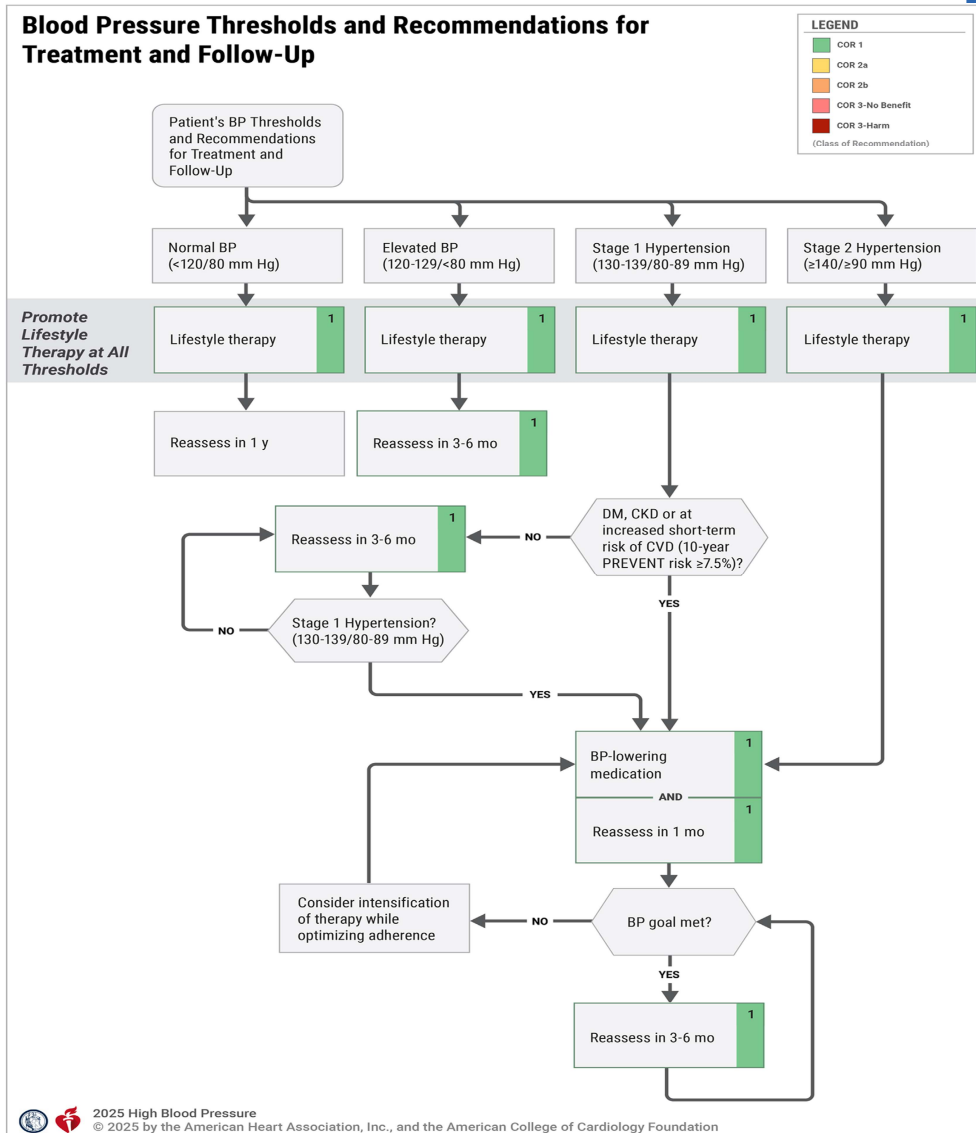


## Office Blood Pressure Measurement

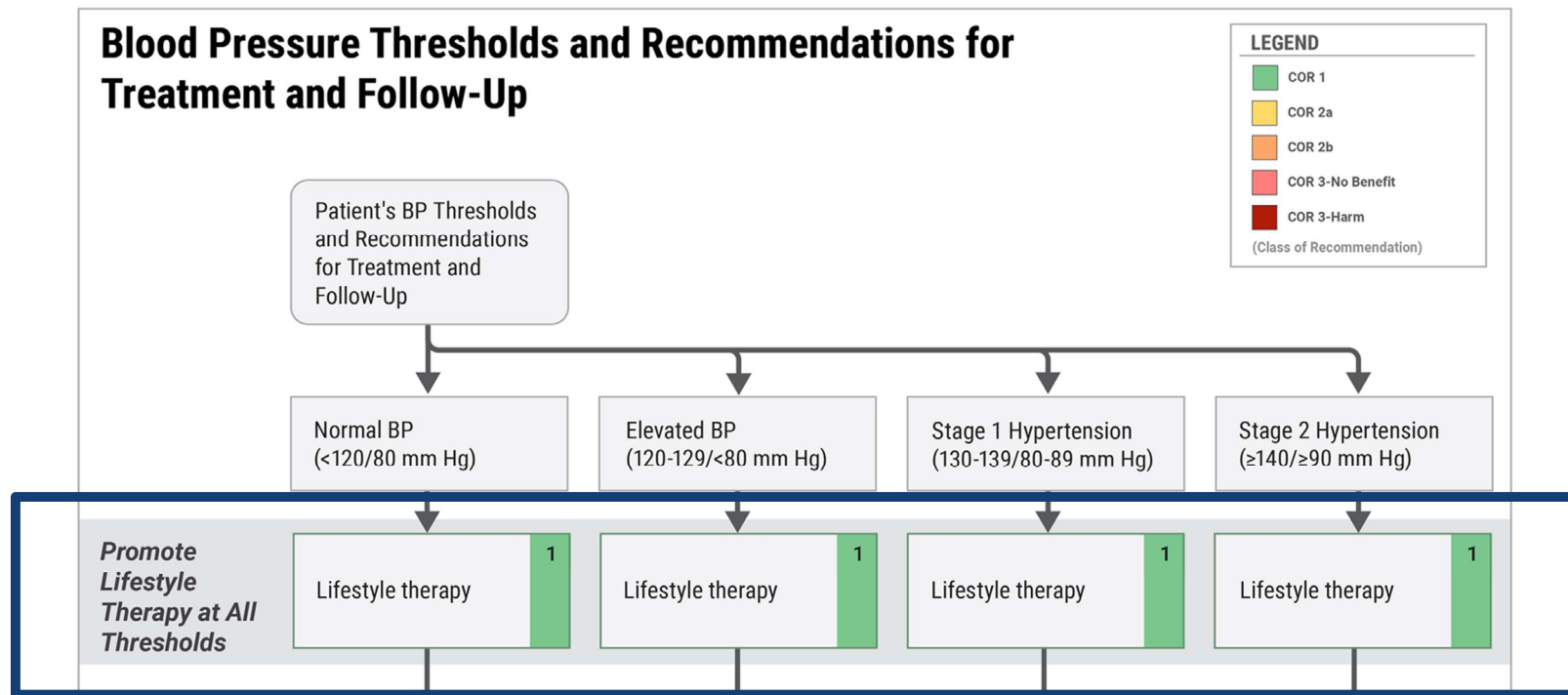


1. The patient should avoid caffeine, exercise, and smoking for at least 30 minutes before measurement. Ensure the patient has emptied their bladder.
2. Use a blood pressure device that has been validated for accuracy ([validatebp.org](http://validatebp.org)).
3. Use the correct cuff size on a bare arm.
4. The patient's arm should be supported at heart level.
5. Have the patient relax, sitting in a chair (feet on floor, legs uncrossed, and back supported) for more than 5 minutes of rest.
6. Neither the patient nor the clinician should talk during the rest period or during the measurement. The patient should not be using their phone.
7. Blood pressure measurement should be taken in a temperature-controlled room.
8. Take 2 or more blood pressure measurements at least 1 minute apart. Average the readings, and provide the patient their blood pressure readings both verbally and in writing.

