

PACE

Pharmaceutical Assistance
Contract for the Elderly



Balanced information for better care

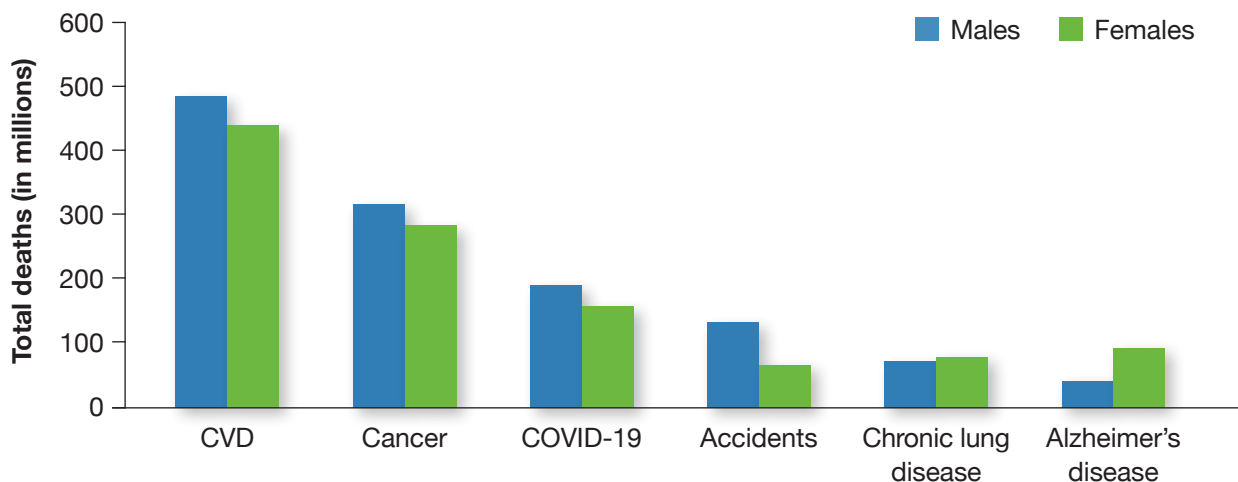
Don't let the pressure get to you

Managing blood pressure in older adults



Hypertension can lead to cardiovascular disease, the number one cause of death

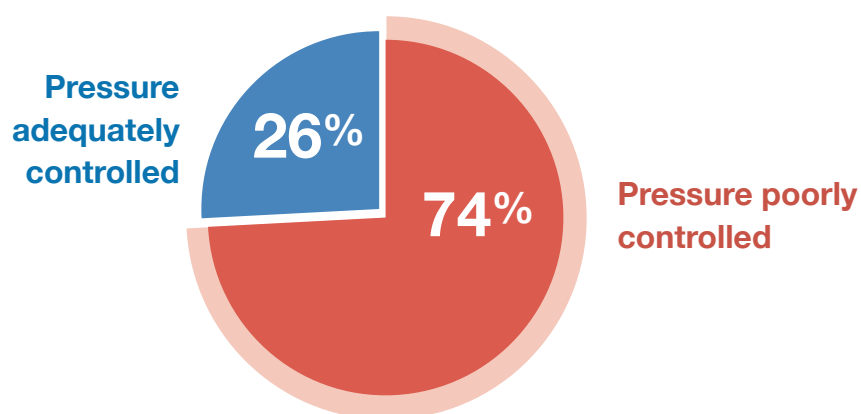
FIGURE 1. More Americans die from cardiovascular disease (CVD) than any other cause.¹



Hypertension is the leading factor in CVD death, contributing to 1 in every 4 CVD deaths.²

Most patients with hypertension have uncontrolled blood pressure.

FIGURE 2. Of the 91 million Americans with hypertension, nearly 3 in 4 are not at goal (BP < 130/80 mm Hg).³



50% of patients not at goal are already prescribed at least one antihypertensive medication.³

Obtain accurate readings to guide treatment

➔ Measure blood pressure appropriately.

- Have patients **rest for 5 minutes**, with back supported, feet on the floor, and arm resting comfortably at heart level.
- Ask patients to **relax**, sitting calmly and without conversation.
- **Check blood pressure three times**, with readings separated by at least one minute.
- **Ensure correct cuff size** and make sure the BP device is calibrated.

➔ When in doubt, confirm the diagnosis of hypertension with home measurements.⁴

- Ambulatory blood pressure monitoring can help identify patients with suspected white coat hypertension.
- Recommend a validated, automatic, cuff-style monitor.
 - For a listing of validated devices, see **ValidateBP.org**.
- Have the patient track measurements, taking two readings at about the same time daily.
- Patients should record their readings in a log (e.g., **qrco.de/BP_log**).



➔ Categorize blood pressure to assess the need for treatment.