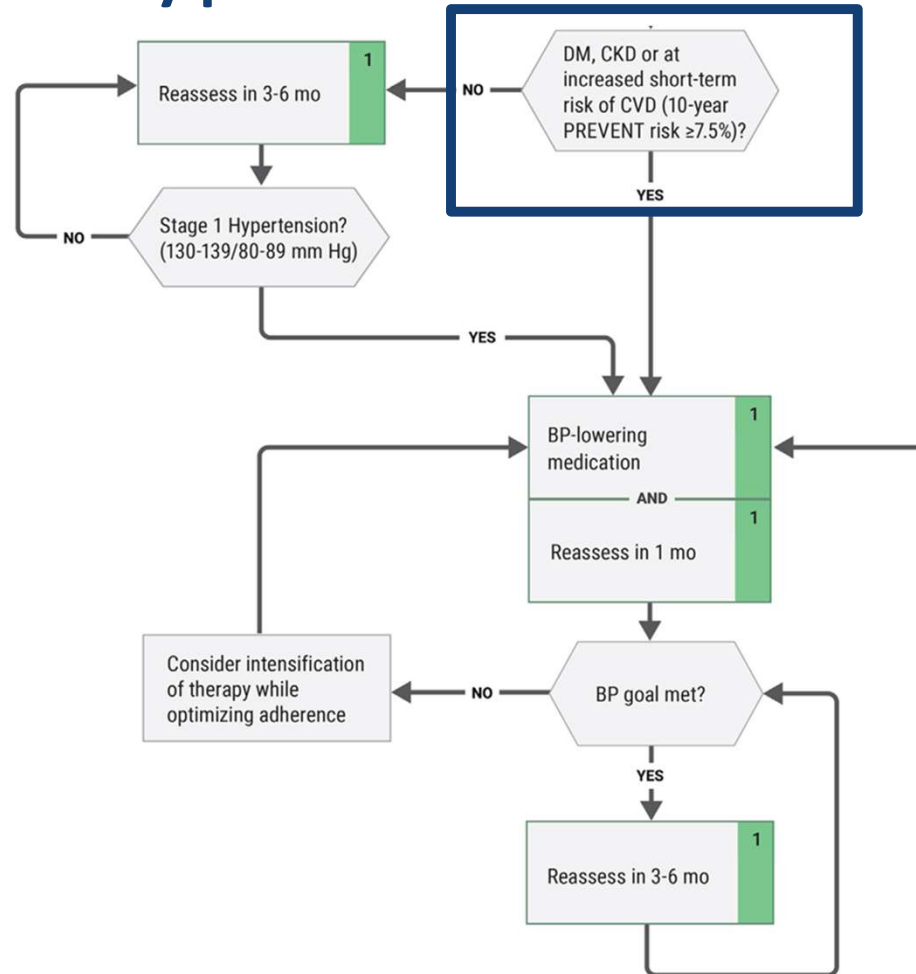
# Treatment Decisions



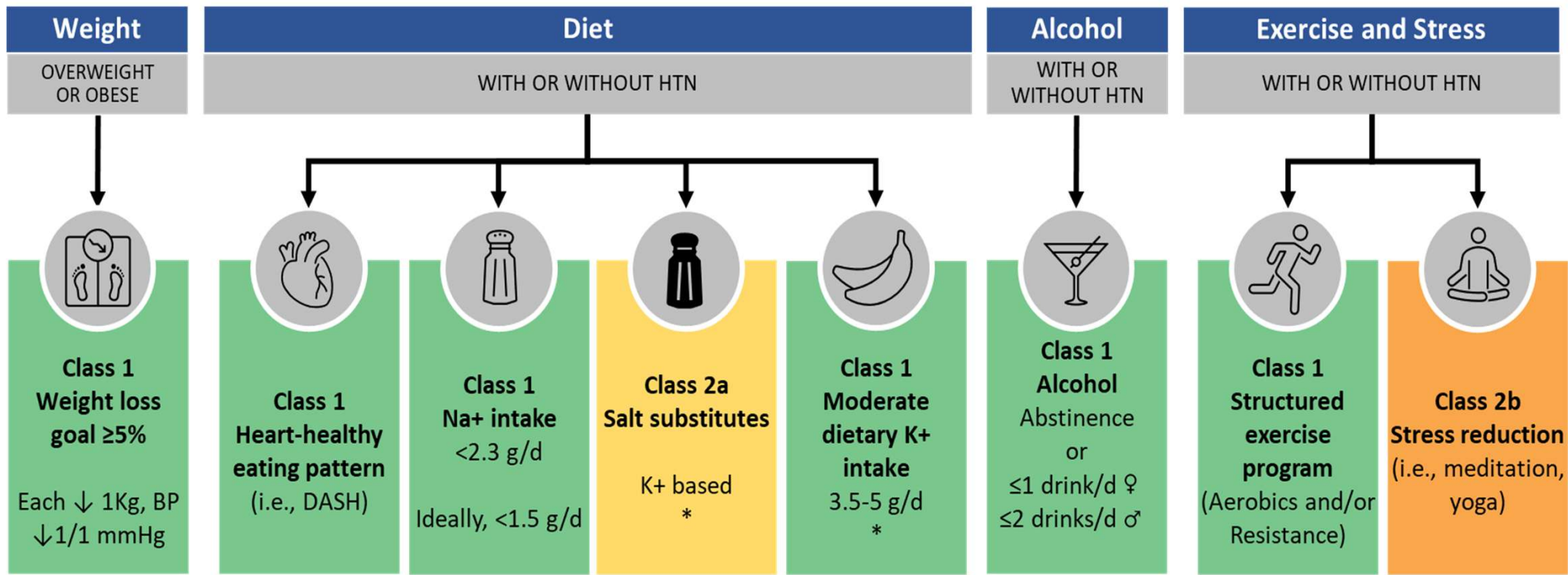
# Lifestyle Therapy



# Stage 1 or 2 Hypertension – After Lifestyle

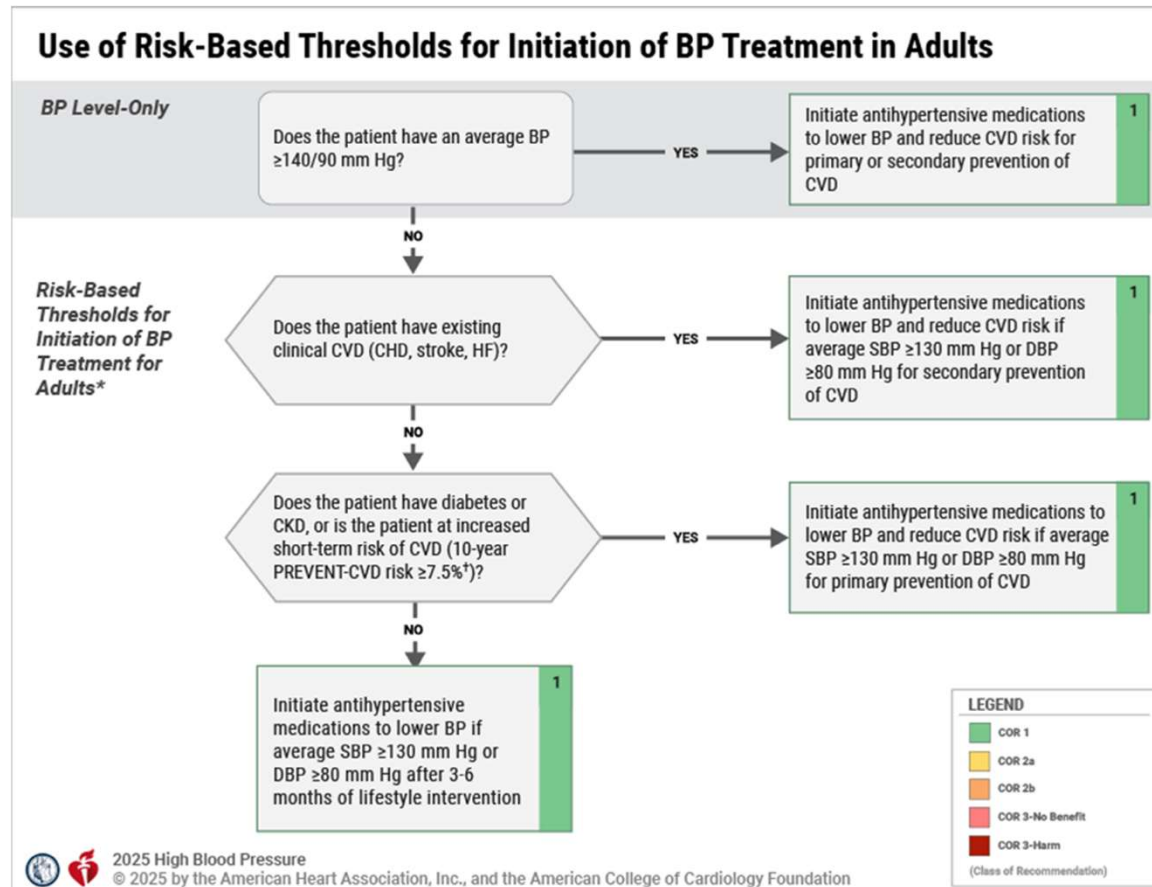


# Lifestyle and Psychosocial Approaches



# Initiation of Pharmacotherapy

- Initiate antihypertensive therapy when:
  - Avg SBP >140 mmHg or DBP >80 mmHg → mortality benefit
- Adults with clinical CVD:
  - Initiate therapy at >130/80 mmHg (Class 1A)



# First Line Therapies

Thiazide-like diuretics

Dihydropyridine calcium channel blockers

ACE inhibitors or ARBs

- Selection based on:
  - Comorbidities
  - Drug interactions
  - Tolerability
  - Patient preferences



# Monotherapy vs Combination Therapy

## Stage 1 HTN:

- Monotherapy reasonable

## Stage 2 HTN:

- Initiate two first-line agents
- Single-pill combinations preferred