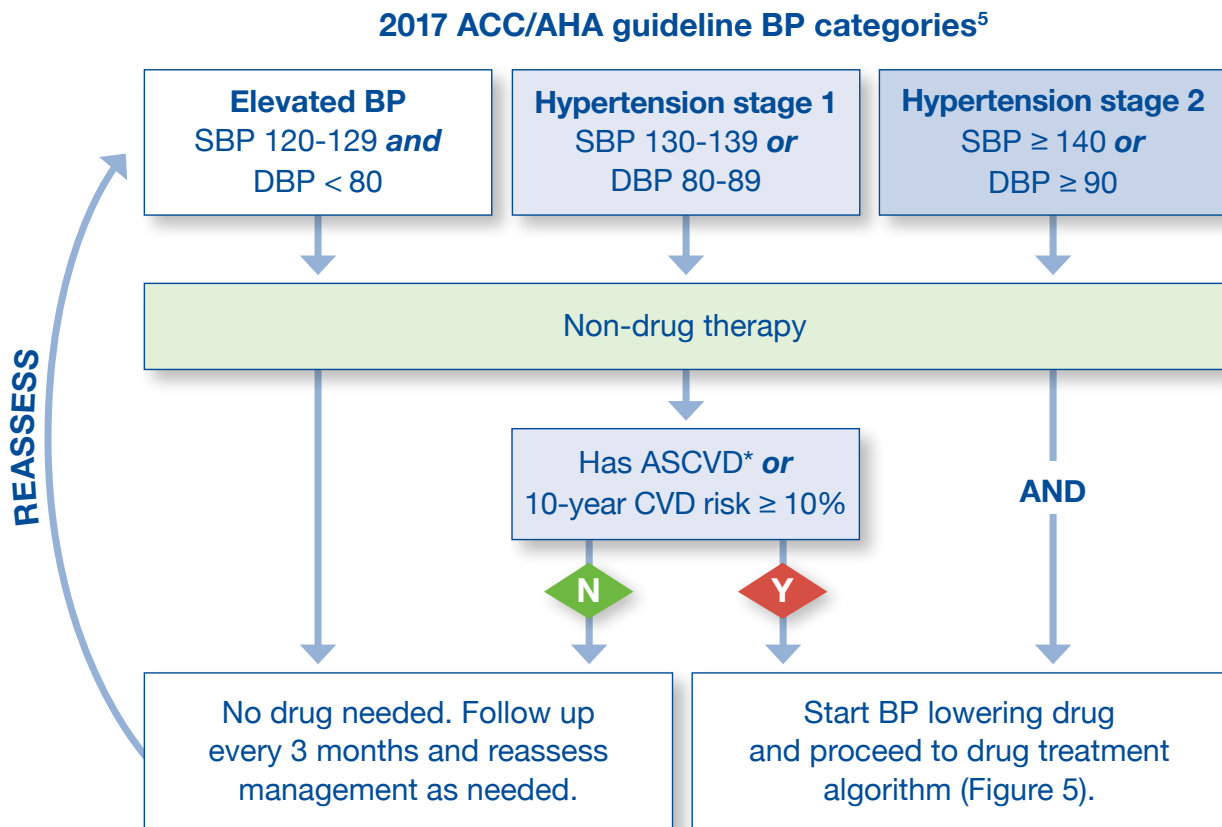
TABLE 1. The American College of Cardiology and American Heart Association (ACC/AHA) 2017 blood pressure classifications⁵

BP category	SBP		DBP
Normal	< 120 mm Hg	AND	< 80 mm Hg
Elevated	120-129 mm Hg		< 80 mm Hg
Hypertension—stage 1	130-139 mm Hg	OR	80-89 mm Hg
Hypertension—stage 2	≥ 140 mm Hg		≥ 90 mm Hg

In patients ≥ 65 years old, use only the systolic BP to determine treatment category.⁵

Choose a management strategy

FIGURE 3. A practical guide for when to start treatment



*ASCVD (atherosclerotic cardiovascular disease) includes acute coronary syndrome, myocardial infarction, angina, revascularization, stroke, transient ischemic attack (TIA), or peripheral arterial disease.



Use a tool such as the **ASCVD Risk Plus estimator** to calculate the 10-year risk of a CV event.




Assess progress toward treatment goals.

- The goal is to achieve an SBP < 130 mm Hg.
- Patients < 65 years old have a DBP goal of < 80 mm Hg.
- For patients whose management requires assessment of 10-year CVD risk, reassess at follow-up visits.

Devise the treatment plan based on BP

Encourage lifestyle change in all patients with SBP > 120 mm Hg.

FIGURE 4. For patients with elevated BP (> 120/80 mm Hg), small changes in BP can be achieved by changing health habits.^{5,6}

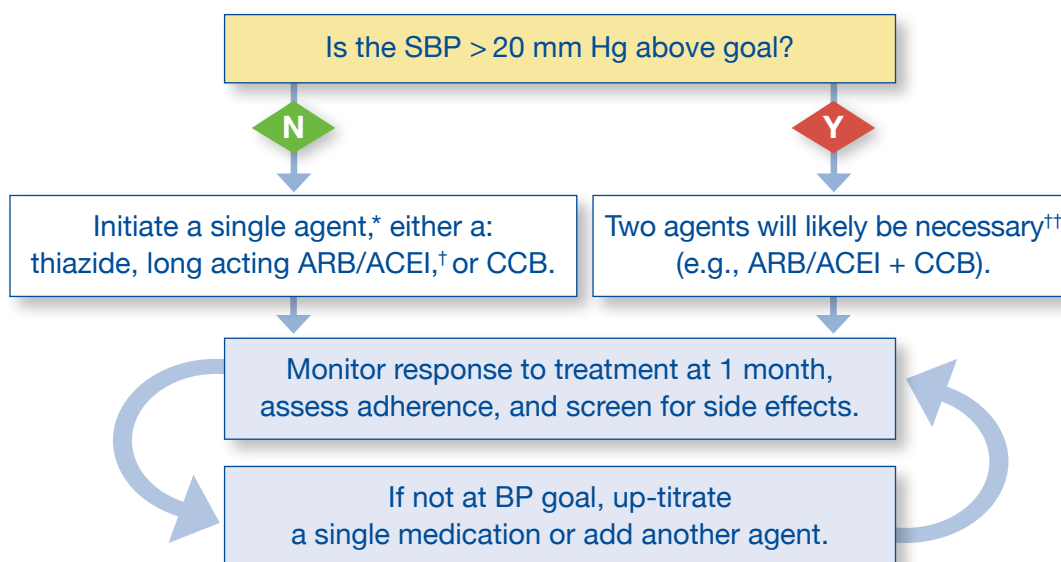
				
DASH diet	Exercise	Reduce sodium	Lose weight*	Limit alcohol
↓ 11 mm Hg	↓ 5-6 mm Hg	↓ 5-6 mm Hg	↓ 5 mm Hg	↓ 4 mm Hg
DASH diet: nhlbi.nih.gov/ education/dash	aerobic activity 90-150 min/week	reduce by 1,000 mg/day; ideal is < 2,300 mg/day	aim for ideal body weight	limit drinks/day males: ≤ 2/day females: ≤ 1/day

*Anticipate about 1 mm Hg reduction for each 1 kg lost.

Start medication if Stage 2, or Stage 1 with ASCVD or risk factors.

Start with a medication from one of four classes: angiotensin receptor blocker (ARB), angiotensin converting enzyme inhibitor (ACEI), thiazide diuretic, or calcium channel blocker (CCB).

FIGURE 5. Multiple medications may be needed if patients are > 20 mm Hg above goal.



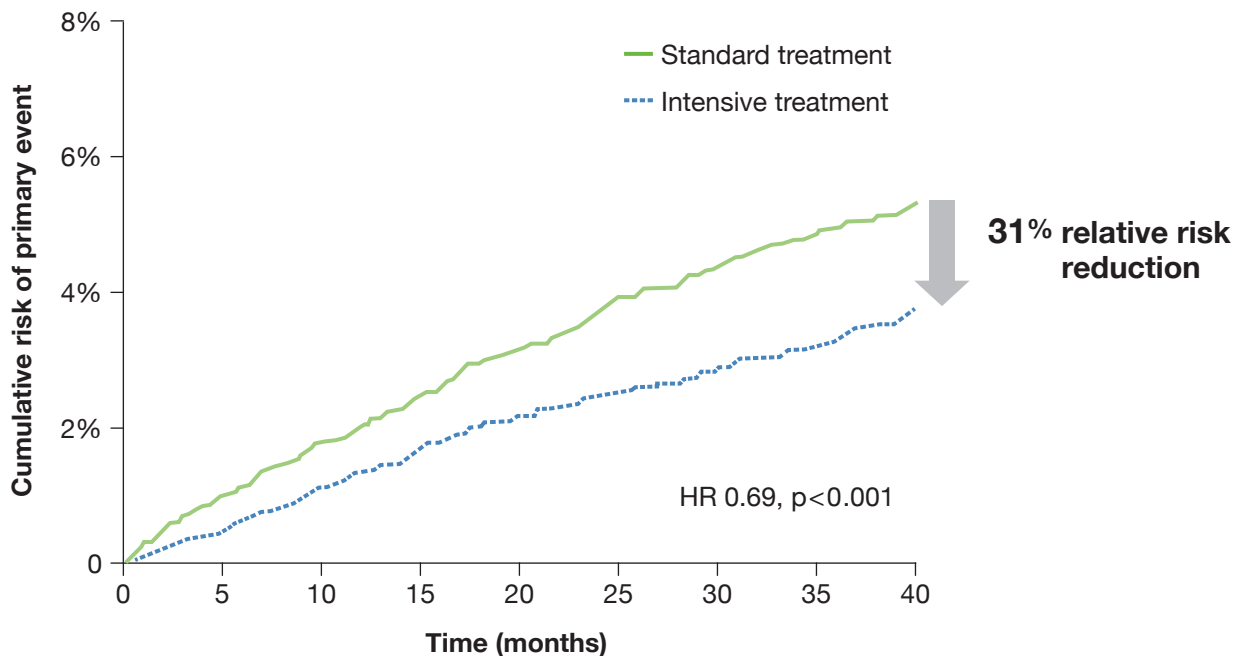
* For African Americans, initiate a thiazide or CCB.