# Combination Fixed-Dose Therapies

- Improved medication adherence
- Reduced pill burden
- Faster BP control
- Simplified titration

ACEi + Thiazide Diuretic

ARB + Thiazide Diuretic

ACEi + CCB

ARB + CCB

ARB + Beta Blocker

Beta Blocker + Thiazide Diuretic

Potassium Sparing Diuretic + Thiazide Diuretic

MRA + Thiazide Diuretic

ARB + CCB + Thiazide Diuretic

# Adjustment to Race-Based Recommendations

- JNC-8 recommended thiazide or CCB in Black adults
  - Based on ALLHAT (1990s)
- Limitations:
  - Underuse of ACEi/ARBs
  - Worse BP control
- Current guidance:
  - Race removed as a biologic variable
  - Focus on risk, comorbidities, and response



# Resistant Hypertension Update

- Screening for primary aldosteronism:
  - Recommended regardless of potassium level
- Prior to screening:
  - Continue all antihypertensives except MRAs



# Treatment of Patients with Current CKD:

## Diabetes + HTN + CKD

- ACEi or ARB
- eGFR <60 OR ACR  $\geq 3$
- Consider if mild albuminuria

## HTN + CKD + ACR $\geq 30$

- ACEi or ARB (not both)
- $\downarrow$  CVD
- $\downarrow$  CKD progression



# Hypertension and Pregnancy

## Severe HTN

- $\geq 160$  OR  $\geq 110$
- Treat in 30–60 min
- Goal  $< 160 / < 110$

## Chronic HTN

- Pre-pregnancy OR  $< 20$  weeks
- 140–159 / 90–109
- Goal  $< 140 / 90$

## Preeclampsia Prevention

- Low-dose aspirin counseling

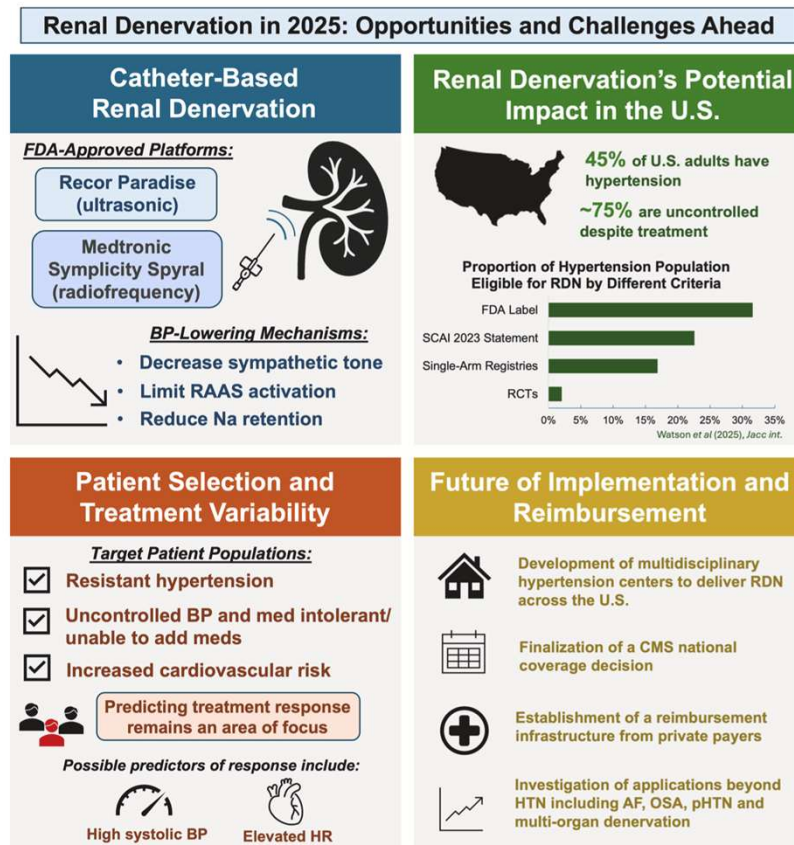
## Contraindicated

- ACEi, ARB, DRI
- MRA, nitroprusside
- Atenolol



# Renal Denervation: New Recommendations

- Renal denervation:
  - Reduces sympathetic signaling
  - Lowers RAAS activity
  - Decreases sodium retention
- Catheter-based procedure using 2 FDA Approved devices:
  - Medtronic Symplicity Spyral System (Radiofrequency)
  - Recor Paradise (ultrasonic)