† Combining an ACEI and an ARB confers no additional benefit and may increase adverse events. ARBs confer far less risk of cough or angioedema, and are preferred over ACEI.⁷

†† For older patients, start one medication and intensify therapy at the first follow-up visit.

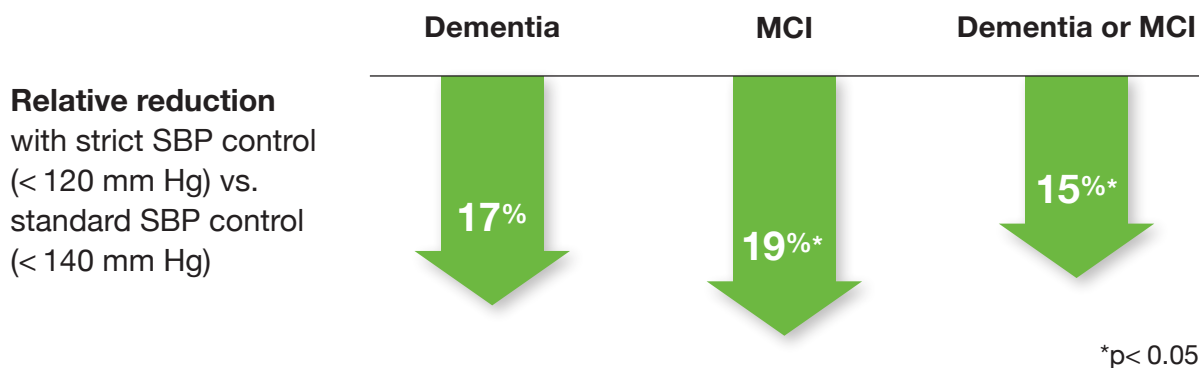
Like all adults, older adults benefit from intensive BP lowering

FIGURE 6. Across randomized controlled trials in adults aged 60 and older, BP lowering to SBP < 130 mm Hg led to nearly immediate reduction in major CV events.⁸



At 40 months, only 63 people would need to be treated to prevent 1 major cardiovascular event.

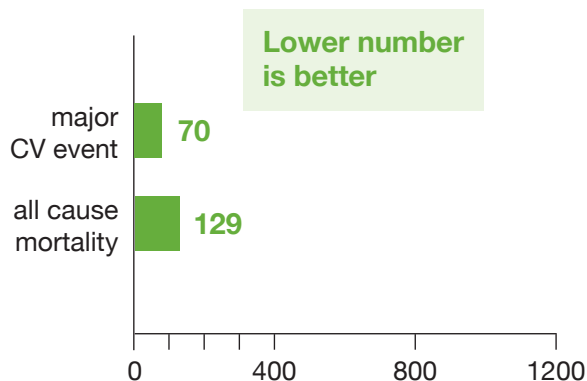
FIGURE 7. The SPRINT-MIND study found tighter BP control after five years also reduced the incidence of mild cognitive impairment (MCI).⁹



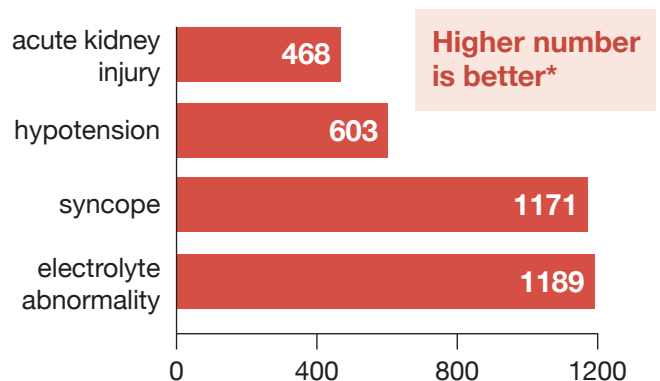
Balancing the risks and benefits of treatment in older adults

FIGURE 8. In a population of patients treated to an SBP goal of < 130 mm Hg, far more will benefit from prevented CV events or death than will have side effects.¹⁰

Number treated for one patient to benefit



Number treated per one patient harmed

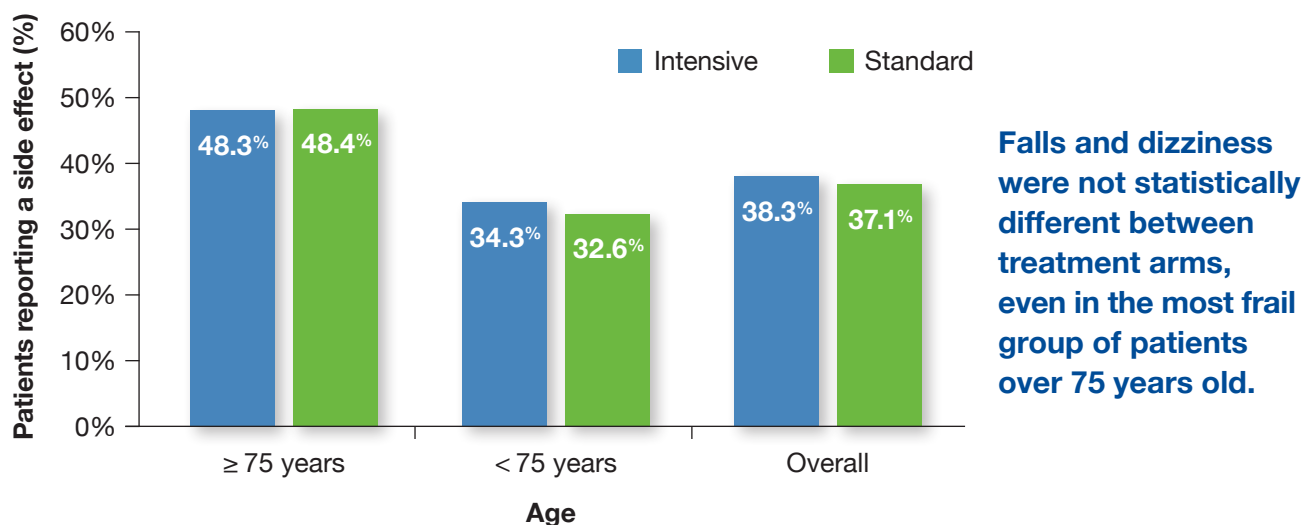


*A higher number indicates harm events are more rare.

The rate of injurious falls was no higher in patients treated to a goal of SBP < 130 vs. those with a higher SBP goal.¹⁰

Current evidence supports treating older adults to guideline recommended goals.

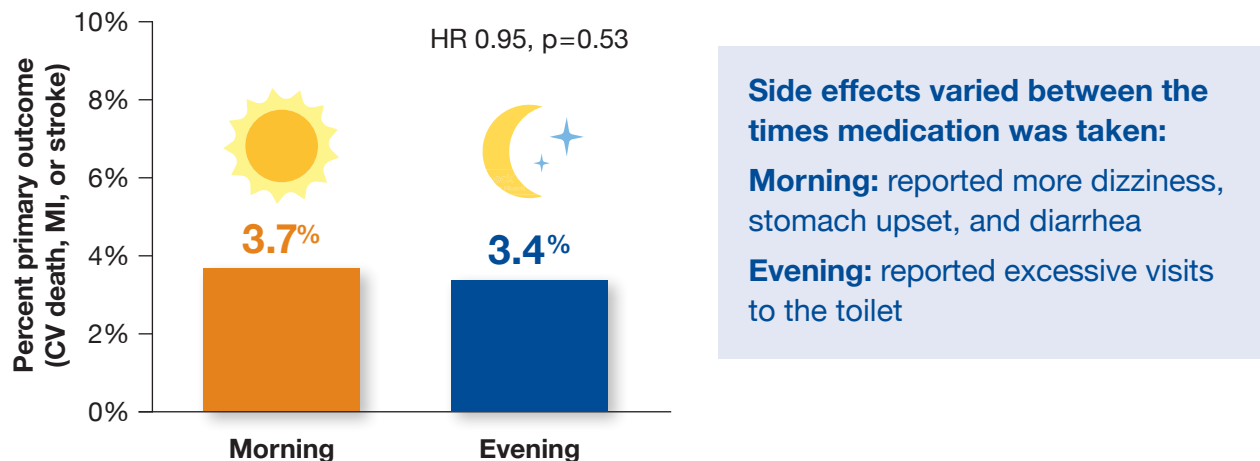
FIGURE 9. In SPRINT, side effects were more common in older adults (≥ 75) than in younger adults (< 75), but were not different between intensive and standard treatment arms.^{11,12}



Helping patients reach their treatment goals

Take the medication. Don't worry about timing.