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Cite the picture

david.foote@utoledo.edu, 2026-02-11T00:08:31.991

# Renal Denervation: New Recommendations

- Patients being considered for RDN should be:
  - Evaluated by a multidisciplinary team
  - Team should have expertise in resistant hypertension and RDN
- Engage in shared decision-making:
  - Discuss expected BP reduction
  - Review procedural risks
  - Compare with continued medical therapy



# Renal Denervation: New Recommendations

## Appropriate for RDN

- Stage 2 HTN ( $\geq 140/90$  mm Hg)
- Not at goal despite  $\geq 4$  optimal agents (ACEi/ARB + CCB + thiazide + MRA)
- OR unable to tolerate additional therapy

## Contraindications

- Pregnancy
- Neurogenic orthostatic hypotension
- Fibromuscular dysplasia
- Stented renal artery
- Renal artery aneurysm
- Significant renal artery stenosis
- Renal or secreting adrenal tumors



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## Social History

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- Alcohol: None
- Illicit drugs: None
- Diet: Limited access to fresh fruits/vegetables
- Physical activity: Moderate
- Insurance: Medicaid



Vital Signs	
Blood Pressure	154/92 mmHg (repeat 152/90)
Heart Rate	78 bpm
Respiratory Rate	16
Temperature	98.8°F
BMI	33.8 kg/m <sup>2</sup>
Height	5'4"
Weight	~197 lbs

Lipid Panel	
Total Cholesterol	218 mg/dL
LDL-C	132 mg/dL
HDL-C	42 mg/dL
Triglycerides	178 mg/dL
Non-HDL-C	176 mg/dL

Basic Metabolic Panel	
Sodium	138 mEq/L
Potassium	4.3 mEq/L
Chloride	102 mEq/L
CO <sub>2</sub>	24 mEq/L
BUN	14 mg/dL
Serum Creatinine	0.82 mg/dL
eGFR	72 mL/min/1.73 m <sup>2</sup>
Fasting Glucose	125 mg/dL

Diabetes Labs	
A1c	8.0%
UACR	28.2 mg/g



# CASE: Check for Understanding

**What stage of hypertension is CS?**

Stage 2: BP of 154/92 mmHg >140/90 mmHg

**How many first line therapies would be indicated?**

Stage 2: 2 first-line agents, consider combination therapy



# Predicting Risk of CVD EVENT (PREVENT) Equations



# History of Risk Stratification

## Framingham Risk Score

- First widely used tool to estimate general cardiovascular risk
- Limited diversity
- Short-term risk focus

## PREVENT Risk Equation

- Estimates total CVD risk (ASCVD + heart failure)
- Expanded age range
- Removes race as a biologic variable
- Incorporates CKM health

## Pooled Cohort Equations (PCE)

- Introduced estimation of 10-year ASCVD risk
- Included race and sex
- Limited to ASCVD outcomes

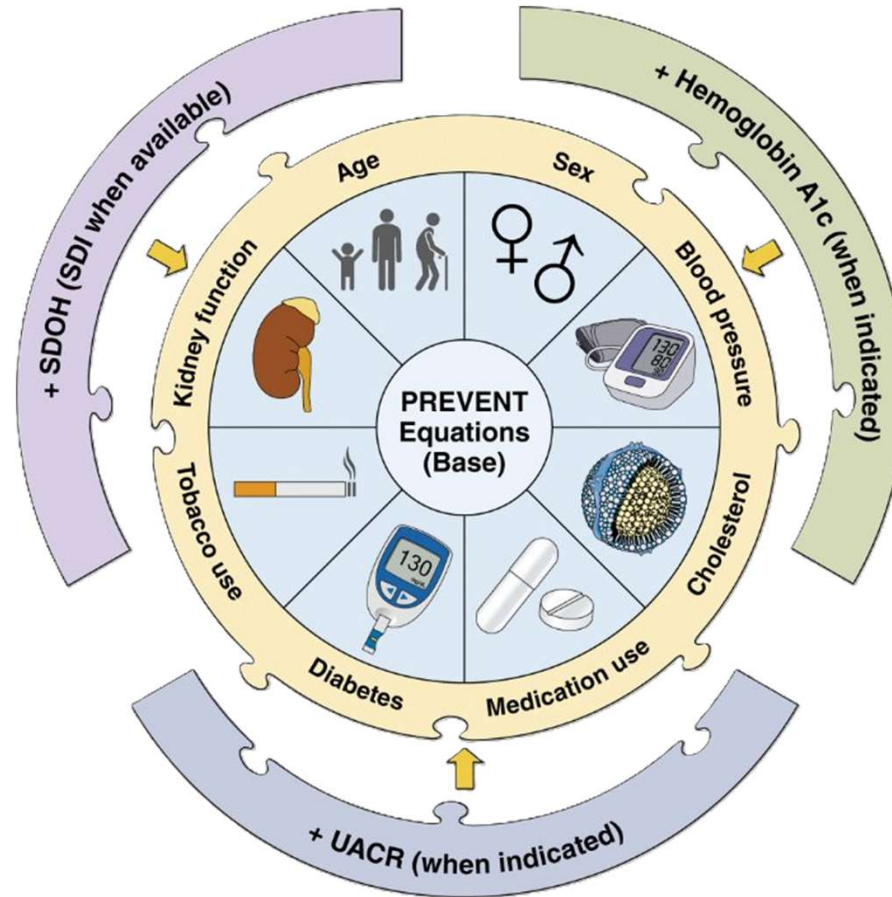
Khan SS, et al. *Circulation*.2024;149(6):430-449.  
Ko DT, et al. *CMAJ*.2020;192(17):E442-E449.  
Goff DC Jr, et al. *J Am Coll Cardiol*. 2014;63(25 Pt B):2935-2959.  
Razavi AC, et al. *Circ Cardiovasc QualOutcomes*. 2024;17(4):e010763



# Key Differences from PCE and PREVENT

Feature	Pooled Cohort Equations (PCE)	PREVENT Risk Equation
Primary outcome(s)	10-year ASCVD risk	Total CVD risk (ASCVD + HF)
Heart failure included	No	Yes
Age range	40–79 years	30–79 years
Sex-specific calculators	Yes	Yes
Race included as variable	Yes	No
Body mass index (BMI)	Included (limited use)	Included (same BMI range as PCE → PREVENT-HF model)
Hemoglobin A1c	No	Included
Urine albumin-to-creatinine ratio (UACR)	No	Included
Requirement for additional labs	Standard lipid panel required	Additional labs optional (not required in all populations)
Estimated glomerular filtration rate (eGFR)	No	Included based on CKM health
Kidney disease integration	Limited	Explicit CKD incorporation
Clinical focus	ASCVD prevention	Broader prevention across CKM health
Equity considerations	Limited generalizability	Improved equity and generalizability

# Key Differences from PCE and PREVENT



# Key Differences: Social Deprivation Index

- Allows inclusion of social determinants of health (SDoH) in risk estimation
- Recognizes that differences in CVD risk by race and ethnicity largely reflect downstream effects of social and structural factors, not biology
- Addresses limitations of PCE, which may lack generalizability to populations not included in the original derivation



# Development and Validation of the American Heart Association's PREVENT Equations

Sadiya Khan, et al. February 6th, 2024



# Study Design

	<i>Published 02/06/2024</i>
<b>Design</b>	46 observational cohorts with individual data for the derivation statistics.
<b>Population</b>	Adults age 30-79 without known ASCVD or HF at baseline
<b>Primary endpoint</b>	Incident total CVD (Fatal and nonfatal ASCVD and HF events)
<b>Secondary endpoints</b>	<ul style="list-style-type: none"><li>• Calibration of predicted vs observed CVD events</li><li>• Comparison to Pooled Cohort Equations</li></ul>
<b>Statistical Analysis:</b>	<ul style="list-style-type: none"><li>• Modeling: Sex-specific Cox models with competing risk of non-CVD death; derived in 25 cohorts and externally validated in 21 cohorts.</li><li>• Performance: Discrimination (Harrell's C-statistic) and calibration (observed vs predicted risk, calibration slope); comparison with PCE.</li></ul>

# Population Criteria

<i>Data collected from NHANES spanning 1999-2010 with a 10-year follow up period.</i>	
<b>Inclusion criteria</b>	<ul style="list-style-type: none"><li>• Adults age 30-79 years of age without known ASCVD or HF at baseline. Must have all predictor data. Cutoffs for data (SBP, TC&lt; HDL_C) based off PCE. BMI Cutoff was based on PCP-HF Models (18.6-39.9 kg/m<sup>2</sup>)</li><li>• EGFR based on risk association and ease of availability</li><li>• Diabetes</li><li>• Current smoking</li><li>• Antihypertension med</li><li>• Statin medication use</li></ul>
<b>Exclusion criteria</b>	<ul style="list-style-type: none"><li>• Missing data, lack of follow up</li><li>• Participants with extreme clinical ranges for SBP, TC, HDL-C, or BMI<ul style="list-style-type: none"><li>• SBP: &lt;90 mmHg or &gt;200 mmHg</li><li>• TC: &lt;130 mg/dL or &gt;320 mg/dL</li><li>• HDL-C: &lt;20 mg/dL or &gt;100 mg/dL</li><li>• BMI: &lt;18.5 kg/m<sup>2</sup> or ≥40.0 kg/m<sup>2</sup></li></ul></li></ul>

# Predictor Measurement

	<i>Derived from PCE and Cardio-Kidney-Metabolic risk factors</i>
<b>Required Data</b>	<ul style="list-style-type: none"><li>• Traditional<ul style="list-style-type: none"><li>○ Demographic data on self-report</li><li>○ Cholesterol levels</li><li>○ Diabetes</li><li>○ Smoking status</li><li>○ Antihypertensives</li><li>○ Statin use</li></ul></li><li>• New<ul style="list-style-type: none"><li>○ eGFR</li></ul></li></ul>
<b>Optional Predictors</b>	<ul style="list-style-type: none"><li>• UACR</li><li>• Social Deprivation Index (SDI)</li></ul>

# Derivation Sample Characteristics

	Females (1,839,828)	Males (1,442,091)
Age, mean	53+-13	52+-12
Race/ethnic group		
Asian	2.6%	2.5%
White	78%	80%
Black	10%	8.0%
Hispanic/Latino	6.0%	5.3%
Other	4.1%	4.6%
Diabetes prevalence	10%	12%
Antihypertensive use	23%	27%
Statin use	14%	17%
Mean eGFR	91 +- 19	91 +- 17