FIGURE 10. The TIME study (over 21,000 older adults randomized to take antihypertensives in the morning or evening) found no difference in CV events over a median of 5 years.¹³



Continue to titrate medication.

BP control should be sustained over time. When SPRINT participants relaxed to standard BP targets, their relative CV benefit disappeared a year later.¹⁴

Prescribe combination antihypertensives.

BP was lower in patients taking combination medication vs. the same regimen as separate agents.¹⁵ Combinations are often available generically at cost similar to or lower than individual drugs.

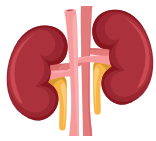
Assess for other causes of hypertension.

Patients who are taking three antihypertensives, including a diuretic, and still have uncontrolled BP are defined as treatment resistant.

Evaluate for common and treatable causes of resistant hypertension:

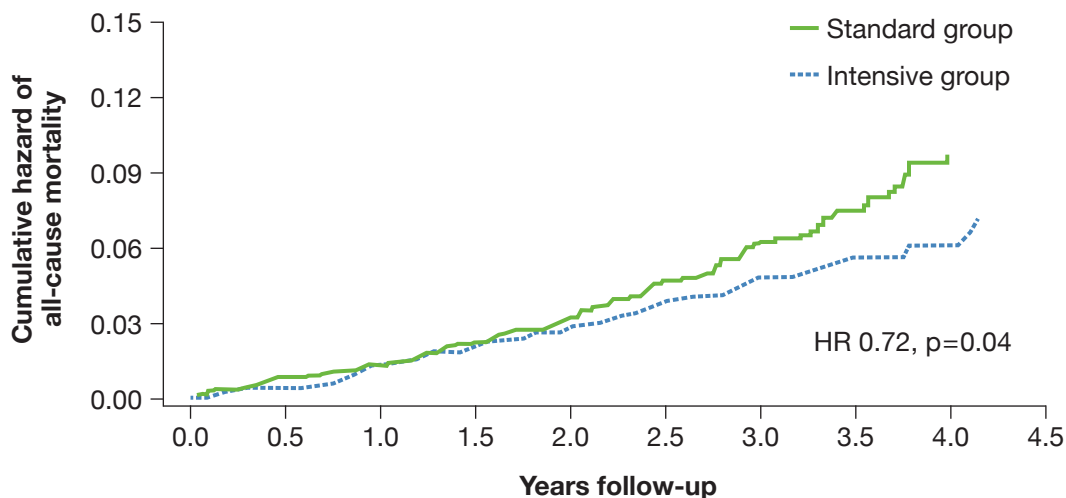
- **Obstructive sleep apnea**
- **Renovascular disease**
- **Primary aldosteronism:** As many as 20% of patients with treatment-resistant hypertension have primary aldosteronism, yet only 2% are screened.¹⁶
Make the diagnosis with an elevated plasma aldosterone:renin ratio (under standard conditions, in the absence of an aldosterone antagonist).

Addressing BP in special populations



Chronic kidney disease (CKD)

FIGURE 11. Analysis of SPRINT in patients with CKD found reduced all-cause mortality in the intensive treatment group without an increase in adverse renal outcomes.¹⁷



While ACC/AHA recommend a goal of < 130/80 mm Hg, KDIGO (Kidney Disease Improving Global Outcomes) recommends a goal of < 120/80 mm Hg when tolerated in patients not on dialysis or with a renal transplant.¹⁸

Start with ACEIs or ARBs in patients with albuminuria to prevent progression of CKD.



Secondary prevention in people who have had strokes

- Aim for the standard BP goal (< 130/80 mm Hg).
- Start with ARBs, ACEIs, or thiazide diuretics.¹⁹