# Primary Endpoints – Derivation Sample (Base Model)

	Female	Males
Total incident CVD events	53,258	53,403
Mean follow up time:	4.8 +- 3.1 years	4.6 +- 3.0 years
ASCVD events	31,812	34,691
Heart Failure	30,957	28,393
Discrimination (C-Statistic)	0.794 (0.763-0.809)	0.757 (0.727-0.778)
Calibration slope	1.03 (0.81-1.18)	0.94 (0.81-1.13)
With UACR+HbA1c+SDI	1.05 (0.73 to 1.20)	0.95 (0.72--1.10)
With UACR	1.03 (0.83 to 1.17)	0.95 (0.85-1.13)

# Primary Endpoints – CVD Comparison

	Females	Males
<b>PREVENT: C-statistic</b>	0.794 (0.763-0.809)	0.757 (0.727-0.778)
<b>PCE: C-statistic</b>	0.789 (0.746-0.802)	0.747 (0.721-0.767)
<b>PREVENT: Calibration Slope</b>	1.03 (0.81-1.16)	0.94 (0.81-1.13)
<b>PCE: Calibration Slope</b>	0.84 (0.65-1.00)	0.67 (0.60-0.81)

# Primary Endpoints – **ASCVD** Comparison

	Females	Males
<b>PREVENT: C-statistic</b>	0.774 (0.743-0.788)	0.736 (0.710-0.755)
<b>PCE: C-statistic</b>	0.772 (0.729-0.782)	0.733 (0.701-0.751)
<b>PREVENT: Calibration Slope</b>	1.09 (0.93-1.33)	1.04 (0.95-1.19)
<b>PCE: Calibration Slope</b>	0.54 (0.47-0.61)	0.50 (0.39-0.52)

# Conclusions

- PREVENT shows **superior calibration** compared to PCE across multiple cohorts
- Race-free contemporary modeling supports broader use and **equity-focused risk assessment**
- Clinical implementation supports use in a wide variety of patients, with or without CKD or Diabetes
- Add-on predictors are routinely available, with options for **more personalized risk estimation**



# Limitations

- Baseline for included data set spans >3 decades, leading to differences in prevalence, treatment, and period effects, but no significant variation in secondary analyses
- Age was used as the time scale, which enables flexibility of long term estimates, but could result in overestimation of 30-year risk
- Individual level SDOH measures not routinely available for all datasets, therefore not included in development of PREVENT. Zip was used given wide availability and CMS recognition
- Biomarkers representing target organ damage (BNP, troponin) and inflammation (CRP) or subclinical disease (CAC) were considered but not included



# Pros and Cons

<b>Strengths</b>	<b>Areas for further consideration</b>
Calculation of risk across a wider age range (30–79 vs 45–79 y old)	Differentiating biological vs cardiovascular age in clinical risk assessment
Estimation of global CVD risk (CHD, stroke, HF)	Precise allocation, titration, and intensity of medications for disease-specific outcomes
Option to calculate 10- and 30-year risk (useful for risk communication in young adults)	Structured lifestyle recommendations for young individuals with high 30-year risk
Inclusion of body mass index in base risk equations; social deprivation index in optional equations	Incorporation of imaging (eg, CAC scan and echocardiogram) and biomarkers specific for HF (hs-TnT and NT-proBNP) and broader residual risk (Lp(a), ApoB, and hsCRP)
Consideration of race as a social construct	Leveraging sex- and race-specific differences to optimize precision in preventive treatment

# Application to Case: Calculate PREVENT

**Question: Using the PREVENT Equations, what would CS 10-year ASCVD Risk score be? How would this compare to the PCE?**

- **ZIP Code:** 43609
- **BP:** 154/92 mmHg (repeat manual 152/90)
- **HR:** 78 bpm
- **RR:** 16
- **Temp:** 98.8°F
- **BMI:** 33.8 kg/m<sup>2</sup>
- **eGFR:** 72 mL/min/1.73 m<sup>2</sup>
- **Age:** 62 years
- **Lipid Panel**
  - **Total Cholesterol:** 218 mg/dL
  - **LDL-C:** 132 mg/dL
  - **HDL-C:** 42 mg/dL
  - **Triglycerides:** 178 mg/dL
  - **Non-HDLC:** 176 mg/dL
- **A1c:** 8.0%
- **Urine Albumin/Cr Ratio (UACR):** 28.2 mg/g

Estimated **10-year**  
risk of ASCVD

**12.7%**



# Patient Education and Self-Monitoring



# Self-Monitoring and Patient Education

## Evidence-Based Strategies for Improving Antihypertensive Medication Adherence

**Dose consolidation**

**Single pill combination rather than separate pills**

**Education/coaching by pharmacists and other health professionals**

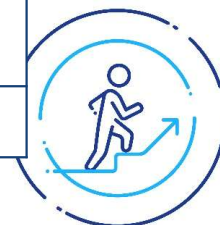
**Electronic/home blood pressure monitoring and feedback**

**Integration of patient preferences and values/shared decision-making into management plan**

**Medication synchronization and reminder aids**

**Mindfulness-based stress reduction or counseling for high stress, anxiety, and/or depression**

**Self-management interventions**



## Home Blood Pressure Monitoring



### Device and blood pressure cuff

Use a blood pressure device that has been validated for accuracy. Check with your clinician or other members of your care team, and the following website for devices: [www.validatebp.org](http://www.validatebp.org).

Use the correct cuff size matched to the size of your arm.

### Patient preparation

Avoid smoking, caffeinated beverages, or exercise within 30 minutes before blood pressure measurements.

### Positioning of patient and cuff

Place the cuff on a bare arm, and your arm should be supported at heart level.

The bottom of the cuff should be placed directly above the bend of the elbow.

You should relax, and sit in a chair (feet on floor, legs uncrossed, and back supported) for at least 5 minutes.

### Blood pressure measurement

While relaxing and measuring your blood pressure, please do not talk, use your phone, or watch TV.

You should take 2 readings 1 min apart twice a day (for a total of 4 readings): 2 readings in the morning after emptying your bladder (urinating) and before taking your medication and eating; and 2 readings at bedtime before sleep.

Check blood pressure for 3 days (minimum) to 7 days (preferred) before your appointment or interaction with your clinician.

Document your daily blood pressure measurements in writing or electronically.

Share your readings with the clinician taking care of you.

# Remote Patient Monitoring

- Telehealth interventions using home blood pressure monitoring (HBPM) with remote BP data transfer
- Combined approaches (HBPM + lifestyle education and/or medication management) result in greater BP lowering than usual clinic care alone
- Ambulatory BP monitoring (ABPM) provides stronger prediction of cardiovascular outcomes than office BP
- HBPM may be more reproducible and accessible for ongoing monitoring in routine practice



# Psychosocial and Stress Recommendations

## Exercise:

- Aerobic: 90–150 min/week
- Dynamic resistance: 90–150 min/week (3 sets × 10 reps)
- Isometric resistance: Max voluntary contraction
- Expected SBP reduction: ~5–10 mmHg

## Meditation

- Transcendental meditation (guided)
- Seated, eyes closed
- 20 minutes, twice daily
- Expected SBP reduction: ~5–7 mmHg

## Breathing Control

- Slow breathing (<10 breaths/min)
- 15 minutes daily
- Expected SBP reduction: ~5 mmHg

# Case: Apply Patient Education

**What education pearls would you provide CS with for best success?**

- Aim for >90 minutes per week of aerobic exercise
- Consider meditation/breathing control
- Choose low-sodium canned options when available
- Appropriate home monitoring techniques
- Use a pill box/set an alarm for adherence reminders



# Summary: Key Take Home Points

- A target of **<130/80 mmHg** is recommended for most patients, with additional considerations based on comorbidities and special populations
- Blood pressure classification and treatment decisions are now risk-based, incorporating **PREVENT** rather than BP thresholds alone
- Medication initiation is recommended for:
  - **All adults with average BP >140/90 mmHg**
  - Select adults with BP >130/80 mmHg and clinical CVD, ASCVD, CKD, or elevated PREVENT 10-year CVD risk
- Adults with BP ~130/80 mmHg and PREVENT risk <7.5% may trial lifestyle interventions for 4–6 months
- For **stage 2 hypertension**, initiation of **two first-line agents** in a single-pill, fixed-dose combination is preferred
- Home BP monitoring with standardized office follow-up is recommended; smartwatch-based BP measurements are not recommended



# References

1. Writing Committee Members\*, Jones DW, Ferdinand KC, et al. 2025 AHA/ACC/AANP/AAPA/ABC/ACCP/ACPM/AGS/AMA/ASPC/NMA/PCNA/SGIM 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 Joint Committee on Clinical Practice Guidelines. *Hypertension*. 2025;82(10):e212-e316. doi:10.1161/HYP.0000000000000249
2. Whelton PK, Carey RM, Aronow WS, et al. 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. *Hypertension*. 2018;71(6):e13-e115. doi:10.1161/HYP.0000000000000065
3. James PA, Oparil S, Carter BL, et al. 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). *JAMA*. 2014;311(5):507-520. doi:10.1001/jama.2013.284427
4. Watson NW, Kandzari DE, Kirtane AJ, Secemsky EA. Renal Denervation for Hypertension in 2025: Opportunities and Challenges Ahead. *JACC Cardiovasc Interv*. 2025;18(21):2670-2675. doi:10.1016/j.jcin.2025.09.017
5. Khan SS, Matsushita K, Sang Y, et al. Development and Validation of the American Heart Association's PREVENT Equations. *Circulation*. 2024;149(6):430-449. doi:10.1161/CIRCULATIONAHA.123.067626
6. Ko DT, Sivaswamy A, Sud M, et al. Calibration and discrimination of the Framingham Risk Score and the Pooled Cohort Equations. *CMAJ*. 2020;192(17):E442-E449. doi:10.1503/cmaj.190848
7. Goff DC Jr, Lloyd-Jones DM, Bennett G, et al. 2013 ACC/AHA guideline on the assessment of cardiovascular risk: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines. *J Am Coll Cardiol*. 2014;63(25 Pt B):2935-2959. doi:10.1016/j.jacc.2013.11.005
8. Razavi AC, Kohli P, McGuire DK, et al. PREVENT Equations: A New Era in Cardiovascular Disease Risk Assessment. *Circ Cardiovasc Qual Outcomes*. 2024;17(4):e010763. doi:10.1161/CIRCOUTCOMES.123.010763
9. Khan SS, Coresh J, Pencina MJ, et al. Novel Prediction Equations for Absolute Risk Assessment of Total Cardiovascular Disease Incorporating Cardiovascular-Kidney-Metabolic Health: A Scientific Statement From the American Heart Association. *Circulation*. 2023;148(24):1982-2004. doi:10.1161/CIR.0000000000001191



# Need More Information?

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