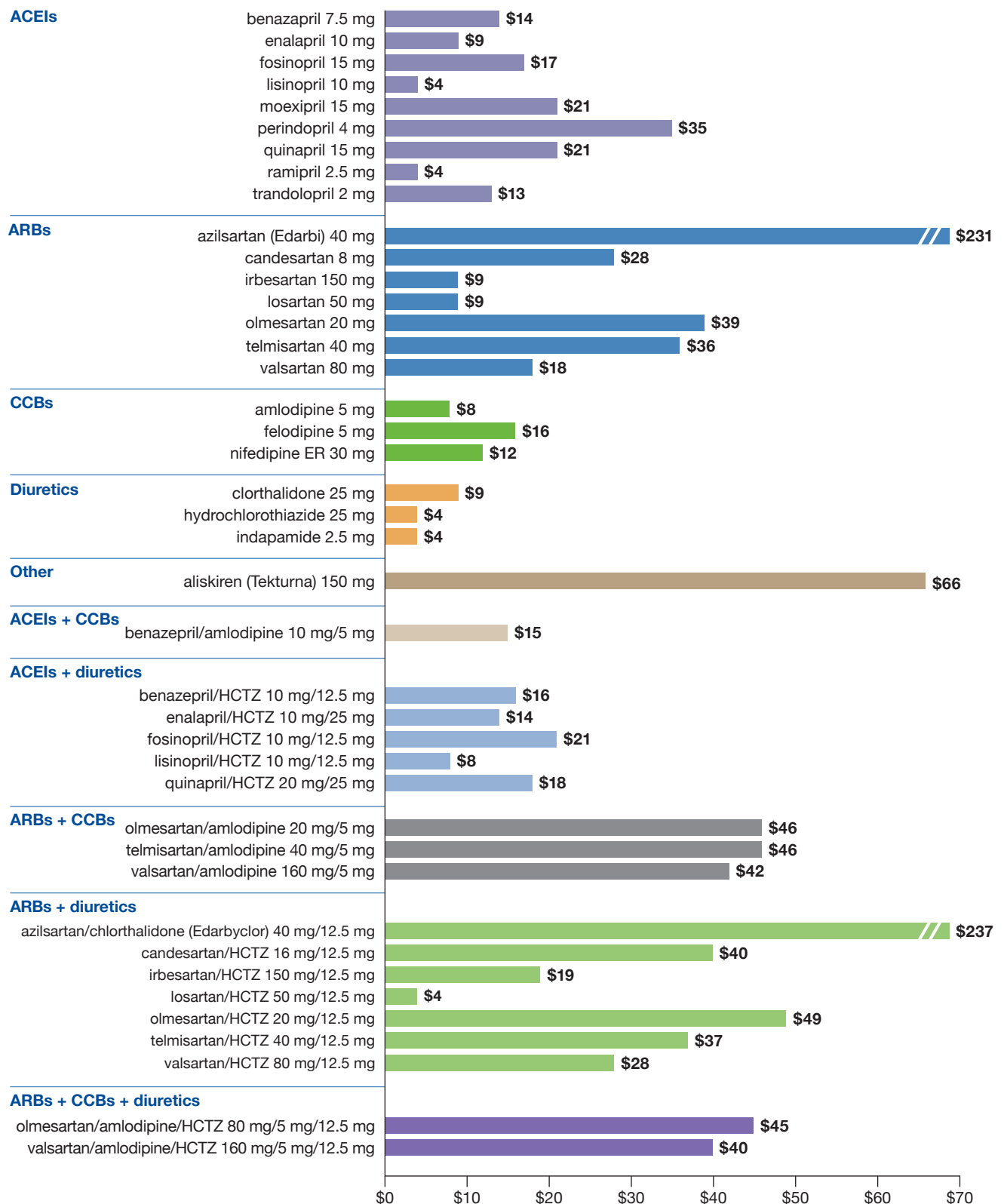


Type 2 diabetes

- Aim for the standard BP goal.
- In some patients, an SGLT-2 inhibitor may lower BP. It may be appropriate to preferentially add a medication from this class for patients with hypertension and diabetes.²⁰

Costs

FIGURE 12. Price of a 30-day supply of medications to manage hypertension



Prices from goodrx.com, May 2023. Listed doses are based on Defined Daily Doses by the World Health Organization and should not be used for dosing in all patients. All doses shown are generics when available, unless otherwise noted. These prices are a guide; patient costs will be subject to copays, rebates, and other incentives.

Key points

- **Identify patients with elevated blood pressure**, using home-based assessments to aid in diagnosis of hypertension when needed.
- Initiate treatment with **lifestyle modification and medication therapy** in patients with stage 2 hypertension or stage 1 hypertension with ASCVD or risk factors. Goal BP in most patients is < 130/80 mm Hg.
- **Continuously reassess treatment and monitor for non-adherence**, escalating therapy if needed.
- **Balance treatment targets with the risk of side effects.**
- **Help patients achieve treatment goals** by utilizing combination pills, ensuring an affordable regimen, and continuing to increase doses based on response.

Visit AlosaHealth.org/Hypertension
for links to a comprehensive evidence document
and other resources.

References:

- (1) Tsao CW, et al. Heart Disease and Stroke Statistics-2023 Update: A Report From the American Heart Association. *Circulation*. 2023;147(8):e93-e621. (2) Willey JZ, et al. Population attributable risks of hypertension and diabetes for cardiovascular disease and stroke in the northern Manhattan study. *J Am Heart Assoc*. 2014;3(5):e001106. (3) Centers for Disease Control and Prevention (CDC). Hypertension Cascade: Hypertension Prevalence, Treatment and Control Estimates Among US Adults Aged 18 Years and Older Applying the Criteria From the American College of Cardiology and American Heart Association's 2017 Hypertension Guideline—NHANES 2017–2020. May 12, 2023; <https://millionhearts.hhs.gov/data-reports/hypertension-prevalence.html>. Accessed June 20, 2023. (4) Krist AH, et al. Screening for Hypertension in Adults: US Preventive Services Task Force Reaffirmation Recommendation Statement. *JAMA*. 2021;325(16):1650-1656. (5) Whelton PK, 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. *J Am Coll Cardiol*. 2018;71(19):e127-e248. (6) Horn LV, et al. Recommended Dietary Pattern to Achieve Adherence to the American Heart Association/American College of Cardiology (AHA/ACC) Guidelines: A Scientific Statement From the American Heart Association. *Circulation*. 2016;134(22):e505-e529. (7) Messerli FH, et al. Angiotensin-Converting Enzyme Inhibitors in Hypertension: To Use or Not to Use? *J Am Coll Cardiol*. 2018;71(13):1474-1482. (8) Chen T, et al. Time to Clinical Benefit of Intensive Blood Pressure Lowering in Patients 60 Years and Older With Hypertension: A Secondary Analysis of Randomized Clinical Trials. *JAMA Intern Med*. 2022;182(6):660-667. (9) Williamson JD, et al. Effect of Intensive vs Standard Blood Pressure Control on Probable Dementia: A Randomized Clinical Trial. *JAMA*. 2019;321(6):553-561. (10) Bundy JD, et al. Estimating the Association of the 2017 and 2014 Hypertension Guidelines With Cardiovascular Events and Deaths in US Adults: An Analysis of National Data. *JAMA Cardiol*. 2018;3(7):572-581. (11) Williamson JD, et al. Intensive vs Standard Blood Pressure Control and Cardiovascular Disease Outcomes in Adults Aged ≥75 Years: A Randomized Clinical Trial. *JAMA*. 2016;315(24):2673-2682. (12) Wright JT, Jr., et al. A Randomized Trial of Intensive versus Standard Blood-Pressure Control. *N Engl J Med*. 2015;373(22):2103-2116. (13) Mackenzie IS, et al. Cardiovascular outcomes in adults with hypertension with evening versus morning dosing of usual antihypertensives in the UK (TIME study): a prospective, randomised, open-label, blinded-endpoint clinical trial. *Lancet*. 2022;400(10361):1417-1425. (14) Jaeger BC, et al. Longer-Term All-Cause and Cardiovascular Mortality With Intensive Blood Pressure Control: A Secondary Analysis of a Randomized Clinical Trial. *JAMA Cardiol*. 2022;7(11):1138-1146. (15) Parati G, et al. Adherence to Single-Pill Versus Free-Equivalent Combination Therapy in Hypertension: A Systematic Review and Meta-Analysis. *Hypertension*. 2021;77(2):692-705. (16) Jaffe G, et al. Screening Rates for Primary Aldosteronism in Resistant Hypertension: A Cohort Study. *Hypertension*. 2020;75(3):650-659. (17) Cheung AK, et al. Effects of Intensive BP Control in CKD. *J Am Soc Nephrol*. 2017;28(9):2812-2823. (18) KDIGO 2021 Clinical Practice Guideline for the Management of Blood Pressure in Chronic Kidney Disease. *Kidney Int*. 2021;99(3s):S1-s87. (19) Zonneveld TP, et al. Blood pressure-lowering treatment for preventing recurrent stroke, major vascular events, and dementia in patients with a history of stroke or transient ischaemic attack. *Cochrane Database Syst Rev*. 2018;7(7):Cd007858. (20) ElSayed NA, et al. 10. Cardiovascular Disease and Risk Management: Standards of Care in Diabetes-2023. *Diabetes Care*. 2023;46(Suppl 1):S158-s190.

About this publication

These are general recommendations only; specific clinical decisions should be made by the treating clinician based on an individual patient's clinical condition. More detailed information on this topic is provided in a longer evidence document at AlosaHealth.org.



This material is provided by **Alosa Health**, a nonprofit organization which accepts no funding from any pharmaceutical company.

This material was produced by Eden Bernstein, M.D., Research Fellow in Medicine; Alex Chaitoff, M.D., Research Fellow in Medicine (principal editor); Jerry Avorn, M.D., Professor of Medicine; Ellie Grossman, M.D., M.P.H., Instructor in Medicine; all at Harvard Medical School; Alan Drabkin, M.D., F.A.A.F.P., Clinical Associate Professor of Family Medicine at Tufts University School of Medicine; and Ellen Dancel, Pharm.D., M.P.H., Director of Clinical Materials Development at Alosa Health. Drs. Avorn and Chaitoff are physicians at the Brigham and Women's Hospital and Dr. Bernstein practices at Massachusetts General Hospital, both in Boston. Dr. Grossman practices at the Cambridge Health Alliance. None of the authors accept any personal compensation from any drug company.



Pharmaceutical Assistance
Contract for the Elderly